



## Transforming Public Transportation Institutional and Business Models

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73 pages | 8.5 x 11 | PAPERBACK

ISBN 978-0-309-25869-2 | DOI 10.17226/22675

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**TRANSIT COOPERATIVE RESEARCH PROGRAM**

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**TCRP REPORT 159**

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**Transforming Public  
Transportation Institutional  
and Business Models**

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Public Transportation • Administration and Management

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Research sponsored by the Federal Transit Administration in cooperation with the Transit Development Corporation

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**TRANSPORTATION RESEARCH BOARD**

WASHINGTON, D.C.

2012

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## 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, to adapt appropriate new technologies from other industries, and to 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, problem-solving research. TCRP, modeled after the longstanding and successful National Cooperative Highway Research Program, undertakes research and other technical activities in response to the needs of transit service providers. The scope of TCRP includes a variety of 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, acting through the Transportation Research Board (TRB); and the Transit Development Corporation, Inc. (TDC), a nonprofit educational and research organization established by APTA. TDC is responsible for forming the independent governing board, designated as the TCRP Oversight and Project Selection (TOPS) Committee.

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 Committee to formulate the research program by identifying the highest priority projects. As part of the evaluation, the TOPS Committee defines funding levels and expected products.

Once selected, each project is assigned to an expert panel, appointed by the Transportation Research Board. 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 managing cooperative research programs since 1962. As in other TRB activities, TCRP project panels serve voluntarily without compensation.

Because research cannot have the desired impact if products fail to reach the intended audience, special emphasis is placed on disseminating TCRP results to the intended end 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 will arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by urban and rural transit industry practitioners.

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

## TCRP REPORT 159

Project H-43  
ISSN 1073-4872  
ISBN 978-0-309-25869-2  
Library of Congress Control Number 2012952621

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*are available from:*

Transportation Research Board  
Business Office  
500 Fifth Street, NW  
Washington, DC 20001

*and can be ordered through the Internet at*  
<http://www.national-academies.org/trb/bookstore>

Printed in the United States of America

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# FOREWORD

By Lawrence D. Goldstein

Staff Officer

Transportation Research Board

*TCRP Report 159* provides an analysis of and strategy for defining and implementing transformative change in institutional and business models for operating and maintaining public transportation systems. It addresses a wide range of issues important to continued efficient operations, including responding to the needs of affected customer markets, improving operating procedures, implementing effective capital asset management, carrying out long-term planning and mission definition, improving and expanding functional areas as well as expertise and technical skill sets of the workforce, identifying and improving necessary business practices, identifying and implementing innovative funding mechanisms, implementing performance measures and improved governance models, identifying required organizational structures, and instituting effective area-wide collaborative practices. The report identifies the components of transformative change and develops a substantive typology to assist agencies in organizing and structuring an approach to defining and implementing components of productive change. The report further examines potential consequences of change that should be considered by agencies or organizations contemplating new institutional and business models.

The analysis is based on a detailed case study approach that examines experience in 13 locations throughout the country and one in Canada, representing a diverse set of agencies with widely varying demographic and operational characteristics. These case studies are described in detail, and case study outcomes are used to help define what contributes to successful implementation. Each of the case studies describes background conditions and agency characteristics, type and nature of transformation undertaken, rationale for change, approaches to planning and infrastructure development, methods of community and agency collaboration and cooperation, outcomes and consequences of change, and lessons learned.

The target audience for this study includes leaders who are seeking to transform public transportation organizations. Within transit agencies, the audience includes general managers, deputy general managers, and other senior leadership. Outside of transit agencies, the target audience includes political leaders, regional business leaders, leaders in partner transportation and planning agencies, and other key stakeholders that have the ability to influence the direction of public transportation.

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While public transportation organizations face tremendous variation in the markets they serve; in the modes in which they operate; and in how they are organized, governed, and financed; there are common change strategies that are beneficial within the diverse transit industry. This is a fundamental conclusion of this research. Based on the commonality of issues, what emerges is a process or strategy on how to plan, evaluate, and address the components of

change, and how to coordinate and collaborate with a widely diverse audience on methods for achieving change in a beneficial way. A critical step in that process involves carrying out a concise self-assessment that begins the conversation with the broad range of affected agencies on how they might approach the complex and often controversial process of transformation.

Another important conclusion of the research is that the most notable change efforts occurred within a context of strong collaboration with local and regional leaders. While internal agency leadership appears critical to success, the most successful agencies approached the transformation process by carrying out a broad coordination and collaboration effort involving many partners. In several cases, change was driven by leaders from outside of the transit agency. The research also highlights that change often takes an extended period of time and benefits from stable leadership through that extended process.

This report serves as a roadmap for those seeking improved institutional and managerial models that assist public transportation agencies in addressing change in demand, change in institutional responsibilities, change in financing, and other critical evolutionary requirements. It is a complex process that requires a systematic approach bringing all those involved into the transformation process.

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## S U M M A R Y

# Transforming Public Transportation Institutional and Business Models

This study describes and explains how transit agencies are making transformative changes in institutional and business models that equip them to handle forces that threaten the long-run efficiency, effectiveness, reliability, safety, and security of the nation's public transportation systems. The research approach and conclusions of this study are based on 14 case studies of public transportation organizations that have implemented fundamental change. The case studies help explain what changes agencies are making, why they are making these changes, and how they are doing it. The study highlights transferable lessons that can help guide agencies that are undertaking or considering similar efforts. While the reasons for change and approaches to it vary widely, the 14 case studies highlighted in this research exemplify the significant potential for change that exists within the public transportation industry. In many of the regions examined, the change that happened was so fundamental as to transform the reach and role of multiple transportation organizations, including transit operators and regional planning agencies.

### Defining Fundamental Change

The study emphasizes the experiences of agencies that have gone beyond incremental changes in standard or traditional business practices toward large-scale adoption of what might be viewed as “emerging” practices. The consequences of change as highlighted in the research have been perceived as positive, and the lessons learned from the case studies have a degree of transferability. The research identifies the following categories of “transformative” change:

- **Mission shift**—A shift in the defined mission of the organization, led by internal or external stakeholders, which might involve a shift in types of services, geographic coverage, or market emphasis.
- **Funding**—Responses to changes in funding, including new and broader sources of revenues; threats or uncertainty surrounding existing funding sources; or increased accountability related to existing or new funding sources.
- **Governance**—Changes in the role or structure of the governing body.
- **Measuring goal achievement**—An increased emphasis on goals and measures, with specific activities such as the integration of customer quality measures with operational and budget measures or the integration of measures of community goals (e.g., sustainability and livability) with customer, operational, and budget measures.
- **Resource management**—Innovation in the generation of resources and revenues and their use, including the application of performance measures in policy, budget, and operating decisions; innovation in capital and infrastructure management; and enhanced private sector participation.

- **Retooled workforce and organization**—Innovation in human capital management, including a renewed focus on recruitment and retention, training, and succession planning; the addition of new capabilities, skills, and capacity; and revised or realigned roles and responsibilities.
- **Collaboration and integration**—Enhanced public and private collaboration across modes, jurisdictions, and programs, including the integration of assets, facilities, equipment, and financial and human resources, as well as of operational, managerial, and decision-making roles.
- **Technology applications**—Adoption of state-of-the-art information technologies, including the implementation of real-time data and customer service applications, changes in information access and use policies, and the application of enhanced asset management.

## Drivers of Change

Organizations rarely embrace fundamental change without first facing significant and specific external driving factors—factors that may be negative or positive. In an individual agency, the relevance of particular external drivers for change will vary depending on the agency’s mission, organization, governance, sources of funding, location, and size, among other factors. Common drivers of change include the following:

- **Funding and finance**—In the face of funding shortfalls and uncertainty about if, or how, they can be bridged, funding and finance are undeniably important drivers of change. Without reform of traditional transit funding practices, the long-term prospects are dim for ensuring that transit funding in the United States is sufficient to maintain or expand service.
- **New technology**—As new technology continues to evolve across all aspects of society, expectations increase for transit agencies to participate in this evolution. A range of emerging state-of-the-art technologies have the potential to transform the efficiency, effectiveness, reliability, safety, and security of transit in coming decades, if the transit industry is able to integrate them into standard business practices.
- **Demographics and society**—Rapid changes in regional demographics often create an environment in which transit agencies must embrace fundamental change to remain relevant within their region’s transportation system. Population growth, an aging and more diverse population, and changing lifestyles are important forces for change that will redefine markets for transit.
- **Sustainability, energy, and environmental concerns**—Perceptions about issues related to sustainability, energy, and climate change all suggest a promising role for public transportation in the nation’s transportation system over the coming decades. Greater transit deployment is viewed as a potential strategy to reduce energy use and contribute to reductions in greenhouse gas emissions.
- **Travel, land use, and development patterns**—A number of societal changes have occurred over the past decade that have implications for the level of and type of demand for transit services, including the revival of cities, the growth in single-person households, the growth of jobs in the suburbs, increased congestion, a decrease in the proportion of work trips, and an increase in trip “chaining” (the practice of combining multiple trips into a single coordinated trip).
- **Infrastructure condition**—A significant proportion of the nation’s transit assets are in need of capital reinvestment, an issue that is continuing to challenge public transportation agencies in an era of limited resources.

## Themes of Successful Change

On the basis of the case studies, this study identifies several shared themes related to successful change found across a selection of public transportation agencies that have made fundamental changes in business and institutional models. These themes are the following:

- **Collaboration and partnership are essential to successful change.** The case study research suggests that motivation for change often comes from outside the organization, or as part of a collaborative partnership. Challenges during the change process often require more support and resources than are available within an agency. Given the long-term nature of change strategies, it appears vital that an agency establish partnerships with organizations that have continuity, particularly in cases where the transit agency governance changes with political cycles. In a number of cases, when an agency faced criticism, external partners defended the agency and thereby allowed change to continue.
- **Successful change requires a clear vision.** In almost all of the cases explored, the transit agency, the regional planning organization, the business community, elected officials, or other stakeholders first defined a vision or desired outcome that subsequently helped guide the direction of fundamental change and helped stakeholders stay focused through the inevitable challenges faced along the way. In most of the cases examined, a vision was developed in partnership with other organizations and outside stakeholders. In some cases, the vision for change was developed by outside organizations with expectations that the transit agency change to fully meet an expected role.
- **Stable and supportive leadership is necessary to support change.** Any change effort will require the support of leadership within the organization, but some of the most effective change efforts are headed by leaders that have served their agencies for an extended period of time. These leaders built the support of their governing board, employees, and other key stakeholders as they engaged in the change process. Among the agencies explored in the case studies, a number engaged in a period of fundamental change under leadership that had been in place for more than a decade.
- **An effective governance structure is required for fundamental change.** In six of the case studies explored, a change in governance was at the center of the movement toward fundamental change. In five of these six cases, the make-up of the governing body changed, and in the sixth, the governing body remained fundamentally the same but the governing body explicitly changed its role. The common thread through these cases was that the existing governing body required some modification to support a changing role for the transit agency, often with the effect of providing agency staff with more authority.
- **Change requires sufficient internal and external agency resources.** In several of the case studies, the path to change required modifications in organizational structure to reinforce a desired outcome, while in others change required outside expertise, hiring new staff, or considering new approaches to procurement. While the needs for new resources varied widely, in all cases the agencies identified specific resources that were needed to make the change happen.
- **Targeted workforce development supports change.** In a number of the case studies, the agency focused attention and resources on the development of its workforce. In some cases, this attention included engagement of employees in the process of change, while in others the agency invested in workforce development with direct training related to the change.
- **Change may require realignment of agency authority with other regional agencies.** Several of the change efforts among the case studies involved a shift of responsibility and/or authority across agencies, often with an enhanced emphasis on multimodal transportation planning, project delivery, and finance. In many cases, more effective transit

programs emerged from closer coordination with highway programs and regional planning organizations.

- **Understanding the risk of failing to change supports success.** In a number of the case studies, the agency and other stakeholders understood the risk of failing to change and were motivated by those potential consequences. The reality of any effort to embrace fundamental change is that an agency will face opposition to the proposed changes. Understanding the risk of failing to change can provide balance against the natural resistance to change.

As outlined in Table S-1, these common themes of successful change are found within the 14 case studies conducted as part of this research effort. While the underlying characteristics of these organizations vary and the consequences of these changes are remarkably different, many of the strategies and elements of change are notably consistent. Table S-1 provides a brief summary of the change explored in each case study and the consequences of change. Full descriptions of each case study are available in the appendix to this report.

## **Actions Recommended to Promote Change**

The experiences of the agencies studied highlight a number of critical actions for transit agencies and/or their stakeholders who wish to promote fundamental changes in business and institutional models:

1. **Define a vision.** A “vision” should serve to guide fundamental change. Support and acknowledgement of that vision should exist among board members, agency staff, key regional organizations, other stakeholders, and the general public. Should a clear vision not exist, establishing the most effective platform for developing such a vision is a critical step in the change process. Agencies should consider several key questions at this step:
  - Is there a clear vision or desired outcome upon which to focus the change process? If not, who are the key organizations or leaders who should serve as partners in a visioning process?
  - If a defined vision does exist, are key stakeholders aware of and supportive of that vision (e.g., unionized agency staff, non-union staff, senior management, governing body, agency funders, local elected officials, state elected officials)? If key stakeholders are not supportive, does the lack of support among specific stakeholders undermine the potential for change?
2. **Assess the strength and role of external partnerships.** Partners and external advocates are crucial to success. These partners may serve to defend the agency, run campaigns for transit funding, or provide critical support as inevitable challenges emerge. In some cases, the transit organization may need to cede leadership to a partner with broader scope to accomplish the change. Agencies should consider several key questions in assessing the strength of partnerships:
  - Who are your current partners and advocates?
  - Which partners could help you achieve desired change?
  - What actions are your partners taking to support desired change within the organization?
  - What additional activities could be helpful?
3. **Identify and address barriers to change.** It is vital to conduct a thorough assessment of potential barriers that will limit the agency’s ability to achieve its vision for change. Areas of consideration include the following:
  - External institutional constraints, including legislative constraints, funding limitations or requirements, and agency authority;

Table S-1. Agency case studies.

Transit Agency	Change Evaluated for Case Study	Consequences of Change
<b>Advance Transit (NH/VT)</b>	Shift in service to target choice riders in collaboration with regional institutions and other area partners. These new partners needed the new service to meet changes in institutional locations and resulting travel patterns.	The agency now plays a key role in regional mobility and serves the needs of major regional institutions. Service now attracts more choice riders (54 percent) compared to 10 years ago (25 percent) and is the second largest in New Hampshire as measured by ridership.
<b>Capital Area Transportation Authority (CATA) (Lansing, MI)</b>	Shift from operational mission guided by experience and intuition to one based on collaboration, integration, and partnering using data-based planning and management. An enhanced partnership with Michigan State University (MSU) encouraged the change to a more analytical approach.	Decisions are now based on a more analytic framework with a shift from an annual to a long-term planning horizon. As a result, the agency has increased ridership and sustained strong public support as measured by approval for property tax millage renewals or increases.
<b>Champaign-Urbana Mass Transit District (C-U MTD) (Champaign-Urbana, IL)</b>	Agency fully embraced technology with a supporting change in the organizational structure. C-U MTD has completely transformed its communication approach with real-time information delivered through multiple means.	Resulted in improved customer satisfaction, an improved perception of reliability, continued community support, and high levels of customer satisfaction. The transition to using one data set for stop times and locations also has improved the accuracy and efficiency of scheduling.
<b>Charlotte Area Transit System (CATS) (Charlotte, NC)</b>	Agency changed from a bus operator serving the city with relatively static service to a regional multimodal service provider. Shift involved governance changes and an increase in internal staff capacity with business involvement and collaboration to push for change.	Between 1998 and 2010, CATS increased service by more than 75 percent, expanded its service area, opened its first light rail line, expanded commuter bus service, and more than doubled ridership. Local land use decisions are now coordinated with transit investments.
<b>Chittenden County Transportation Authority (CCTA) (Burlington, VT)</b>	Agency changed its role from serving a single jurisdiction to serving multiple counties. Most expansion occurred through the takeover of other systems, which was required to protect existing services that were in crisis.	The agency improved service and increased efficiencies through the merger of several operating agencies. By taking responsibility for an expanded service area, the agency transitioned from providing service in a single county to serving a five-county region with a wide variation in service type.
<b>Metropolitan Transit System (MTS) (San Diego, CA)</b>	Change involved integration of transit operations with a shift of all planning and development functions to the regional metropolitan planning organization (MPO). Operations planning and support functions later moved back to the transit agency with long-term planning remaining at the MPO.	The transformation of agency roles has allowed the transit agency to focus on operations while the San Diego Association of Governments (SANDAG) manages other decision-making responsibilities. MTS restructured most of its service, increased bus ridership 12 percent, and improved the farebox recovery ratio from 25 percent to 43 percent. SANDAG now leads the region's emphasis on complex multimodal transportation projects.
<b>Metropolitan Transportation Authority (MTA) (New York, NY)</b>	Decades after the consolidation of different operating agencies, MTA has centralized a number of duplicative business service functions that were previously delivered independently by each of the operating agencies.	Transition to centralized delivery of business services allowed for a significant reduction in staff and, over the long term, will allow the agency to focus on ways to further improve its approach to these activities.

(continued on next page)

Table S-1. (Continued).

Transit Agency	Change Evaluated for Case Study	Consequences of Change
<b>Metro Transit (Minneapolis/St. Paul, MN)</b>	Change in the region involved creation of a new body to facilitate regional funding for transit. The change involved a shift in responsibility for funding and decision-making from the state to the region.	The creation of the Counties Transit Improvement Board (CTIB) increased the Twin Cities region's capacity to develop large-scale, federally funded transit projects. Since its creation in 2008, CTIB has authorized about \$500 million in grants and has supported securing about \$1.5 billion in federal funds.
<b>Regional Transportation District (RTD) (Denver, CO)</b>	Agency changed its focus from moving vehicles to moving people in a continuing evolution in business model and organization. Change was supported by new strategies in partnering and in resource use to increase the availability and effectiveness of service. The agency did so while reducing the associated public subsidy per trip.	Partnering and cost-sharing arrangements adopted to meet its new people-moving mission have allowed RTD to meet its service standards, minimize per-trip subsidies, carry on a major capital expansion program, and sustain a high degree of political and community support.
<b>San Francisco Municipal Transportation Agency (SFMTA) (San Francisco, CA)</b>	Change involved consolidation of multimodal responsibilities, including roadways, parking, bicycle planning, pedestrian planning, and taxi regulation for the entire city-county transportation network into one agency governed by a single policy board.	Efforts to manage limited road space using various modes have begun to take better advantage of the inherent capabilities of each mode in meeting market needs. Combined responsibility has brought greater funding flexibility and offers the prospect of continued improvements in service, access, and mobility.
<b>Southeastern Pennsylvania Transportation Authority (SEPTA) (Philadelphia, PA)</b>	The agency instituted an enhanced emphasis on customer service with corresponding organizational changes to reinforce the focus. The agency also now focuses on non-users as key stakeholders.	Customer service ratings have improved significantly since the new customer service initiative began. There has been a steady change in front-line interactions with customers.
<b>TransLink (Vancouver, BC)</b>	The agency changed from a transit operator to a regional multimodal organization with land use authority. The shift in role happened as the province moved away from its role as the provider of regional transportation services with a corresponding emphasis on regional delivery.	Ridership has more than doubled since 1999, bus service hours have increased by 40 percent, and the agency has constructed two rail lines. The region's transit mode split increased from 10 percent to 12 percent between 1999 and 2011, customer service ratings reached record levels in 2010, and land use density has increased in transit corridors.
<b>Utah Transit Authority (UTA) (Salt Lake City, UT)</b>	The agency transitioned from a regional bus operator to one that operates bus, light rail, and commuter rail services. Change happened with active community collaboration to build political support, an effort to build institutional capacity, and a change in the role of the board.	A market that was once made up primarily of captive riders is now estimated to be approximately 70 percent choice riders, and annual ridership has increased from 24 million in 1998 to 39 million in 2010.
<b>Washington (Statewide)</b>	Washington State DOT shifted its role from grants manager responding to funding requests to an active manager of intercity bus with innovative financing approaches. Under the new business model, the state contracts for identified services rather than responding to specific subsidy requests.	The change has resulted in a complete statewide intercity bus network with limited public subsidies and now serves as a model for other states.

- Internal institutional constraints, including agency governing body, or organizational structure;
- Human resources and technical capacity;
- Perceptions of the agency's capabilities held by the public, elected officials, or other key stakeholders;
- Financial resources;
- Technology-related constraints; and
- Process-related limitations.

For each of these potential barriers, change agents should identify potential strategies to eliminate the identified barriers (e.g., through legislative changes, reorganization, new partnerships, etc.) or, in cases where eliminating these barriers is not possible, identify strategies to minimize the identified barrier.

4. **Identify necessary changes in institutional responsibilities.** Desired change may require a shift in responsibilities for operations, planning, or visioning. If limitations in institutional authority or institutional capacity act as impediments to desired change, it is helpful to consider which organizations can take on some of these responsibilities and become a partner in the change movement. Conversely, public perception of too much agency authority might serve as an obstacle to an agency's effectiveness. In several of the case studies, the transit agency either increased its authority (e.g., authority to generate revenue or regulate land use) or shifted responsibilities to other regional organizations (e.g., shift of transit planning, project delivery, authority to generate revenue).
5. **Determine financial or human resources necessary to make the change happen.** Agents of change should determine expected resource needs and think broadly about how to obtain needed support, even if these resources come through partnership. While additional resources are often needed to support change strategies, these resources do not necessarily require new funds or people. In a number of the case studies, the agencies shifted funds or people from other places, or generated resources through partnership. Development of necessary human resources through targeted workforce development activities can be an effective approach.
6. **Set expectations for a reasonable timeframe for success.** A realistic assessment of the timeframe for success will establish a framework within which change agents can identify necessary resources to effect change. As importantly, a realistic assessment of the timeframe will set expectations and support strategies that extend beyond political or other institutional cycles. Establishing a reasonable timeframe is important for setting expectations among governing bodies, the general public, funders, and other key stakeholders.
7. **Assess current governance and whether the governance aligns with desired change.** Given the influence of the governing body, understanding the support of the current governing body and whether the governance structure creates any potential barriers is critical. The governing structure may create limitations in geographic expansion, expectations regarding the distribution of service, or generate other limitations that should be understood.
8. **Understand the risk of failing to change.** Failing to change also comes with risk. Understanding the consequences of failing to change is an important motivator in promoting change. Remembering these consequences can serve to balance the likely opposition to promoting change and help an agency overcome some of the external challenges, particularly those that are political and public in nature.

The wide variation in transit agency size, role, mission, governance structure, funding partners, and operating environment make it difficult to map a precise strategy for making change

happen. The questions below provide a structured process of self-assessment for those transit agencies beginning the process regardless of an agency's size, structure, or mission:

1. Is there a clear vision or desired outcome upon which to focus the change process?
  2. If a defined vision does exist, are key stakeholders aware of and supportive of the vision (such stakeholders include unionized agency staff, non-union staff, senior management, the governing body, agency funders, and state and local elected officials)?
  3. Who are the agency's current partners and advocates? What actions are the agency's partners taking to support desired change within the organization? What additional activities could be helpful?
  4. What external institutional constraints, including legislative constraints, funding limitations or requirements exist? What actions can the agency or others take to remove or reduce any of these barriers to change?
  5. What internal institutional constraints, including the agency governing body or organizational structure, exist (e.g., human and technical capacity, perception of agency capability, financial resources, technology constraints, process limitations)? What actions can the agency or others take to address these limitations that are likely to inhibit change?
  6. What additional financial or human resources are needed to undertake the desired change?
  7. Does the current governance structure create any limitations in the agency's ability to undertake change? What actions can the governing body or others undertake to address these limitations?
-

## CHAPTER 1

# Introduction

### 1.1 Research Objective

This study describes and explains how transit agencies are making transformative changes in institutional and business models that equip them to handle forces that threaten the long-run efficiency, effectiveness, reliability, safety, and security of the nation's public transportation systems. The phrase "institutional and business models" is shorthand for a wide range of strategic issues that includes customer markets, operations and capital asset management, mission, long-range planning, functional areas of expertise, technical skill sets, business processes, funding mechanisms, performance measures, governance models, organizational structures, and collaborative practices.

While institutional and business models in many transit organizations have changed over the past decade, the reasons for change and the way it is achieved are rarely documented in the literature. The research approach and conclusions of this study are based on 14 case studies of public transportation organizations that have implemented fundamental change. The case studies help explain what changes agencies are making, why, and how. This report highlights transferable lessons

that can help guide transit agencies that are undertaking or considering similar efforts.

### 1.2 Report Organization

**Chapter 2: Defining Examples of Transformative Change** identifies examples of transformative change relevant to this research effort and summarizes the focus of 14 case studies explored as part of the research.

**Chapter 3: Drivers of Change Faced by the Transit Industry** describes the most significant forces spurring change within public transportation agencies. This chapter also provides a summary of drivers of change found in the case studies.

**Chapter 4: Themes for Successful Change Strategies** provides an overview of common, transferable lessons identified in the case studies.

**Chapter 5: Development of a Strategy for Fundamental Change** defines eight actions transit agencies should consider as they embark on strategies to promote fundamental change.

The appendix to this report provides an overview of the case study process and all 14 case studies undertaken for this research effort.

## CHAPTER 2

## Defining Examples of Transformative Change

To expand and update previous research in the area of fundamental change, the research effort conducted as part of this study relied on extensive interviews with public transportation organizations that had recently undergone fundamental change. Four simple, qualitative criteria were used to screen and select agencies to study based on readily available information and with the goal of identifying appropriate and diverse examples of change:

1. Each **type** of potentially transformative change, as defined below, should be represented.
2. The **scope** of changes to be examined should be significant.
3. The **consequences** of the changes, actual or anticipated, should be positive.
4. There should be a greater rather than a lesser degree of **transferability** among the cases selected.

The case study research relied in large part on the perspectives of those who manage and work for the transit agencies explored. In some instances, the research team also conducted interviews with individuals from outside of the organization who were involved in the process of change at some level. The case studies represent a point in time, and the research team expects that some of the changes highlighted in the research may be seen in a different light in the future. Despite these acknowledged limitations, the cases studied in this research highlight a number of consistent and transferable lessons.

### 2.1 Types of Transformative Change

Table 2.1 provides a typology of the categories of changes considered “transformative” in their nature, scope, and consequences. The categories are an expansion of the dimensions of change that were first suggested in *TCRP Report 97* (Stanley et al., 2003). Past experience in exploring fundamental organizational change has revealed important lessons with respect to the types of change being considered:

1. Institutions involved in “transformative” change seldom experience change in only one of the dimensions noted; more often, changes take place across several of these dimensions simultaneously.
2. “Transformative” change is shaped by context, such as circumstances, history, evolving governance philosophies, and leadership, as well as future institutional strategies.
3. Accomplishing “transformative” change does not depend on accomplishing the types of changes noted in any specific order. For instance, wholesale adoption of new information technologies may trigger changes in organizational structure, roles and responsibilities, and vice versa; formal mission shift may trigger new collaborative and integrative actions and vice versa.

### 2.2 Scope of Transformative Change

Regarding the scope of change, “transformative” change and innovation refers to change that is more extensive than incremental changes in standard or traditional business practices, moving toward broader adoption within the industry of what might be viewed as “emerging” conventional practices. Transformative changes are “directed,” or forward-looking, institutional changes and innovations that set future benchmarks for an entire industry.

While crises of various sorts played a role in driving the changes in some of the agencies studied, it is important to look beyond changes that are largely crisis-driven or reactionary in nature. In the case of the U.S. transit industry, the most prevalent and persistent crisis affecting agencies of all sizes is inadequate resources. For many of the organizations studied in this research, the perception may be that change was triggered by a funding crisis, but, in fact, the plans and roadmap to change were in place prior to the financial crisis. In these instances, the financial crisis simply provided a trigger to move forward with transformative change.

**Table 2.1. Types of transformative change.**

<b>Mission Shift</b>
<ul style="list-style-type: none"> <li>• Transit service delivery TO transportation, environmental, and land use steward role</li> <li>• Narrow focus on transit service TO broad focus on “mobility” and “access”</li> <li>• Asset-oriented mission TO customer-oriented mission</li> <li>• Operations-oriented mission TO quality-oriented mission</li> </ul>
<b>Funding</b>
<ul style="list-style-type: none"> <li>• Adapting to new and broader sources of revenue and financial support</li> <li>• Addressing threats or uncertainty surrounding existing funding sources</li> <li>• Responding to increased accountability or expectations related to existing or new funding sources</li> </ul>
<b>Governance</b>
<ul style="list-style-type: none"> <li>• Enhanced regional role and/or regional coordination</li> <li>• Enhanced or modified governance structures</li> <li>• Changes in oversight role of governing body</li> </ul>
<b>Measuring Goal Achievement</b>
<ul style="list-style-type: none"> <li>• Integration of customer quality measures with operational and budget measures</li> <li>• Integration of measures of community goals (e.g., sustainability and livability) with customer, operational, and budget measures</li> </ul>
<b>Resource Management</b>
<ul style="list-style-type: none"> <li>• Innovation in generation of resources and revenues and their use</li> <li>• Application of performance measures in policy, budget, and operating decisions</li> <li>• Innovation in capital and infrastructure management</li> <li>• Enhanced private sector participation</li> </ul>
<b>Retooled Workforce and Organization</b>
<ul style="list-style-type: none"> <li>• Innovation in human capital management, including public/private model</li> <li>• Renewed focus on recruiting/retention, training, and succession planning</li> <li>• Addition of new capabilities, skills, and capacity</li> <li>• Revised/realigned roles and responsibilities</li> </ul>
<b>Collaboration and Integration</b>
<ul style="list-style-type: none"> <li>• Collaboration across modes, jurisdictions, and programs</li> <li>• Collaboration across organizations (public and private)</li> <li>• Integration of assets (public and private) such as facilities and equipment</li> <li>• Integration of financial and human resources</li> <li>• Integration of operational, managerial, and decision-making roles</li> </ul>
<b>Technology Applications</b>
<ul style="list-style-type: none"> <li>• Adoption of state-of-the-art information technologies</li> <li>• Implementation of real-time data and customer service applications</li> <li>• Changes in information access and use policies and procedures</li> <li>• Application of enhanced asset management</li> </ul>

## 2.3 Consequences of Transformative Change

In defining what constitutes “transformative” change and innovation, it is important to consider the consequences of the changes made by an agency or organization. The full consequences may not be clear for some time following the introduction of transformative change but may include, among others:

- Heightened recognition of the “relevance” of the services offered;
- Increases in non-single occupant vehicle (SOV) use;
- Increases in service availability, convenience, or variety of service options;
- Reduced cost to the customer or to the taxpayer;
- Improved operational efficiency or service reliability;
- More streamlined decision-making processes;
- Enhanced access or flexibility in the use of resources;

- Positive impact on community goals; and
- Enhanced political and community support.

## 2.4 Change Explored in Case Studies

While the reasons and approaches for change vary widely, the 14 organizations studied in this research exemplify the significant potential for change that exists within the public transportation industry. In many of the regions examined, the change that happened was so fundamental as to transform the reach and role of multiple transportation organizations, including transit operators and regional planning agencies. Table 2.2 provides a brief summary of the change evaluated in each case study and the consequences of the change. In all of the case studies, change occurred over a number of years, and more often over the course of more than a decade. Detailed descriptions of all 14 case studies are included in the appendix to this report.

**Table 2.2. Agency case studies.**

<b>Transit Agency</b>	<b>Change Evaluated for Case Study</b>	<b>Consequences of Change</b>
<b>Advance Transit (NH/VT)</b>	Shift in service to target choice riders in collaboration with regional institutions and other area partners. These new partners needed the new service to meet changes in institutional locations and resulting travel patterns.	The agency now plays a key role in regional mobility and serves the needs of major regional institutions. Service now attracts more choice riders (54 percent) compared to 10 years ago (25 percent) and is the second largest in New Hampshire as measured by ridership.
<b>Capital Area Transportation Authority (CATA) (Lansing, MI)</b>	Shift from operational mission guided by experience and intuition to one based on collaboration, integration, and partnering using data-based planning and management. An enhanced partnership with Michigan State University (MSU) encouraged the change to a more analytical approach.	Decisions are now based on a more analytic framework with a shift from an annual to a long-term planning horizon. As a result, the agency has increased ridership and sustained strong public support as measured by approval for property tax millage renewals or increases.
<b>Champaign-Urbana Mass Transit District (C-U MTD) (Champaign-Urbana, IL)</b>	Agency fully embraced technology with a supporting change in the organizational structure. C-U MTD has completely transformed its communication approach with real-time information delivered through multiple means.	Resulted in improved customer satisfaction, an improved perception of reliability, continued community support, and high levels of customer satisfaction. The transition to using one data set for stop times and locations also has improved the accuracy and efficiency of scheduling.
<b>Charlotte Area Transit System (CATS) (Charlotte, NC)</b>	Agency changed from a bus operator serving the city with relatively static service to a regional multimodal service provider. Shift involved governance changes and an increase in internal staff capacity with business involvement and collaboration to push for change.	Between 1998 and 2010, CATS increased service by more than 75 percent, expanded its service area, opened its first light rail line, expanded commuter bus service, and more than doubled ridership. Local land use decisions are now coordinated with transit investments.
<b>Chittenden County Transportation Authority (CCTA) (Burlington, VT)</b>	Agency changed its role from serving a single jurisdiction to serving multiple counties. Most expansion occurred through the takeover of other systems, which was required to protect existing services that were in crisis.	The agency improved service and increased efficiencies through the merger of several operating agencies. By taking responsibility for an expanded service area, the agency transitioned from providing service in a single county to serving a five-county region with a wide variation in service type.
<b>Metropolitan Transit System (MTS) (San Diego, CA)</b>	Change involved integration of transit operations with a shift of all planning and development functions to the regional metropolitan planning organization (MPO). Operations planning and support functions later moved back to the transit agency with long-term planning remaining at the MPO.	The transformation of agency roles has allowed the transit agency to focus on operations while the San Diego Association of Governments (SANDAG) manages other decision-making responsibilities. MTS restructured most of its service, increased bus ridership 12 percent, and improved the farebox recovery ratio from 25 percent to 43 percent. SANDAG now leads the region's emphasis on complex multimodal transportation projects.

Table 2.2. (Continued).

Transit Agency	Change Evaluated for Case Study	Consequences of Change
<b>Metropolitan Transportation Authority (MTA) (New York, NY)</b>	Decades after the consolidation of different operating agencies, MTA has centralized a number of duplicative business service functions that were previously delivered independently by each of the operating agencies.	Transition to centralized delivery of business services allowed for a significant reduction in staff and, over the long term, will allow the agency to focus on ways to further improve its approach to these activities.
<b>Metro Transit (Minneapolis/St. Paul, MN)</b>	Change in the region involved creation of a new body to facilitate regional funding for transit. The change involved a shift in responsibility for funding and decision-making from the state to the region.	The creation of the Counties Transit Improvement Board (CTIB) increased the Twin Cities region's capacity to develop large-scale, federally funded transit projects. Since its creation in 2008, CTIB has authorized about \$500 million in grants and has supported securing about \$1.5 billion in federal funds.
<b>Regional Transportation District (RTD) (Denver, CO)</b>	Agency changed its focus from moving vehicles to moving people in a continuing evolution in business model and organization. Change was supported by new strategies in partnering and in resource use to increase the availability and effectiveness of service. The agency did so while reducing the associated public subsidy per trip.	Partnering and cost-sharing arrangements adopted to meet its new people-moving mission have allowed RTD to meet its service standards, minimize per-trip subsidies, carry on a major capital expansion program, and sustain a high degree of political and community support.
<b>San Francisco Municipal Transportation Agency (SFMTA) (San Francisco, CA)</b>	Change involved consolidation of multimodal responsibilities, including roadways, parking, bicycle planning, pedestrian planning, and taxi regulation for the entire city-county transportation network into one agency governed by a single policy board.	Efforts to manage limited road space using various modes have begun to take better advantage of the inherent capabilities of each mode in meeting market needs. Combined responsibility has brought greater funding flexibility and offers the prospect of continued improvements in service, access, and mobility.
<b>Southeastern Pennsylvania Transportation Authority (SEPTA) (Philadelphia, PA)</b>	The agency instituted an enhanced emphasis on customer service with corresponding organizational changes to reinforce the focus. The agency also now focuses on non-users as key stakeholders.	Customer service ratings have improved significantly since the new customer service initiative began. There has been a steady change in front-line interactions with customers.
<b>TransLink (Vancouver, BC)</b>	The agency changed from a transit operator to a regional multimodal organization with land use authority. The shift in role happened as the province moved away from its role as the provider of regional transportation services with a corresponding emphasis on regional delivery.	Ridership has more than doubled since 1999, bus service hours have increased by 40 percent, and the agency has constructed two rail lines. The region's transit mode split increased from 10 percent to 12 percent between 1999 and 2011, customer service ratings reached record levels in 2010, and land use density has increased in transit corridors.

*(continued on next page)*

**Table 2.2. (Continued).**

<b>Transit Agency</b>	<b>Change Evaluated for Case Study</b>	<b>Consequences of Change</b>
<b>Utah Transit Authority (UTA) (Salt Lake City, UT)</b>	The agency transitioned from a regional bus operator to one that operates bus, light rail, and commuter rail services. Change happened with active community collaboration to build political support, an effort to build institutional capacity, and a change in the role of the board.	A market that was once made up primarily of captive riders is now estimated to be approximately 70 percent choice riders, and annual ridership has increased from 24 million in 1998 to 39 million in 2010.
<b>Washington (Statewide)</b>	Washington State DOT shifted its role from grants manager responding to funding requests to an active manager of intercity bus with innovative financing approaches. Under the new business model, the state contracts for identified services rather than responding to specific subsidy requests.	The change has resulted in a complete statewide intercity bus network with limited public subsidies and now serves as a model for other states.

## CHAPTER 3

# Drivers of Change Faced by the Transit Industry

Several major societal forces are spurring public transportation agencies of all kinds to reevaluate basic assumptions about who their customers are, how they deliver service, where they get funding, and what organizational and governance structures work best. Transit agencies today show diversity in their mode(s) of service, size, governance models, funding, and other important characteristics. It is within this context that the current research seeks transferable lessons.

### 3.1 External Forces for Change

Organizations rarely embrace fundamental change without first facing significant and specific external driving factors—factors that may be negative or positive. Many of the drivers for change outlined in the *New Paradigms* research (Cambridge Systematics, 1999; Stanley et al., 2003) a decade ago continue to be relevant today, but some emerging forces are also important such as the following:

- Funding and finance;
- New technology;
- Demographics and society;
- Sustainability, energy, and environmental concerns;
- Travel, land use, and development patterns; and
- Infrastructure condition.

#### 3.1.1 Funding and Finance

Funding shortfalls and uncertainty about whether, or how, they can be bridged, are undeniably important drivers of change within the transit industry. Without reform of traditional transit funding practices, the long-term prospects appear dim for ensuring that transit funding in the United States is sufficient to maintain or expand service in the mid to long-term. The American Public Transportation Association (APTA) states that annual operating and capital spending on transit from all sources grew by more than 67 percent between 1988 and 2008, from \$33.1 billion to \$55.4 billion

(APTA, April 2010). Several recent national-level studies have documented, however, that despite growth in transit spending, current investment in transit falls well below the amount needed to meet long-term investment needs for public transportation. Most of the national research on funding has focused on long-term capital needs, although in many jurisdictions funding for operations is also critical.

While specific estimates of the capital funding needs vary, relevant studies consistently depict a large and widening investment gap between nationwide transit-related needs and current funding levels. In 2009's *Paying Our Way* study, mandated under SAFETEA-LU, the National Surface Transportation Infrastructure Financing Commission (NSTIFC) concluded that the nation will need an average of \$21 billion per year in capital spending between 2008 and 2035 to maintain the current condition of the nation's transit infrastructure, while only \$11 billion per year in capital spending is available to meet these needs (NSTIFC, 2009). The 2008 *State and National Public Transportation Needs Analysis* concludes that total operating and capital spending on transit of \$47.1 billion in 2006 was approximately “one-third to one-fifth of the projected annual investment required to maintain public transportation system physical conditions and service performance at current levels” (Cambridge Systematics, September 2008).

#### 3.1.2 New Technology

Technology has the potential to be both a driver and facilitator of change. As new technology continues to evolve across all aspects of society, expectations increase for transit agencies to participate in this evolution. Work done by the Federal Transit Administration (FTA), TCRP, APTA, and others suggests that a range of emerging state-of-the-art technologies has the potential to transform the efficiency, effectiveness, reliability, safety, and security of transit in coming decades, if the transit industry is able to integrate them into standard business practices (Hemily, 2004; U.S.DOT-FTA, 2007).

Despite the acknowledged transformative potential of new technology, transit agencies often lag behind the commercial sector in adopting new technologies. In its 2006 *Advanced Public Transportation Systems: State-of-the-Art Update*, FTA reports several obstacles to faster deployment of new technology, including inadequate cooperation among different departments, agencies, and jurisdictions; limited resources; and gaps in education and training in the integration, use, and maintenance of technologies (U.S.DOT-FTA, 2006).

### 3.1.3 Demographics and Society

For many transit agencies, rapid changes in regional demographics create an environment in which fundamental change must occur in order to remain relevant within the region's transportation system. Some of these changes are region-specific. *TCRP Report 53* (Cambridge Systematics, 1999) cites the importance of changing demographics as a force for change in transit agencies, as does APTA's *Trends Affecting Public Transit's Effectiveness* (Hemily, 2004). The more recent *Long Range Strategic Issues Facing the Transportation Industry* study draws similar conclusions for the transportation industry as a whole (ICF International, 2008). In particular, these reports identify population growth, an aging and more diverse population, and changing lifestyles as important forces for change that will redefine markets for transit:

- **Population growth**—According to the U.S. Census Bureau, the population of the United States is projected to be 439 million by 2050, an increase of 46 percent from 2007.
- **Aging population**—According to the *Long Range Strategic Issues Facing the Transportation Industry* study, more than 20 percent of the population of the United States will be 65 years or older by 2050, compared to 13 percent in 2008 (ICF International, 2008).
- **Immigration**—Immigrants and their U.S.-born descendants are expected to provide most of the U.S. population gains in the decades ahead. Hemily observes that minorities and low-income households account for 63 percent of the nation's transit riders and concludes that immigrants to the United States are one of the most promising market segments for transit (Hemily, 2004).

As a consequence of these demographic changes, transit agencies will find it necessary to tailor services to different customer segments with increasingly differing needs and expectations.

### 3.1.4 Sustainability, Energy, and Environmental Concerns

Societal concerns about sustainability, energy, and environmental issues, particularly in relation to climate change, suggest a promising role for public transportation in the nation's transportation system over the coming decades. With regard to

livability, smart growth, and sustainability, transit has become increasingly accepted over the past 15 years as an important contributor to the overall livability and quality of life in the many communities where it provides improved access and mobility to workers, reduces congestion, and improves air quality. Transit is also usually considered a vital part of effective "smart growth" planning (Duany et al., 2009).

Transit also is perceived as having a role in efforts to address climate change and improve energy efficiency. Transit is viewed as a potential strategy to reduce energy use and contribute to reductions in greenhouse gas (GHG) emissions. If new business and institutional models were used to create new mobility services and were combined with changes in land use, much larger energy and GHG benefits might be achieved (Center for Neighborhood Technology, 2010).

### 3.1.5 Travel, Land Use, and Development Patterns

The most salient trend in American travel behavior over the last four decades of the twentieth century has been an increased reliance on the private automobile for travel, with corresponding declines in transit ridership (Pucher and Renne, 2003). Evidence reported in APTA's *2010 Public Transportation Fact Book* suggests, however, that transit ridership has rebounded throughout the first decade of the twenty-first century to its highest level since 1956, reaching an estimated 10.5 billion trips in 2008 (APTA, April 2010). A number of societal changes that have occurred over the past decade and are expected to continue in the future have contributed to this growth in demand for public transportation including the following:

- **Revival of cities.** After decades of out-migration, the last decade has shown the first signs of inward migration and growth of city cores and inner suburbs (Hemily, 2004).
- **Growth in single-person households.** Household composition is changing, with the greatest growth occurring in households of childless couples, non-family households, and single-person households. Generation X and aging boomers choosing different lifestyles are creating a greater demand for urban living and urban housing (Hemily, 2004).
- **Growth of population and jobs in the suburbs.** Despite the revival of cities, suburban growth continues. The growth of both population and job concentration in the suburbs will lead to an increase in the demand for suburb-to-suburb travel by commuters (Cambridge Systematics, 1999).
- **Congestion.** Transit can achieve substantial market penetration in congested corridors where it is given an advantage through separated right-of-way or significant transit priority. Commuter markets in corridors where transit is itself the victim of congestion, however, are likely to be volatile (Hemily, 2004).
- **Decrease in work trips as proportion of total travel.** According to the 2001 National Household Travel Survey,

work travel constitutes fewer than 15 percent of all person trips and is decreasing.

- **Trip “chaining.”** A growing share of commuting households now have two or more workers, which has created greater pressure on time and a subsequent increase in linking work trips with trips to daycare, food shopping, or other errands. As a strategy to reduce total travel time, trip chaining has become common (Hemily, 2004).

### 3.1.6 Infrastructure Condition

A significant proportion of the nation’s transit assets are in need of capital reinvestment, an issue that is continuing to challenge public transportation agencies in an era of limited resources. FTA’s *National State of Good Repair Assessment*, released in June 2010, found that 29 percent of all bus and rail assets are in either “poor” or “marginal” condition (U.S.DOT-FTA, June 2010a). Authors of the study estimate that the cost of bringing the nation’s rail and bus transit systems into a state of good repair is \$77.7 billion in 2009 dollars.

The challenge is multifaceted, with limitations in the technical capacity of agencies to assess, maintain, and manage aging assets. Based on review of numerous agencies’ asset management practices, FTA issued a report in 2010 that highlights weaknesses in transit asset management practices (U.S.DOT-FTA, June 2010b). Few agencies have completed development of capital asset inventories intended to support long-term capital needs analysis. Only 6 of the 23 agencies included in FTA’s study have committed to conducting comprehensive asset condition assessments on an ongoing basis. Approaches to prioritizing capital investments also vary widely.

## 3.2 Effect of External Drivers on a Diverse Transit Industry

In individual agencies, the relevance of particular external drivers for change will vary depending on the agency’s mission, organization, governance, source of revenue, location, and size. Public transportation organizations range in size from the massive New York Metropolitan Transportation Authority, with an annual capital and operating budget of more than \$12 billion, to thousands of small paratransit providers in rural communities throughout the country. The *APTA 2010 Public Transportation Fact Book* (APTA, April 2010) estimates that 7,700 public transportation systems operate in the United States, with about 5,300 of these organizations dedicated to providing paratransit service for the elderly and disabled (see Table 3.1).

### 3.2.1 Governance Structures

Transit agency governance has an influence over an agency’s ability to undertake fundamental change. Public transportation agencies operate under a wide range of governance

**Table 3.1. Number of public transportation systems by mode—2008.**

Mode	Number of Systems
Aerial Tramway	2
Automated Guideway Transit	7
Bus	1,100
Cable Car	1
Commuter Rail	23
Ferryboat	32
Heavy Rail	15
Inclined Plane	4
Light Rail	33
Monorail	2
Paratransit <sup>a</sup>	7,200
Trolleybus	5
Vanpool	83
<b>Total<sup>b</sup></b>	<b>7,700</b>

<sup>a</sup> Paratransit providers include an estimated 5,300 serving the elderly and persons with disabilities.

<sup>b</sup> The total number of systems does not equal the sum of all modes listed because it includes a number of agencies that operate more than one mode of transit. Source: APTA, April 2010.

structures. Five of the most common governance structures are identified in “Regional Organizational Models for Public Transportation” (Booz Allen Hamilton, 2011):

1. **State agencies** include agencies owned and operated by a state, such as the Maryland Transit Administration.
2. **General purpose authorities** occur where state law permits the establishment of a transit agency outside of local government. General purpose authorities are usually established by state-enabling legislation initiated by local actions and support. Examples include Ohio’s transit authorities and Florida’s transit districts.
3. **Special purpose authorities** are transit agencies created as a result of a specific act of the state legislature, such as the Bay Area Rapid Transit system, or the Utah Transit Authority (UTA).
4. **Municipal agencies** are transit agencies operated by existing local governments, such as Charlotte Area Transit, King County Metro, or the San Francisco Municipal Transit Agency.
5. **Joint exercise of powers or joint powers authorities** are special local arrangements, such as the Virginia Railway Express and the Trinity Railway Express in Dallas-Fort Worth.

### 3.2.2 Financial Support Mechanisms

Agency sources of funds and the potential for funding establish the parameters within which change will happen. As described in *TCRP Report 97* (Cambridge Systematics et al., 2009), funding for transit generally comes from farebox revenues and a combination of federal, state, and local government subsidies (see Table 3.2). In general, federal subsidies are applied to support capital needs, and state and local subsidies complement farebox and ancillary system revenue to support operations and contribute to capital investment.

**Table 3.2. Public transportation funding sources (capital and operating)—2008**

Source	Total Dollars (Millions)	Percent of Total
Local (including agency levies)	\$19,547	35%
State	11,941	22%
Federal	9,628	17%
Fares/Other Agency Generated	14,304	26%
<b>Total</b>	<b>\$55,420</b>	<b>100%</b>

Source: APTA, April 2010

In urbanized areas with more than 200,000 people, federal funding flows directly to “designated recipients,” but funds for transit in rural and small urban areas are administered by state departments of transportation (DOTs), which usually coordinate the distribution of funds with small urban transit agencies and rural transit providers.

### 3.3 Drivers of Change Among Agencies Studied

Among the potential drivers of change, those identified as most significant among the agencies studied are wide reaching, as summarized in Table 3.3. The most common drivers of change relate to funding and finance; sustainability, energy, and environmental concerns; travel, land use, and development patterns; and demographics and society. Technology and infrastructure condition are less notable as drivers of change among the agencies studied despite the attention given to these topics in recent years within the industry.

It is within the context of these drivers that the agencies studied in this research undertook often impressive efforts to promote change within their organizations, often with the effect of shaping the overall significance of transit within their respective regions.

**Table 3.3. Drivers of change.**

	Funding and Finance	New Technology	Demographics and Society	Sustainability, Energy, and Environmental Concerns	Travel, Land Use, and Development and Development Patterns	Infrastructure Condition
Advance Transit (NH/VT)	■			■	■	■
Capital Area Transportation Authority (Lansing, MI)		■			■	
Champaign-Urbana Mass Transit District (Champaign-Urbana, IL)	■	■	■	■		
Charlotte Area Transit System (Charlotte, NC)	■		■	■	■	
Chittenden County Transportation Authority (Burlington, VT)	■				■	■
Metropolitan Transit System (San Diego, CA)			■	■	■	
Metropolitan Transportation Authority (New York, NY)	■	■				
Metro Transit (Minneapolis/St. Paul, MN)	■		■	■	■	
Regional Transportation District (Denver, CO)	■			■	■	
San Francisco Municipal Transportation Agency (San Francisco, CA)				■	■	■
Southeastern Pennsylvania Transportation Authority (Philadelphia, PA)	■		■	■	■	
TransLink (Vancouver, BC)	■	■	■	■	■	
Utah Transit Authority (Salt Lake City, UT)	■		■	■	■	
Washington (Statewide)	■				■	■
<b>Total</b>	11	4	7	10	12	4

## CHAPTER 4

# Themes for Successful Change Strategies

Several themes for successful change can be seen from the case studies, across a selection of public transportation agencies that have made fundamental changes in business and institutional models. As a word of caution, every agency also has its own unique political environment, governance structure, institutional capacity, financial resources, perceived role in the regional transportation system, and core mission, and these will influence the transferability of the lessons outlined below. Nonetheless, the “themes for success” summarized in this section merit consideration by organizations, individuals, advocacy groups, elected officials, and others who are seeking to transform their transit organizations.

### 4.1 Collaboration and Partnership Are Essential to Successful Change

The *New Paradigms* research (Cambridge Systematics, 1999; Stanley et al., 2003) completed almost a decade ago highlighted the expectation that collaboration and partnership play a key role in making fundamental change in business and institutional models happen. The case study research herein suggests that motivation for change often comes from outside the organization or as part of a collaborative partnership. Challenges during the change process often require support and resources beyond those available within an agency; navigating these challenges successfully necessitates strong partnerships. The experiences of the case study agencies highlight the importance of collaboration. In a number of cases, as an agency faced criticism, it was their external partners that defended the agency and allowed change to continue. Given the long-term nature of change strategies, it appears vital that an agency establish partnerships with organizations that have continuity, particularly in cases where the transit agency governance changes with political cycles.

**Utah Transit Authority’s Partnership with Business Leaders and Elected Officials.** To build support within the

community, senior staff at the Utah Transit Authority (UTA) worked closely with local elected officials and other area stakeholders to improve these relationships. After the failure of a funding referendum in 1992, UTA staff recognized that they needed to build more support within the community. UTA’s senior staff now routinely meets with mayors from throughout the region to improve external understanding of the agency, even if there are disagreements on specific issues. Many of the local mayors are now champions of UTA.

UTA also actively reaches out to private and public organizations that often serve as transit advocates, including the Wasatch Front Regional Council (the region’s metropolitan planning organization [MPO]), Envision Utah, the Utah Chamber of Commerce, and the Church of Jesus Christ of Latter-day Saints. UTA’s partnership with the business community through the Utah Chamber of Commerce helped build broad support through the business community’s recognition that transit is vital to the region’s economic development.

**Charlotte’s Partnership with the Local Chamber of Commerce.** Like the chamber of commerce in the Salt Lake City region, the Charlotte Chamber of Commerce recognizes the necessity of transportation investment for the city’s economic competitiveness and has served as one of transit’s strongest advocates. The Charlotte Chamber of Commerce worked closely with the city to lobby the state legislature to allow for a local tax to generate revenue for transit. The organization followed this initial effort with a public campaign to pass the referendum and then several years later led another public campaign to protect the revenue source from repeal.

**Advance Transit’s Embrace of Philanthropy.** Advance Transit, serving parts of New Hampshire and Vermont, embraced a funding model that relied in part on tax-deductible donations to support service. This had the effect of building support for the organization throughout the community. While the revenue generated through outreach for support represents only a small portion of the agency’s operating

budget, the effect of fundraising efforts has built relationships and political support that have served to protect existing funding resources.

**Denver RTD’s Collaboration for Service Delivery.** Collaboration and resource integration have been the hallmark of the transformation of Denver’s Regional Transportation District (RTD). The RTD has an active role in working with those making service requests, sponsors, contractors, and funding partners to find alternative arrangements when RTD service standards cannot be met or when alternative service delivery schemes can lower the public subsidy. Examples include collaboration with the MPO to manage the growing vanpool program, collaboration with local governments to support localized services through cost-sharing arrange-

ments, collaboration with the state to guide multimodal capacity expansion projects, collaboration with human service agencies through capital support and cost-sharing arrangements, and collaboration with private providers and contractors in major project initiatives as well as in the use of resources and assets.

## 4.2 Successful Change Requires a Clear Vision

In almost all of the case studies, the transit agency, the regional planning organization, the business community, elected officials, or other stakeholders first defined a vision or desired outcome that subsequently helped guide the direction of fundamental change (as described in Table 4.1) and

**Table 4.1. Brief description of agency “vision” or desired outcome.**

Transit Agency	“Vision” or Desired Outcome
Advance Transit (NH/VT)	A financially stable transit system that plays a key role in the area transportation system.
Capital Area Transportation Authority (Lansing, MI)	Expand community reliance on and support of CATA by operating as a market and customer-oriented business, viewing clients as full partners and stakeholders in broadening the scope of its services and the breadth of its partnerships.
Champaign-Urbana Mass Transit District (Champaign-Urbana, IL)	An agency that uses enhanced technology to improve customer service and meet the expectations of tech-savvy customers.
Charlotte Area Transit System (Charlotte, NC)	An expanded role for transit in the region’s transportation system that supports the region’s “Wedges and Corridors” growth strategy.
Chittenden County Transportation Authority (Burlington, VT)	Preserve access to transit services across a multi-county region.
Metropolitan Transit System (San Diego, CA)	A region that takes a multimodal approach to transportation solutions.
Metropolitan Transportation Authority (New York, NY)	An agency that is more efficient and consistent with internal business services.
Metro Transit (Minneapolis/St. Paul, MN)	An expanded role for transit in the region’s transportation system.
Regional Transportation District (Denver, CO)	An agency that focuses on moving people rather than moving vehicles.
San Francisco Municipal Transportation Agency (San Francisco, CA)	A city that focuses on multimodal approaches to transportation solutions.
Southeastern Pennsylvania Transportation Authority (Philadelphia, PA)	An agency that emphasizes customer service in all aspects of its operations.
TransLink (Vancouver, BC)	A region that takes a coordinated and multimodal approach to transportation investment tied closely to the region’s growth strategy.
Utah Transit Authority (Salt Lake City, UT)	An expanded role for transit in the region’s transportation system that also supports the region’s “Quality Growth Strategy.”
Washington (Statewide)	Access to intercity bus service across the state.

helped stakeholders stay focused through inevitable challenges faced along the way. For most of the agencies studied, a vision was developed in partnership with other organizations and outside stakeholders. In some cases, the vision for change was developed by outside organizations that expected that the transit agency change to fully meet a prescribed role.

#### **Charlotte’s Vision for a Regional Transportation System.**

In the case of the Charlotte Area Transit System, coordination of land use planning and transportation investment was viewed as a means to enhance the role of transit in key transportation corridors and to better manage expected population and economic growth in the region. City planning staff, together with community and business leaders, spent nearly a decade exploring ways to make transit a more central part of the region’s transit system. The approval of a funding source and the shift in governance necessary to achieve this vision took only a few years and benefitted from the extended period of visioning that educated the public on the potential for transit. The value of the region’s vision was later apparent when the transit sales tax was challenged in a repeal referendum. Those involved in the process cite a failure to promote the vision among newly arriving residents as the source of this threat.

**New Vision for Transit in the Salt Lake City Region.** In the Salt Lake City region, a number of key leaders, including the Utah Chamber of Commerce and Envision Utah, developed a vision for transit that far exceeded historic investment. Envision Utah, a local non-profit, created a “Quality Growth Strategy,” with the goal of providing a sustainable way to accommodate expected population growth through 2040 in Utah. The focus of this strategy is termed the “3% strategy,” which calls for 33 percent of future development to be accommodated on 3 percent of the land, near key transit stops and major road corridors. Change was necessary at UTA for the transit system to achieve the role defined for transit in this regional vision.

**Vancouver’s (British Columbia) Regional Vision and the Link to Institutional Reform.** The Greater Vancouver Regional District led three different visioning exercises that highlighted the need to better coordinate transportation investment and regional land use. These visioning efforts concluded that the desired outcome could happen only through a shift in institutional responsibility for transportation investment away from the provincial government to a regional governing body with the taxing authority to fund needed investments.

**Vision for Preserving Intercity Services in Washington State.** Washington State recognized that the existing model used to fund intercity bus services was no longer working,

and the state watched as the elimination of some intercity bus services isolated a number of smaller communities from any form of public transportation service. The state’s vision for intercity bus service across the state was possible only with a new model in which the state targeted resources to define a network of services rather than respond to disconnected individual grant requests.

### **4.3 Stable and Supportive Leadership Is Necessary to Support Change**

Those seeking to fundamentally change an organization, or the role of transit in a region, should prepare for an extended effort that requires stability in leadership. Any change effort will require the support of leadership within the organization, but some of the most effective change efforts are headed up by leaders who have served their agencies for an extended period of time. These leaders built the support of their governing board, employees, and other key stakeholders as they engaged in the change process. Among the agencies explored in the case studies, a number engaged in a period of fundamental change under leadership that extended more than a decade, as shown in Table 4.2.

### **4.4 An Effective Governance Structure Is Required for Fundamental Change**

In six of the case studies, a change in governance was at the center of the movement toward fundamental change. In five of these six cases, the make-up of the governing body changed. In the sixth case (the UTA), the governing body remained fundamentally the same, but the governing body explicitly changed its role. The common thread through these cases was that the existing governing body required some modification to support a changing role for the transit agency.

**Transfer to Regional Governance in Vancouver (British Columbia).** In Vancouver, the transfer of governance from the province of British Columbia to TransLink, a regionally governed entity, allowed the region to move ahead on its vision of transit investment and transit-oriented development to increase the regional transit mode share. It was of critical importance that the province’s delegation of governing authority to TransLink was accompanied by taxing authority. The initial board structure established when the organization was formed was made up of elected officials. The result was skepticism from some, particularly the provincial government, regarding motives behind investment priorities. To address this concern, the board make-up was changed to a composition of both professionals and elected officials.

**Table 4.2. Tenure of transit agency leaders during period of change.**

	<5 Years	5–10 Years	>10 Years
Advance Transit (NH/VT)			■
Capital Area Transportation Authority (Lansing, MI)			■
Champaign-Urbana Mass Transit District (Champaign-Urbana, IL)			■
Charlotte Area Transit System (Charlotte, NC)		■	
Chittenden County Transportation Authority (Burlington, VT)			■
Metropolitan Transit System (San Diego, CA)			■
Metropolitan Transportation Authority (New York, NY)	■		
Metro Transit (Minneapolis/St. Paul, MN)		■	
Regional Transportation District (Denver, CO)			■
San Francisco Municipal Transportation Agency (San Francisco, CA)	■		
Southeastern Pennsylvania Transportation Authority (Philadelphia, PA)	■		
TransLink (Vancouver, BC)	■		
Utah Transit Authority (Salt Lake City, UT)			■
Washington (Statewide)			■

**A Move Away from City Council Governance in Charlotte.** In Charlotte, the transit agency previously existed as a unit within the city government with oversight by the City Council. Under the new structure, agency responsibility is shared among a policy board, the Metropolitan Transit Commission (MTC), and the Charlotte City Council. MTC—which is made up of representatives from city, county, and other area municipalities—sets policy, approves service changes, sets fares, and approves expansion plans. The Charlotte City Council maintains a separate procurement and contracting function. The effect of this split responsibility has been an increasing reliance on professional staff and a reduction in political influence over day-to-day operations. Administratively, the transit staff remains within the Charlotte City Government; however, the new governance model has shifted toward a regional approach for transit operations and planning.

**UTA Board of Trustees’ Empowerment of Professional Staff.** In the case of the UTA, the agency’s board structure remained intact, but the role of the board changed to empower the general manager and agency staff. This explicit change in the board’s role took place in the late 1990s just prior to a period of extraordinary success for UTA. The agency’s volunteer board recognized that it was too involved in the management of the organization and adopted the Carver Model form of governance. Under this model, a board sets

clear boundaries about what the general manager is *not* permitted to do and sets clear expectations for what outcomes shall be achieved. All contact from board members is with the general manager, who is responsible for managing the staff of the organization. This approach to governance distinguishes professional responsibility from policy direction and is credited as being a key contributor to the agency’s recent success.

**Two-Step Governance Changes with the Chittenden County Transportation Authority (CCTA).** In the case of the CCTA, the governance structure evolved as the state and area transit systems worked to protect transit services that were in jeopardy. The evolution began first as two independent boards, one responsible for CCTA and services in the central county and the other for the subsidiary operator with responsibility for service in the other four counties within the region. Recently, governance has shifted again with the move to a single governing body with representation from throughout the region. The multistep change in governance allowed the region to gradually transition from multiple service providers in different markets to a single provider responsible for service across five counties.

**A Voter-Approved Mandate for Governance Changes in San Francisco.** With the passage of “Proposition E” in 1999, voters directed the 2002 formation of the San Francisco Municipal Transportation Agency (SFMTA), a semi-

independent agency combining responsibilities for San Francisco Municipal Railway's (Muni) transit network and city streets under the San Francisco Department of Parking and Traffic. In the process, separate commissions governing each of the organizations were dissolved and a single, seven-member SFMTA board of directors was created, appointed by the mayor and subject to confirmation by the city and county board of supervisors. The SFMTA board replaces separate boards or commissions that formerly governed transit, parking and traffic, and taxi and livery services, and, with this responsibility, the regional governing body is required to think across modes.

**New Representation and Its Effect on the CATA.** The consolidation of city-managed transit operations and those run by Michigan State University brought to Capital Area Transportation Authority (CATA) a non-voting board member from Michigan State University. The academic influence and perspective has increased attention on CATA performance based on data and analysis, which has led to efforts to upgrade technology and management systems. Key governance processes have been transformed as well. Rather than present a proposed budget for approval each budget cycle, staff facilitates board discussion on 5-year assumptions for major categories of expenditure and programs, and the board debates and adopts assumptions. This change has contributed to a shift in the board's focus toward a long-term planning horizon.

#### **4.5 Change Requires Sufficient Internal and External Agency Resources**

Agencies must determine whether available resources are adequate to achieve desired change and, if necessary, identify strategies to obtain or align resources as needed. In several of the cases studied, the path to change required modifications in organizational structure to reinforce a desired outcome. In other cases, change required outside expertise, hiring new staff, or considering new approaches to procurement. While the needs for new resources varied widely, in all cases the agencies identified specific resources that were needed to make the change happen.

**Champaign-Urbana Mass Transit District Coordination of Technology Investments with Other Agencies.** Champaign-Urbana Mass Transit District (C-U MTD) recognized the need to embrace technology and made changes in the organization and in procurement practices to make it happen. In order to implement real-time passenger information, the agency needed to overcome constraints in its funding sources and staff capabilities. The agency partnered with several other smaller transit operators to share the burden of procure-

ment and obtain the desired technology at a lower cost. After implementing the technologies, the C-U MTD restructured the organization to give technology the focus that it needed for the successful implementation of improvements.

**Realignment of Internal Resources and Partnerships for a Redefined Mission at Denver's RTD.** RTD's focus on flexible perspectives and creativity among staff in building partnerships outside the RTD required that new, non-traditional skills (e.g., contract negotiation and contract management) and knowledge (e.g., of private for-profit and non-profit enterprises) be brought into the organization and that roles within RTD and among partnering agencies be adapted to better serve RTD's people-moving mission. RTD continues to build its internal capacity through several leadership development programs.

**Southeastern Pennsylvania Transportation Authority's Reinforcement of an Emphasis on Customer Service Through Reorganization.** When customer service was made the top priority at Southeastern Pennsylvania Transportation Authority (SEPTA), a new customer service division was created with an assistant general manager of customer service who reports directly to the general manager. SEPTA's customer service functions had previously been scattered across the organization with elements included in various divisions. The job of the assistant general manager of customer service is to ensure that customer service is a high priority across the entire organization and that all managers consider customer service during their decision-making processes.

**Transit's Elevation to a Department within the City of Charlotte.** Charlotte elevated the transit group within the city government structure to become its own department, and the agency's first general manager was hired in 1999. As part of this change, the city shifted responsibility for service planning, the call center, and safety and security functions from contractor staff to city employees. All of these changes elevated the visibility of transit within the city government.

#### **4.6 Targeted Workforce Development Supports Change**

In a number of the cases studied, the agency focused attention and resources on the development of its workforce. In some cases, this attention included engagement of employees in the process of change, while, in others, the agency invested in workforce development with direct training related to the change.

**Denver's RTD Implements Leadership Development Program.** Leadership within RTD recognized the need to

support and enhance the institutional capacity of the organization through active professional development. To support this objective, the agency has developed a strategic leadership development program that consists of the following five elements:

1. Leadership Academy—A 12-month curriculum serving approximately 25 people across the organization.
2. Multiagency Exchange Program—A multiagency exchange program with Los Angeles County Metropolitan Transportation Authority and Dallas Area Rapid Transit serving 8 to 10 employees from each agency, with rotations among the agencies.
3. Departmental Training Programs—Each department is responsible for the development of its own professional development program.
4. Mentoring Program—Senior staff members mentor someone from a different department in the agency over a 12-month period.
5. Enhanced Existing Programs—Targeted efforts to make existing programs more meaningful to employees.

**SEPTA Investment in Workforce Development Despite Budget Constraints.** SEPTA invested in training programs for new hires and current employees to reinforce the agency's increased emphasis on customer service. New employees must now pass a week-long social skills training course before advancing into new-hire technical training. Since 2010, this "social skills" prerequisite training has been mandatory for all new bus and trolley operators. In the fall of 2011, SEPTA expanded this program to new railroad conductor trainees. Another key training program, called "SEPTA Connect," consists of weekly classes for current employees to enhance their technical and social skills.

**UTA Turns Dissatisfied Employees into Transit Advocates.** By the mid-1990s, the agency's long-term emphasis on fiscal discipline had had the effect of undermining employee morale. UTA's senior staff recognized the need to improve employee/management relations and did so by actively engaging employees in agency decisions. Working with employees to reach decisions has created stronger buy-in for implementation of all types of changes. UTA also sought to address specific sources of conflict, such as a long-standing difference in pension benefits for management and labor. More fundamentally, senior management changed the employee engagement philosophy to value employees and to promote individual success. These changes have substantially reduced turnover, have helped recruiting, and as an unintended consequence, have created a new cadre of strong advocates for UTA who have provided support in the community during local funding referenda.

## 4.7 Change May Require Realignment of Agency Authority with Other Regional Agencies

Several of the change efforts documented in the case studies involved a shift of responsibility and/or authority, often with an enhanced emphasis on multimodal transportation planning, project delivery, and finance. In Vancouver, San Francisco, and San Diego, transit and highway planning and development functions were merged. In Vancouver, the integration of transit and highway project development also includes land use planning. In all these cases, more effective transit programs emerged from closer coordination with highway and regional planning. In addition, several of the case studies document a shift in funding and operations authority.

**Vancouver Realigns Roles for Operations, Transportation Planning, and Land Use Authority.** In the Vancouver region, a number of regional visioning efforts highlighted the need to improve the coordination of regional transportation investment and land use planning. The previous structure—one in which the province was responsible for transit investment and operations—would not allow the region to move toward this desired outcome. Only with a shift in responsibility to a multimodal agency with land use authority could the region achieve its desired vision.

**Shift in Planning Functions to the MPO in San Diego.** In San Diego, planning and project development responsibilities shifted from the transit agency to the MPO, San Diego Association of Governments (SANDAG), with the goal of promoting a multimodal project development process to better coordinate transportation and land use decisions. SANDAG was able to focus on planning long-term capital investments in complex, multimodal projects, a type of planning that requires expertise not available within a transportation organization focused primarily on project delivery within a single mode. Although the transit agency's authority in project development was reduced, the change allowed the transit agency to focus more on operations planning. A number of significant operations improvements followed.

## 4.8 Understanding the Risk of Failing to Change Supports Success

In a number of the cases studied, the agency and other stakeholders understood the risk of failing to change and were motivated by the potential consequences. The reality of any effort to embrace fundamental change is that an agency will face opposition to the proposed changes. Understanding the risk of failing to change can help balance the natural resistance to change.

**Metropolitan Transportation Authority’s Fiscal Reform to Address Fiscal Crisis in New York.** In the case of New York’s Metropolitan Transportation Authority (MTA), the desire to consolidate business services in the agency was viewed as a necessary step in the evolution of the organization. Failure to make this change would have required even deeper cuts in staff and services in other parts of the organization. Initial detractors of the proposal eventually recognized that the shift in resources would protect staff in other critical parts of the organization and supported implementation.

**Preservation of Service in Chittenden County, Vermont.** The willingness of the CCTA to take over and merge transit services in adjacent jurisdictions protected existing transit services in those communities. Absent an aggressive move to transition the agency from being focused on service in a single county to serving multiple counties, there would have been substantial reductions in service in many parts of the region.

**Protecting Access to Service in the State of Washington.** In Washington, the elimination of intercity bus services and the expectation of further reductions necessitated a radically new approach to the provision of operating subsidies in order to protect this critical service in a number of communities.

Had the state not changed its approach, many of the less profitable routes would have faced elimination, and parts of the state would have been completely cut off from bus service.

**Protecting Economic Competitiveness in Charlotte.** In Charlotte, community leaders believed that if the region did not change its approach to transportation investment and growth management, it would face many of the downsides of growth seen in larger urban areas, like Atlanta, and that the region would lose its economic competitiveness with other parts of the country over the long term.

## 4.9 Summary

The cases studied in this research effort show consistency in approach and strategy within a wide range of circumstances. The agencies studied operate a range of transit modes, have different roles within their respective regions, and are organized under a wide variety of funding and governance structures. It is within this diversity that the themes of successful change emerge. The appendix to this report includes a detailed summary of each case study agency, with additional background provided on the drivers of change, the strategies undertaken, and the consequences for the organization.

## CHAPTER 5

# Development of a Strategy for Fundamental Change

The cases studied in this research highlight a number of lessons learned by agencies that were successful in achieving fundamental change. These lessons provide a foundation for specific actions recommended for transit agencies, or other key stakeholders, that wish to promote fundamental changes in business and institutional models. The first part of this chapter details a number of specific actions recommended for transit agencies seeking to undertake fundamental change. The second section presents a brief self-assessment guide that provides a structured method for agencies use in assessing their organizations as they begin the change process.

## 5.1 Recommended Actions for Implementing Fundamental Change

Based on the research undertaken, a number of specific actions are recommended for transit agencies that wish to pursue and promote fundamental change. Many of these actions are critical for agencies of all types and necessary regardless of the specific change desired. The actions recommended consist of the following:

1. **Define a vision.** A “vision” should serve to guide fundamental change. Support and acknowledgement of that vision should exist among board members, agency staff, key regional organizations (public and private), other stakeholders, and the general public. Should a clear vision or desired outcome not exist, establishing the most effective platform for developing such a vision is a critical step in the process. As highlighted in the research, in many cases the vision was developed by outside stakeholders or, at a minimum, was developed in close cooperation with key stakeholders outside the organization.

An agency should consider several key questions at this step:

- Is there a clear vision or desired outcome upon which to focus the change process? If not, who are the key organizations or leaders appropriate to serve as partners in a visioning process?
  - If a defined vision does exist, are key stakeholders aware of and supportive of the vision (such stakeholders include unionized agency staff, non-union staff, senior management, the governing body, agency funders, and state and local elected officials). If stakeholders are not aware of and supportive of the vision, does the lack of support among specific stakeholders undermine the potential for change?
2. **Assess the strength and role of external partnerships.** Partners and external advocates are crucial to success. These partners may serve to defend the agency, run campaigns for transit funding, or provide critical support as inevitable challenges emerge. In some cases, the transit organization may need to cede leadership to a partner with broader scope to accomplish the change.
 

An agency should consider several key questions in assessing the strength of its underlying partnerships:

    - Who are the agency’s current partners and advocates?
    - Which partners could help the agency achieve desired change?
    - What actions are the agency’s partners taking to support desired change within the organization? What additional activities could be helpful?

Potentially beneficial partners include the following:

    - Chamber of commerce/business organizations;
    - Individual civic leaders;
    - Major regional employers (public or private);
    - Regional advocacy organizations (environmental, labor, social);
    - Local transit union;
    - Elected officials (local, state, federal);
    - Key regional institutions (universities, hospitals, religious etc.); and

- Metropolitan planning organization and other regional government bodies.
3. **Identify and address barriers to change.** It is critical to conduct a thorough assessment of potential barriers to an agency's ability to achieve its vision for change. Areas of consideration include the following:
- External institutional constraints, including legislative constraints, funding limitations or requirements, and agency authority;
  - Internal institutional constraints, including agency governing body or organizational structure;
  - Human resources and technical capacity;
  - Perceptions of the agency's capabilities, including the public's perceptions of the agency's capabilities as well as those of elected officials or other key stakeholders;
  - Financial resources;
  - Technology-related constraints; and
  - Process-related limitations.

For each of these potential barriers, change agents should identify potential strategies to eliminate the identified barriers (e.g., through legislative changes, reorganization, new partnerships, etc.). In cases where eliminating these barriers is not possible, identify strategies to minimize the identified barrier.

4. **Identify necessary changes in institutional responsibilities.** Desired change may require a shift in responsibilities for operations, planning, or visioning. If limitations in institutional authority or institutional capacity are acting as impediments to desired change, it is wise to consider which organizations can take on some of these responsibilities and become a partner in the change movement. Conversely, public perceptions of too much agency authority might serve as an obstacle to an agency's effectiveness. In several of the cases studied, the transit agency either increased its authority (e.g., authority to generate revenue and/or regulate land use) or shifted functions (e.g., transit planning, project delivery, and/or authority to generate revenue) to other regional organizations.

Some key questions to consider in this assessment are the following:

- Does the agency have the necessary authority to undertake the desired change? What additional authority is needed?
  - Does the agency have responsibility for activities that are not central to the agency's mission and detract from the agency's ability to undertake change?
5. **Determine the financial or human resources necessary to make the change happen.** Agents of change should determine resource needs and think broadly about how to obtain needed support, even if the resources come through partnership. While additional resources are often needed to support change strategies, these resources do

not necessarily require new funds or people. In a number of the cases studied, the agencies shifted funds or people from one place to another or generated resources through partnership. Development of necessary human resources through targeted workforce development activities can be an effective approach.

6. **Set expectations for a reasonable timeframe for success.** A realistic assessment of the timeframe for success will establish a framework within which an agency can identify necessary resources to effect change. As importantly, realistic assessment of the timeframe will set expectations and support strategies that extend beyond political or other institutional cycles. Virtually all of the cases studied suggest that fundamental change takes many years and that long-term leadership contributes to successful change. Establishing a reasonable timeframe is important for setting expectations for the governing body, the general public, funders, and other key stakeholders.
7. **Assess current governance and whether the governance aligns with the desired change.** Given the influence of the governing body, understanding the attitude of the current governing body toward change and whether the governance structure creates any potential barriers is critical. The governing structure may create limitations in geographic expansion, result in expectations of equity in service, or generate other limitations that should be understood. While an agency is likely to face limitations in its ability to advocate for changes in governance, in a limited number of cases studied, agency staff was involved in facilitating an assessment of alternative governance approaches. In a number of the cases studied, it appears that changes in governance, while modest, had far-reaching effects on the authority of staff, the approach to decision-making, and the overall effectiveness of the organization.
8. **Understand the risk of failing to change.** Failing to change comes with risk just as changing comes with risk. Understanding the consequences of failing to change can be an important motivator in promoting change. Remembering these consequences can serve to balance the likely opposition to promoting change and help an agency overcome some of the external challenges, particularly those that are political and public in nature.

## 5.2 Agency Self-Assessment

The wide variation in transit agency size, role, mission, governance structure, funding partners, and operating environment make it difficult to map a precise strategy for making change happen. The questions outlined below provide a structured process of self-assessment for those agencies beginning the process and will provide a starting point from which agencies can begin the process of change.

Questions to guide a transit agency self-assessment are the following:

1. Is there a clear vision or desired outcome upon which to focus the change process?
2. If a defined vision does exist, are key stakeholders aware of and supportive of the vision (such stakeholders include unionized agency staff, non-union staff, senior management, the governing body, agency funders, and state and local elected officials)?
3. Who are the agency's current partners and advocates? What actions are the agency's partners taking to support desired change within the organization? What additional activities could be helpful?
4. What external institutional constraints, including legislative constraints and funding limitations or requirements exist? What actions can the agency or others take to remove or reduce any of these barriers to change?
5. What internal institutional constraints, including the agency governing body or organizational structure, exist (e.g., human and technical capacity, perception of agency capability, financial resources, technology constraints, and process limitations)? What actions can the agency or others take to address these limitations that are likely to inhibit change?
6. What additional financial or human resources are needed to undertake the desired change?
7. Does the current governance structure create any limitations in the agency's ability to undertake change? What actions can the governing body or others undertake to address these limitations?

### 5.3 Conclusion

The cases studied for the purposes of this research highlight a number of lessons learned by agencies that were successful in achieving fundamental change. These lessons provide a foundation for the specific actions recommended to transit agencies that wish to promote fundamental changes in business and institutional models. It is within the diversity of circumstances faced by transit agencies that these studies reveal remarkable consistency in approach and strategy. As agencies embark on the process of change, they can use as a resource the recommended actions outlined in this research and begin the process of self-assessment with the structured approach outlined above. Those seeking change can recognize that with the right strategies and approach change can happen, often with far-reaching benefits.

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## APPENDIX

# Case Studies

This appendix provides summaries of each of the 14 case studies conducted for this research effort. The agencies studied were the following:

- Advance Transit, NH/VT
- Capital Area Transportation Authority (CATA), Lansing, MI
- Champaign-Urbana Mass Transit District (C-U MTD), Champaign-Urbana, IL
- Charlotte Area Transit System (CATS), Charlotte, NC
- Chittenden County Transportation Authority (CCTA), Burlington, VT
- Metropolitan Transit System (MTS), San Diego, CA
- Metropolitan Transportation Authority (MTA), New York, NY
- Metro Transit, Minneapolis/Saint Paul, MN
- Regional Transportation District (RTD), Denver, CO
- San Francisco Municipal Transportation Agency (SFMTA), San Francisco, CA
- Southeastern Pennsylvania Transportation Authority (SEPTA), Philadelphia, PA
- TransLink, Vancouver, British Columbia
- Utah Transit Authority (UTA), Salt Lake City, UT
- Washington State Intercity and Rural Bus Program

Each of the case studies provides detail on the process by which the organizations listed above undertook change, with the goal of providing more detail for those interested in the specifics of how individual agencies achieved change. The research team focused predominantly on *why* organizations

changed and *how* they accomplished change, with careful attention to transferability of processes.

Case studies were conducted using a mix of telephone and in-person interviews and a review of available documentation on the change that occurred. Interviews typically involved representatives from the transit agency or former representatives of the transit agency who were involved in the change process. In some cases, the research team interviewed outside stakeholders for a broader perspective on the process.

For each of the case studies, the research team sought the following:

1. The “before and after” of the agency.
2. An understanding of why change happened.
3. A clear description of what changed.
4. If there were multiple elements of change, an understanding as to which of these elements came first, with the goal of identifying the degree to which one element of change promoted or led to others.
5. Detail on how the agency and people involved accomplished the change, including involvement from those outside of the transit agency.
6. An understanding of the overall timeframe for change with key decision points or actions that allowed change to happen.
7. Clarity on the expectations for the extent of change prior to initiation of the effort.
8. An understanding of barriers faced by the agency in the process and how those involved in the change process moved beyond these barriers.
9. Information on what is left to be done.

## Advance Transit, NH/VT

**CASE STUDY FOCUS:** *Transition of a rural agency from exclusively serving captive riders to having a broader role through institutional partnership*

Within a decade, Advance Transit transformed from an organization that almost exclusively served captive riders and struggled to meet annual financial needs to one that serves a significant number of choice riders and has strong partnerships throughout the community. Advance Transit has taken partnerships to a higher level, including direct route sponsorship by institutions, municipal partners, and private sponsors, and contributions from over 1,000 philanthropic donors.

### Background

Advance Transit is a private, non-profit agency that was created in 1984 to provide public transportation for the Upper Valley areas of New Hampshire and Vermont, including the Vermont townships of Norwich and Hartford and the New Hampshire municipalities of Hanover, Lebanon, Enfield, and Canaan. While the area is officially designated as rural, the presence of the two major institutions creates a significant ridership base for Advance Transit. Dartmouth College has a total enrollment of approximately 6,000 students, and the Dartmouth-Hitchcock Medical Center employs over 9,300 people.

Advance Transit is governed by a board of directors that includes representatives from each of the municipalities served as well as representatives from local institutions, including Dartmouth College, the Dartmouth-Hitchcock Medical Center, and the Upper Valley Lake Sunapee Regional Planning Commission. Advance Transit's stable, long-term leadership has been provided by the same executive director since 1987. Table 1 provides an overview of Advance Transit's basic agency characteristics as well as the basic community characteristics of the Upper Valley.

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area	273 sq. mi
Service Area Population	47,095
Annual Passenger Trips	841,864
Annual Revenue Miles	585,440
Annual Operating Expenses	\$3.0 million
FY2009 Capital Expenses	\$1.8 million

Source: 2009 National Transit Database.

### Type and Nature of Transformation

There are two areas of focus for this case study. The first area of focus is a shift in vision from a typical small-town transit provider focused on the needs of transit-dependent riders to a more aggressive, proactive transit provider that is able to provide a level of service appealing to choice riders. The mind-set shifted from survival to "how do we get to where we want to be." The second area of focus is that of collaboration and is more evolutionary. Advance Transit has always had community partners, but it has taken these partnerships to a higher level, which includes direct route sponsorship by the region's two major institutions, as well as partnerships with municipal partners and private sponsors, and contributions from over 1,000 philanthropic donors. This institutional and municipal support allows Advance Transit's fixed routes to operate fare-free. Table 2 provides a summary of the types of change made at Advance Transit.

### Reasons for the Change and How It Happened

In the late 1980s, Advance Transit was operating in "survival mode" according to the agency's director. Like many rural transit programs, it had limited resources and required a line of credit to get through the typical cash-flow issues experienced by grant-funded agencies. The director and the board came to the realization that to maintain a successful program, the agency would need to take on a more proactive role in several areas, including planning, infrastructure development, and fundraising. Table 3 provides a summary of the forces leading to change at Advance Transit.

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Secondary
Funding and Governance	Primary
Measuring Goal Achievement	
Resource Management	Secondary
Retooled Workforce and Organization	Secondary
Collaboration and Integration	Primary
Technology Applications	

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	
Demographics and Society	
Sustainability, Energy, and Environmental Concerns	■
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	■

## Planning and Infrastructure Development

Advance Transit's first major planning effort was conducted in the early 1990s in response to the agency's need for an administrative, operating, and maintenance facility. The agency was awarded a technical assistance grant from the Community Transportation Association of America (CTAA) to conduct a facility study. The study's completion came at an opportune time, as for the first time federal transportation legislation allowed flexing of highway funding to transit projects (a provision of the Intermodal Surface Transportation Efficiency Act of 1991, ISTEA). The Vermont Agency of Transportation (VTrans) agreed to flex the necessary funding from its federal highway funds to fund Advance Transit's facility, which resulted in the construction of the facility on the Vermont side of its service area.

The expanded facility has been silver certified by the Leadership in Energy and Environmental Design (LEED) system and features solar panels on the roof. The solar energy harnessed by these panels qualified Advance Transit to participate in a feed-in tariff (FIT) program, through which the agency can sell its power to the grid at a higher cost-based rate. Advance Transit obtained a Certificate of Public Good from the state as an energy producer and earns about \$10,000 per year from the panels. According to the director, if Advance Transit had not had the facility study in place, it would not have been able to capitalize on this new funding opportunity. Although this step preceded the agency's recent transformation, it highlighted the value of establishing visions and plans should funding opportunities arise.

Service planning is also a key feature of Advance Transit's proactive approach. Advance Transit keeps its 5-year Transit Development Plan current, as is required by VTrans, and uses this plan to implement potential service ideas when funding opportunities arise.

Advance Transit has a capital plan in place that has provided direction for the capital campaign. The current plan included the recent facility expansion that features environmentally friendly building designs, as well as a plan to upgrade the fleet to diesel electric and hybrid vehicles to improve air quality. This capital plan has been largely implemented using American Recovery and Reinvestment Act (ARRA) funds.

## Community Partnerships and Fundraising

Concern for the future economic health of Advance Transit led the staff and board to research ways to broaden the revenue base of the agency. While planning has been critical for Advance Transit and has allowed the agency to take advantage of various grants, the economic reality of rural public transportation is that there generally are not enough funds to meet area needs.

Advance Transit has used the following mechanisms to broaden its revenue base:

- **Community Partnerships.** Advance Transit's major institutional partners provide \$1.6 million annually toward its \$4.5 million operating budget. This revenue supports high-frequency shuttle service geared toward Dartmouth College and the Dartmouth-Hitchcock Medical Center. This partnership was a business decision for the institutions, providing a parking and transportation solution for the Medical Center. The major facility location created new transit needs for this key regional employer. These transit services are open to the public and help provide a much higher level of public transportation than normally exists in a rural area. The expansion of service to support the new facility was a key component of the agency's shift to serve a market beyond captive riders.
- **Sponsorships.** A business will pay Advance Transit to sponsor a vehicle in a manner similar to advertising. Advance Transit currently receives about \$40,000 per year in sponsorships.
- **Philanthropy.** As a private non-profit agency, Advance Transit is permitted to conduct fundraising campaigns. About 5 years ago, the staff and board began to focus on philanthropy as a way to broaden the revenue base. Advance Transit now employs a part-time philanthropy development director. Advance Transit currently has a donor base of about 1,000 individuals/businesses and raises about \$100,000 per year through its philanthropic program. This philanthropic effort has raised the community's awareness of the public transportation services provided and helped broaden political support for the organization. It is more difficult to cut the agency's budget when local donors support its operation.

## Consequences of the Transformation

Funding partnerships have expanded, and the agency has raised its profile within the community and is now considered a critical part of the local transportation system. Advance Transit's shift from status quo survival mode to proactive visionary mode has resulted in a transit program that carries the second largest number of passenger trips per year in

the state of New Hampshire (second only to the program at the University of New Hampshire). Over the past decade, ridership has more than doubled, and the proportion of choice riders has increased from just one in four to over half of all riders. The agency's planning efforts also have allowed them to take advantage of numerous grant opportunities that might not have been feasible without sound plans in place.

The nurturing of community partnerships also has contributed to the success of the program, as the major institutions and municipalities could have chosen other ways to meet their mobility needs, but instead chose to work with Advance Transit to provide a comprehensive public transportation program for the region. Their contributions have allowed the routes to operate fare-free, which has promoted ridership, decreased traffic congestion and the resulting air quality problems, and decreased the demand for parking.

While it is still a relatively small portion of the agency's overall revenues, Advance Transit's philanthropy program is becoming fully established and is helping the agency with its local matching fund needs. The program also affirms that Advance Transit is proactive in seeking out all available funding opportunities, which is helpful when discussing revenue needs with local municipalities and community partners.

## Lessons Learned

The Advance Transit case study provides a number of key lessons:

- A proactive planning program is critical when looking for financial support, be it from governmental, institutional, or private sources. Well-researched capital, service, and financial plans provide justification for and a greater understanding of the specific projects for which Advance Transit is seeking support.
- The development of a philanthropy program takes resources and requires a long-term commitment and effort. While philanthropic donations do not generate enough revenue to supplant municipal or institutional funds, these programs can have the effect of broadening the awareness of and political support for a transit agency.
- The process of building community partnerships requires direct involvement of the executive director. There must be staff support to run the transit program so that the executive director can be free to attend related events and build critical relationships in the community.
- Institutional partners are interested in the bottom line and a partnership arrangement must be a good business decision in order for them to participate.

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## Capital Area Transportation Authority (CATA), Lansing, MI

**CASE STUDY FOCUS:** *Collaboration on a data-based business model and a client focus*

The transformation that has taken place at the Capital Area Transportation Authority (CATA) is one of fundamental change in the authority's business model driven largely by collaboration. By combining CATA services with those operated by Michigan State University (MSU) and by including an MSU presence on the CATA board of directors, the CATA business model has shifted from traditional service planning and delivery guided by the experience and intuition of senior managers, to a business model based on collaboration, integration, and partnering using data-based planning and management.

### Background

CATA began service in the Lansing area in 1972 following enactment of state-enabling legislation. CATA is governed by a 10-member, appointed board of directors and two non-

voting members representing outlying Ingham County and MSU. CATA has approximately 300 employees, including approximately 200 vehicle operators.

The Capital Area Transportation Authority's 33 fixed routes are operated through two transportation centers serving downtown Lansing and MSU and a separate administrative facility. A variety of other services are available, including "Limited" or commuter bus services on three routes, advance reservation curb-to-curb services in four outlying areas, "Spec-Tran" ADA paratransit services, "Clean Commute" carpool matching and vanpool programs managed in partnership with many of the region's employers, and Emergency Ride Home (ERH) service for Clean Commute participants.

Table 1 provides an overview of CATA's transit services as well as the basic community characteristics of the Lansing, Michigan, area.

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area	136 sq. mi
Service Area Population	277,316
Annual Passenger Trips	11.4 million
Annual Revenue Miles	5.7 million
Annual Operating Expenses	\$36.0 million
FY2009 Capital Expenses	\$4.9 million

Source: 2009 National Transit Database.

## Type and Nature of Transformation

The focus of this case study is how collaboration among agency and university partners led to a more data-driven business model supported by improved information systems as well as expanded services and service arrangements, significant ridership increases, and broader sustained support across the community. The partnership that has evolved has shifted the CATA mission and internal philosophy to focus on service to clients and to view clients as full partners in service design and delivery. In addition, because CATA is supported by a property tax paid by all residents, community members are viewed as “stockholders” who should have maximum access to the services they support. In support of this philosophy, CATA has embraced a policy of no ADA complementary paratransit trip denials within the funded area. Table 2 provides an overview of the kinds of change that have occurred at CATA.

With respect to governance, the consolidation brought to CATA a non-voting board member from MSU. The academic administrative influence has helped to increase attention to CATA performance based on data and analysis. This shift, in turn, launched efforts to upgrade technology and management systems. With this change in governance perspective, key processes have been transformed as well. Rather than

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Secondary
Funding	
Governance	Secondary
Measuring Goal Achievement	Secondary
Resource Management	
Retooled Workforce and Organization	
Collaboration and Integration	Primary
Technology Applications	Secondary

present the board with proposed budget assumptions each budget cycle, staff facilitates discussion of 5-year assumptions for categories of expenditure and programs, and the board debates and adopts assumptions to be used in building the budget. These assumptions, in turn, determine what increases, if any, should be pursued in major categories as well as why and how available resources must be allocated. In this way, the board has a primary role in building the budget and necessary revenue streams.

Goal achievement is defined more broadly since the consolidation. In addition to traditional operating-based performance measures, CATA’s performance is now measured on the basis of the scope of services it provides, the breadth of the partnerships in which it is engaged, increases in the reliance on CATA across the community, heightened levels of public (and political) support at the ballot box, and the extent to which the board role remains focused on major policy decisions rather than operational detail.

Collaboration and integration are now taking place with an number of entities, including CATA, MSU, the cities of Lansing and East Lansing, and local developers. Examples include the following:

- Development of the MSU-CATA transportation center, in part, using excess funds for development of the downtown Lansing transportation center;
- Expansion of an MSU commuter lot using federal capital, the ongoing operation of which is supported through an annual payment to CATA from MSU to offset the operating costs of the CATA in downtown Lansing; and
- Contracts with off-campus housing that assess developers for CATA services, as required by the city of East Lansing as a condition of development.

With respect to technology applications, the consolidation of CATA and MSU services resulted in MSU influencing CATA to pursue state-of-the-art information technologies more aggressively as a core strategy to enhance data-driven planning and management. As a result, new information systems have been introduced to support financial management, operations, maintenance, human resources, and paratransit. The system elements are linked and fully integrated. CATA’s use of these new systems to more efficiently schedule and cover bus operator planned and unplanned time off is estimated to save \$800,000 annually.

## Reason for the Change and How It Happened

Prior to 1998, CATA and MSU operated separate transit systems. Up to this time, CATA had periodically expressed interest in integrating or combining operations. With the

**Table 3. Forces leading to change.**

Funding and Finance	
New Technology	■
Demographics and Society	
Sustainability, Energy, and Environmental Concerns	
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	

arrival of a new Vice President for Operations at MSU, the case for consolidation of CATA and MSU services was made and accepted by both parties as a sound “business” decision. The agreement included CATA’s purchase of MSU’s buses.

The terms of the transition and the current service contract with MSU includes a “demand test” clause for routes serving MSU whereby new services are tested for 30 days. If use averages 15 passengers per hour or more, MSU will allow service to continue operating and fully support the allocated cost.

Several key elements stood behind the transformation that has taken place at CATA:

1. Expanded collaborative ventures, including: the consolidation of CATA and MSU services; formal service agreements involving CATA, local governments, and local developers; and the addition of an MSU representative to the CATA board.
2. Introduction of a data-based management orientation and business model to CATA from MSU partners.
3. Implementation of an integrated, organization-wide network of state-of-the-art information technology to support more data-driven planning and decision-making.

These strategies coupled with necessary attention to strong growth in the university and regional markets have helped make CATA both more effective and more responsive in serving the region and more relevant to the entire community. The transformation described is the product of over a decade of evolution in governance, policies, and procedures. This change has happened during a period of extraordinary stability and continuity among both staff and board members. Table 3 provides a summary of the forces leading to change at CATA.

## Consequences of the Transformation

The transformation described above has produced several important consequences:

- From an *operational standpoint*, the act of integrating MSU services as part of the CATA system created a synergy throughout the community that has allowed the system to blossom, with ridership on the combined system growing from 4.5 million trips per year to over 11.0 million since the consolidation with MSU campus service representing 3 million.
- From a *budget and financial standpoint*, CATA has been able to support service expansion and improvement as well as creative new service initiatives and business arrangements.
- From a *customer and community standpoint*, CATA has sustained strong political and popular support as measured by strong public approval (57 percent to 72 percent) for 10 of 11 5-year property tax millage renewals or increases since 1983.

## Lessons Learned

The CATA case study provides a number of key lessons:

- Industry experience and intuition in planning and management may no longer be sufficient to sustain successful transit planning and operations; the “business case” must be regularly examined on a data-driven basis, particularly in response to new and varied public and private partners.
- Collaboration, partnerships, and non-traditional arrangements are an increasingly critical part of maintaining the effectiveness of, the relevance of, and community support for public transportation; these partnerships must be customer-focused and reflect a clear understanding of the different markets to be served.
- Innovation and experimentation in service design and delivery must be encouraged but managed under clear guidelines for assessing success, failure, and financial responsibility.
- New information technologies and data systems are essential to clearly and credibly demonstrate the benefit and value of new and varied service strategies and partnering arrangements, to ensure reasonable accommodations can be reached in labor negotiations, and to secure public support.
- Stability and continuity in staffing and governance may have contrary effects; although stability and continuity in staffing can result in a reluctance to let go of long-standing practices and thereby slow fundamental change, stable staffing and governance can also build confidence for embarking on fundamental changes.

# Champaign-Urbana Mass Transit District (C-U MTD), Champaign-Urbana, IL

**CASE STUDY FOCUS:** *Embracing technology through investment, organizational change, and collaboration with consequential improvements in customer satisfaction*

The Champaign-Urbana Mass Transit District (C-U MTD) has experienced an evolutionary transformation from a transit agency that used only basic technology to one that has embraced technology to such an extent that this adoption has retooled the workforce and shifted the organizational structure of the agency. The make-up of C-U MTD's customer base and growing pressure for accountability prompted the agency's move to embrace cutting-edge technology.

## Background

The Champaign-Urbana Mass Transit District was created in 1970 after the private bus operator, City Lines, made a request to the Illinois Commerce Commission to cease operations. Transit service began under C-U MTD, governed by a five-member board of trustees, in 1971. The board of trustees currently comprises seven members appointed by the Champaign County Board. C-U MTD serves the urbanized area of Champaign, Illinois, which includes the twin cities of Champaign and Urbana. The University of Illinois, with an undergraduate population of 30,000 students and a graduate population of 10,000 students, is located in the middle of these twin cities. Since its inception, C-U MTD has partnered with the University of Illinois to help provide mobility for the university. In 1973, the first two campus routes were implemented and, in 1989, the students passed a referendum to impose a student fee to fund transit services. A student referendum is held every 3 years to set the fee, which is currently \$50 per student per semester.

C-U MTD has had stable, long-term leadership, with the same managing director since 1974. Table 1 provides an overview of C-U MTD's basic agency characteristics.

**Table 1. C-U MTD agency characteristics.**

Characteristic	Value
Service Area	41 sq. mi
Service Area Population	123,938
Total Vehicle Fleet	114
Annual Passenger Trips	10.5 million
Annual Revenue Miles	3.1 million
Annual Operating Expenses	\$24.3 million
FY2009 Capital Expenses	\$2.5 million

Source: 2009 National Transit Database.

## Type and Nature of Transformation

The focus of this case study is how C-U MTD has embraced technology and transformed its organizational structure to maximize the benefits of the enhanced information that the agency now is able to access and share with its customers. Table 2 provides a summary of the kinds of change that have occurred at C-U MTD.

## Reasons for the Change and How It Happened

The make-up of C-U MTD's customer base and the level of accountability faced by the agency, given its funding sources, prompted the agency's move to embrace cutting-edge technology. C-U MTD faces a student referendum on transit funding every 3 years. This routine vote of confidence provides a backdrop against which the agency must stay at the forefront of technology and other innovations. The university itself stands at the forefront of technology research, and the community expects C-U MTD to take full advantage of available technology. Table 3 provides an overview of the forces leading to change at C-U MTD.

In 2001, C-U MTD completed a strategic plan that included an emphasis on mobility, partnerships, and technology. C-U MTD staff members encouraged technology improvements and the agency's board of trustees supported such an investment. These factors resulted in C-U MTD's decision to pursue the implementation of a real-time passenger information system, including computer-aided dispatch (CAD), automatic vehicle location (AVL), mobile data terminals (MDTs), and associated software. This investment decision required inno-

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Secondary
Funding and Governance	
Measuring Goal Achievement	
Resource Management	Secondary
Retooled Workforce and Organization	Primary
Collaboration and Integration	Secondary
Technology Applications	Primary

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	■
Demographics and Society	■
Sustainability, Energy, and Environmental Concerns	■
Travel, Land Use, and Development Patterns	
Infrastructure Conditions	

vative approaches to funding and procurement and organizational changes to fully support this change.

C-U MTD partnered with two other transit agencies, CityBus (Lafayette, Indiana) and MetroLINK (Rock Island, Illinois), to form a consortium to purchase the hardware and software required for the system. This consortium allowed all three agencies to share the workload of the procurement and provided the group with additional purchasing power to obtain a lower price.

As they worked through the procurement, C-U MTD's director and board found that the agency did not have the capital funds to purchase the desired equipment and software, however, the agency did have enough operating funds through the state of Illinois to lease the equipment. C-U MTD went through with the consortium purchase using a lease agreement for its portion. These systems were installed in 2003.

C-U MTD's embrace of technology has since led to the full implementation of the following applications:

- CAD,
- AVL,
- MDT,
- Real-time passenger information, and
- Automatic passenger counters (APCs).

This new technology has supported C-U MTD's implementation of a passenger information program, called "STOPwatch." STOPwatch provides real-time bus information via the following:

- On-street electronic screens and kiosks, including audio;
- Internet (STOPwatch.WEB);
- Online trip planner (STOPwatch.JOURNEY);
- Mobile phone via text message (STOPwatch.SMS);
- Other web-enabled mobile devices (STOPwatch.MOBI);
- Personal computer, desktop widget (STOPwatch.WIDGET); and
- Google Transit integration.

In addition, the university is now including real-time bus information as a scrolling band at the bottom of informa-

tional video screens that are being installed at various buildings on campus.

After implementing the technologies, C-U MTD restructured the organization to make full use of available data and ensure effective maintenance of the hardware and software. The new management structure includes three divisions: management information, service delivery, and market development, which includes technology, marketing, and planning. This new structure gave technology the focus that it needed in order for C-U MTD to successfully implement the improvements. Implementing these technologies also has required the addition of staff, including a position in the maintenance department to maintain the hardware, and positions in technology, planning, and marketing. C-U MTD recently added staff responsible for social media and software development. These staff members are critical to ensuring that the technology is working properly, that C-U MTD is using it to its fullest capability, and that C-U MTD stays on the forefront of new technologies, in keeping with its customer base.

## Consequences of the Transformation

The technological transformation has had an impact on customers, the organization, and the staff. Results from C-U MTD's most recent customer satisfaction survey indicate that 98 percent of customers are satisfied with the services provided by the agency. C-U MTD staff credit the STOPwatch program in part for this high rating and indicated that if this level of satisfaction is to be maintained, C-U MTD's technology will have to stay at the forefront to keep pace with the community's technological savvy. C-U MTD currently uses every available technological outreach strategy to provide customers with real-time bus information. This information allows customers to plan their trips efficiently, without having to wait for long periods at bus stops. While the buses may or may not be on time according to printed schedules, riders now perceive a high level of on-time performance.

C-U MTD's staff has generally embraced new technologies and, as a result of recent investments, there is now one data set used across the agency for stop times and locations. This same data source is used by operations schedulers, the planning staff, and the marketing staff and has contributed to improved efficiency and accuracy in the scheduling of drivers and vehicles as well as revisions in printed schedules based on more accurate timetables. The new technology also provides controllers with the ability to see where all of the buses are in real time so they can make immediate adjustments to service as needed. This ability is particularly helpful in a university transit setting where there are often traffic disruptions.

These technologies also have transformed communication between customers and staff. Customers communicate with C-U MTD via text, social media, and web-based applications.

## Lessons Learned

The C-U MTD case study provides a number of key lessons:

- The confluence of interest in transit and technology among younger people provides an opportunity for transit agencies to tap the support of this stakeholder group. A full embrace of technology is most replicable for agencies that have technology-savvy customers, but customers can become tech-savvy if the product is useful and easy to use.
- Stable long-term leadership can provide an environment conducive to organizational change.
- Organizational change in a small agency may need to happen slowly, as individuals move on to other jobs or retire and as new staff positions are added.
- Consortium purchasing can be a valuable mechanism for maximizing an agency's staff and financial resources.
- Leasing equipment may be a viable option for implementation if a system has operating funds but not capital funds.
- The use of advanced technology does not necessarily save money. Additional staff members are likely to be needed to ensure that the technologies are working and that the agency is making full use of the improvements. Transit technology programs are not typically "plug and play."

## Charlotte Area Transit System (CATS), Charlotte, NC

**CASE STUDY FOCUS:** *Shift from static bus operator serving the city to a regional multimodal service provider through collaboration and changes in governance*

Over a period of less than 10 years, public transportation in the Charlotte region evolved from a city-run bus system serving a captive market to a multimodal agency with growing ridership, an improved public image, and a more diverse customer base. While activities to support this transition happened over an extended period of time, a distinct change in governance and organizational structure, initiated in late 1998 with the approval of a one-half percent sales tax, served as a turning point in this transition. Much of this change happened with the active support of key business leaders in the community and a mayor who believed Charlotte needed a strong transit system to support the region's growing economy. The change was facilitated by a new governance arrangement, an increase in funding, and a shift in the organization's structure within the city of Charlotte government. In 1999, the system name changed from Charlotte Transit to the Charlotte Area Transit System (CATS).

### Background

The city of Charlotte has operated the city's transit system since 1977 when service transitioned from a private operator. The transit staff was initially established as a unit within the Charlotte Department of Transportation (DOT) and the system was managed by the assistant director of transportation. A complex organization was set up to manage and operate the system within the constraints of North Carolina's labor laws. Administrative staff and those operating the paratransit service worked directly for the city. A separate organization,

Transit Management of Charlotte (TMOC), was created to hire transit operating staff for the bus system. The city hired a contractor to manage operations, service planning, and customer service.

After the sales tax increase was approved in 1998, the transit organization became its own department and business unit within the city of Charlotte. The agency's first general manager was hired in 1999 to manage the newly created department. The city consolidated service planning, the call center, and safety and security. City employees include paratransit service operators, light rail service operators, planning specialists, and general administrators. The transit department now employs a staff of about 360 people. A separate organization continues to employ personnel to operate and maintain the bus operation. The city also continues to contract management services for the bus system. The general manager, assistant general manager, and the general manager of maintenance for bus operations are all employed by the city's contractor. Table 1 provides a summary of CATS' operating characteristics.

CATS is governed by the Charlotte City Council and the Metropolitan Transit Commission (MTC), which serves as the policy board. The City Council approves contracts, oversees procurement, and approves the agency budget (without the authority for modification). MTC provides direction to the organization, including decisions on service, fare policy, and long-range transit plans. MTC is made up of nine voting members (the mayors of the seven municipalities in Mecklenburg County, the chairman of the Mecklenburg County

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area	435 sq. mi
Service Area Population	758,927
Annual Passenger Trips	25.7 million
Annual Revenue Miles	17.3 million
Annual Operating Expenses	\$101.6 million
FY2009 Capital Expenses	\$59.0 million

Source: 2009 FTA National Transit Database.

Council, and a representative from the North Carolina DOT), and six non-voting members (representatives of each of the five surrounding counties and one from the South Carolina DOT).

## Type and Nature of Transformation

As shown in Table 2, change was facilitated by a new governance structure and a substantial increase in funding and supported by a shift in the organization's structure within the city of Charlotte government to raise the stature of the transit organization to a level on par with the city's DOT. The transit organization and city also benefitted from an emphasis on collaboration across departments within Charlotte and with external stakeholders.

## Reason for the Change and How It Happened

Change occurred as a direct result of the growing pressure on elected officials to respond to rapid increases in population and employment. There was a sense that the Charlotte region needed to develop an approach that more actively managed population and employment growth to remain

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Secondary
Funding	Primary
Governance	Primary
Measuring Goal Achievement	
Resource Management	
Retooled Workforce and Organization	Secondary
Collaboration and Integration	Secondary
Technology Applications	

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	
Demographics and Society	■
Sustainability, Energy, and Environmental Concerns	■
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	

competitive as a desired location for employers. Many leaders in the region suggested that Charlotte should take a different approach to managing growth, with the goal of avoiding the perceived problems of sprawl and congestion facing another fast-growing southern city, Atlanta. Existing resources available for transit were not enough to move transit into its desired role within the region. Table 3 provides a summary of the forces leading to change at CATS.

## Building Consensus Around a Regional Vision

The concept of transit as a transportation choice was first addressed in a city comprehensive plan completed in the 1980s. In the late 1980s and early 1990s, the city conducted several corridor studies that explored the possibility of fixed guideways to serve higher density corridors. Through these various planning studies, the region became increasingly aware of different options to address transportation investment and regional growth. Efforts transitioned into a more political process in the early 1990s. In 1994, a "Committee of 100" was established at the suggestion of the City Council and Charlotte Chamber of Commerce with the responsibility of generating a consensus vision for regional transportation and land use. The group of political and civic leaders from across the region was charged with exploring strategies for long-term transportation investment and with recommending revenue options to support the defined vision.

The city of Charlotte took the lead in the development of the regional vision. Charlotte's planning staff developed a regional development concept of "wedges and corridors" that consisted of higher density development in five corridors with lower density development in the "wedges" between these corridors. The concept would provide a choice of housing types and reduce development pressure in lower density residential neighborhoods outside of the identified corridors. The corridors identified for high-density growth were predominantly commercial and followed major highway and rail corridors connecting areas outside of Charlotte to the city center. Support was high for concentrating development in these locations.

## Shifting to a Focus on Funding

After reaching a general agreement on the regional vision, the focus shifted to funding. The Committee of 100 adopted the wedges and corridors strategy and recommended a 1 percent local sales tax to fund supporting regional highway and transit improvements. While there was widespread support for the concept recommended, only York County, South Carolina, passed the local sales tax endorsed by the group. Counties in North Carolina, including Mecklenburg, faced the constraint that, in the state of North Carolina, the state legislature must approve any local tax other than a property tax, even those proposals that go before voters.

Mayor Pat McCrory, elected as Charlotte's mayor in 1995, accelerated advocacy efforts for increased public transportation investment. He established a "Committee of 10" to implement the recommendations of the Committee of 100. The Committee of 10 included two area business leaders, two members of the Charlotte City Council, and members of the North Carolina Board of Transportation. The group reaffirmed the original recommendations, developed a 5-year implementation plan, and endorsed a local option revenue source of a one-half percent sales tax to support public transportation. The head of the Mecklenburg County Commission, a Democrat, worked with Charlotte's Republican mayor throughout the process, making the effort bipartisan.

Mayor McCrory's strong relationship with the business community provided key support. Bill Lee, the chairman of Duke Power, was instrumental in encouraging Mayor McCrory to address regional growth issues in order to maintain Charlotte's economic competitiveness. Other area business leaders, including Hugh McColl, the chief executive officer (CEO) of Bank of America, believed that if Charlotte were to continue to attract world-class corporations, it would need to have a robust transit system. Many of these business leaders provided support behind the scenes as the effort moved forward.

## Seeking State Authority to Implement Funding Strategy in Partnership with Other Regions

In 1997, a bill was introduced to the state legislature by two other regions in the state to add a local rental car tax to support transit. Proponents of transit in the Charlotte region took the opportunity to seek approval for local revenue options together with these other proposals. The city of Charlotte and Charlotte Chamber of Commerce also closely coordinated advocacy efforts at the state General Assembly. The legislature approved the legislation, which gave Mecklenburg County the authority to seek a one-half percent sales tax for transit services.

## Advocating for a New Role for Transit—Achieving Voter Approval

In the summer of 1998, the Mecklenburg Board of County Commissioners approved inclusion of the one-half percent sales tax referendum on the November ballot. The proposal was paired with a \$100 million road bond authorization to frame the transportation investment proposal as multimodal.

During the period just prior to the referendum, the city took a number of steps to support efforts for approval. Staff from the city of Charlotte led the development of the 2025 Integrated Transit and Land Use Plan. This effort involved substantial outreach to the community and helped provide specifics on what citizens might expect should the referendum pass. The results of the plan were presented in July of 1998 to all mayors and councils of the municipalities within Mecklenburg County. In addition, as additional funding for transit was being considered, CATS took advantage of a partially constructed and unused high-occupancy vehicle (HOV) lane along Independence Boulevard to establish the region's first bus rapid transit (BRT) facility in 1998. The use of this facility showed the public the potential value of exclusive guideways in providing transit service.

The Charlotte Chamber of Commerce led advocacy efforts for the sales tax increase and the roadway construction bonds using funds generated from its members. The sales tax referendum passed by a margin of 58 percent to 42 percent. Revenue collection began in April of 1999 and the resulting changes in the organizational structure of transit began.

## With Voter Approval, Agency Change Begins

With the passage of the funding referendum, the MTC was officially formed and had its first meeting in January of 1999. The transit group that had resided within the Charlotte DOT became its own department within the city of Charlotte and the agency's first general manager was hired in November of 1999. The city shifted service planning, the call center, and safety and security functions from contractors to city employees.

In addition to these internal actions, the agency took steps to show progress publicly. Examples included the removal of advertising from the outside of buses, standardizing bus signs, increasing the number of bus shelters from just 50 to approximately 300, refurbishing transit shelters, and providing real-time information on next bus arrivals. The agency also enhanced its capacity to reach out to the public by adding staff with public involvement experience. CATS also embraced market research to inform its decisions with the routine use of surveys and focus groups. The agency also began to more aggressively deal with customer complaints and now has a process that requires prompt resolution of all complaints.

The agency moved forward with the implementation of light rail in the south corridor and began major investment studies in other corridors. The agency conducted hundreds of meetings related to these studies, which contributed to a general increase in the awareness of transit across the region.

### Changing Governance Structure

The governance change created a policy board with one vote per jurisdiction, which is typically held by each jurisdiction's city manager or mayor. The Charlotte City Council also approves the annual budget and the CEO of CATS continues to report directly to the city manager. As a result, Charlotte still maintains a high level of control. The policy board maintains authority over broad funding decisions for major capacity expansion. Initially, there was disagreement on the approach to governance for the new transit organization. The business community favored an appointed board. Local elected officials favored appointments by elected officials to maintain support for the organization and to better connect transit investment decisions to land use. In the end, the chosen approach established the current governance structure with a required review after 5 years. At the end of this 5-year period, a change was made to add a North Carolina DOT representative as a full voting member.

### Unexpected Challenges—a Threat to Revenue

Controversy surrounding implementation of the first large light rail project resulted in a referendum to repeal the transit sales tax that failed by a wide margin. The Chamber of Commerce was a key partner in defending the revenue source for public transportation investment and raised \$630,000 from its membership to campaign against the referendum. The effort to avoid this repeal required another regional re-education effort on the value of transit investment and the goals of the regional plan. Staff now recognizes that there is a need to constantly educate the general public on the value of transit investment, particularly given the constant turnover of residents in this rapidly growing region.

### Consequences of the Transformation

Changes in the transit system organization and funding levels have led to a rapid growth in ridership, financial stability, increased institutional capacity, an expansion of service to include light rail, and enhanced coordination between transit investments and area land use planning. The agency was able

to increase routes by more than 75 percent, supporting a more than doubling of ridership between 1998 and 2010, with an average annual increase of more than 6 percent per year. The Charlotte area has been hit hard by the economic downturn and only in 2010 did ridership decline. Ridership increased every other year, even in those years with fare increases. The agency also was successful in implementing its first light rail line in 2007 and continues to pursue rail and BRT options in other corridors.

Prior to the transition of the transit group to its own department, the relationship between land use and transit decisions was not strong. The decisions within these groups were made independently. Now, land use decisions are made with careful consideration as to how these decisions relate to public transportation services.

Before the MTC was established, proposals for service changes and fare changes were caught up in City Council politics. The establishment of a policy board with representation beyond the boundaries of the city of Charlotte has shifted the role of the agency toward being more regional in nature.

### Lessons Learned

There were several key elements to the successful push for transit in Charlotte: (1) a good plan with strong buy-in from the public and the business community, (2) a clear strategy for implementation, and (3) a process to continue to refine the general approach as needed. Efforts for transformation offer a number of other lessons valuable for other regions considering similar actions:

- Collaboration with external stakeholders, including the Charlotte Chamber of Commerce and local elected officials in area municipalities, in this case proved critical in gaining local political support for a revenue increase.
- The coordination of land use and transportation provides a vision for investment that goes beyond moving people and can be critical in advocacy efforts.
- A well-known “vision” for transit can prove critical, and collaboration with the public, while it is time consuming, can provide a foundation that protects the transit revenue source.
- Political champions are critical. Transit staff generally cannot drive the process and need elected officials who can stand behind it. Engagement with the region's most significant community leaders can prove crucial to success.
- Active engagement with the public should continue beyond an approval of a new funding source.
- Building institutional capacity can take time in cities where high-quality transit is new.

# Chittenden County Transportation Authority (CCTA), Burlington, VT

**CASE STUDY FOCUS:** *Transformation from a local to a regional transit provider through agency consolidation*

The focus of this case study is Chittenden County Transportation Authority's (CCTA's) evolution from a single-county transit agency serving the greater Burlington, Vermont, area to a regional entity serving a five-county area. The transformation required the creation of an umbrella organization, Green Mountain Transit Agency (GMTA), to subsume a number of existing public transit systems in surrounding counties and, more recently, the merging of GMTA under CCTA in July 2011. The transition to a regional entity can be, in part, attributed to the successful relationship that CCTA built with GMTA over a 9-year period.

## Background

CCTA is Vermont's first and only transit authority. It was chartered by the Vermont General Assembly in 1973. Until recently, CCTA served only the greater Burlington area through its network of local fixed-route bus services within Chittenden County, commuter bus services from adjacent counties, and ADA paratransit services. CCTA recently expanded to serve five counties on a cohesive, regional basis.

In fiscal year 2009, CCTA's services in the greater Burlington area covered approximately 59 square miles and served a population of 86,000 with an operating budget of \$9.2 million. With the addition of transit services operated under GMTA, CCTA now serves approximately 1,900 square miles in five counties and a population of more than 224,000 people with a combined operating budget of over \$13 million. Core CCTA services provide about 2.6 million trips annually with a vehicle fleet of 69 vehicles. The GMTA portion of the agency carries approximately 385,000 annual passenger trips. Table 1 provides an overview of CCTA/GMTA agency

characteristics as well as the basic community characteristics of the service area.

Outside Chittenden County, GMTA services continue to be differentiated by region: Capitol District, Mad River Valley, Stowe/Lamoille Valley, and Franklin/Grand Isle Region. GMTA service has different branding depending on the service area. Services include fixed routes in the Capital District, seasonal routes in Mad River Valley and Stowe, commuter routes throughout the region, community shuttles, ADA paratransit, Medicaid transportation, and demand-responsive services for elderly persons and persons with disabilities.

## Type and Nature of Transformation

CCTA has always had partnerships with universities and colleges, local businesses, and social service and non-profit organizations within its service area. The change being explored in this case study has transformed the agency beyond its traditional partnerships to the managing and operating of public transit services in several adjacent counties. As indicated in Table 2, the primary types of transformative change represented by this case study include governance and collaboration and integration, but these changes also had the effect of shifting the overall mission of the organization over time.

## Reasons for the Change and How It Happened

In 2002, one of the largest rural transit operators in the state (a private non-profit agency, Central Vermont Transportation Association [CVTA]—known as "Wheels") filed for bankruptcy and closed its doors with 1 day of notice. The Vermont

**Table 1. Agency characteristics.**

Characteristic	Value (CCTA— Chittenden County)	Value (GMTA Regional Services)
Service Area	59 sq. mi	1,870 sq. mi
Service Area Population	85,889	138,725
Annual Passenger Trips	2,552,000	385,800
Annual Revenue Miles	1,643,600	917,000
Annual Revenue Hours	117,500	53,900
Annual Operating Expenses	\$9.2 million	\$4.0 million
FY2009 Capital Expenses	\$6.0 million	N/A

Sources: 2009 National Transit Database (for CCTA). FY 2011 data from VTrans and CCTA/GMTA, Census 2010.

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Secondary
Funding	
Governance	Primary
Measuring Goal Achievement	
Resource Management	
Retooled Workforce and Organization	
Collaboration and Integration	Primary
Technology Applications	

Agency of Transportation (VTrans) looked to neighboring transit agencies to see if any were willing to step in and take over the services, which led to CCTA restarting the service within 2 weeks. This initial action was the beginning of a transformation in CCTA that happened over the next decade. There were a number of other rural transit systems in neighboring counties also floundering or on the brink of collapse, including the network serving Franklin/Grand Isle counties northeast of Burlington, the Town of Stowe Transit System, and Mad River Valley. As indicated in Table 3, a funding crisis, deteriorating services, and changes in the demand for travel served as the key forces for change.

The process of change took place between 2002 and 2011, with the following progression of key actions:

1. In 2002, the General Assembly granted CCTA the authority to operate outside of Chittenden County, which allowed CCTA to create GMTA to take over public transportation services being provided in Central Vermont.
2. In 2003, CCTA created GMTA internally to operate the CVTA/Wheels services. During this time, VTrans bought CCTA new vehicles for the service and allowed the operation of these vehicles out of the state-owned airport in Montpelier (former CVTA vehicles and its facility were tied up in court proceedings).
3. CCTA transformed GMTA into a Vermont private non-profit, 501(c)3, but with a CCTA-appointed board.

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	
Demographics and Society	
Sustainability, Energy, and Environmental Concerns	
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	■

4. GMTA then transitioned to an independent 501(c)3 with its own board that contracted with CCTA for management services.
5. In 2011, CCTA absorbed the services and service areas where GMTA operated. GMTA was dissolved, and the CCTA hired GMTA's employees.

External pressure motivated many agencies to become part of the newly created GMTA. In 2003, VTrans conducted performance/compliance reviews of its rural transit systems and discovered that many did not have the administrative staff or procedures in place to manage their federal/state grants properly. These agencies faced the requirement to either hire administrative staff or join together to create one entity that could administer their programs efficiently and effectively. As a result, over a period of more than 5 years, many of the neighboring transit systems elected to join GMTA:

- 2003—Mad River joined GMTA.
- 2004—Town of Stowe (contract) joined GMTA.
- 2005—Stowe was absorbed into GMTA.
- 2006—Rural Community Transportation (RCT) fixed routes in Lamoille were transitioned to GMTA.
- 2009/2010—Network in Franklin/Grand Isle was absorbed into GMTA.

GMTA operated as an independent 501(c)(3) non-profit with management services provided by CCTA. After these transit systems were absorbed by GMTA, additional change resulted in the complete transition of transit services in the five counties into a single provider. As of July 1, 2011, the CCTA charter changed to allow municipalities outside Chittenden County to join CCTA as member communities. On June 30, 2011, the GMTA non-profit was formally dissolved, with CCTA assuming the GMTA name when operating rural public transportation services in Washington, Lamoille, Franklin, and Grand Isle Counties.

### Incremental Changes in Governance

The governance of the new GMTA followed an incremental path. During its inception and “emergency” creation period, it was governed by a subset of the CCTA board and staff (two CCTA board members and three staff members). When the private non-profit agency was first created, it was governed by its own board with members appointed by the CCTA board. Eventually, when GMTA became an independent agency, it had its own locally appointed board of directors, which was composed of representatives from municipalities, regional planning organizations, and the Regional Elderly and Disabled Partners Advisory Committee. With the CCTA/GMTA merger in July 2011, the GMTA board was merged with the CCTA board

and the CCTA Board of Commissioners was reconfigured and expanded to include representatives from Washington County, Franklin County, Lamoille County, and Grand Isle County.

### Building Local Political Support for Change

The executive director of CCTA presented the change to the CCTA board as an opportunity to fill a needed service gap while assisting VTrans in its efforts to protect existing service. CCTA benefitted through improved VTrans support, which enabled CCTA to expand commuter services in the region.

At the local level, municipalities were initially wary of CCTA and worried that they would not retain control over service decisions. This concern led to the creation of the independent GMTA entity and board and the contract for management services with CCTA. While the adoption of this structure addressed concerns regarding local control, under the management contract arrangement, CCTA effectively operated two organizations for two boards. In the fourth year of its 5-year contract, CCTA created a committee made up of the CCTA and GMTA boards to explore whether GMTA should hire its own staff or merge with CCTA. Committee deliberations resulted in a proposal to eliminate duplicative efforts and merge the boards and organizations.

### Consequences of the Transformation

The transformation has benefitted customers and has affected the organization and its staff as follows:

- The change successfully averted the elimination of key mobility services in parts of the five-county region now served by CCTA.

- The merged organizations have achieved a significant improvement in efficiencies with reduced staff and cost (initially estimated at \$200,000).
- Over time, CCTA was able to hire additional staff while maintaining some of these savings.
- CCTA is better positioned to compete for state dollars and to start new commuter services.

An ongoing challenge has been CCTA's ability to secure local funding from some of the communities served by GMTA. To tailor local contributions to the services being provided within communities, CCTA created a "fare share" formula to differentiate between (1) towns providing services only to elderly persons and persons with disabilities and (2) towns that also provide fixed-route/commuter services. Nonetheless, soliciting the local contributions from some communities has been a struggle.

### Lessons Learned

The CCTA case study provides several key lessons:

- Building the trust of rural communities requires a great deal of outreach. CCTA hired an outreach coordinator to work with the communities.
- Even in circumstances where change begins in the wake of an "emergency," long-term organizational and governance shifts are likely to continue over an extended period.
- Organizational changes can continue to evolve and respond to political input.
- An evolutionary governance approach can help protect community support while allowing organizations to shift quickly to protect existing services.

## Metropolitan Transit System (MTS), San Diego, CA

**CASE STUDY FOCUS:** *Shift in institutional arrangements to encourage multimodal planning and focus the transit agency on operations*

This case study focuses on the impact of 2003 legislation that consolidated all development, construction, and planning functions from San Diego Metropolitan Transit Development Board (MTDB) and North San Diego County Transit Development Board (NSDCTDB) into the San Diego Association of Governments (SANDAG), which is the region's metropolitan planning organization (MPO), and refocused

the responsibilities of the former two agencies on operations. The consolidation moved the region away from thinking modally to planning and implementing the optimal mix of transportation investments at the corridor level. The consolidation also led to more efficient and faster project delivery, improved system connectivity, and higher quality transportation services.

## Background

San Diego MTDB was formed in 1976 by passage of California Senate Bill 101. The agency was created primarily as a transit development entity to plan and construct transit guideways in the urbanized south coastal area of San Diego County; however, it was also responsible for operating or contracting out these transit services. In its early years, MTDB focused on the development of the light rail transit system.

In 1980, just prior to the completion of the first light rail transit segment, MTDB established San Diego Trolley, Inc. (SDTI) as a subsidiary to operate the service. After the start of the light rail transit revenue operation in 1981, the agency switched its focus to fare policy planning and introduced a regional monthly pass that was accepted by the three major transit operators in the region: NSDCTDB, operating in the suburban and rural northern coastal areas of San Diego County; San Diego Transit Corporation (SDTC), operating bus service in the City of San Diego; and SDTI. In 1985, SDTC joined MTDB as a second operating subsidiary. MTDB's role thus evolved during its first decade from being primarily a development entity to taking on an expanded role in operations. Over the next two decades, MTDB led expansion of San Diego's light rail transit system; developed bus yards, transit centers, and bus shelter programs; provided capital support to SDTC and SDTI; and regulated the operation of Taxicab Administration services.

In 2003, California Senate Bill 1703 transferred all development, construction, and planning functions from MTDB and NSDCTDB to SANDAG. The bill also changed MTDB's name to the Metropolitan Transit System (MTS) and limited the agency's primary responsibility to transit operations. MTS continued to coordinate with SANDAG on capital project development. Table 1 shows the agency characteristics of MTS.

## Type and Nature of Transformation

This case study focuses on the change that resulted from the 2003 legislation that consolidated all development, construction, and planning functions from MTDB and NSDCTDB

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area	406 sq. mi
Service Area Population	2.2 million
Total Vehicle Fleet	628
Annual Passenger Trips	88.3 million
Annual Revenue Miles	29.3 million
Annual Operating Expenses	\$202.7 million
FY2009 Capital Expenses	\$92.1 million

Source: 2009 National Transit Database.

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Secondary
Funding	Secondary
Governance	Primary
Measuring Goal Achievement	
Resource Management	
Retooled Workforce and Organization	Primary
Collaboration and Integration	Secondary
Technology Applications	

into SANDAG. The legislation also limited the primary responsibilities of MTDB and NSDCTDB to transit operations. These transformations in governance and organization successfully moved the region away from thinking modally to planning and implementing the optimal mix of transportation investments at the corridor level. Table 2 shows the kinds of change that have occurred at MTS.

## Reasons for the Change and How It Happened

In 2000, there were five dominant transportation entities in the San Diego region: MTDB (and its operating subsidiaries), NSDCTDB, SANDAG, the airport, and the port. State Senator Steve Peace led a reform effort to coordinate decision-making among these entities. Supported by a committee of local stakeholders, he drafted a bill to consolidate the five entities and form a Regional Infrastructure and Transportation Agency (RITA) that would be responsible for all transportation-related matters in the region. The bill faced political opposition. In reaction to RITA, several regional governance studies were conducted to explore and propose alternatives. Over the next 2 years, the bill was revised multiple times and was finally passed into law in January 2003.

## Legislation Mandated a Change in Governance

The legislation dismantled the independent governing boards of SDTC and SDTI. The general managers of SDTC and SDTI became chief operating officers of bus and rail, respectively, and reported directly to the MTS CEO. The new relationship between MTS and its operating subsidiaries was formally established through operating agreements and corporate policies, which clearly defined the roles and responsibilities of each entity. MTS also restructured the agreements for its contracted bus services (Chula Vista Transit and National City

Transit). Consolidating the work rules, pension plans, and other labor matters proved challenging, however, and these remained separate by agency.

The consolidation also changed SANDAG's governance structure. SANDAG's board is composed of 21 members: one representative from each of the 18 cities in San Diego County, with two voting members for the City of San Diego and two representatives from the county government. Before the consolidation, each member city held one vote, and all votes were weighted equally. After the consolidation, in addition to the tally vote, each member city representative now holds an additional vote weighted by population. For a motion to pass, both tally and weighted votes must represent the majority.

### Agencies Shifted Internal Staff Resources in Response to New Roles

The legislation mandated the consolidation of the development, construction, and planning functions of MTDB and NSDCTDB into SANDAG. SANDAG became the region's designated recipient for federal transit funds. As a result of the consolidation, SANDAG transitioned from an organization focused on research and long-range planning to one that was also responsible for development and construction within a multimodal context. These added responsibilities ensured that SANDAG would ensure that projects included in the long-range plans would be implemented.

### Project Development Emphasis at SANDAG

There were some tensions between SANDAG, NSDCTDB, and MTS related to the transfer of the development functions that were overcome with effective project delivery. SANDAG delivered technical resources and funding support during the construction of NSDCTDB's first light rail transit system. The system was at risk of losing federal funds due to FTA's perception that NSDCTDB lacked the adequate technical capacity, but SANDAG provided the expertise needed to augment NSDCTDB's technical skills. The newly founded development function dramatically changed the workforce composition at SANDAG; the percentage of engineers in the workforce increased from less than 3 percent to approximately 30 percent.

### Movement to Multimodal Planning

The benefits of consolidation are seen in maximized mobility in the San Diego region. Through its short- and long-range transportation plans, SANDAG has been successful in bringing highway and transit together and balancing the needs of its member cities. SANDAG's board has adopted a structured process to objectively review goals and priorities,

**Table 3. Forces leading to change.**

Funding and Finance	
New Technology	
Demographics and Society	■
Sustainability, Energy, and Environmental Concerns	■
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	

establish performance measures to determine whether goals are being attained, and set evaluation criteria to guide investments. Land use is changing and investments are naturally shifting toward transit. The most recent 40-year transportation plan includes four new trolley lines and proposes only one new highway and few road-widening projects.

### Consolidation Improves Public Support for Funding

In 1987, San Diego area voters approved a one-half-cent transportation sales tax, called TransNet. One-third of the sales tax proceeds were allocated to transit. The consolidation of agencies helped ensure public support for a measure to extend the dedicated half-cent sales tax for another 40 years. The original TransNet sales tax was set to expire in 2008. Following the consolidation, voters approved a reauthorization measure in 2004 to extend the TransNet sales tax for an additional 40 years. SANDAG attributes this success partly to the consolidation, which presented the agency as a coherent entity focused on both planning and development.

In addition to administering local sales tax revenue, SANDAG also administers all federal and state funding sources. The agency has benefitted from legislation passed in 1997 that allocated 75 percent of the State Transportation Improvement Program to regional MPOs, with the remaining 25 percent allocated to the California Department of Transportation (CalTrans). SANDAG's ability to manage all these resources has allowed it to effectively leverage federal funds for the optimal benefit of the region. Table 3 summarizes the forces leading to change at MTS.

### Consequences of the Transformation

The transformation has allowed MTS to focus on operations and consolidate all other decision-making responsibilities with SANDAG. The latter organization was able to move the region away from thinking modally to planning and implementing the optimal mix of transportation investments at the corridor level. This has resulted in easier and faster project delivery, improved system connectivity, and higher quality transportation services.

The consolidation has allowed the governing board of SANDAG to take a holistic look at the surface transportation issues facing the region and to make transportation and land use decisions simultaneously to address those issues. In response to the region's natural evolution, 82 percent of all new housing currently planned in San Diego County is multifamily with an emphasis on transit accessibility. The consolidation has allowed the board to evaluate each corridor in SANDAG's network separately, determining the optimal mix of highway and transit improvements.

A flagship project of the agency is the \$1.5 billion investment on Interstate 15 comprising a multimodal facility with managed lanes. A bus rapid transit (BRT) system operating on the Interstate ensures that passengers have a competitive alternative to driving. The project has a state-of-the-art pricing facility, which can adjust prices every 6 minutes, providing transit users and carpoolers premium levels of service. The net revenue generated is reinvested in the system to enhance transit in the corridor. The consolidation made it easier and faster for SANDAG to construct the facility and transform one of the most congested corridors in the region to one of the best performing.

The consolidation also has allowed MTS to focus on operations, which has improved the quality of public transportation services. Following the consolidation, MTS conducted a Comprehensive Operational Analysis of its bus system. The

agency restructured 95 percent of its bus routes and, as a result, bus ridership increased by 12 percent and the farebox recovery ratio increased from 25 percent to 43 percent.

## Lessons Learned

The San Diego MTS case study provides a number of key lessons:

- Transitioning responsibilities such as long-range planning away from a transit operating agency has the potential to improve the long-term prospects for transit investment despite a perceived reduction in authority for the transit entity.
- Changes in institutional arrangements can have the benefit of building public support for transportation investments by improving the credibility of those organizations responsible for implementation.
- Shifting responsibilities for long-term planning can provide the benefit of allowing a transit agency to focus on its core competency, transit operations, but an effective and collaborative relationship across agencies is critical to this transition.
- Shifting organizational roles can allow for complex multimodal project implementation that is more challenging under an agency with primarily transit expertise.

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## Metropolitan Transportation Authority (MTA), New York, NY

**CASE STUDY FOCUS:** *Centralization of business services to improve efficiency*

While New York's Metropolitan Transportation Authority (MTA) has consolidated and taken on responsibility for various transit providers over the course of several decades, prior to the late 2000s, the agency had not fully taken the opportunity to identify and reduce duplicative functions and resulting costs within the organization that emerged through these consolidations. In response to the need to improve the efficiency of business services across the organization, MTA successfully moved forward with an effort to bring these functions into a centralized business services unit that provides support for all of its subsidiaries. MTA identified the need for business service consolidation a number of years ago and took the opportunity to make the consolidation happen during the recent fiscal crisis faced by the agency.

### Background

New York's MTA acts as the oversight agency responsible for managing seven operating subsidiaries, including New York City Transit, Long Island Railroad, Long Island Bus, Metro-North Railroad, Bridges and Tunnels, MTA Bus, and Capital Construction. The agency was first established in 1968 and has continued to consolidate services provided by a number of operators across the region since its creation. The agency is a public benefit corporation of the state of New York governed by a 17-member board that is appointed by New York's governor, with recommendations provided by the city of New York and the counties for which the agency provides service. Appointments are approved by the New York Senate. MTA oversees public transportation operations

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area	5,000 sq. mi
Service Area Population	14.6 million
Total Vehicle Fleet	15,171
Annual Passenger Trips	3.5 billion
Annual Revenue Miles	689.3 million
Annual Operating Expenses	\$9,727.4 million
FY2009 Capital Expenses	\$4,712.7 million

Source: MTA for service area and population, 2009 FTA National Transit Database for other data (as reported by each of the operating agencies.).

for an approximately 5,000-square-mile area that is home to 14.6 million people. Service extends across 12 counties in New York, including all five of New York City's boroughs and two counties in Connecticut. MTA is the largest public transportation provider in the United States, carrying almost one in three public transportation trips in the country. Table 1 shows the agency characteristics of MTA.

## Type and Nature of Transformation

Over the course of several decades, MTA absorbed a number of transit agencies, but separate business services remained within these operating units. MTA's subsidiaries, or "operating agencies," are relatively independent organizations. To improve the efficiency of providing business services across the organization, MTA brought these functions into a centralized business services unit to provide support for all of its subsidiaries. MTA identified the need for business service consolidation a number of years ago and seized the opportunity to make the consolidation happen during the recent fiscal crisis faced by the agency. The fiscal crisis led to more widespread support for this type of change across MTA and the operating agencies. Table 2 summarizes the types of change that occurred at MTA.

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	
Funding	
Governance	
Measuring Goal Achievement	
Resource Management	Secondary
Retooled Workforce and Organization	Primary
Collaboration and Integration	
Technology Applications	Secondary

## Reasons for the Change and How It Happened

The initial concept of business services consolidation was the result of an identified need to consolidate information technology services. The MTA board became aware of duplicative efforts as MTA's operating agencies approached the board with periodic, uncoordinated requests for the purchase or enhancement of back-office information technology systems. At the request of the board, MTA funded a study led by two major consulting firms that documented the case for a consolidated business service center. Although greater coordination of information technology services served as the initial motivation for change, the agency recognized the potential value of consolidating other services as well. The MTA board endorsed the study in 2008. A new enterprise system, already used by a number of MTA's subsidiaries, was selected to support a number of back-office functions, including finance, human resources, procurement, and payroll.

Although the board endorsed the study in 2008 and moved forward with implementation, resistance remained strong within some of the operating agencies until the financial crisis and economic downturn hit the agency in 2009. At that time, MTA projected a \$900 million operating deficit. Actions considered to reduce the budget shortfall included a furlough of employees, but senior management within the operating agencies preferred to reduce the number of employees rather than go forward with an agency-wide furlough. The required staff reductions served as a catalyst for the operating agencies' decision to emphasize reductions in areas where the potential for consolidation was greatest. Support for the consolidation of business services came with the expectation that reductions in staff that supported business service functions across the operating agencies, would result in fewer staff reductions elsewhere. Table 3 provides an overview of the forces leading to change at MTA.

MTA hired an outside consulting firm in 2008 to guide the process of transitioning services from a decentralized structure to a consolidated unit within MTA headquarters. Throughout 2009, there was significant work underway that was related to information technology to support the change. During this period, the operating agencies provided support

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	■
Demographics and Society	
Sustainability, Energy, and Environmental Concerns	
Travel, Land Use, and Development Patterns	
Infrastructure Conditions	

to identify potential changes in business processes necessary to facilitate the transition. In late 2009, the size of the operating deficit emerged and, as a result, by 2010, there was more receptivity to the concept of a shared service center as a means to reduce staff. The agency expects to achieve a savings equal to the cost of the contracts for consultants to implement the transition within as few as 6 years.

In support of the process to undertake the consolidation of business services, the implementation team engaged subject matter experts from each of the operating agencies to help map the business processes and direct development of an Enterprise Resource Planning (ERP) system. Each of the operating agencies conducted extensive training of staff prior to going live with the new system.

Phase 1 of implementation took place in January 2011. All finance functions were consolidated, including payroll and accounts payable. By the middle of 2011, all finance functions were consolidated with the exception of payroll, which will be consolidated in two phases. Phase 2 will be completed in 2012.

## Consequences of the Transformation

The transition to a centralized delivery of business services allowed MTA to make a significant reduction in the net head count of those providing related support. There are fewer people in the consolidated service center than were in the operating agencies prior to the transition. While allowing short-term reductions in staff resources, over the long-term, the consolidation of human resources and accounts payable will allow the agency to focus more on ways to improve the approach to those activities.

There is general agreement that the agency faced some challenges in the first phase of implementation, although these challenges were within the range of expectations given the magnitude of the organizations involved and the workload shifted to the centralized service center. Some of these challenges were attributed to issues with communication across the operating agencies and perhaps insufficient engagement

in the business process reengineering during the early stages of the project due to limited available staff time.

Despite these initial challenges, the overall success of the implementation process has led to a belief that MTA can accomplish still more through a continued push to improve financial accountability across the agency. MTA also is moving forward with the consolidation of other elements of information technology, the media center, call centers, and even email, with a move away from seven different email systems to one.

## Lessons Learned

The MTA business consolidation effort provides an example of the challenges faced by large and complex transit operating agencies as they seek to make improvements that enhance the efficiency of internal services. Many of the inefficiencies addressed through the business services consolidation had existed for a number of years and resulted from a merging of organizational functions without a concerted effort to identify opportunities for cost savings. The case study highlights the potential for efficiency gains by streamlining processes that have been in place for many decades. The key lessons from this case study are the following:

- A change process of the type arrived at by MTA requires a significant information technology component, but is more of a change management project than an information technology project and requires active engagement to identify necessary process reengineering.
- Providing adequate training and communication throughout the organization is critical to success, particularly during the transition.
- Commitment from the most senior levels in the organization is critical for a change process of this magnitude in a large and complex organization.
- Challenges, such as the economic downturn and financial crisis faced by MTA in 2008/2009 provide opportunities to implement controversial change processes that can benefit an organization.

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## Metro Transit, Minneapolis/Saint Paul, MN

**CASE STUDY FOCUS:** *Creation of a new body to facilitate regional funding for transit and shift responsibility from state to local resources*

Transit governance in the Twin Cities region has changed multiple times over the past 45 years, with the most recent change occurring in 2008 with the creation of the Counties

Transit Improvement Board (CTIB). This case study focuses on this change, which has transformed the funding and governance structures in the region to establish a dedicated

funding source for transit. As a result, the region has been able to accelerate transit expansion projects.

## Background

Metro Transit was created as part of the Metropolitan Council (Met Council) in 1994 following the Minnesota Legislature's enactment of the Metropolitan Reorganization Act. The Act consolidated many transit responsibilities in the Twin Cities region (among other region-wide functions) into the Met Council. The Met Council is a quasi-state agency with members appointed by and serving at the will of the governor. Metro Transit was formed as the transit operating division of Met Council and the primary transit operator in the region.

Prior to 1994, transit services in the Twin Cities region were provided by the Metropolitan Transit Commission (MTC). The Minnesota Legislature created MTC and the Met Council in 1967 as two separate entities with distinct responsibilities. The Met Council was responsible for “coordinating the planning and development of the metropolitan area” for various functions, including transit, parks, airports, and libraries. MTC was charged with providing transit operations and developing a comprehensive transit plan for the region in collaboration with the Met Council. Throughout most of the 1970s and early 1980s, each organization had a different vision regarding transit development.

During this same period, the Minnesota Legislature established other transit governing entities in the region. In 1974, the Transportation Advisory Board (TAB) was formed as a component of the region's metropolitan planning organization (MPO). While the Met Council is the designated MPO, the creation of TAB was a response to federal regulations requiring local elected officials to serve on the MPO. In 1980, the Minnesota Legislature authorized county Regional Railroad Authorities (RRA) to levy taxes for the development of rail transit in the Twin Cities region. In 1981, several suburban transit providers formed after the Minnesota Legislature established the Metropolitan Transit Service Demonstration Program that allowed eligible suburban communities to “opt-out” of the regional service provided by MTC. Finally, in 1984, the Minnesota Legislature established the Regional Transit Board (RTB), which diminished the transit development functions of MTC—limiting its responsibilities to transit operations and short-term planning. A decade later, the Minnesota Legislature changed transit governance once again with the enactment of the Metropolitan Reorganization Act. The Act abolished both MTC and RTB and consolidated their functions into Met Council, with Metro Transit as one of the operating divisions. In 2008, the Minnesota Legislature authorized the creation of the CTIB to provide a dedicated source of transit funding in the region.

Currently, there are several organizations with transit responsibilities in the Twin Cities region:

- **Met Council** is a regional entity funded by the state legislature whose members are appointed by the governor. It provides wastewater treatment services, housing, and park services to the region and, as the MPO, maintains comprehensive authority for transportation planning and for transit operations, including the following:
  - Operation of regular bus route, light rail, and commuter rail transit services through Metro Transit, its transit operating division.
  - Operation of contracted regular bus route service, Americans with Disabilities Act/dial-a-ride services, and a van-pool program through its Metropolitan Transportation Services (MTS) division.
  - Development of the long-range transportation plan and all transit planning functions through the MTS division.
- The **TAB** administers certain federal transportation and transit grants and comments on the long-range transportation plan developed by the Met Council. The short-term transportation improvement program, another main task of the Met Council (as the MPO), is approved by the TAB followed with Met Council concurrence.
- The county **RRAs**, each of which is governed by its respective county, have the capacity to provide property tax revenue for rail projects in their county.
- **CTIB** primarily provides transit funding to the region, although it is also involved in transit planning activities.
- The 12 suburban communities that “opted-out” of regional transit service in 1981 are receiving transit services from one of six **suburban transit providers** rather than from Metro Transit.

Table 1 provides an overview of Metro Transit's agency characteristics as well as the basic community characteristics of the service area.

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area	624 sq. mi
Service Area Population	1,858,545
Annual Passenger Trips	76.3 million
Annual Revenue Miles	24.8 million
Annual Operating Expenses	\$300.2 million
FY2009 Capital Expenses	\$195.8 million

Source: 2009 National Transit Database.

## Type and Nature of Transformation

The focus for this case study is the most recent change in transit governance in the Twin Cities region, specifically, the creation of CTIB in 2008. Emphasis is on the funding and governance structure transformations that have resulted in accelerated investment in transit expansion in the region. Table 2 summarizes the kinds of change that occurred at Metro Transit.

## Reasons for the Change and How It Happened

Until recently, transit in the Twin Cities region was funded primarily through property taxes and state general funds. In 2001, the Minnesota Legislature prohibited the use of property taxes to fund transit operations and replaced this funding source with an allocation of 20.5 percent of state Motor Vehicle Sales Tax (MVST) funds, starting in fiscal year 2003. The allocation was later increased to 21.5 percent and again to 36 percent by fiscal year 2012 (as the result of a 2006 constitutional amendment that dedicated 100 percent of MVST to transportation). Despite the increases in percentages of MVST revenue allocated to transit, the total net funds collected through this source were well below projections, due to the recession. At the same time, the Minnesota Legislature reduced state general fund allocations. Consequently, the Met Council faced significant challenges in its ability to pay for regional transit operations and was unable to provide necessary funding to leverage federal capital funds to invest in transit improvements. The Minnesota Legislature was unwilling to raise additional statewide taxes and instead provided the seven-county region with the authority to form a joint powers board that could levy a sales tax to provide a regional transit funding source.

Given Metro Transit's funding situation and the state's lack of commitment to transit expansion projects, local elected

officials recognized the need for a dedicated transit funding source to achieve the local vision for transit. County RRAs were not able to achieve this vision for two main reasons: (1) each RRA acts as a separate political entity focused mainly on the interests of its respective county, and (2) the RRAs are limited in their capacity to generate enough funds given that they are only authorized to levy property taxes. CTIB was thus created as a regional body "to facilitate investment in transitways in the Twin Cities region, collaboratively plan and develop policies for transit investments, advocate for state and federal funding and transportation policies supportive of transitways, and provide for public education and information."

The Minnesota Legislature authorized the seven counties in the Twin Cities region to levy a one-quarter-cent sales tax and an excise tax of \$20 per motor vehicle to fund transit improvements. Five counties (Anoka, Dakota, Hennepin, Ramsey, and Washington)—representing 90 percent of the metropolitan area population and the source of 95 percent of the seven-county region's sales tax collections—agreed to enact the sales tax. In less than 6 weeks, the five counties successfully negotiated a joint powers board and established principles for the allocation of funding. This timeline was driven by the sales tax potential of the upcoming Republican National Convention to be hosted in Minneapolis/St. Paul. The counties began collecting the sales tax in July 2008 and CTIB received its first revenue in September 2008. Table 3 provides an overview of the forces leading to change at Metro Transit.

## Governance Structure Promotes Regional Collaboration

The five counties forming CTIB have voting representation on the governing board, weighted equally by population and sales tax revenues. These counties hold 95 percent of the votes and are represented by local elected officials; the chair of Met Council holds the remaining 5 percent of the votes. The two counties that elected not to impose the sales tax are still part of the organization, but have non-voting representation. For any motion to pass, 63 percent of the votes

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Secondary
Funding	Primary
Governance	Primary
Measuring Goal Achievement	
Resource Management	
Retooled Workforce and Organization	
Collaboration and Integration	Secondary
Technology Applications	

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	
Demographics and Society	■
Sustainability, Energy, and Environmental Concerns	■
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	

are needed in conjunction with the support of three of the five voting counties. For long-term financial commitments (over \$100 million in more than 5 years), a super majority is needed, with 75 percent of the votes and the same level of county support. This structure was devised to guarantee a fair joint tax agreement and to protect the interests of all five counties.

By law, CTIB also had to establish a Grant Evaluation and Ranking System (GEARS) committee, which included representation at the county and city levels. The cities within the five counties that constitute CTIB originally conditioned their support of the authorizing legislation on being a part of CTIB's governing board; the GEARS committee was negotiated as an alternative to gain the cities' support. The committee is responsible for evaluating grant applications, primarily from Met Council according to criteria established by CTIB, and for making recommendations to the board.

With the creation of CTIB, responsibilities for transit governance in the Twin Cities region became even more fragmented. The relationship between CTIB and Met Council was contentious at first. CTIB's perception was that Met Council did not have an aggressive transit plan and that its political advocacy was limited because of its structure. Met Council is governed by a board of 17 members, all of whom are appointed by the governor. The creation of CTIB, with a different governance structure, resulted in differing priorities and confusion over roles and responsibilities. CTIB was primarily formed to generate a reliable funding source for capital expansion projects and their ongoing operations. At the time of its creation, CTIB had a vision for transitways in the region and was using the funds generated through the one-quarter-cent sales tax to realize that vision. While CTIB's vision was generally consistent with the Met Council's, there were minor differences, particularly related to the timing and sequencing of transit investments over the long term.

In more recent years, the tensions between CTIB and Met Council have been dissipating, especially with the change in administration at the state. The two entities have developed an effective working relationship to resolve many of their differences and to advance transit investments in the Twin Cities region.

### **Regional Transit Funding Facilitated by the Creation of CTIB**

Funding for transit in the Twin Cities region has always been complicated, with a variety of revenue sources, including the state MVST, the state general fund, federal funds, passenger fares, and property taxes levied by county RRAs. The addition of CTIB funding further added to this complexity. CTIB can decide which transitways to fund, but its funding

decisions must be consistent with the MPO's Transportation Policy Plan (TPP). Furthermore, any grants awarded by CTIB to Met Council must supplement, not supplant, the operating and capital assistance provided by the state as stated in the authorizing legislation.

CTIB raised approximately \$90 million for transit during its first year of taxation and made its first award in fall 2008, the same year it was founded. By fiscal year 2012, CTIB will have awarded grants totaling approximately \$475 million. As part of CTIB's creation, the board negotiated which transitway projects to fund (following CTIB's creation, projects to be funded were selected through the annual grant solicitation process) and agreed to pay the counties' associated operating subsidies from CTIB revenue sources, rather than county RRA funds.

The CTIB has accelerated transitway expansion in the Twin Cities region by providing a dedicated funding source that reduced the reliance on state funding and allowed the region to maximize leverage of federal funds. As a result of CTIB's creation, capital funding for transitway projects has changed. After a federal Full Funding Grant Agreement (FFGA) is signed, the expectation of funding for specific projects is as follows:

- 50 percent of the funding is provided by the FTA,
- 30 percent of the funding is provided by CTIB (the maximum allowed),
- 10 percent of the funding is provided by the state (the maximum allowed), and
- 10 percent of the funding is provided by the county RRA(s) in which the project will operate.

Prior to CTIB's creation, the capital funding percentages were as follows:

- 50 percent was provided by the FTA,
- 33 percent was provided by the state, and
- 17 percent was provided by the county RRA(s) in which the project operated.

The new funding structure poses some concerns on the capital front. For any transitway expansion project, the Minnesota Legislature limits the state's contribution to 10 percent of the project's capital cost and CTIB's contribution to 30 percent. This means that federal funding shortfalls can only be covered by Met Council, counties, and/or other local project partners.

On the operating front, CTIB is committed, per the authorizing legislation, to fund 50 percent of the net operating costs of transitway projects for which it has provided capital funding. There is concern that CTIB funding is being used to supplant, not supplement, state funds. Reliance on

CTIB funds for operating assistance reduces its ability to fund capital expansion. At the same time, additional investment in transitways will not be successful if Met Council and CTIB do not have the funding needed to sustain operations. The Minnesota Legislative State Audit report observed that Met Council faces a significant challenge to long-term financial sustainability unless it identifies new operating funding sources.

Met Council also has expressed concern that the existing bus system is underfunded. The backbone of Metro Transit has been and continues to be bus service, which has been experiencing steady increases in ridership. In 2009, bus service provided almost 90 percent of the transit rides in the region. However, there is currently no reliable structure in place to fund the continued operations of the current system, let alone its growth.

## Consequences of the Transformation

Prior to the creation of CTIB, the Twin Cities region had integrated transit operations and transportation planning, resulting in an aggressive long-range transit program. While the region was able to fund construction of the Hiawatha light rail line and, in part through the state DOT, the Northstar commuter rail service, regional leaders were impatient with the inconsistency of the state's commitment to funding for investment in additional corridors.

The creation of CTIB has increased the Twin Cities region's capacity to develop large-scale federally funded transit projects. Since its creation in 2008, CTIB has authorized \$475 million in grants, an amount which has been matched by

approximately the same amount of federal funding. CTIB has supported the design and construction of a number of transit stations along existing transitways. CTIB and the RRAs have provided the local funding commitment required to secure federal funding for the Central Corridor light rail line and continue to support the development of the Southwest light rail line. Neither of these projects would have moved forward as quickly without CTIB's funding commitment. Additionally, CTIB has committed capital funding for the Cedar Avenue bus rapid transit (BRT) line. On the operating front, CTIB is committed to funding 50 percent of the net operating costs of the Hiawatha and Central Corridor light rail lines, Northstar commuter rail line, the Cedar Avenue BRT line, and the 35W BRT line.

## Lessons Learned

The Twin Cities Metro Transit case study provides a number of key lessons:

- Regional governance changes coupled with dedicated regional funding can mobilize other entities and financial resources to implement transit investment.
- Even a region with strong popular support for transit investment and with a powerful, integrated transportation agency can benefit from changes in regional governance to accelerate transit investment.
- The state role in local transit can be beneficial, but can also result in fluctuations in the amount of commitment to the regional transportation vision with political changes or changes in available state financial resources.

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## Regional Transportation District (RTD), Denver, CO

**CASE STUDY FOCUS:** *Mission shift to moving people through collaboration*

The underlying feature of the Regional Transportation District's (RTD) transformation lies in a shift in mission. Over a decade or more, RTD has changed from an agency focused largely on moving vehicles to an agency whose mission and success is focused on moving people. The result has been a continuing evolution in the RTD business model and organization that features new strategies in partnering and in resource use that are geared to increasing the availability and effectiveness of an increasing range of services while reducing the associated public subsidy per trip.

### Background

Denver's RTD is the regional authority responsible for the planning, provision, and oversight of public transportation for over 40 cities and towns in all or portions of eight counties around Denver, including all of Boulder, Broomfield, Denver, and Jefferson Counties, and parts of Adams, Arapahoe, Douglas, and Weld Counties. Table 1 provides an overview of RTD's basic agency characteristics as well as the basic characteristics of the Denver, Colorado, urbanized area.

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area	2,326 sq. mi
Service Area Population	2,619,000
Annual Passenger Trips	98.2 million
Annual Revenue Miles	55.8 million
Annual Operating Expenses	\$384.7 million
FY2009 Capital Expenses	\$410.4 million

Source: 2009 National Transit Database.

RTD is a public agency that was created in 1969 by the Colorado Assembly. RTD's governance is somewhat unique in the transit community: the 15-member board of directors is elected on staggered 4-year cycles by popular vote from 15 designated districts in the region. RTD operates under a "Family of Services" concept that includes fixed-route bus service, express bus service, light rail, shuttle services, ADA paratransit service ("Access-a-Ride"), public demand-responsive services ("Call-a-Ride"), a user-side subsidy taxi voucher program ("Access-a-Cab"), "Bike-n-Ride" services, vanpools, free shuttle service on Denver's downtown mall, a guaranteed-ride-home program, and a number of other services, including special event services supporting regional universities as well as professional sports events. In addition, RTD operates 74 park-n-ride facilities throughout the region.

An extensive program of coordinated rail transit and highway improvements is underway throughout the Denver region. The FasTracks transit expansion program, supported through a 2004 sales tax referendum, includes 122 miles of new commuter rail and light rail, 18 miles of BRT, added rail station parking, and redevelopment of Denver's Union Station into a multimodal terminal. Elements of the FasTracks program are being carried out through large-scale, public-private partnership agreements, such as the \$2 billion, 35-year "design-build-finance-operate-maintain" agreement for the East Line to Denver International Airport (DIA) and the Gold Line to Arvada.

Also unique to RTD is the statutory requirement, enacted in 1988, requiring that RTD contract out a specified portion of its services. The initial 20-percent contracting requirement applied to all fixed-route bus services. Through several iterations, the contracting requirement was increased to include at least 50 percent of all rubber-tired service. Due to a change in the political environment, the legislation was recently amended, and now RTD may contract out its services up to a cap of 58 percent of all rubber-tired services. Contracted services today account for approximately 57 percent of all RTD rubber-tired services, including approximately 45 percent of its fixed-route service and all ADA paratransit and general public demand-responsive services.

## Type and Nature of Transformation

The underlying feature of the RTD transformation lies in a shift in mission. Over a decade or more, RTD has changed from an agency focused largely on moving vehicles to an agency whose mission and success is focused on moving people. The result has been a continuing evolution in the RTD business model and organization that features new strategies in partnering and in resource use that are geared to increasing the availability and effectiveness of an increasing range of services while reducing the associated public subsidy per trip. Table 2 summarizes the kinds of change that occurred at RTD.

The fundamental shift in mission noted above has taken place in parallel with other noteworthy transformations. Leadership at the agency has played a major role in the transformation of RTD. Over a 14-year period, the former general manager brought to RTD a non-traditional and flexible perspective and operating philosophy, reflecting extensive prior experience in managing contract services and taxi operations. In addition, several current senior staff members were recruited to both amplify this new philosophy and to exercise creativity in implementing new initiatives. The willingness and confidence to innovate were critical factors during a time of continued growth in the region's economy and population.

With respect to governance, RTD has had an elected board from its inception. Half of the 15 board members are elected by popular vote from designated districts every 2 years and can serve a maximum of 8 years. A major factor in the success of this governance model has been the active role of the business community in recent years in helping to recruit prospective RTD board candidates from among community leaders, in an effort to ensure the strongest leadership and broadest vision possible.

Measures of achievement and resource management during this period of transformation have revolved around change and evolution in RTD's system of service standards that has resulted in a recognition of the need for realistic

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Primary
Funding	Secondary
Governance	
Measuring Goal Achievement	Secondary
Resource Management	Secondary
Retooled Workforce and Organization	
Collaboration and Integration	Primary
Technology Applications	

variation among types or classes of service. Where these standards cannot be met for services proposed, alternative operating and/or funding arrangements are often sought with sponsors, client groups, or other providers. In the final measure, service decisions are driven in large part by finding the arrangement that satisfies demand with the lowest public subsidy per trip.

From the standpoint of organizational change, transformations have been modest but critical. Most significant perhaps is the encouragement of flexible perspectives and creativity among staff in building partnerships outside RTD. This shift in focus has required that RTD bring into the organization new, non-traditional skills (e.g., contract negotiation and management) and knowledge (e.g., of private for-profit and non-profit enterprises). New organizational priorities also have required that roles change within RTD and among partnering agencies to better serve the people-moving mission.

Collaboration and resource integration have been the hallmark of the transformation of RTD, along with flexibility and creativity in exploring how best to meet travel needs. RTD takes an active role in working with service requests, sponsors, contractors, and funding partners to find alternative arrangements when RTD service standards cannot be met or when alternative service delivery schemes can lower the public subsidy. Examples include collaboration with the Metropolitan planning organization (MPO) to support the management of the rapidly growing vanpool program, collaboration with local governments to support localized services through cost-sharing arrangements where RTD operations are not feasible, collaboration with the state to guide multimodal capacity expansion projects, collaboration with human service agencies through capital support and cost-sharing arrangements, and collaboration with private providers and contractors in major project initiatives as well as in the use of resources and assets.

Although planning and decision-making can be characterized as “data-driven” at RTD, the application of state-of-the-art information technologies has largely followed, rather than led, the transformative changes that have taken place at RTD. Automatic passenger counters (APCs) are in use to support the data-driven approach. Smartcard technology implementation is currently underway as are applications for real-time mobile, or cell-based, travel planning. In the process, information technology has become a core function within RTD.

## Reasons for the Change and How It Happened

The Denver region has experienced rapid growth for several decades, supporting the need for an increased role for public transportation. Changes in demographics and the shift in expectations that arrived with newcomers from other parts

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	
Demographics and Society	
Sustainability, Energy, and Environmental Concerns	■
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	

of the country helped to build support for an increased role for transit. Given this support and approval for additional funding sources, the agency has responded with continued expansion. Table 3 provides an overview of the forces leading to change at RTD.

The principal driver of RTD’s transformation has been the flexibility, creativity, and new sense of mission—moving people rather than vehicles—brought to the agency by the former general manager. His extensive experience in contracting and taxi operations provided a crucial fit given RTD’s requirement to contract out significant portions of its service. Senior staff hires share the former general manager’s philosophy and continue to serve the revised mission, which has greatly heightened and sustained the relevancy and support for transit in the region.

The “transformation” at RTD has been an evolutionary process spanning a decade or more. The continuity in executive staff and business leaders’ heightened attention to improving RTD governance under the elected board model have allowed sustained progress.

Subsequent activities and actions at RTD are focused on several key areas:

- Continued build-out of the region’s light rail network (2013–2016), commuter rail project (2016), and track-sharing agreements, as well as Union Station redevelopment (2014) through a combination of federal full funding grant agreements (FFGAs) and a design-build-finance-operate-maintain public-private partnership;
- Ongoing implementation of a regional Smartcard system and associated customer-based information technologies;
- Bus improvements in support of new rail services; and
- Examination of policy trade-offs as funding availability tightens and costs increase, i.e., how to balance broad regional service demands and variable performance among services.

RTD faces several challenges in its continuing transformation:

- It will be difficult to maintain current levels of service under current funding conditions.

- While the capital expansion program continues, perhaps at a somewhat slower pace, operating funding for rail and supporting bus services remains a challenge in the immediate future.
- Needs for capital replacement continue to increase.
- As greater emphasis is placed on performance as funds get tight, pressure may build to reduce the least productive services, e.g., demand response, while the demand is expected to grow.
- As RTD approaches the current 58-percent cap on contracted rubber-tired services (bus and demand response), it may be necessary for RTD to operate more of its fixed-route service in-house or else operate some of its most costly service, e.g., demand response, to stay under the cap.

### Consequences of the Transformation

The shift in mission, increased funding, and resulting changes in the organization have had the following effects:

- From an **operational standpoint**, various partnering and cost-sharing arrangements adopted to meet its people-moving mission have allowed RTD to meet its service standards, minimize per-trip subsidies, carry on a major capital expansion program, and sustain strong political and community support.
- From a **budget and financial standpoint**, RTD has broadened services offered in the region while minimizing per-trip costs and has found creative means to continue its rail expansion program.

- From a **customer and community standpoint**, RTD carries out a regular cycle of customer satisfaction surveys that consistently demonstrate a high degree of customer approval. In addition, passage by significant margins of major regional funding initiatives attests to sustained and broad community support and the acknowledged relevance of transit in the Denver region.

### Lessons Learned

The primary lessons from RTD's experience include the following:

- A fundamental shift from a mission of moving vehicles and a basic engineering orientation to a mission of moving people has the power to change an organization.
- Enlightened leadership, broad leadership experience, and leadership continuity are critical to achieving fundamental change in a traditional organization and business model.
- Flexibility and creativity are crucial developing more effective products and services.
- Collaboration, integration, experimentation, and partnering are critical to transforming an organization.
- Adherence to data-driven decision-making through service standards appropriate to types of services and markets and cost-effectiveness in using public funds can be effective in maintaining an agency's focus.
- Transformations such as the type experienced at RTD may take years to accomplish.

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## San Francisco Municipal Transportation Agency (SFMTA), San Francisco, CA

**CASE STUDY FOCUS:** *Fundamental reorganization to support integrated multimodal planning, management, and mobility*

The transformation that has taken place at the San Francisco Municipal Transportation Agency (SFMTA) is one of fundamental organizational restructuring and consolidation of multimodal responsibilities for the entire city-county transportation network into a single agency governed by a single policy board. As important, the agency's traditional, transit-oriented operating mission has been expanded to optimize "the use of transportation assets and the quality of the travel experience regardless of which mode or combination of modes are being used." (Substantial portions of this

case study and all quoted passages are taken from a profile prepared APTA that appears on the APTA website ([www.apta.org](http://www.apta.org)) under "Hot Topics/Mobility Management.")

### Background

Prior to 1999, San Francisco Municipal Railway, or Muni, was the operating agency responsible for the extensive system of multimodal transit services provided throughout the city and county of San Francisco. Muni's transit services include

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area (San Francisco City–County)	49 sq. mi
Service Area Population (San Francisco City–County)	845,559
Annual Passenger Trips	227.1 million
Annual Revenue Miles	29.1 million
Annual Operating Expenses	\$610.5 million
FY2009 Capital Expenses	\$62.6 million

Source: 2009 National Transit Database.

diesel and electric trolley buses, light rail, cable cars, and demand-response services that have operated under the city’s “Transit-First Policy” since 1973. Muni services historically have been planned and operated in coordination with the services of several other major transit providers in surrounding jurisdictions that serve San Francisco travel markets. Public transportation within the San Francisco–Oakland urbanized area is provided by 28 transit operating agencies serving 101 municipalities, most of which have responsibility for a portion of the region’s street and highway network. The region’s nine counties act as congestion management agencies under state law.

With the passage of Proposition E in 1999, voters directed the 2002 formation of the SFMTA, combining responsibilities for Muni’s transit network and responsibility for city streets under the San Francisco Department of Parking and Traffic. The separate commissions governing each of the organizations were dissolved and a single seven-member SFMTA board of directors was created, appointed by the mayor and subject to confirmation by the city and county board of supervisors. Responsibilities were further consolidated in 2009. Passage of Proposition A resulted in merging the former San Francisco Taxicab Commission into the SFMTA, giving SFMTA the added authority to regulate the taxi industry and other for-hire services in San Francisco. Table 1 provides an overview of SFMTA’s operating statistics.

## Type and Nature of Transformation

The transformation that has taken place at the SFMTA is one of fundamental organizational restructuring and consolidation of multimodal responsibilities for the entire city–county transportation network into a single agency governed by a single policy board. As importantly, the traditional transit-oriented operating mission, based to a large extent on a 1973 “Transit-First Policy,” has been expanded to optimize “the use of transportation assets and the quality of the travel experience regardless of which mode or combination of modes are being used.” This change in mission together with the shift in governance and organizational structure served

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Primary
Funding	Secondary
Governance	Primary
Measuring Goal Achievement	Secondary
Resource Management	Secondary
Retooled Workforce and Organization	Primary
Collaboration and Integration	Secondary
Technology Applications	Secondary

as primary change elements in the transformation to a multimodal organization. Far-reaching reorganization within SFMTA is firmly rooted and reflects the mission shift noted above. Table 2 summarizes the kinds of change that occurred at SFMTA.

## Reasons for Change and How It Happened

The principal driver of SFMTA’s transformation was the increasing frustration of city and county elected officials and citizens with the complications inherent in bridging the interests, responsibilities, programs, and resources of separate municipal transportation agencies and commissions. Ever-increasing demand for additional transportation services in the city that has come with population growth, a desire to more aggressively address the impacts of the transportation system on the environment, and a general recognition of the need to invest in aging infrastructure led to reforms that addressed long-standing limitations in the organizational structure. Table 3 provides an overview of the forces leading to change at SFMTA.

It was not until 2002 that the SFMTA was officially created by combining the professional staffs responsible for public transportation, traffic, and street parking, as described above. Transportation responsibilities were further consolidated in 2009. Efforts to mesh these professional cultures, policies, and processes continue even today. Within SFMTA, the new

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	
Demographics and Society	
Sustainability, Energy, and Environmental Concerns	■
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	■

divisions made up of formerly independent agencies are now drawn together in reconciling policy and management processes and in sharing a common customer orientation, under the guidance of a single policy board. The current SFMTA organizational structure includes the following:

- Division of Administration, Taxis, and Accessible Services
- Division of Capital Programs and Construction
- Division of Finance and Information Technology
- Division of Transit
- Division of Sustainable Streets

The Division of Sustainable Streets has the most direct responsibility for integrating and reconciling multimodal decision-making for planning, programs, and investment across the entire city-county surface transportation network. The Division of Sustainable Streets includes five subdivisions:

- Long-range planning and policy.
- Livable streets.
- Transportation engineering.
- Transportation operations.
- Parking facilities.

The consolidation of responsibilities for the entire surface transportation network has led to a new, ongoing effort to introduce and track the effect of all transportation decisions and investments on the broader set of region-wide goals, including access within the region, greenhouse gas emissions, and utility consumption. The combination of these operational and strategic measures is intended to provide a mechanism to assess the sustainability of both the overall transportation system and the SFMTA itself and to reconcile conflicting demands on the use of limited transportation rights-of-way.

Integration of responsibilities, policies, assets, and resources is taking place on a number of levels as a result of the new SFMTA organizational structure and approach. Key themes or initiatives include the following:

- **Sharing street space.** Efforts are underway to make operational the notion that finite street space and capacity has to be rationed or allocated among competing users in varying ways to effectively sustain mobility, safety, economic vitality, and environmental quality.
- **Policy and strategy integration.** First priority is given to maintaining a state of good repair in infrastructure, followed by efforts to optimize use of available capacity, then by demand management, and then introduction of other modes to add capacity. SFMTA is hiring the agency's first travel demand management coordinator to develop projects and programs that reduce the use of the automobile and service delivery trips in the city for all trip generators.

- **Plan integration.** Plans in place or underway provide a mechanism for integrating policy and strategy within the city and county area. For instance, the *Better Streets Plan* and *Pedestrian Strategy* focused on the pedestrian environment; the *San Francisco Bicycle Plan* has been developed to be consistent with the Transit-First Policy and a *Climate Action Plan* (CAP), and a new *Cycletracks Strategy* is being developed to advance a 100-mile, grade-separated, in-street bicycle network.

Outside SFMTA, active collaboration takes place with local land use, development, environmental, social service, and related agencies and other region-wide interests. Citizen advisory councils also are active in each area of SFMTA responsibility as well as on major projects. Finally, SFMTA meets regularly with all the transit providers inside and outside of the city of San Francisco service area to address mutual mobility needs.

The new organizational structure has taken on a number of activities that benefit from a multimodal approach and vision, including the following:

- Development of a climate action strategy;
- Revised asset management and state of good repair needs assessment;
- Publication of the SFMTA Annual Mobility Report to measure progress;
- Development of a pedestrian action strategy;
- Development of a transportation demand management (TDM) program;
- Expansion of the parking management system;
- Broadened use of the Clipper card across modes and services;
- Greater attention to data sharing and implementation of the NextMuni real-time arrival data system and data access through wifi, web, and personal devices;
- Development of SFgo, the city's transit and emergency vehicle signal priority and synchronization project; and
- Execution of a transit data license agreement to facilitate access to and use of real-time transit data and information.

Principal barriers and challenges to the transformation of the SFMTA include the following:

- Marshalling the funding and financial resources to support the entire range of multimodal services;
- Managing competing priorities for shrinking resources;
- Maintaining a focus on and developing measures to assess how operational and investment decisions affect broad regional goals;
- Balancing the use of limited street space and right-of-way among different modes and users; and
- Merging the corporate cultures, policies, and processes of pre-existing modal organizations.

## Consequences of the Transformation

Operationally, efforts to rationally allocate road space among various modes and users have begun to leverage the inherent capabilities of specific modes to meet specific market needs in appropriate settings and to support the broader economic, developmental, and environmental goals of the city, county, and region. Plans for the future include continuing elimination of modal conflicts and operational inefficiencies as well as greater safety across modes.

From a budget and financial standpoint, combining responsibility for all aspects of surface transportation has brought greater funding flexibility by making available a broader array of revenue sources to support multimodal planning investment decisions made through a unified process under consistent policies. As a single agency responsible for a multimodal transportation network, SFMTA can draw on a variety of funding sources not typically available to traditional transit operating agencies, including parking revenue, traffic fine revenue, and development fees. Multiple funding sources, not typically available to single mode agencies, allow the system to fund operations from a diverse source of revenues and can minimize major service disruptions experienced by other agencies during economic downturns.

The ability to meet with land use agencies and execute development agreements that address impacts to the multimodal transportation network allows for greater cooperation as well as agreements for funding capital projects (e.g., rights-of-way, facilities, streetscapes, etc.) and operating resources that would have been very difficult to coordinate otherwise and that support a holistic approach to meeting transportation needs.

From a customer and community standpoint, consolidated SFMTA responsibilities offer the prospect of continued improvements in service, access, and mobility; more

understandable, timely, and transparent decision-making; and a more direct means of pursuing broader city, county, and regional goals. The merging of various commissions has allowed cross-pollination of ideas and problem solving to include better outcomes for projects and programs that would not have been so successful prior to the merger.

## Lessons Learned

While the ultimate success of the SFMTA is yet to be determined, the primary lessons from the SFMTA experience include the following:

- Funding and financial stress on transportation agencies, systems, and providers strengthens the case for embracing more sustainable mobility strategies.
- A fundamental mission shift from moving vehicles and dealing with modal transportation assets in isolation to moving people under a unified set of roles, responsibilities, and processes offers tremendous power to shift the focus of an organization.
- Enlightened political leadership and advocacy groups are critical to the integration of traditionally separate centers of modal responsibility and for supporting continuing internal staff efforts to integrate policy and procedures.
- Transformation of governance models, organizational structure, policies, and processes is a long-term process, and merging different organizational and professional cultures across transportation modes and professions can involve inherent difficulties.
- Change should be viewed as part of an evolutionary process unfolding over the long term, rather than as a single revolutionary and instantaneous event.

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## Southeastern Pennsylvania Transportation Authority (SEPTA), Philadelphia, PA

**CASE STUDY FOCUS:** *Shift to agency focus on customer service through organizational changes, employee development, and technology investment*

The Southeastern Pennsylvania Transportation Authority (SEPTA) is accomplishing a quantum change in its relationship with riders and the general public. Employees have a reaffirmed commitment to treat riders as valued customers and recognize that the general public is composed of stakeholders who support the system financially and expect good stewardship and

public benefits such as congestion relief and improved air quality in return. To further these goals, SEPTA has instituted organizational changes and workforce development strategies to reinforce the shift in emphasis. SEPTA expects that the ultimate results will be greater public acceptance, increased ridership, and stronger support for funding and operations initiatives.

## Background

SEPTA is now the nation's sixth-largest public transportation system and the largest in Pennsylvania. SEPTA's service area covers the counties of Bucks, Chester, Delaware, Montgomery, and Philadelphia with service to Trenton and West Trenton in New Jersey and Newark, Delaware, on regional rail. SEPTA service consists of 117 bus routes, 3 trackless trolley routes, 3 high-speed lines, 8 trolley lines, and 13 regional railroad lines. On February 18, 1964, the Pennsylvania General Assembly established SEPTA to provide public transit services for southeastern Pennsylvania after consolidating the remnants of bankrupt private operators. SEPTA's acquisition of transit companies by year is the following:

- 1968—Philadelphia Transportation Company (PTC)
- 1969—Philadelphia Suburban Transportation Company (also known as Red Arrow)
- 1976—Schuylkill Valley Lines (Frontier)
- 1983—Regional Rail (Conrail)
- 1984—Opening of the Center City Commuter Tunnel to join the previously separate Penn Central and Reading Railroads in Center City Philadelphia.

Table 1 summarizes the agency characteristics of SEPTA.

When SEPTA was first created, it melded the cultures of former private sector monopolies. In the early years, this situation required that company leaders focus more on funding and cost control than customer service. SEPTA now embraces the idea that to be successful providing first-class public transportation, a transit agency needs to be connected to the needs of its customers—including riders, regional stakeholders, taxpayers throughout Pennsylvania, and political leaders. SEPTA works to create a level of awareness and understanding that public transit is vital not only to southeastern Pennsylvania, but to the economy across the Commonwealth.

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area	1,800 sq. mi
Service Area Population	5.1 million
Annual Passenger Trips	348.3 million
Annual Revenue Miles	89.0 million
Annual Operating Expenses	\$1,081.9 million
FY2009 Capital Expenses	\$481.9 million

Source: 2009 National Transit Database.

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Secondary
Funding	
Governance	
Measuring Goal Achievement	Secondary
Resource Management	Secondary
Retooled Workforce and Organization	Primary
Collaboration and Integration	Secondary
Technology Applications	Secondary

## Type and Nature of Transformation

Over the past 3 years, SEPTA has succeeded in changing its corporate culture through senior management's concerted focus on listening to and responding to customers. The current general manager's emphasis on the "four Cs" of customer service—cleanliness, convenience, courtesy, and communication—provides a simple matrix for prioritizing and planning SEPTA programs. By creating a formal customer service program, SEPTA has a well-defined blueprint for action built around the "four C" components. Table 2 shows the types of change that occurred at SEPTA.

## Reasons for the Change and How It Happened

New leadership within the organization recognized the threats to the organization and placed a high priority on customer service. The general manager and policy makers based this initiative on the perception of SEPTA by riders, the public generally, the legislature, and state and local elected officials, as well as SEPTA's image in the news media. Table 3 provides an overview of the forces leading to change at SEPTA.

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	■
Demographics and Society	■
Sustainability, Energy, and Environmental Concerns	
Travel, Land Use, and Development Patterns	
Infrastructure Conditions	

Customer service initiatives were implemented from the top down with a change in organizational structure to create an assistant general manager of customer service who reports directly to the general manager. Customer service initiatives were also implemented from the bottom up, with investments in technology, collaboration with advocacy groups, and implementation of training programs such as new-hire training and continuing education training called “SEPTA Connect.”

### **Changing the Organizational Structure**

In 2008, a new Customer Service and Advocacy Division was created with an assistant general manager of customer service reporting directly to the general manager. The new assistant general manager’s principal job is to make sure that customer service is a priority across the entire organization and that all managers consider customer service during their decision-making processes. The agency made several additional organizational changes to reinforce the emphasis on customer service.

### **Investments in Technology**

SEPTA has embraced a number of innovative communication strategies using new technology, including an online chat service for SEPTA’s website. SEPTA also has included more real-time information on its website, is replacing the phone system with new Integrated Voice Response (IVR) software, and is creating more phone capacity with a modernized Automated Call Distribution (ACD) system. Together, these investments will dramatically improve the ability of SEPTA’s customers to access both automated trip planning information and live agents.

### **Collaboration with Advocacy Groups and the General Public**

SEPTA has expanded its collaborative efforts with a number of community organizations. In 2008, the Customer Service and Advocacy Division created the Youth Advisory Council (YAC), made up of high school and college students, to engage a younger generation. Outreach to railroad and transit advocacy groups has helped mitigate the traditionally adversarial relationships of these groups with SEPTA. SEPTA engages non-riders with a program called “SEPTA Customer Connection.” Through this program, SEPTA holds events at SEPTA facilities and “meet-and-greets” at key area attractions, SEPTA representatives visit schools, encourage groups to tour SEPTA’s facilities, and encourage employees to actively participate in civic activities as representatives of SEPTA.

### **Integrating Customer Service into Employee Training and Performance**

SEPTA has invested in training programs for new hires and current employees. New employees must now pass a week-long social skills training course before advancing into formal new-hire technical training. Since 2010, this “social skills” prerequisite training has been mandatory for all new bus and trolley operators. In the fall of 2011, SEPTA expanded this program to include new railroad conductor trainees. Another key training program is called “SEPTA Connect.” These are weekly classes in which current employees can work on enhancing their technical and social skills. The general manager participates in all customer service classes along with other assistant general managers and the head of operations.

Integrated with new training are efforts to celebrate employee achievements. The General Manager’s Recognition Task Force nominates employees for special consideration based upon acts “above and beyond.” There are also programs to ensure that all compliments and commendations are received promptly, and “employee of the month” programs exist in nearly all departments. In addition, there are presentations at SEPTA’s monthly board meetings in which SEPTA employees are recognized for outstanding service.

### **Consequences of the Transformation**

SEPTA conducts comprehensive market research through a customer survey every other year, with the last one completed in the fall of 2010. The results of this recent survey were much improved as compared to the 2008 survey. Since 2008, the number of customer commendations received each month has been higher than commendations received in the same month in the prior year 85 percent of the time for the last 36 months. This change indicates a slow but steady change in the way SEPTA’s front-line employees interact with its customers. More subjectively, employees feel that their reception among the general public is improving. There is a general sense that the “mood” on the street about SEPTA is getting better and that the company’s overall reputation is improving. The ability to deliver reliable, personalized service can go a long way toward creating a legion of passionate and loyal customers.

### **Lessons Learned**

The SEPTA case study provides a number of key lessons:

- Organizational changes can reinforce desired shifts in agency priorities—in this case the desire to emphasize customer service.

- Investments in training and employee development also can reinforce an agency shift, and such investments are critical even during times of tight fiscal budgets.
- Engagement with the public can contribute to improvements in customer satisfaction. SEPTA leadership believes that a customer deserves to be heard and responded to promptly. A lack of response may result in fewer complaints, but not necessarily an increase in customer satisfaction.

- SEPTA's measure of success regarding complaints is how quickly they can respond to the customer personally.
- Outreach and improved collaboration with advocacy groups can help mitigate once adversarial relationships. SEPTA has brought organizations into the process in a meaningful way, with activities related to lobbying, writing articles, and contributing to a presence in the capital.
- Excellence in customer service does not have to be costly.

## TransLink, Vancouver, BC

**CASE STUDY FOCUS:** *Regional agency elevated from a regional planning organization to one responsible for land use planning, transit operations, and roadway development with a shift from provincial to regional control*

As a result of the frustration of local governments and their regional planning agency with the rate of investment in transportation and the desire of British Columbia's government to disengage from local transit and road responsibilities, a radical realignment of functions took place in 1999. TransLink was created to combine transit and major roadway planning, investment, and operations region-wide, and was entrusted with powers of taxation. TransLink has accomplished a significant increase in the rate of transportation investment, an increase in transit's mode share, and improvement in customers' ratings of its performance.

### Background

In the 1990s, Greater Vancouver had the highest per capita automobile ownership in Canada and the impacts were of major concern to the region's leaders and its residents. At that time, Vancouver's regional planning agency, the Greater Vancouver Regional District (GVRD), had responsibility for land use planning and the development of the regional major road network while the province owned and operated the regional transit system, BC Transit. GVRD resolved to change the course of transportation and development. In 1999, GVRD's negotiations with the provincial government culminated in the creation of TransLink, officially known as the South Coast British Columbia Transportation Authority. It was the first North American transportation authority responsible for development and operation of both roads and transit. TransLink has taxing authority, a key change from its predecessor, BC Transit.

Prior to the creation of TransLink, the Vancouver metropolitan area was one of only a few regions in Canada where transit was operated by the provincial government. Originally, the BC Electric Railway Company operated public tran-

sit in Vancouver. BC Electric was purchased by the provincial government in 1962 and transferred to the Bureau of Transit Services in 1976, then to the Urban Transit Authority in 1978, and later renamed BC Transit.

TransLink has a multitiered governance structure that includes a nine-member board of directors, the Mayors' Council on Regional Transportation, and the regional transportation commissioner. The board has responsibility for making decisions in the interest of TransLink within limits established by the authorizing legislation. The Mayors' Council is composed of representatives from each of the region's 21 municipalities, as well as the Tsawwassen First Nation, and collectively represents the interests of citizens. The Mayors' Council appoints the TransLink board of directors and the commissioner. It approves the transportation plan, regional funding, and borrowing limits.

TransLink delivers services through contractors and its operating subsidiaries, including Coast Mountain Bus Company, British Columbia Rapid Transit Company Ltd. (SkyTrain), and West Coast Express Ltd. The agency is responsible for over 220 bus routes with a fleet of over 1,525 vehicles; 3 ferries; HandyDART, a custom transit service for people with disabilities; 3 automated light rail services; 2 commuter rail services; the operation and maintenance of the 2,400-km (1,490-mile) major road network; 3 bridges; the transit police; and AirCare, the vehicle emission testing and inspection system. Table 1 summarizes the agency characteristics of TransLink.

### Type and Nature of Transformation

The focus of this case study is the governance and mission change that has happened over the past decade with increased emphasis on coordinated land use and transportation invest-

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area	1,149 sq. mi
Service Area Population	2.4 million
2010 Scheduled Transit Service Boarded Passengers	347.2 million
2010 Scheduled Transit Service (Miles)	94.1 million
2010 Annual Expenses	\$1,366.6 million
2010 Expenses	\$1,358.3 million

Source: TransLink 2010 Annual Report.

ment. Although TransLink is a new entity, it carries on the regional heritage of the GVRD and integrates regional land use and transportation planning with transit investment and operations and roadways. Table 2 lists the types of change that occurred at TransLink.

## Reasons for the Change and How It Happened

During the 1990s, local governments in the Vancouver region were demanding increased investment in transportation while the province was pursuing a policy of fiscal restraint. The provincial government managed BC Transit and had started the commuter rail system in 1996. The region was undergoing extensive growth, and there was concern that transit was not keeping pace. The provincial government was not interested in continuing to provide service and was facing increasing costs to plan, manage, and fund a transportation system that supported regional land use, air quality, and economic objectives. The GVRD developed a land use plan for the metropolitan area with four key areas of emphasis, including transportation, and recognized the need for a regional government structure. The GVRD's evolving vision for regional transportation can be tracked through three planning documents published in the 1990s. These documents outlined key transportation priorities and strategies that would later lead to the creation of TransLink:

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Secondary
Funding	Primary
Governance	Primary
Measuring Goal Achievement	
Resource Management	Secondary
Retooled Workforce and Organization	Secondary
Collaboration and Integration	Secondary
Technology Applications	

1. *Creating Our Future* established measurable goals and targets and committed to a transportation policy that gave walking, cycling, transit, and goods movement a higher priority than the private automobile.
2. *Transport 2021* detailed specific strategies for how to achieve increased transportation choice by managing land use, transportation demand, and transportation supply. A key proposal in *Transport 2021* was some form of road user charge to help fund the major transit fleet expansions and transit and road infrastructure improvements.
3. *Livable Region Strategic Plan*, GVRD's first growth management strategy was derived from *Creating Our Future*. One of the four main principles in the plan was increasing transportation choice.

Once GVRD and the provincial government agreed that a regional government was needed, the Vancouver region and the provincial government each identified a person to negotiate the governance and funding to support this new entity. The negotiation process took 2 years and concluded with an agreement to give the new authority responsibility for transit and major roads in the region.

TransLink was established with a board structure, which helped in gaining acceptance from the municipal governments, but that structure has evolved over time. Two governance models were considered, a political board and a professional board. Initially, the decision was made to create a political board of 15 elected officials, including mayors, councilors, and members of the Legislative Assembly with the responsibility of providing oversight. The creation of a political board generated some concern among stakeholders, including the port and the airport. In 2007, there was a change to the governance of TransLink due to a funding dispute between the provincial government and local governments on a specific project. The province minister asked for a review of TransLink's governance, which was undertaken in 2006 and resulted in a governance change in 2007. In that change, the 15-member political board was replaced with a 9-member professional board appointed through an independent selection process. Three members rotate each year. Each year, a screening panel selects five potential members, of whom the Mayors' Council chooses three.

When created, funding also was a key part of the agreement negotiated between the province and the local governments. Existing funding sources, including parking sales taxes, fuel taxes, and local property taxes, were transferred to TransLink. TransLink advocated for a new vehicle levy to support increased funding, but has been unable to get the support of the provincial government, which it needs to administer this particular revenue source. The expectation is that TransLink will be allowed to implement the levy in the near future. Despite maintaining local taxing authority,

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	
Demographics and Society	
Sustainability, Energy, and Environmental Concerns	
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	■

long-term sustainable funding is still a challenge. Table 3 provides an overview of the forces leading to change at TransLink.

### Consequences of the Transformation

The creation of TransLink contributed to increased levels of investment, ridership growth, and an improved coordination of development and transportation investment. TransLink has increased bus service hours by 40 percent, implemented two rail lines, and made strides in the coordination and consistency of policies in the major road network. Road plans, as well as transit plans, no longer stop at municipal boundaries.

Ridership has more than doubled since 1999, and there have been significant increases in land use density in transit corridors. The region's transit mode split has increased from approximately 10 percent in 1999 to 12 percent in 2011, in contrast to declines in other areas of Canada and in the United States during the same period. Customer service ratings reached their highest levels ever in 2010.

### Lessons Learned

The TransLink case study offers a number of key lessons:

- Aligning funding authority, long-range planning, and project implementation responsibility has the potential to accelerate the implementation of a long-term vision for transportation.
- Integration of highway and transit planning has the potential to improve decision-making for both modes.
- Integration of transit, highway, and land use planning can lead to an increase in the role of transit in a region's transportation system.
- Shifting funding sources to the local level has the potential benefit of bringing long-term stability and local control.

## Utah Transit Authority (UTA), Salt Lake City, UT

**CASE STUDY FOCUS:** *An exceptional emphasis on collaboration with external and internal stakeholders to change the regional role for transit*

The Utah Transit Authority (UTA) has undergone almost continuous change since its formation in 1970 as it has continued to expand service to cover the rapidly growing Salt Lake City region. Some of its more remarkable changes have occurred since the late 1990s as the agency moved from being a regional bus operator to a multimodal operation managing bus, light rail, and commuter rail. At the same time, the agency has actively embraced partnerships with key regional organizations and local elected officials. It also has built its internal capacity through an active promotion of leadership and through efforts to engage employees at all levels.

### Background

UTA was formed in 1970 to address a growing regional transportation need. By the 1960s, private transit service operated in the Salt Lake City region had deteriorated to the point where transit service was inadequate to serve transportation-

disadvantaged persons. To address a growing concern over declining service, UTA was formed, and over the next several decades, the agency expanded rapidly. In 1974, the first local quarter-cent sales tax was passed to fund the transit agency, and, during the 1970s, UTA tripled the size of its bus fleet. In the early years of the new organization, UTA struggled with a number of operating challenges related to reliability. Service expanded through the 1980s, with most of this expansion in suburban areas of the region. During this period of expansion, UTA's board emphasized service "coverage," with performance measures to track the percentage of households within one-quarter mile of service. As service expanded, the cost per mile of service remained reasonable, while the cost per passenger mile increased. Despite increased costs, the growing economy of the region provided revenue that allowed for continued service expansion.

By the early to mid-1980s, the regional view of transit started to change. In 1980, transit investments were considered for

**Table 1. Agency characteristics.**

Characteristic	Value
Service Area	1,412 sq. mi
Service Area Population	1,744,417
Total Vehicle Fleet	1,032
Annual Passenger Trips	37.2 million
Annual Revenue Miles	33.1 million
Annual Operating Expenses	\$204.1 million
FY2009 Capital Expenses	\$656.7 million

Source: 2009 National Transit Database.

the I-15 corridor in a joint transit and highway Environmental Impact Statement. As a part of this analysis, multimodal scenarios were developed and evaluated. In the early 1980s, analysis conducted by the metropolitan planning organization (MPO) concluded that a regional growth policy coordinated with transit investment would help the region address regional congestion challenges. By the late 1980s, the transit market also started to change. UTA carried more university students and an increasing number of commuters. As the ridership characteristics changed, the board developed a strategic plan to better define UTA's mission and resolved differences of opinion among board members on whether the agency should be run like a business or act primarily as a social services agency. The strategic planning exercise marked the point at which the agency began to shift its focus to markets.

More recently, the agency has changed the overall role of public transportation within the region's transportation system. UTA completed its first rail line in 1999, with a second extension to the site of the Olympic Stadium completed in time for the Olympics in 2002. The agency's first commuter rail project was completed in 2008. UTA is currently managing five different capital projects that will further expand the role of rail in the region over the coming decade. Table 1 provides a summary of UTA's most recent operating characteristics.

The UTA Board of Trustees is made up of 15 members. Eleven are appointed by municipalities and counties that provide agency funding and the remaining four members are appointed by the state, including a representative of the state department of transportation (DOT). The state legislature recently approved the addition of the four state representatives, although no state funds are provided to UTA.

## Type and Nature of Transformation

UTA has undergone continuous change since its creation, but the pace of change accelerated in the late 1990s. Since that time, the agency has undertaken a number of specific

**Table 2. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Secondary
Funding	Secondary
Governance	Primary
Measuring Goal Achievement	Secondary
Resource Management	Secondary
Retooled Workforce and Organization	Secondary
Collaboration and Integration	Primary
Technology Applications	

actions to transform the organization and the role of transit within the Salt Lake City region. Actions of note include the following:

- A shift in emphasis from service "coverage" to strong transit markets;
- An active emphasis on collaboration with key regional organizations (e.g., the Wasatch Front Regional Council, the Utah Chamber of Commerce, and Envision Utah);
- Increased outreach and partnership with local elected officials across the region;
- An effort to actively improve employee morale and labor relations;
- The development of project implementation capacity;
- A shift in the role of the UTA board away from agency management to high-level policy;
- Continued increases in financial support from area local governments; and
- An expansion of service, including the addition of light rail and commuter rail.

The specific elements of change within UTA are diverse and any one of them would be considered significant within an organization. Together, these changes have transformed UTA from a regional bus operator to a dynamic, multimodal organization with the capability for project delivery, innovative management, and the ability to respond to continued market changes. Table 2 indicates the types of transformative change represented by UTA, including nearly every category of change.

## Reason for the Change and How It Happened

The changing role of transit within the Salt Lake City region was driven in large part by the culture of the region, a strong local economy, and the long-term pace of population growth.

The influence of the Church of Jesus Christ of Latter-day Saints and the commitment of its members to preserve the quality of life in Salt Lake City also played an important role. Population growth in the Salt Lake City region continues unabated, and area leaders continue to seek ways to manage this growth in a way that protects the assets of the region. Transit is considered a key part of that strategy. Within this context, the impetus for change was multidimensional and consisted of the following key drivers:

- Regional interest in maintaining a high quality of life in the Salt Lake City region was perceived as threatened by continued and rapid population growth;
- An emphasis on lean operations did not allow UTA to respond to the demands for an increased role for transit within the regional transportation system;
- Active involvement in agency management by the UTA board made it difficult for the board to provide a long-term vision and for the agency to respond quickly to day-to-day challenges;
- Poor employee morale made it difficult to attract and retain high-quality employees; and
- There was a need to generate long-term funding support to expand service.

Table 3 provides an overview of the forces leading to change at UTA.

The organizational strategies undertaken to promote change included actions that were both internal and external in nature. The agency's success in maintaining long-term, stable leadership and its fiscal strength provided an environment within which change could happen. Several specific actions were taken that contributed to fundamental change within the organization:

- The board of trustees shifted its focus away from agency management to high-level policy by delegating more management authority to the UTA general manager.
- The agency emphasized collaboration across multiple dimensions, including

- Partnerships with other key regional organizations, including the region's MPO (the Wasatch Front Regional Council) and the non-profit, Envision Utah, to promote a long-term vision for transit investment in the region.
- Partnership with the business community through the Utah Chamber of Commerce.
- Dedicated staff resources at the highest levels to work closely with mayors across the region to improve relationships with local elected officials.
- In response to the changing expectations for transit within the region, the agency shifted its focus from transit service "coverage" to strong transit markets likely to see the highest demand.
- Management within UTA dedicated staff and financial resources to improving UTA staff morale and institutional capacity at all levels.

### Foundation of Fiscal Stability and Stable Leadership

As UTA began to enter a period of change in the mid to late 1990s, the agency had the financial stability to undertake change, even if identified strategies required additional financial or staff resources. John Pingree, the general manager at UTA for almost two decades, focused on managing cost and maintaining fiscal discipline. Although this emphasis created some tension with labor unions, the culture of fiscal discipline has carried on beyond his tenure. The agency also has benefited from strong local financial support. In the 1990s, revenue from sales tax increased due to strong local economic growth. Although revenue growth moderated during the recession between 2000 and 2002, the passage of a new tax in 2000 moderated the effect of the more recent economic downturn on the agency.

UTA also has maintained stable leadership that has encouraged innovation throughout the organization. Mike Allegra, who has served as the general manager since April 2010, is only the fourth UTA general manager since the agency was established in 1970. Leadership has promoted innovation and, as a result, a number of innovations have emerged from within the organization.

**Table 3. Forces leading to change.**

Funding and Finance	■
New Technology	
Demographics and Society	■
Sustainability, Energy, and Environmental Concerns	■
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	

### A Changing Role for UTA's Board of Trustees

The board of trustees shifted its role from agency management and oversight to an emphasis on long-term vision and high-level policy. As UTA continued to expand through the 1980s and 1990s, the board was active in a number of issues facing the organization. Committees were frequently formed around specific topics, and the volunteer board members

faced increasing time requirements to support these activities. The board recognized the issue and embraced reform to follow the “Carver Model” of governance. In that model, an agency’s board fully empowers the professional staff. The board defines broad policy and provides a long-term vision for an agency. The board establishes what the general manager cannot do, but allows everything else within the constraint of the approved agency budget. All communication from the board must pass through the general manager. The effect of this change resulted in less day-to-day management from the board, reduced the number of board committees, and allowed the group to focus on leading the agency’s long-term vision. The change also effectively de-politicized a number of efforts and helped free up staff resources to focus on other initiatives.

### **Building Partnerships with Local Elected Officials**

In an effort to build support within the community, UTA management made and continues to make a conscious effort to work more closely with local elected officials to improve these relationships. After the failure of a funding referendum in 1992, UTA staff recognized that they were operating too independently and needed to build more support within the community. UTA’s senior staff routinely meets with mayors from throughout the region, with the goal of increasing the level of understanding of the agency and to air disagreements on specific issues. Many of the mayors are now champions of UTA, including the last few Salt Lake City mayors.

### **Partnership with Key Regional Organizations**

When John English began his tenure as UTA’s general manager in the late 1990s, he more actively engaged with a number of key regional organizations under the belief that the agency should partner with everyone possible. A key part of the change has involved outreach and collaboration with private and public organizations that have served as advocates for UTA, including the Wasatch Front Regional Council (the region’s MPO), Envision Utah (a regional non-profit focused on regional land use strategies), the Utah Chamber of Commerce, and the Church of Jesus Christ of Latter-day Saints.

The Wasatch Front Regional Council is the MPO for the Salt Lake City region. A number of senior leaders within UTA once worked for the MPO, and senior staff supports the MPO’s role in setting regional transportation policy. The MPO and Utah DOT share authority and provide an effective checks and balances system. The MPO must approve the regional Transportation Improvement Program (TIP) for

the state to include these projects in the State Transportation Improvement Program (STIP), and without the approval of the STIP, the projects included in the regional TIP cannot move forward.

UTA also has worked closely with Envision Utah, a public-private partnership formed to focus on strategies to protect Utah’s environment, economic strength, and quality of life. This organization serves in an educational capacity within the region. Envision Utah created a “Quality Growth Strategy,” with the goal of providing a sustainable way to accommodate the expected population growth through 2040 in Utah. The focus of this strategy is termed the “3% strategy” which calls for 33 percent of the future development to be accommodated on 3 percent of the land, near key transit stops and road corridors. The principles of this land use plan include (1) focusing growth in economic centers and along transportation corridors; (2) creating significant areas of mixed use development throughout the region; (3) targeting growth around transit stations; (4) encouraging infill and redevelopment to revitalize declining neighborhoods; and (5) preserving rural, recreational, and environmentally sensitive areas.

Finally, UTA’s partnership with the business community through the Utah Chamber of Commerce has helped to build stronger support for transit within the community. The business community recognizes that transit is vital to the region’s economic development and UTA actively supports efforts to attract new employers by working closely with the Chamber to provide needed support. The Chamber acts as a supporter of UTA and has publicly endorsed a number of the proposed revenue increases for UTA.

### **Shift from Service “Coverage” to Markets**

UTA made a conscious decision to shift its emphasis from maximizing service coverage to serving strong transit markets where demand is expected to be highest. This change was first conceptualized in the 1990s, but the change took a number of years to implement. UTA conducted an in-depth market analysis that informed service reconfigurations in 1999 in Utah County, in 2003 in Weber County, and system-wide in 2007. The changes in service, which included reductions in geographic coverage and increased frequency for core areas, resulted in an increase in ridership with a similar level of service.

### **An Emphasis on Employees**

UTA’s senior staff recognized the need to improve employee relations across the agency and did so by actively engaging employees in agency decisions. The agency also addressed issues that contributed to poor morale. Prior to 1997, UTA

struggled with employee relations. The agency's long-term emphasis on fiscal discipline, while beneficial to the agency's fiscal stability, had the effect of undermining employee morale. There was a general lack of trust in agency management and disputes with the labor union were common.

Shortly after taking over as general manager in 1997, John English began to actively engage employees to solve agency problems. He organized approximately 15 "diagonal slice" teams made up of staff from all levels and from various UTA departments, and the teams were tasked with identifying strategies for addressing issues within the agency. This approach to problem-solving has continued and is now fundamental to the agency. Working with employees to reach decisions creates stronger buy-in among employees to implement the change.

In its efforts to improve relations with organized labor, UTA addressed a long-standing difference in pension benefits between management and labor. Prior to this change, management's pension benefit was more generous and served as a source of tension. UTA's management proposed parity in pension benefits and to promote this change focused on educating leadership within the union on how pensions work. The change was subsequently supported by the union and resulted in an increase in labor costs of about 5 percent for UTA. Although labor costs increased, this change addressed this long-standing source of mistrust.

UTA also changed its approach to grievances. Previously, the agency would defer decisions on grievances until the point of contract negotiations. As a result, labor negotiations tended to focus more on these grievances than on core components of the labor contract. The agency now deals with grievances filed by the union immediately rather than waiting until the time of contract negotiation. Both sides have more energy to focus on the core of the labor contract, and the negotiation process generally progresses more smoothly.

The multitude of changes made to improve employee morale within the agency have reduced turnover and helped recruiting. As an unintended consequence, UTA's 2,000 employees have now become strong advocates for the organization. Improved employee relations played an important role in the approval of the funding referendum in 2000, and employees continue to serve as advocates for local funding referenda.

## Consequences of the Transformation

The successes of UTA's transformative change are apparent both inside and outside the organization. The agency

has successfully transitioned from a regional bus operator to an agency that now operates bus, light rail, and commuter rail service. UTA also has built the institutional capacity to deliver projects and is now managing the completion of five major rail projects simultaneously. The agency also continues to receive broad support in the community, with continued approval of local ballot initiatives to increase taxes to support UTA. With the increased revenue, the agency has been more able to respond to demand for increased service.

Total ridership has increased from 24 million in 1998 to 39 million in 2010, and the regional market share for transit is now estimated at about 3 percent. Within some travel markets, however, the change is more dramatic. In the late 1980s, the transit market share of travel to the University of Utah was estimated at about 5 percent, but today that share has reached as much as 40 percent. The agency, which once carried primarily captive riders, has now shifted to a market that is estimated at approximately 70 percent choice riders.

## Lessons Learned

UTA's successful transformation over the last two decades offers a number of lessons beneficial to other organizations seeking to undertake similar efforts:

- Building trust with employees can have wide-ranging benefits, including reduced turnover and improved service quality.
- Collaboration with key regional organizations can help build broad support.
- Outreach to mayors can serve as an effective method to broaden support. Given the high proportion of funding that comes from local sales taxes approved by referenda, these relationships have helped UTA gain support from local elected officials as these ballot initiatives come before the voters.
- Stable leadership and solid finances can provide the environment for change. Senior UTA staff built trust with the board of trustees and with employees to create an environment open to innovation.
- Increased delegation of authority to the general manager can accelerate change. UTA is now able to respond more quickly to unanticipated challenges by keeping issues outside of the political environment. Many of the innovative approaches to specific issues have likely happened as a result of this change.

# Washington State Department of Transportation, Public Transportation Division, “Travel Washington” Intercity and Rural Bus Program

**CASE STUDY FOCUS:** *Transition of a state DOT transit program from a grants administrator to a leader in defining and implementing a statewide network*

The state of Washington made a major change in the business model for the rural intercity bus program in which the state role, as administered by the Washington State Department of Transportation (WSDOT), changed from that of being a passive provider of funding to meet local initiatives to taking responsibility for developing a statewide network of connecting services. This effort involved identifying gaps in the network and then using available federal funding to contract for specific services to fill these gaps. This change has successfully addressed reductions in the state’s intercity bus services and has provided critical transportation services to many small urban and rural areas in the state.

## Background

The Public Transportation Division (PTD) of WSDOT administers the FTA’s Section 5311 program of rural public transportation assistance, as well as the Section 5310, 5316, and 5317 programs. The PTD also administers state funding for public transportation. The Section 5311 program provides funding for capital, operations, administration, planning, and marketing for transit systems in urbanized areas with fewer than 50,000 people. Section 5311(f) sets aside 15 percent of each state’s overall Section 5311 allocation specifically for rural intercity projects unless the governor certifies that the state has no unmet rural intercity bus needs.

In the WSDOT public transit program, a single statewide grant solicitation is conducted for all types of public transit projects. Under this Consolidated Grant Program, all potential projects are evaluated and ranked in the same pool. This approach was developed to avoid “funding silos.” For those projects selected for funding, WSDOT assigns the most appropriate funding program.

Under its public transit program, WSDOT had previously used its Section 5311(f) allocation to fund several projects that could be classified as intercity service projects under the federal guidelines. However, in 2004, restructuring of Greyhound Lines’ nationwide service resulted in the loss of service to a number of points in Washington. Local concern over the loss of these particular services led PTD to realize that under the Consolidated Grant Program it could only respond to local applications and that it had no way to proactively seek to implement particular services if there was no qualified local applicant with a sufficient local match.

## Type and Nature of Transformation

WSDOT’s decision to develop a statewide intercity bus plan was the result of concern about the intercity bus service losses, concern about some of the existing services funded with the state’s federal intercity bus funds, and the idea that it is the state’s responsibility to create and maintain a network of statewide transportation services. This plan was completed in 2007 and included an effort to identify a statewide intercity network that included both unsubsidized intercity bus services provided by private for-profit firms and subsidized rural intercity routes.

The state now has a direct role in the design of intercity bus services, including routes, schedules, stops, equipment, fares, and information. The state also can control to a much larger extent how the service connects with the national network of intercity bus services and other modes, including requirements for interline tickets and stops at particular terminals. This change in the state role includes performance and service monitoring, with provisions for contract termination if measures are not met in a timely manner.

The change in the state’s role was accompanied by the development of a new way to provide the required operating match for Section 5311(f) operating assistance by allowing the inclusion of the value of capital used in connecting unsubsidized intercity bus service as an in-kind match for the federal operating assistance on subsidized routes. This new matching approach was proposed to FTA and was allowed as a 2-year demonstration pilot project for the Section 5311(f) program. The new services funded under the WSDOT PTD program are branded and promoted with a distinct statewide identity (Travel Washington) and a regional flavor for each route based on local products (the Grape Line, for example). Table 1 provides a summary of the types of change that occurred at WSDOT.

## Reasons for the Change and How It Happened

There were several factors leading to the change in the intercity program business model at WSDOT. One was the Greyhound service reductions, which created publicity around the issue of declining rural bus service and led to calls for action by WSDOT. WSDOT was using some of its

**Table 1. Types of transformative change represented.**

Type of Change	Primary or Secondary
Mission Shift	Primary
Funding	Secondary
Governance	
Measuring Goal Achievement	
Resource Management	Primary
Retooled Workforce and Organization	Secondary
Collaboration and Integration	Secondary
Technology Applications	Secondary

Section 5311(f) allocation to provide operating assistance in areas of the state, but not in those areas losing bus service. There was no way under the program structure, at that time, to use the available funding to address service losses or needs elsewhere unless a local agency or provider applied for funding and could provide a local match. The state also struggled with limited ability to address non-performance and compliance issues among recipients of Section 5311(f) funding.

In addition to the public (and legislative) concern about loss of Greyhound services, other departmental planning efforts suggested a need for rural intercity connections in other locations. The federally mandated, locally coordinated, human service–public transportation planning process identified some unmet rural intercity needs, particularly in places losing intercity bus service. These factors all acted as a catalyst in the state’s decision to conduct a study of rural intercity bus service needs, policy, and program options. Table 2 provides an overview of the forces leading to change at WSDOT.

The resulting study was *The Washington State Intercity and Rural-to-Urban Public Transportation Network Plan*. It identified rural intercity bus needs and the programmatic and regulatory issues involved in addressing them. It proposed a new role for the state that would involve defining and maintaining a statewide intercity network consisting of both unsubsidized intercity bus services and gap-filling rural intercity services with some public funding. The plan defined

**Table 2. Forces leading to change.**

Funding and Finance	■
New Technology	
Demographics and Society	
Sustainability, Energy, and Environmental Concerns	
Travel, Land Use, and Development Patterns	■
Infrastructure Conditions	■

potential corridors, estimated costs, and demonstrated sustainability under existing Section 5311(f) allocation levels, utilizing a new way to define a local operating match using the in-kind value of unsubsidized connecting service.

Implementation of the plan’s recommendations required actions from a number of different parties. In Washington, entry into intrastate bus service is still regulated by the Washington Utilities and Transportation Commission (WUTC) and firms are required to obtain operating authority for particular routes and services. Firms without such authority are not allowed to compete with the firm holding the authority. Legislative action was required to allow WSDOT’s selected contractors the ability to operate. State legislation was required to change this process so that WSDOT’s selected contractor could provide service authority held by an incumbent (but non-performing) carrier. The selected contractor is required to obtain the required authority from the WUTC.

A second major action involved FTA approval of the proposed in-kind funding match for Section 5311(f). This involved the development of the proposal and the presentation of it to both FTA headquarters and regional staff, resulting in the development of the “Pilot Project” funding guidelines, which have since been administratively renewed several times.

Within WSDOT, these activities required an initial increase in staff support beyond that previously provided for the rural intercity bus program. Initially, the development of new policies, coordination with outside agencies, and development of a Request for Bid competitive procurement for services required a full-time staff member. Over time, this position has been able to transition to one-half of a full-time equivalent position with some additional staff resources required when a new route is being developed and contracted. Additional support for the new business model has come from local advisory committees and from the contractors themselves.

The implementation of the initial corridor, from Walla Walla to Pasco, involved the development of a Request for Bid competitive procurement, coordination with the local transit operations for stops and ticket sales support; coordination with Greyhound Lines both for the in-kind match and for the development of a full interline ticketing and information agreement; and support for the selected contractor in operating the service, developing the branding, and developing a website. This initial process began as the plan was being completed, and the service, dubbed “The Grape Line,” began in December 2007. Subsequent corridors began service over the coming years, including the “Dungeness Line,” the “Apple Line,” and the “Gold Line.” At this point, WSDOT is fully utilizing its available federal intercity bus funding, so expansion under the current conditions can only take place as ridership and revenue increases.

## Consequences of the Transformation

The transformation has allowed WSDOT to fully utilize the available Section 5311(f) program funding in a way that addresses the federal goals of the program as well as state goals for improved mobility. Under the new program, no state or local operating match is required. This allows State Mobility Program transit funding to be used in other programs, while enabling the state to address rural intercity mobility gaps.

The new business model, in which the state contracts for particular services, allows for the state to create a complete intercity bus network with very limited public funding. Through a combination of unsubsidized private intercity bus transportation and the Travel Washington routes, WSDOT provides for a coordinated statewide public transportation network.

Implementation of service in four corridors under the revised program has provided meaningful connections to the national intercity bus network, including shared stations, interline ticketing, user information (through both the WSDOT and the intercity carrier information systems), and coordinated schedules. Where feasible, connections also are provided to Amtrak intercity rail passenger services and to airports with commercial service. All of these routes provide service in areas that contain more than 100,000 residents that would otherwise have no access to intercity travel (or even regional trips). This subsidized network generated approximately 26,000 intercity trips in 2009.

The Washington State program has become a model for other states in terms of the change in state function to a more

active role that includes the identification of gaps in the statewide network and the use of contracts or grant solicitations to fill these gaps. With FTA's endorsement of the in-kind funding match, many other states are now also using this same tool to match operating assistance under Section 5311(f). The use of this funding method is working to create connecting networks wherever it is applied.

## Lessons Learned

The change that happened in Washington State provides a number of lessons important to others considering similar change:

- Change and successful implementation requires staff time and focus. Adding program aspects that require new roles adds staff requirements.
- Even within the perceived confines of federal program regulations, new ways of doing business are possible.
- Change can take place if institutions look beyond existing practices. In this case, WSDOT was willing to consider separating out the rural intercity program from the state's Consolidated Grant Program, which had been developed specifically to avoid creating funding silos.
- Collaboration with local committees and groups, as well as with potential operators, can provide additional support for implementation of useful services—in this case, both of these activities were previously left to the local applicants (to a large degree).

# List of Acronyms and Abbreviations

ACD	Automated Call Distribution
APC	Automatic Passenger Counter
ARRA	American Recovery and Reinvestment Act
AVL	Automatic Vehicle Location
BRT	Bus Rapid Transit
CAD	Computer-Aided Dispatch
CalTrans	California Department of Transportation
CAP	<i>Climate Action Plan</i> (San Francisco)
CATA	Capital Area Transportation Authority (Lansing, MI)
CATS	Charlotte Area Transit System
CCTA	Chittenden County Transportation Authority (Burlington, VT)
CEO	Chief Executive Officer
CTAA	Community Transportation Association of America
CTIB	Counties Transit Improvement Board
C-U MTD	Champaign-Urbana Mass Transit District
DIA	Denver International Airport
DOT	Department Of Transportation
ERH	Emergency Ride Home
ERP	Enterprise Resource Planning
FFGA	Full Funding Grant Agreement
FIT	Feed-In Tariff
GEARS	Grant Evaluation and Ranking System
GHG	Greenhouse Gas
GMTA	Green Mountain Transit Agency
GVRD	Greater Vancouver Regional District
HOV	High-Occupancy Vehicle
IVR	Integrated Voice Response
LEED	Leadership in Energy and Environmental Design
MDT	Mobile Data Terminal
MPO	Metropolitan Planning Organization
MSU	Michigan State University
MTA	Metropolitan Transportation Authority (New York, NY)
MTC	Metropolitan Transit Commission
MTDB	San Diego Metropolitan Transit Development Board
MTS	Metropolitan Transit System (San Diego, CA)
MTS	Metropolitan Transportation Services (Minnesota)
Muni	San Francisco Municipal Railway

MVST	Motor Vehicle Sales Tax
NSDCTDB	North San Diego County Transit Development Board
NSTIFC	National Surface Transportation Infrastructure Financing Commission
PTC	Philadelphia Transportation Company
PTD	Public Transportation Division (Washington State)
RCT	Rural Community Transportation
RITA	Regional Infrastructure and Transportation Agency
RRA	Regional Railroad Authorities
RTB	Regional Transit Board
RTD	Regional Transportation District (Denver, CO)
SANDAG	San Diego Association of Governments
SDTC	San Diego Transit Corporation
SDTI	San Diego Trolley, Inc.
SEPTA	Southeastern Pennsylvania Transportation Authority
SFMTA	San Francisco Municipal Transportation Agency
SOV	Single-Occupant Vehicle
STIP	State Transportation Improvement Program
TAB	Transportation Advisory Board
TDM	Transportation Demand Management
TIP	Transportation Improvement Program
TMOC	Transit Management of Charlotte
TPP	Transportation Policy Plan
UTA	Utah Transit Authority
VTrans	Vermont Agency of Transportation
WSDOT	Washington State Department of Transportation
WUTC	Washington Utilities and Transportation Commission
YAC	Youth Advisory Council

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*Abbreviations and acronyms used without definitions in TRB publications:*

AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI-NA	Airports Council International-North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HMCRRP	Hazardous Materials Cooperative Research Program
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RITA	Research and Innovative Technology Administration
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation