

2022

TCRP

ANNUAL REPORT OF PROGRESS

TRANSIT
COOPERATIVE
RESEARCH
PROGRAM

Sponsored by the Federal Transit Administration

YEARS
1992–2022

TRANSIT COOPERATIVE
RESEARCH PROGRAM

NATIONAL
ACADEMIES

*Sciences
Engineering
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* Membership as of November 2022.

2022
TCRP
ANNUAL REPORT OF PROGRESS

TRANSIT
COOPERATIVE
RESEARCH
PROGRAM

Research sponsored by the Federal Transit Administration
in cooperation with the American Public Transportation Association

NATIONAL
ACADEMIES *Sciences
Engineering
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TRB TRANSPORTATION
RESEARCH BOARD

TRANSIT COOPERATIVE RESEARCH PROGRAM

The nation's growth and the need to meet mobility, environmental, and energy objectives place demands on public transit systems. Current systems, some of which are old and in need of upgrading, must expand service area, increase service frequency, and improve efficiency to serve these demands. Research is necessary to solve operating problems, adapt appropriate new technologies from other industries, and introduce innovations into the transit industry. The Transit Cooperative Research Program (TCRP) serves as one of the principal means by which the transit industry can develop innovative near-term solutions to meet demands placed on it.

The need for TCRP was originally identified in TRB Special Report 213—Research for Public Transit: New Directions, published in 1987 and based on a study sponsored by the Urban Mass Transportation Administration—now the Federal Transit Administration (FTA). A report by the American Public Transportation Association (APTA), *Transportation 2000*, also recognized the need for local, problemsolving research. TCRP, modeled after the successful National Cooperative Highway Research Program (NCHRP), undertakes research and other technical activities in response to the needs of transit service providers. The scope of TCRP includes various transit research fields including planning, service configuration, equipment, facilities, operations, human resources, maintenance, policy, and administrative practices.

TCRP was established under FTA sponsorship in July 1992. Proposed by the U.S. Department of Transportation, TCRP was authorized as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). On May 13, 1992, a memorandum agreement outlining TCRP operating procedures was executed by the three cooperating organizations: FTA; the National Academies of Sciences, Engineering, and Medicine, acting through the Transportation Research Board (TRB); and APTA. APTA is responsible for forming the independent governing board, designated as the TCRP Oversight and Project Selection (TOPS) Commission.

Research problem statements for TCRP are solicited periodically but may be submitted to TRB by anyone at any time. It is the responsibility of the TOPS Commission to formulate the research program by identifying the highest priority projects. As part of the evaluation, the TOPS Commission defines funding levels and expected products.

Once selected, each project is assigned to an expert panel appointed by TRB. The panels prepare project statements (requests for proposals), select contractors, and provide technical guidance and counsel throughout the life of the project. The process for developing research problem statements and selecting research agencies has been used by TRB in manag-

ing cooperative research programs since 1962. As in other TRB activities, TCRP project panels serve voluntarily without compensation.

Because research cannot have the desired effect if products fail to reach the intended audience, special emphasis is placed on disseminating TCRP results to the intended users of the research: transit agencies, service providers, and suppliers. TRB provides a series of research reports, syntheses of transit practice, and other supporting material developed by TCRP research. APTA, in collaboration with the Conference of Minority Transportation Officials, will arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by urban and rural transit industry practitioners.

TCRP provides a forum where transit agencies can cooperatively address common operational problems. TCRP results support and complement other ongoing transit research and training programs.

For additional information, go to www.trb.org/TCRP.

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Page 1

100% electric bus, GoDurham, godurhamtransit.org

NATIONAL ACADEMIES

Sciences
Engineering
Medicine

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. John L. Anderson 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.nationalacademies.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 provide leadership in transportation improvements and innovation through trusted, timely, impartial, and evidence-based information exchange, research, and advice regarding all modes of transportation. The Board's varied activities annually engage about 8,000 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.

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TRANSIT COOPERATIVE RESEARCH PROGRAM

Annual Report of Progress

DECEMBER 31, 2022

INTRODUCTION

The Transit Cooperative Research Program (TCRP) was established in 1992 to provide a continuing program of applied research on transit issues. The program is sponsored by the Federal Transit Administration (FTA) and carried out under a three-way agreement among the National Academies of Sciences, Engineering, and Medicine (the National Academies), acting through its Transportation Research Board (TRB); the American Public Transportation Association (APTA); and the FTA.

TCRP focuses on issues significant to the public transportation industry, with emphasis on developing near-term research solutions to a variety of transit problems involving facilities, vehicles, equipment, service concepts, operations, policy, planning, human resources, maintenance, and administrative practices.

TCRP is a unique undertaking. Anyone with an interest in public transportation may play a role in setting the research agenda for the program by submitting research problem statements to TRB at any time. Problem statements are solicited annually from individuals representing the public transportation industry, metropolitan planning organizations (MPOs), universities, and federal agencies. In addition, to complement the open solicitation process, conferences are held to address research needs or small consultant studies are commissioned to develop research problem statements on topics of special interest.



The selection of research projects is the responsibility of the TCRP Oversight and Project Selection (TOPS) Commission. The TOPS Commission consists of industry executives, representing the primary beneficiaries of TCRP research. The TOPS Commission functions as the TCRP governing board and sets research priorities.

HOW TCRP PROGRAMS ARE FORMULATED

The annual research program is the foundation of TCRP. Formulating the annual program—that is, identifying the highest priority projects to be researched in a given fiscal year—is the primary duty of the TOPS Commission. Projects to be funded are based on the TOPS Commission’s assessment of current problems facing the public transportation industry. The programming process encompasses a series of five steps.

First, problem statements that describe problems in the industry are solicited annually by TCRP staff, but they may be submitted to TRB by anyone at any time. Approximately 3,187 research problem statements have been submitted since program inception. Research problem statements are typically submitted by individuals representing the following:

- Transit Agencies,
- State DOTs,
- FTA,
- APTA Committees,
- TRB Committees,
- Industries,
- Universities, and
- Consultants.

Table 1 shows the origin of problem statements submitted to date.

TABLE 1 ORIGIN OF PROBLEM STATEMENTS

ORGANIZATION	FY 1992–2019		FY 2020		FY 2021		FY 2022		FY 2023	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
Transit Agencies	744	27.9	3	4.5	1	2.4	1	2.3	8	17.8
State DOTs	161	6.0	2	3.0	0	0.0	0	0.0	1	2.2
FTA/U.S. DOT	247	9.3	0	0.0	0	0.0	2	4.6	0	0.0
APTA Committees	148	5.6	3	4.5	3	7.3	1	2.3	0	0.0
TRB Committees	277	10.3	25	37.9	10	24.3	9	20.9	5	11.1
Industries	78	3.0	1	1.5	7	17.0	4	9.3	4	8.9
Universities	339	12.7	7	10.7	6	15.0	7	16.2	7	15.6
Consultants	459	17.2	20	30.3	5	12.0	14	33.5	10	22.2
Other	213	8.0	5	7.6	9	22.0	5	11.6	10	22.2
Total	2,666	100.0	66	100.0	41	100.0	43	100.0	45	100.0

In addition to this process, the TOPS Commission authorizes special efforts to develop problem statements around specific themes. In 1994, projects to aid in increasing transit

ridership were developed by the TCRP Project H-5 workshop, "Identification of Research Needs to Increase U.S. Transit Ridership." TCRP Project H-4, "Transit Policy-Related Research," generated five projects in the policy area. Problem statements for fiscal years 1997, 1998, and 1999 were developed under TCRP Project J-8, "New Paradigms for Public Transit," and TCRP Project H-15, "Projects to Support 'Mobility for the 21st Century.'" In 2001, problem statements were developed on public transportation security under TCRP Project J-10, "Public Transportation Security Research," in response to the attacks of September 11, 2001. Consultants have also been retained to develop problem statements in the areas of human resources and transit bus improvements.

Second, screening workshops are conducted to evaluate and recommend problem statements for consideration by the TOPS Commission. The screening panels consider, in addition to FTA strategic research goals, five strategic priorities adopted in the TCRP strategic plan:

1. Place the customer first,
2. Enable transit to operate in a technologically advanced society,
3. Continuously improve public transportation,
4. Flourish in the multimodal system, and
5. Revitalize transit organizations.

TCRP revises its strategic plan periodically and adjusts selection criteria to be consistent with the plan.

The problem statements are screened to determine the following:

- Whether the problem supports the FTA strategic research goals and/or the TCRP strategic plan,
- Whether the problem is important to transit agencies,
- Whether the problem is researchable,
- Whether the contemplated research is timely,
- Whether successful research will produce significant benefits,
- Whether the probability of success of the proposed study is sufficiently high,
- Whether the proposed study can be designed to avoid undesirable duplication of other completed or ongoing research, and
- Whether the proposed study is appropriate for TCRP or whether it should be performed elsewhere.

Third, the short list of problem statements is presented to the TOPS Commission for consideration in formulating each year's program.

Fourth, the technical merits of the problem statements that survive the screening are further evaluated by the TOPS Commission at an annual meeting held for this purpose. Based on the comments and discussions, the TOPS Commission selects the projects for the next program year.

Finally, each year's program is referred to TRB for review, acceptance, and execution.



TOPS Commission Meeting, Washington, DC, November 4, 2022

RESEARCH PROGRAM

TCRP was established by memorandum agreement in 1992. Since then, the TOPS Commission has generally met twice each year, a total of 64 times, to select the research program for the next fiscal year and to review TCRP procedures and performance.

Most problem statements selected by the TOPS Commission become research projects, but some are treated as syntheses. Research projects involve original research, which includes data collection, analysis, and preparation of materials for use by the transit industry. Syntheses search out and assemble useful knowledge from all available sources,



TOPS Commission Meeting, Washington, DC, November 4, 2022



Doran Barnes thanks Neil Pedersen for his service to TCRP and the transit community on the occasion of his retirement. From left to right, Paul Skoutelas, Neil Pedersen, Doran Barnes, Paul Ballard, TOPS Commission Meeting, Washington, DC, November 4, 2022

especially from practitioners, and report on current practices in the subject area. In addition to these two types of studies, TCRP also conducts IDEA (Innovations Deserving Exploratory Analysis) investigations, legal studies, and quick-response studies. IDEA investigations are intended to develop commercially viable products; legal studies examine legal issues facing the transit industry; and quick-response studies address a variety of issues that require a short-term response.

The distribution by research field of all projects and syntheses through December 2022 is shown in Table 2.

TABLE 2 DISTRIBUTION OF PROJECTS AND SYNTHESSES BY FIELD THROUGH DECEMBER 31, 2022

RESEARCH FIELDS	NUMBER OF PROJECTS	NUMBER OF SYNTHESSES
Operations	65	60
Service Configuration	60	38
Engineering of Vehicles and Equipment	30	9
Engineering of Fixed Facilities	44	6
Maintenance	16	7
Human Resources	31	21
Administration	21	20
Policy and Planning	76	23
Special Projects	11	0

FINANCING THE PROGRAM

TCRP funding was authorized by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) for fiscal years 1992 through 1997; by the Transportation Equity Act for the 21st Century (TEA-21) for fiscal years 1998 through 2005; by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) for fiscal years 2006 through 2012; by the Moving Ahead for Progress in the 21st Century Act (MAP-21) for fiscal years 2013 through 2015; and by the Fixing America's Surface Transportation (FAST) Act for fiscal years 2016 through 2023. Funding for each year of the program is provided below:

- FY 1992 \$8.92 M
- FY 1993 \$7.75 M
- FY 1994 \$8.475 M
- FY 1995 \$8.475 M
- FY 1996 \$7.61 M
- FY 1997 \$8.25 M
- FY 1998 \$4.00 M
- FY 1999 \$8.25 M
- FY 2000 \$7.15 M
- FY 2001 \$6.73 M
- FY 2002 \$8.25 M
- FY 2003 \$8.196 M
- FY 2004 \$8.196 M
- FY 2005 \$8.184 M
- FY 2006 \$8.91 M
- FY 2007 \$9.30 M
- FY 2008 \$9.30 M
- FY 2009 \$10.00 M
- FY 2010 \$10.00 M
- FY 2011 \$9.98 M
- FY 2012 \$6.50 M
- FY 2013 \$3.50 M
- FY 2014 \$3.00 M
- FY 2015 \$6.00 M
- FY 2016 \$5.00 M
- FY 2017 \$5.00 M
- FY 2018 \$5.00 M
- FY 2019 \$5.00 M
- FY 2020 \$5.00 M
- FY 2021 \$5.00 M
- FY 2022 \$6.58 M
- FY 2023 \$6.72 M (anticipated)

HOW TCRP IS ORGANIZED TO ADMINISTER RESEARCH PROGRAMS

Nine research fields and 45 problem areas are used to classify TCRP research.

RESEARCH FIELDS	PROBLEM AREAS
RESEARCH FIELD A Operations	Scheduling Vehicle Operations Control Systems Fare Collection User Information Systems Safety and Security
RESEARCH FIELD B Service Configuration	System Planning Specialized Service Planning Service Performance Marketing
RESEARCH FIELD C Engineering of Vehicles and Equipment	Buses Vans Heavy Rail Cars Commuter Rail Vehicles Light Rail Cars People-Mover Vehicles Vehicle Components
RESEARCH FIELD D Engineering of Fixed Facilities	Buildings Rail Operating Facilities Passenger Stations and Terminals Bus Stop Facilities
RESEARCH FIELD E Maintenance	Vehicle Servicing Vehicle Inspections and Maintenance Vehicle Corrective Repairs Overhaul and Rebuilding Non-Vehicle Maintenance Maintenance Management
RESEARCH FIELD F Human Resources	Recruitment Training Employee Reviews Job Classification Salary Administration Labor Relations Performance Improvement Programs
RESEARCH FIELD G Administration	Financial Management Procurement and Inventory Control Risk Management Law Management Information Systems Transit Organizations
RESEARCH FIELD H Policy and Planning	Policy Analysis Planning Economics Environmental Analysis
RESEARCH FIELD J Special Projects	Areas Not Covered Elsewhere



From left to right, Dorval Carter, Jr., Stephan A. Parker, Vicki Shotland, Dianne S. Schwager, TOPS Commission Meeting, Washington, DC, November 4, 2022



From left to right, Kimberly Williams, Mallory Avis, Bernard Schmidt, TOPS Commission Meeting, Washington, DC, November 4, 2022

PROJECT PANELS

Each project is assigned to a panel appointed by TRB. Panel membership must be balanced in terms of professional qualifications, geography, age, gender, and ethnicity. Nominations for members of new panels are solicited through an annual solicitation process. Information about panel nominations is also available on the TCRP website. For most panels, more than four nominees are received for each available slot. Emphasis on selection of well-balanced panels has resulted in membership that reflects the diversity in the transit industry. To ensure that research is relevant to the industry, about one-third of the members of most panels are employed by transit systems.

Panels have four important responsibilities:

1. Defining the scope of the study in a research project statement (request for proposals),
2. Selecting a contractor from among the agencies submitting proposals,
3. Monitoring the research over the duration of the contract, and
4. Reviewing the final research deliverables.

HOW PROJECTS ARE PLACED UNDER CONTRACT

TCRP concentrates on applied research projects. The program is directed at problems of an immediate, near-term nature that can be undertaken with moderate research funds. TCRP project funding levels are typically \$200,000 to \$300,000 per project. As TCRP initiates each year's program, the panels meet for the first time to write research project statements based on the problem statements referred by the TOPS Commission. Research project statements are only available on the TCRP website. Proposals are submitted according to fixed deadlines; extensions are not granted. An average of six to eight proposals are received per project.

It is important to note that the opportunity to propose is open to anyone. Agency selection is based on the following factors: (1) understanding of the problem, (2) research approach, (3) experience of the research team, (4) application of results and implementation plan, (5) plan for participation by disadvantaged business enterprises, and (6) facilities and equipment. Note that the fifth factor was added in 1997 to supplement ongoing TCRP outreach efforts to encourage greater participation in the program by disadvantaged business enterprises. Staff and panel members evaluate all proposals based on these criteria.

The funds available for a project are specified in the research project statement, and contract awards cannot exceed this amount. Line item costs in proposal budgets are examined to determine the reasonableness of the allocation of funds and staffing to the various tasks. The unit costs of the research proposed and elements such as compensation for key personnel, distribution of effort for key tasks, overhead rate, size of any fixed fee, and those expenditures included in direct costs are evaluated. Agency selection is made when the panels meet for the second time, typically about 30 days after the panel members have received the proposals. Panel members candidly discuss all aspects of each agency's known performance on other research projects. These panel deliberations are privileged. Agency selection is made by all panel members excluding staff and liaison representatives. Successful proposals are retained by the panel members for use in monitoring the research.

Following the selection meeting, TCRP staff notifies the selected agency. After the National Academies' Office of Contracts and Grants completes a financial investigation, a contract between the National Academies and the agency is executed, and the research commences.

The policy of TCRP is to provide a debriefing to unsuccessful proposers upon request. The debriefing is intended to indicate to the proposers the strengths and weaknesses of their proposal based on the panel review.

The National Academies' research contract is normally one of the following types:

- Cost reimbursement,
- Cost reimbursement plus fixed fee, or
- Fixed price.

The National Academies decides, in agreement with the agency, which type of contract will be executed in each case. The research agency's proposal is made a part of the contract with the National Academies. Thus, in addition to the specific objectives outlined in the contract, the research agency's cost estimates are also recognized as being part of the agreement. However, the principal investigator does have flexibility in conducting the research, if it is consistent with the general scheme of the proposal.

MONITORING RESEARCH IN PROGRESS

Once research begins, TCRP staff monitors the administrative and technical progress of the project in accordance with the approved proposal and amplified research plan to ensure conformance with contractual obligations. The project panel maintains control over the research process during execution of the study. Its first involvement is the approval of the researcher's amplified research plan. This amplified plan is due 15 days after the contract start date. It provides a detailed expansion of the research plan and furnishes a complete description of the activities to be pursued in conducting the research. The purpose of the amplified plan is to assist the staff in its monitoring activities and to provide further technical panel guidance to the researcher.

TCRP staff reviews quarterly progress reports and monthly progress schedules and maintains contact with the principal investigators. TCRP project managers visit their assigned research agencies throughout the contract period and discuss with each principal investigator the project's status to learn whether the research is being pursued in accordance with the approved research plan. Finally, the project manager and the corresponding project panel evaluate the completed research to determine the degree of technical compliance with the contract.

PROMOTING DISSEMINATION AND APPLICATION OF RESEARCH RESULTS

In an applied research program such as TCRP, research results must be not only accurate but also usable. In "Information and Instructions for Preparing Proposals," available at <https://onlinepubs.trb.org/onlinepubs/crp/docs/ProposalPrep.pdf>, proposers are encouraged to include a section in their proposals on the applicability of their research results to transit practices. This section should clearly describe how the anticipated research results can be used to improve transit practices and should indicate the expected audience. This measure is taken to ensure that final research reports are presented in language that is understandable to transit managers, professionals, and administrators.

Thus, research agencies for TCRP are required to report their results in a form that succinctly summarizes the findings for the busy administrator and likewise informs the transit practitioner of the application of the findings. The program specifies style and organization of all research reports so that maximum use by the practitioner may be obtained. Table 3, starting on page 18, lists all TCRP publications issued to date.

In addition to publication, measures are taken to ensure that useful research results are made immediately available to the appropriate personnel.

After publication, products are publicized in *TRB Weekly*, TRB's electronic newsletter; on TRB's social-media channels; and on TRB's website (www.trb.org). All TCRP publications are available on the National Academies Press website (nap.nationalacademies.org) for immediate and free electronic access.

Further dissemination of the research reports and support products is carried out according to the Dissemination Plan developed by APTA under TCRP Project J-1, "Dissemination and Implementation of TCRP Research Findings." The purpose of Project J-1 is to ensure that TCRP products reach the appropriate transit industry audience. For each product, APTA identifies a target audience and ensures that these individuals receive the material. APTA staff also promotes the program and disseminates products at 10 major conferences each year, including the Community Transportation Association of America (CTAA) Annual Meeting, the Conference of Minority Transportation Officials (COMTO) Annual Meeting, and the TRB Annual Meeting. Announcements of products are routinely published in *Passenger Transport*. APTA includes sessions on research in its conferences, and researchers are encouraged to present findings at the APTA, TRB, CTAA, and other conferences. To aid in the dissemination of findings, APTA's website (www.apta.com) includes a section listing and describing TCRP research products (click on the "Research Technical Resources" tab and scroll down the menu to "TCRP.")

Under TCRP Project J-1, a TCRP Ambassador Program has been established with the assistance of COMTO to create a network of geographically distributed transit professionals who are briefed on TCRP products and who represent TCRP at transit agencies and at national, state, and regional conferences. Participants in the TCRP Ambassador Program are identified through a nomination process and are selected by a designated panel. Each TCRP ambassador serves a 2-year term. In any given year, there are typically 16 ambassadors available to represent TCRP at various functions. Requests for nominations are issued to the transit industry on a periodic basis.

TCRP publications, starting with Report 166, Synthesis 111, Legal Research Digest 45, and Research Results Digest 109, are only published electronically as PDFs. However, TRB provides a "print-on-demand" option for a fee to cover expenses for those preferring a hard copy.

CURRENT STATUS

In the period from August 1992 (when the first TCRP grant was received) through December 2022, approximately 860 study activities have been authorized and more than 760 publications have been issued. Tables 4 through 12, starting on page 38, provide a summary of the status of each project authorized.

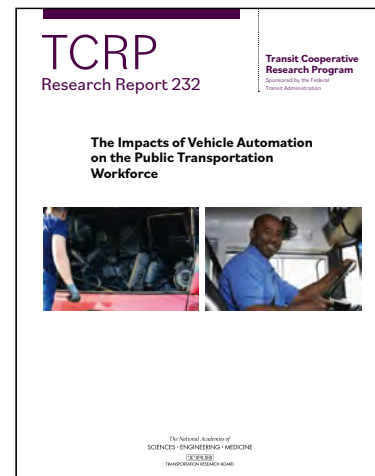
ACCOMPLISHMENTS IN 2022

In Fiscal Year 2022, TCRP produced 19 publications, including 6 research reports, 9 syntheses, 2 legal research digests, and 2 web-only documents, bringing the total to more than 760 publications since the inception of the program. These publications are available at <http://www.trb.org/Publications/PubsTCRPPublications.aspx>.

The following TCRP publications of particular interest were completed during the year.

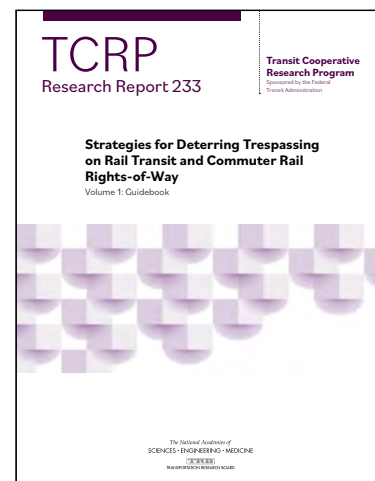
Workforce Development

TCRP Research Report 232: The Impacts of Vehicle Automation on the Public Transportation Workforce provides an analysis of the possible impacts of automation on the public transportation workforce. The report examines five possible transit automation use cases on five transit jobs and estimates the effects of automation on different job tasks. This report will provide public transit agencies with the possible impacts of automation on their transit workforce and guiding principles and strategies that could help prepare them for these impacts. The report was developed for public transit systems of all sizes and their stakeholders, including policymakers, transit board members, and elected officials, who are seeking better understanding of the possible effects of automation on transit and the transit workforce. The results presented in this report will provide the transit industry with discussion points on planning for those potential automation effects on the workforce.

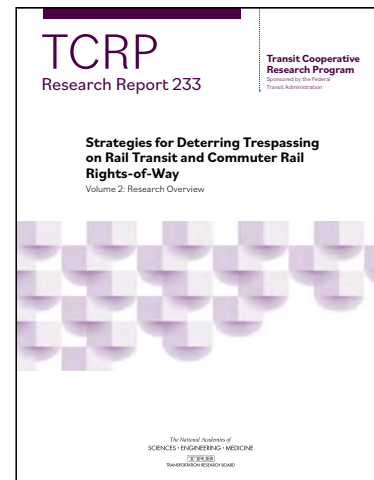


Operations

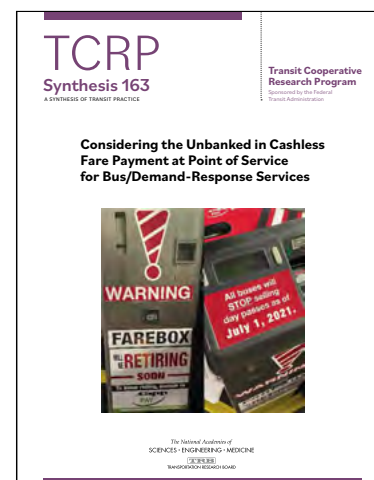
TCRP Research Report 233: Strategies for Detering Trespassing on Rail Transit and Commuter Rail Rights-of-Way, Volume 1: Guidebook and Volume 2: Research Overview provides strategies to deter trespassing on rail transit and commuter rail exclusive and semi-exclusive rights-of-way, including within station areas outside designated pedestrian crossings. A great risk facing the rail transit and commuter rail industries is the continuing problem with trespassing incidents that occur on systems throughout the United States. Most of the accidents and deaths are preventable, and rail transit and commuter rail agencies have deployed techniques and treatments to address trespassing. This report provides trespassing prevention strategies to both transportation agencies and regulatory bodies for consistent implementation



and will be of immediate use to designers of new rail systems, existing rail transit and commuter rail agencies, planning groups, local development firms, local municipalities, and other stakeholder entities who influence the rail system and local land development adjacent to the rail transit and commuter rail right-of-way. *Volume 1* presents the guidebook, including two appendices which contain the countermeasure summary matrix and instructions for the interactive spreadsheet. *Volume 2* presents the research activities conducted to produce the guidebook and the interactive spreadsheet. This report also includes a video that highlights the importance of using all the available tools to counteract trespassing.



TCRP Synthesis 163: Considering the Unbanked in Cashless Fare Payment at Point of Service for Bus/Demand-Response Services informs transit systems of the impacts of going cashless. The synthesis includes an introduction, a literature review, and case examples of nine transit agencies that have publicly stated they are considering going cashless or have eliminated onboard cash fare collection either temporarily, as a pilot, or permanently. Each case example includes a description of the agency’s fare policy and fare collection system; their motivation for going cashless; policy and regulatory factors; consideration of special populations of riders; and outcomes, plans, and lessons learned. The synthesis looks at the effects of going cashless at point of service on the unbanked population’s access to public transportation. This study will inform transit agencies as they evaluate the opportunities and challenges of going cashless.



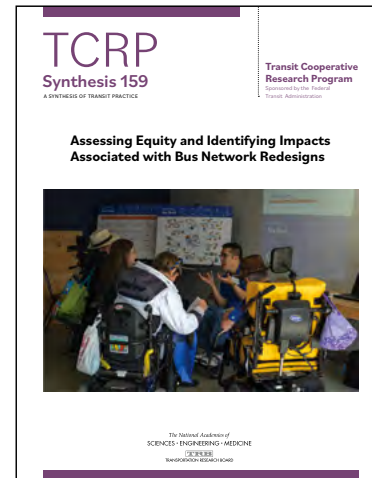
TCRP Synthesis 164: Bus Rapid Transit: Current State of Practice documents the current practices and lessons learned of U.S. and Canadian transit systems that use bus rapid transit (BRT) components to improve the reliability of bus service, bus travel time, operation efficiency, and customer satisfaction to increase ridership. BRT and BRT light continue to interest transit agencies. *TCRP Report 90: Bus Rapid Transit* was published in 2003 and *TCRP Report 118: Bus Rapid Transit Practitioner’s Guide* was published in 2007. Since then, agencies have continued to struggle with the ridership and operational benefits associated with investment in exclusive BRT lanes



and turning restrictions, minimum service frequencies, integration with local bus service and other routes in the corridor, basic versus high-end stations, level boarding platforms, upgraded fare collection systems, and branding. After more than 13 years of BRT experience, stronger information on all these issues is now available. This document will inform transit executives and decision-makers as they make their decisions about BRT in their communities and will also help identify the need for future studies.

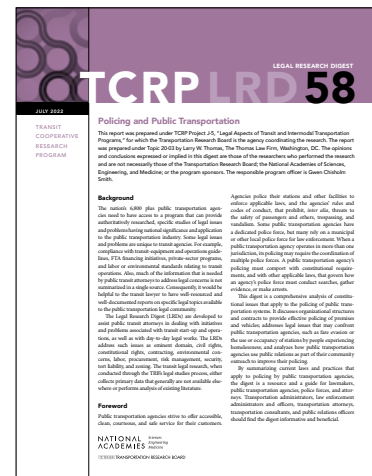
Equity

TCRP Synthesis 159: Assessing Equity and Identifying Impacts Associated with Bus Network Redesigns documents the current practice of how transit providers are defining, assessing, and addressing the equity impacts of bus network redesigns, including and beyond the FTA’s Title VI regulatory requirements. The study expands on recently conducted and published TCRP reports—*TCRP Synthesis 140: Comprehensive Bus Network Redesigns* (2019) and *TCRP Research Report 221: Redesigning Transit Networks for the New Mobility Future* (2021)—that discussed the current use of full-system bus network redesigns among transit agencies but provided limited detail regarding equity in that process. The synthesis will assist transit agencies that are considering redesigning their bus networks. The report presents the reality and complexity of conducting an equitable bus network redesign that will allow agencies to make better decisions about the process.



Legal

TCRP Legal Research Digest 58: Policing and Public Transportation is a comprehensive analysis of constitutional issues that apply to the policing of public transportation systems. It discusses organizational structures and contracts to provide effective policing of premises and vehicles; addresses legal issues that may confront public transportation agencies, such as fare evasion or the use or occupancy of stations by people experiencing homelessness; and analyzes how public transportation agencies use public relations as part of their community outreach to improve their policing. By summarizing current laws and practices that apply to policing by public transportation agencies, the digest is a resource and a guide for lawmakers, public transportation agencies, police forces, and attorneys. Transportation administrators, law enforcement administrators and officers, transportation attorneys, transportation consultants, and public relations officers should find the digest informative and beneficial.



Webinars

Communicating results is a necessary first step to facilitate the research-to-practice pipeline. Webinars offer a resource-efficient and interactive environment where attendees can hear directly from authors, ask clarifying questions, and receive feedback that might make a proposed solution more relevant to their particular environment. In addition to publication downloads from the National Academies Press website, webinar attendance is a key indicator of how many people are accessing TCRP products.

Webinar attendance in 2022 was as follows:

- 279 attendees for Improving Diversity and Inclusion Programs in Public Transportation (based on *TCRP Research Report 228*) in February 2022.
- 205 attendees for Micromobility and Transit—Keys to Successful Collaboration (based on *TCRP Research Report 230*) in March 2022.
- 204 attendees for Prioritization of Public Transportation Investments (based on *TCRP Research Report 227*) in June 2022.
- 107 attendees for Microtransit—Innovation in Rural Mobility (based on NCHRP 20-65/Task 76, TCRP B-47, and *TCRP Research Report 230*) in October 2022.
- 99 attendees for New Transit Fare Policy—Capping and “Cashless” Collection (based on *TCRP Synthesis 160* and *TCRP Synthesis 163*) in October 2022.
- 192 attendees for Cybersecurity Trends in Transportation (based on *TCRP Synthesis 158*) in November 2022.
- 230 attendees for Trends in Transit Ridership—Analysis, Causes, Responses (based on *TCRP Research Report 231*) in December 2022.
- 232 attendees for Microtransit: Expanding Services and Improving the Rider Experience (based on *TCRP Synthesis 141*, *TCRP Research Report 188*, and *TCRP Research Report 221*) in December 2022.
- 84 attendees for Measuring and Managing Fare Evasion (based on *TCRP Research Report 234*) in December 2022.

FISCAL YEAR 2023 PROGRAM

In November 2022, the TOPS Commission allocated funds for fiscal year 2023. Table 13 lists the new projects, continuations of existing projects, and special projects that were selected, contingent on available funding.

POLICIES ON BIAS AND CONFLICT OF INTEREST

TOPS Commission

In the administration of TCRP, it is essential to maximize both the substance and the appearance of fairness in the selection and management of contractors while simultaneously ensuring the quality of and expanding the number of potential researchers as much as possible.

It is in the interest of TCRP to use the expertise of the best-qualified individuals and organizations available to conduct research while avoiding actual or apparent conflicts of interest. However, conflicts may arise or appear to arise if members of the TOPS Commission or the organizations with which they are affiliated submit proposals on projects.

To prevent such problems in the administration of TCRP, members of the TOPS Commission are not permitted to serve concurrently as principal investigators on any TCRP projects. Additionally, the following rules will apply to all members of the TOPS Commission for the duration of their terms of appointment:

- A TOPS Commission member is not permitted to be involved in the selection process for TCRP contractors in which the individual member or an affiliated organization is being considered.
- No involvement by a TOPS Commission member is permitted in TRB's administration of a contract in which the individual member or an affiliated organization is involved.
- No involvement by a TOPS Commission member is permitted in setting or modifying administrative policies that would directly or materially affect either the administration of existing contracts with the individual TOPS member or affiliated organization, or the ability of the member or affiliated organization to submit proposals.

Because of the special position of the TOPS Commission Chair, the following additional rules also will apply during the Chair's term:

- Neither the TOPS Commission nor the immediate administrative unit of which the Chair is a part may propose on any TCRP projects.
- The Chair may not be involved in the preparation of a proposal for a TCRP project.
- The Chair may not work on a TCRP project as a member of the research team or as a consultant to the team.

When a newly appointed Chair of the TOPS Commission or other member of the Commission has existing activities or commitments covered in the foregoing lists of rules on a TCRP project at the time of appointment, those circumstances will be disclosed without delay to the Executive Commission of TOPS, and recommendations will be made by the Executive Commission on a case-by-case basis. All issues arising out of the need to interpret these rules will be resolved by the Executive Commission, with the affected members standing aside as appropriate.

TCRP Project Panels

TRB, as a unit of the National Academies, accords special importance to the policies and procedures established by the institution for ensuring the integrity of the research reports and, hence, public confidence in them. Extensive efforts are made to ensure the soundness of research reports issued by the institution by selecting highly qualified panel members. Yet, if a research report is to be not only sound but also effective, as measured by its acceptance in quarters in which it should be influential, the research report must be and

must be perceived to be (1) free of any significant conflict of interest, (2) not compromised by bias, and (3) untainted by allegations of scientific misconduct.

To address questions of potential bias and conflict of interest for the protection of both the individual involved and the institution, individuals participating in studies and other activities are asked to complete a Potential Sources of Bias and Conflict of Interest form to be submitted to and reviewed by the institution. In addition, project panels are asked to discuss the general questions of bias and conflict of interest and the relevant circumstances of their individual members at each panel meeting.

The question of potential sources of bias ordinarily relates to views stated or positions taken that are largely intellectually motivated or that arise from the close identification or association of an individual with a particular point of view or the positions or perspectives of a particular group. Such potential sources of bias are not necessarily disqualifying for purposes of panel service. Indeed, it often is necessary, in order to ensure that a panel is fully competent, to appoint members in such a way as to represent a balance of potentially biasing backgrounds or professional or organizational perspectives.

It is also essential that the work of panels not be compromised by a significant conflict of interest or, in some circumstances, the significant appearance of conflict of interest on the part of any member of a panel or anyone associated with the work of a panel (e.g., consultants, staff). For this purpose, the term "conflict of interest" means any financial or other interest that conflicts with the service of an individual because it (1) could impair the individual's objectivity or (2) could create an unfair competitive advantage for any person or organization. The existence of a significant conflict of interest ordinarily disqualifies an individual from service.

SUMMARY

TCRP focuses on issues significant to the public transportation industry, emphasizing the development of near-term research solutions to a variety of transit problems involving facilities, service concepts, operations, policy, planning, human resources, maintenance, and administrative practices.

TCRP processes ensure maximum exposure of the research efforts while they are in progress in the hope that research results will find their way more quickly into practice in the form of policies, procedures, and specifications by the public transportation industry.

TABLE 3 PUBLICATIONS OF THE TRANSIT COOPERATIVE RESEARCH PROGRAM (1994–2022)

Research Reports		
No.	Proj. No.	Title, Pages, Publication Year
1	E-02	Artificial Intelligence for Transit Railcar Diagnostics, 64 p. (1994)
2	C-02	Applicability of Low-Floor Light Rail Vehicles in North America, 174 p. (1995)
3	B-03	Workbook for Estimating Demand for Rural Passenger Transportation, 124 p. (1995)
4	A-03	Aids for Rail Car Side-Door Observation, 130 p. (1995)
5	E-04	Guidelines for Development of Public Transportation Facilities and Equipment Management Systems, 56 p. (1995)
6	A-02	Users' Manual for Assessing Service-Delivery Systems for Rural Passenger Transportation, 240 p. (1995)
7	D-04	Reducing the Visual Impact of Overhead Contact Systems, 90 p. (1995)
8	F-03	The Quality Journey: A TQM Roadmap for Public Transportation, 80 p. (1995)
9	B-01	Transit Operations for Individuals with Disabilities, 118 p. (1995)
10	A-01	Fare Policies, Structures, and Technologies, 182 p. (1996)
11	C-05	Impact of Radio Frequency Refarming on Transit Communications, 42 p. (1996)
12	A-09	Guidelines for Transit Facility Signing and Graphics, 64 p. (1996)
13	A-08	Rail Transit Capacity, 178 p. (1996)
14	H-04C	Institutional Barriers to Intermodal Transportation Policies and Planning in Metropolitan Areas, 212 p. (1996)
15	C-04	Procurement Specification Guidelines for Mass Transit Vehicle Window Glazing, 46 p. (1996)
16	H-01	Transit and Urban Form, Volumes 1 and 2, 452 p. (1996)
17	A-05	Integration of Light Rail Transit into City Streets, 270 p. (1996)
18	A-06	A Handbook for Acquiring Demand-Responsive Transit Software, 82 p. (1996)
19	A-10	Guidelines for the Location and Design of Bus Stops, 218 p. (1996)
20	H-02	Measuring and Valuing Transit Benefits and Disbenefits, 46 p. (1996)
21	B-07	Strategies to Assist Local Transportation Agencies in Becoming Mobility Managers, 142 p. (1997)
22	H-04D	The Role of Transit in Creating Livable Metropolitan Communities, 184 p. (1997)
23	C-03	Wheel/Rail Noise Control Manual (distributed through APTA), 212 p. (1997)
24	B-05	Attracting Paratransit Patrons to Fixed-Route Services, 392 p. (1997)
25	F-04	Bus Operator Workstation Evaluation and Design Guidelines, 22 p. (1997)
26	A-07	Operational Analysis of Bus Lanes on Arterials, 70 p. (1997)
27	H-04A	Building Transit Ridership, 156 p. (1997)
28	H-04B	Transit Markets of the Future: The Challenge of Change, 194 p. (1998)
29	F-05	Closing the Knowledge Gap for Transit Maintenance Employees: A Systems Approach, 56 p. (1998)
30	A-11	Transit Scheduling: Basic and Advanced Manuals, 148 p. (1998)
31	H-07	Funding Strategies for Public Transportation, Volumes 1 and 2, 83 p. (1998)
32	A-14	Multipurpose Transit Payment Media, 132 p. (1998)
33	H-04D(02)	Transit-Friendly Streets: Design and Traffic Management Strategies to Support Livable Communities, 72 p. (1998)
34	H-11	Assessment of the Economic Impacts of Rural Public Transportation, 209 p. (1998)
35	H-09	Economic Impact Analysis of Transit Investments: Guidebook for Practitioners, 196 p. (1998)
36	B-09	A Handbook: Using Market Segmentation to Increase Transit Ridership, 194 p. (1998)
37	B-02	A Handbook: Integrating Market Research into Transit Management, 207 p. (1998)
38	C-08	Guidebook for Evaluating, Selecting, and Implementing Fuel Choices for Transit Bus Operations, 164 p. (1998)
39	H-10	The Costs of Sprawl—Revisited, 229 p. (1998)
40	H-03	Strategies to Attract Auto Users to Public Transportation, 105 p. (1998)
41	C-10C	New Designs and Operating Experiences with Low-Floor Buses, 103 p. (1998)
42	H-13A	Consequences of the Interstate Highway System for Transit: Summary of Findings, 64 p. (1998)
43	C-10A	Understanding and Applying Advanced On-Board Electronics, 102 p. (1999)
44	E-02A	Demonstration of Artificial Intelligence Technology for Transit Railcar Diagnostics, 72 p. (1999)
45	A-12	Passenger Information Services: A Guidebook for Transit Systems, 52 p. (1999)
46	B-10	The Role of Transit Amenities and Vehicle Characteristics in Building Transit Ridership: Amenities for Transit Handbook and the Transit Design Game Workbook, 240 p. (1999)
47	B-11	A Handbook for Measuring Customer Satisfaction and Service Quality, 212 p. (1999)

Research Reports

No.	Proj. No.	Title, Pages, Publication Year
48	H-12	Integrated Urban Models for Simulation of Transit and Land Use Policies: Guidelines for Implementation and Use, 31 p. (1999)
49	H-08	Using Public Transportation to Reduce the Economic, Social, and Human Costs of Personal Immobility, 133 p. (1999)
50	B-13	A Handbook of Proven Marketing Strategies for Public Transit, 182 p. (1999)
51	B-08	A Guidebook for Marketing Transit Services to Business, 50 p. (1999)
52	A-17	Joint Operation of Light Rail Transit or Diesel Multiple Unit Vehicles with Railroads, 482 p. (1999)
53	J-08B	New Paradigms for Local Public Transportation Organizations, Task 1 Report: Forces and Factors That Require Consideration of New Paradigms, 94 p. (1999)
54	G-05	Management Toolkit for Rural and Small Urban Transportation Systems, 375 p. (1999)
55	B-06	Guidelines for Enhancing Suburban Mobility Using Public Transportation, 81 p. (1999)
56	A-19	Integrating School Bus and Public Transportation Services in Non-Urban Communities (& WOD 11), 400 p. (1999)
57	D-06	Track Design Handbook for Light Rail Transit, 352 p. (2000)
58	J-08B	New Paradigms for Local Public Transportation Organizations, 59 p. (2000)
59	C-10B	Hybrid-Electric Transit Buses: Status, Issues, and Benefits, 98 p. (2000)
60	H-20	Using Geographic Information Systems for Welfare to Work Transportation Planning and Service Delivery, 83 p. (2000)
61	B-14	Analyzing the Costs of Operating Small Transit Vehicles: User's Guide STVe, 42 p. (2000)
62	B-18	Improving Public Transportation Access to Large Airports, 148 p. (2000)
63	B-20	Enhancing the Visibility and Image of Transit in the United States and Canada, 320 p. (2000)
64	H-15A	Guidebook for Developing Welfare-to-Work Transportation Services, 190 p. (2000)
65	A-10A	Evaluation of Bus Bulbs, 69 p. (2001)
66	A-18	Effective Practices to Reduce Bus Accidents, 96 p. (2001)
67	C-03A	Wheel and Rail Vibration Absorber Testing and Demonstration, 45 p. (2001)
68	F-07	Part-Time Transit Operators: The Trends and Impacts, 134 p. (2001)
69	A-13	Light Rail Service: Pedestrian and Vehicular Safety, 141 p. (2001)
70	A-21	Guidebook for Change and Innovation at Rural and Small Urban Transit Systems, 262 p. (2001)
71	D-07/Tasks 01, 03, 04	Track-Related Research, Vol. 1: Broken Rail Detection, Control of Wheel/Rail Friction, and Wide-Gap Welding Techniques, 108 p. (2001)
71	D-07/Task 02	Track-Related Research, Vol. 2: Transit-Switch Design Analysis (Phase I), 40 p. (2003)
71	D-07/Task 06	Track-Related Research, Vol. 3: Exothermic Welding of Heavy Electrical Cables to Rail and Applicability of AREMA Track Recommended Practices for Transit Agencies, 30 p. (2004)
71	D-07/Task 07	Track-Related Research, Vol. 4: Friction Control Methods Used by the Transit Industry, 108 p.
71	D-07/Task 08	Track-Related Research, Vol. 5: Flange Climb Derailment Criteria and Wheel/Rail Profile Management and Maintenance Guidelines for Transit Operations, 140 p. (2005)
71	D-07/Task 11	Track-Related Research, Vol. 6: Direct-Fixation Track Design Specifications, Research, and Related Material (& CD 61), 12 p. (2005)
71	D-07/Task 16	Track-Related Research, Vol. 7: Guidelines for Guard/Restraining Rail Installation, 34 p. (2010)
72	A-22	Simulators and Bus Safety: Guidelines for Acquiring and Using Transit Bus Operator Driving Simulators, 60 p. (2001)
73	B-15	Characteristics of Urban Travel Demand (& CD 17), 56 p. (2002)
74	H-10	Costs of Sprawl—2000, 620 p. (2002)
75	B-16	The Role of the Private-for-Hire Vehicle Industry in Public Transit (& CD 16), 81 p. (2002)
76	B-17	Guidebook for Selecting Appropriate Technology Systems for Small Urban and Rural Public Transportation Operators, 73 p. (2002)
77	F-09	Managing Transit's Workforce in the New Millennium, 146 p. (2002)
78	H-19	Estimating the Benefits and Costs of Public Transit Projects: A Guidebook for Practitioners (& CD 18), 144 p. (2002)
79	B-21	Effective Approaches to Meeting Rural Intercity Bus Transportation Needs, 184 p. (2002)
80	A-24	A Toolkit for Self-Service, Barrier-Free Fare Collection (& CD 19), 220 p. (2002)
81	F-10	Toolbox for Transit Operator Fatigue (& CD 21), 234 p. (2002)
82	B-19	Improving Public Transit Options for Older Persons, Vol. 1: Handbook, 59 p. (2002)
82	B-19	Improving Public Transit Options for Older Persons, Vol. 2: Final Report, 204 p. (2002)
83	B-18A	Strategies for Improving Public Transportation Access to Large Airports, 137 p. (2002)

Research Reports

No.	Proj. No.	Title, Pages, Publication Year
84	J-09/Task 01	e-Transit: Electronic Business Strategies for Public Transportation, Vol. 1: Supply Chain: Parts and Inventory Management, 31 p. (2002)
84	J-09/Task 03	e-Transit: Electronic Business Strategies for Public Transportation, Vol. 2: Application Service Provider Implementation Guidelines, 34 p. (2002)
84	J-09/Task 06	e-Transit: Electronic Business Strategies for Public Transportation, Vol. 3: Using the Internet for Transit Training and Certification (& CD 27), 10 p. (2003)
84	J-09/Task 04	e-Transit: Electronic Business Strategies for Public Transportation, Vol. 4: Advanced Features of Transit Websites (& CD 34), 10 p. (2003)
84	J-09/Task 08	e-Transit: Electronic Business Strategies for Public Transportation, Vol. 5: Concept for an e-Transit Reference Enterprise Architecture, 44 p. (2004)
84	J-09/Task 10	e-Transit: Electronic Business Strategies for Public Transportation, Vol. 6: Strategies to Expand and Improve Deployment of ITS in Rural Transit Systems, 20 p. (2005)
84	J-09/Task 09	e-Transit: Electronic Business Strategies for Public Transportation, Vol. 7: The Successful Adoption of Web-Based Collaborative Software, 66 p. (2005)
84	J-09/Task 12	e-Transit: Electronic Business Strategies for Public Transportation, Vol. 8: Improving Public Transportation Technology Implementations and Anticipating Emerging Technologies, 76 p. (2008)
84	J-09/Task 13	e-Transit: Electronic Business Strategies for Public Transportation, Vol. 9: Transit Enterprise Architecture and Planning Framework, 148 p. (2011)
85	H-24	Public Transit Board Governance Guidebook, 30 p. (2002)
86	J-10B(04)	Public Transportation Security, Vol. 1: Communication of Threats: A Guide, 42 p. (2002)
86	J-10B(05)	Public Transportation Security, Vol. 2: K9 Units in Public Transportation: A Guide for Decision Makers, 120 p. (2002)
86	J-10B(03)	Public Transportation Security, Vol. 3: Robotic Devices: A Guide for the Transit Environment, 23 p. (2003)
86	J-10A(03)	Public Transportation Security, Vol. 4: Intrusion Detection for Public Transportation Facilities Handbook, 162 p. (2003)
86	J-10A(02)	Public Transportation Security, Vol. 5: Security-Related Customer Communications and Training for Public Transportation Providers (& CD 43), 8 p. (2004)
86	J-10B(02)	Public Transportation Security, Vol. 6: Applicability of Portable Explosive Detection Devices in Transit Environments, 36 p. (2004)
86	J-10B(01)	Public Transportation Security, Vol. 7: Public Transportation Emergency Mobilization and Emergency Operations Guide, 126 p. (2005)
86	J-10F	Public Transportation Security, Vol. 8: Continuity of Operations (COOP) Planning Guidelines for Transportation Agencies (Joint: NCHRP Rep. 525, Vol. 8), 84 p. (2005)
86	J-10C	Public Transportation Security, Vol. 9: Guidelines for Transportation Emergency Training Exercises (Joint: NCHRP Rep. 525, Vol. 9), 146 p. (2006)
86	J-10D	Public Transportation Security, Vol. 10: Hazard and Security Plan Workshop: Instructor Guide (& CD 64), 208 p. (2006)
86	J-10H	Public Transportation Security, Vol. 11: Security Measures for Ferry Systems, 72 p. (2006)
86	J-10G	Public Transportation Security, Vol. 12: Making Transportation Tunnels Safe and Secure (Joint: NCHRP Rep. 525, Vol. 12), 182 p. (2006)
86	J-10J	Public Transportation Security, Vol. 13: Public Transportation Security Inspections: A Guide for Policy Decision Makers (& WOD 38), 68 p. (2007)
87	H-25	Strategies for Increasing the Effectiveness of Commuter Benefits Programs, 70 p. (2002)
88	G-06	A Guidebook for Developing a Transit Performance-Measurement System (& CD 25), 368 p. (2003)
89	J-06/Task 29	Financing Capital Investment: A Primer for the Transit Practitioner, 172 p. (2003)
90	A-23	Bus Rapid Transit, Vol. 1: Case Studies in Bus Rapid Transit (& CD 31), 54 p. (2003)
90	A-23	Bus Rapid Transit, Vol. 2: Implementation Guidelines, 224 p. (2003)
91	H-26	Economic Benefits of Coordinating Human Service Transportation and Transit Services, 171 p. (2003)
92	A-20A(02)	Strategies for Improved Traveler Information, 112 p. (2003)
93	H-21	Travel Matters: Mitigating Climate Change with Sustainable Surface Transportation, 79 p. (2003)
94	A-25	Fare Policies, Structures and Technologies: Update, 232 p. (2003)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 1: Introduction, 90 p. (2013)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 2: HOV Facilities, 127 p. (2006)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 3: Park-and-Ride/Pool, 96 p. (2004)

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95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 5: Vanpools and Buspools, 55 p. (2005)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 6: Demand Responsive/ADA, 52 p. (2004)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 9: Transit Scheduling and Frequency, 41 p. (2003)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 10: Bus Routing and Coverage, 74 p. (2004)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 11: Transit Information and Promotion, 71 p. (2003)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 12: Transit Pricing and Fares, 59 p. (2004)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 13: Parking Pricing and Fees, 60 p. (2005)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 14: Road Value Pricing, 67 p. (2003)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 15: Land Use and Site Design, 140 p. (2003)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 16: Pedestrian and Bicycle Facilities, 490 p. (2012)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 17: Transit Oriented Development, 136 p. (2007)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 18: Parking Management and Supply, 86 p. (2003)
95	B-12A	Traveler Response to Transportation System Changes, 3rd Edition (19-Chapter Series), Ch. 19: Employer and Institutional TDM Strategies, 184 p. (2010)
96	A-20B(02)	Determining Training for New Technologies: A Decision Game and Facilitation Guide, 44 p. (2003)
97	J-08B, J-08C	Emerging New Paradigms: A Guide to Fundamental Change in Local Public Transportation Organizations, 110 p. (2003)
98	B-23	Resource Requirements for Demand-Responsive Transportation Services (& CD 40), 42 p. (2003)
99	B-22A	Embracing Change in a Changing World: Case Studies Applying New Paradigms for Rural and Small Urban Transit Service Delivery, 27 p. (2004)
100	A-15A	Transit Capacity and Quality of Service Manual, 2nd Edition (& CD 42), 600 p. (2003)
101	B-24	Toolkit for Rural Community Coordinated Transportation Services (with brochure), 448 p. (2004)
102	H-27	Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects, 552 p. (2004)
103	F-11	Public Transportation Operating Agencies as Employers of Choice (& CD 45), 12 p. (2004)
104	H-24A	Public Transportation Board Effectiveness: A Self-Assessment Handbook, 46 p. (2004)
105	H-30, H-30A	Strategies to Increase Coordination of Transportation Services for the Transportation Disadvantaged (& CD 51), 80 p. (2005)
106	H-29A	Practitioner's Handbook—From Handshake to Compact: Guidance to Foster Collaborative, Multimodal Decision Making (& CD 52) (Joint: NCHRP Rep. 536), 68 p. (2005)
107	H-25A	Analyzing the Effectiveness of Commuter Benefits Programs (& WOD 27), 74 p. (2005)
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109	E-05	Guidebook for Developing and Sharing Transit Bus Maintenance Practices, 120 p. (2005)
110	J-06/Task 55	Commuting in America III (Joint: NCHRP Rep. 550), 196 p. (2006)
111	H-32	Elements Needed to Create High-Ridership Transit Systems (& CD 66; & WOD 32), 136 p. (2007)
112	D-08	Improving Pedestrian Safety at Unsignalized Crossings (& WOD 30) (Joint: NCHRP Rep. 562), 112 p. (2006)
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117	D-11	Design, Operation, and Safety of At-Grade Crossings of Exclusive Busways (& WOD 36), 40 p.
118	A-23A	Bus Rapid Transit Practitioner's Guide (& WOD 39), 242 p. (2007)
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120	J-06/Task 59	Racial and Gender Diversity in State DOTs and Transit Agencies (Joint: NCHRP Rep. 585), 52 p. (2007)
121	B-30	Toolkit for Integrating Non-Dedicated Vehicles in Paratransit Service, 59 p. (2008)

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122	B-32	Understanding How to Motivate Communities to Support and Ride Public Transportation, 81 p.
123	H-31	Understanding How Individuals Make Travel and Location Decisions: Implications for Public Transportation, 137 p. (2008)
124	B-31	Guidebook for Measuring, Assessing, and Improving Performance of Demand-Response Transportation, 123 p. (2008)
125	A-28	Guidebook for Mitigating Fixed-Route Bus-and-Pedestrian Collisions, 65 p. (2008)
126	B-29	Leveraging ITS Data for Transit Market Research: A Practitioner's Guidebook, 82 p. (2008)
127	F-12	Employee Compensation Guidelines for Transit Providers in Rural and Small Urban Areas, 204 p. (2008)
128	H-27A	Effects of TOD on Housing, Parking, and Travel, 64 p. (2008)
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130	A-27	Shared Use of Railroad Infrastructure with Noncompliant Public Transit Rail Vehicles: A Practitioner's Guide, 120 p. (2009)
131	G-08	A Guidebook for the Evaluation of Project Delivery Methods (& WOD 41), 102 p. (2009)
132	C-15	Assessment of Hybrid-Electric Transit Bus Technology (& CD 71), 86 p. (2009)
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136	B-31A	Guidebook for Rural Demand-Response Transportation: Measuring, Assessing, and Improving Performance, 98 p. (2009)
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138	G-10	Estimating Soft Costs for Major Public Transportation Fixed Guideway Projects, 148 p. (2010)
139	F-14	Guidebook for Recruiting, Developing, and Retaining Transit Managers for Fixed-Route Bus and Paratransit Systems (& CD 77), 208 p. (2010)
140	B-35	A Guide for Planning and Operating Flexible Public Transportation Services, 102 p. (2010)
141	G-11	A Methodology for Performance Measurement and Peer Comparison in the Public Transportation Industry, 120 p. (2010)
142	F-13	Vehicle Operator Recruitment, Retention, and Performance in ADA Complementary Paratransit Operations (& WOD 50), 140 p. (2010)
143	B-34	Resource Guide for Commingling ADA and Non-ADA Paratransit Riders, 112 p. (2011)
144	G-09	Sharing the Costs of Human Services Transportation, Vol. 1: The Transportation Services Cost Sharing Toolkit (& CD 86), 80 p. (2011)
144	G-09	Sharing the Costs of Human Services Transportation, Vol. 2: Research Report, 140 p. (2011)
145	H-36	Reinventing the Urban Interstate: A New Paradigm for Multimodal Corridors, 154 p. (2011)
146	C-19	Guidebook for Evaluating Fuel Charges for Post-2010 Transit Bus Procurements, 252 p. (2011)
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155	D-14	Track Design Handbook for Light Rail Transit, Second Edition, 710 p. (2012)
156	G-12	Guidebook for Evaluating Fuel Purchasing Strategies for Public Transit Agencies, 134 p. (2012)
157	E-09	State of Good Repair: Prioritizing the Rehabilitation and Replacement of Existing Capital Assets and Evaluating the Implications for Transit, 132 p. (2012)
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161	B-36	Methods for Forecasting Demand and Quantifying Need for Rural Passenger Transportation: Final Workbook (& WOD 58), 80 p. (2013)
162	F-16A	Building a Sustainable Workforce in the Public Transportation Industry—A Systems Approach, 216 p. (2013)

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164	B-42	Community Tools to Improve Transportation Options for Veterans, Military Service Members, and Their Families, 228 p. (2014)
165	A-15C	Transit Capacity and Quality of Service Manual—3rd Edition (& CD 138), 808 p. (2013)
166	H-37	Characteristics of Premium Transit Services that Affect Choice of Mode, 398 p. (2014)
167	H-42	Making Effective Fixed-Guideway Transit Investments: Indicators of Success, 262 p. (2014)
168	B-41	Travel Training for Older Adults, Part I: A Handbook, 81 p. (2014)
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172	E-09A	Guidance for Developing a Transit Asset Management Plan, 131 p. (2014)
173	H-49	Improving Transit Integration Among Multiple Providers, Vol. I: Transit Integration Manual, 94 p. (2015)
173	H-49	Improving Transit Integration Among Multiple Providers, Vol. II: Research Report, 70 p. (2015)
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177	J-06/Task 83	Preliminary Strategic Analysis of Next Generation Fare Payment Systems for Public Transportation, 107 p. (2015)
178	F-19	A National Training and Certification Program for Transit Vehicle Maintenance Instructors, 112 p. (2015)
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181	F-20	Labor–Management Partnerships for Public Transportation, Vol. 1: Toolkit, 32 p. (2015)
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190	J-11/Task 22	Guide to Value Capture Financing for Public Transportation Projects, 114 p. (2016)
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210	G-16	Development of Transactional Data Specifications for Demand-Responsive Transportation, 152 p. (2020)
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1	B-01	Transit Operations for Individuals with Disabilities, 4 p. (1994)
2	J-07	Synthesis of Information Related to Transit Problems, 4 p. (1994)
3	F-03	Total Quality Management in Public Transportation, 40 p. (1994)

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No.	Proj. No.	Title, Pages, Publication Year
4	J-06/Task 02	Transit Ridership Initiative, 48 p. (1995)
5	A-04	Electronic On-Vehicle Passenger Information Displays (Visual and Audible), 6 p. (1995)
6	H-05	Research Agenda for Increasing Transit Ridership, 16 p. (1995)
7	H-01	An Evaluation of the Relationships Between Transit and Urban Form, 56 p. (1995)
8	J-07	Synthesis of Information Related to Transit Problems, 6 p. (1995)
9	C-04	Responding to Vandalism of Transit Bus and Rail Vehicle Passenger Windows, 5 p. (1996)
10	J-06/Task 06	Integrating Americans with Disabilities Act Paratransit Services and Health and Human Services Transportation, 13 p. (1997)
11	G-03	Guidelines for the Consistent Collection, Categorization, and Dissemination of Bus Transit Loss Data, 9 p. (1996)
12	G-03	Transit Risk Manager: Risk Management Software for Bus Transit Systems (& CD 13), 4 p. (1996)
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32	J-07/ Topic SA-09A	Accessibility of Automated Fare Vending and Collection for Customers with Disabilities, 12 p. (1998)
33	J-03	International Transit Studies Program: Private Urban Transit Systems and Low-Cost Mobility Solutions in Major Latin American Cities, 40 p. (1999)
34	A-13	Light Rail Service: Vehicular and Pedestrian Safety, 56 p. (1999)
35	A-15	Highlights of the Transit Capacity and Quality of Service Manual: First Edition, 36 p. (1999)
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39	C-11	Alternative-Fuel Transit Bus Hazard Assessment Model, 7 p. (2000)
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42	J-03	International Transit Studies Program, 34 p. (2001)
43	A-17A	Supplementing and Updating TCRP Report 52, 60 p. (2001)
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48	J-07	Synthesis of Information Related to Transit Problems, 7 p. (2002)

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49	J-03	International Transit Studies Program: Excellence in Transit Operations in Small and Medium European Cities, 29 p. (2002)
50	J-05	Legal Aspects of Transit and Intermodal Transportation Programs, 3 p. (2002)
51	A-05A(01)	Second Train Coming Warning Sign: Demonstration Projects, 68 p. (2002)
52	H-27	Transit-Oriented Development and Joint Development in the United States: A Literature Review, 144 p. (2002)
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56	G-06	A Summary of TCRP Report 88: A Guidebook for Developing a Transit Performance-Measurement System, 25 p. (2003)
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61	B-12	Traveler Response to Transportation System Changes: An Interim Introduction to the Handbook, 23 p. (2003)
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63	J-07	Synthesis Information Related to Transit Problems, 7 p. (2003)
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65	H-29	A New Vision of Mobility: Guidance to Foster Collaborative Multimodal Decision Making (Joint: NCHRP RRD 288), 10 p. (2004)
66	J-03	International Transit Studies Program: Transit Design, Construction, and Operations in the Mediterranean Region, 28 p. (2004)
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83	D-07/Task 13	Performance and Testing Requirements for Portable Track Geometry Inspection Systems, 20 p. (2007)
84	D-10	Audible Signals for Pedestrian Safety in LRT Environments (& WOD 35), 22 p. (2007)
85	J-03	International Transit Studies Program: Rail Passenger Safety: Equipment and Technologies, 40 p. (2007)
86	J-07	Synthesis of Information Related to Transit Practices, 10 p. (2007)
87	J-03	International Transit Studies Program: Emergency Preparedness, Response, and Recovery in the Transit Industry, 38 p. (2008)
88	J-03	International Transit Studies Program: Innovative Practices in Transit Workforce Development, 36 p. (2008)

Research Results Digests

No.	Proj. No.	Title, Pages, Publication Year
89	J-03	International Transit Studies Program: Public Transportation's Role in Addressing Global Climate Change, 22 p. (2009)
90	J-10E	A Guide to Planning Resources on Transportation and Hazards (Joint: NCHRP RRD 333), 46 p.
91	J-07	Synthesis of Information Related to Transit Problems, 10 p. (2009)
92	J-03	International Transit Studies Program: Balancing Infrastructure Reinvestment with System Expansion, 27 p. (2009)
93	J-06/Task 71	Rural Transit Achievements: Assessing the Outcomes of Increased Funding for Rural Passenger Services under SAFETEA-LU, 12 p. (2009)
94	J-07	Synthesis of Information Related to Transit Problems, 9 p. (2010)
95	J-03	International Transit Studies Program: Performance Measurement and Outcomes, 36 p. (2010)
96	J-03	International Transit Studies Program: Managing Increasing Ridership Demand, 30 p. (2010)
97	J-05/ Topic 11-03	Transit Agency Compliance with Title VI, Limited English Proficiency Requirements, 20 p. (2011)
98	J-07	Synthesis of Information Related to Transit Problems, 10 p. (2011)
99	J-06/Task 74	Improving Mobility for Veterans, 98 p. (2011)
100	J-06/Task 72	Professional Certification and Credentialing Program for the Transit Industry, 16 p. (2011)
101	J-03	International Transit Studies Program: Funding for Infrastructure Maintenance: Achieving and Sustaining a State of Good Repair, 20 p. (2011)
102	J-03	International Transit Studies Program: Public Transportation Systems as the Foundation for Economic Growth, 20 p. (2011)
103	J-03	International Transit Studies Program: Sustainable Public Transportation: Environmentally Friendly Mobility, 26 p. (2011)
104	J-07	Synthesis of Information Related to Transit Problems, 12 p. (2012)
105	H-41	Summary of Research Findings: Assessing and Comparing Environmental Performance of Major Transit Investments (& WOD 55), 24 p. (2012)
106	J-07	Synthesis of Information Related to Transit Practices, 12 p. (2013)
107	H-44	Developing Partnerships Between Transportation Agencies and the Disability and Underrepresented Communities, 64 p. (2013)
108	J-07	Synthesis of Information Related to Transit Problems, 18 p. (2014)
109	J-06/Task 81	Impact of the Affordable Care Act on Non-Emergency Medical Transportation (NEMT): Assessment for Transit Agencies, 56 p. (2014)
110	J-07	Synthesis of Information Related to Transit Problems, 13 p. (2015)
111	J-07	Synthesis of Information Related to Transit Practices, 12 p. (2016)
112	G-14	Contracting Commuter Rail Services, 28 p. (2016)
113	J-07	Synthesis of Information Related to Transit Practices, 12 p. (2017)
114	J-07	Synthesis of Information Related to Transit Practices, 12 p. (2018)
115	J-07/SB-32	Use of Agency Service Agreements in ADA Paratransit Delivery, 16 p. (2021)

Legal Research Digests (Project J-05)

No.	Topic No.	Title, Pages, Publication Year
1	01-06	Strategies to Facilitate Acquisition and Use of Railroad Right of Way by Transit Providers, 16 p. (1994)
2	01-07	Successful Risk Management for Rideshare and Carpool-Matching Programs, 24 p. (1994)
3	01-04	State Limitations on Tort Liability of Public Transit Operations, 18 p. (1994)
4	01-01	Transit Labor Protection—A Guide to Section 13(c) Federal Transit Act, 32 p. (1996)
5	01-03	Legal Issues Associated with Intermodalism, 22 p. (1996)
6	01-05	Requirements That Impact the Acquisition of Capital-Intensive Long-Lead Items, Rights of Way, and Land for Transit, 24 p. (1996)
7	03-02	The Impact of Civil Rights Litigation Under Title VI and Related Laws on Transit Decision Making, 24 p. (1997)
8	01-02	Transportation Service Agreements: A Preparation and Reference Guide for Transit Attorneys, 40 p. (1997)
9	03-05	Strategies to Minimize Liability under Federal and State Environmental Laws, 20 p. (1998)
10	02-01	Restrictions on Speech and Expressive Activities in Transit Terminals and Facilities, 36 p. (1998)
11	02-02	Potential Tort Liability for Transit Agencies Arising Out of the Americans with Disabilities Act, 40 p. (1998)
12	03-03	The Zoning and Real Estate Implications of Transit-Oriented Development, 50 p. (1999)

Legal Research Digests (Project J-05)

No.	Topic No.	Title, Pages, Publication Year
13	03-01	Report on Innovative Financing Techniques for Transit Agencies, 41 p. (1999)
14	04-02	Treatment of Privacy Issues in the Public Transportation Industry, 29 p. (2000)
15	04-01	Impact of the Family and Medical Leave Act of 1993 on the Transit Industry, 39 p. (2000)
16	03-04	Drug and Alcohol Testing—A Survey of Labor-Management Relations, 60 p. (2001)
17	05-03	Guide to Federal Buy America Requirements, 29 p. (2001)
18	05-01	Federal and State Licensing and Other Safety Requirements for Commercial Motor Vehicle Operators and Equipment, 90 p. (2001)
19	06-02	Impact of the Americans with Disabilities Act on Transit Operations, 43 p. (2003)
20	07-01	Transit Passengers and Civil Rights, 68 p. (2005)
21	08-01	Trademarking and Licensing for Transit Providers, 30 p. (2005)
22		The Case for Searches on Public Transportation (Proj. J-06, Task 60), 82 p. (2005)
23	08-04	The Americans with Disabilities Act: The Federal Transit Administration's Letters of Findings and Compliance Assessments (& CD 65), 106 p. (2007)
24	09-05	Transit Bus Stops: Ownership, Liability, and Access, 61 p. (2008)
25	09-01	Privacy Issues with the Use of Smart Cards, 25 p. (2008)
26	09-06	Resources for Legal Issues Associated with Bus Maintenance, 75 p. (2008)
27	09-04	Civil Rights Implications of the Allocation of Funds Between Bus and Rail, 36 p. (2008)
28	09-02	Use of Fees or Alternatives to Fund Transit, 37 p. (2008)
29	10-01	First Amendment Implications for Transit Facilities: Speech, Advertising, and Loitering, 42 p. (2009)
30	11-01	Legal Handbook for the New Starts Process, 44 p. (2010)
31	12-01	Guide to Federal Buy America Requirements—2009 Supplement, 36 p. (2010)
32	10-03	Reconciling Security, Disclosure, and Record-Retention Requirements in Transit Procurements, 80 p. (2010)
33	10-02	Developing and Implementing a Transit Advertising Policy, 28 p. (2010)
34	09-03	Application of Physical Ability Testing to Current Workforce of Transit Employees, 95 p. (2010)
35	12-02	Reductions in Transit Service or Increases in Fares: Civil Rights, ADA, Regulatory, and Environmental Justice Implications, 56 p. (2011)
36	11-02	Transit-Oriented and Joint Development: Case Studies and Legal Issues (& CD 96), 38 p. (2011)
37	12-04	Legal Arrangements for Use and Control of Real-Time Data, 56 p. (2011)
38	12-03	Legal Aspects Relevant to Outsourcing Transit Functions Not Traditionally Outsourced, 28 p. (2011)
39	10-04	Competition Requirements of the Design/Build, Construction Manager at Risk, and Public-Private Partnership Contracts—Seven Case Studies, 56 p. (2012)
40	13-02	Legal Issues Involving Surety for Public Transportation Projects, 106 p. (2012)
41	13-03	Transit Labor 13c Employee Protection Digest (CD 120), 0 p. (2012)
42	14-02	Transit Agency Intergovernmental Agreements: Common Issues and Solutions (& CD 122), 56 p. (2012)
43	14-03	Contractual Means of Achieving High-Level Performance in Transit Contracts (& CD 134), 48 p. (2013)
44	15-02	Legal Issues in Public Transit Emergency Planning and Operation, 74 p. (2013)
45	15-03	Transit Public-Private Partnerships: Legal Issues, 322 p. (2014)
46	15-04	How the Health Insurance Portability and Accountability Act (HIPAA) and Other Privacy Laws Affect Public Transportation Operations, 224 p. (2014)
47	15-01	Legal Issues with Obtaining Insurance on Large Transit Projects, 66 p. (2014)
48	16-02	Legal Issues Concerning Transit Agency Use of Electronic Customer Data, 66 p. (2017)
49	16-01	Updated Guide to Buy America Requirements—2015 Supplement, 54 p. (2017)
50	16-03	Public Transit Emergency Preparedness Against Ebola and Other Infectious Diseases: Legal Issues, 56 p. (2017)
51	16-04	Technology Contracting for Transit Projects, 52 p. (2017)
52	17-02	Legal Implications of Video Surveillance on Transit Systems, 46 p. (2018)
53	17-03	Legal Considerations in Evaluating Relationships Between Transit Agencies and Ridesourcing Service Providers, 236 p. (2018)
54	17-01	Impact of the Americans with Disabilities Act on Transit Agency Liability, 70 p. (2018)
55	18-01	Tax Increment Financing for Transit Projects, 48 p. (2020)
56	18-04	Joint Development Agreements Using FTA Funds or FTA-Funded Assets, 29 p. (2021)
57	18-05	Fix it, Sign it or Close it: State of Good Repair in an Era of Budget Constraints (& NCHRP LRD 84), 32 p. (2021)
58	20-03	Policing and Public Transportation, 56 p. (2022)
59	19-02	Legal Issues and Emerging Technologies, 70 p. (2022)

Syntheses (Project J-07)

No.	Topic No.	Title, Pages, Publication Year
1	SC-01	Safe Operating Procedures for Alternative Fuel Buses, 48 p. (1993)
2	SC-03	Low-Floor Transit Buses, 44 p. (1994)
3	SF-02	Incentive Programs to Improve Transit Employee Performance, 46 p. (1994)
4	SB-01	Integration of Bicycles and Transit, 54 p. (1994)
5	SG-03	Management Information Systems, 78 p. (1994)
6	SG-04	The Role of Performance-Based Measures in Allocating Funding for Transit Operations, 52 p. (1994)
7	SD-01	Regulatory Impacts of Design and Retrofit of Bus Maintenance Facilities, 50 p. (1994)
8	SC-04	Retrofit of Buses to Meet Clean Air Regulations, 48 p. (1994)
9	SC-02	Waste Control Practices at Bus Maintenance Facilities, 26 p. (1995)
10	SA-01	Bus Route Evaluation Standards, 54 p. (1995)
11	SA-02	System-Specific Spare Bus Ratios, 46 p. (1995)
12	SE-01	Transit Bus Service Line and Cleaning Functions, 48 p. (1995)
13	SG-01	Risk Management for Small and Medium Transit Agencies, 32 p. (1995)
14	SB-02	Innovative Suburb-to-Suburb Transit Practices, 50 p. (1995)
15	SA-03	System-Specific Spare Rail Vehicle Ratios, 44 p. (1995)
16	SA-07	Changing Roles and Practices of Bus Field Supervisors, 46 p. (1996)
17	SA-05	Customer Information at Bus Stops, 64 p. (1996)
18	SF-01	Bus Occupant Safety, 56 p. (1996)
19	SA-06	Passenger Transfer System Review, 37 p. (1996)
20	SH-01	Transit-Focused Development, 55 p. (1997)
21	SF-03	Improving Transit Security, 35 p. (1997)
22	SF-04	Monitoring Bus Maintenance Performance, 48 p. (1997)
23	SD-02	Inspection Policy and Procedures for Rail Transit Tunnels and Underground Structures, 95 p. (1997)
24	SA-04	AVL Systems for Bus Transit, 47 p. (1997)
25	SC-05	Light Rail Vehicle Compression Requirements, 34 p. (1997)
26	SA-08	Bus Transit Fare Collection Practices, 29 p. (1997)
27	SF-05	Emergency Preparedness for Transit Terrorism, 73 p. (1997)
28	SG-05	Managing Transit Construction Contract Claims, 50 p. (1997)
29	SA-09	Passenger Counting Technologies and Procedures, 50 p. (1998)
30	SB-03	ADA Paratransit Eligibility Certification Practices, 38 p. (1998)
31	SG-06	Paratransit Contracting and Service Delivery Methods, 35 p. (1998)
32	SB-04	Transit Advertising Revenue: Traditional and New Sources and Structures, 58 p. (1998)
33	SF-06	Practices in Assuring Employee Availability, 75 p. (1999)
34	SA-10	Data Analysis for Bus Planning and Monitoring, 68 p. (2000)
35	SG-08	Information Technology Update for Transit, 106 p. (2000)
36	SG-07	Identifying and Reducing Fraudulent Third Party Tort Claims Against Public Transit Agencies, 58 p. (2000)
37	SB-05	Communicating with Persons with Disabilities in a Multimodal Transit Environment, 48 p. (2001)
38	SA-12	Electronic Surveillance Technology on Transit Vehicles, 57 p. (2001)
39	SA-11	Transportation on College and University Campuses, 62 p. (2001)
40	SF-07	A Challenged Employment System: Hiring, Training, Performance Evaluation, and Retention of Bus Operators, 72 p. (2001)
41	SB-06	The Use of Small Buses in Transit Service, 71 p. (2002)
42	SH-02	Use of Flexible Funds for Transit Under ISTEA and TEA-21, 40 p. (2002)
43	SB-08	Effective Use of Transit Websites, 79 p. (2002)
44	SF-09	Training for On-Board Bus Electronics, 63 p. (2002)
45	SB-07	Customer-Focused Transit, 100 p. (2002)
46	SF-08	Diversity Training Initiatives, 59 p. (2003)
47	SF-10	Corporate Culture as the Driver of Transit Leadership Practices, 91 p. (2003)
48	SA-14	Real-Time Bus Arrival Information Systems, 61 p. (2003)
49	SA-13	Yield to Bus—State of the Practice, 78 p. (2003)
50	SC-06	Use of Rear-Facing Position for Common Wheelchairs on Transit Buses, 42 p. (2003)
51	SB-10	Transit Advertising Sales Agreements, 99 p. (2004)

Syntheses (Project J-07)

No.	Topic No.	Title, Pages, Publication Year
52	SF-11	Transit Operator Health and Wellness Programs, 80 p. (2004)
53	SB-09	Operation Experiences with Flexible Transit Services, 58 p. (2004)
54	SE-02	Maintenance Productivity Practices, 92 p. (2004)
55	SH-03	Geographic Information System Applications in Transit, 66 p. (2004)
56	SG-10	Performance-Based Measures in Transit Fund Allocation, 74 p. (2004)
57	SA-15	Use of Computer-Aided Scheduling and Dispatch for Demand-Responsive Transit Services, 80 p. (2004)
58	SC-07	Emergency Response Procedures for Natural Gas Transit Vehicles, 54 p. (2005)
59	SH-04	Strategic Planning and Management in Transit Agencies, 44 p. (2005)
60	SB-11	Practices in No-Show and Late Cancellation Policies for ADA Paratransit, 50 p. (2005)
61	SE-03	Maintenance Staffing Levels for Light Rail Transit, 42 p. (2005)
62	SB-12	Integration of Bicycles and Transit, 70 p. (2005)
63	SH-05	On-Board and Intercept Transit Survey Techniques, 92 p. (2005)
64	SD-03	Bus Use of Shoulders, 91 p. (2006)
65	SB-13	Transit Agency Participation in Medicaid Transportation Programs, 48 p. (2006)
66	SH-06	Fixed-Route Bus Transit Ridership Forecasting and Service Planning Methods, 51 p. (2006)
67	SH-08	Bus Transit Service in Land Development Planning, 62 p. (2006)
68	SB-14	Methods of Rider Communication, 95 p. (2006)
69	SH-07	Web-Based Survey Techniques, 104 p. (2006)
70	SC-08	Mobile Data Terminals, 150 p. (2007)
71	SB-15	Paratransit Managers' Skills, Qualifications, and Needs, 52 p. (2007)
72	SC-09	Use of Biodiesel in a Transit Fleet, 61 p. (2008)
73	SA-17	AVL Systems for Bus Transit: Update, 104 p. (2008)
74	SB-15	Policies and Practices for Effectively and Efficiently Meeting ADA Paratransit Demand, 54 p. (2008)
75	SA-16	Uses of Higher Capacity Buses in Transit Service, 72 p. (2008)
76	SB-16	Integration of Paratransit and Fixed-Route Transit Services, 48 p. (2008)
77	SA-18	Passenger Counting Systems, 74 p. (2008)
78	SA-19	Transit Systems in College and University Communities, 98 p. (2008)
79	SA-20	Light Rail Vehicle Collisions with Vehicles at Signalized Intersections, 48 p. (2009)
80	SF-13	Transit Security Update, 150 p. (2009)
81	SE-05	Preventive Maintenance for Transit Buses, 80 p. (2010)
82	SH-11	Transit Fare Arrangements for Public Employees, 90 p. (2010)
83	SA-22	Bus and Rail Transit Preferential Treatments in Mixed Traffic, 210 p. (2010)
84	SH-09	Current Practices in Greenhouse Gas Emissions Savings from Transit, 82 p. (2010)
85	SH-10	Effective Use of Citizen Advisory Committees for Transit Planning and Operations, 72 p. (2010)
86	SH-12	Relationships Between Streetcars and the Built Environment, 72 p. (2010)
87	SA-23	Practices in the Development and Deployment of Downtown Circulators, 122 p. (2011)
88	SB-18	Strollers, Carts, and Other Large Items on Buses and Trains, 170 p. (2011)
89	SH-13	Public Participation Strategies for Transit, 96 p. (2011)
90	SA-24	Video Surveillance Uses by Rail Transit Agencies, 90 p. (2011)
91	SA-25	Use and Deployment of Mobile Device Technology for Real-Time Information, 96 p. (2011)
92	SG-11	Transit Asset Condition Reporting, 54 p. (2011)
93	SF-14	Practices to Protect Bus Operators from Passenger Assault, 126 p. (2011)
94	SB-17	Innovative Rural Transit Services, 52 p. (2011)
95	SF-15	Practices for Wayside Rail Transit Worker Protection, 90 p. (2012)
96	SA-27	Off-Board Fare Payment Using Proof-of-Payment Verification, 117 p. (2012)
97	SF-16	Improving Transit Safety Through Rewards and Discipline, 62 p. (2012)
98	SB-19	Ridesharing as a Complement to Transit, 72 p. (2012)
99	SB-19	Uses of Social Media in Public Transportation, 66 p. (2012)
100	SE-06	Elevator and Escalator Maintenance and Safety Practices, 58 p. (2012)
101	SA-26	Implementation and Outcomes of Fare-Free Transit Systems, 104 p. (2012)
102	SB-23	Integrating Passenger and Ferry Service with Mass Transit, 54 p. (2013)
103	SB-21	Transit Station and Stop Adoption Programs, 68 p. (2013)
104	SB-22	Use of Electronic Passenger Information Signage in Transit, 108 p. (2013)

Syntheses (Project J-07)

No.	Topic No.	Title, Pages, Publication Year
105	SB-22	Use of Market Research Panels in Transit, 70 p. (2013)
106	SA-29	Energy Savings Strategies for Transit Agencies, 76 p. (2013)
107	SD-04	Rail Transit Track Inspection Practices, 58 p. (2014)
108	SF-17	Transit Bus Operator Distraction Policies, 100 p. (2013)
109	SA-32	System-Specific Spare Bus Ratios Update, 68 p. (2014)
110	SA-31	Commonsense Approaches for Improving Transit Bus Speeds, 147 p. (2014)
111	SG-12	Optimizing Bus Warranty, 72 p. (2014)
112	SA-30	Maintaining Transit Effectiveness Under Major Financial Constraints, 119 p. (2014)
113	SH-14	Sub-Allocating FTA Section 5307 Funding Among Multiple Recipients in Metropolitan Areas, 73 p. (2014)
114	SA-33	Critical Incident Management and Clearance Practices for Rail Transit, 108 p. (2015)
115	SA-34	Open Data: Challenges and Opportunities for Transit Agencies, 120 p. (2015)
116	SB-25	Practices for Establishing ADA Paratransit Eligibility Assessment Facilities, 76 p. (2015)
117	SA-35	Better On-Street Bus Stops, 132 p. (2015)
118	SG-13	Practices for Utility Coordination in Transit Projects, 56 p. (2015)
119	SB-26	Use of Taxis in Public Transportation for People with Disabilities and Older Adults, 113 p. (2016)
120	SF-18	Use of Automotive Service Excellence Tests Within Transit, 100 p. (2016)
121	SH-16	Transit Agency Practices in Interacting with People Who Are Homeless, 100 p. (2016)
122	SH-15	Transit Supportive Parking Policies and Programs, 70 p. (2016)
123	SA-36	Onboard Camera Applications for Buses, 90 p. (2016)
124	SA-40	Planning and Design for Fire and Smoke Incidents in Underground Passenger Rail Systems, 103 p. (2017)
125	SA-37	Multiagency Electronic Fare Pavement Systems, 132 p. (2017)
126	SA-38	Successful Practices and Training Initiatives to Reduce Bus Accidents and Incidents at Transit Agencies, 92 p. (2017)
127	SF-19	Addressing Difficult Customer Situations, 89 p. (2017)
128	SH-17	Practices for Evaluating the Economic Impacts and Benefits of Transit, 95 p. (2017)
129	SA-39	Managing Extreme Weather at Bus Stops, 77 p. (2017)
130	SA-41	Battery Electric Buses—State of the Practice, 194 p. (2018)
131	SA-42	College Student Transit Pass Programs, 138 p. (2018)
132	SB-27	Public Transit and Bikesharing, 104 p. (2018)
133	SB-28	Administration of ADA Paratransit Eligibility Appeal Programs, 102 p. (2018)
134	SB-29	Customer-Focused Service Guarantees and Transparency Practices, 128 p. (2018)
135	SG-14	ADA Paratransit Service Models, 256 p. (2018)
136	SG-15	Contracting Fixed-Route Bus Transit Service, 148 p. (2018)
137		Microgrids and Their Application for Airports and Public Transit (Joint: ACRP Syn. 91), 66 p. (2018)
138	SH-18	Public Transit Rider Origin-Destination Survey Methods and Technologies, 170 p. (2019)
139	SA-43	Transit Service Evaluation Standards, 140 p. (2019)
140	SA-44	Comprehensive Bus Network Redesigns, 200 p. (2019)
141	SB-30	Microtransit or General Public Demand-Response Transit Services: State of the Practice, 220 p.
142	SB-31	Implementing the U.S. DOT Reasonable Modification Rule, 168 p. (2019)
143	SF-20	Managing the Transit Scheduling Workforce, 212 p. (2019)
144	SA-49	Multimodal Fare Payment Integration, 82 p. (2020)
145	SA-45	Current Practices in the Use of Onboard Technologies to Avoid Transit Bus Incidents and Accidents, 82 p. (2020)
146	SA-48	Transit Security Preparedness, 130 p. (2020)
147	SF-21	Attracting, Retaining, and Advancing Women in Transit, 66 p. (2020)
148	SA-46	Business Models for Mobile Fare Apps, 110 p. (2020)
149	SA-47	Transit Signal Priority: Current State of the Practice, 118 p. (2020)
150	SD-05	Third Rail Insulator Failures: Current State of the Practice, 78 p. (2020)
151	SE-07	Maintenance Planning for Rail Asset Management—Current Practices, 68 p. (2020)
152	SD-06	Transit Agency Relationships and Initiatives to Improve Bus Stops and Pedestrian Access, 204 p. (2021)
153	SG-18	The Transit Analyst Toolbox: Analysis and Approaches for Reporting, Communicating, and Examining Transit Data, 100 p. (2021)
154	SH-20	Innovative Practices for Transit Planning at Small to Mid-Sized Agencies, 158 p. (2021)
155	SG-17	Intelligent Transportation Systems in Headway-Based Bus Service, 96 p. (2021)
156	SB-33	Uses of Social Media in Public Transportation, 116 p. (2022)

Syntheses (Project J-07)

No.	Topic No.	Title, Pages, Publication Year
157	SA-51	Transit Safety Risk Assessment Methodologies, 82 p. (2021)
158	SA-50	Cybersecurity in Transit Systems, 74 p. (2022)
159	SA-52	Assessing Equity and Identifying Impacts Associated with Bus Network Redesigns, 90 p. (2022)
160	SH-21	Fare Capping: Balancing Revenue and Equity Impacts, 150 p. (2022)
161	SG-19	ADA Paratransit and Other Demand-Responsive Transportation Services in Small to Midsized Transit Agencies, 190 p. (2022)
162	SB-34	Coordination of Public Transit Services and Investments with Affordable Housing Policies, 94 p. (2022)
163	SH-19	Considering the Unbanked in Cashless Fare Payment at Point of Service for Bus/Demand Response Services, 90 p. (2022)
164	SA-53	Bus Rapid Transit: Current State of Practice, 98 p. (2022)
166	SA-55	On-Street Bus Operations Management, 116 p. (2022)

IDEA

No.	Proj. No.	Title, Pages, Publication Year
1	J-04	Customer Satisfaction Index for the Mass Transit Industry, 61 p. (1995)
2	J-04	Adaptive Diagnostic System Project, 35 p. (1997)
3	J-04	Automatic Rail-Wheel Inspection Station, 11 p. (1997)
4	J-04	Management Information Benefits of Integrating Electronic Fareboxes with Other On-Board Equipment, 30 p. (1995)
5	J-04	Improved Passenger Counter and Classifier System for Transit Operations, 28 p. (1996)
7	J-04	Pneumatically Operated and Flexible Wheelchair Restraint System, 16 p. (1995)
8	J-04	Real-Time Transit Data Broadcast, 15 p. (1995)
9	J-04	Independent Transportation Network: Alternative Transportation for the Elderly, 27 p. (1997)
10	J-04	Automatic Data Collection on Transit Users via Radio Frequency Identification, 42 p. (1996)
11	J-04	Compact Disc—Interactive Multimedia Violence Prevention Training Program. Customers, Conflicts, and You: A Transit Operator's Guide to Problem Solving (CD-ROM was previously distributed by the National Training Institute), (2001)
13	J-04	Self-Paced PC-Based Track Safety Training System, 11 p. (1998)
14	J-04	Market Study and Operational Test Results for the Instant Rent-A-Car (IRAC) Station Field Tests, 42 p. (1998)
15	J-04	Internet Information Sharing for Transit Maintenance, 37 p. (1997)
16	J-04	A Public Transit-Compatible Restraint System for Wheelchair Users, 26 p. (1998)
17	J-04	Operational Evaluation of a Rail-Based Wheel Gauge Inspection System, 11 p. (1998)
18	J-04	Pilot Testing Innovative Payment Operations for Independent Transportation for the Elderly, 35 p. (2002)
19	J-04	Field Testing and Evaluation of the Transit Integrated Monitoring System, 25 p. (1998)
20	J-04	Non-Contact Sensor for Improved Passenger Counting and Classification System for Rail Transit, 25 p. (2001)
21	J-04	Smart Parking Lot with Just-in-Time Shuttle, 11 p. (2001)
22	J-04	Sleeved Column System for Crashworthiness of Light Rail Vehicles, 29 p. (2001)
24	J-04	Operational Testing of Intelligent Rail Lubrication System, 8 p. (1998)
28	J-04	Transit Scratchitti Removal, 54 p. (2002)
29	J-04	Fare Machine Tactile/Audio Instruction System, 40 p. (2003)
31	J-04	A Tool for Evaluating and Optimizing Bus Stop Location Decisions, 64 p. (2005)
32	J-04	Simulation and Animation Model for Planning and Designing Transit Facilities, 16 p. (2005)
33	J-04	Community Visualization in Design of Light Rail Transit-Oriented Development, 26 p. (2004)
35	J-04	Innovative Bioterrorism Detection Technology for Transit Security, 33 p. (2005)
36	J-04	Cleaning Device for Electrified Third Rail Insulators, 28 p. (2006)
37	J-04	Bandwidth Expansion and Real-Time Surveillance for Security on Transit Buses, 25 p. (2005)
38	J-04	Assessment of Rear-Facing Wheelchair Accommodation on BRT, 36 p. (2005)
39	J-04	Dynamic Timetable Generator from Schedule Data, 28 p. (2006)
40	J-04	Counter Terrorism Chemical Detector for Rail Transit Vehicles, 36 p. (2005)
41	J-04	Track Geometry/Design Testing for Transit Applications, 40 p. (2007)
42	J-04	Detection of Radioactivity in Transit Stations, 26 p. (2006)
44	J-04	Cleaning and Recoating Electrified Third Rail Cover Boards, 18 p. (2008)

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No.	Proj. No.	Title, Pages, Publication Year
45	J-04	Chemical and Biological Decontamination System for Rail Transit Facilities, 29 p. (2007)
47	J-04	Cleaning Device for Electrified Third Rail Insulators—Phase 2, 23 p. (2008)
49	J-04	Smart Sander Enhancement for Commuter Rail, 35 p. (2008)
50	J-04	Developing Regional Mobility Management Centers, 65 p. (2012)
52	J-04	Travel Assistance Device (TAD) to Help Transit Riders, 42 p. (2009)
53	J-04	Ultraviolet Germicidal Irradiation for Transit Buses, 24 p. (2009)
54	J-04	Detection of Radioactivity in Transit Stations—Phase 2, 22 p. (2009)
55	J-04	Warning Device for Rail Transit Personnel for Approaching Trains, 20 p. (2008)
56A	J-04	Detection of Explosives and Weapons in Transit Systems, 28 p. (2015)
57	J-04	Independent Wheelchair Securement, 22 p. (2010)
58	J-04	Google Transit Data Tool for Small Transit Agencies, 23 p. (2011)
59	J-04	Recoating Electrified Third Rail Cover Boards—Phase 2, 12 p. (2010)
60	J-04	Transit Communications Interface Profiles (TCIP) Traveler Information Pilot, 33 p. (2011)
61	J-04	Flexible Carpooling to Transit Stations, 70 p. (2012)
62	J-04	Development of Online Training Maintenance Module for Bus Transit Technicians, 18 p. (2012)
63	J-04	Improving Bus Transit On-Time Performance through the Use of AVL Data, 25 p. (2014)
65	J-04	A Context Aware Transit Navigator, 8 p. (2013)
66	J-04	Advanced Wayside Energy Storage Systems (WESS) for Rail Transit, 81 p. (2012)
67	J-04	Diesel-Electric Locomotive Energy Recovery and Conversion, 29 p. (2014)
68	J-04	Light Rail Transit/Street Grade Crossing Safety System, 52 p. (2014)
70	J-04	Effortless Passenger Identification System, 24 p. (2013)
71	J-04	Transit Information Access for Persons with Visual or Cognitive Impairments, 23 p. (2015)
72	J-04	Handheld Noncontact Electronic Rail Wheel Gauge, 42 p. (2014)
73	J-04	Innovative Operating Strategy for Paratransit Services, 59 p. (2014)
74	J-04	Apparatus for Gap Management, 20 p. (2015)
75	J-04	Transit Trip Planning Web Application, 29 p. (2014)
76	J-04	RideScout Mobile Application, 39 p. (2015)
77	J-04	Development of a Prototype Retrofit Bumper for Improved Light Rail Vehicle (LRV) Safety, 23 p. (2015)
79	J-04	Implementation of Smart Card Automatic Fare Collection (AFC) Technology in Small Transit Agencies for Standards Development, 36 p. (2016)
80	J-04	Enhancing Safety and Security of Transit Systems Using Computer Vision, 23 p. (2017)
81	J-04	Advanced Locomotive Exhaust Gas Simulator to Fine-Tune Energy Recovery and Conversion Systems, 35 p. (2016)
82	J-04	Active Safety-Collision Warning Pilot in Washington State, 33 p. (2017)
83	J-04	Track Circuit Monitoring Tool: Standardization and Deployment at CTA, 31 p. (2018)
85	J-04	Location Aware Networks Optimizing Use of Transit Systems by Blind Travelers, 31 p. (2019)
86	J-04	Advanced Neutral Temperature Estimation using Solitary Waves (ANTEUSW), 34 p. (2019)
87	J-04	Development of pathNav: A Pedestrian Navigation Tool that Utilizes Smart Data for Improved Accessibility and Walkability, 45 p. (2019)
88	J-04	Evaluation of an Automatic, Individual, Computer-Based Operator Education and Training Program, 36 p. (2021)
89	J-04	Dynamic Vehicle to Infrastructure TCIP Communications Laboratory Proof of Concept, 45 p. (2019)
90	J-04	sUAS-based GeoIntel for Commuter Rail Parking in Rural and Suburban Areas, 34 p. (2019)
A	J-04	Innovation in Action: Accomplishments of the Transit IDEA Program, 15 p. (2019)
91	J-04	Comprehensive Wayfinding for All (CWall), 3 p. (2022)
92	J-04	Augmented Reality Transit Dispatcher Interface, 29 p. (2021)
93	J-04	An Open Platform for Transit Agencies to Improve the Quality of Their Real-Time Data, 15 p. (2020)
94	J-04	Evaluation of Transit Vehicle Brake Inspection Through Ultrasonic Emissions Analysis, 15 p. (2020)
95	J-04	Connected and Automated Parking Feasibility—A Pilot Study, 37 p. (2021)
96	J-04	Multi-Stage Planning and Electrifying Transit Bus Systems with Multi-Format Charging Facilities, 3 p. (2022)
98	J-04	Safety Assessment for the Interaction Between the Autonomous Shuttle Bus and Vulnerable Road Users, 2 p. (2022)

Web-Only Documents

No.	Proj. No.	Title, Pages, Publication Year
1	F-04	Bus Operator Workstation Evaluation and Design Guidelines: Final Report, 694 p. (1997)
2	B-01	Evaluating Transit Operations for Individuals with Disabilities, 366 p. (1997)
3	B-02	Directions: A Simple Guidebook for Integrating Market and Customer Research into Transit Decision-Making to Become Customer Oriented, 30 p. (1998)
4	E-03	Inventory Management for Bus and Rail Public Transit Systems: Final Report, 114 p. (1998)
5	H-13B	Trends in Single Occupant Vehicle and Vehicle Miles of Travel Growth in the United States: Final Report, 100 p. (1998)
6	A-15	Transit Capacity and Quality of Service Manual, First Edition (CD 2), 426 p. (1999)
7	H-08	Using Public Transportation to Reduce the Economic, Social and Human Costs of Personal Immobility, 322 p. (1999)
8	B-08	Marketing Transit Services to Business, 242 p. (1999)
9	H-12	Integrated Urban Models for Simulation of Transit and Land-Use Policies: Final Report, 252 p. (1999)
10	G-02	Bar Coding in Mass Transit Operations and Maintenance—Application Guide Book, 84 p. (1999)
11	A-19	Integrating School Bus and Public Transportation Services in Non-Urban Communities—Implementation Guide (& Rep. 56), 160 p. (1999)
12	B-12	Traveler Response to Transportation System Changes, Interim Handbook, 446 p. (2000)
13	J-06/Task 33	Cost of Meeting Accessibility Requirements for Over-the-Road Buses, 130 p. (2000)
14	H-20	Using Geographic Information Systems for Welfare to Work Transportation Planning and Service Delivery—Case Studies, 76 p. (2000)
15	F-06	Guidelines for the Effective Use of Uniformed Transit Police and Security Personnel, 312 p. (2001)
16	H-15A	Welfare to Work: Integration and Coordination of Transportation and Social Services, 214 p. (2001)
17	E-03A	Applications for Improved Inventory Management for Public Transit Systems, 104 p. (2001)
18	F-06A	Developing Useful Transit-Related Crime and Incident Data, 76 p. (2001)
19	A-10A	An Evaluation of Bus Bulbs on Transit, Traffic, and Pedestrian Operations, 162 p. (2001)
20	B-17	Advanced Public Transportation Systems for Rural Areas, 200 p. (2002)
21	H-24	Public Transit System Policy Boards: Organization and Characteristics, 200 p. (2002)
22	B-04	Public Agency Guidance on Employer-Based TDM Programs and Employer Technical Memorandum Characteristics of Effective TDM Programs, 229 p. (2003)
23	H-28	Uses of Archived AVL-APC Data to Improve Transit Performance and Management: Review and Potential (& Rep. 113), 167 p. (2003)
24	H-24A	The Public Transportation Board Effectiveness Study (Contractor's Final Report), 44 p. (2004)
25	J-10B(01)	Public Transportation Emergency Mobilization Guide: Appendix B—Survey of U.S. Public Transportation Systems, 41 p. (2005)
26	H-21A	TravelMatters: Mitigating Climate Change with Sustainable Surface Transportation, 53 p. (2005)
27	H-25A	Appendixes to TCRP Report 107: Analyzing the Effectiveness of Commuter Benefit Programs (& Rep. 107), 97 p. (2005)
28	J-06/Task 62	Train Door Systems Analysis: Appendixes (& RRD 74), 64 p. (2006)
29	B-27	Cost-Benefit Analysis of Providing Non-Emergency Medical Transportation (& RRD 75), 208 p. (2006)
30	D-08	Improving Pedestrian Safety at Unsignalized Crossings: Appendixes B to O (& Rep. 112) (Joint: NCHRP WOD 91), 270 p. (2006)
31	G-07	Managing Capital Costs of Major Federally Funded Public Transportation Projects (& RRD 78), 297 p. (2006)
32	H-32	Elements Needed to Create High Ridership Transit Systems: Interim Guidebook (& Rep. 111), 237 p. (2006)
33	J-05	The Federal Transit Act, as Amended through August 10, 2005, and Related Laws, 317 p. (2007)
34	B-16	Developing Guidelines for Evaluating, Selecting, and Implementing Suburban Transit Services (Contractor's Final Report) (& Rep. 116), 250 p. (2006)
35	D-10	Appendixes to TCRP RRD 84: Audible Signals for Pedestrian Safety in LRT Environments (& RRD 84), 147 p. (2007)
36	D-11	Appendixes to TCRP Report 117: Design, Operation, and Safety of At-Grade Crossings of Exclusive Busways (& Rep. 117), 155 p. (2007)
37	D-07/Task 14	Rail Base Corrosion Detection and Prevention, 129 p. (2007)
38	J-10J	Appendixes to TCRP Report 86: Public Transportation Security, Volume 13: Public Transportation Passenger Security Inspections: A Guide for Decision Makers (& Rep. 86 Vol. 13), 77 p. (2007)
39	A-23A	Appendixes to TCRP Report 118: Bus Rapid Transit Practitioner's Guide (& Rep. 118), 50 p. (2007)
40	C-17	Development of Crash Energy Management Performance Requirements for Light-Rail Vehicles, 154 p. (2008)
41	G-08	Evaluation of Project Delivery Methods (& Rep. 131), 231 p. (2009)

Web-Only Documents

No.	Proj. No.	Title, Pages, Publication Year
42	A-30	Selected Appendices for TCRP Report 137: Improving Pedestrian and Motorist Safety Along Light Rail Alignments (& Rep. 137), 341 p. (2009)
43	J-07	Track Maintenance Costs on Rail Transit Properties, 72 p. (2009)
44	B-38	Literature Review for Providing Access to Public Transportation Stations, 100 p. (2009)
45	A-29	Appendices to TCRP Report 135: Controlling System Costs: Basic and Advanced Scheduling Manuals and Contemporary Issues in Transit Scheduling, 222 p. (2009)
46	J-06/Task 71	Rural Transit Achievements: Assessing the Outcomes of Increased Funding for Rural Passenger Services under SAFETEA-LU, 120 p. (2009)
47	D-07/Task 17	Guidelines for Rail Base Inspection and Rail Condemnation Limits for Corrosion Induced Material Loss, 26 p. (2009)
48	D-12	Ground-borne Noise and Vibration in Buildings Caused by Rail Transit, 208 p. (2010)
49	B-36	Methods for Forecasting Demand and Quantifying Need for Rural Passenger Transportation, 83 p. (2010)
50	F-13	Survey Instrument, Productivity Charts, and Interview Protocol for Case Studies for TCRP Report 142 (& Rep. 142), 42 p. (2010)
51	J-06/Task 75	Guiding the Selection and Application of Wayside Energy Storage Technologies for Rail Transit and Electric Utilities, 64 p. (2010)
52	D-07/Task 18	Performance-Based Track Geometry, Phase I, 100 p. (2012)
53	A-32	Operation of Light Rail Transit Through Ungated Crossings at Speeds over 35 MPH, 124 p. (2012)
54	H-38	Developing, Enhancing, and Sustaining Tribal Transit Services: Final Research Report (& Rep. 154), 143 p. (2012)
55	H-41	Assessing and Comparing Environmental Performance of Major Transit Investments (& RRD 105), 344 p. (2012)
56	H-39	Methodology for Determining the Economic Development Impacts of Transit Projects, 365 p. (2012)
57	B-39	Audience Measurement for Transit Advertising, 142 p. (2012)
58	B-36	Methods for Forecasting Demand and Quantifying Need for Rural Passenger Transportation (& Rep. 161), 104 p. (2013)
59	A-33A	Using Pictograms to Make Transit Easier to Navigate for Customers with Communications Barriers, 99 p. (2013)
60	A-36	Command-Level Decision Making for Transit Emergency Managers (Joint: NCHRP WOD 200), 70 p. (2013)
61	J-11/Task 17	Millennials & Mobility: Understanding the Millennial Mindset and New Opportunities for Transit Providers, 70 p. (2013)
62	J-06/Task 82	Standardizing Data for Mobility Management, 62 p. (2014)
63	A-38	Treatments Used at Pedestrian Crossings of Public Transit Rail Services (& Rep. 175), 166 p. (2015)
64	D-07/Task 19	Performance-Based Track Geometry Phase 2, 50 p. (2015)
65	D-07/Task 20	Wheel Profile Maintenance Guidelines, 137 p. (2015)
66	A-39	Improving Transportation Network Efficiency Through Implementation of Transit-Supportive Roadway Strategies (& Rep. 183), 194 p. (2016)
67	D-15	Protection of Transportation Infrastructure from Cyber Attacks: A Primer, 183 p. (2016)
68	G-13	Developing an ITS Technology Web Portal for Transit System Leaders, 159 p. (2016)
69	H-52	Decision-Making Toolbox to Plan and Manage Park-and-Ride Facilities for Public Transportation: Research Report and Transit Agency Case Studies (& Rep. 192), 513 p. (2017)
70	A-41	Improving the Resiliency of Transit Systems Threatened by Natural Disasters, Vol 1: A Guide, 163 p. (2017)
70	A-41	Improving the Resiliency of Transit Systems Threatened by Natural Disasters, Vol 2: Research Overview, 70 p. (2017)
70	A-41	Improving the Resiliency of Transit Systems Threatened by Natural Disasters, Vol 3: Appendixes A & B to the Research Report, 447 p. (2017)
71	D-18	A Transit Agency Guide to Evaluating Secondary Train Detection/Protection Systems in Communications-Based Train Control Systems, 93 p. (2018)
72	A-42	Developing a Guide to Bus Transit Service Reliability (& Rep. 215), 262 p. (2020)
73	H-57	Guide to Joint Development for Public Transportation Agencies: Appendixes (& Rep. 224), 185 p. (2021)
74	A-43	Recent Decline in Public Transportation Ridership: Hypotheses, Methodologies, and Detailed City-by-City Results (& Rep. 231), 293 p. (2022)
75	A-36	Command-Level Decision Making for Transportation Emergency Managers (joint with NCHRP WOD 321 and ACRP WOD 52), 259 p. (2022)

CDs		
No.	Proj. No.	Title, Publication Year
2	A-15	Transit Capacity and Quality of Service Manual: First Edition (WOD 6) (1999)
3	D-05	Performance of Direct-Fixation Track Software: Design Guidelines and Software (1999)
4	C-11	Alternative-Fuel Transit Bus Hazard Assessment Model (2001)
13	G-03	Transit Risk Manager for Bus Services (Contractor's CD) (& RRD 12) (1996)
16	B-16	Multimedia Presentation: Role of Private-for-Hire Vehicle Industry in Public Transit (& Rep. 75) (2002)
17	B-15	Supporting Material for TCRP Report 73: Characteristics of Urban Travel Demand (& Rep. 73) (2002)
18	H-19	Estimating and Presenting the Benefits and Costs of Public Transit Projects: Guidebook for Practitioners (& Rep. 78) (2002)
19	A-24	A Toolkit for Self-Service Barrier-Free Fare Collection (& Rep. 80) (2002)
20	20-06 NCHRP	Selected Studies in Transportation Law, Vol. 1: Construction Contract Law (2004)
20	20-06 NCHRP	Selected Studies in Transportation Law, Vol. 1 2014 Supplement: Construction Contract Law (2014)
20	20-06 NCHRP	Selected Studies in Transportation Law, Vol. 2: Eminent Domain (2009)
20	20-06 NCHRP	Selected Studies in Transportation Law, Vol. 3: Environmental Law and Transportation (2003)
20	20-06 NCHRP	Selected Studies in Transportation Law, Vol. 3 Supplement: Environmental Law and Transportation (2010)
20	20-06 NCHRP	Selected Studies in Transportation Law, Vol. 4: Tort Liability of Highway Agencies (2002)
20	J-05/Topic 05-04	Selected Studies in Transportation Law, Vol. 5: Transit Law (2004)
20	J-05/Topic 05-04	Selected Studies in Transportation Law, Vol. 5 2014 Supplement: Transit Law (2015)
20	J-05/Topic 06-03	Selected Studies in Transportation Law, Vol. 6: Transit Labor 13[c] Decisions (2003)
20	J-05/Topic 07-03	Selected Studies in Transportation Law, Vol. 7: Transit Charter Bus Service Decisions and Documents (2005)
20	20-06 NCHRP	Selected Studies in Transportation Law, Vol. 8: Transportation Law and Government Relations (2007)
21	F-10	Toolbox for Transit Operator Fatigue (& Rep. 81) (2002)
25	G-06	Guidebook for Developing a Transit Performance-Measurement System and Supplementary Material (& Rep. 88) (2003)
27	J-09/Task 06	Using the Internet for Transit Training and Certification (& Rep. 84 Vol. 3) (2003)
31	A-23	Supporting Material for TCRP Report 90, Volume 1, BRT Case Studies (& Rep. 90 Vol. 1) (2003)
34	J-09/Task 04	Supporting Material for TCRP Report 84, Volume 4: Advanced Features of Transit Websites (& Rep. 84 Vol. 4) (2003)
40	B-23	Supporting Material for TCRP Report 98 (NU DRT Software, User's Manual, and Supplementary Documents) (& Rep. 98) (2003)
42	A-15A	TCRP Report 100 (TCQSM) 2nd Edition and Supplemental Material (& Rep. 100) (2003)
43	J-10A(02)	Supporting Material for TCRP Report 86: Public Transportation Security; Vol. 5, Security-Related Customer Communications and Training for Public Transportation Providers (& Rep. 86 Vol. 5) (2004)
45	F-11	Public Transportation Operating Agencies as Employers of Choice: Toolkit (& Rep. 103) (2004)
51	H-30	Appendix Material for TCRP Report 105 (& Rep. 105) (2004)
52	H-29A	A Research Results Compendium to TCRP Report 106 (& Rep. 106) (2005)
60	B-26	Appendix Material for TCRP Report 108 (& Rep. 108) (2005)
61	D-07/Task 11	Direct-Fixation Track Design Specifications, Research, and Related Material (& Rep. 71 Vol. 6) (2005)
64	J-10D	TCRP Report 86: Public Transportation Security, Volume 10: Hazard and Security Plan Workshop: Instructor Guide—Appendixes (& Rep. 86 Vol. 10) (2006)
65	J-05/Topic 08-04	The Americans with Disabilities Act: The Federal Transit Administration's Letters of Findings and Compliance Assessments (& LRD 23) (2007)
66	H-32	Building and Retaining Transit Ridership: The Keys to Success—An Interactive CD (& Rep. 111) (2007)
71	C-15	Appendixes to and Toolkit for TCRP Report 132: Assessment of Hybrid-Electric Transit Bus Technology (& Rep. 132) (2009)
77	F-14	Model Job Descriptions and Employer Information (& Rep. 139) (2010)
86	G-09	Cost Sharing Model for TCRP Report 144 (& Rep. 144 Vol. 1) (2010)
96	J-05/Topic 11-02	TCRP LRD 36: Appendices to Case Studies (& LRD 36) (2011)
100	B-37	Estimation of Demand for Rural Intercity Bus Services Toolkit (& Rep. 147) (2011)
107	B-38	Planning Tool and Appendices for TCRP Report 153 (& Rep. 153) (2012)
120	J-05/Topic 13-03	Transit Labor 13c Employee Protection Digest (LRD 41) (2012)

CDs

No.	Proj. No.	Title, Publication Year
121	B-28A	Supplemental Material to TCRP Report 158 (& Rep. 158) (2012)
122	J-05/Topic 14-02	TCRP LRD 42 Intergovernmental Agreements (& LRD 42) (2012)
134	J-05/Topic 14-03	Performance-Based Clauses and Standards for TCRP LRD 43 (& LRD 43) (2013)
138	A-15C	Supporting Material and Tools to Accompany TCRP Report 165 (& Rep. 165) (2013)

Notes:

Publications in parentheses with an ampersand (&) are companion publications.

Publications in parentheses without an ampersand are reports or digests published as stand-alone CDs.

Beginning with *TCRP Report 166*, *Research Results Digest 109*, *Legal Research Digest 45*, and *Synthesis 111*, publications are available online only.

TABLE 4 SUMMARY OF PROJECT STATUS THROUGH DECEMBER 31, 2022

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
A : OPERATIONS									
A-01	Fare Policies, Structures, and Technologies	\$450,000	\$449,941	Multisystems	4/1/1993	6/30/1997	Completed - Published as Report 10		
A-02	User's Manual for Assessing Service-Delivery Systems for Rural Passenger Transportation	\$300,000	\$300,000	Ecosometrics	5/15/1993	5/19/1995	Completed - Published as Report 6		
A-03	Aids for Rail Car Side-Door Observation	\$200,000	\$199,789	Telephonics Corp	6/7/1993	2/28/1995	Completed - Published as Report 4		
A-04	Electronic On-Vehicle Passenger Information Displays (Visual and Audible)	\$100,000	\$100,000	Municipality of Metropolitan Seattle	3/1/1994	3/31/1996	Completed - Published as RRD 5		
A-05	Integration of Light Rail Transit into City Streets	\$250,000	\$250,000	Korve Engineering	3/1/1994	2/28/1996	Completed - Published as Report 17		
A-05A(01)	Second Train Coming Warning Sign Demonstration Project	\$200,000	\$200,000	Los Angeles County Metropolitan Transit Authority	4/14/1997	1/31/2002	FTA Demonstration - Completed - Published as RRD 51		
A-05A(02)	Second Train Coming Warning Sign Demonstration Project	\$200,000	\$200,000	Mass Transit Agency, Baltimore, MD	2/26/1997	1/31/2001	FTA Demonstration - Completed - Published as RRD 51		
A-06	A Handbook for Acquiring Demand-Responsive Transit Software	\$200,000	\$200,000	Systan	2/22/1994	7/20/1996	Completed - Published as Report 18		
A-07	Operational Analysis of Bus Lanes on Arterials	\$100,000	\$100,000	Wilbur Smith Assoc	5/1/1994	6/30/1996	Completed - Published as Report 26		
A-07A	Operational Analysis of Bus Lanes on Arterials: Application and Refinement	\$70,000	\$70,000	Wilbur Smith Assoc	6/16/1997	8/31/1999	Completed - Published as RRD 38		
A-08	Rail Transit Capacity	\$200,000	\$199,640	Transport Consult Ltd	3/1/1994	10/31/1995	Completed - Published as Report 13		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
A-09	Guidelines for Transit Facility Signing and Graphics	\$250,000	\$249,952	KRW	4/18/1994	1/17/1996	Completed - Published as Report 12		
A-10	Guidelines for the Location and Design of Bus Stops	\$300,000	\$250,000	Texas A&M Research Foundation	11/1/1994	7/30/1996	Completed - Published as Report 19		
A-10A	Evaluation of Bus Bulbs	\$175,000	\$175,000	Texas A&M Research Foundation	2/27/1998	8/30/2000	Completed - Published as Report 65 and Web-Only Document 19		
A-11	Transit Scheduling: Basic and Advanced Manuals	\$200,000	\$199,846	Transportation Management & Design	10/1/1994	1/15/1997	Completed - Published as Report 30		
A-12	Passenger Information Services: A Guidebook for Transit Systems	\$250,000	\$250,000	Texas A&M Research Foundation	3/1/1996	2/28/1998	Completed - Published as Report 45		
A-13	Light Rail Service: Pedestrian and Vehicular Safety	\$400,000	\$400,000	Korve Engineering	4/23/1996	11/30/2000	Completed - Interim Report Published as RRD 34; Final Report Published as Report 69		
A-14	Multipurpose Transit Payment Media	\$300,000	\$300,000	Multisystems	1/29/1996	9/30/1997	Completed - Published as RRD 16 and Report 32		
A-15	Transit Capacity and Quality of Service Manual: First Edition	\$250,000	\$250,000	Kittelison and Assoc	11/1/1996	1/31/1999	Completed - Published as RRD 35; Web-Only Document 6; and as CD-2		
A-15A	Transit Capacity and Quality of Service Manual: Second Edition	\$300,000	\$300,000	Kittelison and Assoc	10/29/1999	9/1/2003	Completed - Published as Report 100		
A-15B	Update of Transit Chapters of Highway Capacity Manual	\$22,000	\$22,000	Kittelison and Assoc	9/10/2003	3/31/2004	Completed - Forwarded to HCM Committee		
A-15C	Transit Capacity and Quality of Service Manual, Third Edition	\$400,000	\$400,000	Kittelison and Assoc	9/22/2010	3/15/2013	Completed - Published as Report 165		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
A-16	Improved Traffic Signal Priority for Transit	\$105,270	\$105,270	U of Arizona	2/17/1997	2/28/1998	Terminated		
A-16A	Improved Traffic Signal Priority for Transit	\$194,730	\$194,730	Gardener Transportation Systems, Inc.	6/7/1999	11/30/2006	Completed - Not Published		
A-17	Joint Operation of Light Rail Transit or Diesel Multiple Unit Vehicles with Railroads	\$250,000	\$249,820	Edwards and Kelcey	10/7/1996	9/30/1998	Completed - Published as Report 52		
A-17A	Supplementing and Updating TCRP Report 52: Joint Operation of Light Rail Transit or Diesel Multiple Unit Vehicles with Railroads	\$40,000	\$39,995	Edwards and Kelcey	8/18/2000	4/18/2001	Completed - Published as RRD 43		
A-18	Effective Practices to Reduce Bus Accidents	\$250,000	\$250,000	Technology & Management Systems	12/1/1996	9/30/1999	Completed - Published as Report 66		
A-19	Integrating School Bus and Public Transportation Services in Non-Urban Communities	\$200,000	\$199,751	Multisystems	12/1/1996	4/21/1999	Completed - Published as Report 56 and Web-Only Document 11		
A-19A(1)	Scoping Study for Project A-19A(2)	\$9,000	\$8,059	Multisystems	4/1/2001	12/31/2001	Completed		
A-19A(2)	Vehicle Guide for Integrating Non-Urban School and Public Transportation Services	\$166,000	\$163,986	Team, Inc.	5/1/2002	1/30/2007	Cancelled		
A-20A(1)	Strategies for Improved Traveler Information	\$90,417	\$90,417	Charles River Assoc	6/22/1998	1/3/2002	Completed - Results to A-20A(2)		
A-20A(2)	Strategies for Improved Traveler Information	\$359,583	\$50,000	Multisystems, Inc.	7/1/2002	3/3/2003	Completed - Published as Report 92		
A-20B(1)	Training for New Technology	\$109,105	\$109,105	Battelle	1/4/1999	7/6/2000	Terminated		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
A-20B(2)	Training for New Technology	\$90,895 \$50,000	\$90,895	Klein Associates, Inc.	1/3/2001	2/15/2003	Completed - Published as Report 96		
A-21	Guidebook for Change and Innovation at Rural and Small Urban Transit Systems	\$150,000	\$148,662	KFH Group	8/25/1999	2/24/2001	Completed - Published as Report 70		
A-22	Simulators and Bus Safety: Guidelines for Acquiring and Using Transit Bus Operator Driving Simulators	\$250,000	\$250,000	Milestone Group	8/19/1999	7/30/2001	Completed - Published as Report 72		
A-23	Implementation Guidelines for Bus Rapid Transit Systems	\$250,000	\$249,980	Daniel, Mann, Johnson & Mendenhall (DMJM)	5/24/2000	5/1/2003	Completed - Published as Report 90, Volumes 1 and 2		
A-23A	Bus Rapid Transit Practitioner's Guide	\$300,000	\$300,000	Kittelson & Associates, Inc.	11/15/2003	9/30/2006	Completed - Published as Report 118 and Web-Only Document 39		
A-24	A Toolkit for Self-Service, Barrier-Free Fare Collection	\$250,000	\$249,921	Multisystems	8/30/2000	3/1/2002	Completed - Published as Report 80		
A-25	Fare Policies, Structures and Technologies: Update	\$250,000	\$249,939	Multisystems	7/1/2001	4/15/2003	Completed - Published as Report 94		
A-26	Smart Card Interoperability Issues for the Transit Industry	\$250,000	\$249,323	Acumen Building Enterprise	10/15/2003	4/30/2006	Completed - Published as Report 115		
A-27	Shared Use of Railroad Infrastructure With Non-Compliant Public Transit Rail Vehicles: A Practitioner's Guide	\$200,000	\$198,564	Booz-Allen & Hamilton	8/31/2005	9/30/2008	Completed - Published as Report 130		
A-28	Guidebook for Mitigating Fixed-Route Bus-and-Pedestrian Collisions	\$250,000	\$250,000	Science Applications International Corporation	11/2/2005	9/15/2007	Completed - Published as Report 125		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
A-29	Controlling System Costs: Basic and Advanced Scheduling Manuals and Contemporary Issues in Transit Scheduling	\$375,000	\$375,000	Dan Boyle & Associates	7/31/2006	3/15/2009	Completed - Published as Report 135 and Web-Only Document 45		
A-30	Improving Pedestrian and Motorist Safety Along Light Rail Transit Alignments	\$300,000	\$300,000	iTrans Consulting, Ltd.	9/8/2006	6/30/2009	Completed - Published as Report 137 and Web-Only Document 42		
A-31	Transit, Call Centers, and 511: A Guide for Decision Makers	\$250,000	\$250,000	Battelle	12/15/2006	6/30/2009	Completed - Published as Report 134		
A-32	Operation of Light Rail Transit through Ungated Crossings at Speeds Over 35 MPH	\$295,000	\$294,924	Science Applications International Corporation	11/26/2008	12/31/2011	Completed - Published as Web-Only Document 53		
A-33	Communication with Vulnerable Populations: A Transportation and Emergency Management Toolkit	\$350,000	\$349,888	The Louis Berger Group, Inc.	8/27/2009	9/26/2011	Completed - Published as Report 150		
A-33A	Using Pictograms to Make Transit Easier to Navigate for Customers with Communication Barriers	\$100,000	\$99,887	The Louis Berger Group, Inc.	12/6/2011	9/30/2012	Completed - Published as Web-Only Document 59		
A-34	Improving Safety-Related Rules Compliance in the Public Transportation Industry	\$350,000	\$350,000	Foster-Miller, Inc.	9/30/2009	9/1/2011	Completed - Published as Report 149		
A-35	Improving Safety Culture in Public Transportation	\$500,000	\$500,000	Sam Schwartz Engineering	12/15/2010	10/1/2014	Completed - Published as Report 174		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
A-36	Command-Level Decision Making for Transit Emergency Managers	\$435,000 \$225,829 (NCHRP) \$155,000 \$220,000 (NCHRP) \$360,000 (NCHRP) \$50,000 (TCRP)	\$685,551	Engineering & Computer Simulations	11/1/2010	6/30/2021	Completed - Initial Research Published as Web-Only Document 60; Final Report published as TCRP Web-Only Document 75/NCHRP Web-Only Document 321/ACRP Web-Only Document 52	R. Lyons R. Chen	
A-36A	Transportation Emergency Response Application (TERA): Migration Options Beyond 2020	\$25,000 \$50,000 (ACRP)	\$0				In Development. ACRP co-funded with \$50,000 under ACRP A04-29.		S. Parker
A-37	Paratransit Emergency Operations and Preparedness Handbook	\$350,000	\$350,000	BCG Transportation Group	11/4/2010	6/30/2012	Completed - Published as Report 160		
A-38	Guidebook on Pedestrian Crossings of Public Transit Rail Services	\$250,000	\$250,000	Texas A&M Transportation Institute	2/1/2013	11/30/2014	Completed - Published as Report 175 and Web-Only Document 63		
A-39	Improving Transportation Network Efficiency Through Implementation of Transit-Supportive Roadway Strategies	\$300,000	\$300,000	Kittelson & Associates	1/31/2013	10/31/2015	Completed - Published as Report 183 and Web-Only Document 66		
A-40	Manual to Improve Rail Transit Safety at Platform/Train and Platform/Guideway Interfaces	\$275,000	\$274,431	Oregon State University	12/20/2013	5/31/2016	Completed - Published as Report 189		P. Centolanzi
A-41	Improving the Resiliency of Transit Systems Threatened by Natural Disasters	\$350,000	\$349,961	Louis Berger Group, Inc.	2/24/2015	5/31/2017	Completed - Published as Web-Only Document 70		N. Chung A. Schildge
A-42	Minutes Matter: A Guide to Bus Transit Service Reliability	\$250,000	\$250,000	Parsons Brinckerhoff	1/4/2016	12/31/2018	Completed - Published as Report 215		E. Papetti

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
A-43	Recent Decline in Public Transportation Ridership: Analysis, Causes, Responses	\$400,000	\$400,000	Georgia Tech Research Corporation	1/17/2019	5/28/2021	Completed. Published as TCRP Report 231 and TCRP Web Only-Documents 74.	R. Bartlett	
A-44	Mitigation Strategies for Deterring Trespassing on Transit Rail Rights-of-Way	\$250,000	\$250,000	Texas A&M Transportation Institute	3/25/2019	11/5/2021	Completed. Released as TCRP Report 233 Volume 1 & 2	G. Good S. Schuster	
A-45	Measuring and Managing Fare Evasion	\$150,000	\$150,000	Four Nine Technologies	10/15/2019	6/30/2021	Completed. Released as Pre-Publication of TCRP Report 234.	M. Kane	S. Parker
A-46	Quantitative Procedures for Designing and Operating Ferry Transit Services	\$100,000	\$0	KPFF, Inc.	12/29/2020	7/30/2022	Completed. Pre-published as TCRP Research Report 238.	S. Truong V. Williams	D. Schwager
A-47	Transit Capacity and Quality of Service Manual, 4th Edition	\$400,000	\$0				In Development		D. Schwager
A-48	Mitigation Strategies for Deterring Transit Assaults	\$250,000	\$0				In Development		M. Garcia-Colberg
B : SERVICE CONFIGURATION									
B-01	Transit Operations for Individuals with Disabilities	\$200,000	\$344,969	EG&G Dynatrend	6/1/1993	3/31/1997	Completed - Published as RRD 1, Report 9, and Web-Only Document 2		
B-01A	Demonstration of Paratransit/Fixed-Route Feeder Service for ADA Compliance	\$240,000	\$240,000				FTA Demonstration - Cancelled		
B-02	A Handbook: Integrating Market Research into Transit Management	\$600,000	\$339,368	Northwest Research Group	7/1/1993	1/31/1996	Completed - Published as Report 37 and Web-Only Document 3		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
B-03	Workbook for Estimating Demand for Rural Passenger Transportation	\$200,000	\$199,685	SG Associates, Inc.	6/1/1993	2/28/1995	Completed - Published as Report 3		
B-04	Transportation Demand Management (TDM) Strategies	\$300,000	\$300,000	COMSIS Corp	6/15/1993	3/31/1996	Completed - Published as RRD 18 and Web-Only Document 22		
B-05	Guidebook for Attracting Paratransit Patrons to Fixed-Route Services	\$250,000	\$250,000	Bionetics Corp, Ketron Division	2/22/1994	3/21/1996	Completed - Published as Report 24		
B-06	Guidelines for Enhancing Suburban Mobility Using Public Transportation	\$300,000	\$274,993	Urbitran Assoc	12/1/1994	12/31/1996	Completed - Published as Report 55		
B-07	Strategies to Assist Local Transportation Agencies in Becoming Mobility Managers	\$300,000	\$299,952	Crain & Assoc	10/3/1994	8/31/1997	Completed - Published as Report 21		
B-08	A Guidebook for Marketing Transit Services to Business	\$150,000	\$149,985	Multisystems	1/15/1996	7/31/1998	Completed - Published as Report 51 and Web-Only Document 8		
B-09	A Handbook: Using Market Segmentation to Increase Transit Ridership	\$250,000	\$249,999	Northwest Research Group	5/1/1996	5/15/1998	Completed - Published as Report 36		
B-10	The Role of Passenger Amenities and Vehicle Characteristics in Building Transit Ridership: Amenities for Transit Handbook and the Transit Design Game Workbook	\$200,000	\$200,000	Project for Public Spaces	2/1/1996	11/30/1998	Completed - Published as Report 46		
B-11	A Handbook for Measuring Customer Satisfaction and Service Quality	\$200,000	\$200,000	M.O.R. PACE	1/2/1996	4/15/1998	Completed - Published as Report 47		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
B-12	Updating the Traveler Response to Transportation System Changes Handbook	\$300,000	\$300,000	Richard H. Pratt Consultant, Inc.	2/1/1997	11/5/1999	Completed - Published as Web-Only Document 12		
B-12A	Continuing Update of the	\$300,000	\$300,000	Richard H. Pratt	11/5/1999	12/31/2012	Completed - Published as Report 95 series		
B-12B	Traveler Response to	\$75,000		Assoc					
B-12C	Transportation Systems Changes Handbook	\$81,600							
B-13	A Handbook of Proven Marketing Strategies for Public Transit	\$150,000	\$150,000	Texas A&M Research Foundation	1/6/1997	10/6/1998	Completed - Published as Report 50		
B-14	Analyzing the Costs of Operating Small Transit Vehicles	\$150,000	\$149,503	KFH Group	8/1/1997	4/6/2000	Completed - Published as Report 61		
B-15	Characteristics of Urban Travel Demand	\$250,000	\$249,998	Cambridge Systematics	8/18/1997	9/30/2001	Completed - Published as Report 73		
B-16	The Role of the Private-for-Hire Vehicle Industry in Public Transit	\$250,000	\$249,990	North Carolina State U.	3/9/1998	7/30/2001	Completed - Published as Report 75 and CD-16		
B-17	Guidebook for Selecting Appropriate Technology Systems for Small Urban and Rural Public Transportation Operators	\$200,000	\$199,905	North Carolina State U.	4/20/1998	7/30/2001	Completed - Published as Report 76 and Web-Only Document 20		
B-18	Improving Public Transportation Access to Large Airports	\$150,000	\$150,000	Leigh Fisher Associates	12/14/1998	6/13/2000	Completed - Published as Report 62		
B-18A	Strategies for Improving Public Transportation Access to Large Airports	\$200,000	\$200,000	Leigh Fisher Associates	6/20/2000	5/17/2002	Completed - Published as Report 83		
B-19	Improving Public Transit Options for Older Persons	\$300,000	\$300,000	Westat, Inc.	10/4/1999	4/12/2002	Completed - Published as Report 82		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
B-20 B-20A	Enhancing the Visibility and Image of Transit in the United States and Canada	\$250,000 \$60,000	\$310,000	Wirthin Worldwide	7/15/1999	9/1/2000	Completed - Published as Report 63		
B-21	Effective Approaches to Meeting Rural Inter-city Bus Transportation Needs	\$150,000	\$99,957	KFH Group	9/27/1999	11/16/2001	Completed - Published as Report 79		
B-22	New Paradigms for Rural and Small Urban Transit Service Delivery	\$82,000	\$82,000	University of Arizona	5/31/2000	3/31/2002	Completed - See Project B-22A		
B-22A	Case Studies in New Paradigms for Rural and Small Urban Transit Service Delivery	\$18,000	\$17,995	KFH Group	6/30/2003	1/31/2004	Completed - Published as Report 99		
B-23	Resource Requirements For Demand-Responsive Transportation Services	\$250,000	\$249,971	Northwestern University	11/1/2000	10/1/2003	Completed - Published as Report 98		
B-24	Toolkit for Rural Community Coordinated Transportation Services	\$250,000	\$250,000	Westat, Inc.	8/20/2001	12/15/2003	Completed - Published as Report 101		
B-25	Guidebook for Evaluating, Selecting, and Implementing Suburban Transit Services	\$300,000	\$299,977	Urbitrans Associates, Inc.	11/1/2003	5/1/2006	Completed - Published as Report 116 and Web-Only Document 34		
B-26	Car-Sharing: Where and How It Succeeds	\$250,000	\$250,000	Nelson\Nygaard	10/10/2003	10/9/2005	Completed - Published as Report 108		
B-27	Cost Benefit Analysis of Providing Non-Emergency Medical Transportation	\$250,000	\$250,000	Altatum	12/30/2003	11/1/2005	Completed - Published as RRD 75 and Web-Only Document 29		
B-28	Improving ADA Complementary Paratransit Demand Estimation	\$250,000	\$250,000	Nelson\Nygaard	8/24/2004	3/31/2007	Completed - Published as Report 119		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
B-28A	Improving ADA Paratransit Demand Estimation: Regional Modeling	\$330,000	\$330,000	Nelson/Nygaard	5/15/2008	4/30/2012	Completed - Published as Report 158		
B-29	Leveraging ITS Data for Transit Market Research: A Practitioner's Guidebook	\$200,000	\$200,000	Portland State University	2/3/2005	11/30/2007	Completed - Published as Report 126		
B-30	Toolkit for Integrating Non-Dedicated Vehicles in Paratransit Service	\$250,000	\$249,921	Nelson/Nygaard	9/1/2004	10/1/2007	Completed - Published as Report 121		
B-31	Guidebook for Measuring, Assessing, and Improving Performance of Demand-Response Transportation	\$250,000	\$250,000	KFH Group	9/8/2005	9/15/2007	Completed - Published as Report 124		
B-31A	Guidebook for Rural Demand-Response Transportation: Measuring, Assessing, and Improving Performance	\$150,000	\$150,000	KFH Group	9/30/2007	8/31/2009	Completed - Published as Report 136		
B-32	Understanding How to Motivate Communities to Support and Ride Public Transportation	\$300,000	\$324,542	SRBI	9/29/2005	10/30/2007	Completed - Published as Report 122		
B-33	Practical Measures to Increase Transit Industry Advertising Revenues	\$285,000	\$285,000	Denneen & Company	3/19/2007	2/15/2009	Completed - Published as Report 133		
B-34	Resource Guide for Commingling ADA and Non-ADA Paratransit Riders	\$300,000	\$300,000	TransSystems, Inc.	8/30/2006	9/30/2010	Completed - Published as Report 143		
B-35	A Guide for Planning and Operating Flexible Public Transportation Services	\$300,000	\$300,000	DMP Group	8/16/2007	3/30/2010	Completed - Published as Report 140		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
B-36	Methods for Forecasting Demand and Quantifying Need for Rural Passenger Transportation: Final Workbook	\$300,000 \$300,000	\$599,180	Vanesse Hangen Brustlin, Inc.	12/4/2007	9/30/2012	Completed - Published as Report 161 and Web-Only Document 58		
B-37	Estimation of Demand for Rural Intercity Bus Services	\$200,000	\$199,411	KFH Group, Inc.	12/11/2007	3/31/2011	Completed - Published as Report 147		
B-38	Guidelines for Providing Access to Public Transportation Stations	\$500,000	\$489,288	Kittelison & Assoc	9/17/2008	10/1/2011	Completed - Published as Report 153; Literature Review Published as Web-Only Document 44		
B-39	Audience Measurement for Transit Advertising	\$350,000	\$350,000	People Count	12/1/2009	5/1/2012	Completed - Published as Web-Only Document 57		
B-40	Strategy Guide to Enable and Promote the Use of Fixed-Route Transit by People with Disabilities	\$300,000	\$300,000	TransSystems	9/30/2011	1/30/2014	Completed - Published as Report 163		
B-41	Travel Training for Older Adults: A Handbook	\$300,000	\$300,000	Westat, Inc.	11/4/2011	1/31/2014	Completed - Published as Report 168, Parts I and II		
B-42	Community Tools to Improve Transportation Options for Veterans, Military Service Members, and Their Families	\$200,000	\$200,000	KFH Group	4/13/2012	2/1/2014	Completed - Published as Report 164		
B-43	Use of Web-Based Rider Feedback to Improve Public Transit Services	\$250,000	\$250,000	Georgia Tech Research Corporation	1/11/2013	4/1/2015	Completed - Published as Report 179		
B-44	Impact of the Trend Toward Separate Statewide Medicaid Transportation Brokerages on Human Service Transportation	\$300,000	\$300,000	Texas A&M Transportation Institute	1/10/2014	3/31/2018	Completed - Published as Report 202	R. Opsteiten	

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
B-45	Transportation to Dialysis Centers: Health/Transportation Policy Intersection	\$350,000	\$350,000	KFH Group, Inc.	12/3/2016	10/30/2018	Completed - Published as Report 203	D. Nelson	
B-46	Tactile Wayfinding in Transportation Settings for Travelers who are Blind or Visually Impaired	\$215,740 \$384,260 (NCHRP)	\$600,000	University of North Carolina - Chapel Hill	2/26/2019	7/31/2023	Research in Progress. Supplemental funding request to NCHRP pending.	P Butler D. Golba	S. Parker
B-47	Impact of Transformational Technologies on Underserved Populations (NCHRP)	\$250,000 \$450,000 (NCHRP) \$250,000 (NCHRP)	\$250,000	Texas A&M Transportation Institute	11/5/2019	3/1/2023	Research in Progress	B. Graves M. Veltri	S. Parker
B-48	The Provision of Alternative Services by Transit Agencies: The Intersection of Regulation and Program Objectives	\$350,000	\$350,000	KFH Group, Inc.	10/14/2020	10/14/2022	Research Completed.	B. Graves T. Scotton	M. Garcia-Colberg
B-49	Improving Public Transportation in Rural Areas and Tribal Communities	\$100,000	\$600,000	KFH Group, Inc.	8/27/2021	2/27/2024	Research in Progress. This project is jointly funded by NCHRP and has a total budget of \$600,000. It is being managed as NCHRP 08-147.	J. Day M. Naqvi	D. Schwager
B-50	Public Transportation Information Systems for Riders with Vision Disabilities	\$350,000	\$0				In Development		M. Garcia-Colberg
C : ENGINEERING OF VEHICLES AND EQUIPMENT									
C-01	Personal Mobility Aid Securement and Passenger Restraint on Transit Vehicles	\$300,000	\$299,971	Cleveland Clinic Foundation	7/15/1993	1/13/1996	Completed - Not Published		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
C-02	Applicability of Low-Floor Light Rail Vehicles in North America	\$200,000	\$198,497	Booz-Allen & Hamilton	6/8/1993	1/31/1995	Completed - Published as Report 2		
C-03	Wheel/Rail Noise Control Manual	\$300,000	\$300,000	Wilson, Ihrig & Assoc	3/1/1994	10/15/1996	Completed - Published as RRD 19 and Report 23		
C-03A	Wheel and Rail Vibration Absorber Testing and Demonstration	\$300,000	\$300,000	Wilson, Ihrig & Assoc	9/1/1997	10/31/2000	Completed - Published as Report 67		
C-04	Procurement Specification Guidelines for Mass Transit Vehicle Windows Glazing	\$200,000	\$199,875	U of Dayton	9/26/1994	3/25/1996	Completed - Published as RRD 9 and Report 15		
C-05	Impact of Radio Frequency Refarming on Transit Communications	\$125,000	\$142,151	Arthur D Little	9/26/1994	12/31/1995	Completed - Published as Report 11		
C-06	Improved Methods for Increasing Wheel/Rail Adhesion in the Presence of Natural Contaminants	\$150,000	\$150,000	Tranergy Corp	12/1/1994	8/15/1996	Completed - Published as RRD 17		
C-06A	Demonstration of Improved Methods for Increasing Wheel/Rail Adhesion in the Presence of Natural Contaminants	\$262,000	\$18,820	Vincent Terrill	11/1/1997	6/30/1998	Scoping Study Completed. Demonstration Project Cancelled.		
C-07	Technology Assessment of Refueling-Connection Devices for CNG, LNG, and Propane	\$150,000	\$149,989	SAIC	3/15/1996	9/14/1997	Completed - Published as RRD 25		
C-08	Evaluating Fuel Choices for Transit Bus Operations	\$150,000	\$150,000	ARCADIS Geraghty & Miller, Inc.	4/1/1996	3/15/1998	Completed - Published as Report 38		
C-09	Paratransit Vehicle Specifications and Related Special Maintenance Requirements	\$250,000	\$250,000	Bionetics Corp, Ketron Division	2/1/1996	10/31/1999	Completed - ParaSPEC Software Developed		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
C-10A	Understanding and Applying Advanced On-Board Bus Electronics	\$170,000	\$170,000	John J. Schiavone, Technical & Corporate Communications	6/16/1997	10/15/1998	Completed - Published as Report 43		
C-10B	Hybrid Electric Transit Buses: Status, Benefits, and Issues	\$45,000	\$44,585	Northeast Alternative Vehicle Consortium	6/15/1999	2/15/2000	Completed - Published as Report 59		
C-10C	New Designs and Operating Experiences with Low-Floor Transit Buses	\$35,000	\$35,000	Rolland King	7/1/1997	4/30/1998	Completed - Published as Report 41		
C-11	Alternative-Fuel Transit Bus Hazard Assessment Model	\$300,000	\$299,921	SAIC	12/1/1997	12/31/2000	Completed - Published as RRD 39 and CD-4		
C-12	Standard Technical Specifications for 35/40-Foot Low-Floor and CNG Transit Buses	\$269,000	\$269,000	American Public Transportation Association	9/1/1998	6/30/2001	Completed - Specifications published by APTA		
C-13	30-Foot Transit Bus Technical Specification	\$92,000	\$92,000	American Public Transportation Association	9/14/2000	6/30/2002	Completed - Specifications published by APTA		
C-14	Technical Assistance for Development of Transit Bus Standards	\$125,000 (01) \$250,000 (02) \$250,000 (03) \$250,000 (04) \$250,000 (05) \$150,000 (06)	\$1,275,000	American Public Transportation Association	10/1/2001	9/30/2008	Completed - Standards published by APTA		
C-15	Assessment of Hybrid-Electric Transit Bus Technology	\$300,000	\$300,000	West Virginia University	12/20/2004	7/31/2009	Completed - Published as Report 132		
C-16	Center Truck Performance of Low-Floor Light Rail Vehicles	\$250,000	\$249,170	Interfleet Technology, Inc.	10/19/2004	4/18/2006	Completed - Published as Report 114		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
C-17	Development of Crash Energy Management Performance Requirements for Light-Rail Vehicles	\$300,000	\$299,990	Applied Research Associates, Inc.	9/22/2005	3/31/2008	Completed - Published as Web-Only Document 40		
C-18	Strategic Plan for Meeting Transit Industry Wireless Communication Needs	\$225,000 \$48,000 \$50,000	\$272,972	Science Applications International Corp.	10/22/2008	10/31/2012	Completed - Resources to APTA		
C-19	Guidebook for Evaluating Fuel Choices for Post-2010 Transit Bus Procurements	\$150,000 \$150,000	\$300,000	Science Applications International Corporation	11/15/2007	12/31/2010	Completed - Published as Report 146		
C-20	Use of Mobility Devices on Paratransit Vehicles and Buses	\$400,000	\$399,157	Oregon State University	11/4/2011	12/31/2013	Completed - Published as Report 171		
C-21	Positive Train Control (PTC) Radio Spectrum Planning for Passenger Commuter Rail Operators in the United States						Cancelled		
C-22	Bus Operator Workstation Design for Improving Occupational Health and Safety	\$275,000	\$275,000	Virginia Tech	1/15/2014	3/1/2016	Completed - Published as Report 185		
C-23	Assessing and Mitigating Electrical Fires on Transit Vehicles	\$150,000 \$150,000	\$300,000	TRC Engineering Services	1/5/2017	12/31/2020	Completed. Published as TCRP Report 229.	M. Belanger M. Nawn	
C-24	Traction Power Cables: Replacement Guidelines	\$250,000	\$250,000	Eastern Michigan University	4/15/2019	1/31/2022	Completed. Publication Pending.	M. Smith	S. Parker
C-25	Bus Operator Barrier Design	\$350,000	\$350,000	Virginia Polytechnic Institute and State University	1/18/2022	7/18/2023	Research in Progress	J.Y. E-Hamri	S. Parker

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
D : ENGINEERING OF FIXED FACILITIES									
D-01	Rail Corrugation Mitigation in Transit	\$500,000	\$270,000	Assoc of American Railroads	8/22/1994	11/30/1997	Completed - Published as RRD 26		
D-02	Derailment of Transit Vehicles in Special Trackwork	\$400,000	\$399,956	Zeta-Tech Assoc	4/1/1994	6/30/1996	Completed - Published as RRD 15		
D-03	Tunnel Track Reconstruction Methods Using Precast Concrete Systems	\$450,000	\$30,895	Louis Berger & Assoc	6/1/1994	12/31/1994	Terminated		
D-03A	Tunnel Track Reconstruction Methods Using Precast Concrete Systems	\$39,921	\$39,921	Thomas Dyer	9/1/1995	12/31/1996	Completed - Not Published		
D-04	Reducing the Visual Impact of Overhead Contact Systems	\$100,000	\$100,000	Urbitran Assoc	12/15/1993	5/31/1995	Completed - Published as Report 7		
D-05	Performance of Direct-Fixation Track Structure: Design Guidelines and Software	\$300,000	\$300,000	Battelle Memorial Inst	2/23/1995	6/22/1999	Completed - Published as CD-3		
D-06	Track Design Handbook for Light Rail Transit	\$350,000	\$350,000	Parsons Brinckerhoff, Quade, & Douglas	1/2/1996	8/30/1999	Completed - Published as Report 57		
D-07	Joint Rail-Related Research with the Association of American Railroads/TTCI	\$250,000 (99) \$200,000 (00) \$150,000 (02) \$150,000 (03) \$50,000 (04) \$150,000 (05) \$150,000 (07) \$200,000 (09) \$476,896 (11) \$250,000 (15)	\$1,776,896	Transportation Technology Center, Inc.	10/28/1999	6/30/2022	Continuing Project - See Table 5	T. Williams	S. Parker

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
D-08	Improving Pedestrian Safety at Unsignalized Roadway Crossings	\$275,000 (TCRP) \$275,000 (NCHRP)	\$550,000	Texas Transportation Institute	10/1/2002	3/6/2006	Completed - Published as Report 112 and Web-Only Document 30		
D-09	Transit Vehicles and Facilities on Streets and Highways	\$350,000	\$349,969	Parsons Brinckerhoff, Quade, & Douglas	11/1/2002	6/30/2007	Completed - Published by AASHTO		
D-10	Audible Signals for Pedestrian Safety in Light Rail Transit Environments	\$400,000	\$400,000	Korve Engineering	10/3/2003	1/31/2007	Completed - Published as RRD 84 and Web-Only Document 35		
D-11	Design, Operation, and Safety of At-Grade Crossings of Exclusive Busways	\$150,000	\$150,000	BMI - SG	9/29/2004	2/15/2007	Completed - Published as Report 117 and Web-Only Document 36		
D-12	Ground-Borne Noise and Vibration in Buildings Caused by Rail Transit	\$425,000	\$424,867	Acentech, Inc.	9/16/2005	12/31/2009	Completed - Published as Web-Only Document 48		
D-13	A Guide for Implementing Bus-on-Shoulder (BOS) Systems	\$200,000	\$200,000	Wilbur Smith Associates, Inc.	9/15/2006	4/30/2011	Completed - Published as Report 151		
D-14	Track Design Handbook for Light Rail Transit, Second Edition	\$300,000	\$300,000	PB Americas, Inc.	9/24/2009	11/30/2011	Completed - Published as Report 155		
D-15	Effective Practices for the Protection of Transportation Infrastructure from Cyber Incidents	\$150,000 (TCRP) \$150,000 (NCHRP)	\$300,000	Countermeasures Assessment and Security Experts, LLC	5/2/2013	12/31/2015	Completed - Published as Web-Only Document 67		
D-16	Improving the Safety and Sustainability of Stray Current Control of DC-Powered Rail Transit Systems	\$350,000	\$349,921	Corrpro Companies, Inc.	2/16/2012	8/31/2018	Completed - Published as Report 212		R. Chen

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
D-17	Detecting and Mitigating Low-Level DC Leakage and Fault Currents in Transit Systems	\$250,000	\$250,000	University of Akron	10/24/2014	9/30/2017	Completed - Published Report 211	T. Williams	
D-18	A Transit Agency Guide to Evaluating Secondary Train Detection/Protection Systems in Communications-Based Train Control (CBTC) Systems	\$200,000	\$197,624	CH2M Hill	2/5/2016	7/3/2017	Completed - Published as Web-Only Document 71	P. Centolanzi	
D-19	Detecting and Mitigating Low-Level DC Fault Currents in Transit Systems (Phase II of TCRP Project D-17)	\$250,000	\$250,000	The University of Akron	3/2/2022	3/2/2024	Research in Progress	P. Centolanzi T. Williams	S. Parker
D-20	Insulated Joint Failure Investigation Mitigation	\$250,000	\$0				In Development	J. Thompson A. Medero	S. Parker
D-21	Planning for the Future of Intermodal Passenger Facilities: Guide and Decision-Making Framework	NCHRP \$200,000 ACRP \$150,000 TCRP \$1-00,000	\$100,000	Nelson/Nygaard Consulting Associates, Inc.	4/6/2022	10/5/2023	Research in Progress	N. Conroy M. McGill	D. Schwager
D-22	Evaluating Frog Design to Minimize Noise and Vibration and Improve Life-Cycle Costs	\$300,000	\$0				In Development	M. Lechuga M. Nawn	S. Parker
E : MAINTENANCE									
E-01	Leveraging Information for Better Transit Maintenance	\$350,000 \$150,000	\$349,890	RAND Corp	9/1/1993	11/30/1995	Completed - Published as RRD 13		
E-02	Artificial Intelligence Technology for Transit Railcar Diagnostics	\$150,000	\$149,597	ANSTEC	5/17/1993	6/16/1994	Completed - Published as Report 1		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
E-02A	Demonstration of Artificial Intelligence Technology for Railcar Diagnostics	\$200,000	\$199,947	ANSTEC	2/27/1997	10/31/1998	Completed - Published as Report 44		
E-03	A Desk Guide for Inventory Managers in the Transit Industry	\$150,000	\$150,000	Klick, Kent, & Allen, Inc.	12/1/1993	7/31/1995	Completed - Published as RRD 28 and Web-Only Document 4		
E-03A	Revised Inventory Management Desk Guide	\$150,000	\$150,000	Draycott Consulting	10/1/1997	3/31/2000	Completed - Published as RRD 40 and Web-Only Document 17		
E-04	Guidelines for the Development of Public Transportation Facilities and Equipment Management Systems	\$200,000	\$200,000	Parsons Brinckerhoff, Quade, & Douglas	6/10/1994	9/30/1995	Completed - Published as Report 5		
E-05	Guidebook for Developing and Sharing Transit Bus Maintenance Practices	\$300,000	\$300,000	Transit Resource Center	9/26/2003	7/15/2005	Completed - Published as Report 109		
E-06	Transit Bus Mechanics: Building for Success - The ASE Transit Bus Maintenance Certification Test Series	\$450,000 (04) \$300,000 (05) \$300,000 (07) \$275,000 (08)	\$845,608	National Institute for Automotive Service Excellence (ASE)	8/1/2004	6/30/2012	Completed - 8 ASE Transit Bus Tests Now Offered		
E-07	Establishing a National Transit Industry Rail Vehicle Technician Qualification Program: Building for Success	\$400,000 (08) \$400,000 (09) \$400,000 (10) \$200,000 (11) \$500,000 (12)	\$1,900,000	Transportation Learning Center	7/18/2008	3/1/2014	Completed - Published as Report 170		
E-08	Extending and Deepening National Transit Training Standards	\$250,000	\$250,000	Transportation Learning Center (TLC)	7/14/2008	10/13/2009	Completed - Results Used by TLC		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
E-09	State of Good Repair: Prioritizing the Rehabilitation and Replacement of Existing Capital Assets and Evaluating the Implications for Transit	\$150,000 (10)	\$150,000	Spy Pond Partners	10/6/2010	3/31/2012	Completed - Published as Report 157		
E-09A	Guidance for Developing a Transit Asset Management Plan	\$350,000 (12)	\$350,000	Spy Pond Partners	9/25/2012	6/30/2014	Completed - Published as Report 172		
E-10	Maintenance Technician Staffing Levels for Modern Public Transit Fleets	\$300,000	\$300,000	EDSI Consulting	1/23/2013	7/30/2015	Completed - Published as Report 184		
E-11	The Relationship Between Transit Asset Condition and Service Quality	\$350,000	\$350,000	Spy Pond Partners	11/5/2015	3/30/2018	Completed - Published as Report 198	M. Schilling M. Smith	
E-12	Guidance for Calculating the Return on Investment in Transit State of Good Repair	\$300,000	\$300,000	Spy Pond Partners	10/21/2016	10/20/2018	Completed - Published as Report 206	E. Hu	
E-13	COVID-19 and Transit Air Quality Protections (Insight Event)	\$200,000	\$200,000	Versar	6/21/2022	6/22/2022	Completed, event proceedings to be posted online. Event held June 21 and June 22, 2022	M. Yousuf	M. Garcia-Colberg
E-14	Electric Bus Fire Prevention and Risk Management	\$350,000	\$0				In Development	M. Yousuf Minter	S. Parker
F : HUMAN RESOURCES									
F-01	Fitness-for-Duty Testing in the Transit Workplace	\$300,000 \$500,000	\$474,350	Battelle Memorial Inst	6/1/1993	10/31/1996	Completed - Not Published		
F-02	Innovative Labor-Management Practices	\$250,000	\$199,935	Mercer Management Consult	7/15/1993	10/31/1994	Completed - Not Published		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
F-03	A Quality Journey: A TQM Roadmap for Public Transportation	\$500,000	\$500,000	MacDorman & Assoc	5/10/1993	11/10/1995	Completed - Published as RRD 3 and Report 8		
F-04	Bus Operator Workstation Evaluation and Design Guidelines	\$250,000	\$250,000	Penn State U	5/11/1994	2/28/1997	Completed - Published as Report 25 and Web-Only Document 1		
F-05	Closing the Knowledge Gap for Transit Vehicle Maintenance Employees-- A Systems Approach	\$300,000	\$300,000	RAND Corp	10/10/1994	9/9/1996	Completed - Published as Report 29		
F-06	Guidelines for the Effective Use of Uniformed Transit Police/Security Personnel	\$400,000	\$399,490	Interactive Elements	12/12/1994	5/29/1997	Completed - Published as Web-Only Document 15		
F-06A	Guidelines for Collecting, Analyzing, and Reporting Transit Crime Data	\$175,000	\$150,000	Technology & Management Systems, Inc.	4/1/1998	3/31/2000	Completed - Published as RRD 41		
F-07	Part-Time Transit Operators: The Trends and Impacts	\$250,000	\$250,000	Charles River Assoc	10/15/1997	10/31/2000	Completed - Published as Report 68		
F-09	Managing Transit's Workforce in the New Millennium	\$250,000	\$250,000	McGlothin Davis, Inc.	2/1/2000	1/30/2002	Completed - Published as Report 77		
F-10	Toolbox for Transit Operator Fatigue	\$300,000	\$299,828	Foster-Miller, Inc.	10/15/2000	6/30/2002	Completed - Published as Report 81		
F-11	Positioning the Public Transportation Operating Agency as an Employer of Choice	\$300,000	\$299,705	Watson Wyatt Worldwide	9/12/2002	10/15/2003	Completed - Published as Report 103		
F-12	Employee Compensation Guidelines for Transit Providers in Rural and Small Urban Areas	\$300,000	\$300,000	KFH Group	9/27/2005	3/3/2008	Completed - Published as Report 127		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
F-13	Vehicle Operator Recruitment, Retention, and Performance in ADA Complementary Paratransit Operations	\$300,000	\$300,000	TranSystems	9/4/2007	1/30/2010	Completed - Published as Report 142		
F-14	Guidebook for Recruiting, Developing, and Retaining Transit Managers for Fixed-Route and Paratransit Systems	\$250,000	\$249,998	ICF, Inc.	9/12/2008	2/26/2010	Completed - Published as Report 139		
F-15	A Practical Guide for Recruiting Minorities for Chief Executive Officers at Public Transportation Agencies	\$250,000	\$249,945	Generator Group, LLC	12/5/2008	3/30/2011	Completed - Published as Report 148		
F-16	Building a Sustainable Workforce in the Public Transportation Industry - A Systems Approach	\$150,000	\$149,278	Transportation Learning Center	9/29/2010	3/28/2011	Completed - Results to F-16A		
F-16A	Building a Sustainable Workforce in the Public Transportation Industry - A Systems Approach	\$350,000	\$350,000	ICF, Inc.	9/30/2011	4/30/2013	Completed - Published as Report 162		
F-17	Developing Best Practice Guidelines for Improving Bus Operator Health and Retention	\$350,000	\$350,000	Transportation Learning Center	10/13/2011	11/30/2013	Completed - Published as Report 169		
F-18	Policing and Security Practices for Small- and Medium-Sized Transit Systems	\$150,000	\$150,000	Countermeasures Assessment and Security Experts, LLC	9/30/2011	11/13/2014	Completed - Published as Report 180		
F-19	A National Training and Certification Program for Transit Vehicle Maintenance Instructors	\$250,000	\$250,000	Transportation Learning Center	1/21/2013	10/31/2014	Completed - Published as Report 178		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
F-20	Labor-Management Partnerships in Public Transportation	\$300,000	\$300,000	AECOM Technical Services, Inc.	11/12/2012	8/15/2015	Completed - Published as Report 181, Volumes 1 and 2		
F-21	Tools and Strategies for Eliminating Assaults Against Transit Operators	\$300,000	\$300,000	Countermeasures Assessment & Security Experts LLC	12/13/2013	7/30/2017	Completed - Published as Report 193	J. Powell	
F-22	Identifying Best Practices and Sharing Resources for Transit Technical Training	\$300,000	\$300,000	ICF, Inc.	10/28/2015	3/30/2018	Completed - Published as Report 199, Vol. 1	B. Jackson	
F-23	Knowledge Management Resource to Support Strategic Workforce Development for Transit Agencies	\$300,000	\$300,000	ICF, Inc.	11/3/2015	8/30/2017	Completed - Published as Report 194	T. Dexter	
F-24	Overcoming Barriers to Implementing Best and Innovative Training Practices for Public Transportation's Frontline Workforce	\$300,000	\$300,000	ICF, Inc.	10/28/2015	3/30/2018	Completed - Published as Report 199, Vol. 2	B. Jackson	
F-25	Improving the Safety, Health, and Productivity of Transit Operators Through Adequate Restroom	\$300,000	\$300,000	Research Foundation of City University of New York	2/2/2017	1/30/2020	Completed - Published as Report 216	H. Jensen	
F-26	Improving the Health and Safety of the Transit Workforce with Corresponding Impacts on the Bottom Line: Medical Qualification, Health Care and Use of Rx/OTC	\$250,000	\$250,000	Econometrica, Inc.	11/15/2017	1/17/2020	Completed - Published as Report 217	K. Blacks	
F-27	Evaluation of Non-Punitive Employee Safety Reporting to Improve Transit Safety	\$100,000	\$100,000	USF CUTR	1/8/2019	4/30/2020	Completed - Published as Report 218	N. Sobhi C. LaMacchia	

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
F-28	Practitioner's Guide to Bus Operator Workforce Management	\$100,000+ \$100,000 (J-11) = 200,000	\$0	Eno Transportation	12/3/2020	12/2/2022	Research in Progress	B. Jackson	D. Schwager
F-29	Mental Health, Wellness, and Resilience for Transit System Workers	\$300,000	\$300,000	Rutgers University	12/21/2021	1/15/2023	Research in Progress	B. Jackson K. Osborne	M. Garcia- Colberg
F-30	Guide for Protecting Transportation Employees and the Traveling Public from Airborne Diseases	\$350,000	\$350,000	University of California, Riverside			Research in Progress (Jointly funded with NCHRP)		D. Schwager
G : ADMINISTRATION									
G-01	Information Technologies-- State-of-the-Art Applications for Transit Properties	\$100,000	\$100,000	Castle Rock Consultants	12/1/1993	5/31/1995	Completed - Not Published		
G-02	Bar Coding in Transit Operations and Maintenance	\$150,000	\$149,999	Telephonics Corp	11/15/1993	9/14/1995	Completed - Published as Web-Only Document 10		
G-03	Transit Risk Manager for Bus Systems	\$195,000	\$192,964	Risk Management Center	10/1/1994	5/31/1996	Completed - Published as RRDs 11 and 12; Risk Manager Software Developed		
G-04	Developing Standards for System and Subsystem Interfaces in Electric Rail Passenger Vehicles	\$200,000	\$200,000	Thomas J McGean	1/15/1996	10/1/1997	Completed - Project Continued as G-04A		
G-04A	Developing Standards for System and Subsystem Interfaces in Electric Rail Passenger Vehicles - Extension	\$275,000	\$755,148	Thomas J McGean	9/1/1997	2/28/2002	Completed - Published as RRD 44		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
G-04C	Developing Standards for System and Subsystem Interfaces in Electric Rail Passenger Vehicles - Transition to APTA	\$75,000	\$75,000	American Public Transportation Association	4/1/2002	7/31/2003	Completed - APTA Standards Published		
G-05	Management Toolkit for Small Urban and Rural Public Transportation Systems	\$250,000	\$249,896	KFH Group	2/1/1997	3/31/1999	Completed - Published as Report 54		
G-06	A Guidebook for Developing a Transit Performance-Measurement System	\$300,000	\$300,000	Kittelson & Associates	6/28/2001	11/28/2002	Completed - Published as Report 88 and RRD 56		
G-07	Managing Capital Costs of Major Federally Funded Public Transportation Projects	\$300,000	\$300,000	Booz, Allen & Hamilton	9/10/2003	12/1/2005	Completed - Published as RRD 78 and Web-Only Document 31		
G-08	A Guidebook for the Evaluation of Project Delivery Methods	\$300,000	\$300,000	Northeastern University	10/1/2006	10/31/2008	Completed - Published as Report 131 and Web-Only Document 41		
G-09	Sharing the Costs of Human Services Transportation	\$250,000	\$250,000	Westat, Inc.	10/15/2006	9/30/2010	Completed - Published as Report 144		
G-10	Estimating Soft Costs for Major Public Transportation Fixed Guideway Projects	\$300,000	\$300,000	AECOM Consult	8/24/2007	12/1/2009	Completed - Published as Report 138		
G-11	A Methodology for Performance Measurement and Peer Comparison in the Public Transportation Industry	\$300,000	\$300,000	Kittelson & Assoc	11/1/2007	3/1/2010	Completed - Published as Report 141		
G-12	Fuel Purchasing Strategies for Public Transit Agencies	\$300,000	\$299,997	Science Applications International Corporation	12/11/2009	3/2/2012	Completed - Published as Report 156		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
G-13	Developing an ITS Technology Web Portal for Transit System Leaders	\$100,000	\$99,993	Consensus Systems Technologies Corp.	11/15/2011	12/31/2015	Completed - Results to APTA		
G-14	Contracting Commuter Rail Services	\$300,000	\$300,000	Texas A&M Transportation Institute	2/18/2015	5/31/2018	Completed - Published as Report 200	S. Maia	
G-15	Public Transportation Resource for Small- and Medium-Sized P3 Initiatives	\$150,000	\$150,000	Parsons Brinckerhoff	9/25/2015	1/24/2017	Completed - Published as TCRP Report 191	T. Yedinak	
G-16	Development of Transactional Data Specifications for Demand-Responsive Transportation	\$250,000	\$250,000	Demand Trans Solution	11/16/2016	8/31/2019	Completed - Published as Report 210	M. Omay	
G-17	Assessing Lifecycle and Human Costs of Bus Operator Workstation Design and Components	\$250,000	\$250,000	Pennsylvania State University	7/17/2018	12/31/2022	Research in Progress	S. Pereira D. Spratling	S. Parker
G-18	Improving Access and Management of Transit ITS Data	\$350,000	\$349,873	EBP-US	2/27/2020	2/26/2022	Completed. Published as TCRP Report 235	G. Torng A. Valle	
H : POLICY AND PLANNING									
H-01	Transit and Urban Form	\$600,000	\$600,000	Parsons Brinckerhoff, Quade, & Douglas	6/10/1993	3/31/1996	Completed - Published as RRD 7 and Report 16		
H-02	Measuring and Valuing Transit Benefits and Disbenefits	\$300,000	\$300,000	Cambridge Systematics	5/26/1993	5/31/1996	Completed - Published as Report 20		
H-03	Strategies to Attract Auto Users to Public Transportation	\$300,000	\$300,000	Portland State U	5/2/1994	10/31/1996	Completed - Published as Report 40		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
H-04A	Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies that Influence It	\$250,000	\$250,000	Charles River Assoc	10/17/1994	10/16/1997	Completed - Published as Report 27		
H-04B	Transit Markets of the Future - The Challenge of Change	\$250,000	\$249,995	U of Arizona	2/1/1995	4/30/1997	Completed - Published as Report 28		
H-04C	Institutional Barriers to Intermodal Transportation Policies and Planning in Metropolitan Areas	\$250,000	\$249,998	Crain & Assoc	10/3/1994	6/30/1996	Completed - Published as Report 14		
H-04D	The Role of Transit in Creating Livable Metropolitan Communities	\$250,000	\$250,000	Project for Public Spaces	10/3/1994	7/31/1997	Completed - Published as Report 22		
H-04D(2)	Transit-Friendly Streets: Design and Traffic Management Strategies to Support Livable Communities	\$75,000	\$75,000	Project for Public Spaces	7/1/1996	7/31/1997	Completed - Published as Report 33		
H-04E	Sustainable Transportation	\$150,000	\$150,000	TRB Studies and Information Services Division	5/1/1994	12/31/1996	Completed - Published as TRB Special Report 251		
H-05	Research Agenda for Increasing Transit Ridership	\$200,000	\$54,828	N/A	11/18/1994	11/19/1994	Completed - Published as RRD 6		
H-06	Coordinated Intermodal Transportation Pricing and Funding Strategies	\$200,000	\$150,000	Multisystems	12/1/1994	6/30/1997	Completed - Published as RRD 14		
H-07	Funding Strategies for Public Transportation	\$200,000	\$199,836	Price Waterhouse	2/15/1996	12/31/1997	Completed - Published as Report 31		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
H-08	Using Public Transportation to Reduce the Economic, Social, and Human Costs of Personal Immobility	\$300,000	\$299,996	Crain & Assoc	2/12/1996	6/30/1999	Completed - Published as Report 49; Case Studies Published as Web-Only Document 7		
H-09	Economic Impact Analysis of Transit Investments: Guidebook for Practitioners	\$200,000	\$200,000	Cambridge Systematics	1/2/1996	12/1/1997	Completed - Published as Report 35		
H-10	Costs of Sprawl--2000	\$300,000	\$300,000	Rutgers U Center for Urban Policy Research	4/1/1996	4/30/2001	Completed - Interim Report Published as Report 39; Final Report Published as Report 74		
H-11	Assessment of the Economic Impacts of Rural Public Transportation	\$250,000	\$250,000	Ecosometrics	1/15/1996	10/14/1997	Completed - Published as Report 34		
H-12	Integrated Urban Models for Simulation of Transit and Land-Use Policies: Guidelines for Implementation and Use	\$100,000	\$100,000	U of Toronto	6/1/1997	9/30/1998	Completed - Published as Report 48 and Web-Only Document 9		
H-13A	Consequences of the Interstate Highway System for Transit	\$125,000	\$125,000	Parsons Brinckerhoff, Quade, & Douglas	5/31/1996	12/31/1997	Completed - Interim Report Published as RRD 21; Final Report Published as Report 42		
H-13B	Trends in Single-Occupant Vehicle and Vehicle Miles of Travel Growth in the U.S.	\$125,000	\$125,000	Charles River Assoc	4/16/1996	10/16/1997	Completed - Published as RRD 30 and Web-Only Document 5		
H-14	Making Transit Work: Insight from Western Europe, Canada, and the United States	\$400,000	\$400,000	TRB Studies and Information Services	3/10/1997	12/30/2000	Completed - Published as TRB Special Report 257		
H-15	Projects to Support "Mobility for the 21st Century"	\$150,000	N/A				Completed - Workshop Conducted April 1997		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
H-15A	Guidebook for Developing Welfare-to-Work Transportation Services	\$300,000	\$300,000	Multisystems	5/11/1998	6/30/2000	Completed - Published as Report 64 and Web-Only Document 16		
H-16	A National Transit Industry Labor-Management Cooperation Program: New Paradigms for Labor-Management Relations in the Transit Industry of the 21st Century	\$150,000	\$75,000	Cornell University	8/6/1998	1/31/2002	Completed - Three Workshops Conducted		
H-17	New Forms of Labor/Management Cooperation: A Series of Meetings Leading to a Demonstration of Innovative Working Assignments	\$150,000					Cancelled		
H-19	Estimating the Benefits and Costs of Public Transit Projects: A Guidebook for Practitioners	\$200,000	\$250,000	Parsons, Brinckerhoff, Quade, & Douglas	3/23/1999	10/31/2001	Completed - Published as Report 78		
H-20	Using Geographic Information Systems (GIS) for Welfare to Work Transportation Planning and Service Delivery	\$125,000	\$124,970	Multisystems	10/19/1998	2/15/2000	Completed - Published as Report 60 and Web-Only Document 14		
H-21	Travel Matters: Mitigating Climate Change with Sustainable Surface Transportation	\$175,000	\$174,953	Center for Neighborhood Technology	6/7/2001	3/7/2003	Completed - Published as Report 93		
H-21A	Travel Matters: Mitigating Climate Change with Sustainable Surface Transportation	\$100,000	\$100,000	Center for Neighborhood Technology	6/7/2003	10/1/2004	Completed - Published as Web-Only Document 26		
H-22A	Evaluation of the National Transit Database	\$900,000		FTA Project with KPMG Peat Marwick	2/1/2000	5/31/2001	Completed - FTA Report Prepared		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
H-22B	Evaluation of the National Transit Database-TRB Committee	\$100,000	TRB Division B	8/1/2000	4/30/2001	Completed - Letter Reports Prepared			
H-22C	Implementation of the Redesignated National Transit Database	\$1,500,000	FTA Project			FTA Project - Completed			
H-23	Assessment of the Benefits of New Transit Investments vs. Investments in Existing Infrastructure	\$200,000	FTA Project			FTA Project - Completed			
H-24	Public Transit Board Governance Guidebook	\$150,000	Simon & Simon Research and Assoc.	10/11/2000	7/15/2002	Completed - Published as Report 85 and Web-Only Document 21			
H-24A	Public Transportation Board Effectiveness: A Self-Assessment Handbook	\$175,000	AECOM Consulting Transportation Group	1/13/2003	6/13/2004	Completed - Published as Report 104 and Web-Only Document 24			
H-25	Strategies for Increasing the Effectiveness of Commuter Benefits Programs	\$150,000	ICF Consulting, Inc.	10/13/2000	11/15/2002	Completed - Published as Report 87			
H-25A	Analyzing the Effectiveness of Commuter Benefit Programs	\$160,000	ICF Consulting, Inc.	4/8/2003	6/30/2005	Completed - Published as Report 107 and Web-Only Document 27			
H-26	Economic Benefits of Coordinating Human Service Transportation and Transit Services	\$150,000	Westat, Inc.	10/15/2000	4/15/2003	Completed - Published as Report 91			
H-27	Transit-Oriented Development in America: Experiences, Challenges, and Prospects	\$250,000	UC - Berkeley	9/1/2001	1/30/2004	Completed - Published as Report 102			
H-27A	Effects of TOD on Housing, Parking, and Travel	\$250,000	Parsons, Brinckerhoff, Quade, & Douglas	10/1/2004	4/30/2008	Completed - Published as Report 128			

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
H-28	Use of Archived AVL-APC Data to Improve Transit Performance and Management	\$300,000	\$300,000	Northeastern University	8/1/2001	4/30/2006	Completed - Interim Report Published as Web-Only Document 23; Final Report Published as Report 113		
H-29	A New Vision of Mobility: Guidance to Foster Collaborative Multimodal Decision Making	\$200,000 (TCRP)	\$350,000	TransManagement, Inc.	8/1/2001	10/28/2004	Completed - Published as Report 106		
H-30 H-30A	Strategies to Increase Coordination of Transportation Services for the Transportation Disadvantaged	\$200,000	\$200,000	TransSystems	7/16/2002	10/9/2004	Completed - Published as Report 105		
H-31	Understanding How Individuals Make Travel and Location Decisions: Implications for Public Transportation	\$350,000	\$350,000	TransSystems	10/22/2003	8/31/2007	Completed - Published as Report 123		
H-32	Elements Needed to Create High Ridership Transit Systems	\$300,000	\$300,000	TransSystems	11/4/2004	10/30/2006	Completed - Published as Report 111		
H-33A	State and National Transit Investment Analysis: Quick-Response Analyses for SAFETEA-LU Commission	\$100,000	\$100,000	Cambridge Systematics, Inc.	2/21/2006	12/30/2006	Completed - Results to APTA		
H-33B	State and National Transit Investment Analysis: Additional Analyses for AASHTO Bottom Line Report and Related APTA Reports	\$100,000	\$100,000	Cambridge Systematics, Inc.	10/16/2007	10/15/2008	Completed - Results to AASHTO and APTA		
H-34	Local and Regional Funding Mechanisms for Public Transportation	\$250,000	\$250,000	Cambridge Systematics, Inc.	8/8/2006	9/15/2008	Completed - Published as Report 129		
H-35	The Role of Transit in Emergency Evacuation	\$65,000	\$65,000	NAS/TRB	11/1/2006	7/31/2008	Completed - Published as TRB Special Report 294		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
H-36	Reinventing the Urban Interstate: A New Paradigm for Multimodal Corridors	\$400,000	\$349,984	Dowling Associates	10/26/2007	11/1/2010	Completed - Published as Report 145		
H-37	Characteristics of Premium Transit Services That Affect Choice of Mode	\$375,000 \$400,000	\$774,945	RSG, Inc.	12/28/2007	12/30/2013	Completed - Published as Report 166		
H-38	Developing, Enhancing and Sustaining Tribal Transit Services: A Guidebook	\$400,000	\$399,366	LSC Transportation Consultants, Inc.	9/30/2008	12/31/2011	Completed - Published as Report 154 and Web-Only Document 54		
H-39	Methodology for Determining the Economic Development Impacts of Transit Projects	\$400,000	\$400,000	Rutgers University	11/11/2008	6/23/2012	Completed - Published as Web-Only Document 56		
H-40	Guidelines for Ferry Transportation Services	\$200,000	\$199,286	Arup	10/30/2008	11/30/2011	Completed - Published as Report 152		
H-41	Assessing and Comparing Environmental Performance of Major Transit Projects	\$400,000	\$400,000	Cambridge Systematics, Inc.	12/24/2009	3/1/2012	Completed - Published as RRD 105 and Web-Only Document 55		
H-42	Making Effective Fixed - Guideway Transit Investments: Indicators of Success	\$400,000 \$100,000	\$500,000	University of California - Berkeley	11/19/2010	1/15/2014	Completed - Published as Report 167		
H-43	Transforming Public Transportation Institutional and Business Models	\$300,000	\$300,000	High Street Consulting Group	10/1/2010	10/31/2012	Completed - Published as Report 159		
H-44	Developing Partnerships Between Transportation Agencies and the Disability and Underrepresented Communities	\$75,000	\$74,955	Simon & Simon Research Associates	9/21/2010	9/30/2012	Completed - Published as RRD 107		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
H-45	Livable Transit Corridors: Methods, Metrics, and Strategies	\$400,000	\$400,000	CFA Consultants	1/20/2012	6/1/2016	Completed - Published as Report 187	A. Loui	
H-46	Quantifying Transit's Impact on GHG Emissions and Energy Use: The Land Use Component	\$400,000	\$400,000	ICF, Inc.	10/11/2011	12/1/2014	Completed - Published as Report 176		
H-47	Linking Transit Agencies and Land Use Decision-Making: Guidebook for Transit Agencies	\$300,000	\$300,000	Parsons Brinckerhoff	1/25/2012	10/24/2015	Completed - Published as Report 182		
H-48	Value Capture for Financing Transit						Cancelled		
H-49	Improving Transit Integration Among Multiple Transit Providers	\$300,000	\$299,783	Neison/Nygaard	1/2/2013	10/1/2014	Completed - Published as Report 173, Volumes I and II		
H-50	Local Economic Development Measurement Tool for Transit	\$150,000	\$150,000	Economic Research Development Group	2/11/2015	4/1/2016	Completed - Published as Report 186		
H-51	Understanding Changes in Demographics, Preferences and Markets for the Transit Industry	\$350,000	\$350,000	Resource Systems Group, Inc.	10/23/2015	4/30/2018	Completed -Published as Report 201	P. Mazurek J. Ryan	
H-52	Decision-Making Toolbox to Plan and Manage Park-and-Ride Facilities for Public Transportation	\$300,000	\$300,000	Texas A&M Engineering Experiment Station	2/1/2015	1/11/2017	Completed - Published as Report 192	K. Cervenka	
H-53	Tools for a Sustainable Transit Agency	\$300,000	\$300,000	ICF International, Inc	10/23/2015	3/30/2018	Completed - Published as Report 197	A. Quagliata	
H-54	Guide to Equity Analysis in Regional Transportation Planning Processes	\$300,000	\$200,000	ICF International, Inc	12/14/2016	8/31/2019	Completed- Published as Report 214, Vol. 1, Vol. 2	K. Cervenka	

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
H-55	Guidebook for Integrating Transportation and Health Care Services	\$200,000	\$200,000	KFH Group	10/16/2017	9/30/2020	Completed - Published as Report 223	D. Nelson J. Lynch	
H-56	Reinventing Transit Networks for a New Mobility Future	\$300,000	\$300,000	Foursquare Integrated Transportation Planning Inc	1/8/2019	7/7/2020	Completed - Published as Report 221	M. Omay K. Wood	
H-57	Guide to Joint Development for Public Transportation Agencies	\$400,000	\$400,000	AECOM	12/3/2018	6/2/2020	Completed - Published as Report 224	D.Schned J. Crocker	
H-58	Transit Prioritization Scoring Methodology in Metropolitan Planning Organization Programming	\$100,000	\$0	ERDG	3/29/2019	2/11/2021	Completed - Published as Report 227	R. Long	
H-59	Racial Equity, Black America, and Public Transportation	\$250,000	\$249,883	Thrivance Group LLC	11/15/2021	2/16/2023	Research in Progress. Pre-published as TCRP Report 236, Volume 1 (of 4)	S. Nelson M. Hopson	S. Parker
H-60	Lessons Learned from Covid-19: Strategies to Enhance Racial and Social Equity through Public Transportation as a Community Lifeline	\$350,000	\$350,000	WSP USA Inc.	11/1/2021	7/1/2023	Research in Progress	J. Bochicchio J. Howard	D. Schwager
H-61	Resilience and Emergency Response Planning for Zero-Emission Fleets	\$215,000	\$0				In Development	A. Brun L. Brennan	S. Parker

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
J : SPECIAL PROJECTS									
J-01	Dissemination and Implementation of TCRP Research Findings	\$400,000 (92) \$600,000 (94) \$250,000 (95) \$450,000 (96) \$696,000 (97) \$596,000 (98) \$666,600 (99) \$696,605 (00) \$691,600 (01) \$700,000 (02) \$696,000 (03) \$700,000 (04) \$736,000 (05) \$750,000 (06) \$775,000 (07) \$750,400 (08) \$756,000 (09) \$695,000 (10) \$720,700 (11) \$404,600 (12) \$313,650 (13) \$308,219 (14) \$420,000 (15) \$500,000 (16) \$450,000 (17) \$439,260 (18) \$414,841 (19) \$393,600 (20)	American Public Transportation Association	2/15/1993		Continuing Project	F. Hall	G. Chisholm	
J-02	TCRP Strategic Planning Process and Strategic Plan	\$50,000	\$50,000	Various	10/28/1992	12/31/1996	Completed		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
J-03	International Transit Studies Program	\$250,000 (92) \$250,000 (94) \$250,000 (95) \$325,000 (96) \$325,000 (97) \$200,000 (98) \$450,000 (99) \$325,000 (00) \$325,000 (01) \$325,000 (02) \$325,000 (03) \$325,000 (04) \$325,000 (05) \$325,000 (06) \$450,000 (07) \$425,000 (08) \$500,000 (09) \$500,000 (10) \$500,000 (11)	Various	2/1/1994	Project on Hold; Publications - RRDs 20, 22, 27, 31, 33, 36, 42, 47, 49, 53, 54, 58, 62, 64, 66, 68, 70, 71, 77, 81, 85, 87, 88, 89, 92, 95, 96, 101, 102, and 103	F. Hall	G. Chisholm		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
J-04	Innovations Deserving Exploratory Analysis--The Transit IDEA Program	\$500,000 (92) \$500,000 (94) \$400,000 (95) \$400,000 (96) \$500,000 (97) \$500,000 (99) \$500,000 (00) \$500,000 (01) \$200,000 (02) \$500,000 (03) \$500,000 (04) \$500,000 (05) \$500,000 (06) \$500,000 (07) \$560,000 (08) \$560,000 (09) \$560,000 (10) \$560,000 (11) \$460,000 (12) \$300,000 (13) \$300,000 (14) \$560,000 (15) \$360,000 (16) \$585,000 (17) \$425,000 (18) \$200,000 (19) \$205,000 (20) \$210,000 (21)		Transportation Research Board	12/1/1992		Continuing Project; See Table 6	R. Opstelten	V. Basemera- Fitzpatrick
J-04A	Plans for Tracking IDEA and Developing Transit IDEA Marketing and Communications	\$40,000	\$40,000	Eastern Research Group	7/1/2019	11/30/2019	Completed - Posted to the Web	R. Opstelten	

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
J-05	Legal Aspects of Transit and Intermodal Transportation Programs	\$150,000 (92) \$175,000 (94) \$300,000 (95) \$150,000 (96) \$175,000 (97) \$300,000 (99) \$120,000 (00) \$150,000 (01) \$150,000 (02) \$100,000 (03) \$25,000 (04) \$150,000 (05) \$250,000 (06) \$250,000 (07) \$250,000 (08) \$250,000 (09) \$250,000 (10) \$300,000 (11) \$200,000 (12) \$150,000 (13) \$250,000 (14) \$250,000 (15) \$125,000 (16) \$250,000 (17) \$200,000 (18) \$150,000 (19) \$150,000 (20) \$150,000 (21)	Transportation Research Board	3/1/1993		Continuing Project; See Table 7 - Published as RRD 50	B. Graves	G. Chisholm	

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
J-06	TCRP Quick Response for Special Needs	\$100,000 (93) \$50,000 (94) \$329,139 (95) \$100,000 (96) \$175,000 (97) \$125,000 (98) \$535,887 (99) \$335,000 (00) \$75,000 (01) \$200,000 (02) \$150,000 (03) \$500,000 (04) \$150,000 (05) \$300,000 (06) \$150,000 (07) \$75,000 (08) \$250,000 (09) \$205,000 (10) \$150,000 (11) \$100,000 (13) \$100,000 (15) \$50,000 (16)	Various	11/1/1994	Continuing Project; See Table 8		To be determined		

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
J-07	Synthesis of Information Related to Transit Practices	\$1,800,000 (92-94) \$375,000 (95) \$375,000 (96) \$400,000 (97) \$200,000 (98) \$400,000 (99) \$400,000 (00) \$400,000 (01) \$375,000 (02) \$400,000 (03) \$500,000 (04) \$600,000 (05) \$600,000 (06) \$600,000 (07) \$600,000 (08) \$700,000 (09) \$755,000 (10) \$750,000 (11) \$650,000 (12) \$350,000 (13) \$550,000 (14) \$650,000 (15) \$750,000 (16) \$857,000 (17) \$870,000 (18) \$315,000 (19) \$315,000 (20) \$315,000 (21)	Transportation Research Board	12/1/1992	Continuing Project; See Table 9; Publications - RRDs 2, 8, 37, 48, 63, 67, 73, 80, 86, 91, 98, 104, 108, 110, 111, and 113	F. Hall	G. Chisholm		
J-08	New Paradigms for Public Transit	\$171,000 (96)				Completed			
J-08A	New Paradigms for Public Transportation: A Scoping Study	\$154,000 (96)	Eno Transportation Foundation	2/25/1997	2/24/1998	Completed - Future Search Held May 1997; Published as RRD 24			
J-08B/C	New Paradigms for Local Public Transportation Organizations	\$325,000 (97) \$400,000 (99)	Cambridge Systematics, Inc.	5/11/1998	9/30/2003	Completed - Task 1 Published as Report 53; Task 5 Published as Report 58; Phase III Issue Paper Published as RRD 55; Final Report Published as Report 97			

TABLE 4 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FTA Liaison(s)	Staff Officer
J-09	e-Transit: Electronic Business Strategies for Public Transportation	\$400,000 (00) \$175,000 (02) \$210,000 (03) \$100,000 (04) \$100,000 (05) \$100,000 (06)					Completed - Table 10		
J-10	Public Transportation Security Research	\$2,000,000 (02) \$400,000 (03) \$350,000 (04)					Completed - See Table 11		
J-11	Quick Response Research on Long-Term Strategic Issues	\$300,000 (07) \$300,000 (08) \$300,000 (09) \$75,000 (10) \$250,000 (11) \$200,000 (13) \$225,000 (15) \$100,000 (16) \$400,000 (17) \$400,000 (18) \$300,000 (19) \$300,000 (20) \$400,000 (21)						Continuing Project - See Table 12	D. Schwager

**TABLE 5 SUMMARY OF TCRP PROJECT D-7 STATUS THROUGH DECEMBER 31, 2022
Joint Track-Related Research with the Association of American Railroads/Transportation Technology Center, Inc.**

No.	Title	Contract Amount	Contractor	Start Date	End Date	Status	Staff Officer
01	Broken Rail Detection	\$31,685	TTCI	10/28/1999	3/30/2001	Completed - Published in Report 71, Volume 1	
02	Transit Switch Design Evaluation (Phase I)	\$107,298	TTCI	10/28/1999	3/31/2002	Completed - Published in Report 71, Volume 2	
03	Wide-Gap Welding Techniques	\$40,119	TTCI	10/28/1999	7/31/2001	Completed - Published in Report 71, Volume 1	
04	Control of Wheel-Rail Friction	\$70,898	TTCI	10/28/1999	6/30/2001	Completed - Published in Report 71, Volume 1	
05	Guidelines for an Alternative Transit Switch Design	\$79,109	TTCI	3/7/2001	9/30/2005	Completed - Published as RRD 72	
06	Exothermic Welding of Heavy Electrical Cables to Rail	\$50,046	TTCI	3/7/2001	11/15/2003	Completed - Published in Report 71, Volume 3	
07	Friction Control Methods Used by the Transit Industry	\$106,700	TTCI	3/7/2001	1/31/2005	Completed - Published in Report 71, Volume 4	
08	Flange Climb Derailment Criteria & Wheel/Rail Profile Management and Maintenance Guidelines for Transit Operators	\$188,113	TTCI	7/17/2003	3/15/2005	Completed - Published in Report 71, Volume 5	
09	Applicability of AREMA Track Recommended Practices for Transit Agencies	\$25,170	TTCI	8/11/2003	5/15/2004	Completed - Published in Report 71, Volume 3	
10	Acoustic Rail-Break Detection Demonstration at MTA New York City Transit	\$49,000	TTCI	9/24/2003	11/30/2005	Completed - Published as RRD 76	
11	Direct-Fixation Track Design Specifications, Research, and Related Material	\$50,000	Laurence E. Daniels	5/6/2004	6/7/2005	Completed - Published in Report 71, Volume 6	
12	Use of Guard/Girder/Restraining Rail	\$40,619	TTCI	10/25/2005	9/30/2006	Completed - Published as RRD 82	
13	Performance and Testing Requirements for Portable Track Geometry Inspection Systems	\$35,275	TTCI	10/25/2005	12/15/2006	Completed - Published as RRD 83	
14	Rail Base Corrosion Detection and Prevention	\$74,110	TTCI	10/25/2005	3/15/2007	Completed - Published as Web-Only Document 37	
15	Design of Track Transitions	\$34,383	TTCI	10/25/2005	6/30/2006	Completed - Published as RRD 79	

TABLE 5 (continued)

No.	Title	Contract Amount	Contractor	Start Date	End Date	Status	Staff Officer
16	Guidelines for Guard/Restraining Rail Installation	\$63,500	TTCI	4/11/2008	6/30/2009	Completed - Published as Report 71, Volume 7	
17	Guidelines for Rail Base Inspection and Rail Condemnation Limits for Corrosion-Induced Material Loss	\$80,500	TTCI	4/11/2008	2/25/2009	Completed - Published as Web-Only Document 47	
18	Performance-Based Track Geometry, Phase 1	\$199,800	TTCI	12/2/2009	4/30/2011	Completed - Published as Web-Only Document 52	
19	Performance-Based Track Geometry, Phase 2	\$249,900	TTCI	1/12/2012	10/31/2014	Completed - Published as Web-Only Document 64	
20	Wheel Profile Maintenance Guidelines	\$233,196	TTCI	1/11/2012	10/31/2014	Completed - Published as Web-Only Document 65	
21	Performance-Based Track Geometry, Phase 3	\$150,000	TTCI	10/9/2018	9/30/2022	Research Completed. In Publication.	S. Parker

**TABLE 6 SUMMARY OF TCRP PROJECT J-4 STATUS THROUGH DECEMBER 31, 2022
Innovations Deserving Exploratory Analysis—The Transit IDEA Program**

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
IDEA 001	Customer Satisfaction Index for the Mass Transit Industry	Tri-County Metropolitan Transportation District of Oregon	8/1/1994	4/30/1995	Completed	
IDEA 002	Adoptive Diagnostic System Demonstration Project	San Francisco Bay Area Rapid Transit District	2/1/1995	9/2/1998	Completed	
IDEA 003	Automated Wheel Inspection Station	International Electronic Machines Corp.	8/1/1994	9/30/1995	Completed	
IDEA 004	Management Information Benefits of Integrating Electronic Fareboxes with Other On-Board Equipment	Northeastern University	8/15/1994	9/22/1995	Completed	
IDEA 005	Improved Passenger Counter and Classification System for Transit Applications	E. F. Greneker & Associates	10/15/1995	4/14/1996	Completed	
IDEA 006	Interactive Training with Video and Audio	Transit Engineering	10/1/1994	11/18/1995	Terminated	
IDEA 007	Wheelchair Restraint System	Baylor College of Medicine	10/1/1994	10/31/1995	Completed	
IDEA 008	Real-Time Transit Data Broadcast	Transcom International Ltd.	10/1/1994	9/30/1995	Completed	
IDEA 009	Independent Transportation Network (ITN): Alternative Transportation for the Elderly	Southern Maine Areas Agency on Aging	4/15/1995	8/31/1996	Completed	
IDEA 010	Automatic Data Collection on Transit Users Via Radio Frequency Identification (RF/ID)	Advanced Systems Group International	8/1/1995	6/30/1996	Completed	
IDEA 011	Compact Disc-Interactive Violence Prevention Training Program	San Francisco Municipal Railway	7/15/1996	2/29/2000	Completed	
IDEA 012	Transit and Intermodal Scheduling Using Expert Systems	Vertical Systems, Inc.	3/1/1997		Terminated	
IDEA 013	Interactive PC-Based Track Safety Training	TransTech Management	5/1/1996	7/27/1998	Completed	
IDEA 014	Instant Rent-A-Car Technology Applied to Transit Station Car Practice	C. F. International	9/1/1996	7/31/1998	Completed	
IDEA 015	Internet Information Sharing for Transit Maintenance	Kieman Transit Associates	9/1/1996	12/15/1997	Completed	

TABLE 6 (continued)

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
IDEA 016	Transit Restraint System for Wheelchairs	Cleveland Clinic Foundation	9/1/1996	12/31/2001	Completed	
IDEA 017	Pilot Testing of a Prototype Rail-Based Wheel Gauge Inspection System	International Electronic Machines Corp.	4/1/1997	8/30/1998	Completed	
IDEA 018	Pilot Testing Innovative Payment Operations for Independent Transportation for the Elderly	Independent Transportation Network	4/1/1997	10/31/2002	Completed	
IDEA 019	Transit Integrated Monitoring System: Operational Evaluation	University of Virginia	1/15/1998	1/15/1999	Completed	
IDEA 020	Non-Contact Sensor for Improved Passenger Counting and Classification System for Transit and Rail Applications	E.F. Greneker & Associates	12/1/1997	2/22/2001	Completed	
IDEA 021	Smart Parking Lot with Just-in-Time Shuttle	Oregon State University	10/1/1997	12/31/2001	Completed	
IDEA 022	Sleeved Column System for Crashworthiness of Light Rail Vehicles	Arthur D. Little, Inc.	12/31/1998	2/22/2001	Completed	
IDEA 023	Optimizing Travel Paths for People with Disabilities	Washington University	3/1/1998	10/1/1998	Terminated	
IDEA 024	Operational Testing of Innovative and Intelligent Rail Lubrication System	Tranenergy Corporation	1/1/1998	6/30/1998	Completed	
IDEA 025	Operating Policies for Improved Transit Productivities	Systan, Inc.	5/17/2000	7/16/2001	Terminated	
IDEA 026	Designing Transit Services for the Mode-Choice Market: Stage III Planning Tools and Processes	The Mission Group	6/30/2000	3/31/2005	Terminated	
IDEA 027	"Gap Guard" for Reducing the Gap Between Rail Platforms and Cars	Ultimate Technologies	12/17/1999	4/29/2002	Terminated	
IDEA 028	Transit Scratchitti Removal by Controlled Fire Polishing	Columbia University	2/2/2000	3/20/2002	Completed	
IDEA 029	Fare Machine Tactile/Audio Instruction System	KRW Inc.	9/25/2001	4/11/2003	Completed	
IDEA 030	Predictive Diagnostics for Bus Maintenance	Georgia Tech Research Institute	12/19/2001	7/1/2003	Terminated	

TABLE 6 (continued)

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
IDEA 031	A Tool for Evaluating and Optimizing Bus Stop Location Decisions	Northeastern University	12/12/2001	8/31/2006	Completed	
IDEA 032	Simulation and Animation Model for Planning and Designing Transit Facilities	TransAn	12/19/2001	11/23/2005	Completed	
IDEA 033	Community Visualization in Design of Light Rail Transit-Oriented Development	University of Kentucky	12/6/2001	9/30/2003	Completed	
IDEA 034	Mechanical Precision Docking System for Bus Rapid Transit	Greater Cleveland Regional Transit Authority	5/30/2002	6/30/2006	Terminated	
IDEA 035	Innovative Bioterrorism Detection Technology for Transit Security	Science Applications International Corporation	5/30/2003	8/8/2005	Completed	
IDEA 036	Cleaning Device for Electrified Third Rail Insulators	Arun Vohra	5/7/2003	10/25/2004	Completed	
IDEA 037	Bandwidth Expansion and Real-Time Surveillance for Security on Transit Buses	Carnegie-Mellon University	8/23/2003	5/20/2005	Completed	
IDEA 038	Assessment of Rear Facing Wheelchair Accommodation on BRT	Oregon State University	8/27/2003	1/6/2005	Completed	
IDEA 039	Dynamic Timetable Generator from Schedule Data	Systems & Solutions, Inc.	9/24/2003	1/31/2006	Completed	
IDEA 040	Counter Terrorism Chemical Detector for Rail Transit Vehicles	Connecticut Analytical Corporation	11/25/2003	12/28/2005	Completed	
IDEA 041	Track Geometry/Design Testing for Transit Applications	Trak-Tech Corporation	12/22/2003	6/18/2007	Completed	
IDEA 042	Detection of Radioactivity in Transit Stations	Advanced Fuel Research, Inc.	6/25/2004	10/20/2006	Completed	
IDEA 043	Portable Electronic Wheel Gauge	International Electronic Machines	12/30/2004	9/30/2008	Terminated	
IDEA 044	Cleaning and Recoating Electrified Third Rail Cover Boards	Arun Vohra	6/30/2005	12/31/2007	Completed	

TABLE 6 (continued)

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
IDEA 045	Chemical and Biological Decontamination System for Rail Transit Facilities	Foster Miller, Inc.	3/31/2005	12/29/2006	Completed	
IDEA 046	Toxic Industrial Chemical Detection for Rail Transit Systems	MESI, Inc.	9/30/2005	6/30/2007	Terminated	
IDEA 047	Cleaning Device for Electrified Third Rail Insulators - Phase 2	Arun Vohra	9/30/2005	12/20/2007	Completed	
IDEA 048	Biometric Notification Network for Transit Employees	Eyemetric Identity Systems	12/20/2005	4/30/2009	Terminated	
IDEA 049	Smart Sander Enhancement for Commuter Rail	AEA Technology Rail	12/30/2005	11/30/2007	Completed	
IDEA 050	Developing Regional Mobility Management Centers	Westat, Inc.	7/28/2007	3/30/2012	Completed	
IDEA 051	Bioterrorism Detection Technology for Transit Security - Phase 2	Science Applications International Corporation	10/20/2006	9/30/2008	Terminated	
IDEA 052	Travel Assist Device (TAD) to Help Transit Riders	University of South Florida	3/20/2007	1/31/2010	Completed	
IDEA 053	Ultraviolet Germicidal Irradiation for Transit Buses	JKA Company	5/29/2007	2/20/2009	Completed	
IDEA 054	Detection of Radioactivity in Transit Stations - Phase II	Advanced Fuel Research, Inc.	6/25/2007	10/30/2009	Completed	
IDEA 055	Warning Device for Rail Rapid Transit Personnel for Approaching Trains	Victoria Consultants, LLC	6/29/2007	12/10/2008	Completed	
IDEA 056A	Detection of Explosives and Weapons in Transit Systems	Systems Micro Technologies (Kirsen) Inc.	1/2/2014	2/1/2015	Completed	
IDEA 057	Independent Wheelchair Securement	Oregon State University	3/12/2008	12/30/2010	Completed	
IDEA 058	Google Transit Data Tool for Small Transit Agencies	PEMCO, Inc.	12/30/2008	3/28/2011	Completed	
IDEA 059	Recoating Electrified Third Rail Cover Boards - Phase 2	Arun Vohra	9/22/2009	6/30/2010	Completed	
IDEA 060	TCIP Traveler Information Pilot	Ayers Electronic Systems, LLC	12/15/2008	5/31/2011	Completed	

TABLE 6 (continued)

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
IDEA 061	Flexible Carpooling to Transit Stations	Trip Convergence Ltd.	12/22/2008	12/31/2012	Completed	
IDEA 062	Development of Electrical Maintenance Training Module for Bus Transit Technicians	CDX Global	10/23/2009	8/10/2012	Completed	
IDEA 063A	Improving Bus Transit On-Time Performance Through the Use of AVL Data	Pascal Systems, Inc.	9/30/2013	5/29/2014	Completed	
IDEA 064	Improved Crashworthiness of Rail Transit Vehicles Using Advanced Composite Structures	University of California, Davis	3/30/2010	12/31/2010	Terminated	
IDEA 065	A Context Aware Transit Navigator	University of Illinois at Chicago	6/30/2010	3/21/2013	Completed	
IDEA 066	Advanced Wayside Energy Storage Systems (WESS) for Rail Transit	Navigant Consulting, Inc.	11/8/2010	12/30/2011	Completed	
IDEA 067	Diesel - Electric Locomotive Energy Recovery and Conversion	ThermaDynamics Rail, LLC	9/20/2011	6/30/2014	Completed	
IDEA 068	Light Rail Transit/Street Grade Crossing Safety System	SIL4 Systems, Inc.	6/20/2011	1/10/2014	Completed	
IDEA 069	Predictive Failure Mode Characterization System for Rail Transit Car Equipment	Dayton T. Brown, Inc.	3/30/2012	11/30/2013	Terminated	
IDEA 070	Effortless Passenger Identification System	North Dakota State University	3/30/2012	7/31/2013	Completed	
IDEA 071	Transit Information Access for Persons with Visual or Cognitive Impairments	University of California, Santa Cruz	9/29/2012	5/15/2015	Completed	
IDEA 072	Noncontact Electronic Wheel Gauge	International Electronic Machines Corp.	3/26/2012	3/31/2014	Completed	
IDEA 073	Innovative Operating Strategies for Paratransit Services	Texas A&M University	8/30/2012	1/31/2014	Completed	
IDEA 074	Apparatus for Gap Management	Rutgers University	8/8/2013	11/15/2015	Completed	

TABLE 6 (continued)

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
IDEA 075	Transit Trip Planning Web Application	Resource Systems Group, Inc.	6/1/2013	11/1/2014	Completed	
IDEA 076	RideScout Mobile Application	RideScout, LLC	6/20/2013	9/30/2015	Completed	
IDEA 077	Development of a Prototype Retrofit Bumper for Improved Light Rail Vehicle (LRV) Safety	Applied Research Associates	1/27/2014	6/3/2015	Completed	
IDEA 078	Rail Neutral Temperature Monitoring	Protran Technology	1/27/2014	9/30/2015	Completed	
IDEA 079	Smartcard AFC in Small Transit Agencies	Acumen Building Enterprise	11/24/2014	10/14/2017	Completed	
IDEA 080	Enhancing Safety and Security of Transit Systems Using Computer Vision	Rutgers University	11/2/2015	10/14/2017	Completed	
IDEA 081	Advanced Locomotive Exhaust Gas Simulator to Fine-Tune Energy Recovery and Conversion Systems	ThermaDynamics Rail, LLC	1/12/2015	5/12/2016	Completed	
IDEA 082	Active Safety-Collision Warning Pilot in Washington State	Washington State Transit Insurance Pool (WSTIP)	1/19/2016	7/19/2017	Completed	
IDEA 083	Track Circuit Monitoring Tool: Standardization and Deployment at Chicago Transit	Rail IT, LLC	6/6/2016	11/30/2017	Completed	
IDEA 084	Deployment of a Mass-Based Automated Passenger Counter	University of Minnesota	11/2/2016	10/1/2019	Completed - Posted to the Web as Transit IDEA Final Report 84	
IDEA 085	Location AWARE Networks Optimization Use of Transit Systems by Blind Travelers	SVN, Inc	1/13/2017	2/5/2019	Completed - Posted to the Web as Transit IDEA Final Report 85	
IDEA 086	Advanced Neutral Temperature Estimation Using Solitary Waiver	University of Pittsburgh	4/27/2017	12/31/2018	Completed - Posted to the Web as Transit IDEA Final Report 86	
IDEA 087	Development of pathNav: A Pedestrian Navigation Tool that Utilizes Smart Data for Improved Accessibility and Walkability	Pathway Accessibility Solutions, Inc.	1/25/2018	6/30/2019	Completed - Posted to the Web as Transit IDEA Final Report 87	

TABLE 6 (continued)

No.	Title	Contractor	Start Date	End Date	Status	Staff Office
IDEA 088	Evaluation of an Automatic, Individual Computer-Based Operator Education and Training Program	Virginia Tech Transportation Institute	1/31/2018	3/20/2021	Completed - Posted to the Web as Transit IDEA Final Report 88	
IDEA 089	Dynamic Vehicle to Infrastructure TCIP Communications Laboratory Proof of Concept	Ayers Electronic Systems, LLC	3/30/2018	10/31/2019	Completed - Posted to the Web as Transit IDEA Final Report 89	
IDEA 090	sUAS-Based Geospatial Intelligence for Commuter Rail Parking in Rural and Suburban Areas	Harmon Consulting, LLC	6/11/2018	9/11/2019	Completed - Posted to the Web as Transit IDEA Final Report 90	
IDEA 091	Comprehensive Wayfinding for All (CWall)	Texas A&M Transportation Institute	6/13/2018	2/15/2022	The roject was terminated at Stage 1, as the contractor was unable to continue work beyond Stage 1 due to software development problems. The contractor was paid \$68,000, the Stage 1 amount.	I. Jaw
IDEA 092	Augmented Reality Transit Dispatcher Interface	MACRO, a Division of Ross & Baruzzini	1/24/2019	4/15/2021	Completed - Posted to the Web as Transit IDEA Final Report 92	
IDEA 093	An Open Platform for Transit Agencies to Improve the Quality of Their Real-Time Data	Interline Technologies, LLC	1/10/2019	9/30/2020	Completed - Posted to the Web as Transit IDEA Final Report 93	
IDEA 094	Evaluation of Transit Vehicle Brake Inspection Through Ultrasonic Emissions Analysis	BrakeAudit	5/30/2019	11/15/2020	Completed - Posted to the Web as Transit IDEA Final Report 94	
IDEA 095	Connected and Automated Parking Feasibility/MDOT MTA Dorsey Run Pilot Project	Maryland Department of Transportation	7/30/2019	12/31/2021	Completed - Posted to the Web as Transit IDEA Final Report 95	
IDEA 096	Multi-Stage Planning for Electrifying Transit Bus	University of South Florida	12/9/2019	10/31/2021	Completed - Posted to	

TABLE 6 (continued)

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
IDEA 097	Open Platform to Attract, Organize, and Coordinate Volunteers for Rural and Small Urban Transit	West Virginia University	2/12/2020	2/15/2023	Research in Progress	I. Jawed
IDEA 098	Safety Assessment of the Interaction Between the Autonomous Shuttle Bus and Vulnerable Road Users	Florida State University	10/26/2020	7/31/2022	Completed - Posted to the Web as Transit IDEA Final Report 98	
IDEA 099	Bike Love	Palo Alto Transportation Management Association (TMA)	2/8/2021	1/31/2023	Research in Progress	I. Jawed
IDEA 100	TrainMate Robotic Systems: Making Public Transportation Public	Infratek Solutions, Inc.	1/14/2022	3/31/2023	Research in Progress	I. Jawed
IDEA 101	Multimodal Transit with Citopia	Citopia	1/22/2022	3/31/2023	Research in Progress	I. Jawed

TABLE 7 SUMMARY OF TCRP PROJECT J-5 STATUS THROUGH DECEMBER 31, 2022
Legal Aspects of Transit and Intermodal Transportation Programs

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
01-01	Transit Labor Protection--A Guide to Section 13(c) Federal Transit Act	G. Kent Woodman, Esq., and Jane Sutter Starke, Esq., Eckert, Seamans, Cherin & Mellot	September 1993	Completed - Published as LRD 4	
01-02	Purchase of Service Agreements for Public Transportation Agencies (Transit)	Robert Weaver, Esq., Weaver & Preil	September 1994	Completed - Published as LRD 8	
01-03	Legal Issues Associated with Intermodalism	Russell Leibson, Esq., Carroll, Burdick & McDonough	June 1994	Completed - Published as LRD 5	
01-04	State Limitations on Tort Liability for Public Transit Operations	Larry W. Thomas, Esq., Cameron & Hornbostel	September 1993	Completed - Published as LRD 3	
01-05	Procurement and Funding Procedures Which Impact the Procurement of Expensive Long Lead Items	Kevin M. Sheys, Esq., Oppenheimer, Wolff & Donnelly	October 1994	Completed - Published as LRD 6	
01-06	Strategies to Facilitate Acquisition and Use of Right of Way	Kevin M. Sheys, Esq., Oppenheimer, Wolff & Donnelly	September 1993	Completed - Published as LRD 1	
01-07	Risk Management for Rideshare Carpool Matching Programs	Russell Leibson, Esq., Carroll, Burdick & McDonough	September 1993	Completed - Published as LRD 2	
02-01	Restriction of Speech and Related Activity at Transit and Terminal Facilities	Norman Y. Herring, et al.	September 1995	Completed - Published as LRD 10	
02-02	Reconciling ADA with Tort Liability Law	Robert Hirsh, Esq., Krukowski, & Costello	January 1996	Completed - Published as LRD 11	
03-01	Innovative Financing Techniques for Transit Providers	Mary A. Collins & Victor Hsu	March 1996	Completed - Published as RRD 13	
03-02	The Impact of Civil Rights Litigation on Transit Decisionmaking	Sandra Van de Walle	April 1996	Completed - Published as LRD 7	
03-03	Zoning and Real Property Implications of Transit-Oriented Development	Robert Freilich & S. Mark White	May 1996	Completed - Published as LRD 12	
03-04	Drug and Alcohol Testing - A Survey of Labor-Management Relations	Robert Hirsch, Esq., Krukowski & Costello	June 1996	Completed - Published as LRD 16	

TABLE 7 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
03-05	Strategies to Minimize Liability Under Federal and State Environmental Laws	G. Martin Cole, Rothberg & Logan	August 1996	Completed - Published as LRD 9	
04-01	The Impact of the Federal Wage, Hour, and Family Medical Leave Act on the Transit Industry	Lauri D'Auri	May 1998	Completed - Published as LRD 15	
04-02	Privacy Issues in Public Transportation	Mark McNulty, Special Counsel, State of Delaware	September 1997	Completed - Published as LRD 14	
05-01	Federal and State Licensing and Other Safety Requirements for Commercial Motor Vehicles, Operators and Equipment	Rex Nicholson Trans Tech Attorney	March 2000	Completed - Published as LRD 18	
05-02	A Survey of Joint Development Techniques	Mattie Condray	November 1999	Cancelled	
05-03	Guide to Federal Buy America Provisions	Jaye Pirshing Johnson	January 2000	Completed - Published as LRD 17	
05-04	A Compilation of Transit Laws	Paul Dempsey	January 2000	Completed - Published as CD-20/5	
06-01	Integrated Transit Operation and Maintenance and the Use of Private Contractors	John Brennan, Attorney-at-Law	October 2001	Cancelled	
06-02	Impact of the Americans with Disabilities Act on Transit Operations	Cross, Gunther, Witherspoon & Galchus, PC	July 2001	Completed - Published as LRD 19	
06-03	Transit Labor 13(c) Decisions	Shelly Brown Associates	June 2001	Completed - Published as CD-20/6	
07-01	Transit Passengers and Civil Rights	Larry Thomas	September 2003	Completed - Published as LRD 20	
07-02	State and Transit Authority Immunity from State Laws			Cancelled	
07-03	Transit Charter Bus Service: Decisions and Documents	Shelly R. Brown	March 2003	Completed - Published as CD-20/7	
08-01	Trademarking and Licensing for Transit Providers	Raju & Sarracino, LLC	September 2004	Completed - Published as LRD 21	
08-02	Innovative Financing Techniques for Transit Providers (Update)			Cancelled	
08-03	The Federal Transit Act as Amended Through August 10, 2005 and Related Laws	Jocelyn K. Waite Waite & Associates	January 2005	Completed - Published as Web-Only Document 33	

TABLE 7 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
08-04	FTA Interpretations - The Americans with Disabilities Act	Shelly R. Brown	January 2005	Completed - Published as LRD 23	
09-01	Privacy Issues with the Use of Smart Cards	Paul Dempsey	May 2006	Completed - Published as LRD 25	
09-02	Use of Fees or Alternatives to Fund Transit	Jaye Pershing Johnson	September 2006	Completed - Published as LRD 28	
09-03	Application of Physical Ability Testing to Current Workforce of Transit Employees	Jocelyn K. Waite Waite & Associates	November 2008	Completed - Published as LRD 34	
09-04	Civil Rights Implications of the Allocation of Funds Between Bus and Rail	Larry Thomas	October 2006	Completed - Published as LRD 27	
09-05	Transit Bus Stops: Ownership, Liability and Access	Jocelyn K. Waite Waite & Associates	June 2006	Completed - Published as LRD 24	
09-06	Resources for Legal Issues Associated with Bus Maintenance	Jocelyn K. Waite Waite & Associates	June 2006	Completed - Published as LRD 26	
09-07	How to Handle Security-Related Documents			Cancelled	
10-01	First Amendment Implications for Transit Facilities: Speech, Advertising, and Loitering	Ames, Miller & Van Eaton	July 2007	Completed - Published as LRD 29	
10-02	Developing and Implementing a Transit Advertising Policy	Low Bricker & Smith Amundsen	August 2008	Completed - Published as LRD 33	
10-03	Reconciling Security, Disclosure & Record-Retention Requirements in Transit Procurements	Jocelyn K. Waite Waite & Associates	June 2009	Completed - Published as LRD 32	
10-04	Competition Requirements of Design-Build, Construction Manager at Risk, and Public-Private Contracts - Seven Case Studies	Anthony Songer	November 2007	Completed - Published as LRD 39	
11-01	Legal Handbook for the New Starts Process	Daniel Duff, Thompson, Coburn	July 2008	Completed - Published as LRD 30	
11-02	Transit-Oriented Development and Joint Development: Case Studies and Legal Issues	The TOD Group	July 2008	Completed - Published as LRD 36	

TABLE 7 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
11-03	Transit Agencies Compliance with Title VI: Limited English Proficiency Requirements	Steven Diaz	December 2008	Completed - Published as RRD 97	
12-01	Guide to Buy America Requirements - 2009 Supplement	Jaye Pershing Johnson	January 2009	Completed - Published as LRD 31	
12-02	Reductions in Transit Service or Increases in Fares: Civil Rights, ADA, Regulatory, and Environmental Justice Issues	Larry Thomas	April 2009	Completed - Published as LRD 35	
12-03	Legal Aspects Relevant to Outsourcing Transit Functions Not Traditionally Outsourced	Daniel Duff, Thompson, Coburn	April 2009	Completed - Published as LRD 38	
12-04	Legal Arrangements for Use and Control of Real-Time Data	Larry Thomas	May 2009	Completed - Published as LRD 37	
13-01	Strategies to Facilitate Acquisition of New and Use of Existing Railroad Right-of-Way by Transit and Other Intercity Providers (Update)	Kevin Sheys		Cancelled	
13-02	Legal Issues Involving Surety for Public Transportation Projects	Capital Project Strategies	March 2010	Completed - Published as LRD 40	
13-03	Transit Labor 13(c) Employee Protection Digest	Shelly Brown	February 2010	Completed - Published as LRD 41	
14-01	TCRP Selected Studies in Transportation Law, Volume 5: Transit Law 2014 Supplement	Paul Dempsey	March 2011	Completed - Published as SSSL 5 Supplement	
14-02	Transit Agency Intergovernmental Agreements: Common Issues and Solutions	Larry Thomas	March 2011	Completed - Published as LRD 42	
14-03	Contractual Means of Achieving High-Level Performance in Transit Contracts	Larry Thomas	April 2011	Completed - Published as LRD 43	
14-04	Legal Handbook for Rural Transit Providers			Cancelled	
15-01	Legal Issues with Obtaining Insurance for Large Transit Projects	Kerness Consulting	June 2012	Completed - Published as LRD 47	
15-02	Legal Issues in Public Transit Emergency Planning and Operation	URS	June 2012	Completed - Published as LRD 44	

TABLE 7 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
15-03	Transit Public-Private Partnerships: Legal Issues	Larry Thomas	September 2012	Completed - Published as LRD 45	
15-04	How HIPPA and Other Privacy Laws Affect Public Transportation Operations	Larry Thomas	September 2012	Completed - Published as LRD 46	
16-01	Guide to Buy America Requirements - 2015 Supplement	Timothy Wyatt Conner Gwyn Schenck	July 2015	Completed - Published as LRD 49	
16-02	Legal Issues Concerning Transit Agency Use of Electronic Customer Data	Larry Thomas The Thomas Law Firm	July 2015	Completed - Published as LRD 48	
16-03	Public Transit Emergency Preparedness Against Ebola and Other Infectious Diseases: Legal Issues	Center for Health and Homeland Security	July 2015	Completed - Published as LRD 50	
16-04	Technology Contracting for Transit Projects	Larry Thomas The Thomas Law Firm	July 2015	Completed - Published as LRD 51	
17-01	Impact of the Americans with Disabilities Act on Transit Agency Liability	Larry Thomas The Thomas Law Firm	November 2016	Completed - Published as LRD 54	
17-02	Legal Implications of Video Surveillance on Transit Systems	Larry Thomas The Thomas Law Firm	November 2016	Completed - Published as LRD 52	
17-03	Legal Considerations in Relationships Between Transit Agencies and Ride-Sourcing Service Providers	Jocelyn K. Waite	December 2016	Completed - Published as LRD 53	
18-01	Tax Increment Financing for Transit Projects	University of Texas - Austin	September 2018	Completed - Published as LRD 55	
18-02	Codes of Conduct on Transit Vehicles and Property: Legal Issues	Countermeasures Assessment & Security Experts, LLC	January 2019	The draft final report was not approved. The contract has expired. Further discussion is needed on next steps.	G. Chisholm
18-03	Workplace Implications of Autonomous Vehicles on the Transit Workforce			Terminated	
18-04	Joint Development Agreements Using FTA Funds or FTA-Funded Assets	AECOM Technical Services, Inc.	April 2019	Completed. Published as TCRP Legal Research Digest 56	

TABLE 7 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
18-05	Fix It, Sign It, or Close It: State of Good Repair in an Era of Budget Constraints	Parker Corporate Enterprises, Ltd	January 2019	Completed. Published as TCRP Legal Research Digest 57/NCHRP Legal Research Digest 84	
19-01	Legal Issues Regarding Multijurisdictional Transit Agencies			Terminated	
19-02	Legal Issues and Emerging Technologies	Windels Marx Lane & Mittendorf LLP	February 2020	Completed. Published as TCRP Legal Research Digest 59.	
19-03	Navigating the Complexities of SSI and PCI	Countermeasures Assessment & Security Experts, LLC	February 2020	Research in Progress	G. Chisholm
19-04	Transit Sponsor and Contractor Delay Damages and Remedies Due to Third Parties - Transit Facility Improvements - Common Legal Issues and Solutions			Cancelled.	G. Chisholm
19-05	Legal Issues Surrounding Disasters and Evacuations			In Development	G. Chisholm
20-01	Legal Issues in Transit Mega Projects--Case Studies	Kaplan, Kirsch, Rockwell, LLP	December 2020	Completed. Will be published as LRD 60.	G. Chisholm
20-02	Liability Insurance Issues for Transit Lawyers: A Primer			In Development	G. Chisholm
20-03	Policing and Public Transportation	Larry Thomas w/The Thomas Law Firm (ePro)	March 2021	Complete. Published as LRD 58.	
21-01	Update of Legal Research Digests Regarding Civil Rights, Privacy, and Other Related Digests			In Development	G. Chisholm
21-02	Legal Issues in Transit Agencies Providing/Subsidizing Innovative Micromobility Projects	Windels Marx Lane & Mittendorf, LLP	April 2022	Research in Progress	G. Chisholm
21-03	Update of Selected Studies in Transportation Law, Volume 5, 2014 Supplement (Transit Law)			In Development	G. Chisholm

**TABLE 8 SUMMARY OF TCRP PROJECT J-6 STATUS THROUGH DECEMBER 31, 2022
Quick Response for Special Needs**

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
Task 01	New Transit Bus	Ronald J. Hartman and Rosalyn Simon	March 1994	Completed	
Task 02	Transit Ridership Initiative	Robert Stanley, Cambridge Systematics	March 1994	Completed - Published as RRD 4	
Task 03	Organizational Research Structure for APTA	Barbara T. Harder	February 1994	Completed	
Task 04	Station Car Demonstration	Kevin Sheys, Esq., Oppenheimer, Wolff & Donnelly	March 1994	Completed	
Task 05	Characteristics of State and Local Transit Funding	Sarah Campbell, TransManagement, Inc., and Robert Stanley, Cambridge Systematics, Inc.	July 1995	Completed	
Task 06	Integrating Americans with Disabilities Act (ADA) Paratransit Services with Health and Human Services Transportation	Rosalyn Simon	June 1995	Completed	
Task 07	Impact of a Change in the Matching Ratio for Transit Projects	Booz-Allen & Hamilton, Inc.	August 1995	Completed	
Task 08	Impact of Elimination of Federal Operating Assistance for Transit	TransManagement, Inc. and Cambridge Systematics, Inc.	August 1995	Completed	
Task 09	The Value of Federal Support for Transit Research	National Transportation Consortium of Minority Colleges and Universities	August 1995	Completed	
Task 10	Direct Cost of Drug and Alcohol Testing	Battelle	August 1995	Completed	
Task 11	FCC Proposal to Institute User Fees or to Auction Radio Frequencies	Arthur D. Little, Inc.	September 1995	Completed	
Task 12	Innovative Technologies Initiative	Brian McCollom	March 1996	Completed	
Task 13	Commuter Rail System Management Contracts to Minimize Cost and Maximize Productivity	John Cline, Kent Woodman, and Jane Sutter Starke	March 1996	Completed	
Task 14	Development of a Transit Bus Research Agenda	John J. Schiavone	February 1996	Completed	

TABLE 8 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
Task 15	The Useful Life of a Heavy Duty Transit Bus	Edward Abrams, Abrams-Cherwony & Associates, Henry Hide, TMG International	December 1996	Completed	
Task 16	Development of a Human Resources Research Agenda	Gayland Moffat	June 1996	Completed	
Task 17	Available Geographic Information System (GIS) Technology and Potential Transit Applications	Lawrence Harman, Bridgewater State College		Task Cancelled	
Task 18	Characteristics and Functions of State Transit Associations	Katherine Hooper	August 1996	Completed	
Task 19	Continuing Examination of Successful Transit Ridership Initiatives	Cambridge Systematics, Inc.	April 1997	Completed - Published as RRD 29	
Task 20	Feasibility of an Orientation Course for New Members of Transit Agency Boards of Directors	Deborah Price		Task Cancelled	
Task 21	New Paradigms Research and Strategic Plan Update	Various	September 1997	Completed	
Task 22	Market Research on Current National Public Attitudes Toward Public Transportation	Fleishman-Hillard	October 1997	Completed	
Task 23	Survey of Current Practice and Potential Improvements in Screening of Transit Personnel Placement in Customer Sensitive Positions	Watson Morris Consulting, Simon & Simon Research & Associates, Inc.	February 2000	Completed	
Task 24	Combating Global Warming Through Sustainable Surface Transportation Policy: A Research Scoping Study	Elizabeth Deakin	April 1998	Completed	
Task 25	APTA/FTA Bus Technology: Research Agenda for TCP	N/A	November 1997	Completed	
Task 26	Identification of Research Needs for Rural and Small Transit Agencies	N/A		Completed	
Task 27	Organizational Support for APTA/FTA Intelligent Transportation Systems (ITS) International Exchange Program Workshops	George Wynne	September 1998	Completed	

TABLE 8 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
Task 28	Characteristics of State Funding for Public Transportation	Robert Stanley, Cambridge Systematics, Inc.	March 1999	Completed	
Task 29	Financing Capital Investment: A Primer for the Transit Practitioner	Hagler Bailly, Inc.	October 1999	Completed - Published as Report 89	
Task 30	Data Collection on Pupil Safety on Transit Buses	University of Michigan Transportation Research Institute	October 1999	Completed	
Task 31	Transportation & Livable Communities Summary Booklet	Stephen Davies, Project for Public Spaces, Inc.	April 1999	Completed	
Task 32	Evaluation of the National Transit Database - TRB Committee	Renamed Project H-22B	January 2000	Completed	
Task 33	Cost of Meeting Accessibility Requirements for Over-the-Road Buses	KFH Group, Inc.	January 2000	Completed	
Task 34	Documentation of Independent Technical Study Tour Featuring German Shared Track	David Phraner, Edwards & Kelcey	June 2000	Completed	
Task 35	GIS Forum	Planners Collaborative, Inc.	September 2000	Completed	
Task 36	Analyses for TEA-21 Reauthorization Activities	Cambridge Systematics	December 2000	Completed	
Task 37	Procurement Issues in the Public Transportation Industry: An Assessment of Perceptions and Concerns	Scott Baker, AECOM Consulting	January 2001	Completed	
Task 38	Identification of the Critical Workforce Development Issues in the Transit Industry	Brian Vogel, Quatt Associates	March 2001	Completed - Published as RRD 45	
Task 39	Supplemental Analysis of National Survey on Contracting Transit Services	Daniel K Boyle	May 2001	Completed	
Task 40	Identification of Practices, Techniques, and Strategies for Attracting and Retaining Employees in the Transit Industry	Brian Vogel, Quatt Associates	March 2001	Completed - Published as RRD 45	
Task 41	Transit Research and Reauthorization	Cambridge Systematics	October 2001	Completed	

TABLE 8 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
Task 42	Developing a Recommended Standard for Automated Fare Collection for Transit: Scoping Study-Regional Fare Management Programs	Rich Lobron	May 2002	Completed - Published as RRD 57	
Task 43	Expanded State and National Transit Investment Analysis	Cambridge Systematics	December 2001	Completed	
Task 44	Identification of Competitive Contract Success Stories and Management Guidelines			Cancelled by Requestor	
Task 45	Advanced Transportation Technology Workshop	BCAE Consultants	August 2002	Completed	
Task 46	Characteristics of State Funding for Public Transportation - 2002	Cambridge Systematics	September 2002	Completed - Published as RRD 60	
Task 47	Case Studies in Environmental Justice	University of South Florida	June 2003	Completed	
Task 48	Transit Industry Interface with International Standards	Thomas McGean, PE	October 2003	Completed	
Task 49	Feasibility and Issues Associated with the Concept of Environmental Transfer Credits with a Public Transportation Focus	Environmental Financial Products	November 2003	Completed	
Task 50	Light Rail Vehicle (LRV) Crashworthiness Standards	Aaron James	August 2003	Completed	
Task 51	Update of Examination of Successful Transit Ridership Initiatives	Cambridge Systematics	November 2003	Completed - Published as RRD 69	
Task 52	Economic Perspective on the Value of Public Transportation	HLB Decision Economics, Inc.	November 2003	Completed	
Task 53	Hudson Institute Transportation Vision 2010 and Beyond Project	Hudson Institute	December 2003	Completed	
Task 54	Develop a Curriculum for Leadership Development Workshop for Upper Level Managers Serving in Public- and Private-Sector Organizations in the Transit Industry	Eno Transportation Foundation	February 2004	Completed	
Task 55	Support for the Preparation of "Commuting in America"	MacroSys	January 2004	Completed - Published as Report 110	

TABLE 8 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
Task 56	Excess Liability Insurance - Developing Alternatives for Public Transit Agencies			Cancelled	
Task 57	The Business Case for Transit Standards	AECOM Consult	March 2004	Completed - Published by APTA	
Task 58	Warehouse, Fulfillment, Dissemination - Developing and Implementing Multi-Organizational Solutions for Transit Research Materials	Bain & Associates	January 2005	Completed	
Task 59	Racial and Gender Diversity in State DOTs and Transit Agencies: A Benchmark Scoping	University of Minnesota	July 2005	Completed - Published as Report 120	
Task 60	The Case for Searches on Public Transportation	Jocelyn Waite, Waite & Associates	August 2004	Completed - Published as LRD 22	
Task 61	Support for Transit Industry Participation in the 2004 ITS World Congress			Cancelled by Requestor	
Task 62	Train Door Systems Analysis	Transportation System Design, Inc.	December 2004	Completed - Published as RRD 74 and Web-Only Document 28	
Task 63	Support for TRB "Potential Impacts of Climate Change on U.S. Transportation" Study	TRB Division B	October 2005	Completed - Published as TRB Special Report 290	
Task 64	Identification of Existing Practices, Guidelines, Strategies and Related Activities Applicable to Level Boarding and Commuter Rail Facilities and Equipment	SEB Associates	September 2005	Completed	
Task 65	Operation of Street-Running Light Rail Transit at Higher Speeds	Korve Engineering	June 2006	Completed	
Task 66	Small Starts and New Starts Program Research	PB Consult	September 2005	Completed	
Task 67	Strategic Assessment of Wireless Capabilities and Needs for the Public Transportation Industry	Science Applications International Corporation	August 2006	Completed	
Task 68	Background Information and Issues Associated with Ridership Estimates for Major Capital Projects	AECOM Consult	August 2006	Completed	
Task 69	Quality Service in Public Transportation Organizations	PSTG Consulting	August 2007	Completed	

TABLE 8 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
Task 70	Security Standards and Guidelines Pertinent to Public Transportation	KFH Group	October 2007	Completed	
Task 71	Rural Transit Achievements: Assessing the Outcomes of Increased SAFETEA-LU Funding for Rural Passenger Services	KFH Group	March 2008	Completed - Published as RRD 93 and Web-Only Document 46	
Task 72	Professional Certification and Credentialing Program for the Transit Industry	McGlothlin Davis, Inc.	September 2009	Completed - Published as RRD 100	
Task 73	Bus Fleet Management in an Era of Increasing Technical Complexity	Eagle Harbor Group, LLC	December 2008	Completed	
Task 74	Improving Mobility for Veterans	Westat, Inc.	September 2009	Completed - Published as RRD 99	
Task 75	Guiding the Selection and Application of Wayside Energy Storage Technologies for Rail Transit and Electric Utilities	American Public Transportation Association	May 2009	Completed - Published as Web-Only Document 51	
Task 76	Support for a Transit Wireless Communications Joint Council	Science Applications International Corporation	July 2009	Completed	
Task 77	Support for APTA/FTA Transit Train Control Assessment	Jacobs Engineering Group	August 2009	Completed	
Task 78	FCC Narrowbanding of Passenger Transport Provider Radio Systems in the United States	Shulman, Rogers, Gandal, Pordy & Ecker, P.A.	November 2010	Completed	
Task 79	Positive Train Control (PTC) Radio Spectrum Planning for Passenger Commuter Rail Operations in the United States	Stantec Consulting	June 2011	Completed	
Task 80	Research Symposium on Sleep Hygiene and Fatigue of Transit Operators	TRB Technical Activities Division	April 2011	Completed	
Task 81	Impact of the Affordable Care Act on Non-Emergency Medical Transportation (NEMT): Assessment for Transit Agencies	RLS & Associates	September 2012	Completed - Published as RRD 109	
Task 82	Standardizing Data for Mobility Management	TransitPlus, Inc.	January 2013	Completed - Published as Web-Only Document 62	
Task 83	Preliminary Strategic Analysis of Open Standards for Fare Payment Systems for Public Transportation	Volpe Center	October 2013	Completed - Published as Report 177	

TABLE 9 SUMMARY OF TCRP PROJECT J-7 STATUS THROUGH DECEMBER 31, 2022
Synthesis of Information Related to Transit Practices

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
A : OPERATIONS						
SA-01	Bus-Route Evaluation Standards	Howard P. Benn	December 1992	Completed - Published as Synthesis 10		
SA-02	System-Specific Spare Bus Ratios	Judith T. Pierce	August 1993	Completed - Published as Synthesis 11		
SA-03	System-Specific Spare Rail Vehicle Ratios	Judith T. Pierce	August 1993	Completed - Published as Synthesis 15		
SA-04	AVL Systems for Bus Transit	Paula Okunieff	August 1995	Completed - Published as Synthesis 24		
SA-05	Customer Information at Bus Stops	John Dobies	March 1995	Completed - Published as Synthesis 17		
SA-06	Passenger Transfer Systems	Richard Stern	March 1995	Completed - Published as Synthesis 19		
SA-07	Changing Roles and Practices of Bus Field Supervisors	Gayland Moffat	December 1994	Completed - Published as Synthesis 16		
SA-08	Bus Transit Fare Collection Practices	Richard Stern	November 1995	Completed - Published as Synthesis 26		
SA-09	Passenger Counting Technologies and Procedures	Daniel K. Boyle	October 1996	Completed - Published as Synthesis 29		
SA-09A	Accessibility of Automated Fare Vending and Collection for Customers with Disabilities	Daniel K. Boyle	April 1997	Completed - Published as RRD 32		
SA-10	Data Analysis for Bus Planning and Monitoring	Peter G. Furth	January 1998	Completed - Published as Synthesis 34		
SA-11	Transportation on College and University Campuses	James H. Miller	February 2000	Completed - Published as Synthesis 39		
SA-12	Electronic Surveillance Technology on Transit Vehicles	Patricia Maier, Jim Caton	February 2000	Completed - Published as Synthesis 38		

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SA-13	Yield to Bus Programs - State of the Practice	Rolland King	January 2002	Completed - Published as Synthesis 49		
SA-14	Real Time Bus Arrival Information Systems	Carol Schweiger	January 2002	Completed - Published as Synthesis 48		
SA-15	Computer-Aided Scheduling and Dispatch in Demand-Responsive Transit Services	David Kessler	November 2003	Completed - Published as Synthesis 57		
SA-16	Uses of Higher Capacity Buses in Transit Service	Bendon Hemily Rolland King	October 2006	Completed - Published as Synthesis 75		
SA-17	AVL Systems for Bus Transit: Update	Doug Parker, TranSystems	November 2006	Completed - Published as Synthesis 73		
SA-18	Passenger Counting Systems	Daniel Boyle	October 2007	Completed - Published as Synthesis 77		
SA-19	Transit Systems in College and University Communities	Gail Murray	October 2007	Completed - Published as Synthesis 78		
SA-20	Light Rail Vehicle Collisions with Vehicles at Signalized Intersections	Kelley Pecheux, SAIC	November 2007	Completed - Published as Synthesis 79		
SA-21	Inventary of Operating Agreements Between Passenger Rail and Freight Railroads			Cancelled		
SA-22	Bus and Rail Transit Preferential Treatments in Mixed Traffic	Alan Danather	November 2008	Completed - Published as Synthesis 83		
SA-23	Practices in the Development and Deployment of Downtown Circulators	Daniel Boyle	November 2009	Completed - Published as Synthesis 87		
SA-24	Video Surveillance Uses by Rail Transit Agencies	Dorothy Schulz	December 2009	Completed - Published as Synthesis 90		
SA-25	Use and Deployment of Mobile Device Technology for Real-Time Transit Information	Carol Schweiger	December 2009	Completed - Published as Synthesis 91		

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SA-26	Implementation and Outcomes of Fare-Free Transit Systems	University of South Florida, Joel Volinski	November 2010	Completed - Published as Synthesis 101		
SA-27	Off-Board Transit Fare Payment Using Proof-of-Payment Verification	Lee Engineering, Thomas Larwin	November 2010	Completed - Published as Synthesis 96		
SA-28	Use of Electronic Passenger Information Signage in Transit	Carol Schweiger	December 2011	Completed - Published as Synthesis 104		
SA-29	Energy Savings Strategies for Transit Agencies	Frank Gallivan	November 2011	Completed - Published as Synthesis 106		
SA-30	Maintaining Transit Effectiveness Under Major Financial Constraints	Joel Volinski	November 2012	Completed - Published as Synthesis 112		
SA-31	Commonsense Approaches for Improving Transit Bus Speeds	Dan Boyle	December 2012	Completed - Published as Synthesis 110		
SA-32	System-Specific Spare Bus Ratios Update	Martin Minkoff	November 2012	Completed - Published as Synthesis 109		
SA-33	Critical Incident Management and Clearance Practices for Rail Transit	Dan Boyle	November 2013	Completed - Published as Synthesis 114		
SA-34	Open Data: Challenges and Opportunities for Transit Agencies	Carol Schweiger	November 2013	Completed - Published as Synthesis 115		
SA-35	Better On-Street Bus Stops	Dan Boyle	November 2013	Completed - Published as Synthesis 117		
SA-36	On-Board Camera Application for Bus	Barbara Thomson	November 2014	Completed - Published as Synthesis 123		
SA-37	Multi Agency Electronic FARE Payment Systems	Paula Okunieff	December 2015	Completed - Published as Synthesis 125	F. Hall	
SA-38	Successful Practices and Training Initiatives to Reduce Bus Incidents at Transit Agencies	Lisa Staes	December 2015	Completed - Published as Synthesis 126	F. Hall	

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SA-39	Managing Extreme Weather at Bus Stops	Barbara Thomson	December 2015	Completed - Published as Synthesis 129	J. Weinstock	
SA-40	Planning and Design for Fire/Smoke Incidents in Underground Passenger Rail Systems	Dan Boyle	December 2015	Completed - Published as Synthesis 124	T. Lloyd	
SA-41	Battery Electric Buses - State of the Practice	Jason Hamlin	December 2016	Completed - Published as Synthesis 130	S. Ricketson	
SA-42	College Student Transit Pass Programs	Jie Yu	December 2016	Completed - Published as Synthesis 131	A. Corniel	
SA-43	Transit Service Evaluation Standards	Dan Boyle & Associates, Inc.	December 2017	Completed - Published as Synthesis 139	M. Bathrick	
SA-44	Comprehensive Bus Network Redesign	Foursquare Integrated Transportation Planning Inc	November 2017	Completed - Published as Synthesis 140	J. Roux B. Jackson	
SA-45	Current Practices in the Use of Onboard Technologies to Prevent Transit Bus Incidents and Accidents	University of South Florida	October 2018	Completed - Published as Synthesis 145	R. Chen P. Centolanzi	
SA-46	Mobile Fare Apps Business Models	University of Tennessee	January 2019	Completed - Published as Synthesis 148	B. Jackson J. Roux	
SA-47	Bus Transit Signal Priority Parameters – Current State of the Practice	Texas A&M Transportation Institute	November 2018	Completed - Published as Synthesis 149		
SA-48	Current Practices in Transit Security Preparedness	Countermeasures Assessment & Security Experts, LLC	November 2018	Completed - Published as Synthesis 146	K. Montgomery	
SA-49	Multi-Modal Fare Payment Integration	IMG Rebel Advisory, Inc.	November 2018	Completed - Published as Synthesis 144	B. Jackson	
SA-50	Cyber Security in Transit Systems	Geographic Paradigm Computing, Inc.	November 2019	Complete - Published as Synthesis 158.	B. Jackson	
SA-51	Transit Safety Risk Assessment Methodologies	Texas A&M Transportation Institute	November 2020	Complete - Published as Synthesis 157.	D. Guruswamy D. Powell	

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SA-52	Assessing Equity and Identifying Impacts Associated with Bus Network Redesigns	Foursquare Integrated Transportation Planning	December 2020	Complete - Published as Synthesis 159.	M. Hecht K. Cervenka	
SA-53	BRT State of Practice, Experience, and Lessons Learned	Texas A&M Transportation Institute	December 2020	Completed - Published as Synthesis 164	J. J. Borrego	
SA-54	Pedestrian and Bicycle Safety in Bus/BRT Corridors	Texas A&M Transportation Institute	December 2021	Research in Progress	J. Howard D. Kellman	M. Garcia-Colberg
SA-55	On Street Bus Operations Management	Daniel Boyle and Associates	December 2021	Completed - Published as Synthesis 166	N. Ismail M. K. Naqvi	M. Garcia-Colberg
SA-56	Use of Automatic Vehicle Monitoring (AVM) and Vehicle Health Monitoring/Diagnostic Systems by Transit Agencies			In Development		M. Garcia-Colberg
SA-57	Statewide Approaches to the Development of Comprehensive Transit Information Systems			In Development		M. Garcia-Colberg
SA-58	Analysis of Transit Exclusion Policies in Passenger Transportation Systems			In Development		M. Garcia-Colberg
SA-59	Electronic Surveillance of Railroad-Highway Crossings for Collision Avoidance, State of the Practice			In Development		M. Garcia-Colberg
SA-60	Examination of Transit Agency Coordination with Electric Utilities			In Development		M. Garcia-Colberg
B : SERVICE CONFIGURATION						
SB-01	Integration of Bicycles and Transit	John T. Doolittle	February 1993	Completed - Published as Synthesis 4		
SB-02	Innovative Suburb-to-Suburb Transit Practices	Katherine S. Hooper	July 1994	Completed - Published as Synthesis 14		
SB-03	ADA Paratransit Eligibility Certification Practices	Richard Weiner	November 1996	Completed - Published as Synthesis 30		

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SB-04	Transit Advertising Revenue: New Sources and Structures	Beverly R. Silverberg	October 1996	Completed - Published as Synthesis 32		
SB-05	Communicating with Persons with Disabilities in a Multimodal Transit Environment	Angela Iannuzziello	July 1999	Completed - Published as Synthesis 37		
SB-06	Use of Small Buses in Transit Services	Brendon Hemily, Rolland D. King	March 2000	Completed - Published as Synthesis 41		
SB-07	Customer-Focused Transit	John Potts	January 2001	Completed - Published as Synthesis 45		
SB-08	Effective Use of Transit Websites	Bruce Schaller	February 2001	Completed - Published as Synthesis 43		
SB-09	Operational Experiences with Flexible Transit Services	David Koffman	November 2002	Completed - Published as Synthesis 53		
SB-10	Transit Advertising Sales Agreements	Bruce Schaller	November 2002	Completed - Published as Synthesis 51		
SB-11	Practices in No-Show and Late Cancellation Policies for ADA Paratransit	Rosemary Mathias	October 2004	Completed - Published as Synthesis 60		
SB-12	Integration of Bicycles and Transit	Robert Schneider	October 2004	Completed - Published as Synthesis 62		
SB-13	Transit Agency Participation in Medicaid Transportation Programs	Kenneth Hosen, KFH Group	January 2005	Completed - Published as Synthesis 65		
SB-14	Methods of Rider Communication	Carol Schweiger, TranSystems Corp.	October 2005	Completed - Published as Synthesis 68		
SB-15	Policies and Practices for Effectively and Efficiently Meeting ADA Paratransit Demand	David Chia, Planners Collaborative	October 2006	Completed - Published as Synthesis 74		
SB-16	Integration of Paratransit and Fixed-Route Transit Services	R. Weiner Nelson/Nygaard	October 2007	Completed - Published as Synthesis 76		

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SB-17	Innovative Rural Transit Services	Ken Hosen	May 2010	Completed - Published as Synthesis 94		
SB-18	Strollers, Carts, and Other Large Items on Buses and Trains	J. Goldman	November 2009	Completed - Published as Synthesis 88		
SB-19	Ridesharing as a Complement to Transit	Gail Murray	November 2010	Completed - Published as Synthesis 98		
SB-20	Uses of Social Media in Public Transportation	Susan Bregman	November 2010	Completed - Published as Synthesis 99		
SB-21	Transit Station and Stop Adoption Programs	Kathryn Harrington-Hughes	December 2011	Completed - Published as Synthesis 103		
SB-22	Use of Market Research Panels in Transit	Kathryn Coffel	December 2011	Completed - Published as Synthesis 105		
SB-23	Integrating Passenger Ferry Service with Mass Transit	Tim Payne	December 2011	Completed - Published as Synthesis 102		
SB-24	Advanced Methods for Title VI Fare and Service Analysis	Sue Knapp	November 2012	Cancelled		
SB-25	Practices for Establishing ADA Paratransit Eligibility Determination Facilities	Russell Thatcher	November 2013	Completed - Published as Synthesis 116		
SB-26	Use of Taxis in Public Transportation for People with Disabilities and Older Adults	Elizabeth Ellis	November 2014	Completed - Published as Synthesis 119		
SB-27	Public Transit and Bikesharing	R.J. Eldridge	December 2016	Completed - Published as Synthesis 132	M. Baltes	
SB-28	Administration of ADA Paratransit Eligibility Appeal Programs	David Chia	December 2016	Completed - Published as Synthesis 133	D. Sweet	
SB-29	Customer-Focused Service Guarantee and Transparency Practices	Michael Walk	December 2016	Completed - Published as Synthesis 134	M. Foreman	
SB-30	Microtransit: Evolving Approaches to Providing General Demand-Response Transit	Joel Volinski	December 2017	Completed - Published as Synthesis 141	R. Opstelten R. Nguyen	

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SB-31	Implementing the US DOT Reasonable Modification Rule	KFH Group, Inc.	October 2017	Completed - Published as Synthesis 142	S. Clark	
SB-32	Use of Agency Trip Agreements in ADA Paratransit Service Delivery	Thomson Consulting	December 2018	Completed - Published as RRD 115	S. Clark	
SB-33	Uses of Social Media in Public Transportation	Texas A&M Transportation Institute	December 2020	Complete -Published as Synthesis 156.	N. Pembleton T. T. Scotton	
SB-34	Coordination of Public Transit Services and Investments with Affordable Housing Policies	MZ Strategies, LLC	December 2020	Complete - Published as Synthesis 162.	S. Eddy T. T. Peit	
SB-35	Customer Education and Awareness of On-Demand Mobility	Texas A&M Transportation Institute	December 2021	Research Complete. In Publication.	K. Tyler E. Younger- Riehl	M. Garcia- Colberg
SB-36	Dynamic Optimization on ADA Paratransit Service	Texas A&M Transportation Institute	December 2021	Research Complete.	P. M. Centolanzi	M. Garcia- Colberg
SB-37	Transit Agency Goals and Non-Traditional Performance Indicators Focused on Equity			In Development		M. Garcia- Colberg
SB-38	Accessible Vehicle Fleet Configuration			In Development		M. Garcia- Colberg
C : ENGINEERING OF VEHICLES AND EQUIPMENT						
SC-01	Safe Operating Procedures for Alternative Fuel Buses	Acurex Environmental Corp.	January 1993	Completed - Published as Synthesis 1		
SC-02	Waste Control Practices at Bus Maintenance Facilities	Acurex Environmental Corp.	January 1993	Completed - Published as Synthesis 9		
SC-03	Low-Floor Transit Buses	Rolland D. King	May 1993	Completed - Published as Synthesis 2		
SC-04	Retrofit of Buses to Meet Clean Air Regulations	John J. Schiavone	February 1994	Completed - Published as Synthesis 8		

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SC-05	Light Rail Vehicle Compression Requirements	Z. M. Lewalski	September 1995	Completed - Published as Synthesis 25		
SC-06	Use of Rear-Facing Position for Common Wheelchairs on Transit Buses	Brendon Hemily, Uwe Rutenberg	January 2002	Completed - Published as Synthesis 50		
SC-07	Emergency Response Procedures for Natural Gas Transit Vehicles	Michael Murphy	December 2003	Completed - Published as Synthesis 58		
SC-08	Mobile Data Terminals	Larry Harman	October 2005	Completed - Published as Synthesis 70		
SC-09	Use of Biodiesel in a Transit Fleet	John Schiavone	November 2006	Completed - Published as Synthesis 72		
D : ENGINEERING OF FIXED FACILITIES						
SD-01	Regulatory Impacts of Design and Retrofit on Bus Maintenance Facilities	Edward M. Abrams, Frank Spielberg	February 1993	Completed - Published as Synthesis 7		
SD-02	Rail Transit Tunnel and Underground Structures Inspection Policy and Procedures	Henry A. Russell	June 1994	Completed - Published as Synthesis 23		
SD-03	Bus Use of Shoulders	Peter Martin	November 2004	Completed - Published as Synthesis 64		
SD-04	Rail Transit Track Inspection Practices	John Zuspan	December 2011	Completed - Published as Synthesis 107		
SD-05	Mitigating Third Rail Insulator Failures - State of Practice	University of Texas - Arlington	May 2019	Completed - Published as Synthesis 150	R. Chen	
SD-06	Transit Agency Programs to Improve Bus Stops and Associated Infrastructure	Texas A&M Transportation Institute	October 2019	Completed - Published as Synthesis 152	S. Clark	
E : MAINTENANCE						
SE-01	Transit Bus Service Line and Cleaning Functions	John J. Schiavone	February 1994	Completed - Published as Synthesis 12		

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SE-02	Maintenance Productivity Practices	Frank Venezia	November 2002	Completed - Published as Synthesis 54		
SE-03	Maintenance Staffing Levels for Light Rail Transit Systems	Richard Stanger, Manuel Padron & Associates, Inc.	November 2004	Completed - Published as Synthesis 61		
SE-04	Track Maintenance Costs on Rail Transit Properties	Lawrence Daniels	November 2006	Completed - Published as Web-Only Document 43		
SE-05	Preventive Maintenance Intervals for Transit Buses	John J. Schiavone	November 2008	Completed - Published as Synthesis 81		
SE-06	Elevator and Escalator Maintenance and Safety Practices	John J. Schiavone	November 2010	Completed - Published as Synthesis 100		
SE-07	Maintenance Planning for Rail Asset Management – Current Practices	University of Delaware	November 2019	Completed - Published as Synthesis 151	M. Smith	
F : HUMAN RESOURCES						
SF-01	Bus Occupant Safety	Rolland D. King	March 1995	Completed - Published as Synthesis 18		
SF-02	Employee Incentive Programs to Improve Transit Performance	Ronald Hartman and Elaine Kurtz	April 1993	Completed - Published as Synthesis 3		
SF-03	Methods for Reducing Violence and Improving Transit Security	Jerome Needle	March 1995	Completed - Published as Synthesis 21		
SF-04	Monitoring Maintenance Performance	John J. Schiavone	October 1995	Completed - Published as Synthesis 22		
SF-05	Emergency Procedures for Transit Counter Terrorism	Annabelle Boyd, John Sullivan	June 1996	Completed - Published as Synthesis 27		
SF-06	Practices in Ensuring Employee Availability	Joel Volinski	December 1997	Completed - Published as Synthesis 33		

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SF-07	Practices for Bus Operator Hiring, Training, Performance Evaluation, and Retention	Gayland K. Moffat	December 1999	Completed - Published as Synthesis 40		
SF-08	Diversity Training Initiatives	Gwynn Simpson	January 2001	Completed - Published as Synthesis 46		
SF-09	Training for On-Board Bus Electronics	John Schiavone	February 2001	Completed - Published as Synthesis 44		
SF-10	Corporate Culture as the Driver of Transit Leadership Practices	Mary Davis	January 2002	Completed - Published as Synthesis 47		
SF-11	Transit Operator Health and Wellness Programs	Mary J. Davis	November 2002	Completed - Published as Synthesis 52		
SF-12	Paratransit Managers' Skills, Qualifications, and Needs	John Potts The DMP Group	November 2006	Completed - Published as Synthesis 71		
SF-13	Transit Security Update	Yuko Nakanishi	October 2007	Completed - Published as Synthesis 80		
SF-14	Practices to Protect Bus Operators from Passenger Assault	Yuko Nakanishi	November 2009	Completed - Published as Synthesis 93		
SF-15	Practices for Wayside Rail Transit Worker Protection	Chris Kozub	December 2010	Completed - Published as Synthesis 95		
SF-16	Improving Bus Transit Safety Through Rewards and Discipline	Jay Goodwill	December 2010	Completed - Published as Synthesis 97		
SF-17	Transit Bus Operator Distraction Policies	Chris Kozub	December 2011	Completed - Published as Synthesis 108		
SF-18	Use of Automotive Service Excellence Tests Within Transit	John J. Schiavone	November 2014	Completed - Published as Synthesis 120		
SF-19	Addressing Difficult Customer Situations	Joel Volinski	December 2015	Completed - Published as Synthesis 127		F. Hall

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SF-20	Managing the Transit Scheduling Workforce	Texas A&M Transportation Institute	December 2017	Completed - Published as Synthesis 143	B. Lavender	
SF-21	Attracting, Retaining and Advancing Women in Transit	ICF Incorporated	December 2018	Completed - Published as Synthesis 147	K. Davis	
G : ADMINISTRATION						
SG-01	Risk Management for Small and Medium Transit Agencies	Michael M. Kaddatz	February 1994	Completed - Published as Synthesis 13		
SG-02	Reducing Fraudulent Third-Party Claims Against Transit Agencies	Ronald Hartman, Elaine Kurtz	April 1993	Cancelled - See SG-7		
SG-03	Management Information Systems	Roger Boldt	October 1993	Completed - Published as Synthesis 5		
SG-04	The Role of Performance-Based Measures in Allocating Funding for Transit Operations	Ronald Hartman, Elaine Kurtz	April 1993	Completed - Published as Synthesis 6		
SG-05	Managing Transit Construction Contract Claims	Joel Callahan	November 1995	Completed - Published as Synthesis 28		
SG-06	Paratransit Contracting and Service Delivery Methods	Rosalyn M. Simon	October 1996	Completed - Published as TCRP Synthesis 31		
SG-07	Identifying and Reducing Fraudulent Third-Party Tort Claims Against Public Transit Agencies	Boyd, Maier & Associates	August 1998	Completed - Published as TCRP Synthesis 36		
SG-08	Information Technology Update for Transit	Roger Boldt	August 1998	Completed - Published as Synthesis 35		
SG-10	Performance-Based Measures in Transit Fund Allocation	Robert Stanley	October 2003	Completed - Published as Synthesis 56		
SG-11	Transit Asset Condition Reporting	Stephen Berrang, Brian McCollom	November 2009	Completed - Published as Synthesis 92		
SG-12	Optimizing Bus Warrantly	John Schiavone	November 2012	Completed - Published as Synthesis 111		

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SG-13	Practices for Utility Coordination in Transit Projects	Cesar Quiroga	December 2013	Completed - Published as Synthesis 118		
SG-14	ADA Paratransit Service Delivery Models	David Chia	December 2016	Completed - Published as Synthesis 135	S. Clark	
SG-15	Contracting Fixed-Route Bus Transit Service	Daniel Boyle	December 2016	Completed - Published as Synthesis 136	D. Ridley-Curtis	
SG-16	Microgrids and Their Application	Arup		Completed - Published as Synthesis 137		
SG-17	The Use and Practice of Intelligent Transportation Systems in Real-Time Headway Based Service Bus Operations	Texas A&M Transportation Institute	November 2019	Completed - Published as Synthesis 155	M. Foreman	
SG-18	The Transit Analyst Toolbox: Analysis and Approaches for Reporting, Communicating, and Examining Transit Data	Go Systems & Solutions	November 2019	Completed - Published as Synthesis 153	D. Schneider	
SG-19	Paratransit Service Delivery Models for Small Systems	Texas A&M Transportation Institute	December 2020	Complete - Published as Synthesis 161	S. Clark	
SG-20	Performance Metrics in Third Party Contracts for Bus Operations and Maintenance	Texas A&M Transportation Institute	November 2021	Research in Progress	T. Coleman M. Gleason	M. Garcia-Colberg
H : POLICY AND PLANNING						
SH-01	Transit-Focused Development	Douglas Porter	February 1995	Completed - Published as Synthesis 20		
SH-02	Use of Flexible Funding Under ISTEA and TEA-21	Robert Stanley	January 2000	Completed - Published as Synthesis 42		
SH-03	Geographic Information Systems Applications in Transit	John Sutton	October 2003	Completed - Published as Synthesis 55		
SH-04	Strategic Planning and Management in Transit Agencies	Judson Lawrie	January 2004	Completed - Published as Synthesis 59		

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SH-05	On-Board and Intercept Transit Survey Techniques	Bruce Schaller	November 2004	Completed - Published as Synthesis 63		
SH-06	Fixed-Route Transit Ridership Forecasting and Service Planning Methods	Daniel Boyle	October 2005	Completed - Published as Synthesis 66		
SH-07	Web-Based Survey Techniques	Gregory Spitz, RSG, Inc.	October 2005	Completed - Published as Synthesis 69		
SH-08	Bus Transit Service in Land Development Planning	Mary Kay Christopher	November 2005	Completed - Published as Synthesis 67		
SH-09	Current Practices in Greenhouse Gas Emissions Savings from Transit	Frank Gallivan, Michael Grant, ICF International	November 2008	Completed - Published as Synthesis 84		
SH-10	Effective Use of Citizen Advisory Committees for Transportation Planning and Operations	Kristin Hull, CH2MHILL	November 2008	Completed - Published as Synthesis 85		
SH-11	Transit Fare Arrangements for Public Employees	Daniel Boyle	November 2008	Completed - Published as Synthesis 82		
SH-12	Relationships Between Streetcars and the Built Environment	Ron Golem, BAE Urban Economics	January 2009	Completed - Published as Synthesis 86		
SH-13	Public Participation Strategies for Transit	Scott Giering	December 2009	Completed - Published as Synthesis 89		
SH-14	Sub-Allocating FTA Section 5307 Funding Among Multiple Recipients in Metropolitan Areas	John Potts Maxine Marshall	November 2012	Completed - Published as Synthesis 113		
SH-15	Transit Supportive Parking Policies and Programs	Lisa Jacobsen	November 2014	Completed - Published as Synthesis 122		
SH-16	Transit Agency Practices in Interacting with People Who Are Homeless	Daniel Boyle	November 2014	Research in Progress		
SH-17	Practices for Evaluating the Economic Impact and Benefits of Transit	Glen Weisbrod	December 2015	Completed - Published as Synthesis 120	R. Bains	

TABLE 9 (continued)

No.	Title	Topic Consultant	Start Date	Status	FTA Liaison(s)	Staff Officer
SH-18	Public Transit Rider Origin-Destination Survey Methods and Technologies	Foursquare Integrated Transportation Planning, Inc.	December 2017	Completed - Published as Synthesis 138	K. Cervenka F. Chowdhury	
SH-19	Supporting the Unbanked in the Transition to Cashless Fare Payment at Point of Service for Bus/Demand Response Services	University of Tennessee	November 2019	Completed - Published as Synthesis 163	M. Omay	
SH-20	Innovative Practices for Transit Planning at Small- to Mid-Sized Agencies	Texas A&M Transportation Institute	November 2019	Completed - Published as Synthesis 154	R. Tomczak	
SH-21	Transit Fare Capping: Balancing Revenue and Equity Impacts	Nelson/Nygaard Consulting Associates, Inc.	December 2020	Complete - Published as Synthesis 160.	J. Yucis	
SH-22	Inclusive Public Participation in Transit Decision Making	Michael Baker International, Inc.	December 2021	Research in Progress	M. E. Hughes V. Shoenfelt	M. Garcia-Colberg
SH-23	Partnerships for Equitable Pandemic Response and Recovery	EBP US, Inc.	December 2021	Research Completed. In Publication.	R. Buckley D. Nelson	M. Garcia-Colberg

TABLE 10 SUMMARY OF TCRP PROJECT J-9 STATUS THROUGH DECEMBER 31, 2022
e-Transit: Electronic Business Strategies for Public Transportation

No.	Title	Contract Amount	Consultant	Start Date	End Date	Staff Officer
Task 01	Supply Chain: Parts and Inventory Management	\$45,000	Mitretek	July 2001	Completed - Published as Report 84, Volume 1	
Task 02	Regulatory Issues	\$20,056	Mitretek		Cancelled	
Task 03	Application Service Provider Implementation Guidelines	\$45,000	Mitretek	July 2001	Completed - Published as Report 84, Volume 2	
Task 04	Advanced Features of Transit Websites	\$55,000	Multisystems	July 2001	Completed - Published as Report 84, Volume 4	
Task 05	Electronic Payments				Cancelled	
Task 06	Using the Internet for Transit Training and Certification	\$35,000	Multisystems	July 2001	Completed - Published as Report 84, Volume 3	
Task 07	Create and Manage a Series of e-Zine Articles				Cancelled - See Task 11	
Task 08	Concept for an e-Transit Reference Enterprise Architecture	\$23,000	Mitretek	June 2003	Completed - Published as Report 84, Volume 5	
Task 09	The Successful Adoption of Web-Based Collaborative Software	\$50,000	Center for Applied Research	December 2003	Completed - Published as Report 84, Volume 7	
Task 10	Strategies to Expand and Improve Deployment of ITS in Rural Transit Systems	\$50,000	Acumen Building Enterprises	January 2004	Completed - Published as Report 84, Volume 6	
Task 11	The "e-Zine Technology Knowledge Center" for Transit	\$205,000	EG&G Technical Services	September 2005	Completed	
Task 12	Improving Public Transportation Technology Implementations and Anticipating Emerging Technologies	\$250,000	Battelle	October 2004	Completed - Published as Report 84, Volume 8	
Task 13	Transit Enterprise Architecture and Planning Framework	\$213,000	Consensus Systems Technologies	September 2008	Completed - Published as Report 84, Volume 9	

TABLE 11 SUMMARY OF TCRP PROJECT J-10 STATUS THROUGH DECEMBER 31, 2022
Public Transportation Security Research

No.	Title	Contract Amount	Contractor	Start Date	End Date	Staff Officer
J-10(01)	Development of Research Agenda/Conduct Four Security Workshops	\$300,000 \$32,000	Booz-Allen Hamilton, Inc. American Public Transportation Association	November 2001	Completed - APTA Publication Issued	
J-10(02)	White Papers on Decontamination Procedures and Technology Clearinghouse/Product Testing	\$20,000	Science Applications International Corp.	April 2002	Completed	
J-10(03)	A Guide to Public Transportation Security Resources	\$5,000	McCormick Taylor	September 2002	Completed - Published as RRD 59	
J-10(04)	Logistics Support for International Transportation Associations Transit Security Summit	\$20,000	American Public Transportation Association	September 2002	Completed	
J-10A(01)	Update of FTA "Transit System Security Program Planning Guide" and FTA "Transit Security Handbook"	\$150,000	McCormick Taylor	March 2002	Completed - FTA Publication Issued	
J-10A(02)	Security-Related Customer Communications and Training for Public Transportation Providers	\$400,000	McCormick Taylor	March 2002	Completed - Published as Report 86, Volume 5	
J-10A(03)	Intrusion Detection for Public Transportation Facilities Handbook	\$250,000	Science Applications International Corp.	June 2002	Completed - Published as Report 86, Volume 4	
J-10A(04)	A Scan of Tools for Evaluating and Prioritizing Anti-Terrorist Security Measures for Transit Applications	\$25,000	McCormick Taylor	February 2003	Completed	
J-10B(01)	Emergency Public Transportation Mobilization and Emergency Operations Guide	\$400,000	McCormick Taylor	March 2002	Completed - Published as Report 86, Volume 7	
J-10B(02)	Applicability of Portable Explosive Detection Devices in Transit Environments	\$200,000	Science Applications International Corp.	June 2002	Completed - Published as Report 86, Volume 6	
J-10B(03)	Robotic Devices: A Guide for the Transit Environment	\$20,000	Science Applications International Corp.	June 2002	Completed - Published as Report 86, Volume 3	
J-10B(04)	Communication of Threats: A Guide	\$20,000	McCormick Taylor	March 2002	Completed - Published as Report 86, Volume 1	

TABLE 11 (continued)

No.	Title	Contract Amount	Contractor	Start Date	End Date	Staff Officer
J-10B(05)	K9 Units in Public Transportation: A Guide for Decision Makers	\$15,000	McCormick Taylor	March 2002	Completed - Published as Report 86, Volume 2	
J-10C	Guidelines for Transportation Emergency Training Exercises	\$100,000 (TCRP) \$100,000 (NCHRP)	McCormick Taylor	July 2004	Completed - Published as Report 86, Volume 9	
J-10D	Hazard and Security Plan Workshop: Instructor Guide	\$200,000	AECOM Consulting	May 2004	Completed - Published as Report 86, Volume 10	
J-10E	A Guide to Transportation and Hazards Resources	\$37,500	University of Colorado at Boulder	January 2007	Completed - Published as RRD 90	
J-10F	Continuity of Operations (COOP) Planning Guidelines for Transportation Agencies	\$100,000 (TCRP) \$100,000 (NCHRP)	McCormick Taylor	July 2004	Completed - Published as Report 86, Volume 8	
J-10G	Making Transportation Tunnels Safe and Secure	\$200,000 (TCRP) \$200,000 (NCHRP)	Science Applications International Corporation	September 2004	Completed - Published as Report 86, Volume 12	
J-10H	Security Measures for Ferry Systems	\$150,000	Science Applications International Corporation	August 2004	Completed - Published as Report 86, Volume 11	
J-10J	Public Transportation Passenger Security Inspections: A Guide for Decision Makers	\$100,000	Countermeasures Assessment and Security Experts, LLC	February 2006	Completed - Published as Report 86, Volume 13 and Web-Only Document 38	

**TABLE 12 SUMMARY OF TCRP PROJECT J-11 STATUS THROUGH DECEMBER 31, 2022
Quick-Response Research on Long-Term Strategic Issues**

No.	Title	Contractor	Start Date	Estimated Completion Date	Staff Officer
Task 01	Research for ENO Transportaion Foundation Forum on the Future of Metropolitan Transportation	ENO Transportaion Foundation	December 2006	Completed - White papers produced for Forum	
Task 02	Public Transportation Contribution to Greenhouse Gas Reduction and Improved Air Quality	Science Applications International Corporation	April 2007	Completed - Published by APTA	
Task 03	Broadening and Localizing the Connection Between Public Transportation and Petroleum Conservation	ICF International	July 2007	Completed - Published by APTA	
Task 04	Support for the Transit Portion of the AASHTO Transportation Visioning Effort	A. Cambridge Systematics, Inc. B. APTA	April 2007	Completed	
Task 05	Strategy for Demonstrating the Economic Return on Transit and the Benefits of Growth	HDR	July 2007	Completed - Published by APTA	
Task 06	Role of Transit Agencies in the Regional Planning Process	Paul N. Bay	July 2008	Completed - Results to APTA	
Task 07	Economic Impact of Transit (Update of 1999 APTA Report)	Cambridge Systematics, Inc.	December 2008	Completed - Results to APTA	
Task 08	Implications of an Aging Population on Public Transit Agency Funding Needs	Nelson/Nygaard Consulting Associates, Inc.	April 2009	Completed - Results to APTA	
Task 09	Improving Transit Systemwide Energy Efficiency to Enhance Transit's Role in Climate Change Strategies	Center for Neighborhood Technology	April 2010	Completed - Published by APTA	
Task 10	Regional Institutional Models for Transit Agencies	Booz Allen & Hamilton	May 2010	Completed - Results to APTA	
Task 11	Approaches to Updating Urbanized Area Population and Density Data	The Nielson Group	April 2011	Completed - Results to APTA	
Task 12	Survey of Existing Resources, Practices and Metrics of Workforce Development Programs in the U.S. Transit Industry	Transportation Learning Center	September 2009	Completed - Results to APTA	
Task 13	National Forum on Performance-Based Planning	Cambridge Systematics, Inc.	August 2010	Completed	
Task 14	Assessment of Alternative Local and Regional Funding Mechanisms	Cambridge Systematics, Inc.	July 2011	Completed - Results to APTA	

TABLE 12 (continued)

No.	Title	Contractor	Start Date	Estimated Completion Date	Staff Officer
Task 15	Impacts of Cuts and Reductions in Public Transportation Funding	KFH Group	June 2011	Completed - Results to APTA	
Task 16	Improving Safety Performance Comparisons Among Transportation Modes	Watchung Transportation, LLC	February 2012	Completed - Results to APTA	
Task 17	Millennials and Mobility: Understanding the Millennial Mindset and New Opportunities for Transit Providers	Latitude Research	November 2012	Completed - Published as Web-Only Document 61	
Task 18	Broadening Transportation Planning Evaluation Criteria	ICF Consulting	January 2013	Completed - Results to APTA	
Task 19	Critical Assessment for Future Transportation Needs Analysis	Arlee Reno	August 2013	Completed - Results to AASHTO/APTA	
Task 20	An Analysis of Transit Bus Axle Weight Issues	MORR Transportation Consulting, Ltd	March 2014	Completed - Results to APTA	
Task 21	The Impact of New Technology-Enabled Mobility Services on Public Transportation	Shared Use Mobility Center	June 2015	Completed - Published as Report 188	
Task 22	Value Capture Financing for Public Transportation Projects	IMG Rebel	October 2015	Completed - Published as Report 190	
Task 23	Real Estate Market Analysis: Approaches for Measuring Developing Potential			Cancelled	
Task 24	Private Transit Services and Public Transportation	Shared Use Mobility Center	October 2016	Completed - Published as Report 196	
Task 25	Broadening Understanding of the Interplay of Public Transit, Shared Mobility, and Personal Automobiles	Shared Use Mobility Center	May 2016	Completed - Published as Report 195	
Task 26	Collaborations and Partnerships between Public Transportation and Transportation Network Companies (TNCs)	Nelson/Nygaard	September 2017	Completed - Published as Report 204	
Task 27	Low-Speed Automated Vehicles (LSAV) in Public Transportation	Mobility e3 LLC	October 2018	Completed - Published as Report 220	
Task 28	Analysis of Recent Public Transit Ridership Trends	Georgia Tech	June 2018	Completed - Published as Report 209	

TABLE 12 (continued)

No.	Title	Contractor	Start Date	Estimated Completion Date	Staff Officer
Task 29	Strategic Communications to Improve Support for Transit-Priority Projects	Nelson/Nygaard	May 2018	Completed - Published as Report 208	
Task 30	Quick-Build Projects to Improve Bus Transportation Services	Street Plans Collaborative	May 2018	Completed - Pre-published as Report 207	
Task 31	Guidance for Trading, Sharing, and Selling Public Transit Data – Now and in the Future	Economic Development Research Group, Inc.	November 2018	Completed - Published as Report 213	
Task 32	Social and Economic Sustainability Metrics for Public Transportation	Louis Berger	August 2018	Completed - Published as Report 205	
Task 33	Guidebook for Deploying Zero Emissions Transit Buses	Center for Transportation and the Environment	January 2019	Completed - Pre-published as Report 219	
Task 34	The Effects of Vehicle Automation on the Public Transportation Workforce	Texas A&M Transportation Institute	March 2019	Completed - Published as Report 232	
Task 35	Resource Guide for Improving Diversity and Inclusion Programs for the Public Transportation Industry	Keen Independent Research	October 2019	Completed - Published as Report 228	
Task 36	An Update on Public Transportation's Impacts on Greenhouse Gas Emissions	Center for Neighborhood Technology	October 2019	Completed - Published as Report 226	
Task 37	Transit and Micro-Mobility (Bikeshare, Scooter-share, etc.)	Shared-Used Mobility Center	September 2019	Completed - Published as Report 230	
Task 38	An Analysis of Green Bond Financing in the Public Transportation Industry	Cadmus	September 2019	Completed - Published as Report 222	
Task 39	Evaluation Framework for Fare-Free Transit	Nelson/Nygaard Consulting Associates, Inc.	December 2020	Completed. Pre-published as TCRP Research Report 237.	D. Schwager
Task 40	Homelessness: A Guide for Public Transportation	Portland State University	November 2020	Research in Progress	D. Schwager
Task 41	Pathways to Effective, Inclusive, and Equitable Virtual Public Engagement for Public Transportation	Rutgers University (POET)	February 2022	Research in Progress	D. Schwager
Task 42	Transportation Services for People with Disabilities and Older Adults during a Pandemic and Other Emergencies: Lessons Learned during the COVID-19 Pandemic	Texas A&M Transportation Institute	December 2021	Research in Progress	D. Schwager

TABLE 12 (continued)

No.	Title	Contractor	Start Date	Estimated Completion Date	Staff Officer
TASK 43	Analysis of Public Transportation Health Impacts and Benefits			In Development	D. Schwager
TASK 44	Improving Access to Public Transit with Transit-Oriented Streets			In Development	D. Schwager

TABLE 13 NEW PROJECTS AND CONTINUATIONS SELECTED FOR THE TCRP FISCAL YEAR 2023 PROGRAM

PROJECT NUMBER	TITLE	ALLOCATION
NEW PROJECTS		
A-49	Fare Policies, Structures, and Technologies—2022 Updates	\$300,000
A-50	Practical Considerations for Developing Transition Plans to Zero-Emission Fleets	\$250,000
A-51	Innovative Practices for Technology Implementation at Rural, Small, and Mid-Sized Transit Agencies	\$350,000
B-51	Floating Transit Stops and Passengers with Vision Disabilities	\$400,000
B-52	Intercity Bus: The State Role Update	\$450,000
B-53	Planning for the Travel Needs of Women	\$300,000
D-23	Guidebook for Planning and Constructing a Small and Rural Tribal Transit Facility	\$400,000
D-24	Determination of Actual Derailment Loads on Transit Bridges	\$300,000
E-15	COVID-19 and Transit Air Quality Protections	\$150,000
F-31	Modernizing Transit Station Staffing Management	\$250,000
J-11/ Task 45	Future of Commuter Rail	(\$100,000)
J-11/Task 46	New Tech, New Skills, New Jobs	(\$100,000)
J-11/Task 47	Affordable Housing and Transit	(\$100,000)
Total New Studies		\$3,150,000
CONTINUED PROJECTS		
J-04	Innovations Deserving Exploratory Analysis—The Transit IDEA Program	\$315,000
J-05	Legal Aspects of Transit and Intermodal Transportation Programs	\$225,000
J-07	Synthesis of Information Related to Transit Problems + Improving Customer Perception of Personal Security by Addressing Substance Abuse, Mental Illness, and Homelessness in and on Transit Systems	\$440,000
J-11	Quick-Response Research on Long-Term Strategic Issues	\$400,000
Total Continuations		\$1,380,000

**These projects are funded separately under the TCRP Project J-11, "Quick-Response Research on Long-Term Strategic Issues," and will be conducted as expedited research projects. Consequently, all panel meetings will be conducted as conference calls.*

NOTICE TO READERS

Information about project status and detailed project write-ups are available on the TCRP website: www.trb.org/TCRP.

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TCRP publications are listed in Table 3.

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