

TCRP

REPORT 106

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NATIONAL
COOPERATIVE
HIGHWAY RESEARCH
PROGRAM

NCHRP

REPORT 536

**From Handshake
to Compact:
Guidance to Foster
Collaborative,
Multimodal
Decision Making**

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and
National Cooperative Highway Research Program**

TCRP REPORT 106/NCHRP REPORT 536

PRACTITIONER'S HANDBOOK

**From Handshake to Compact:
Guidance to Foster Collaborative,
Multimodal Decision Making**

Sarah Campbell
Dennis Leach
Kate Valentine

TransManagement, Inc.

In association with

Matthew Coogan
Michael Meyer
Christina Casgar

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Planning and Administration • Public Transit

Research Sponsored by the Federal Transit Administration in Cooperation with the Transit Development Corporation and by the American Association of State Highway and Transportation Officials in Cooperation with the Federal Highway Administration

TRANSPORTATION RESEARCH BOARD

WASHINGTON, D.C.
2005
www.TRB.org

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.

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The project that is the subject of this report was a part of the Transit Cooperative Research Program conducted by the Transportation Research Board with the approval of the Governing Board of the National Research Council. Such approval reflects the Governing Board's judgment that the project concerned is appropriate with respect to both the purposes and resources of the National Research Council.

The members of the technical advisory panel selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project. The opinions and conclusions expressed or implied are those of the research agency that performed the research, and while they have been accepted as appropriate by the technical panel, they are not necessarily those of the Transportation Research Board, the National Research Council, the Transit Development Corporation, or the Federal Transit Administration of the U.S. Department of Transportation.

Each report is reviewed and accepted for publication by the technical panel according to procedures established and monitored by the Transportation Research Board Executive Committee and the Governing Board of the National Research Council.

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The Transportation Research Board of The National Academies, the National Research Council, the Transit Development Corporation, and the Federal Transit Administration (sponsor of the Transit Cooperative Research Program) do not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the clarity and completeness of the project reporting.

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Systematic, well-designed research provides the most effective approach to the solution of many problems facing highway administrators and engineers. Often, highway problems are of local interest and can best be studied by highway departments individually or in cooperation with their state universities and others. However, the accelerating growth of highway transportation develops increasingly complex problems of wide interest to highway authorities. These problems are best studied through a coordinated program of cooperative research.

In recognition of these needs, the highway administrators of the American Association of State Highway and Transportation Officials initiated in 1962 an objective national highway research program employing modern scientific techniques. This program is supported on a continuing basis by funds from participating member states of the Association and it receives the full cooperation and support of the Federal Highway Administration, United States Department of Transportation.

The Transportation Research Board of the National Academies was requested by the Association to administer the research program because of the Board's recognized objectivity and understanding of modern research practices. The Board is uniquely suited for this purpose as it maintains an extensive committee structure from which authorities on any highway transportation subject may be drawn; it possesses avenues of communications and cooperation with federal, state and local governmental agencies, universities, and industry; its relationship to the National Research Council is an insurance of objectivity; it maintains a full-time research correlation staff of specialists in highway transportation matters to bring the findings of research directly to those who are in a position to use them.

The program is developed on the basis of research needs identified by chief administrators of the highway and transportation departments and by committees of AASHTO. Each year, specific areas of research needs to be included in the program are proposed to the National Research Council and the Board by the American Association of State Highway and Transportation Officials. Research projects to fulfill these needs are defined by the Board, and qualified research agencies are selected from those that have submitted proposals. Administration and surveillance of research contracts are the responsibilities of the National Research Council and the Transportation Research Board.

The needs for highway research are many, and the National Cooperative Highway Research Program can make significant contributions to the solution of highway transportation problems of mutual concern to many responsible groups. The program, however, is intended to complement rather than to substitute for or duplicate other highway research programs.

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The **National Academy of Engineering** was established in 1964, under the charter of the National Academy of Sciences, as a parallel organization of outstanding engineers. It is autonomous in its administration and in the selection of its members, sharing with the National Academy of Sciences the responsibility for advising the federal government. The National Academy of Engineering also sponsors engineering programs aimed at meeting national needs, encourages education and research, and recognizes the superior achievements of engineers. Dr. William A. Wulf is president of the National Academy of Engineering.

The **Institute of Medicine** was established in 1970 by the National Academy of Sciences to secure the services of eminent members of appropriate professions in the examination of policy matters pertaining to the health of the public. The Institute acts under the responsibility given to the National Academy of Sciences by its congressional charter to be an adviser to the federal government and, on its own initiative, to identify issues of medical care, research, and education. Dr. Harvey V. Fineberg is president of the Institute of Medicine.

The **National Research Council** was organized by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purposes of furthering knowledge and advising the federal government. Functioning in accordance with general policies determined by the Academy, the Council has become the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in providing services to the government, the public, and the scientific and engineering communities. The Council is administered jointly by both the Academies and the Institute of Medicine. Dr. Bruce M. Alberts and Dr. William A. Wulf are chair and vice chair, respectively, of the National Research Council.

The **Transportation Research Board** is a division of the National Research Council, which serves the National Academy of Sciences and the National Academy of Engineering. The Board's mission is to promote innovation and progress in transportation through research. In an objective and interdisciplinary setting, the Board facilitates the sharing of information on transportation practice and policy by researchers and practitioners; stimulates research and offers research management services that promote technical excellence; provides expert advice on transportation policy and programs; and disseminates research results broadly and encourages their implementation. The Board's varied activities annually engage more than 5,000 engineers, scientists, and other transportation researchers and practitioners from the public and private sectors and academia, all of whom contribute their expertise in the public interest. The program is supported by state transportation departments, federal agencies including the component administrations of the U.S. Department of Transportation, and other organizations and individuals interested in the development of transportation. www.TRB.org

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FOREWORD

By Dianne Schwager
Staff Officer
Transportation Research
Board

TCRP Report 106/NCHRP Report 536: From Handshake to Compact: Guidance to Foster Collaborative, Multimodal Decision Making, A Practitioner's Handbook is the result of a research project initiated by the Transit Cooperative Research Program and the National Cooperative Highway Research Program to identify and document examples of collaboration in multimodal decision making. The research has resulted in three companion products designed to be complementary to each other. These include a Research Results Digest (*TCRP RRD 65/NCHRP RRD 288: A New Vision of Mobility: Guidance to Foster Collaborative Multimodal Decision Making*), giving a brief overview of the research and findings; a Compendium on the enclosed CD-ROM (*CRP-CD-52*), providing a detailed set of case examples and research methodology; and this handbook, which is designed to provide practical advice to transportation professionals interested in identifying, implementing, and sustaining collaborative activities.

Transportation managers are challenged to manage the transportation system better. That means maximizing opportunities and resources; making a commitment to seamless operation of transportation services; examining capacity investments from the perspective of mobility enhancement; and tapping into information systems designed to promote access to, and knowledge of, transportation services. Transportation managers must find creative ways to share ideas, information, funding, facilities, and even staff. This has led many agencies to identify partners and to realign roles based on who can best deliver a given service or function.

The purpose of this handbook is to provide overall guidance on the characteristics of successful collaboration and on the steps that can be taken to enhance the probability of success. A method for assessing the health of an existing collaboration is proposed that allows one to identify areas of weakness and areas where improvement can occur. For those wanting to start a collaboration initiative, or for those already in a collaborative effort who want to reach a more involved level of collaboration, a multistep strategy is described. This strategy is portrayed as a ladder representing the often difficult need to undertake multiple efforts to reach the level of collaboration necessary to achieve an original purpose.

The research for this handbook consisted of case studies of collaborative efforts in several policy/planning areas. Collaborations were examined relating to efforts in transportation-systems management and operations, responding to disruptions caused by unexpected or unusual events, managing transportation assets across modal boundaries, integrating traveler information systems, and integrating transportation and land use strategies. True to the spirit of collaboration in developing this handbook, focus groups were also convened at national transportation conferences in 2003 to solicit input from those who have "seen it, done it, and been there." While there was considerable agreement about the factors that motivate and challenge collaborations, there

were no simple answers when it came to implementing and sustaining collaborative activities. Indeed, numerous case studies of transportation collaborations in the United States and Europe found in the Compendium, on the enclosed CD-ROM, show a range of factors that led to overall success.

TCRP Report 106/NCHRP 536 Report: From Handshake to Compact: Guidance to Foster Collaborative, Multimodal Decision Making, A Practitioner's Handbook will be of interest to two groups. The first group includes transportation professionals who want to use collaborative efforts to accomplish their mission. This group might include transit operators, metropolitan planning organization (MPO) planners, state department of transportation (DOT) officials, rideshare coordinators, transportation management association (TMA) staff, and local transportation professionals. The second group consists of organizations and individuals, who may have limited experience in transportation but want to work together with transportation organizations to achieve some common goal.

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A Practitioner's Handbook

FROM HANDSHAKE TO COMPACT: GUIDANCE TO FOSTER COLLABORATIVE, MULTIMODAL DECISION MAKING

This handbook is the result of a body of research initiated by the Transit Cooperative Research Program and the National Cooperative Highway Research Program to identify and document examples of collaboration in multimodal decision making. It marks the first time these entities have come together to jointly fund a major research project. The research has resulted in three companion products designed to be complementary to each other. These include a joint Research Results Digest (*TCRP 65/NCHRP 288: A New Vision of Mobility: Guidance to Foster Collaborative Multimodal Decision Making*), giving a brief overview of the research and findings; a Compendium on the enclosed CD-ROM, providing a detailed set of case examples and research methodology; and this handbook, which is designed to provide practical advice to those transportation professionals interested in identifying, implementing, and sustaining collaborative activities.

1.0 INTRODUCTION

The first question in considering the role of collaboration in transportation today is “Why is collaboration so important to transportation officials?” As part of this research, this question was posed to a wide range of transportation professionals in state, regional, and local transportation agencies; local transit operators; car-sharing firms; and full-service transportation management organizations. While the answers varied, the message was consistent: building successful alliances with other organizations, both public and private, is essential to “get the job done.”

Clearly, “the job” of most transportation managers has changed. For many years, it was the public sector’s job to provide basic transportation infrastructure—roads, transit, and airports. Today, transportation is considered part of larger societal strategies to improve air quality, provide access to jobs, stimulate economic growth, and enhance quality of life. As such, the public is demanding solutions that go beyond the ability of any one agency, or mode, to solve. This expansion of purpose requires a new approach, a new “vision of mobility,” namely management of the transportation network as a mobility “system.”

Today’s challenge for transportation managers is to manage the transportation system better. That means maximizing opportunities and dollars; making a commitment to seamless operation of transportation services; examining capacity investments from the perspective of mobility enhancement; and tapping into information systems designed to promote access to, and knowledge of, transportation services. Transportation managers must find creative ways to share ideas, information, funding, facilities, and even staff. This has led many

agencies to identify partners and to realign roles based on who can best deliver a given service or function.

Words of Wisdom on Collaboration from Focus Group Participants

- Customers and the general public are not focused on individual agency missions but are often more concerned about the services being provided (e.g., express bus service on a region's freeway system) that often require joint action. Collaboration is essential to delivering such transportation services.
- Collaboration fosters creative thinking and responses that may be beyond professional disciplines, employee backgrounds, and organizational missions. It also can lead to substantial expansion of problem-solving and communication skills on the part of the participants involved.
- Taking the first step toward collaboration, that is, deciding that participating in a collaborative undertaking is to the benefit of an organization, is often the most critical hurdle to overcome.
- Operations staff in one organization often establish informal coordination and collaboration mechanisms with the operating staff in other organizations. As you move up the hierarchy in an organization, however, collaborative efforts become more formalized and often more difficult.
- Public agencies may need to be more flexible in becoming effective partners in collaborative initiatives.
- Sharing goals was emphasized as an essential starting point in building trust, which often requires educating intended partners on the benefits of the collaboration. Thus, collaboration often does not start out as something everyone agrees to; but, as the benefits of such effort become clear over time, the participants become more willing to contribute to joint action.
- The collaboration journey can be very uneven; you will likely experience successes and setbacks. However, this uneven journey becomes easier if the need for the collaboration is clearly established at the beginning.

The purpose of this handbook is to provide overall guidance on the characteristics of successful collaboration and on the steps that can be taken to enhance the probability of success. A method for assessing the health of an existing collaboration is proposed that allows you to identify areas of weakness and thus areas where improvement can occur. For those wanting to develop a collaboration from the very beginning, or for those already in a collaborative effort who want to reach a more involved level of collaboration, a multistep strategy is described. This strategy is portrayed as a ladder representing the often difficult need to undertake multiple efforts to reach the level of collaboration necessary to achieve an original purpose, or, if you will, the need to climb a ladder to reach the height necessary to accomplish some task.

The research for this guidebook consisted of case studies of collaborative efforts in several policy/planning areas. Collaborations were examined relating to efforts in transportation

systems management and operations, responding to disruptions caused by unexpected or unusual events, managing transportation assets across modal boundaries, integrated traveler information systems, and integrating transportation and land use strategies. True to the spirit of collaboration in developing this handbook, focus groups were also convened at national transportation conferences in 2003 to solicit input from those who have “seen it, done it, and been there.”¹ (Some observations made by members of the focus groups are given in the accompanying boxes, “Words of Wisdom on Collaboration from Focus Group Participants” and “Further Words of Wisdom on Collaboration from Focus Group Participants.”) While there was considerable agreement about the factors that motivate and challenge collaborations, there were no simple answers when it came to implementing and sustaining collaborative activities. Indeed, numerous case studies of transportation collaborations in the U.S. and Europe found in the *Compendium*, on the enclosed CD-ROM, show a range of factors that led to overall success. (For more details on the research methodology or individual case examples, please refer to the *Compendium*.)

The audience for this handbook consists principally of two groups. The first includes transportation professionals who realize that collaborative efforts are necessary to accomplish their mission, but who do not know how to organize such collaboration. This group might include transit operators, metropolitan planning organization (MPO) planners, state department of transportation (DOT) officials, rideshare coordinators, transportation management association (TMA) staff, and local transportation professionals. The second group consists of organizations, groups, and individuals who do not have transportation expertise, but who want to work together with transportation organizations to achieve some common goal.

Given this dual audience, the language in this handbook is purposely kept nontechnical and jargon free. Symbols are used throughout the text to convey the aspects of collaboration that are important to overall success. “Road signs” provide special warnings as to the level and type of effort that might be required to best utilize this guidance (see Figure 1).

“There is a tremendous value in pulling groups together from across various disciplines and backgrounds, both within agencies and among agencies. This sparks improved communication, learning, and creativity.”

—Brad Mueller, Douglas County Community Development (Colorado)

¹ These focus groups were held in conjunction with the Rail-Volution Conference (a conference dedicated to the latest developments in rail transit), and the annual meetings of APTA, AASHTO, the Association of Metropolitan Planning Organizations (AMPO), and TRB’s Committee on Regional Transportation Operations Collaboration. Please see Appendix A for a complete listing of participants.




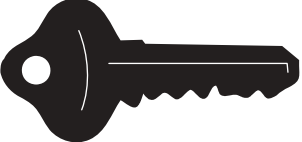



	<p>Key concept that provides an important guiding principle for successful collaborative efforts that are effective and credible.</p>
	<p>Steps that can be taken to deal with more complex (i.e., higher on the ladder) environments for collaboration. The higher the step, the more complex the organizational and personal interaction strategies that might have to be considered.</p>
	<p>Tools that can be used to conduct collaborative actions. These include specific strategies for bringing people together, as well as strategies for institutionalizing collaborative efforts.</p>
	<p>Key finding of this research on what makes collaborative efforts successful. These findings together present an overall strategy of implementing collaborative efforts.</p>
	<p>Benefits, outcomes, or products of collaborative efforts. These will vary by types of collaboration and the aim or goal of joint activities.</p>
	<p>The use of this guidance material should be undertaken with great caution and foresight as to the likely steps that will be necessary for success.</p>
	<p>Stop to consider what has happened and to determine the best strategy for future activities.</p>

Figure 1: Symbols Indicating Important Characteristics of Collaborative Decision Making

2.0 BASIC FOUNDATIONS

Effective collaboration depends on numerous factors that together lead to success. This section describes characteristics of collaboration that are important points of departure for the subsequent introduction of tools that can be used to help officials assess the health of current collaborative efforts or to develop new collaborative partnerships.

Defining Collaboration

Many terms have been used to describe the process of working together to achieve a common aim. In transportation, such terms as coordination, partnering, conflict resolution, and cooperation, to name just a few, are often used to characterize the efforts to develop joint actions. Although each has a specific meaning, these terms have often been used interchangeably. In this handbook, collaboration is defined as follows:

Col·lab´o·ra´tion: **A purposeful process of working together to plan, to create, and to solve problems and/or manage activities**

Several of the terms in this definition are important in understanding the different aspects of collaboration for multimodal decision making.

A purposeful . . . Successful collaboration must be serving a clearly articulated need. Thus, in the early stages of a collaborative effort, goals must be defined and agreed to. Not only does this keep subsequent activities targeted on the ultimate aim, but it provides a means of measuring progress toward this aim.

. . . process of . . . Collaboration is, at its fundamental level, a process. This process usually involves understanding the need for collaboration, identifying common goals, putting in place common communication strategies, and using feedback mechanisms that allow for collaboration strategies to be evaluated and modified over time in order to better respond to changing decision-making demands.

. . . working together to . . . Collaboration is a process of interaction among a group of individuals, groups, or organizations. However, collaboration is more than just interaction, it is a process of working toward commonly held goals. Thus, collaborative interaction implies working with others to achieve the goals articulated at the beginning of the process.

... **plan, create, and solve problems** and/or **manage activities**.

Collaboration can occur for a variety of reasons. Planning for joint action, creating new approaches to commonly perceived challenges, solving problems faced by more than one entity, and managing activities that involve the participation of several groups are four major reasons why collaborative efforts are undertaken.

Figure 2 shows where collaboration fits on a scale of trust and mutual interaction. Many organizations, having very specific mandates and mission statements, often find themselves in the lower left of this figure and, accordingly, have difficulty participating effectively in collaborative efforts. Isolation defines the lowest level of mutual trust and interaction in that there is little need and desire for any joint activity. For example, an organization's mission might be so clear and targeted on so specific a function that its goals can be achieved with little involvement of others. Collaboration, on the other hand, is heavily dependent upon a sense of trust among the participants and provides great potential for achieving a better integrated and balanced outcome as it relates to transportation mobility. Note that Figure 2 suggests that these different types of interaction could overlap. Thus, a collaborative effort might include some level of coordinated service provision, or a competitive relationship might very well involve areas of cooperation (e.g., a joint venture for consultants). Table 1 illustrates the differences between a collaborative approach to decision making and one based on competition.

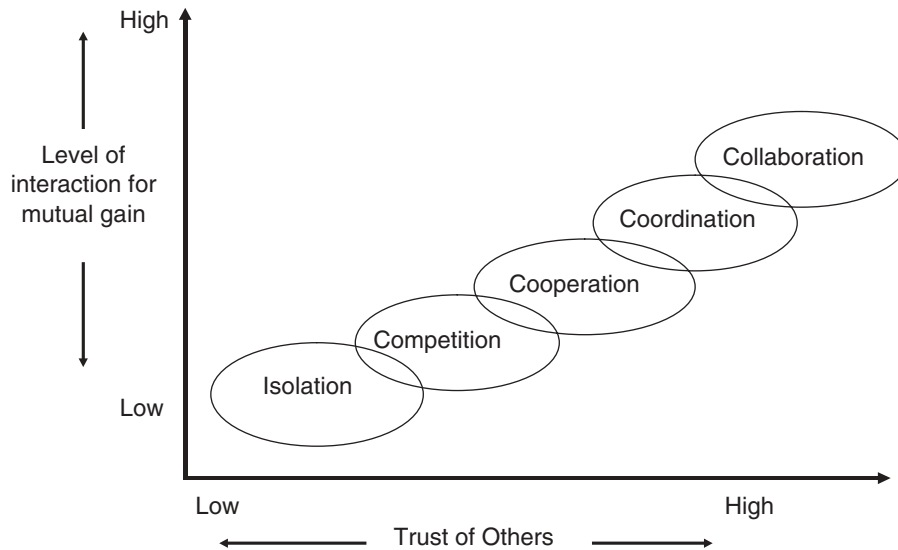


Figure 2: Collaboration on a Scale of Trust and Mutual Interaction

Table 1: Characteristics of Collaborative versus Competitive Interaction

Collaboration		Competition
Top leaders support collaboration	versus	Top leaders foster competition
Open communications	versus	Withholding of information
Common language and terminology designed to foster communications	versus	Different language and terminology designed to guard competitive advantage
Concern for mutual benefit and gain	versus	Focus on own interests
Emphasis on trust among participants	versus	Distrust of others
Respect for the interests of those collaborating	versus	Suspicion of the motives of others
Easy access to other partners	versus	Little interaction with others
Staff assigned to foster collaborative activities	versus	Staff assigned to encourage and attain competitive advantage
Readiness to be helpful	versus	Use of threats and coercion
Focus on joint problem solving	versus	Individual action to beat other competitors
Institutional mechanisms for joint action	versus	Separate structures for individual action
Reward staff who are successful in collaborative activities	versus	Reward staff who are able to beat the competition
Possible evolutionary growth into full partnership on many issues	versus	Little chance for cooperative partnership

Source: Based in part on M. Issenhart and M. Spangle, *Collaborative Approaches to Resolving Conflict*, Thousand Oaks, CA: Sage, 2000.

“If we are to engage successfully in collaboration, we need to identify clearly what we are trying to accomplish at the end of the day.”

—Gloria Jeff, Michigan Department of Transportation

Benefits of Collaboration

What are the benefits of collaboration? The answer to this question relates directly to why collaboration occurs in the first place. The compendium of case studies on the CD-ROM enclosed with this handbook describes many efforts at collaboration. In general, this research found the following reasons for collaboration:

- **Responding to public needs** that require multimodal or multijurisdictional strategies.
- **Utilizing new technologies** to integrate system and traveler information that crosses modal and jurisdictional boundaries.
- **Coordinating organizational actions** to maximize the effectiveness of infrastructure investment and transportation system operational efficiency.
- **Improving the probability of securing new funding** for your region or organization (by expanding the constituency base for your proposal).
- **Sharing the costs** of a program or policy initiative that a single organization or group could not afford.
- **Sharing the risks** associated with a new undertaking, which, if attempted by a single organization or group, would not likely be pursued.
- **Preparing for both planned and unexpected events** (such as freeway reconstruction and natural disasters) that could disrupt the transportation system.
- **Developing effective strategies to respond to or implement programs required by legislation** that have as their focus multimodal, multijurisdictional, and/or multidisciplinary solutions.

The benefits of collaboration thus range from enhancing the image of transportation agencies to more effective program delivery, with increased cost effectiveness the primary benefit identified in the compendium case studies. The accompanying box, “Why Has Collaboration Occurred,” illustrates why collaborative efforts have been undertaken. A subsequent box lists some of the benefits of collaboration in today’s transportation world.

“All the players in the collaboration must see that they each have something to gain. By perceiving such a gain, they will stay at the table when the process becomes difficult.”

—Ysella Llort, Florida Department of Transportation

Why has Collaboration Occurred?

The following examples (described in more detail in the compendium found in the enclosed CD-ROM) illustrate the different reasons why collaborative efforts have been undertaken by various transportation agencies.

Montgomery County, Maryland: The availability of both federal and state grant funding served as one of many catalysts for the development of a multimodal operations center with centralized computer-aided bus dispatch and traffic signal control. The initial collaboration occurred between two divisions of the Montgomery County Department of Public Works and Transportation that had responsibilities for road operations and transit services. Growing demands to centralize transit operations, an established culture of innovation in traffic management services, the availability of federal and state funding, and strong leadership from top agency management caused this collaboration to occur and to thrive up to the present.

New York City: The Port Authority of New York and New Jersey in 1986 formed a voluntary partnership of the key operating agencies in the New York region to act as a mechanism to exchange information on construction schedules. This original collaboration has now evolved into a regional information clearinghouse that disseminates system performance information to 16 member agencies and 100 affiliates, as well as serving as a test bed for the application of new technologies. The reasons for forming and the continuing evolution of TRANSCOM were primarily the mutual perception of a regional need (and avoidance of embarrassment when different agency construction projects conflicted) and the perception that information exchange, especially between transportation operators and emergency management agencies, needed a common home. This was especially found to be true in the regional response to the 9/11 attacks on the World Trade Center, where TRANSCOM was credited with providing important coordination and communication capabilities.

Houston, Texas: In 1993, the Texas DOT, the region's transit authority, the City of Houston, and Harris County formed a partnership called TranStar to serve as a forum for planning, designing, and operating the region's transportation system. All of the region's operating and enforcement agencies are part of this collaboration. The catalysts for this effort included a strong transportation professional desire to coordinate transportation system management in Houston, the existence of a regional "champion" in the form of Houston's mayor, and the existence of a federal demonstration project that required more formal inter-organizational agreements as a prerequisite for receiving program funds.

Oregon: In 2000, the Oregon DOT announced the creation of a statewide origin-destination public mode trip-planning information system. In developing this system, the DOT developed a collaborative planning structure with the state's transit operators and with public health providers who viewed this program as a critical element in reaching out to those in need of health services. The initial catalyst for this effort came from middle-level staff members who thought such a coordinated approach to trip information would be beneficial to the citizens of Oregon.

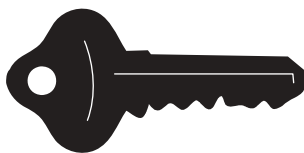
Note: More detailed descriptions of these case studies can be found in the enclosed CD-ROM.



The benefits of collaboration in today's transportation world are many and include . . .

- Improving communication among entities involved in regional transportation system management and operations.
- Ensuring more effective use of resources (dollars and labor) that relate to the desired outcomes (mobility, accessibility and environmental quality) of transportation system performance.
- Reducing the costs to participants through sharing of resources.
- Improving the quality of information to travelers on available services.
- Laying the institutional foundation for new actors and stakeholders to participate in transportation decision making as the need arises (e.g., public health, emergency management, and enforcement agencies).
- Reducing confusion and uncertainty associated with institutional responsibility for transportation system management.
- Bridging the divide between federal and state transportation planning and local government land use and decision making.
- Providing a foundation with one collaborative effort to build trust and enthusiasm for collaboration on subsequent projects.

Challenges to Successful Collaboration



Although the benefits of collaboration are many, there are often important challenges that can hinder success. These challenges relate to such things as the characteristics of the organizations involved, the historical context of previous attempts at collaborative efforts, poor interpersonal relations among the major participants, and insufficient dollar or personnel resources. The list in

Table 2 provides a starting point for determining whether serious challenges could exist in efforts to collaborate with other groups or organizations. In many ways, because collaboration among organizations succeeds only because of investment of time and effort by individuals having a capacity to work together, these challenges can also be applied to collaborative efforts among individuals as well. The accompanying box, “Challenges to Collaboration” lists challenges within an agency and external to it.

Table 2: Challenges to Successful Collaboration

Organizational Characteristics	
Organizational mission	Narrowly defined roles can be major impediments to working with other organizations that do not share the same mission. For major transportation functions—transit operations, traffic operations, infrastructure planning, design and construction—agencies have different perceived missions, priorities, and legal requirements. Often these missions also reflect different jurisdictional responsibilities and roles that can hinder collaborative action.
Organizational motivation	Although a mission can often explain why an organization acts the way it does, organizational behavior can be motivated by a variety of factors. Often, and especially when both public agencies and private firms are involved with a collaborative undertaking, a lack of understanding of what motivates the behavior of others can hinder joint action.
Standardized practice or standard operating procedures	Organizations often establish standard practices when facing situations that occur repeatedly. Thus, for example, most design manuals or transit operating guidelines provide standard responses to the types of decisions facing agency personnel. However, in many cases, the public today demands more tailored responses targeted at very specific needs, thus requiring a more flexible and creative response from the organizations involved.
Organizational culture	Organizational culture includes the concepts of mission, motivation, and standard practices, in addition to the history of interaction and the type of personnel (and their education and training) that are found within an organization. Thus, for example, an agency might be very hierarchically oriented with respect to decision making, where this decision making is driven by data and technical information.
Organizational inertia	In many cases, there is great reluctance to do anything different; in other words, there is often great comfort in the collective advantages of maintaining the status quo. It is thus often difficult to get an organizational commitment to work together, especially on an issue for which there is no track record of accomplishment or success.
Professional mindset of dominant organizational groups	The professional mindset of dominant groups in an organization can strongly influence the way an organization behaves and responds to challenges. Transportation is a complex field that fosters technical specialization, resulting in organizational fragmentation and the development of standardized approaches to solving problems.
Language barriers	The reliance on technical specialties in transportation often lends itself to the use of different vocabulary, acronyms, and terminology among the many different disciplines involved. For example, planners, traffic engineers, urban designers, developers, elected officials, and enforcement personnel often use different terms. This lack of a common language often creates great challenges in communicating key concepts.
Uneven playing fields in the institutional environment	In many cases, not all potential members of a collaboration have equal power or influence. Those having control of financial resources or having legitimacy due to legal mandate can often have greater say in collaborative efforts.

Interpersonal Relationships	
Personal dynamics	Collaboration depends primarily on establishing trust among the participants involved in the effort. Organizational barriers might stand in the way, but on a personal basis, collaboration can still occur within these boundaries as long as everyone trusts the other actors. In some cases, due to personalities or personal history, establishing such trust is a very difficult undertaking.
Established behavior	Some individuals have difficulty thinking beyond the “way it has been done for the past 40 years.” Through many years of experience, promotion guidelines, or training, they have come to believe that there is only one right way to do something and that any deviation is unacceptable.
Resources	
Insufficient dollars	This is often one of the most difficult challenges. Many collaborative undertakings require the sharing of costs and thus the need for participants to support financial efforts that are often at the fringe of their main mission. This is especially critical in the initial start-up phase of collaborative activities where, in the short term, financial resources are needed that can usually only come from limited budgets that are mostly allocated to other programs.
Inadequate information or communication sharing	Information and communication systems are an important resource in support of collaborative efforts. Not having the ability to communicate and exchange information because of incompatible information systems or due to inadequate organizational support of such systems can seriously degrade efforts to establish effective collaboration.
Insufficient staff	Many examples of collaboration require staff support to establish joint ownership of a particular initiative. This support might be nothing more than organizing and staffing meetings, or could be as significant as conducting detailed assessments of the technical and/or institutional feasibility of actions that are being considered. In either case, the assignment of adequate staff time is critical for overall success.
Changing staff	For collaborations that last for some time, it is likely that new individuals representing collaboration partners will join the effort, while others will leave. Each staff turnover could result in the need to educate the new participant in the goals of the effort, what has been done to date, and what has yet to be done. In preparation for staff changes, the collaboration management should engage in succession planning.
Inadequate analysis tools	Many collaborative efforts focus on transportation issues that include different modes of transportation and many different professional perspectives. This research found that few analysis capabilities exist to understand and assess multijurisdictional and multimodal strategies. Thus, for those collaborations that require a good analysis foundation for understanding the problem and needs, inadequate analysis capability could be a significant challenge.

A survey of participants in special events planning identified the following challenges in conducting successful collaborative efforts:

Challenges within the agency

- *Communication challenges* (misinformation, untimely information)
- *Agency roles and awareness* (lack of operations focus, lack of media involvement, isolationist staff attitudes)
- *Resource challenges* (lack of personnel, equipment, training, funds; untimely mobilization of resources)
- *Administrative and commitment challenges* (unsupportive organizational structure for multi-agency activities, lack of accountability, lack of coordination).

Challenges external to the agency

- *Communication challenges* (misinformation, untimely information)
- *Agency roles and awareness* (lack of common goals, teamwork, trust, experience and training, proper oversight; indecision; and political pressure)
- *Resource challenges* (lack of time, access, equipment, technical support, crowd control resources, and traffic control resources)
- *Administrative and commitment challenges* (lack of administrative support, lack of coordination, unsupportive organizational structure for multi-agency activities, and dynamic organizational structures)

Source: Carson and Bylsma, 2003

Collaboration as a Process of Climbing a Ladder

This research began with a goal of developing guidance for the transportation profession on how to form successful collaborations. As the case studies progressed, however, it became clear that there were two important contexts for collaboration that deserved attention in this handbook. First, for those situations where a collaboration currently exists, how can the effectiveness or health of this effort be assessed so that possible actions to improve this effectiveness can be identified? In this context, there is not necessarily any desire to take the collaboration to a new level of effort or complexity, but simply an answer to the question, “How can the collaboration be made more effective?”

Second, many of the case studies illustrated the point that successful collaborations have often had, at their foundation, strong interpersonal and interorganizational relationships resulting from previous collaborative efforts among the participants. Thus, for example, most of the regional transportation management centers in U.S. cities have evolved from much earlier efforts at collaboratively dealing simply with incidents on a region’s road system. This evolution from incident management to regional transportation system management has usually followed several evolutionary steps that have collectively defined the relationships among the participants. Another example of the evolutionary nature of collaboration was found in the planning for natural disaster recovery. The initial efforts at examining how transportation services

needed to work together in times of stress led many to ask, “Why can’t we work together in normal times as well?”

This second context for collaboration leads to the need for guidance that focuses on the more dynamic nature of the evolution of collaborative efforts over time. That is, if an existing collaboration wants to evolve to something more complex or involved, how can this be done? What needs to occur for the early stages of this evolution to serve as a strong foundation for subsequent evolutionary steps?

This evolutionary nature of the collaboration process can be visualized in many different ways. Some in the research focus groups suggested that a “recipe” might be a good analogy in that there are many different ingredients that need to be mixed together in just the right amounts to produce a successful collaboration. Still others suggested the use of a “construction crane” as the most appropriate image because the results of the collaboration case studies point to the very carefully constructed institutional relationships that served as the foundation of evolving collaborative efforts. However, given the nature of the successful progression from one level of collaboration to another as found in the case studies, a ladder was chosen as the best analogy.

Successful collaboration often depends on taking a series of increasingly more difficult steps (moving up the ladder) to reach the desired result (reaching the rung of the ladder that satisfies your needs). Thus, for example, developing a metropolitan-wide traffic management control center that depends on the collaboration of many different transportation system operators, emergency response organizations, and public safety agencies could start with an initial step of simply understanding the goals and operating procedures of those involved and eventually lead to taking the final step of agreeing to joint funding and operating procedures. The intermediate efforts in between these two steps represent actions needed to build the trust and working relationships that serve as an important foundation for joint ownership and operation of the control center.

In many cases, the initial steps taken for one purpose can, many years later, serve as a foundation for collaborative efforts to meet other challenges. The ladder thus serves as a symbol of the evolutionary nature of collaboration, that is, you can start climbing the ladder and remain at a certain collaborative level for some time, but then, given a need, start to climb again.

Finally, just as when building a house, many different ladders are needed. One ladder will most likely not serve all of the possible collaborative needs of a state, region, or institutional structure. In some cases, given the nature of the challenge being faced, you might only need a small ladder; that is, there are not that many steps to be taken. Goals can be achieved, and thus barriers to collaborative efforts that are related to this specific problem overcome, without having to spend much time worrying about how to address more complicated issues. In other cases, the progression of necessary steps to achieving the goal requires the consideration of many different strategies and, most likely, increasingly more significant commitments of time and resources. Such collaboration usually builds upon initial, easier steps and progresses to harder and potentially riskier steps. In this situation, a longer ladder is required.

Further Words of Wisdom on Collaboration from Focus Group Participants

- In the transportation sector, the overall availability of, and project eligibility for, government funding programs can become an important challenge to a collaboration.
- A major barrier to collaboration is often a reluctance to accept risks . . . This has been true for both public- and private-sector organizations.
- Lack of leadership at critical times and loss of leadership after the process has been underway for a period of time can represent serious setbacks to successful collaboration.
- Crises or the threat of crises can be an important motivator for putting in place collaborative frameworks that can serve as the foundation for further joint activities.
- Higher rungs of the collaboration ladder (that is, more complicated efforts at collaboration), which represent more formalized interaction, can often be difficult to attain. In many cases, collaborative efforts work well until initiatives are taken to institutionalize relationships in formal agreements. Such agreements often commit agencies to certain courses of action, which are often reviewed for legal, institutional, and political consequences.
- Fostering public awareness of a collaboration and of what it can produce is a good strategy to weather changes in leadership. If the public has come to expect collaborative undertakings from a group of organizations, it will be difficult for new leadership to disband this group.
- The external environment for collaboration is often characterized by some players having more influence than others. Federal and state agencies, for example, often have funding, permit power, or some other authorizing influence. This unequal distribution of influence could even be ingrained in the proposed decision-making process for the collaboration, possibly resulting in the less-than-enthusiastic participation of those not in the decision-making circle.

The following sections present a method of assessment that examines both collaboration contexts mentioned above. The next section describes a self-assessment tool that can be used for those currently in a collaboration who want to know what steps can be taken to improve its overall effectiveness. The following section presents a methodology that identifies the actions that are necessary to move from one level of collaboration to another or, in the terms of this handbook, from one step of the collaboration ladder to the next.

Assessing an Existing Collaboration—How Steady Is the Collaboration’s Position on the Ladder?

The case studies found in the *Compendium* illustrate four major characteristics of a collaboration that become important evaluation criteria categories for the assessment of an existing collaboration:

- A successful collaboration must have a **basic foundation** in terms of the stated need, goals and resulting benefits;
- There should be strong **leadership** from some members of the collaboration;
- An effective **process** of collaboration must be in place in terms of participant responsibilities and the level of trust engendered; and
- **Organizational support** should be provided by those participating in the collaboration.

A self-assessment tool, referred to as a scorecard, can be used to evaluate the effectiveness or health of an existing collaboration. In order to demonstrate the use of this tool, Table 3 presents such a scorecard as though it had been completed by a hypothetical collaboration.

The questions were answered on a scale from “strongly disagree” to “strongly agree.” After all the questions were answered, the numbers in each column were added and multiplied by the weight given at the bottom of that column. These column scores were added to get an overall score. The overall score indicates the assessment of the health of the collaboration, as described at the bottom of the score sheet. By identifying those questions receiving poor scores, those aspects of a collaboration that need more attention can be identified. As can be seen, the higher the score, the healthier the collaboration. (Note: A blank scorecard is provided in Appendix B.)

In the case of the hypothetical collaboration assessed in Table 3, the scorecard has a score of 50, which places the health of the collaboration in the lowest category. This implies that the collaboration is experiencing serious problems and remedial action needs to be taken to increase the health of the collaboration. Officials would look especially at those questions with marks in the first two columns and adopt strategies to improve those scores. Strategies for doing this are discussed later in the handbook.

Although this scorecard will most likely be filled out by an individual, you can also have all members of the collaboration use the scorecard, add the scores, and divide by the number of people filling out the scorecard to get an average score. In this case, because averages will tend to mask some of the variation in individual responses, it would be appropriate to identify the range of responses for individual questions to determine whether there is a wide variance in the degree to which a positive response was provided. Thus, although, the average response might show a positive feeling toward that particular aspect of the collaboration, a strongly negative response from one or more members of the collaboration (and particularly if this response comes from influential or powerful participants) could foretell problems ahead. In this case, it would be to the benefit of the collaboration for the issue to be addressed.

Table 3: Self-Assessment Scorecard for Determining the Health of a Collaboration

Factors for a Healthy Collaboration	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Basic Foundations					
1. The need for the collaboration has been clearly established				X	
2. The goal(s) for the collaboration have been clearly articulated and understood				X	
3. Intermediate and long-term achievement benchmarks have been established		X			
4. All the necessary partners are involved in accomplishing 1 to 3 above		X			
5. The benefits of participating in the collaboration are clear to each participating organization/group.		X			
6. This collaboration could very well lead to other collaborations in the future		X			
Leadership					
7. Leaders of the participating organizations clearly support the collaboration		X			
8. Leadership responsibilities have been spread fairly among the participants			X		
9. The leadership of the collaboration itself (e.g., who chairs meetings?) is clearly defined and accepted by others				X	
10. The collaboration would survive a change in agency representatives participating in the collaboration		X			
The Process of Collaboration					
11. Participant responsibilities have been clearly defined			X		
12. The right expertise is available as part of the collaboration		X			
13. Effective communication occurs among collaboration participants e.g., everyone is using a common language		X			
14. The level of trust among collaboration participants is high			X		
15. The collaboration is building lasting relationships among the participants			X		
16. There is effective feedback to the collaboration participants on the effects of previous decisions	X				

(continued on next page)

Table 3 (continued)

Factors for a Healthy Collaboration	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Organizational Support					
17. Participating organizations and/or groups have contributed their fair share		X			
18. Representatives of participating agencies/groups are being supported by their home organizations			X		
19. Individuals are being recognized or rewarded for their participation in the collaboration		X			
20. The resources available for the collaborative effort will be (or are) adequate to achieve the collaboration's goals		X			
Number of Ratings in this Column	A	B	C	D	E
	1	11	5	3	0
Weighted Score	A	2 x B	3 x C	4 x D	5 x E
	1	22	15	12	0
Total Score	A + (2 x B) + (3 x C) + (4 x D) + (5 x E)				
	50				
50	Score Range		Collaboration Health Assessment		
	≤ 50		The collaboration is experiencing serious problems, and remedial action needs to be taken to increase the health of the collaboration.		
	$51 \leq \text{Score} \leq 74$		The collaboration is functioning, but there is room for improvement, especially if there is a desire for this collaborative experience to lead to further efforts.		
	$75 \leq \text{Score} \leq 100$		The collaboration is healthy and can serve as a strong foundation for further collaborative efforts in the future.		



The ranges in scores shown in Table 3 for classifying the health of the collaboration (that is, ≤ 50 , $51 \leq \text{Score} \leq 74$, and $75 \leq \text{Score} \leq 100$) assume that all 20 questions are answered. This might not be possible for a collaboration that is in the early stages of development or for a participant who has recently joined the effort. In such cases, *the assessment should only include those questions that are relevant to the stage the collaboration is in*. The score ranges in the health assessment checklist must be changed accordingly. Appendix C describes a methodology for doing this.

If, after conducting the self-assessment exercise, none of the collaboration health criteria seem troubling, the members of the collaboration should be congratulated. The collaboration is on a very healthy foundation and should continue to prosper. However, if a number of troubling characteristics of the collaboration have been identified, steps need to be taken to modify either the basic foundation, leadership, process, or organizational support characteristics of the collaboration.

3.0 THE EVOLUTION OF COLLABORATIVE RELATIONSHIPS— MOVING UP THE LADDER

Collaboration is a journey of many steps. Some of these steps can be relatively straightforward, while others require thoughtful consideration of the dynamics associated with the different organizations and groups involved. As noted earlier, of all the images that could represent the changing nature of collaboration, a ladder was chosen as best illustrating the collaboration journey. In particular, a ladder reflects movement toward a desired goal and, in many cases, movement to a higher level of achievement. Also, you do not have to climb to the top of a ladder to accomplish something; you only need to use the lower rungs to reach something that is not very high, that is, is not very challenging.

Many different individuals representing a variety of organizations and groups will be part of a collaborative effort, thus the ladder of collaboration could be very crowded! However, as long as the ladder is well-grounded on firm principles of successful collaboration, it will not tip over.

! Successful collaborations do not have to be complex. In some cases, they can be achieved within a very short time frame or by taking a few steps on the ladder, depending on the goal. !

Observations in Advancing Collaborative Relationships

Getting to the ladder could be the greatest challenge of all



Entering into a collaboration usually implies something out of the ordinary. Most importantly, it means that there needs to be a really compelling sense of the benefit that will accrue with joint effort over and above that which could be attained through individual action. It represents activities that often require sharing of information and resources, with uncertainties associated with where your participation could lead you. There is thus a tendency on the part of many organizations to avoid the potential risks associated with collaborative undertakings. Getting organizations, groups, and/or individuals to the ladder of collaboration could be a significant challenge.

Taking the first steps up the ladder establishes the foundation for trust and communication necessary for later steps



As experience is gained with the initial steps of collaboration, confidence grows in taking further steps. Not only do these first steps establish the ground rules for how this collaboration will evolve, but they also build the interpersonal relationships and trust that serve as the foundation for different collaborations in the future. In addition, these first steps provide the common language of communication that will be used in future efforts.

In many cases, you might start a collaboration already on the ladder



Collaboration establishes important personal and organizational relationships that enable further collaborative efforts at a later time. For example, many of the case studies of regional traffic management found in the *Compendium* show that more recent collaborations have evolved from partnerships created many years ago for coordinated freeway incident management. Additional collaborative programs could occur years later because of this earlier activity.

The taller the ladder, the greater the challenge and, perhaps, the greater the risk



The more steps that need to be taken to achieve a collaboration's goals, the more commitment is often necessary from the participants. For example, developing a collaborative regional transportation management center (a program goal that would likely need a tall ladder) could very well require the reallocation of budget, a relinquishing of some autonomy over certain aspects of transportation system operations, and the reassignment of staff.

Without care (and nurturing), you could fall off the ladder



Building the foundation for a successful collaboration is not a one-time effort. With changes in participants (e.g., newly elected or appointed officials) and the changing dynamics of a particular initiative (e.g., the sudden elimination of a funding source or the emergence of unexpected project dollars), an apparently solid foundation of collaboration could fall apart. Falling off the ladder could, at a minimum, mean you will have to start over. In the worst case scenario, the fall could really hurt and cause the fallen participant to think twice about climbing the ladder again.

Is moving up the ladder necessary for a collaboration to be successful? NO! Whatever climb is sufficient to satisfy the goals and requirements of a collaborative effort is only as far as you have to go. However, it is interesting to note that the higher on the ladder you go, the more the nature of the collaboration usually changes. In particular, moving up the ladder results in changes in the characteristics of the collaboration process, as shown in Figure 3.

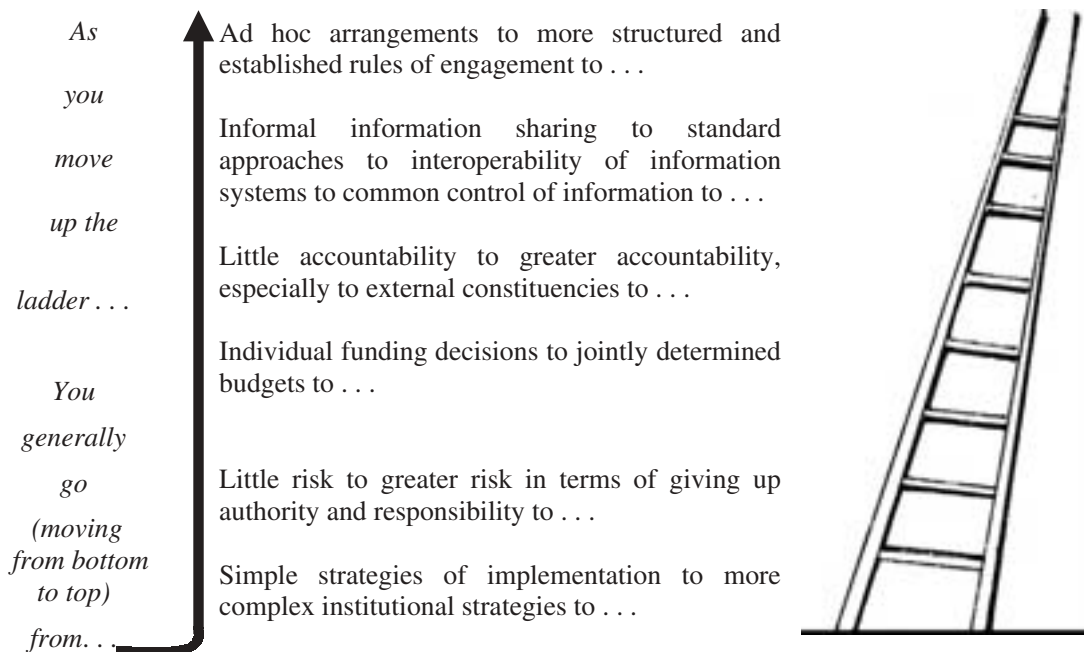


Figure 3: The Changing Characteristics of Collaboration

Step 1: Sizing up and making the ascent: Onward and upward!

There are many reasons why an organization or group would participate in a collaborative effort. In some cases, the reason might be a perception of gain to the organization, while for others it might be mandated. Thus, one of the initial thought processes in considering the creation of a collaboration is to identify the reasons why key participants would want to be part of the effort and, from a strategic perspective, developing incentives for their participation. Important questions include the following:

- Who are the important potential participants in the collaboration? And which ones are critical for a successful outcome?
- Why would these participants want to be part of a collaboration? What benefits would they likely experience participating in the collaboration?
- How will these participants likely view the challenge being faced and the likely activities of the collaborative effort?
- Are there influential champions for the collaboration who can convince others to participate? Or, if you are such a champion, are there cochampions that can help you organize the collaboration?
- If no champions exist, what incentives or rationale can be put in place to encourage the willing participation of key agencies and groups?

Many of the examples of collaboration in this research showed the importance of a champion in convincing others that the mutual gain from joint activity far outweighed any costs associated with the effort. Such a champion is particularly effective when he or she not only brings energy and excitement to the collaboration but also has authority to commit an organization to a particular course of action.

In the absence of a champion, other strategies will most likely be necessary to bring people to the ladder of collaboration. In many cases, the participation in a collaborative effort requires the approval of top management, even though top managers themselves will often not participate in day-to-day activities. Thus, one set of strategies would be targeted at top managers, convincing them that participating in the collaboration will benefit their agency. Another model of bringing people to the ladder is a bottom-up approach, that is, engaging key individuals in the mid-levels of an organization in order to illustrate the benefits of such an effort. In this case, the creation of champions occurs among those who produce the product or service of the organization on a daily basis. The benefits of such collaboration are then communicated to higher levels of the organization as a strategy for improving the effectiveness of the organization.

The existence of a champion is an important factor in getting others to participate in a collaboration. Characteristics of these champions include individuals who . . .

- Are willing to take risks
- Hold a position of influence or leadership within an organization
- Either through personality or position are able to get others to the ladder
- Are able to see the big picture
- Have thought through the reasons for the collaboration and are able to articulate them
- Have developed a support structure for the collaboration before the first formal activities occur
- Often bring resources to the collaboration
- Are respected and trusted by other members of the collaboration

Very little has been written on the strategies for getting people involved in a collaboration. Based on the results of this research and a review of relevant literature (primarily in the field of organization change), a range of strategies can be considered, each depending on an individual assessment of the potential risks and likelihood of success associated with each. These strategies are presented in Table 4 in increasing order of potency.

The selection of one of these strategies should be done with careful consideration of how the potential participant will likely view it. In addition, Table 4 presents the strategies in increasing order of negotiation. Thus, the first set of strategies might be tried before proceeding to the latter strategies. For example, the Pressure strategy might not be used until the Rightness-of-Cause or Trusted Emissary strategies have been tried first. So, just as the ladder of collaboration represents an evolutionary taking of steps to reach higher levels of collaboration, the strategies for getting everyone to the ladder can also be viewed as a series of steps that range from simple persuasion to negotiated participation.

A champion is particularly effective when he or she brings not only energy and excitement to the collaboration but also has authority to commit an organization to a particular course or action.

Table 4: Strategies to Get People to the Ladder of Collaboration

Strategy	Logic
It's the right thing to do! (Rightness of Cause)	You should participate because it is the right thing to do. The result of the collaboration will be so beneficial for the common good that it is something that all responsible organizations should do.
You are too important! (Ego Appeal)	You should participate because we cannot possibly succeed without you. What you bring to the collaboration is so essential to our overall success that we must have your participation.
You want to do what? (Enlightened Self-Interest)	You won't be able to accomplish what you want without working with partners.
The train is leaving! (Left Behind)	This is going to be such an important milestone in the region's history that you should be part of the effort...you need to get on board!
Others want you to do it! (Pressure)	You should participate because others (key opinion makers, the media, influential policy makers, peers) want you to. (This, of course, suggests that a conscious effort is organized to apply pressure)
Your peer says it is the right thing to do! (Trusted Emissary)	You should participate because a peer you trust (e.g., another state DOT or transit agency) has participated in a similar activity and has found great success. (This strategy is even more effective if the peer visits the individual you are trying to convince)
Let's work this out. (Facilitation)	A third-party facilitator manages an information exchange or decision-making forum where the benefits of participation are identified and conveyed in simple yet forceful terms.
What do you want? (Package Deal)	You will certainly benefit from participating in this collaboration. In particular, what is it you want from this collaboration?
You will... (<i>Thou Shalt...</i>)	You will participate...end of story. (This strategy, of course, assumes that someone has the authority to order participation in the collaboration).

Based in part on Meyer and Lloyd, "Strategic Approach to Transportation Project Implementation: The Boston Auto-Restricted Zone," *Transportation Policy and Decision-Making*, 2: 335-349, Nijhoff Publishers, 1984.

“How do you get people to the table? It involves trust, a champion, and a matter of substantial importance to each of those parties.”

—George Scheuernstuhl, Denver Regional Council of Governments

Step 2: Scaling the first rungs: Identifying and acknowledging common purpose, motivation, and needs

The second step in the model of the evolution of collaboration represents a consciousness-raising effort to define a common purpose for the collaboration, understand the motivation and constraints of the participants, and identify the needs that these participants have in participating in an effective manner. Important questions to ask include the following:

- What is the purpose of the collaboration? Has it been clearly stated?
- How will progress be measured? Will this definition of progress be acceptable to those participating in the collaboration?
- Are there communication barriers to be overcome among the participants in the collaboration (the first sign of this is a tendency to speak in acronyms)? Do those in the collaboration need to agree on a common set of terms?
- How will success (or failure) affect each participant? Which of the participants will benefit the most from success or be hurt the most from failure?
- What will each participant need in terms of resources and mutual support to participate effectively in the collaboration?
- What does each participant bring to the collaboration? Is this contribution sufficient to achieve the desired goals?
- Do participants trust one another? If not, what is the best way to establish trust among the participants?

! *Although long-standing organizational and personality conflicts and uneven playing fields can weaken the initial steps in developing a collaboration, every effort must be made to develop an honest and open relationship among the participants as early as possible.* !

In many ways this step represents the process of building the interpersonal relationships and trust that are critical to successful collaboration. Expectations must relate to the institutional reality that the participants are in. This learning process is especially critical when participants come to the collaboration from dramatically different backgrounds and motivational contexts (e.g., participants from both government agencies and private firms).



Are the results from Step 2 sufficient to meet the needs of your collaborative effort? If so, proceed to Step 10; if not, proceed to Step 3.

Step 3: Establishing a firm footing: Ground rules and a decision-making framework

The third step establishes the framework for how the collaboration is going to operate, who will be making decisions, and how these decisions will be made. The ground rules for collaboration could vary significantly depending on the context of the challenge being faced. For example, if agencies are facing a very specific target date to accomplish some objective—such as the opening of an Olympic Games, a major national convention, a funding grant deadline, or the beginning of a major reconstruction project on a critical transportation facility—then the time frame for the collaboration becomes very clear. With such a specific deadline, Step 3 becomes a critical step in the collaboration process, as well as somewhat easier to achieve. A sense of urgency in accomplishing the goals of the collaboration creates a catalyst for coming to agreement on the ground rules and on the process of decision making. In a deadline-specific situation where agreement cannot be reached, it is often common to appeal to higher level decision makers to make the decision for the collaboration.

“For effective collaboration, you need to define partner roles and responsibilities. This was essential in our collaboration for MetroRapid so that it was clear the transit agency would not be taking over the roads and the road agency would not be taking over transit operations.”

—Jim de la Loza, Los Angeles County Metropolitan Transportation Authority

Perhaps the most challenging situation for this step is when there is no deadline or sense of urgency associated with proposed joint action. In such a case, efforts must be made to develop by consensus the ground rules that will be followed. The best strategy for doing this is for the champion(s) of the collaboration to develop a proposed set of rules that can be the focus of initial discussions. These ground rules should be sensitive to the needs and motivations of those who are participating but should clearly lay out a process that will result in achievement.



The worst possible scenario is to develop a process of interaction and decision making that does not lead to specific intermediate and long-term achievement of the goals of the collaboration.

Important questions to ask in this step include the following:

- Who should take the lead in developing a proposed set of ground rules and a decision-making framework? Does this decision-making framework need to be formal or can it, for the time being, survive on an ad hoc basis?
- How will the needs and concerns of all the participants be reflected in the established process of decision making?
- What are the key intermediate and long-term results that are desired from the collaboration, and how does the decision-making framework lead to these results?
- What are the individual decision-making roles for those involved in the collaboration? (For example, in some cases, decision-making authority is given to an executive committee, with other participants having an advisory role)
- Do those participating in the collaboration have the authority to commit their agencies or groups to carrying out jointly made decisions?
- Who at the higher levels of authority might have to be called upon to make decisions in the event of an impasse; that is, who will be the arbiters?

This step is a critical benchmark for establishing the credibility of the collaboration process. Given that many participants could come to the collaboration with their own objectives, expectations, and agenda, the dynamics of how Step 3 is accomplished will critically affect the willingness of participation. In some cases, one agency having ultimate responsibility for the subject of the collaboration might take the lead (e.g., a state transportation agency with responsibility for a freeway network in the case of a regional traffic management center). In others, a shared leadership role might be adopted where it is not clear that one agency has the ultimate authority (e.g., a cochairing by a transit agency and a city transportation department for special events planning). In still others, the leadership of the collaboration might be rotated among a subset of the leading participants to reflect the important contributions that each could make.

“For collaboration to be successful, we need to define clearly what problem we are trying to solve, and who the ultimate customer is that benefits.”

—Sally Thomas, County Supervisor, Abermarle County, Virginia

Many of the examples examined in this research showed that this step is often undertaken on an ad hoc basis. This is especially true when the collaboration includes the participation of local governments or agencies. Local governments often do not work in hierarchically structured committees and task forces and usually have only one or two individuals who can participate in a collaborative effort.



Are the results from Step 3 sufficient to meet the needs of your collaborative effort? If so, proceed to Step 10; if not, proceed to Step 4.

Step 4: Stepping up to the challenge: Determining who will assume responsibility for collaborative activities

Establishing a decision-making framework is often not enough to support a collaborative effort. In many cases, analysis must be conducted to better understand the technical nature of the challenge being faced. The development of a jointly funded work program is an important step for getting collaboration participants to “buy into” the process that is going to be followed. These work activities should be closely tied to the types of decisions that will have to be made by the collaboration partners.

One of the important issues that must be addressed at this step is the assignment of staff responsibilities for required tasks. The most successful examples of collaboration in the *Compendium* have dedicated staff resources to the collaboration, either permanently or on a short-term assignment basis. However, just adding such responsibilities to existing staff work loads might overwhelm the very best staff members in an organization. So, not only will it be necessary to determine which participant of the collaboration will undertake or support various technical activities but also careful thought needs to be given to which staff member(s) in each participant’s organization will be involved with the collaboration. Important questions to ask in this step include the following:

- What are the critical decisions that will have to be made over the life of the collaboration? What type of information will be necessary to support these decisions?
- What staff, financial, and information resources are available to make the work program successful? What resources are needed?
- Is the work program consistent with the cultural norms of the organizations that are participating? If not, where will opposition to the work program likely arise?
- Who should have what responsibilities for individual work tasks?
- What is the time frame for accomplishing different parts of the work program? Is this time frame consistent with the timing of the challenge being faced (e.g., an Olympics transportation program in place by the opening of the Games)?

The work program provides the technical basis and justification for the decisions that are made later. Although this analysis is undertaken in a proactive way, that is, it informs decisions, it can provide the justification for why certain decisions were made in some potentially controversial cases. For example, in preparing for a special event, some of the services provided might not have turned out to be as successful as expected. If attention is brought to this fact by the media or by top management, having analysis results that show why the decision was made can be important for answering these questions.



Are the results from Step 4 sufficient to meet the needs of your collaborative effort? If so, proceed to Step 10; if not, proceed to Step 5.

Step 5: Establishing communication capabilities among those on the ladder: Sharing information

As the adage says, information is power. One of the defining characteristics of the structure of most transportation systems in the United States is the separate responsibility given different agencies. Some organizations are responsible for the road system, while others are responsible for transit, emergency response, and human resource services. Each of these organizations collects data and produces information on the performance of the transportation system or of their services. This step on the ladder of collaboration establishes a protocol for sharing this information, thus leading to an information database that can be used by any of the partnering organizations for conducting their own activities.

Important questions to ask in this step include the following:

- Who are the target audiences for decision-making or operations information?
- What are the critical pieces of information that need to be obtained for effective coordination?
- Who collects and analyzes the data that form the foundation of this information?
- Are consistent formats, terminology, definitions, and technology used in order to foster information sharing? If not, how will such a consistent framework be developed?
- Who will take responsibility for the overall communications system? Will it be centralized? Or will it be coordinated centrally but distributed among collaboration participants?
- How will the purchase and on-going costs of shared information and communications systems be funded? What type of updating strategy (and thus sharing of costs) will be necessary to ensure that these systems stay up to date?

This information sharing is particularly important for collaborations that target improved customer-oriented transportation services as their ultimate goal. Thus, for example, the coordination of transit schedules or the creation of a compatible regional fare system requires that participating agencies provide information about how their own systems are used by the travel-

ing public. Or, a regional traffic management system that is dependent on the participation of those agencies that own and operate individual elements of this system will most likely require a sharing of information on how each element is used by travelers and the types of actions practiced by the responsible agency.



Are the results from Step 5 sufficient to meet the needs of your collaborative effort? If so, proceed to Step 10; if not, proceed to Step 6.

Step 6: Starting to climb higher: Coordinating activities of partner organizations, with each organization using its own standard procedures

This step on the ladder of collaboration requires potentially significant changes in the operations of individual organizations. This level of collaboration implies that, although organizations will modify their own operations or operating procedures in order to accomplish the goals of the collaboration, the organizations still retain control over the procedures themselves. Thus, for example, transit scheduling will still remain the purview of the transit agency, but new schedules that provide for improved transfers with other travel modes might be developed in response to strategies adopted by a collaboration. Or, coordinated agency preparation for special events might require changing traffic management patterns, transit service frequencies and routing, and the assignment of enforcement personnel, all done in response to strategies identified by a collaboration but remaining under the control of the respective agencies.

Important questions to ask in this step include the following:

- Is the decision-making structure established early in the collaboration still sufficient to provide the level of coordination needed at this step on the ladder? If not, what changes should be made?
- What components of the outcome of the collaboration need to be coordinated? Who is responsible for each component?
- What do each of the collaboration partners have to give up (if anything) to provide for coordinated activities?
- Are the standard procedures of partner organizations as they relate to collaboration goals sufficient to ensure coordinated outcomes?
- How visible will the ultimate outcomes be to the public? Does such visibility create additional pressure on the collaboration for overall success or make the chance of failure less acceptable?

- What feedback mechanisms will be used to make sure coordination is occurring and that the activities will lead to the desired outcomes?
- What decision-making structure is in place to make changes to the coordination strategy if it is not producing the desired outcome?

The effectiveness of this step is directly linked to the ability of partner organizations to use or modify their own procedures to participate in the coordination activities. In some cases, this might be difficult, either because of long-standing historical precedents, or because of the perceived disruption in agency activities. If such is the case and the participation of the organization is critical to the overall success of the collaboration, then the collaboration leadership needs to develop a strategy to convince this organization of the benefits of such participation.



Are the results from Step 6 sufficient to meet the needs of your collaborative effort? If so, proceed to Step 10; if not, proceed to Step 7.

Step 7: Making the ascent: Coordinating activities of partner organizations with mutually-agreed-upon standard practices established by the collaboration

The next level of potentially significant change to an individual organization's operations will be jointly developed changes in the standard practices of participating organizations. In this case, the standard practices of individual organizations are not considered adequate to ensure the level of collective action needed to produce the desired outcome. For example, the development of a regional traveler information system that uses new communication technologies will require each participating organization to have a system that is compatible with the others. This is often accomplished through the adoption of common specifications for the regional information system, which all participating groups are expected to incorporate into their own purchasing procedures. Or, in the case of incident management programs, some of the more successful programs have adopted common protocols that specify what each organization responding to an incident will do, when it will be done, and who has ultimate responsibility.

Important questions to ask in this step include the following:

- Is the decision-making structure established early in the collaboration still sufficient to provide the level of coordination needed at this step on the ladder? If not, what changes should be made?
- With respect to the collaboration goal, what decisions have to be made when? What are the current organizational procedures for making these decisions?
- Are there elements to the collaborative strategy that require common procedures or activities on the part of those participating?

- To what extent will the adoption of common procedures be opposed by those participating in the collaboration? What incentives could be provided to support this change?
- To what extent should these procedures be adopted simply by the collaboration or by each participating organization through its own procedure adoption process?
- What decision-making structure is in place to make changes to the coordination strategy if it is not producing the desired outcome?

The credibility of a collaborative effort depends on showing that the benefits associated with participation outweigh the perceived costs. Thus, in this step, where some level of autonomy must be given up by the participating groups, it is very important that the joint activities that result from the collaboration be monitored and adjusted as appropriate to provide the most cost-effective outcome



Are the results from Step 7 sufficient to meet the needs of your collaborative effort? If so, proceed to Step 10; if not, proceed to Step 8.



The credibility of a collaborative effort depends on showing that the benefits associated with participation outweigh the perceived costs.



Step 8: Maintaining the momentum: Coordinating activities through shared funding, management, and accountability

In this step the collaboration takes a more active role in the management of the joint activities and is accordingly held more accountable. In some ways, this step is the first sign of the emergence of a new entity, perhaps with a distinct logo, web site, functions, etc. In such a case, the participating agencies will most likely have to give up some responsibility for activities that they have been conducting, perhaps for many years. An example of such a collaboration might be the creation of a jointly operated regional transportation management center; decisions regarding allocation of resources and operational response strategies would be given to the collaborative group. Or, a new regional ridesharing or mobility management effort could be directed by a collaborative partnership from among many different public and private groups. Such a collaboration could have management participation from the major organizations interested in regional mobility and be held accountable for budget allocations and ultimately transportation system performance.

“Many collaborations work quite well until it comes time to decide on the money—how will the funding be divided. Then it often falls apart.”

—Ken Leonard, Wisconsin Department of Transportation

Important questions to ask in this step include the following:

- Is the decision-making structure established early in the collaboration still sufficient to provide the level of coordination needed at this step on the ladder? If not, what changes should be made?
- Is a shared management and accountability arrangement enabled by legislation or administrative rule? If it is, what are the requirements of this enabling legislation? If it is not, should it be?
- How are the important decisions going to be made in a shared management structure? Who will broker disagreements? Who will arbitrate competing priorities?
- Will this decision-making structure likely change under different demands and contexts? If so, how will such changes occur? And who is responsible for initiating such change?
- If something goes wrong, who will likely receive the first call? Who will receive the last call? (No, it cannot be done by e-mail!)
- Will any costs of the collaboration have to be jointly funded? If so, what is the most equitable allocation of these costs?
- What organizational mechanisms or structures are in place to support shared management activities? Where are there gaps between the need for such structures and their being in place? If needs exist, how will you design and implement the tools for accomplishing a joint management structure?
- How is accountability for joint decision making going to be accomplished? What are the feedback mechanisms between outcomes and the decision-making structure?

Although in some cases the shared management responsibility of this collaboration step might suggest the creation of an autonomous group having only a tenuous link to the original organizations, this step, in most cases, is nothing more than a delegation of authority to individuals who are still employed by each organization.



Are the results from Step 8 sufficient to meet the needs of your collaborative effort? If so, proceed to Step 10; if not, proceed to Step 9.

Step 9: Extending the ladder: Establishing a new organization to pursue the goals originally established by the collaboration

This step recognizes the phenomenon of permanency that can lead to the creation of a new organizational structure. That is, one of the possible results of collaboration is the recommendation that a new organization be created to handle the day-to-day activities that are now part of the collaborative effort. The joint activities of those participating in the collaboration have taken on a life of their own, and the most appropriate strategy for now accomplishing the collaboration's aims is to create an autonomous structure. An example of this is found in transportation management associations (TMAs), organizations that have been formed to coordinate the transportation service opportunities for employees in targeted activity centers. Almost all of the TMAs started with collaborative efforts on the part of developers, businesses, chambers of commerce, and local governments to develop employee transportation options. In almost all cases, and given models of such efforts elsewhere, these efforts evolved into the creation of an organization with responsibility for providing such services.

“In Utah, we started out with an agreement not to merge. This lowered the risk for the actors that needed to engage in the collaboration.”

—Robert Crow, Envision Utah

Important questions to ask in this step include the following:

- Is the creation of an organization enabled by legislation or administrative rule? If it is, what are the requirements of this enabling legislation? If it is not, should it be?
- How will relations with the original collaboration partners be handled? How will their support be continued?
- How will different partner activities be modified, transferred, or merged with those of the new organization so as to avoid inefficiencies and possible duplication?
- How will common relationships with participants external to the collaboration be handled? How will these communications occur?
- To the extent that members of the new organization are supplied by the original collaboration partners, how will different organizational cultures be incorporated (if at all) into the new organization?
- How will information and analysis capabilities be structured to reflect the new organizational culture?

- What training and internal education of employees are necessary to reinforce intended goals?

It is important to recognize that this step should not be viewed as the ultimate goal of collaboration (even though it is near the top of the ladder). Creating new organizations can be very risky and, if not done with care, can create more tensions and problems than originally existed. Therefore, this step in the ladder of collaboration should only be taken when there are very clear needs identified and clear responsibilities delineated.

Step 10: The view from here: Supporting and nurturing the level of collaboration that has resulted

When the step on the collaboration ladder that satisfies everyone's needs has been reached, several outcomes can occur:

Declare victory and disband: This situation implies that the collaboration came into existence to satisfy a very temporary need (e.g., planning for a special event), and once this event is over, the need for the collaboration disappears.

Continue collaboration at this level and do not fall off the ladder: This scenario suggests that the ultimate goal of the collaboration is a continuing activity at the level of participation represented by this step of the ladder.

After satisfying the most immediate needs, explore climbing further: The experience of collaboration could create a desire on the part of the participants to examine higher levels of collaboration either for dealing with the original challenge or for addressing a new challenge.

If the collaboration is to continue, the collaboration partnership must be nurtured. This basically means that participants should continue to receive benefits from their participation and that the collaborative effort is considered better than the sum of individual organizational actions.

Important questions to ask in this step include the following:

- What have been the benefits of the collaboration to date for each of the participants? Do the participants understand or at least perceive these benefits?
- What actions or activities can be undertaken to reinforce such perception of benefits?
- Are benefits still worth the cost in time, dollars, and staff?
- Are the costs of the collaboration equitably distributed among participants?
- How can a reward or incentive structure be established for collaboration participants to recognize the important role they are playing?
- How can information exchange and personal contacts be maintained so that they can provide the foundation for other collaborative efforts?

- When new organizations or staff members join the collaboration, how can they be educated on the collaborative nature of the activities?
- How can the benefits of collaboration be better communicated to decision makers, the media, and the general public?
- How is the collaboration going to be evaluated over time so that improvements can be made and benefits can continue to accrue to participating organizations? Through such feedback, how can the collaboration be made more efficient and effective?

Collaboration does not necessarily end when a problem has been solved. In many cases, the personal relationships and contacts that have been established act as the seed for further collaboration in other areas. Over time, providing mobility in a collaborative and coordinated way will be founded on the strong interpersonal and interorganizational relationships that are established among the major players.

Collaboration does not necessarily end when a problem has been solved.

Because the questions presented in each of the above steps can themselves act as an assessment methodology, they have been listed in Appendix D. This appendix can be used by those interested in knowing what issues have to be dealt with in evolving from one level of collaboration to another.

4.0 STRATEGIES AND TOOLS FOR COLLABORATION



The strategies and tools for collaboration will vary according to which step of the collaboration ladder you are on and the history of successful collaboration in the past. Clearly, the higher the step on the ladder, the more formal and structured the strategies would be. For example, developing a formal structure of shared management and accountability will require a close examination of the legal and institutional prerogatives of existing organizations and the identification of the desired decision-making structure.

Some of the strategies found in the collaboration case studies for this study include the following:

- Purpose and Needs Statement
- Agreement on Language and Terms
- Ad Hoc Planning and Decision Structures
- Task Forces/Committees
- Common Work/Activities Program
- Staff Assignment/Rotation
- Staff Training
- Third-Party Facilitation
- Memorandum of Understanding/Agreement
- Collaboration Technology
- Co-Location
- Forming a New Organization

Purpose and Needs Statement

Description: A clearly defined and articulated reason for a collaboration is a prerequisite for success. In many cases, the reason for a collaboration is clear and obvious, e.g., preparing and managing a transportation strategy for the Olympic Games. However, in other situations, the purpose might be stated by leading proponents, but the boundary of the collaboration might not be clear. For example, many collaborations have been created to promote mobility in a targeted area (e.g., an activity center, downtown, or region). Questions might be asked about the geographic scope of the collaborative effort, the definition of mobility, the target audience (e.g., simply commuters or all travelers?), and the time scale of potential solutions (e.g., today's mobility problems or those 30 years hence?). One of the ways to avoid problems

of misinterpretation later in the collaboration is to agree on a purpose and needs statement early in the process. Quite simply, such a statement identifies what you are trying to accomplish and the desired characteristics of the outcome. Through the process of agreeing to (or possibly negotiating) the purpose and needs statement, collaboration participants develop a more in-depth sense of what the collaboration means and perhaps identify additional participants who should be asked to join the effort.

One of the ways to avoid problems of misinterpretation later in the collaboration is to agree on a purpose and needs statement early in the process.

Advantages:

- Defining a purpose and needs statement early in the process promotes the “shaking out” of the subtle and not-so-subtle aspects of the collaboration. It is better to work out the differences in how participants view a collaboration as early as possible, so that subsequent steps are taken with mutually agreed-upon reasoning.
- A purpose and needs statement acts as an important reminder throughout the collaboration of why it is being undertaken.
- A purpose and needs statement can be an important resource for the media when trying to explain what this collaboration is about.
- A purpose and needs statement can help identify measures of accomplishment that provides participants with some sense of progress, which motivates continued participation in the collaboration.

Challenges:

- Purpose and needs statements can be grandiose and vague, and thus meaningless in motivating continued collaboration.
- Although useful for identifying points of disagreement among participants, this might not be such a good thing so early in the process. In some cases, successful collaboration might rely on developing close personal relationships, which might not occur for many years. Disagreements over a purpose and needs statement could prematurely damage establishing trust.

Agreement on Language and Terms

Description: One of the most common challenges facing those participating in the collaborations examined for this research was the lack of a common language among participants. Technical terms and professional jargon can often lead to confusion and misunderstanding. Even within one discipline, different vocabulary and acronyms can be confusing. For example, those involved with incident management programs often use vocabulary that is strange to

those in a state's DOT or local highway departments. Developing an agreement on language and terms, in essence, requires taking some time early in a collaboration to discuss vocabulary, acronyms, and technical language so that each partner can understand what the other is saying. Although this might result in a written glossary of terms, it does not have to.

Advantages:

- Establishing the definition of commonly used terms and acronyms will go a long way toward minimizing confusion in later discussions. If trust is based on effective communication, effective communication is based on understanding the language being used to exchange information.
- Written documentation on these terms and acronyms can be used to educate participants who join the collaboration at a later time.

Challenges:

- Even though a common language could be established for a collaboration, there will be tendencies to revert to professional jargon as new partners join the collaboration and the long-standing tradition of using specialized terms creeps back into discussions.



Establishing trust is based on effective communication; effective communication is based on understanding the language being used to exchange information.



Ad Hoc Planning and Decision Structures

Description: The coming together of like-minded individuals and groups will often work if everyone is willing to accept the results of group decisions. In such a case, there is no need for a formal structure, such as a task force or committee, to accomplish what needs to be done; ad hoc or informal planning and decision structures can be used as long as possible to guide the collaboration in its activities. Such interaction is common among planning or operating staff where joint activities are necessary to accomplish some task that is often perceived to be of a short-term nature or that is necessary to get approval of the ultimate product of a collaboration. Thus, for example, the planning staff of many MPOs have established “working relationships” with local planners and with their counterparts in the region’s operating agencies so that the outcome of the planning process is acceptable to those who have to implement the actions. Although many of the formal decisions in the MPO structure occur in committees, much of the collaboration occurs outside of the committee structure.

Advantages:

- Ad hoc planning and decision structures work well among the planning and operations staff. They are based on professional and individual respect for the actions of others.
- Such structures do not require enabling authority.
- Given the informal and interpersonal nature of the interaction, ad hoc structures can lead to the creation of trust among the participants faster than more formal mechanisms.
- The participation in ad hoc groups usually occurs because it is viewed as being worthwhile and beneficial to the organization.

Challenges:

- By their very definition, ad hoc groups often do not have a position in the hierarchy of organizations. Thus, they could have great difficulty changing the standard practices of more formal organizations.
- Participation in ad hoc groups might not be recognized by top management as a worthwhile and rewarding activity for its staff members. Thus, the long-term stability of this activity could be threatened by the very nature of how it operates.
- Ad hoc structures are susceptible to disruption by the removal of one or more key participants, given that participation originally was most likely undertaken for professional interest. There might not be any replacements for such participants unless the parent organization sanctions the activity.

Task Forces/Committees

Description: Some form of institutional mechanism is often necessary to act as a forum for the interaction and communication in a collaboration, especially when the collaboration will be held accountable for achieving jointly held goals. In most transportation cases, this mechanism has been a task force or committee that examines the intricacies of the challenge being faced. (See the accompanying box, “Types of Decision-Making Structures.”) For purposes of this guidebook, a task force will be defined as a temporary planning or decision-making structure aimed at achieving a well-defined set of goals. A committee (or subcommittee) is a more permanent planning or decision-making structure that has been established for dealing with certain types of issues. Thus, a committee implies a long-standing commitment to organizational participation.

A task force can itself remain the viable institutional means of conducting collaborative activities, or it can be replaced with a committee structure that represents different roles within the functions of the collaboration. For example, in almost all of the collaboration cases in the *Compendium*, an executive committee consisting of the top managers or leaders of the partner organizations was created to provide top-management involvement for those decisions that were critical to the success of the collaboration. Such a committee need not meet often; or it can meet on a regular basis, depending on the circumstances of the challenge being faced. Along with the executive committee, a committee consisting of the top technical representatives from each

organization is often created to coordinate day-to-day activities. This committee is, in some ways, more important than the executive committee in that the ultimate success or failure of the collaboration will depend on the ability of the operations staff of all participating organizations to work together.

A final possible institutional mechanism for fostering communication and credibility in the collaboration is an advisory committee, which consists of representative from stakeholders and constituencies that often do not have a direct stake in the collaboration but represent important viewpoints.

Some form of institutional mechanism is usually necessary to act as a forum for the interaction and communication that is inherent in a collaboration.

Advantages:

- Task forces and committees are time-honored means of convening individuals representing different perspectives, concerns, and responsibilities, and thus they are most often not viewed as an organizational threat to more traditional participants.
- Responsibilities within the context of these forums include the keeping of minutes, and thus documentation is produced that provides the evolutionary history of the collaboration.
- Formal membership in a task force or committee is given to an organization, not an individual. Thus, as individual staff members or managers change, the organizational representation does not.

Challenges:

- If not handled carefully, task forces and committees can become very bureaucratic and responsive only to the dictates of those who chair them.
- The decision on who chairs (or cochairs) a task force or committee is an important and possibly contentious one. An individual who is unable to keep a meeting moving toward achievable ends or who cannot control the personal interaction among divergent interests can be a significant detriment to successful collaboration.

Common Work/Activities Program

Description: Developing a common purpose and needs statement does not necessarily result in a general buy-in into the activities of the collaboration. In most of the collaboration examples examined in this research, some technical analysis or problem-solving had to occur prior to achieving the desired outcomes. A willingness to conduct an honest assessment of both the technical and institutional challenges facing a collaboration is often a prerequisite to developing an institutional strategy for meeting these challenges. Such an assessment requires the formulation of a jointly approved work program of activities that will lead to successful achievement of a collaboration's goals. It is important in this work program that both intermediate and long-term accomplishments be programmed into the overall effort. Showing that progress can be made and that benefits will accrue to the participants in the near term is an important element of building confidence in the collaborative effort. (See the accompanying box, "The Freeway Concept of Operations Plan," for an example of how collaborative planning can help agencies coordinate their activities.)

Types of Decision-Making Structures

The following decision-making structures were found in the case examples highlighted in the Compendium.

<u>Location</u>	<u>Issue</u>	<u>Decision-Making Structure</u>
Atlanta	Olympics transportation plan	Coordinating committees
Bay Area	Transportation system management	Freeway management committee Transit coordinating council
Boston	Freeway reconstruction	DOT task force
Calgary	Regional mobility	Technical staff team coordination
Denver	Traffic signal coordination	MPO subcommittee
Hampton Roads	Emergency management plan	MPO task force
Houston	Transportation system management	New organization (TranStar)
I-95 Coalition	Corridor system operation	Voluntary organization
National Parks	Transportation for national parks	Interagency agreements
New York	Transportation system management	New organization (TRANSCOM)
Phoenix	Transportation system management	New organization (AZTech)
Pittsburgh	Freeway reconstruction	DOT task force
Portland	Transportation/land use coordination Transportation service provision	Interorganizational committee New organization (TMA)
Salt Lake City	Olympics transportation plan	Coordinating committees
Sweden	Coordinated trip planning information	New organization
Washington D.C.	Emergency management plan	MPO task force

A willingness to conduct an honest assessment of both the technical and institutional challenges facing a collaboration is often a prerequisite to developing an institutional strategy for meeting these challenges.

Advantages:

- A work program lays out the necessary information-producing activities that must be undertaken to support the decision-making process.
- In many cases, the development of a work program includes the allocation of staff resources and budget; thus, early in the process, you can determine the willingness of collaboration participants to make important trade-offs in order to participate.
- A work program provides more detail on what steps must be taken to achieve the vision laid out earlier. Thus, the development of a work program represents an effort to describe in process terms what will be necessary to achieve the goals. It is thus another opportunity for participants to understand more fully what the collaboration is all about.
- The process of creating a joint work program promotes the development of a common language of collaboration, that is, everyone can begin to understand the terminology used by others.

Challenges:

- As stated above, the development of a work program provides an opportunity to determine the willingness of partners to allocate resources to the effort. If the work program development process begins too early, that is, before trust has been established among the participants, this effort could lead to significant debilitating disagreements over responsibilities and roles very early in the process.
- Work program elements must be assigned to those who are most capable of producing results. At an early stage in the collaboration process, knowing who this might be could be problematic.

Showing that progress can be made and that benefits will accrue to the participants in the near term is an important element of building confidence in the collaborative effort.

The Freeway Concept of Operations Plan in the San Francisco Bay Area is an example of how collaborative planning and decision making can provide important guidance to operating agencies for better coordinating their activities with those of other agencies. The types of strategies that are part of this plan include

- Developing a regional strategic plan for system implementation and integration
- Developing a regional evacuation management plan
- Developing a regional architecture for intelligent transportation system (ITS) technologies
- Integrating incident detection activities among participating agencies
- Developing and implement an enhanced and integrated California Highway Patrol data management system
- Providing a common radio frequency for emergency responders
- Establishing and maintaining a sustainable communications system for freeway operations
- Completing improvements to Caltrans' traffic management center
- Developing and implementing an enhanced and integrated traveler information system
- Developing an overall data and video sharing policy
- Investigating a corridor-based ramp metering policy
- Improving response and clearance time for incidents
- Establishing a maintenance program for freeway operations
- Establishing a staffing and funding program
- Establishing an ongoing interagency capacity building

Staff Assignment/Rotation

Description: Nothing sends a clearer message of the importance of an activity to an organization than assigning staff resources to the effort. This might include both a senior manager as well as line staff members who can support collaboration activities on a day-to-day basis. In connection with such an assignment, it is important that senior management make it clear that the assignment is considered an important activity to the agency. Such assigned staff could be housed in a one of the collaboration-participating organizations, assigned to a space commonly managed by the collaboration, or loaned to the collaboration under its management structure. An interesting permutation of this strategy is to rotate staff in collaboration activities so that more than just a small number of staff members become familiar with the benefits of the collaboration.

Nothing better sends a clearer message of the importance of an activity to an organization than assigning staff resources to the effort.

Advantages:

- Staff assignment and rotation sends a message to the rest of the organization of how important collaboration activities are to top management.
- Dedicated staff helps build the personal relationships that lead to a foundation of trust that is so critical to collaboration success.
- Staff assigned to the collaboration become an important source of information to an organization on what the collaboration is doing.

Challenges:

- Unless the importance of the assignment is clearly articulated by top management, staff members might view this responsibility as a necessary detour in their own career path, one that is not viewed very enthusiastically.
- The success of this strategy depends to a large extent on the skills, abilities, and attitudes of the staff members assigned to the task. The best choice of staff will be those who clearly want to work with people, are problem solvers, and who understand the importance of collaborative efforts, in other words, the best people in the organization! However, the assignment of such people to the collaboration might take these individuals away from other important tasks.

Staff Training

Description: Interviews with many collaboration participants in the case studies for this research led to a very important observation concerning what makes a collaboration successful—the willingness and capacity of the staff to work in a collaborative environment. Although many of the founders of a collaboration are naturally inclined to work effectively with others, people who might not have such a perspective may join it as the collaboration evolves. Many times, successful collaborations that have evolved to more formal and longer lasting arrangements have devoted considerable resources to the training of their staff. This training has included such topics as conflict resolution, bargaining and negotiations, effective communications, time management, and more technical subjects related to the focus of the collaboration (e.g., ITS technologies, information system integration, work zone safety, etc.). Enhancing staff abilities to deal with the changing nature of a collaboration improves the chances of a collaboration's success.

Advantages:

- Staff perceptions of career advancement are very important for employee morale and organizational effectiveness. Training is a good way of sending a message that the collaboration and its partner organizations are willing to invest in the staff's future.
- Training provides a relatively easy way of bringing the latest thinking to the collaboration partners and of fostering further innovative approaches to meeting collaboration goals.
- Training is one of the few ways of fostering a new way of behaving and thinking among an organization's employees.
- Training programs are flexible. If individual training modules are not considered successful, they need not be used again.

Challenges:

- Training could take employees away from other important tasks.
- Training courses and programs are usually offered on a fee basis, and thus these costs must be incorporated into the budget.
- Training aimed at interaction skills must be constantly offered and reoffered to reinforce the desired result.

Enhancing the abilities of the staff to deal with the changing nature of a collaboration improves the chances of a collaboration's success.

Third-Party Facilitation

Description: Given institutional or personal conflict between some of those participating (or wanting to participate) in a collaboration, it might be impossible to establish a credible interaction and decision-making process with these participants. In other words, there is no obvious credible or accepted authority for managing the process. In such situations, the participation of someone who can help guide the discussion leading up to a decision might be warranted. A facilitator could be used to move the collaboration partners along a path of progress. Such a facilitator can organize and manage meetings, develop consensus documents, act as a go-between among participants (if necessary), and suggest compromise solutions to avoid breakdowns in communications and working relationships. In most cases, the facilitator is not someone from the organizations participating in the collaboration. However, in some unusual cases, someone from one of the collaborative partners might be able to serve in this position.

Advantages:

- A skilled, third-party facilitator can guide a process of decision making without worrying about the relative influence and clout of those participating.
- Facilitation promotes the involvement of all participants in a collaboration, and thus encourages buy-in to the ultimate purpose of the effort.
- If done effectively, facilitation can quickly identify areas of agreement, points of contention, and issues that remain to be resolved. In other words, it speeds up the process of decision making and the identification of topics that participants should devote more attention to.
- A facilitator who is knowledgeable about the topic, which is always preferable, can offer suggestions to resolve impasses in decision making.

Facilitation promotes the involvement of all participants in a collaboration and thus encourages buy-in to the ultimate purpose of the effort.

Challenges:

- The more influential and powerful participants in a collaboration could view a third-party facilitator as usurping their authority, thus becoming a threat.
- A good facilitator is hard to find, especially one who knows something about the topic.
- A poorly facilitated meeting could create a backlash against the collaboration effort if it is perceived that not much is being accomplished.
- Facilitation is most effective when planned and thought through, thus implying at least a 2- to 3-month planning horizon for an individual meeting. It is thus not a technique that can be used effectively for dealing with short-term issues.

Memorandum of Understanding/Agreement

Description: One of the most common mechanisms used by public agencies to formalize collaboration is the adoption of a memorandum of understanding (MOU), sometimes called a memorandum of agreement (MOA). These documents spell out the respective roles that the signatories will have in pursuing joint activities. The MOU also often states the motivation or rationale for the collaborative effort. In almost all cases, these documents are not legally binding on the participants; that is, they do not represent a contract. However, they do represent a politically potent tool for defining the activities and responsibilities of those involved in a collaboration. They can be used to justify the assignment of staff outside normal operations, the allocation of budget to activities not usually undertaken by an organization, and the adoption of roles that could be unusual for a particular agency.

Many of the participants in the focus groups warned that the formulation of an MOU can be one of the greatest stumbling blocks in the evolutionary path of a collaboration. Whereas up to the adoption of an MOU, collaborative efforts were undertaken in either ad hoc or informal ways, the MOU implies commitment and an agreement on respective roles. In many ways, with the adoption of an MOU, the collaboration accepts formalized procedures and roles, and thus potentially leaves behind the close interpersonal relationships that characterized the early steps in the evolution of the collaboration. With an organizational imprimatur, the collaboration becomes linked to the often risk-averse nature of organizational behavior, and thus less likely to take major steps beyond those considered feasible by organizational managers.

! *One of the most common institutional mechanisms used by public agencies to establish the defining characteristics of a collaboration is the adoption of a memorandum of understanding (MOU), sometimes called a memorandum of agreement (MOA).* !

However....



The adoption of an MOU implies commitment and an agreement on respective roles, thus opening legal and political questions concerning appropriate relationships. The collaboration, which up to this point could have been based on strong interpersonal, yet informal relationships, might not survive a more formal institutional context.

Advantages:

- The MOU provides written documentation on the purpose of, and approach to, collaboration. This is useful for describing the collaboration to others and can serve as an important source of “institutional memory” as the collaboration evolves.
- The MOU is an accepted means of formalizing relationships among partners in an undertaking.
- In most cases, MOUs are signed by the top leadership of an organization or by the political leaders of a jurisdiction, if appropriate. This thus means that the top leadership is aware of and presumably supports the collaboration.

Challenges:

- If not stated in flexible terms, the roles and responsibilities as stated in the MOU could constrain a flexible response to a situation that demands such flexibility.
- Although important for establishing roles and responsibilities, an MOU does not necessarily lead to budget reallocations and shifts in staff resources. Changes in organizational leadership could thus result in a backing away from the collaboration as described in the MOU.

Collaboration Technology

Description: The term “collaboration” in information systems has a very distinct meaning, referring to the use of technology that allows different individuals located far apart to “problem solve.” These technologies consist of communication systems and software that guide a team effort at collaboration. Such a definition of collaboration is too specific for the purposes of this guidebook, but the approach that it describes could be useful for transportation-related collaboration.

Advantages:

- For participants located some distance from each other, this technology might be the only feasible means of jointly participating in the collaborative effort.
- The approach provides a structured process of working through a problem and thus promotes a sense of rigor and accomplishment to those participating.
- Given that participants are involved with collaboration in an impersonal manner, the influence of personality and group dynamics on decision making is minimized.
- The computer-based foundation for the interaction allows the information exchange to include graphics, spreadsheets, and other data forms in a much more user-friendly manner.
- To the extent that decision making includes some effort at consensus-building, techniques can be used (such as the Delphi process) that allow participants to understand the reasoning behind the observations and conclusions of others and to modify their input as appropriate.

Challenges:

- In transportation collaborations, most of the major participants are located close to one another and can thus conduct business personally. If the majority of participants are physically meeting in one location and others are joining via the internet, the remote participants could be at a disadvantage in terms of influencing final decisions.
- Many participants could feel uncomfortable participating in collaborative decision making over long distances via the internet.

- As noted earlier in this handbook, the basic foundation for effective collaboration is developing trust among the participants. Reliance on communications technology that provides an impersonal, yet possibly effective, means of interaction does not lend itself to developing a sense of trust among the participants.
- Most collaboration software is proprietary and thus there will be a cost associated with its purchase and the training in its use.



Reliance on communications technology that provides an impersonal yet possibly effective means of interaction does not lend itself to developing a sense of trust among the participants.

Co-Location

Description: Physically locating the representatives of those agencies participating in the collaboration in the same space is a strategy that assumes that proximity enhances communication among the participants. This strategy has been used successfully in several regional traffic management centers where highway, transit, emergency response, and other relevant government agencies have representatives working side-by-side. In addition, co-location has been used on a temporary basis for dealing with short-term collaborations, such as the planning and management of special events and emergency response to unexpected events. Co-location of relevant agencies is not an uncommon sight during natural disaster responses. In fact, many emergency management centers have been physically designed with the participation of many agencies in mind.

Advantages:

- Physical proximity encourages both the formal and informal interaction of personnel that helps build the foundation for collaborative action.
- Communication systems and technical support are common to all those involved at the site, and thus one avoids the issue of incompatible information systems.
- Decisions relating to real-time events can be communicated quickly and effectively.
- A single location for collaborative activities represents a presence that suggests a performance of collaboration efforts.

! Physical proximity encourages both the formal and informal interaction of personnel that help build the foundation for a collaborative action. !

Challenges:

- A single space for collaborative activities can be expensive and raise questions about the equitable sharing of costs.
- Assignment of personnel to a satellite location could be viewed as a “lessening of prestige” by those coming from a traditional agency culture.
- Supervision and administration of organizational staff assigned to this site could be problematic.
- Whatever communication and information system technologies are adopted for this site must be compatible with all such systems for participating groups, or all of these other systems must be made compatible with the site’s systems.
- Agreements must be made concerning the responsibility for common functions. For example, who will be the spokesperson to the media during unusual events?

Forming a New Organization

Description: The level of collaboration might become so complex or specialized that it makes sense to develop a new organizational unit dedicated to providing service. This could mean that staff members and resources from existing organizations might be removed from their current organizational affiliation to this new unit, or an organization could be created with all new staff members. In most cases, creating a new organization is the last step in collaborative efforts to meet a specific challenge. This could represent a natural evolution of all the collaboration steps that have been taken before, or it could be a political reaction to the inability of existing organizations and groups to work together in a collaborative way. For example, the creation of the Georgia Regional Transportation Authority, a new organization with responsibility for coordinating transportation and land use decisions in the Atlanta region, was a direct result of a business community’s and governor’s frustration with the inability of existing agencies to work together successfully. The creation of a new organization in such circumstances, however, often creates more collaboration challenges than it solves, given the reaction of existing groups to a new participant having little history of working within the current institutional structure. In other words, the level of trust that is necessary for collaboration to succeed has not yet been established.

Advantages:

- A new organization, if viewed as having evolved naturally from many years of collaborative effort, dedicates staff and resources to the challenge being faced by the participants. It represents the creation of a new entity that could relieve existing organizations of the responsibility for dealing with this challenge.
- A new organization can develop its own organizational culture, personnel reward structure, constituency base, and institutional presence in order to solve problems facing a region or state.

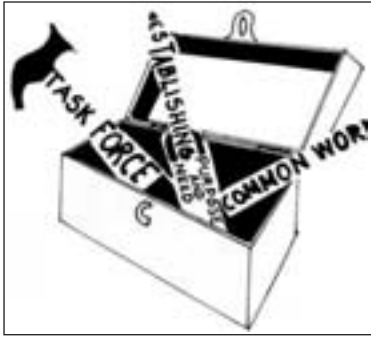
- By having its own personnel system, the organization can convey to staff members a sense of permanence in career development and loyalty.

Challenges:

- The creation of any new organization entails significant start-up costs and uncertainties concerning new responsibilities and operating procedures. There will, out of necessity, be a period of transition when new staff members are learning their jobs.
- A new organization in an existing institutional structure for transportation decision making and operations could be viewed as a competitor for resources and thus run into opposition from more entrenched agencies.
- A new organization often faces a significant challenge conveying its mission and message to the general public and local officials. This will require a concerted outreach effort on the part of organizational leaders to convey this information.
- Organizational structures, over time, often become more rigid in their approach to handling activities for which they are responsible. If the purpose of the collaboration to begin with was providing a flexible response to the challenge facing the participants, a new organizational structure, defined by standard operating procedures, is perhaps not the best way of ensuring continued flexibility in response to rapidly changing challenges.

A new organization can develop its own organizational culture, personnel reward structure, constituency base, and institutional presence in order to solve problems facing a region or state

5.0 BRINGING IT ALL TOGETHER



The material presented in previous sections is focused on the factors and steps that are necessary for a successful collaboration. The material can be used to provide an initial assessment of the health of a collaboration and that can then lead to opportunities for improvement. One of the strategies for improving the health of a collaboration is simply taking action on those characteristics that did not score highly in the self-assessment, such as the one shown in Table 3. For example, the worst score in Table 3 was given to the characteristic “there is effective feedback to the collaboration participants on the effects of previous decisions.” To rectify this

problem, you would want to put in place mechanisms or processes that make sure feedback on the results of previous decisions are communicated to collaboration participants. However, some of the issues identified in the scorecard might require more substantial action. In this case, a collaboration toolbox, consisting of the strategies described in the previous section, can be used to take corrective action to improve the health of the collaboration.

Organizing the Toolbox

There are many examples of how different strategies can be used to deal with a variety of challenges to the collaboration. However, you must think carefully about what specific strategies or combination of strategies can be applied to the problem being faced. Although the strategies described in the previous section can be applied in a variety of ways, the following list suggests how these strategies could help in dealing with any of the issues that arise from the scorecard.

Tools to Improve Basic Foundations

- Writing a purpose and needs statement
- Establishing common language and terms
- Creating an ad hoc or formal task force/committee
- Using third-party facilitation
- Training staff members

Tools to Improve Leadership

- Writing a purpose and needs statement
- Creating an ad hoc or formal task force/committee
- Using third-party facilitation
- Rotating staff assignments

Tools to Improve the Process of Collaboration

- Defining a jointly developed work program
- Establishing common terms and language
- Creating an ad hoc or formal task force/committee
- Rotating staff assignments
- Training staff members
- Adopting a memorandum of understanding
- Using collaboration technology in communications
- Co-locating staff in a common collaboration space

Tools to Enhance Organizational Support

- Adopting a memorandum of understanding
- Using third-party facilitation
- Training staff members
- Rotating staff assignments
- Creating a new organization

Applying the Toolbox

The poor score for “there is effective feedback to the collaboration participants on the effects of previous decisions” falls into the “Process of Collaboration” category. Thus, you might use some of the strategies listed under “Tools to Improve the Collaboration Process” to deal with this issue. Examples of how this can be done include the following:

Defining a jointly developed work program: If a current work program exists, modify it to include a feedback task. If a work program does not exist, develop one that explicitly recognizes this need as part of the technical work program for the collaboration.

Creating an ad hoc or formal task force/committee: If an ad hoc or formal task force/committee exists, jointly decide on the strategy for improving feedback. If such an institutional structure does not exist, consider creating one.

Adopting a memorandum of understanding: This strategy is usually reserved for more complicated relationships and thus is not likely to be used for the feedback issue. However, if an MOU is being considered for the more general description of institutional relationships, the description of the decision-making processes and information flow that will occur among the participants should include the feedback issue. An MOU, however, is not a particularly useful strategy for dealing with only one issue.

Using collaboration technology in communications: Providing feedback on the results of previous decisions will most likely require the collection of data and informa-

tion, interpreting what they mean, and conveying the results to the collaboration partners. Thus, the use of collaboration technology is a likely strategy for dealing with this issue.

Co-locating staff in a common collaboration space: Like the use of an MOU, this strategy is usually reserved for more complicated relationships. However, co-location of staff would certainly enhance the communication and interaction among those working in the collaboration.

Summary

This handbook has presented guidance on how to create healthy and effective collaborations. Given the varied contexts in which collaborations can occur, as well as which rung of the ladder you start on, it is difficult to provide simple advice on how particular collaborations should evolve. The self-assessment tool provides an opportunity for a very important snapshot of the health of a collaboration, pinpointing where problems might exist and leading to an overall strategy for identifying what next steps might be necessary. The ladder of collaboration concept illustrates the level of engagement and commitment necessary to take successive steps toward more involved collaboration. The description of strategies presents a toolbox of actions that can be considered for making necessary improvements to a collaboration.

Remember, you do **not** have to climb all the way to the top of the ladder! However, participants in a collaboration **do** have to get to the ladder. Getting them to the ladder—and keeping them there—could perhaps be the most significant challenge faced.

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APPENDIX A: LIST OF FOCUS GROUP PARTICIPANTS

AASHTO Annual Meeting

Minneapolis, MN

Minneapolis Hilton Hotel

Saturday, September 6, 2003, 5:00–6:30 PM

Facilitator: Michael Meyer

Participants:

Chris Slesar, Environmental Specialist, Vermont Agency of Transportation

William Ankner, former Secretary of Transportation, State of Rhode Island

Mark Stout, Director—Division of Capital Investment Planning & Development, New Jersey DOT

Julie Hunkins, North Carolina DOT

Ysela Llort, State Transportation Planner, Florida DOT

Leroy Irwin, Manager—Environmental Management Office, Florida DOT

Ken Leonard, Director of Planning, Wisconsin DOT

Catherine Nelson, Office of Planning, Oregon DOT

Charles Howard, Director of Planning, Washington State DOT

Roland Wostl, Office of Environmental Services, Colorado DOT

Rail-Volution

Atlanta, GA

Georgia Regional Transportation Authority Offices

Friday, September 12, 2003, 5:30–7:00 PM

Facilitators: Michael Meyer & Dennis Leach

Participants:

Alex Eckman, Mass Transit Administrator, District of Columbia DOT

Jim Ritchie, Executive Director, Georgia Regional Transportation Authority

Crew Heimer, Manager of Passenger Rail, Georgia Regional Transportation Authority

David Hines, Atlanta Regional Commission

Gloria Jeff, Secretary of Transportation, State of Michigan

Charlene Crowell, Lansing Policy Specialist, Michigan Land Use Institute

George Scheuernstuhl, Executive Director, Denver Regional Council of Governments

Brad Mueller, Douglas County Community Development (Denver, CO Region)

Robert Grow, Executive Director, Envision Utah

James de la Loza, Executive Officer—Planning & Development, Los Angeles County
Metropolitan Transportation Authority

Helene Jacobs, City of Los Angeles DOT

Anne Canby, President—Surface Transportation Policy Project, former Secretary of
Transportation, State of Delaware

Nancy Jakowitsch, Surface Transportation Policy Project

APTA Annual Meeting

Salt Lake City, Utah

Little America Hotel

Monday, September 29, 2003, 5:30–7:00 p.m.

Facilitator: Sarah Campbell

Participants:

Jerry Thompson, Board Member, Salem Kaiser Transit, Salem, OR

Jeff Hamm, General Manager, Salem Kaiser Transit, Salem, OR

Brigid Hynes-Cherin, Vice-President, Parsons Transportation Group, Washington, DC

Ricardo A. Sanchez, Director Special Projects, Corpus Christi Regional Transit Authority, TX

Jill Cappadoro, Director Marketing, Hillsborough Area Regional Transit (HART), FL

Sharon Dent, General Manager, HART

AMPO Annual Meeting

Washington, DC

Wyndham Hotel

Friday, October 24, 2003, 5:30–7:00 PM

Facilitators: Dennis Leach & Sarah Campbell

Attendees:

Stephen Heminger, Executive Director, Metropolitan Transportation Commission
(San Francisco Bay Area)

Charles Chappell, Executive Director, Wasatch Front Regional Council (Salt Lake City Region, UT)

Michael Aulick, Executive Director, Capital Area Metropolitan Planning Organization (Austin, TX)

Lucilla Ayer, Staff Director, Hillsborough County Metropolitan Planning Organization (Tampa, FL)

Harrison Rue, Executive Director, Charlottesville-Albemarle Metropolitan Planning
Organization (Charlottesville, VA)

Sally Thomas, Albemarle County Board of Supervisors (Albemarle, VA)

Wendy Clatcher, Senior Transportation Planner, Metropolitan Washington Council of
Governments (Washington, DC)

Robert Ritter, Team Leader—Transportation Planning Capacity Building Program, FHWA

Dianne Schwager, Senior Program Manager, TCRP—National Academy of Sciences

APPENDIX B: SELF-ASSESSMENT TOOL FOR EXISTING COLLABORATIONS

Factors for a Healthy Collaboration	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Basic Foundations					
1. The need for the collaboration has been clearly established					
2. The goal(s) for the collaboration are clearly articulated and understood					
3. Intermediate and long-term achievement benchmarks have been established					
4. All the necessary partners are involved in accomplishing 1 to 3 above.					
5. The benefits of participating in the collaboration are clear to each participating organization/group.					
6. This collaboration could very well lead to other collaborations in the future					
Leadership					
7. Leaders of the participating organizations clearly support the collaboration					
8. Leadership responsibilities have been spread fairly among the participants					
9. The leadership of the collaboration itself (e.g., who chairs meetings?) is clearly defined and accepted by others					
10. The collaboration would survive a change in agency representatives participating in the collaboration					
The Process of Collaboration					
11. Participant responsibilities have been clearly defined					
12. The right expertise is available as part of the collaboration					
13. Effective communication occurs among collaboration participants, e.g., everyone is using a common language					
14. The level of trust among collaboration participants is high					
15. The collaboration is building lasting relationships among the participants					
16. There is effective feedback to the collaboration participants on the effects of previous decisions					

Factors for a Healthy Collaboration	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Organizational Support					
17. Participating organizations and/or groups have contributed their fair share					
18. Representatives of participating agencies/groups are being supported by their home organizations					
19. Individuals are being recognized or rewarded for their participation in the collaboration					
20. The resources available for the collaborative effort will be (or are) adequate to achieve the collaboration's goals					
Number of Ratings in this Column	A	B	C	D	E
Weighted Score	A	2 x B	3 x C	4 x D	5 x E
Total Score	A + (2 x B) + (3 x C) + (4 x D) + (5 x E)				

	Score Range	Collaboration Health Assessment
	≤ 50	The collaboration is experiencing serious problems, and remedial action needs to be taken to increase the health of the collaboration.
	$51 \leq \text{Score} \leq 74$	The collaboration is functioning, but there is room for improvement, especially if there is a desire for this collaborative experience to lead to further efforts.
	$75 \leq \text{Score} \leq 100$	The collaboration is healthy and can serve as a strong foundation for further collaborative efforts in the future.

APPENDIX C: CHANGING THE SCORE RANGES IN THE SELF-ASSESSMENT SCORECARD

The original ranges for the collaboration health categories were calculated as follows:

First Score Range: $\text{Score} \leq [(n/2) \times 3 + (n/2) \times 2]$ for “serious” problems category

Second Score Range: $[\text{Above right side limit} + 1] \leq \text{Score} \leq [\text{Below left side limit} - 1]$

Third Score Range: $[(0.75 \times n) \times 4] + [(0.25 \times n) \times 3] \leq \text{Score} \leq (n \times 5)$

where “n” is the total number of questions in the scorecard.

Thus, when $n = 20$ as was the case in Table 3 and in Appendix B, the score ranges become

First Score Range: $\text{Score} \leq [(20/2 \times 3)] + (20/2 \times 2) = \text{Score} \leq 50$

Second Score Range: $[50 + 1] \leq \text{Score} \leq [75 - 1] = 51 \leq \text{Score} \leq 74$

Third Score Range: $[(0.75 \times 20) \times 4] + [(0.25 \times 20) \times 3] \leq \text{Score} \leq (20 \times 5)$

which equals: $75 \leq \text{Score} \leq 100$

Assume the number of relevant questions was reduced to say 10. The respective ranges of scores for the health assessment scorecard would be

$\text{Score} \leq [(10/2) \times 3] + [(10/2) \times 2]$ or $\text{Score} \leq 25$

$[25 + 1] \leq \text{Score} \leq [38 - 1]$ or $26 \leq \text{Score} \leq 37$

$[(0.75 \times 10) \times 4] + [(0.25 \times 10) \times 3] \leq \text{Score} \leq (10 \times 5)$ or $38 \leq \text{Score} \leq 50$

APPENDIX D: SELF-ASSESSMENT QUESTIONS FOR DIFFERENT LEVELS OF COLLABORATION

The following questions, found in earlier sections of the handbook, serve as the core information base for assessing the effectiveness or health of a collaboration. They are collected in this appendix to provide those interested in conducting an assessment with a central location, and possibly an assessment form, for the desired information.

Starting a collaboration (or, in our terms, getting to the ladder)

- Who are the important participants in the collaboration? And which ones are critical for a successful outcome?
- Why would these participants want to be part of a collaboration? What benefits would they likely experience participating in the collaboration?
- How will these participants likely view the challenges being faced and the likely activities of the collaborative effort?
- Are there influential champions for the collaboration who can convince others to participate? Or, if you are such a champion, are there cochampions who can help you organize the collaboration?
- If no champions exist, what incentives or rationale can be put in place to encourage the willing participation of key agencies and groups?

Identifying and acknowledging common purpose, motivation and needs

- What is the purpose of the collaboration? Has it been clearly stated?
- How will progress be measured? Will this definition of progress be acceptable to those participating in the collaboration?
- Are there communication barriers to be overcome among the participants in the collaboration (the first sign of this is a tendency to speak in acronyms)? Do those in the collaboration need to agree on a common set of terms?
- How will success (or failure) affect each participant? Which of the participants will benefit the most from success or be hurt the most from failure?
- What will each participant need in terms of resources and mutual support to participate effectively in the collaboration?
- What does each participant bring to the collaboration? Is this contribution sufficient to achieve the desired goals?
- Do participants trust one another? If not, what is the best way to establish trust among the participants?

Establishing ground rules and a decision-making framework

- Who should take the lead in developing a proposed set of ground rules and a decision-making framework? Does this decision-making framework need to be formal or can it, for the time being, survive on an ad hoc basis?
- How will the needs and concerns of all the participants be reflected in the established process of decision making?
- What are the key intermediate and long-term results that are desired from the collaboration and how does the decision-making framework lead to these results?
- What are the decision-making roles for those involved in the collaboration? (For example, in some cases, decision-making authority is given to an executive committee, with other participants having an advisory role.)
- Do those participating in the collaboration have the authority to commit their agencies or groups to carrying out jointly made decisions?
- Who at the higher levels of authority might have to be called upon to make decisions in the event of an impasse; that is, who will be the arbiters?

Determining who will assume responsibility for collaborative activities

- What are the critical decisions that will have to be made over the life of the collaboration? What type of information will be necessary to support these decisions?
- What staff, financial, and information resources are available to make the work program successful? What resources are needed?
- Is the work program consistent with the cultural norms of the organizations that are participating? If not, where will opposition to the work program likely arise?
- Who should have what responsibilities for individual work tasks?
- What is the time frame for accomplishing different parts of the work program? Is this time frame consistent with the timing of the challenge being faced (e.g., an Olympics transportation program in place by the opening of the Games)?

Establishing common communication among those in the collaboration through the sharing of information

- Who are the target audiences for decision-making or operations information?
- What are the critical pieces of information that need to be obtained for effective coordination?
- Who collects and analyzes the data that form the foundation of this information?
- Are consistent formats, terminology, definitions and technology used in order to foster information sharing? If not, how will such a consistent framework be developed?
- Who will take responsibility for the overall communications system? Will it be centralized? Or will it be coordinated centrally, but distributed among collaboration participants?

- How will the purchase and ongoing costs of shared information and communications systems be funded? What type of updating strategy (and thus sharing of costs) will be necessary to ensure that these systems stay up to date?

Coordinating activities of partner organizations, with each organization using its own standard procedures

- Is the decision-making structure established early in the collaboration still sufficient to provide the level of coordination needed at this step on the ladder? If not, what changes should be made?
- What components of the outcome of the collaboration need to be coordinated? Who is responsible for each component?
- What do each of the collaboration partners have to give up (if anything) to provide for coordinated activities?
- Are the standard procedures of partner organizations as they relate to collaboration goals sufficient to ensure coordinated outcomes?
- How visible will the ultimate outcomes be to the public? Does such visibility create additional pressure on the collaboration for overall success or make the chance of failure less acceptable?
- What feedback mechanisms will be used to make sure coordination is occurring and that the activities will lead to the desired outcomes?
- What decision-making structure is in place to make changes to the coordination strategy if it is not producing the desired outcome?

Coordinating activities of partner organizations, with mutually-agreed-upon standard practices established by the collaboration

- Is the decision-making structure established early in the collaboration still sufficient to provide the level of coordination needed at this step on the ladder? If not, what changes should be made?
- With respect to the collaboration goal, what decisions have to be made when? What are the current organizational procedures for making these decisions?
- Are there elements to the collaborative strategy that require common procedures or activities on the part of those participating?
- To what extent will the adoption of common procedures be opposed by those participating in the collaboration? What incentives could be provided to support this change?
- To what extent should these procedures be adopted simply by the collaboration or by each participating organization through its own procedure adoption process?
- What decision-making structure is in place to make changes to the coordination strategy if it is not producing the desired outcome?

Coordinating activities through shared funding, management, and accountability

- Is the decision-making structure established early in the collaboration still sufficient to provide the level of coordination needed at this step on the ladder? If not, what changes should be made?
- Is a shared management and accountability arrangement enabled by legislation or administrative rule? If it is, what are the requirements of this enabling legislation? If it is not, should it be?
- How are the important decisions going to be made in a shared management structure? Who will broker disagreements? Who will arbitrate competing priorities?
- Will this decision-making structure likely change under different demands and contexts? If so, how will such changes occur? And who is responsible for initiating such change?
- If something goes wrong, who will likely receive the first call? Who will receive the last call? (No, it cannot be done by e-mail!)
- Will any costs of the collaboration have to be jointly funded? If so, what is the most equitable allocation of these costs?
- What organizational mechanisms or structures are in place to support shared management activities? Where are there gaps between the need for such structures and their being in place? If needs exist, how will you design and implement the tools for accomplishing a joint management structure?
- How is accountability for joint decision making going to be accomplished? What are the feedback mechanisms between outcomes and the decision-making structure?

Establishing a new organization to pursue the goals originally established by the collaboration

- Is the creation of an organization enabled by legislation or administrative rule? If it is, what are the requirements of this enabling legislation? If it is not, should it be?
- How will relations with the original collaboration partners be handled? How will their support be continued?
- How will different partner activities be modified, transferred, or merged with those of the new organization so as to avoid inefficiencies and possible duplication?
- How will common relationships with participants external to the collaboration be handled? How will these communications occur?
- To the extent that members of the new organization are supplied by the original collaboration partners, how will different organizational cultures be incorporated (if at all) into the new organization?

- How will information and analysis capabilities be structured to reflect the new organizational culture?
- What training and internal education of employees are necessary to reinforce intended goals?

Supporting and nurturing the level of collaboration that has resulted

- What have been the benefits of the collaboration to date for each of the participants? Do the participants understand or at least perceive these benefits?
- What actions or activities can be undertaken to reinforce such perception of benefits?
- Are benefits still worth the cost in time, dollars, and staff?
- Are the costs of the collaboration equitably distributed among participants?
- How can a reward or incentive structure be established for collaboration participants to recognize the important role they are playing?
- How can information exchange and personal contacts be maintained so that they can provide the foundation for other collaborative efforts?
- When new organizations or staff members join the collaboration, how should they be educated on the collaborative nature of the activities?
- How can the benefits of collaboration be better communicated to key organization decision makers, the media, and the general public?
- How is the collaboration going to be evaluated over time so that improvements can be made and benefits can continue to accrue to participating organizations? Through such feedback, how can the collaboration be made more efficient and effective?

Abbreviations used without definitions in TRB publications:

AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
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
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ITE	Institute of Transportation Engineers
NCHRP	National Cooperative Highway Research Program
NCTRP	National Cooperative Transit Research and Development Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
TCRP	Transit Cooperative Research Program
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation