PATHS THROUGH THE FOREST
FACTORS THAT INFLUENCE TRANSPORTATION CORRIDOR SUCCESS
"TRANSPORTATION CORRIDORS ARE ESSENTIAL TO VIBRANT COMMUNITIES. THE HUMPHREY INSTITUTE'S FIVE-FACTOR APPROACH TO CORRIDOR DEVELOPMENT IS A SIGNIFICANT STEP FORWARD IN HELPING COMMUNITIES DESIGN BETTER TRANSPORTATION SYSTEMS."

— CONGRESSMAN MARTIN SABO (D-MN)

Our thanks to Congressman Martin Sabo and Hennepin County, Minnesota, without whose generous support this research would not have been possible. We also would like to recognize the assistance of Mara Krinkle of ICF Consulting and Nathan Franzen and Wenling Chen of the University of Minnesota, who provided invaluable help gathering and interpreting these and other case studies. Finally, this acknowledgement would not be complete without recognizing the time and patience of staff from the selected projects as we worked to obtain the necessary information to successfully complete this report.

PROJECT LEADER: Frank Douma  WRITER: Mary Lahr Schier  EDITOR: Julie C. Lund  DESIGN: Shawn Welch
DEAR FRIENDS AND COLLEAGUES:

Transportation corridors are big, complex, and often problematic public projects. Planners see corridors not only as conduits to move people and freight, but also as a means of improving a region’s economy and building more livable communities. The goals of corridors go beyond reducing commute times to making urban areas better places to live and work. Transportation corridors frequently cross political boundaries, so it is no wonder the issues surrounding corridors are among the most challenging transportation planners and public officials face.

Since 1995, researchers with the State and Local Policy Program at the Hubert H. Humphrey Institute of Public Affairs at the University of Minnesota have been studying how corridors work and what factors influence their success. The goal of this research, done under the sponsorship of the Federal Transit Administration and Hennepin County, Minnesota, with support from Congressman Martin Sabo, is to create an integrated framework for analyzing corridor development. The framework not only provides planners with a way to examine what went right and wrong and why in projects, but also with a model for anticipating challenges before and during the planning process. This research identified five factors that significantly affect the success of transportation corridors. These factors are citizen preferences, governance, financing, economic development, and design. Further research included evaluations of a dozen corridor projects in North and South America.

This report summarizes the research findings and offers planners and public officials a framework for developing corridor strategies. The report explains how key factors can influence corridor success or failure and offers concrete suggestions to help planners and public officials anticipate and respond to potential roadblocks to corridor development.

While these studies have given us new insight into corridor development, much more remains to be learned about how corridors can function well as both transportation systems and tools for community development. Fortunately, many metropolitan areas are developing corridors, providing new examples of innovation and technique. We hope this report will assist planners in those areas and that we might hear about what you have learned in developing transportation corridors.

Sincerely,

LEE MUNNICH
Senior fellow and director
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PATHS THROUGH THE FOREST

FIVE FACTORS KEY TO THE SUCCESS OF TRANSPORTATION CORRIDORS

Transportation corridors are as old as paths through the forest. Once a route is established, human nature suggests setting up a trading post, a village—places to congregate, do business, and live. Corridors have always existed. But the need to plan for and enhance corridors as travel routes, engines of economic growth, and factors in community development and redevelopment has increased in the past decade as cities and their residents have grown more concerned about sprawl, congestion, and diminished quality of urban life. Corridors are about cars, buses, and trains, yes, but they mostly are about moving people and freight in a variety of ways to create a dynamic urban environment.

“I don’t think we really create corridors,” says Larry Blackstad, a veteran of several corridor planning projects and director of Hennepin Community Works, a community development agency of Hennepin County, Minnesota, in which Minneapolis is the largest city. “They are there. We bring them to prominence.”

The need to focus attention on corridors and the struggles many cities and multi-jurisdictional planning agencies face in developing successful corridors prompted the State and Local Policy Program (SLPP) at the University of Minnesota’s Hubert H. Humphrey Institute of Public Affairs to begin its study of transportation corridors in 1995. Corridor development is one of the most interesting and complex issues in transportation planning, in large part because corridors often cross several jurisdictions and can serve many functions for users and the government agencies developing the corridors. The first SLPP study of transportation corridors, released in 1997, recommended that transportation and community economic development be integrated in corridor planning. This study found that corridors that took a more holistic approach to planning were more likely to be successfully implemented. Since then, Humphrey Institute researchers have developed a framework for planning corridors. The framework encompasses many of the issues and problems communities developing transportation corridors face.

“We are looking for a model that someone who is in charge of creating a corridor could use as a tool to help the process along,” says Frank Douma, lead researcher on the project. “The framework is not something that can be codified, but it is a way for people to think about the key factors that should be considered as you work to make a corridor a reality. It’s also a way to identify potential problems in advance. Planners then can develop strategies for addressing those issues.”

This framework, developed after examining more than a dozen corridor projects across North America, suggests that five factors most influence the success of a corridor. In individual situations, one variable or another may be the determining factor in whether a corridor flourishes or flounders. In
addition, each of the factors can have an impact on the other factors, and that impact is not entirely predictable. "In a nutshell, our work is about trade-offs in making development and transportation decisions," says Kenneth A. Kriz, an assistant professor at the University of Nebraska, Omaha, who has been involved in the Humphrey Institute research. "One area of the model can act as a constraint on the others."

The five areas identified as crucial to transportation corridor development are:
CITIZEN PREFERENCES AND PARTICIPATION,
GOVERNANCE,
ECONOMIC DEVELOPMENT,
FINANCING, AND
DESIGN.

THE LANGUAGE OF CORRIDORS

IN DEVELOPING THEIR FRAMEWORK, THE HUMPHREY INSTITUTE RESEARCHERS APPLIED SEVERAL TERMS OF ART FROM RELATED DISCIPLINES.

TRANSPORTATION CORRIDOR: A geographic area between two points, linking multiple centers and used to move people and freight.

ACCESSIBILITY: The ease with which individuals can reach a location.

MOBILITY: Ease of travel.

TRANSIT-ORIENTED DEVELOPMENT: Development built around a transit station or mode, commonly used in light rail or subway systems. Usually this term implies a mixed-use development (housing and retail) within walking distance of a transit station.

ISTEA: Passed by Congress in 1991, the Interstate Surface Transportation Efficiency Act (ISTEA) provides a holistic approach to transportation planning. It emphasizes mobility, access, equity, reduction of external impacts, public involvement, and multimodal options. Along with its successor, the Transportation Efficiency Act of the 21st Century (TEA-21), it marks the end of the interstate highway era and the dawn of a federal commitment to transportation planning that considers more than just automobile circulation.

HOMEVOTE HYPOTHESIS: The theory put forward by William Fischel that argues that local politics largely are driven by homeowners who vote based on how an issue or idea will affect the value of their home. This phenomenon can affect how transportation corridors are planned, particularly corridors involving many jurisdictions of government.

HOT NETWORKS: High occupancy toll (HOT) lanes provide an alternative source of corridor funding. In these lanes, single-occupancy vehicles are allowed to use high-occupancy vehicle (HOV) lanes for a fee. The concept has been well received along the I-15 corridor in California.

MEMORANDUM OF UNDERSTANDING (MOU): A document establishing a formal partnership between governmental units that defines the parameters of a relationship, including financial obligations and power sharing arrangements. MOUs usually are not legally binding.
PATHS THROUGH THE FOREST

FIVE FACTORS KEY TO THE SUCCESS OF TRANSPORTATION CORRIDORS

CITIZEN PARTICIPATION: REACHING PEOPLE WHERE THEY LIVE

Boston in the early 1970s was “ground zero” for citizen involvement in transportation planning, says Thomas A. Horan, professor of public policy at the Claremont Graduate University in California and a frequent collaborator with Humphrey Institute transportation researchers. Highway planners had proposed that an extension of Interstate 95 run through several southwest Boston neighborhoods to alleviate congestion. Land already had been purchased and buildings demolished to accommodate the proposed elevated highway. Then, residents of the area objected—loudly. “There was an outcry, and the result of that outcry was a series of laws related to citizen participation in highway and transportation planning,” says Horan.

As helpful as these laws are, planning for a transportation corridor often requires an innovative approach to soliciting and responding to citizen preferences, says Horan. Corridors generally serve their areas best and inspire less conflict when a variety of methods of soliciting citizen views on the project are employed. These might include surveys of area residents, meetings organized by transportation planners, websites that allow citizens to offer input on proposals, and special outreach to business owners in the affected area, during both planning and construction. Some planners have used more elaborate preference research methods, including asking a sample of citizens to describe their travel decisions, map their neighborhoods as they use them, list assets and liabilities of the neighbor-
greater investments in sidewalks and amenities to make the area easier to navigate on foot.

Citizen desires cannot always be met, of course. They may be contradictory or impossible to fund. "The classic conflict is that transportation planners have a more regional view and those closer to the neighborhood do not," says Horan. "The question is, how do you reconcile those objectives? Sometimes the real challenge is to make a project 'both/and,' not 'either/or.'" One key to successful corridor planning is to include a sufficient budget for citizen participation and information. Organizations may want to advertise or conduct other public information campaigns in order to get the word out. Researchers found that educational and communication plans often resulted in greater support for the corridor and greater understanding of construction-related inconveniences.

GOVERNANCE: OUT OF MANY GOVERNMENTS, ONE CORRIDOR

Metropolitan areas in America tended to develop with many smaller suburban towns surrounding a central city. Economist William Fischel attributes the development of these smaller towns to a phenomenon he calls the "Homevoter Hypothesis." Fischel argues that homeowners vote based on the impact an issue will have on the value of their homes. The creation of many small suburbs around an urban core came about because homeowners wanted to be governed by people who shared their interests, particularly when property values could be affected.

For corridor planners, the Homevoter Hypothesis illuminates both a problem and an opportunity. The problem: lots of governmental fingers in the corridor pie. Corridors often cross several cities and counties, and planning may involve additional governmental entities, such as a regional planning organization or a state transportation department, as well as federal involvement in financing a project. With so many different interests involved, corridor planning can get bogged down. The opportunity, however, is that homeowners will support projects that they expect will improve their neighborhoods and increase property values—such as a well-planned, economically vibrant transportation corridor.
transportation systems along a corridor. As a practical matter, most successful corridors fall into the category of greater sharing of power and resources, says Douma.

For example, in Denver, six cities, three counties, a regional planning agency, a group representing private interests along the T-REX corridor, and the Colorado Department of Transportation developed a partnership with the Federal Transit Administration and the Federal Highway Administration to improve a 19-mile corridor that involved a light rail transit line with 13 stations and a large highway improvement project to add lanes to Interstate 25 and Interstate 225 near Denver. The $1.67 billion project required two referenda and a commitment from the six cities for $30 million in matching funds. In this case, because of the highway component and extensive involvement by the federal government, the Colorado Department of Transportation was the lead agency on the project, which will be completed in 2006. The project is unusual both for its size and for its combination of light rail and highway improvements.

development deadline of 2008. A clear statement of the purpose for a corridor helps planners stay on track, says Blackstad. "Local political issues can be detrimental to the planning process. You have to have something to go back to—a philosophical statement," he says.

CORRIDORS AS ECONOMIC DEVELOPMENT ENGINES

Dallas never seemed like a mass transit town. The city is large and spread out, with a huge network of freeways providing road connections. But, as the city's economy grew, so did congestion and, in 1996, the city built its first light rail transit LRT line. The system now covers 23 miles and links riders to the convention center, the zoo, and major medical and commercial centers. Daily ridership runs more than 40,000. Like other transportation corridors, Dallas' LRT also has acted as a catalyst for economic development and urban revitalization. A 2002 study found that LRT had stimulated $900 million in private investment in Dallas. Property values developing cooperation among governmental units was crucial to the project's success. A Memorandum of Understanding laid out in detail the roles and obligations of various parties in the project. Outside of the requirements of the memorandum, however, individual cities have autonomy, which gives them the ability to respond to local needs. The corridor's success has been attributed to the clarity of goals that the governing parties shared from the beginning. Those goals included minimizing inconvenience to the public—a challenge given the size and complexity of the project—staying under budget, providing a quality project, and finishing the project before the initial
corridor near the stations enjoyed high occupancy rates. Retail sales increased, particularly in the downtown business district. Many businesses have decided it is an employee benefit to locate near an LRT station, leading to new business growth near stations. Housing options, especially lofts and apartments, also are springing up around the stations. "We've known for a long time that capital investments can be a community development tool," says Blackstad.

Transportation corridors clearly can play a role in building a region's economy, according to the Humphrey Institute.
researchers. However, how much of an economic benefit a community will gain from a corridor depends on several factors, such as location, density, zoning, the relative attractiveness (or discomfort) of transportation alternatives, and private-public partnerships.

“One thing we know is that successful corridors connect origins with destinations,” says Kriz. When transit, such as light rail or bus rapid transit, is the preferred way of moving people through a corridor, the greatest economic benefit will be achieved when the transit is placed on the most congested corridors. For instance, beginning in the 1980s, Pittsburgh created a busway along an abandoned streetcar right of way. The system runs through several communities. The highway alternatives to the busway are congested, and riding the bus shaves about 35 minutes off commuting time—a significant incentive to ride. As a result of this location, the busway attracted thousands of riders and stimulated more than $300 million worth of new development within a five-minute walk of bus stations. Density also affects a transportation corridor’s ability to generate economic development. Successful corridors have multiple and diverse users, so densely populated areas are more conducive to successful corridors.

A design factor that fuels economic development is how accessible corridors are. What connections exist between the corridor and nearby communities and roadways? Are businesses along the corridor accessible to corridor users, whether they are traveling by bus, car, bicycle, or on foot? Corridor use will increase as will economic benefits when it is easier for corridor users to reach their destinations.

Zoning and land use policies also can be used to promote—or hinder—economic development. In Ottawa, Ontario, for instance, home to North America’s largest bus rapid transit system and a strict zoning and development code, companies or shopping centers with more than 5,000 employees are required to be located within a five-minute walk of busway stations. Not surprisingly, bus stations have become economic development engines, with housing, retail, and commercial centers growing up around them. Most U.S. cities do not have such strong zoning laws, but incentives like tax abatements, parking credits, and housing incentive programs can be used to encourage a diversity of development along the corridor. When corridors involve multiple jurisdictions, agreement about how land along the corridor will be zoned is essential.

**FINANCING:**

**CREATING MATCHING CASH FLOWS**

If citizen preferences have been considered, a workable governance structure established, and a clear understanding of the desired economic effects achieved, the next challenging issue for most corridors is financing. Local revenue sources—fares, development fees, special taxing districts—probably will not generate enough cash to fund construction of the project. Traditionally, federal and state governments have made up the difference—often paying a significant portion of up-front costs. However, as states and the federal government experience budget pressures, more local communities are exploring innovative ways to finance their share of corridor projects. In examining how successful corridors have been funded, researcher Kenneth Kriz identified five criteria for evaluating a financing scheme.
First, does it accelerate the project? Getting a project designed and built relatively quickly should be a major goal of project sponsors. The reasons are simple: You save money by avoiding inflation costs and help the corridor become a revenue generator more quickly through fares, increased property taxes, and economic benefits. Many successful corridors, such as the T-REX corridor in Denver, were built using a design-build process, which allows a single firm to design and build the project. On a hypothetical $500 million project, Kriz calculated that a community would save $38 million over five years by using design-build and accelerating the project’s timeline.

Second, does the financing method capture the full economic value of a project? For better or worse, transportation financing decisions in the United States are largely political decisions. To generate support for a project, planners need to ensure that the financing matches benefits with costs.

Third, does the financing method create an easily understood stream of cost? Financing decisions should reveal the true cost of the corridor in a straightforward manner.

Fourth, does the financing plan enhance project control? Project managers need to know they will have the resources available to complete each stage of a project. Financing schemes that rely on many jurisdictions making payments or approving financing over long periods of time may find themselves under-funded if political winds shift. Additionally, municipal bond credit ratings can fall or rise, affecting the ability to finance a project.

Finally, does the finance plan take into account operating costs? These are not trivial and should be considered in any financing package. In Ottawa, Ontario, for example, an extensive system of dedicated busways is priced so that fare revenue captures 65 percent of the operating costs, with the province and local property taxes making up the difference. In San Diego, single-occupancy vehicles are given the option of using high-occupancy vehicle lanes if they pay a toll. Called Fastrak, the system saves users an average of 20 minutes a day and has generated money to pay for an express bus along the route. Other jurisdictions have used a regional sales tax to generate operating funds and a pool of money for new projects.

“Transportation projects always get delayed in bad times,” notes Kriz, and this is rarely wise in either the short or long term. “A good capital investment is a good capital investment. And, sometimes interest rates are lower in bad economic times, so it makes financial sense to build them then. Governments should take a more macro-economic vision of these projects. They should not be shy about building in recessionary times.”

**DESIGN: INTEGRATING INFRASTRUCTURE, URBAN FORM, NATURAL SYSTEMS**

The design of transportation systems no longer solely focuses on cars. Moving cars quickly and efficiently often is one of multiple goals for transportation corridors. Other goals may include developing employment centers, revitalizing a neighborhood, or promoting alternative methods of travel, such as walking, biking, or mass transit. Corridors can be designed to balance these multiple functions and improve the livability of urban areas. University of Minnesota researchers Jeff Miller and Dan Marckel of the Design Center for the American Urban Landscape identified three structural components of transportation systems:
• Infrastructure, including the dominant method of transportation, whether it's automobiles, buses, light rail, biking, or walking.

• Urban form, including the mix of activities along the corridor, such as housing, employment, and shopping. Successful corridors generally link origins, such as neighborhoods, with destinations, like downtowns or other employment centers. Planning for housing and especially employment centers near corridors can reduce traffic, congestion, and negative effects, such as pollution from many short car trips.

• Natural systems, including soil type, waterways, drainage pattern, water quality, vegetation, and air quality. Thoughtful design of a corridor can enhance environmental features and create more aesthetic urban landscapes.

The relationships among these three factors depends on the kind of corridor planned, say Miller and Marckel, whether it is a regional expressway to move high volumes of traffic rapidly; a subregional transitway, such as light rail lines, busways, or subways; metropolitan arterial boulevards to link regional centers and serve auto and transit; or urban connector streets, which feature lower traffic volumes, slower speeds, and more varied methods of travel.

Miller and Marckel propose five design principles for transportation corridors. First, the best corridors link multiple and varied activity centers along the corridor. For instance, the River District Streetcar line in Portland connects a formerly industrial area to the city's downtown, Portland State University, and cultural amenities, like recreation areas, parks, and trails. With its many destinations, the line has fueled other
housing and retail development in the neighborhood and improved the vitality and character of the area.

The second principle involves providing sufficient access to multiple transportation options and networks. Park-and-ride areas are a common example of this principle in action. Third, corridor planners should encourage the development of transportation-supportive land use mixes and densities. Much has been written about transit-oriented development or TOD, which usually means creating a mix of housing, employment, and shopping venues within walking distance of a transit station. These private investments may not immediately surface, however, so parking areas near transit stations offer a way to “hold” land before development occurs.

Fourth, the design of transportation corridors should be compatible with the character of the surrounding community. Planners need to consider such factors as local travel patterns, street configuration, cultural and natural amenities, and the scale and character of any buildings near the corridor. Corridors that encompass several neighborhoods or communities should reflect the character of each city. Issues like whether a route is at-grade, underground, or elevated are crucial to both design and community acceptance of a project.

Finally, planners need to optimize the character and functions of a corridor’s natural systems. These systems include water quality and drainage patterns as well as native vegetation and animal habitats. A comprehensive inventory of natural systems connected with a corridor is a good first step in incorporating natural elements in the design process.

A CORRIDOR FORMULA?

The five factors provide insight into corridor development and highlight potential problem areas that should be addressed in every corridor plan. But they do not constitute a strict formula for corridor planning. “I shy away from the term ‘best practices,’” says Kriz, “because what might be a best practice with one corridor would be a mistake in another. What the model shows is that there are certain considerations that will drive the process. In Southwest Boston, that consideration was citizen participation. Allowing for participation and doing what citizens wanted was certainly more expensive than the roadway that was originally planned. But the project turned out better because of it. It was a trade-off that had to be made.”

The value in the five factors, says Blackstad, is as a tool for analysis and evaluation. “What the Humphrey Institute has distilled is the central characteristics for planners to use in developing corridors,” he says. “From a practitioner’s point of view, the framework gives you a way to look at things.”
LESSONS LEARNED:
EIGHT WAYS TO IMPROVE
CORRIDOR PLANNING

Political in-fights. Tricky funding processes. An unexpected economic downturn. The potential problems in planning a transportation corridor are many. However, research by members of the State and Local Policy Program has identified eight ways planners can anticipate and minimize potential difficulties. While following these eight lessons cannot guarantee a successful or trouble-free planning process, the guidelines can assist planners in forecasting at what points difficulty may occur. These lessons were learned from successful corridor projects on two continents.

GET TO KNOW FOR WHOM YOU ARE PLANNING, AND MEET THEM ON THEIR OWN TERMS.
Collecting information about travel behavior, housing patterns, and commercial districts provides a two-dimensional portrait of a community. Similarly, open houses and government-sponsored meetings expose planners to a slice of the citizenry—but that’s all. As busy as people are today, many citizens may not realize a project is scheduled until the bulldozers arrive. For a more complete understanding of the needs of a community and to ensure that word about a corridor project is spread widely, planners should make use of already planned meetings of business and neighborhood groups and should build relationships within existing community organizations. Not only will these groups provide nuanced feedback about proposals, but they also can be conduits for exchanging information about the project throughout the life of the corridor. Some corridor planners also use citizen input panels or advisory groups. These more intense information and opinion gathering efforts can provide planners with useful detail about citizen preferences. Finally, most successful projects include strong communication plans. Both planning and construction information should be provided to affected citizens through local media, direct mail, websites, and other methods to keep citizens informed about the project.

TAILOR THE FIVE COMPONENTS TO MEET LOCAL CONDITIONS.
While each of the five components—citizen participation, governance, financing, economic development, and design—plays a role in every corridor plan, the crucial component varies from project to project. In Boston, ensuring citizens were satisfied was vital. In Denver, a strong financial plan mattered most. In Portland, stimulating economic development and improving urban form drove decisions about transportation alternatives. Determining which factors should guide corridor decisions is an important choice corridor planners and political leaders must make. That decision depends on a variety of conditions, including local politics, community needs, funding options, and the economic and transportation goals of the project. Trade-offs are inevitable and necessary.

RECOGNIZE THAT PRIORITIES CAN CHANGE AS SCALE CHANGES.
On large-scale projects, the vital factor may shift as the project progresses. If a corridor passes through several jurisdictions, issues like financing and governance may dominate discussions of the overall project, while questions of design and economic development are more
important as narrower elements—such as station design or park-and-ride features—are determined. Narrow elements should not hold up a large project. Prioritize concerns and separate narrow and controversial elements from the overall discussion. In Denver, planners used the design-build method to ensure that the project remained on time and on budget. The overall project enjoyed significant public support, too, as was demonstrated by referenda on the projects. However, planners encountered opposition on narrower issues, such as station design. In retrospect, it might have been wise to keep these narrow elements out of the large project and allow for greater public input and more time to reach a consensus on these components.

HAVE A CHAMPION. When former Minnesota Governor Jesse Ventura said he would ride light-rail in Minneapolis before he left office, and Congressman Martin Sabo succeeded in securing federal funding, transportation suddenly became a big issue in the state. Having a champion—especially one with political clout—provides much-needed momentum. A champion can keep a project in the public eye, dismiss false rumors, demand attention and time from community groups and governmental organizations, and keep project planners focused on their tasks. Effective champions are committed to the vision behind a project and are willing to devote time and energy to it. While a high-profile champion is great, a person with a lower profile but a big commitment to the project and the vision behind it often is the key to a successful project. On another Minneapolis project, a low-key public official kept the project planners on track. He frequently asked a simple question: Is this part of our mission? This focused planners on important issues and prevented them
from being distracted by minor concerns. In other corridor projects, the champion has been a city council member, a governor, or a mayor.

DO NOT LET PRESENT ECONOMIC CONDITIONS AFFECT A FUTURE VISION. While commanding significant resources, corridors should be viewed as investments, not expenses. Corridors can spur economic development—as projects in cities like Ottawa, Dallas, and Vancouver demonstrate. A clear argument needs to be presented that public investments in transportation corridors will attract private investments in retail, commercial, and residential developments. Corridors often spur business expansion and development and should not be set aside because of a temporary economic downturn. Projects that are most likely to spur economic development and enjoy political support even in a slow economy are those in which a clear vision of the project and its ultimate effect on an area has been articulated. If a project improves conditions for current residents—by providing better transportation links or opportunities to improve home values—and offers ways to attract new investment, it can significantly improve a neighborhood. The economic improvements seen in Portland’s River District, for example, show how transportation and related investment can revive a neighborhood.

AVOID LETTING TECHNOLOGY OR DESIGN DRIVE THE PLANNING PROCESS. Settling on a design style or a mode of transportation too early in the process can hamper creative thinking. Most successful corridors gathered opinions from citizens and settled on a governance structure before developing the particulars of a project. In some cases, this decision to wait led to more responsive, creative options. For instance, along the I-15 corridor in San Diego, planners did not immediately decide to install a light rail line, even though the city had good experiences with light rail. Instead, planners gathered information and determined that this new line would be better served and more easily financed by a combination of bus rapid transit and a user-financed high-occupancy vehicle lane. Boston in the 1960s offers a sobering look at what happens when technology and design are determined too early. A major highway connection between Interstate 95 and the city was planned, and the federal government purchased and cleared 65 acres of land before residents began to protest. In 1972, the governor of Massachusetts stopped the project and residents and planners began working on a new transportation plan for the area, which included a subway connection and significant revitalization of the surrounding neighborhood.

CONNECT WITH REGIONAL TRANSPORTATION PLANNING AND FUNDING PROCESSES. Corridors sometimes are viewed as isolated improvements that assist a narrow group of residents in a metropolitan area—perhaps at a cost to the rest of the region. This often occurs where one part of a region is growing rapidly and simply must have improved transportation connections. However, transportation corridors need not be seen as isolated improvements, and planners should work to integrate corridor planning into larger regional development plans and goals. Corridors can and should be viewed as innovative elements in regional efforts to move people efficiently and to build a vital regional economy. Integrating corridors into regional plans also makes it easier to access federal and state transportation funds.

AMEND LOCAL ZONING AS NECESSARY. Too many times corridor projects have been stopped before they get started because of local zoning ordinances. Flexible zoning gives planners and developers the ability to truly reinvent an area. If the difficulties in zoning arise because of multiple jurisdictions, addressing zoning issues in a Memorandum of Understanding.
between government agencies is one way to ensure the project moves forward. Zoning that significantly promotes development along corridors has been successful in Ottawa and in Pittsburgh.

A decision model based on the eight lessons learned is shown below. This model may appear simple, but it has been used to analyze several corridor projects and of value in highlighting areas that may hamper the success of a project. The value of this model is that it provides advice based upon lessons that were learned in the process of making existing corridors successful.

The next step is to move beyond how these lessons were applied in successful corridors to determining why doing these activities led to a successful outcome. By understanding the underlying principles of corridor development, the model will provide more information about when these lessons are most important in the corridor development process. This effort will include review of academic literature, interviews with local experts, and application of these lessons to local cases. This phase will be completed by late 2006.

### SLPP's International and National Benchmarking for Urban Transportation Corridor Development Analysis Flowchart

<table>
<thead>
<tr>
<th>Analytical Category</th>
<th>Lesson Learned</th>
<th>Questions To Ask of Your Project</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Participation</td>
<td>Get to know for whom you are planning.</td>
<td>How stakeholders been extensively involved? Have methods other than separate public meetings been used?</td>
<td>YES: Continue to involve and inform the public at all phases and kinds of development through conventional and unconventional methods.</td>
</tr>
<tr>
<td>Governance</td>
<td>Take the five components to meet local conditions. Recognize priorities can change as time changes.</td>
<td>Which lessons present the greatest challenges? What should be accomplished next? What will take longer?</td>
<td>NO: Engage the public by meeting them in their terms, on their agendas as at their location.</td>
</tr>
<tr>
<td>Finance</td>
<td>Have a champion.</td>
<td>Is there a recognizable champion that represents the entire corridor?</td>
<td>POSSIMIZE: Activities in different analytical areas have different timelines. Consider setting early planning and outreach in some areas until activities in others are well underway or complete.</td>
</tr>
<tr>
<td>Economic Development</td>
<td>Connect with regional transportation planning and funding process.</td>
<td>Does the governing body have representatives from all affected jurisdictions and funding sources?</td>
<td>YES: Build upon visibility and voice of the champion to build consensus and momentum for the corridor.</td>
</tr>
<tr>
<td>Design</td>
<td>Avoid local zoning is necessary.</td>
<td>Does the governing body have local powers or access to them?</td>
<td>NO: Find a champion with political clout and high visibility throughout the region.</td>
</tr>
<tr>
<td></td>
<td>Do not let economic conditions affect a future vision.</td>
<td>Is there a dedicated or alternative funding source or is an economic downturn funding project completion?</td>
<td>YES: Utilize all corridor agencies' governmental powers and funding sources.</td>
</tr>
<tr>
<td></td>
<td>Do not let technology or design drive the planning process.</td>
<td>How was the preferred technology or design selected? By rational projections? Or by political preference?</td>
<td>NO: Create a governing body with representation from all kinds of government.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>YES: Develop a community vision and adopt zoning regulations supportive of that vision along the corridor.</td>
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*Political Pressure Based*: Not good. Decisions based upon political pressure can be premature and can undermine project legitimacy.

*Projection Based*: Good. Strong design and technology decisions upon which decisions help to ensure long term success of corridor projects.
CASE STUDIES IN SUCCESS

UNITED FRONT MOVES T-REX FORWARD

CITY: DENVER, COLORADO

FACTORS: GOVERNANCE, FINANCE

THE STORY: A 1992 study by Denver’s regional planning agency, the Denver Regional Council of Governments or DRCOG, showed that the I-25 corridor connecting downtown Denver to suburban developments to the southeast was overcrowded and on the verge of day-long gridlock. Working jointly with the Colorado Department of Transportation, the area’s Regional Transportation District, three counties, six cities, and several federal agencies, the planning agency determined that a corridor improvement involving both highway expansion and light rail was necessary.

One innovative aspect of the plan was the creation of a joint oversight group—the Transportation Expansion Project, known as T-REX. This joint organization incorporates the interests of affected parties while setting the framework for their roles as the project has progressed. For instance, the organization secured $30 million from the affected counties and cities for the improvement project. A Memorandum of Understanding outlined each group’s funding match for the project as well as planning priorities. The joint organization also worked with local governments on two referenda needed to approve local bonding for the project. Another interesting governance issue was the passage of a law by the Colorado Legislature that allowed the use of a design-build contract on the project. This contract not only saved money on the $1.67 billion construction project, but also contributed to the contractor’s ability to finish the project ahead of schedule. Work on the corridor is expected to be completed in 2006, nearly two years ahead of schedule.

LESSONS: Projects often involve multiple jurisdictions. Early in corridor development, it’s important to develop relationships that address potential disagreements and will move the project forward. As projects grow in size and scope, so should the formality of the partnership. A Memorandum of Understanding can be invaluable in clarifying responsibilities and goals. A unified front also can help attract necessary financing and federal and state funding for projects.

FOR MORE INFORMATION: WWW.TREXPROJECT.COM
VALUE-PRICING WORKS IN SAN DIEGO
CITY: SAN DIEGO, CALIFORNIA
FACTOR: FINANCING

THE STORY: For years, the High Occupancy Vehicle (HOV) lanes along I-15, San Diego’s main north-south route stood nearly empty, despite a growing population and congestion in other lanes along the route. As an experiment, San Diego officials decided to switch the lanes to High Occupancy Toll or HOT lanes. This allowed single-occupancy vehicles to move along the lane for a fee. Drivers wishing to use the lanes outfit their cars with a transponder, which signals detectors along the road that a fee should be assessed.

The experiment proved a success, with many drivers willing to pay the toll, which varies from 50 cents to $4 each way, depending on time of day and traffic levels. In cases of extreme congestion, the toll can be as high as $8. Drivers save about 20 minutes on average on their commutes. The managed lanes have helped the city control congestion and have generated $2 million a year in revenues, which funds the operation of the lane, additional policing along the route, and bus services along the lane. Researchers Robert W. Poole, Jr. and C. Kenneth Orski view HOT lanes as a potentially significant source of operating revenues for transit. They estimate that if the concept were expanded to other metropolitan areas revenues could be increased by $116 million to $922 million a year, depending on the size of the region.

LESSONS: Consider a wide range of financing options for transportation corridors. User fees as well as regional sales taxes can generate new sources of funding for transportation.

FOR MORE INFORMATION: WWW.SANDAG.ORG

COMMUNITY SETS STANDARD FOR CITIZEN PARTICIPATION
CITY: BOSTON, MASSACHUSETTS
FACTORs: CITIZEN PARTICIPATION, ECONOMIC DEVELOPMENT

THE STORY: For more than 30 years, Boston’s citizens have played a significant role in transportation corridor development on the city’s southwest side. Citizen involvement began as a protest after the federal government cleared 65 acres of residential land in the 1960s for a connection between the city and Interstate 95. In 1972, the State of Massachusetts stopped the highway project and embarked on a planning process to cre-
ate transit-based options for residents and improve the design and character of southwest Boston neighborhoods. The 4.7-mile corridor serves three distinct neighborhoods. The project includes three railroad lines, a rapid transit line, nine stations, 90 community gardens, 20 playgrounds, a health care center, a bike path, and new affordable transit-oriented housing, as well as many small businesses.

More than 1,000 citizen meetings were held during the years between 1972 and the completion of heavy construction in 1987. In addition, newsletters and other communication tools kept citizens informed throughout the project. Citizens have been involved in many decisions from such basic issues as what kinds of transit are desirable and what sorts of economic and residential development should be in place along the line to detailed questions about fences, curbing, the design of parkland, and maintenance. Citizen preferences have translated into zoning ordinances that allow for desired development and the creation of vibrant neighborhoods.

LESSONS: The Boston project took many years to complete, in part because of the extensive involvement of residents. Seeking citizen participation early in the planning process, developing efficient methods of communicating with residents about planning and construction, and reaching out through existing channels—such as business groups and community organizations—provides for extensive citizen involvement in a timely manner.

FOR MORE INFORMATION: WWW.MBTA.COM

STREETCAR MOVES NEIGHBORHOOD DEVELOPMENT

CITY: PORTLAND, OREGON

FACTORS: DESIGN, ECONOMIC DEVELOPMENT

THE STORY: The idea of using a streetcar to move people around Portland's downtown and near downtown first emerged in a city plan of the 1970s. In 1989, a Citizens Advisory Committee was formed, and in 2001 the Portland streetcar began operating. The streetcar runs through the River District—an underused, former industrial area that is being redeveloped—and connects it to Portland State University, downtown, and other transportation options.

Planners chose streetcars because they fit with the scale and historical nature of the area, which includes many converted warehouses. The streetcars themselves are sleek and compact and were designed to run in mixed traffic. In addition to the streetcar, the River District corridor includes roadways for cars, bus lanes, bike paths, and sidewalks for pedestrians. The corridor connects to Portland’s light rail transit system, commuter trains, and bus services, creating many options for travelers.
One of the primary goals of the streetcar corridor was to revive the neighborhood around it, creating a mixed-use, high-density urban neighborhood. The River District included 34 acres of abandoned rail yards, which had been purchased by a developer interested in building housing. Plans call for up to 5,000 housing units in the area, and several commercial and mixed-use developments are underway.

LESSONS: The character of a community can determine what transportation options will work best in that area. Similarly, transportation that complements the design and economic goals of a region will be more successful.

FOR MORE INFORMATION: WWW.PORTLANDSTREETCAR.ORG

BIKE PATH UNITES NEIGHBORHOODS

CITY: MINNEAPOLIS, MINNESOTA

FACTORS: GOVERNANCE, DESIGN

THE STORY: Transportation corridors are about moving people, not cars. They also help communities improve quality of life. The 29th Street Midtown Greenway in Minneapolis is a six-mile bikeway and walking corridor that links several diverse neighborhoods. The Greenway was built within an abandoned railroad corridor. In addition to providing biking and walking space, it connects people to shopping and neighborhood amenities, provides green space in a densely populated part of the city, and connects users to other transit options.

The project was one of the first projects completed by Hennepin Community Works, a program of Hennepin County, which works jointly with the City of Minneapolis and several other county and city agencies. Hennepin Community Works operates under a cooperative agreement among the agencies. It was created to manage large infrastructure projects to achieve a variety of goals simultaneously. The organization focuses on such diverse issues as crime reduction, improving the appearance of the community, economic development, and housing. The Greenway project also included extensive involvement from citizen organizations. Like other projects Hennepin Community Works has undertaken, the Greenway uses infrastructure improvements to enhance declining neighborhoods.

LESSONS: Large infrastructure projects usually require cooperation among agencies and political jurisdictions. Successful projects are those in which partners agree about the mission of the project and have a coordinating entity that clearly designates the responsibilities of all of the parties involved.

FOR MORE INFORMATION: WWW.MIDTOWNCOMMUNITYWORKS.ORG

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LIGHT RAIL STIMULATES ECONOMY

CITY: DALLAS, TEXAS

FACTOR: ECONOMIC DEVELOPMENT

THE STORY: Transportation corridors will not always lead to economic growth, but they can spark significant development if the conditions are right. While Dallas is a sprawling city, changes in its population and economy produced the right situation for corridor development. Dallas Area Rapid Transit (DART), a regional transit authority serving 13 cities, opened its first light rail transit line (LRT) in 1996. The service now includes 23 miles of track and 22 stations and has a daily ridership of 40,000. It connects the suburbs of Dallas with the downtown, the convention center, and other centers of activity. The LRT service coincided with growth in Dallas's regional economy and commercial real estate market. In addition, population increases seemed to require increasing density in the area.

A study by two Texas economists five years after the opening of the LRT shows the significant impact the corridor has had on development. At that point, more than $900 million in private investments had been made along the rail line. The taxable property values around light rail stations had increased by 25 percent. In addition, business occupancy rates in nearby office buildings were up. Several mixed-use and residential development projects also had been built or proposed.

An interesting aspect of the Dallas LRT is that it serves only 13 of the region's 183 cities, as well as two counties. DART requires that citizens in a city vote to become part of DART and agree to contribute a one percent sales tax to DART operations. The system provides an excellent example of the Homeowner Hypothesis at work. When citizens see a benefit to the system—as many in Dallas do—they choose to participate. As a result, the system responds to the interests of those areas that wish to participate. This lack of forced participation has led to greater support for DART and its services.

LESSONS: Corridor planners should not be stymied by short-term economic downturns. Corridors that move people logically from origins to destinations will prompt economic development, while demonstrating quality of life benefits will generate local financial support.

FOR MORE INFORMATION: WWW.DART.ORG
BUSWAYS HELP CITY BUSTLE

CITY: OTTAWA, ONTARIO

FACTORS: ECONOMIC DEVELOPMENT, DESIGN

THE STORY: Canada’s capital city, Ottawa, boasts a transit corridor that seems to prove that if you build it, they will come. Ottawa has the most extensive bus way network in North America. The system is 19 miles long and includes 34 stations. It is a diverse system—with buses operating in bus-only lanes, reserved shoulder lanes, and mixed traffic. Called the Transitway, the system grew out of a comprehensive land use and transportation plan begun in Ottawa in the 1970s. City planners and citizen advisers chose a bus system over other options, like light rail, because of its flexibility in responding to regional development trends and funding options.

However, the system has demonstrated that transit stations also can become destinations and development hubs. As a result of strict zoning, much retail and commercial development has grown up near bus stations. For instance, Ottawa’s regional plan requires that shopping and employment centers with more than 5,000 employees locate within a five-minute walk of a bus station. This has spurred residential and retail development as well. One survey found that 30 percent of shoppers arrive at their shopping destination by bus and 95 percent of Ottawa’s residents live within walking distance of a bus line. While Canadian-style planning is not easily transferred to other countries, Ottawa’s bus system shows that well-planned busways can become destinations.

LESSONS: Supportive zoning laws can help make transportation corridors and transit stations real destinations. When that happens, economic development and increased ridership will follow.

FOR MORE INFORMATION: WWW.OCTRANSPO.COM
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