Learning from Worcester Union Station: An Istea Success Story

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Executive Summary

The passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 represented a major shift in federal transportation policy. ISTEA recognizes the interrelated nature of the country’s transportation network, and the benefits of coordinating multiple transportation modes. More importantly, for the first time states could spend their share of federal transportation money (raised from gasoline taxes) on public transportation projects.

The ISTEA legislation gave priority to transportation projects that could spur economic development. In Massachusetts and across the country intermodal transportation centers were planned to facilitate efficient transit connections and to help revitalize cities and towns. Intermodal transportation centers have recently opened in Boston, Worcester and Pittsfield. In western Massachusetts new centers are planned for Greenfield, Holyoke, Westfield, and Springfield. In each case, the project is part of an effort to revitalize the downtown area.

New facilities are being built even though the link between transportation and economic development is far from clear. Recent literature and case studies describing the impact that transportation has on economic development show mixed results. The two major goals of the Master’s project are to describe the debate surrounding transportation and economic development, and to showcase a successful case study in order to illustrate the context that must be set in order to achieve success.
The literature suggests the benefits generated by public transportation projects vary greatly depending on location and a variety of other socio-economic factors. The Master’s Project concludes that intermodal transportation facilities are more likely to impact economic development and revitalization when:

1. The intermodal facility provides access that was not previously available.
2. The intermodal facility is located in an area with a growing economy.
3. The intermodal facility provides a transportation option that is competitive with automobile travel, because it saves the user time and money.
4. Strong public policy initiatives and land use regulations are in place to support the intermodal facility and nearby development.
5. The private and public sector are committed to investing in nearby development projects.

The Union Station project is successful because it shares many of these characteristics, including the following:

1. The project provides commuter rail access to Boston that was not previously available. Weekday ridership is more than double initial estimates. Union Station is one of the few intermodal centers in Massachusetts that has commuter rail service.
2. The Worcester economy shows signs of growth. Boston area residents are moving to the Worcester area, attracted to the affordable housing. This has resulted in new housing and commercial investment, and population growth.

3. Commuter rail travel between Worcester and Boston provides an attractive alternative to driving. During rush hour, the car trip to Boston can take over two hours. The commuter rail trip takes 1-1/2 hours. A round trip ticket between Worcester and Boston (based on a monthly pass) costs $12. This provides a savings compared to gasoline costs, and the costs to park a car in Boston.

4. The city of Worcester has implemented a series of public policy initiatives to support development around the intermodal center. The city realized from the beginning of the Union Station project the need to augment the project with other complimentary development. The city has recently constructed a 500 car parking garage next to the station and has implemented a major urban design initiative that has resulted in a plan to reopen streets in order to create a better connection between Union Station and downtown. The city of Worcester is also working to revise zoning regulations to encourage large mixed use developments in the vicinity of the intermodal center.

5. Private developers are investing in Worcester in order to be near the Union Station intermodal center. Several historic warehouse buildings have recently been converted to housing and commercial use, in part because of their proximity
to Union Station. A major downtown project – City Center – is a $500 million project being constructed by Boston area developers. When complete, it will be a mixed use “transit oriented” residential and commercial village, that helps reconnect Union Station to the downtown shopping district.

Union Station’s success can be measured by indicators suggesting that it is impacting the local economy and is spurring other downtown development.

Indicators that suggest success include:

- Ridership: commuter rail ridership is double original estimates.
- Land values are increasing near Union Station.
- New development and construction is occurring near Union Station.
- Job growth: after years of decline, Worcester employment is growing.
- Interviews with stakeholders indicate an increased sense of community wellbeing and pride associated with the preservation of a major landmark, and the introduction of new train service to Boston.

Union Station is also contributing to the local economy in other ways, by:

- Helping leverage federal transportation funds for additional nearby projects.
- Providing additional economic benefits to the community, including non-user benefits. These include the cost savings associated with reduced pollution, less traffic congestion, historic preservation and energy conservation.
Future plans for additional rail service between Union Station and other New England cities, together with rising gasoline prices and increased congestion will most likely add value to the intermodal center over time. This will help spur additional revitalization. As the debate continues regarding the impact that transportation has on economic development, Union Station provides a success story with lessons for other cities and towns planning intermodal facilities.
Introduction

The passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 represented a major shift in federal transportation policy. For the first time, ISTEA recognized the interrelated nature of the country’s transportation network, and the widespread benefits of coordinating multiple transportation modes. Even more importantly, ISTEA let states determine how to spend their share of federal transportation money.

When ISTEA was created, virtually all interstate highway projects were complete, or under construction. States were now able to use ISTEA funds to address a range of transportation needs that went beyond traditional road construction. Among these projects were intermodal transportation centers, planned to provide travelers with a convenient way to transfer between different transit modes - usually buses, trains, automobiles, and taxis.

An important part of ISTEA was that it gave priority to transportation projects that could spur economic development. In Massachusetts and across the country, politicians and planners promoted intermodal transportation centers as catalysts to help revitalize cities and towns. Since ISTEA, intermodal transportation centers have opened in Boston, Worcester and Pittsfield. In western Massachusetts new centers are planned for Greenfield, Holyoke, Westfield, and Springfield. All of them have economic development and downtown revitalization as major goals.
Intermodal transportation centers are being built even though their impact on economic development is far from clear. Transportation advocates point to research showing the vast economic benefits of federal spending on large transportation projects. These include increased employment, increasing property values, and environmental benefits. They also point to studies showing increased development and population growth adjacent to public transportation facilities.

Critics suggest that since virtually all parts of developed countries like the United States are already accessible, new transportation projects won’t have a significant economic impact. Harvard economist Edward Glaeser (2003) argues that in general, transportation no longer plays a role in the development of cities. Today, cities grow because they provide amenities that people want (including warm weather) and provide easy access to a talented pool of entrepreneurs and workers. The continued dominance of the automobile has relegated the benefits of public transportation to only a few American cities.

Yet the debate reveals one important area where both sides agree. Both advocates and critics agree that successful transportation projects require public policies and land use regulations in order to succeed. These include zoning changes near transit stations to encourage dense, mixed use development, and laws that discourage automobile use, and encourage the use of public transportation.
Critics argue that most cities and towns are not capable of overcoming existing zoning and development patterns to provide the kind of support necessary to help projects succeed. Conversely, advocates argue that there is growing support for dense, transit oriented development and policies that take advantage of public transportation. They point to new studies showing increases in transit ridership as a sign that the public values public transportation.

The debate notwithstanding, local governments eager to access federal ISTEA money, are counting on intermodal centers to breathe new life into their local economies and revitalize underused downtowns. As more intermodal centers are being planned, it is worth asking how projects actually impact economic development. And what lessons can be learned from a project that is successful?

The Master’s Project has three main goals:

- Present a successful intermodal transportation center.
- Describe the context that needs to be set to have a successful project.
- Present information that can provide lessons to cities and towns planning similar facilities.

The following objectives were set in order to meet these goals:

- Describe the debate surrounding the benefits of public transportation projects.
- Describe factors that help projects achieve success.
- Describe indicators that can be used to measure success.
• Compare published findings with actual experience by presenting a case study.

The Worcester Intermodal Transportation Center opened in 1999. It is located in the renovated Union Station, an historic landmark built in 1911, adjacent to the city’s central business district. The intermodal center currently includes Amtrak, city bus service, commuter rail service to Boston, and taxi service. When complete, the center will also include long distance bus service, a 500 car parking garage and a connection to the Blackstone Valley bicycle trail. Union Station is one of many public and private investments underway to help revitalize downtown Worcester.

According to Mr. Steve Cook, at Worcester’s Oak Hill Community Development Corporation, the redevelopment of Union Station has already helped change nearby land use patterns. New residential and commercial developments have recently opened or are planned near the intermodal center. Daily ridership on the commuter rail trains to Boston is almost double original estimates. And nearby real estate values are rising. As a case study, Union Station illustrates the impact of a successful intermodal center. The case study also addresses some of the following questions:

• What role does location, congestion and the local economy play in determining success?

• What are the project’s main benefits?
• What are the benefits to the city of Worcester?
• Do some residents benefit more than others?
• What role do stakeholders and policy makers have in transit decisions?
• Has the project helped spur other downtown development?

The literature review provides the basis for the assessment of the case study presented. Taken together, the literature review and case study help provide a better understanding of the relationship between transportation and economic development.

Definitions and Limitations

The literature uses many different definitions for “economic development”. Forkenbrock and Weisbrod (2001) define it as “the process through which economic activity in an area is expanded to provide more jobs and income to the area’s residents” (Forkenbrock and Weisbrod, 2001, p.107). In another report Weisbord lists the following quantitative indicators to measure economic development: employment, tourism spending, personal income, property values, industry composition, and tax revenues (Weisbord pg. 7, 12). Weisbrod also suggests project case studies “can be used for small areas where available economic data is limited”. For the Master’s Project, the term economic development is also defined as “revitalization”, following Neuwirth’s (1990) definition, since the goal for many new transportation projects is to create a catalyst for developments that will help create stronger and more vital downtowns.
Transportation has many other impacts that are either directly or indirectly related to economic development. These impacts such as reduced pollution, safety, and conservation are difficult to quantify, yet are considered by many to be important benefits. The Master’s Project highlights economic benefits that primarily impact revitalization. The other benefits, while important are beyond the scope of this project. They should be included in a more thorough review of economic impacts.

Also, the Master’s Project does not attempt to address the relationship between public transportation projects and equity, or the impact that intermodal centers have on providing access to poorer, disadvantaged residents. Additional research should be done to help describe this aspect of transportation projects.

Finally, there is a limited amount of literature available pertaining to the economic impact of intermodal transportation centers. In light of this, the Master’s Project relies on research that addresses the economic impact of more traditional transportation facilities. These include transit stations for buses, mass transit, and commuter rail. The characteristics of these facilities closely resemble intermodal centers and are deemed sufficient to achieve the research goals of the Master’s Project.

**Evolution in transportation and the development of cities.**

By the early 1990’s, when the federal highway system was nearly complete, communities were beginning to address problems related to pollution and sprawl. Environmentalists
and public transportation advocates saw the completion of the highway system as an opportunity to change the status quo. ISTEA, funded by the federal fuel tax, provided a more balanced approach to transportation spending. For the first time, the federal government would address the nations’ transportation problems by looking at a wide range of possible solutions.

The growth of the United States was made possible by transportation networks that allowed the movement of goods and people to previously undeveloped areas. American cities and towns initially developed where there was access to water. They were established first along the coastline and then near rivers, which provided access by boat. Wind-powered boats gave way to the steamship in the early nineteenth century, opening up many inland parts of the country to wider commerce and development. The construction of canals made previously land-locked areas accessible.

As the nation grew, a network of roads also developed that linked various parts of the country. For many years most roads were locally controlled, with the federal government only responsible for “postal roads” used to deliver mail (Dilger, 2003). By 1850 railroads became the most economical way to move people and goods across long distances. Except for short trips, horse and carriages could not compete with the comfort and speed provided by the railroads. Railroads could also go many places that could not be accessed by steamships. The railroad was responsible for the rapid growth of industrial cities like Worcester during the second half of the nineteenth century.
Eventually private roads and toll roads that couldn’t compete with the railroads were shut down. With little federal support, the roads that remained open gradually deteriorated so that they were almost unusable. By 1903 the U.S. had more than two million miles of roads, but 90% were impassible during bad weather (Dilger, 2003).

This all changed with the development of the automobile. In 1902 the Model T Ford was introduced. That same year the American Automobile Association was formed, in part to advocate for better roads and national road investment. Eventually, as more people owned automobiles, streets were paved and better maintained. Still the federal government had little involvement in road building. Most of the larger roads were privately run toll roads, which followed few standards and were not coordinated with roads in other states.

The first significant federal investment in the nation’s roads was made possible with the passage of a federal income tax in the early 1900’s (Dilger, 2003). The Federal Road Act of 1916 provided for $75 million to build and upgrade rural postal roads. More importantly, the funding also required states to create highway departments, which would be responsible for developing and maintaining a highway infrastructure. By the late 1930’s, while roads were still controlled locally, they became regulated by the federal government.

The explosive economic growth that occurred throughout the country after World War II resulted in increased automobile ownership and vast amounts of new commercial and
residential development. Eventually, state and local governments could not keep up with the need for more roads. In order to meet this need and to address the growing concern for national security (the problem of mobilizing troops in the event of war) the federal government passed the Federal Aid to Highway Act of 1956 (Dilger, 2003).

The highway bill, signed by President Eisenhower imposed a tax on gasoline and diesel fuel to fund an interstate highway system. As part of the bill, the Highway Trust Fund was created to distribute money from future fuel taxes that would be required to build the massive highway project. Bolstered by a formidable construction lobby, the interstate highway system became the focus of all federal transportation spending for the next forty years (Dilger, 2003).

From 1956 to 1990, the Highway Trust Fund was used exclusively to pay for the interstate system. In 1990, under President George H.W. Bush a portion of the Highway Trust Fund was diverted to non-highway spending. It was used to help pay down the huge federal debt. From this point forward the Highway Trust Fund was targeted as a funding source for a variety of non-highway purposes (Dilger, 2003).

In the 1990’s, as the interstate highway system was being completed there was no longer a consensus as to how to address federal transportation spending. At the time, New York Senator Daniel Patrick Moynihan was head of the federal Environmental and Public Works Committee’s Subcommittee on Water Resources, Transportation and

The ISTEA bill was scheduled to last six years and called for $24 billion in transportation block grants to be distributed to all of the states. For the first time, states could spend the money on a variety of transportation projects besides highway construction. An important part of the bill was that it also required states to implement statewide transportation plans. This established an important role for local control by giving a greater say in decision making to metropolitan planning organizations.

ISTEA has been used to fund many local transportation projects. Many communities have used funds to purchase new busses and other equipment. Others have used the funds to build bike paths and improve traffic flow. And many communities have used the federal funding to build intermodal transportation centers.
Chapter 1

Literature Review

There is a large amount of literature that addresses the relationship between transportation and economic development. Studies discuss the impact of virtually all modes of transportation (cars, trains, trucks buses, etc) on economic development. The Master’s Project literature review focuses primarily on research pertaining to the impact that *public transportation* has on local economic development and revitalization.

While many studies conclude that public transportation provides economic benefits, many others argue that the impact is vastly overstated. In general the literature suggests that in most cases economic benefits are more likely to be realized when projects are carefully planned, address a specific need, and are complimented by supportive public policies and land use regulations. In addition, project success will vary depending on location. Projects are more likely to be successful when the local economy is strong and other socio-economic characteristics foster growth.

The following key issues summarize the debate and provide a framework for presenting and evaluating the Master’s Project case study:

*Methodology: Traditional methods do not accurately measure the impact of transportation investments, especially at the local level.*

Much of the literature that discusses the link between transportation and economic development addresses methodology – how to measure benefits. Transportation impacts
are typically evaluated at the macroscopic or microscopic level. Macroanalysis measures the broad relationship between large transportation investments and the national economy as a whole. Alternatively, microanalysis is used to measure the impact of a specific project at the local or regional level. The literature explains the uses and limitations of both approaches.

Macroanalysis typically predicts the impact of federal infrastructure spending on the national economy. It describes the impact that transportation has on business productivity by analyzing a wide variety of economic indicators. Banister and Berechman (2000), argue that these large scale studies are misleading because they often conclude that transportation investments create economic development, when in fact it is more likely the enormous capital spending creates the impact. Also, many macroeconomic studies highlight the number of new jobs that will be generated by transportation investments. In fact, the largest economic benefit of many transportation projects is the jobs that are created to construct and operate them (Banister and Berechman 2000).

Since macroanalysis relies on broad generalizations, critics also argue that it cannot adequately address the complex nature of transportation and the many ways it impacts economic development, especially at the local level (Apogee Research, 1998). Banister and Berechman (2000) argue that to be of any use, transportation projects must be evaluated at the local level. National studies conducted using macroanalysis aren’t relevant, since regional economies tend to be unique and behave so differently.
Macroanalysis also cannot adequately measure “externalities”, the indirect impacts of transportation on such things as pollution, land use, urban form, and the environment. These issues are becoming increasingly important to cities and towns. A 1999 report by Cambridge Systematics suggests that stakeholders and others involved in deciding public investment priorities are increasingly concerned with local impacts, those that reflect, among other things community values and neighborhood revitalization, things that cannot be addressed by macroanalysis.

Microanalysis is typically used to measure benefits at the local level. This is usually done by comparing benefits to costs. Planners first used cost benefit analysis in the 1950’s to evaluate the economic impact of highway construction. Early cost benefit studies measured only user benefits: primarily improvements that impacted the driver, such as decreased travel time (Thill, 2001). Traditional cost benefit studies quantify all costs and benefits to determine the net monetary impact on the local or regional economy. This method, or variations of it, is still commonly used (Banister and Berechman, 2000).

The literature describes many of the weaknesses of cost benefit analysis. Beimborn, Horowitz, et. al. (1993 ) argue that cost benefit analysis is subject to inaccuracies because even at the local level, transportation projects affect a wide range of issues that traditional cost benefit analysis can’t measure accurately. These issues are often interrelated and overlap in complex ways, frequently resulting in the “double counting” of benefits. Also, cost benefit studies don’t always account for what Litman (2004) calls “economic transfers”. For example, real estate values may increase near a transportation
improvement but may decrease somewhere else, or vice versa. Taken together, the net economic benefit to the region may be negligible.

Litman (2004) also suggests that traditional cost benefit analysis does not adequately account for a wide range of environmental and social impacts. These include noise and pollution reduction, economic revitalization and changes in land development. Similarly, typical cost benefit studies are criticized because they don’t measure less tangible values such as “community cohesion, economic development, and visual quality” (Forkenbrock and Weisbrod 2001 p.6).

Other research indicates that cost benefit studies do not accurately measure equity, the impact that transportation modes have on different social and economic groups. Banister and Berechman (2000) argue that typical cost benefit analysis measures costs by determining an average “willingness to pay.” These studies by necessity aggregate the population to determine a typical amount the average person is willing to pay for a transportation benefit. Consequently cost benefit analysis places a higher monetary value on transportation alternatives that serve high-income individuals (who are willing to pay more). Beimborn, Horowitz , et.al. (1993) argue that “willingness to pay” scenarios are biased toward the automobile. As a result, public transportation, a mode used disproportionately by persons with low income, is typically valued less.

A large amount of literature discusses the difficulty in measuring the impact that transportation projects have on development patterns and land use. Advocates promote
public transportation because it helps create new activity centers and increases property values. But these “benefits are seldom explicitly considered in traditional cost benefit studies” (Beimborn, Horowitz, et al. 1993, p.3).

Pickerel’s research suggests that most studies exaggerate the impact that transportation has on land use patterns because they “fail to control adequately for the influence of household characteristics and other variables” that affect where people and businesses locate (Pickerel, 1999, p. 404). According to Vessali (1996) most land use studies rely on traditional “location theory”. Location theory suggests that property values will rise because transportation improvements will decrease relative commuting costs, causing land near public transportation to be in greater demand.

Location theory may have been valid in the past, but it does not reflect contemporary household structures. Today, location decisions are complicated by a large number of social and economic factors, including two income families that may have different travel patterns. In most cases where property values are found to go up, the studies cannot say with certainty that the price increases were due to the property’s location near transportation. Even so, location theory is still the “most commonly used conceptual basis for examining the linkages between land use and transportation” (Vessali, 1996 p.72).

Other studies suggest ways to address the weaknesses in traditional methodological approaches. Forkenbrock and Weisbrod (2001) describe a new paradigm: Where in the past, the impact of transportation investments had been traditionally evaluated on the
“basis of a combination of engineering and economic criteria” including their effect on travel time and safety, today we look at quality of life issues (Forkenbrock and Weisbrod, 2001, p 1). This new paradigm includes a ways to measure a broader range of impacts that emphasize non-user benefits (Weisbrod and Grovak, 2001).

Beimborn, Horowitz, et. al. (1999) propose more accurate methods to monetize (calculate the monetary value) of quality of life issues. As opposed to traditional cost benefit analysis, their research argues that the value of each impact should be summarized separately, and then “weighted” (up or down), to reflect its value to the community. After all of the monetary values are calculated in this fashion, their impacts are added together. Impacts that can’t be quantified are described in written qualitative terms to augment their monetary impact.

Litman (2004) proposes ways to make fairer comparisons between automobile and public transportation modes. He proposes a cost benefit approach that measures the “full cost” of a transportation investment. For example, he estimates that the full cost of automobile travel is much more than the internal costs to the driver (ownership and maintenance costs). Environmental costs and social costs to the community must also be measured. Litman’s approach also emphasizes “efficiency benefits” gained by public transportation. His calculations include public transportation’s impact on better air quality, reduced traffic congestion, and increased quality of life.

Litman (2004) also suggests ways to measure the relationship between transportation and equity. Public transportation provides mobility benefits to people that are “physically,
socially or economically disadvantaged” (Litman, 2004, p.52). He argues that mobility benefits are typically overlooked in traditional cost benefit analysis because they cannot be easily quantified. Litman suggests measuring the benefits to disadvantaged persons by predicting the number of trips made possible by public transportation. The trips are monetized based on the increased levels of health care, education and employment they allow.

Burkhardt’s 1998 study also addresses the undervaluing of public transportation. He proposes measuring the economic impact of transportation by using a modified version of the traditional “null alternative” analysis. By asking “What would happen if the transit facility was not there?”, Burkhardt argues that the full range of costs associated with transportation will be better understood. He suggests that the benefits of public transportation improvements be expanded to measure loss in revenues (employees that can’t get to work), increased car trips and congestion that would result if public transportation was not available. The null alternative was illustrated during the 2005 New York City transit strike. The city’s comptroller estimated the economic impact of the first day of the strike at almost $400 million (Perez-Pena, 2005).

Much of the literature recommends case studies as a more appropriate way to describe transportation’s benefits at the local level (Apogee Research, 1998). Case studies, while anecdotal, can present qualitative information more effectively than cost benefit approaches. In addition, Forkenbrock and Weisbrod (2001) argue that case studies can be used for small cities and towns where available economic data is often limited. Case
studies are also more easily understood by local residents. Forkenbrock and Wesbrod explain that “this type of real-life experience is useful especially at public meetings” because it is easier for the general public to understand than more complicated quantitative data (Forkenbrock and Weisbrod. 2001, p. 122).

Higgins and Rabinowitz (2003) presented a case study of the economic benefits of public transportation improvements in Corpus Christi, Texas. By using “before and after” interviews with neighborhood stakeholders, the authors were able to gather qualitative data related to the benefits of new bus stations in the downtown area. Interviews took place three years after the completion of improvements to existing stations. Their study evaluated the benefits of the improved stations based on a range of qualitative indicators that couldn’t be addressed with typical cost benefit analysis. The interviews demonstrated that there was a positive impact on local business activity, because the pedestrian environment and the perception of crime in the neighborhood improved after the transportation improvements were made.

*The relationship between transportation and economic development is complex: Not all transportation projects will impact economic development.*

Many policy makers and stakeholders assume that all transportation projects will impact economic development. Banister and Berechman (2000) argue that this assumption has been influenced by macroanalytic studies showing the vast economic benefits of enormous federal spending on the nation’s infrastructure. Aschauer’s research, published in 1990 following the Reagan administration’s large cuts in federal transportation
spending is one such study. It concludes that the government’s lack of investment in public infrastructure was responsible for the country’s poor economic performance during most of the 1980’s.

Aschauer argues that transportation improvements create efficiencies in productivity that encourage business expansion and job growth. The construction of large public projects such as “airports, highways and mass transit” encourage economic development (Aschauer, 1990, p.1). The study uses the example of Federal Express, a company Aschauer argues wouldn’t be profitable without large public investments in highway and airport infrastructure. He also points to a study conducted in Los Angeles that estimated that traffic congestion resulted in $507 million of lost time and 72 million gallons of wasted fuel each year. This cost would be mitigated if highway capacity were expanded. Finally, by comparing federal capital spending from 1950 to 1985, Ashauer correlates a rise and fall in national productivity with a rise and fall in public capital investment.

Banister and Berechman (2000) argue that any causality between transportation and economic development is overstated, if it exists at all. They argue that this is partly because most of the studies showing a relationship between transportation and economic development were completed during the post World War II era, a period of relative prosperity and overall economic expansion. Banister and Berechman argue that transportation projects respond to economic growth and not vice versa. It is economic development, and increased business and land use activity that creates the need for transportation improvements.
Similarly, Kain (1999) argues that the causal relationship between transportation and economic development is based on outdated, historical associations with trailblazing projects like the transcontinental railroad and the interstate highway system. Some studies still refer to the benefits of the Erie Canal! In the past, large infrastructure projects impacted economic development because they opened up previously inaccessible land to new markets. Today the country is crisscrossed with highways and air corridors, making these kinds of benefits no longer possible. Pickerall (1999) suggests that “the extent and capacity of modern urban transportation networks already provide extremely high degrees of connectivity” so new transportation improvements will have only limited impacts on development (Pickerall, 1999, p. 416).

Black argues that transportation improvements can only achieve impacts in undeveloped areas. He explains that the historical experience in the United States is responsible for the widespread belief that transit investments impact economic growth. The U.S. reaped huge economic benefits from railroad expansion in the 19th century and highway construction in the 20th century. But given the developed state of most of the country, Black argues that today’s transportation improvements will not have the same impact. Reports showing “that any highway or transport facility will bring economic growth are not credible” (Black, 2001, p.3).

Critics also argue that public transportation’s impact is limited because it is so expensive and is used by relatively few people. A study by Baum-Snow and Kahn (2000) of rapid transit systems in Boston, Washington, D.C., Chicago, Atlanta and Portland, Oregon
found that between 1990 and 2000, transit ridership declined in all cities except Washington. In 2005 MBTA ridership hit its lowest level in a decade before rising again just before the beginning of 2006 (Daniel, 2006). The automobile is a more convenient transportation option for most commuters given dispersed land use patterns. Glaeser and Kahn (May 2003) argue that as household incomes rise, the trend toward automobile use will continue. And as residents choose to live in ever expanding suburbs, where less public transit is available, transit use will decline further.

Even the strongest advocates of public transportation concede that the benefits are difficult to prove. A study by Cambridge Systematics (1999) for the American Public Transit Association (APTA) concludes that in order to estimate the real impact of transportation improvements, “it remains necessary to make educated or informed guesses based on logic and professional judgment (Cambridge Systematics, 1999 p.6.4). A recent article in the Boston Globe describing the need to expand commuter rail service between Boston and Worcester quotes Doug Foy, the former secretary of the state’s Executive Office for Commonwealth Development. Foy wanted to expand rail service to remote parts of Massachusetts because in his opinion “you can’t find ‘second tier’ cities that are doing well that lack train service”. But he admits, he can’t prove this (Kladko, 2006, p.30).
Project success will depend on local conditions, including the health of the local economy, the amount of traffic congestion present and whether or not the transportation investment fills a critical need that attracts riders.

A 1999 Cambridge Systematics report argues that the impact of transportation improvements varies greatly, depending on location, and whether or not the improvement provides a benefit that attracts riders. The study shows that economic impacts will be greatest when public transportation fills a critical need. Economic benefits will be greatest in congested metropolitan areas, with long commute times, and where there is limited ability to increase highway capacity. Baum-Snow and Kahn (2000) argue that reduced commuting time is not enough to get people out of their cars. In order for commuters to switch to public transportation it “must be made cheaper than driving” (Kahn, 2000, p.245). The steep increases in gasoline prices are thought to be one of the main reasons for the recent upturn in MBTA ridership (Daniel, 2006).

A study published in 2003 by Ozbay, Ozmen-Ertekin, and Berechman also describes the role that traffic congestion plays in the impact that public transportation makes. Their study of public transportation systems in 18 counties in the New York/New Jersey region shows significant economic benefits can be gained when “accessibility” is increased in highly congested areas. The study uses an “accessibility” index, to compare the degree of accessibility that different locations within the study area have to major employment centers. The study finds that in the New York/New Jersey area, decreased travel time (greater accessibility) afforded by public transportation results in local employment, population and income gains.
Baum-Snow and Kahn (2005) found that transit systems were more successful in attracting riders in larger, denser, and more centralized cities such as Chicago, Washington, D.C. and New York. Kain (1999) points to statistics showing that in 1990 commuters in the seven largest metropolitan areas accounted for 69% of all U.S. transit trips. Public transit ridership continues to decline in the United States, with nationwide ridership dropping from 12% in 1970 to 6% in 2000 (Baum-Snow and Kahn, 2005). Yet Baum-Snow and Kahn found that transit use actually increased for commuters that had to commute in dense metropolitan centers. Commuters were more likely to switch from cars to transit if they lived greater than 10 kilometers (6.2 miles) from the central business district. If they lived closer, driving was more convenient.

A study by Holtzclaw, et. al. (2000) shows a correlation between residential density and automobile ownership and public transportation use (after controlling for income and household size). Very dense areas of cities were more likely to have residents that did not own cars (they could walk to nearby stores and services) and they relied on transit more. “Americans consume more than 4 times the gasoline that Europeans do, and 10 times more than residents due in compact Asian cities” (Holtzclaw, et. al. 2000, p. 2.) The study shows that auto ownership decreases and public transportation increases in more dense neighborhoods because you can get to things without driving. Other factors include income, family size and the availability of readily accessible transportation options. This suggests that building more dense, transit oriented development will increase the use of transit, and increase its economic impact.
The argument that public transportation is more likely to be successful in congested areas is supported by anecdotal evidence. When improved transit service was recently introduced to suburban New Jersey, allowing for direct trips to Manhattan in only 30 minutes, local store owners noticed an increase in sales. In addition, The New York Times reported that the new service is perceived by business owners and residents as responsible for an increase in both residential and commercial real estate values, and was credited with the revitalization of a long dormant downtown area. The article notes that nearby roads are “choked with traffic much of the time”, so the value of rapid rail travel and the proximity to stations has grown (Holusha, 2002).

A number of studies show that public transportation will have a limited impact on economic development in areas with little highway congestion. Sharma’s study, (1987) examined data for 112 small American cities and towns (population, employment, economic activity, and public transportation), to determine the impact that transportation had on central business district revitalization. The study concluded that transportation improvements have much less impact on small and medium sized cities because congestion is not a serious deterrent to driving. The study also shows that in small and medium sized cities, public transportation is used primarily as a means to get to work. Thus its impact on increased shopping and entertainment activities (a frequent goal of downtown revitalization plans) is limited.
There are some studies that show that even in relatively non-congested areas, public transportation can have a significant impact when the project fills other critical needs. Peng and Nelson’s study (1996) shows the economic benefits of connecting transit systems to educational opportunities in remote towns across rural Georgia. Without this access, the study argues that residents would have fewer jobs, at lower salaries. This in turn would mean lower spending on goods and services. The study concludes that public transportation creates a large economic impact in rural areas, especially for low income residents that are less likely to own automobiles (Peng and Nelson, 1996, p.57).

Many studies indicate that transportation investments will have a greater impact where there already is a strong economy. Trygg and Knight’s study (1997) of San Francisco’s Bay Area Rapid Transit (BART) system is cited frequently. It concludes that “recent major rapid transit improvements have been important inducements to intensified development near stations both in CBD’s and in outlying areas, although only when supported by other favorable forces”. Trygg and Knight suggest that the primary factor behind land development is “the existence of strong and effective demand for new office, retail, and apartment development,” closely related to the growing local economy (Trygg and Knight, 1977, p.6). A more recent study by Vessali states that significant economic impacts from transportation investments “have been observed only in areas and during times when populations and regional economies (especially real estate markets) were booming” (Vessali 1996, p. 98).
Trygg and Knight also found that successful transportation projects “are those in which transit and a variety of other complementary factors were present together” (Trygg and Knight, 1977, p.4). These complimentary factors include land availability, its ease of assembly, and the social and physical characteristics of the area, general economic conditions, community support, and public land use policies. Conversely, when these forces were absent or weak, few land use impacts were found.

The evidence showing a link between transportation and economic development is far from clear. Studies frequently present contradictory information, adding to the uncertainty. The Conservation Law Foundation, a group that advocates for sustainable development, found that the Red Line subway extension into Cambridge has helped increase property values adjacent to the Davis Square transit station in Somerville (www.clf.org/programs). But Landau’s study (2000) for the same Red Line extension project concluded that contrary to popular belief, retail development and rising home prices in Somerville were more a reflection of the healthy local economy than the results of proximity to transit.

Case studies also show mixed results.

Many critics argue that very few public transportation projects are successful. A 2002 report by Wendell Cox for the fiscally conservative Heritage Foundation argues that the costs of public transportation far exceeds the limited economic benefits. Cox points to recently completed transit systems in St. Louis, Dallas and Portland Oregon, that had
many fewer riders than expected. Limited ridership means that the cost per new trip is extraordinarily high. Cox argues that a proposed light rail line in San Francisco would have a cost of $18,225 annually per new commuter, or enough “to lease a new Pontiac Grand Am” every year (Cox, 2002, p.2).

Other critics believe that public transportation’s greatest economic impact is the jobs created during the construction and operation of the transportation system. Levine’s study (1992) for the University of Wisconsin looked at the benefits of a light rail transit system proposed for Milwaukee. He argues that the greatest economic benefits won’t come from improved public transportation, but rather from the “public works” aspect of the project. The report estimates that the project will create 6,041 jobs during the four to five year construction period. In addition, once the system is complete, operating and maintaining the system will create 625 permanent jobs. Even so, the report recommends proceeding with the project.

Banister and Berechman (2000) look at the economic impact of a light rail transit system in Buffalo. The 6.5 mile system constructed during the 1980’s was not built to solve any transportation problem. It was built specifically to encourage economic development in the Central Business District. This was supposed to happen because the transit system would make downtown more accessible and attractive to shoppers and businesses. The project was not successful for several reasons. The local economy was not expanding, traffic congestion in the downtown area was not severe, and there was no significant public policy in place to support intensive land use adjacent to transit stations.
Skolnick and Schreiner’s study (1998) argues that critics undervalue the local impact of transportation investments. The study uses a cost benefit approach to measure the economic benefits of public transportation in a relatively small urban area, Danbury, Connecticut. Using an approach first employed by Beimborn, Horowitz et. al. (1993), Skolnick and Schreiner were able to construct a “benefit tree” to describe the relationship between the existing bus system and the travel decisions it allowed local residents to make. The report argues that without existing transit service (the null alternative), “individuals will choose alternative forms of transportation or cancel trips” (Skolnick and Schreiner, 1998, p.53). The study quantifies the economic benefits of fewer traffic accidents, reduced air pollution, less congestion, and increased employment and income.

The study finds that the two largest impacts of eliminating public transportation are those associated with transit users switching to automobiles ($1.2 million) and the loss of transit employee jobs, and loss of operating funds for the transit system. The study concludes that existing public transportation creates a net positive economic impact of almost $6 million, or for every $1 in local investment, transit returns almost $10 to the local community. The report found that the existing transit service provides “significant net economic benefits to the local community” (Skolnick, 1998, p. 55).

As mentioned previously, a study prepared for the U.S. Department of Transportation five years after the completion of the BART system in San Francisco concludes that rapid transit in the Bay Area has had little measurable impact on regional economic
development (Trygg and Knight, 1977). The study concludes that even though general employment in the Bay area was increasing above the national average, after conducting interviews with employers, there was no evidence that this growth was due to BART. Furthermore the study found that BART’S original objective, to “relieve congestion on suburban to downtown transportation corridors” was met, but meant that more whites were served than black residents, implying that jobs were more accessible to whites. Also, since BART was funded with property taxes and sales taxes (household taxes pay for 69 %, and businesses pay for 21%), poorer minority households pay a higher percentage of their income to support public transportation (Trygg and Knight, 1977). The Trygg and Knight study was highly reported and is often cited by public transportation critics. Transit advocates charge that the study was conducted too soon after the BART project was completed.

Yet a more recent study, completed by Cervero twenty years after the BART completion reaches a similar conclusion: “BART in and of itself has clearly not been able to induce large-scale land use changes, though under the right circumstances, it appears to be an important contributor” to land use and economic development gains (Cervero and Landis, 1997 p.309). The Cervero study indicates that BART was successful in building a more dense and developed downtown area in both Oakland and San Francisco, but the hoped for economic development that was predicted for other areas along the transit line did not meet expectations.

A study of Atlanta’s MARTA transit system reaches similar conclusions. The study
reviewed population and employment data for areas near transit stations. The study found that MARTA “has had neither a positive nor negative impact on total population and total employment in station areas” (Bollinger and Ihlanfeldt, 1997 p.202). The authors suggest that the lack of impact is due to the limited benefits that the system provides. They conclude that like many American cities, Atlanta is highly decentralized and auto-dependent. Its development is determined primarily by highways. Also Atlanta has not initiated any major public policies (except zoning) to encourage development in transit station areas. Consequently, the authors argue that the land use and economic impacts of mass transportation will be limited at best.

Armstrong’s study (1994) shows the impact of commuter rail service on property values on the Fitchburg commuter rail line near Boston. The study, which used census data (and complex regression formulas to control for a range of independent variables) compared the median price of a single family home in towns with and without commuter rail stations. The study found that a single family home in an area served by commuter rail was 6.7% more expensive than in towns without commuter rail service. While this may be true, its value may not always be relevant. Neuwirth (1990), argues that even though real estate values may be impacted by proximity to public transportation, this is not a goal for many cities that are primarily interested in revitalizing downtown areas.
Other factors, including supportive public policy and land use regulations can help transportation developments achieve the goal of economic development and revitalization.

There are many complimentary factors that can help transportation projects make a greater impact on economic development. After examining public transportation systems in Atlanta, Dallas, Boston and Hartford, Neuwirth (1990) concludes that “transit is only one of several factors which must be in place to create and direct new development projects”. These factors, which vary depending on location, include “the area economy, land use planning and policy, and availability of land” (Neuwirth, 1990, p 149).

When Atlanta’s MARTA transit system was first constructed, it did not have a significant economic impact. Nuewirth (1990) finds that this was due in part to a decrease in federal funds for urban improvement projects associated with the transportation system. The report suggests that after “a set of public policies designed to support development” was instituted, the city “experienced a scale of development and revitalization fulfilling many early desires” for the transit system (Neuwirth, 1990 p. 146).

Neuwirth (1990) also points to a policy decision to have transit service connect downtown Atlanta to Hartsfield Airport. This made MARTA especially useful to downtown businesses, since it could get people to the airport in 20 minutes. After this connection was made, downtown became an attractive location for corporate offices that could locate near the transit system. This lead to increased commercial activity, that in turn encouraged even more growth.
Levine (1992) studied the economic impact of new rapid transit systems in Portland, Buffalo, Toronto, Baltimore, St. Louis, Atlanta, and San Francisco. By examining changes in employment, earnings and economic output in areas adjacent to transit lines, Levine concludes that in most instances the economic impact was relatively minor. Levine argues that “decisive and active public policy may be required to achieve even modest development impacts of light rail transit, especially in station areas located in neighborhoods with weak private investment markets” (Levine, p. 3).

Many studies indicate that public transportation improvements have only limited economic benefits in poorer cities, ironically, where the benefits are needed most. Both Buffalo and Pittsburgh built new transit systems for the specific purpose of revitalizing their depressed downtowns. Yet Neuwirth’s research (1990) found that if the transit provided any economic impact, it came primarily from public policies that provided incentives for the construction of new office complexes near transit stations. The transit stations created little development themselves. In Buffalo, strong public policy was never established to compliment the transit system. For example, parking garages were still encouraged downtown, and unlike Atlanta, a decision was made not to pursue a transit extension to the major university or the airport.

Belzer and Autler (2002) have also studied the economic impact of public transportation in poorer cities. Their study argues that “transit alone does not drive real estate
investment when other conditions – particularly market conditions – are not supportive”.

Access to transit is only one factor that makes land more attractive. Belzer and Autler argue that there has to be sufficient demand present to create new development. This is especially problematic in low income areas, where the real estate market is particularly weak. Belzer and Autler argue that “real or perceived problems such as crime, social problems, and deteriorated physical conditions all deter development” (Belzer and Autler, p. 27).

Poorer areas have other characteristics that may discourage the use of public transportation. These include relatively high concentrations of poor residents, and class stereotypes. Unless these issues are overcome, the impact transportation investments have, especially on land values and new development, will be limited. Forkenbrock and Weisbrod (2001) argue that the ability of transportation projects to impact land value is directly related to how well the facility improves accessibility, safety, visual quality, and community cohesion and business productivity. Neuwirth (1990) suggests that transportation impacts economic development when it improves the “quality of life”. If the downtown area is seen as a desirable destination, it is more likely to attract economic development.

Vessali (1996) reviewed studies of thirty-seven different transit systems and the impact that they had on property values. Most of the studies showed small increases to property values, leading Vessali to conclude that transportation related investments should not be
considered to be “automatic” (Vessali, p. 98). Vessali argues that specific programs and policies must be put in place to support transportation investments, especially in areas experiencing slow growth, or in areas that already have a high degree of accessibility (limiting the impact of new transportation improvements). Successful economic development and revitalization requires proactive planning initiatives, requiring “a substantial investment of public sector resources and coordination” (Vessali, p. 98, 99).

Spalding (1987) points to Los Angeles as an example of a city that is implementing progressive policies to promote public transportation. The policies include dedicated lanes on freeways for buses, incentives to office workers to form carpools and the construction of commuter parking lots near transit stations. Also, new zoning regulations adjacent to transit stations encourage dense, mixed use development downtown. Other policies require that developers of new office projects implement rideshare programs for tenants. In some areas the developer is required to have at least 60% of building occupants participate in the rideshare program (Spalding, 1987). These policies all help increase the value of public transportation, and in turn increase their economic impact by attracting development.

Critics argue that places like Los Angeles are more the exception than the rule. More often than not, existing public policy limits the impact that public transportation has on economic development. Khan and LeRoy’s research (2003) shows that governments actually discourage transit use and the resulting economic benefits because of policies that give incentives to suburban land development. Their review of economic subsidy
programs for all 50 states shows that not one state connects economic development spending effectively with public transportation planning.

Conversely transportation advocates argue that better public policy is the only way to change historical land use patterns so that they favor “smart growth” (Litman 2005). Litman suggests that new public policy initiatives that encourage mixed use, dense developments will help transportation projects impact economic development. In spite of suburban sprawl, Litman points to studies showing that dense, “24 hour metropolitan areas” are the most profitable for developers. This leads to increased property values because smart growth development is more desirable than traditional suburban patterns. As evidence, Litman suggests that “high technology” and biotechnology clusters in east and west coast cities show that contrary to popular belief, the automobile, computer, and cell phone have not diminished the benefits of density (Litman, 2005, p. 26).

Belzer and Autler (2002) conducted a large study for the Brookings Institution concerning the potential benefits of Transit Oriented Development (TOD). After conducting extensive interviews with nearly 30 transit agencies across the country, the authors argue that in order to achieve benefits, municipalities must carefully coordinate transit investments with economic development. The report uses the example of Plano, Texas, a city on the outskirts of Dallas. Plano actively pursued a new transit stop that would connect it to downtown Dallas and created a comprehensive redevelopment plan that supported the use of the station. Belzer and Autler quote a local developer as saying he never would have been interested in downtown Plano “had it not been for the city’s
downtown plan, its willingness to finance infrastructure and public improvements, and its efforts to assemble land for development” (Belzer and Autler p. 26).

Shuldiner, Collura, et. al (1986) studied four small to medium sized cities in New England: Hartford, Springfield, Burlington, VT and Portland, ME. Their findings showed that cities that implemented policy initiatives to “integrate downtown revitalization and transportation” were more likely to see downtown revitalization (Shuldiner, Collura, et.al., p.32). Burlington, Vermont combined downtown events such as street festivals, and fairs with streetscape improvements along with new transit (bus) programs to attract residents and visitors downtown. This approach is confirmed by a study done of public transit facilities in Corpus Christi, Texas (Higgins and Rabinowitz, 2003). The study evaluated the impact of streetscape improvements adjacent to public transit (bus) stations. Interviews conducted with business owners and residents found that they attributed the physical improvements to attracting more economic development to the neighborhoods near the stations.

Trygg and Knight’s study (1977) argues that zoning near stations must allow for “intensification of use” if any significant impact is to occur. Their study of San Francisco’s BART system concludes that “land use policy was found to be one of the most important factors in the generation or prevention of economic impact” (Trygg and Knight, p. 8). In referring to the Trygg and Knight study, Neuwirth notes that development around transit stations in San Francisco was due mostly to “specific
redevelopment planning efforts undertaken for Market Street by the city” (Neuwirth, 1990, p. 144).

**Summary of Literature Review**

The literature highlights the complex nature of transportation and the ongoing debate regarding the impact that transportation has on economic development. While a number of studies conclude that public transportation provides economic benefits, many others argue that the impact is usually vastly overstated. In general the literature indicates that it should not be assumed that all transportation improvements will lead to economic development. Economic benefits are influenced by local economic and social conditions. Projects that are carefully planned and that address a specific need are more likely to be successful, especially if they complimented by supportive public policies and land use regulations.

Some common themes discussed in the literature:

1. Traditional methodology does not measure the broad range of impacts made by transportation investments, especially at the local level. New approaches need to be developed to accurately measure both user and non users’ benefits. While many studies measure land use changes, job creation and real estate values, other less quantifiable benefits are also important and also impact economic
development. These include such things as noise and pollution reduction, safety, social equity and visual quality.

2. Transportation projects do not automatically impact economic development. Many policy makers and stakeholders assume that all transportation projects will impact economic development. This is based in large part on historical studies showing the benefits that railroads and highways had on making previously remote areas accessible to trade and development. The country is far too developed for this relationship to exist today.

3. Project success will depend on a number of factors. These include the strength of the local economy, the amount of traffic congestion and whether or not there is land available for new development.

4. Individual case studies also show mixed results. In general the case studies show that public transportation generally benefits downtowns by making them more accessible for workers, shoppers and residents. Public transportation also encourages more dense downtowns.

5. Both transportation advocates and critics agree supportive public policy and land use regulations are necessary if public transportation is going to have a measurable impact on economic development and revitalization. Supportive public policies include zoning laws that support dense, mixed use development, and regulations that promote the use of public transportation.
Chapter 2

Union Station

Introduction

Intermodal transportation centers are currently planned for Springfield, Holyoke, Westfield, and Greenfield, and have recently been completed in Boston, Pittsfield and Worcester. All of these projects are financed in large part with federal ISTEA funds. And each is designed to spur economic development and revitalization.

The Worcester Intermodal Transportation Center was built in the restored Union Station train station. The station, originally built for the Boston and Albany Railroad, is just outside the downtown shopping district. The building was last used as a train station in 1964, and was abandoned shortly afterwards. After a $33 million dollar renovation, the station reopened in 1999. It is currently used for commuter rail service to Boston. Eventually the project will include inter-city and local bus service, a parking garage and connections to the Blackstone Valley bicycle trail.

The Union Station intermodal facility in Worcester is presented as part of the Master’s Project for two main reasons: The project is a success and the project illustrates a range of challenges and issues that confront most public transportation projects that are being built to spur economic development. The case study can provide valuable lessons to other communities planning similar projects.
Worcester, Massachusetts

Worcester, located approximately 40 miles west of Boston is part of the original Massachusetts Bay Colony. The city occupies 33 square miles of land originally purchased in 1674 from the Nipmuck Indians. The city, (a town until 1848) was originally named “Quinsigamond” for the nearby Quinsigamond Pond, a large body of water four miles long, and half mile wide. The original town was later called Worcester, after the English town of the same name (Erskine, 1981, p.11).

Worcester developed very slowly due to its remote terrain, not accessible to any navigable water (Erskine, 1981, p.14). Most early residents were farmers. Like other parts of New England, Worcester’s early days were marked by frequent Indian attacks. The town only began to grow after Indian treaties were eventually signed. Growth
accelerated when Worcester was designated the seat of Worcester County in 1731. This initiated an era of new development that lasted for the next 100 years (Erskine, 1981).

Worcester changed dramatically during the 1800’s. By 1810, the town had 2,500 residents, the largest population in the county (Erskine, 1981, p.45). The local economy was transformed after the War of 1812. The English blockade of all New England harbors in 1814, created a huge migration of people and business inland toward Worcester (Erskine, 1981, p. 47). The blockade created the need for local production of farming implements like plows and wagons. Soon Worcester mills were building a variety of products including wire and other metal goods.

With no access to water power, the mills relied on horsepower-- literally horses on treadmills, to run machinery (Erskine, 1981). The lack of waterpower together with Worcester’s remote location soon became a major obstacle to the town’s growth.

In 1822 local leaders began planning the construction of a canal from Worcester to the Atlantic Ocean at Providence. The canal would provide water power to mills and would also serve as a navigable waterway for the shipment of goods. Construction began in 1823. By 1828 the canal was completed, running alongside the Blackstone River to Providence.

The canal never lived up to its expectations. In the winter it often froze over. Mills in Rhode Island drew off too much water, making it difficult to power mills in Worcester. Worcester never became a major textile milling center like other towns in New England.
But other important industries, namely tool making and wire making thrived during the Industrial Revolution. These industries prospered in Worcester until the 1990’s.

More change happened after the invention of the steam engine. By 1834 steam locomotives ran between Worcester and eastern Massachusetts. Shortly after, trains connected Worcester to Albany and the Erie Canal. At the same time steam engines were used to power huge new factories. “Freed from a stationary power source, these massive new structures could be built near the center of towns large enough to house a substantial labor force” (Rifkind, 1977, p. 45). Worcester, “the nation’s greatest industrial city not located on a natural waterway” was soon transformed into a manufacturing and commercial center (Rifkind, 1977, p. 49).

By 1848, when the town of Worcester was incorporated as a city, it was becoming the center of a major steam railroad network. Many local businesses took advantage of this growth by making railroad cars and railroad parts, including steel rails. The wire industry continued to thrive, producing everything from piano wire, to hoop skirt wire, to telegraph wire (Erskine, 1981). During this time the city grew rapidly with many immigrants coming from Ireland, Italy, and French Canada to work in Worcester’s factories. Later, large numbers of Swedish immigrants were recruited to work in skilled trades in the iron and steel industries.

By the end of the nineteenth century, the city had developed the infrastructure of a major metropolitan center. Holy Cross College opened in 1843, followed by Clark University in
1889. Public parks, art museums, concert halls and other civic amenities were all built. Worcester was a crowded city during the first half of the twentieth century. Traffic jams were common, made worse by frequent at-grade train crossings. By 1911 the year that Union Station opened, Worcester was a prosperous city with a population of over 146,000, almost twice the population of Springfield (U.S. Census, 1910). By 1920, the population was 180,000 and growing rapidly (Erskine, 1981, p.113).

Worcester’s enormous growth came to a halt during the Great Depression. By 1932, one fourth of the local workforce was unemployed. The economy improved after World War II, but other factors impacted the way the city developed. As the automobile became more popular, development moved to the suburbs. The demise of the American railroad had a devastating effect. As trucks, cars and later planes became convenient ways to transport goods, Worcester lost the advantage it had as a railroad hub. And as the market for railroad parts declined, so did the large number of Worcester businesses that made these parts.

As times changed many of the old manufacturing companies moved away or went out of business. Older metal and wire making factories closed, as did other prominent manufacturers that made products of a bygone era: ice skates, railroad cars, bicycle chains, and corsets (Erskine, 1981). The city still had jobs in the insurance industry, colleges, hospitals and government, but the level of prosperity was never the same. Currently, the largest employer is the University of Massachusetts Medical Center
As large numbers of residents moved to the surrounding suburbs, city neighborhoods declined and crime increased.

The city responded with many urban renewal plans. By the 1950’s the city had many abandoned mill buildings. Union Station station’s predecessor sat vacant for many years across from the present station. It was finally demolished in 1958. Over the next few decades other structures, including historic mill buildings and factories were also demolished. Like many other cities, trolley tracks were removed and streets were reconfigured to ease traffic. In 1963 a plan was developed with the help of the Columbia University School of Architecture to turn the Central Business District into a pedestrian only area, with cars traveling on an elevated roadway encircling the downtown area. (New York Times, August 4, 1963).

The Columbia plan was not fully implemented, but it helped start a downtown redevelopment process that would culminate in the removal of 86 “old, dingy buildings, including 5 small hotels” to make way for “Worcester Center”, a large redevelopment project financed in part with federal urban renewal funds. The project, estimated to cost $65 million, included plans for a large enclosed shopping mall, two high rise office buildings, a parking garage, a hotel and a heliport (New York Times, December 24, 1967).

The Worcester Center Galleria was the first portion completed in 1971. The enclosed shopping mall was built adjacent to the historic Worcester Common, and required closing
off a portion of Front Street, a traditional shopping street that had connected Main Street to Union Station. The mall included over one hundred retail outlets, a cinema and two department stores, Jordan Marsh and Filenes. Other urban renewal projects included the building of the Worcester Center arena for sporting events, and later the construction of a convention center.

The mall remained open for almost 20 years. It’s fate was sealed when it’s two department stores closed in 1991, unable to compete with suburban shopping malls. Worcester then had an unemployment rate of 10.4%. News accounts indicate that crime in the city had escalated dramatically, and there was a general exodus to suburban areas and disinvestment in downtown. (Griffin, 1991). The Galleria was later sold and reopened as the Worcester Common Fashion Outlets in 1994. But after a decade, tenants gradually dwindled, and the mall closed in 2004, when it was sold to the Boston-based Berkeley investments.
Description of project area and downtown Worcester

As redevelopment plans were formulated for downtown Worcester, Union Station languished in Washington Square, systematically cut off from the Central Business District. Washington Square was the traditional transportation hub for Worcester. It was the focal point of Worcester’s streetcar system that connected Worcester to nearby towns during the early twentieth century. People would also make connections here to the original Union Station, and to the present station, both located adjacent to the square (Arsenault). By the 1960’s Washington Square was transformed into a large traffic circle bordered by the huge I-290 elevated highway. Then it was cut off from the rest of downtown with the construction of Worcester Center Boulevard and the Worcester Galleria. Union Station was largely forgotten.

History of Union Station

The existing Union Station replaced an older station (a large gothic structure opened in 1875 across Washington Square) of the same name. The older station had many flaws that quickly lead to plans for its replacement. The biggest problem was that all trains arriving or departing the station relied on at-grade crossings. This caused gridlock for streets near the station and in surrounding neighborhoods (few cars were used in those days, most of the traffic consisted of streetcars and wagons).
The new Union Station, built just across from the old one, was designed to have all railroad crossings occur on elevated viaducts. It was completed in 1911, at a cost of approximately $750,000 (Worcester Magazine, May 20, 1998). Built by the Boston and Albany Railroad, the newer station was designed in a fashion described by its architects as the French Beaux Arts style. Even so, it consists of a mix of many different styles, including its main waiting area that is based on Roman designs. The architects were Watson and Huckel of Philadelphia. The building sits atop a portion of the old Blackstone Canal (Worcester Magazine, July, 1911).

The building was designed to be especially grand. The waiting room is larger than Grand Central Terminal in New York and “60% the size of Boston’s South Station” (Worcester Magazine, July, 1911). The new station included new track work that would bring more New Haven and Hartford trains to Worcester, and would include new service into Maine. It was built in part to help transform the city into a major industrial center (Worcester Magazine, September, 1908). News accounts of its opening described it as “a poem in stone”, a reference that seemed to stick over the years. Describing the station’s investors, Worcester Magazine said in 1911 that they “are convinced that the solid but rapid growth of Worcester is to continue unabated”.

The front of the building features a granite base with marble and white terra cotta above, forming three large arches flanked by two large marble and terra cotta covered towers. The towers served as prominent landmarks that could be seen from all directions for miles away. The towers were removed just five years after the building was finished,
because the owners thought the trains rumbling nearby were going to cause the stone towers to collapse, and the design did not account for this (Wolfe, 1978).

Before the building opened, Worcester Magazine wrote: “The building is to be erected with an eye to the future, to the time when Worcester will have 250,000 instead of 150,000 inhabitants, for among all who believe in the future of Worcester, and are working hard to make that future more illustrious than the past, none are more indefatigable than the great railroads which act as the arteries of commerce north, south, east, and west from the Heart of the Commonwealth” (Worcester Magazine, 1908).

The building was much larger than the one it replaced, and included a 4,000 square foot restaurant, a barber shop (with 5 barbers) and office space on the second floor for the railroad companies. The ceiling over the main waiting room contained a large semicircular stained glassed skylight.

In 1914 one hundred trains stopped at Union Station daily (Arsenault, 1999). There were 25 daily trains to Boston and 17 to Springfield (Gelbwasser 2000). In the early 1900’s many Worcester residents took the train for the one hour ride to Boston, returning in the evening. There were very few automobiles, and even fewer passable roads between Worcester and Boston.
Like most American train stations, use peaked during World War II, when 10,000 passengers would pass through the station and 140 trains would come or go each day. In 1998, Worcester Magazine called Union Station “arguably the most important public space in the city” during its heyday between 1920 and the end of World War II. For many current residents, the most prominent memories of Union Station is the thousands of soldiers departing and returning through the station.

In 1945, intercity streetcar service connecting Worcester to nearby towns ended. After the Massachusetts Turnpike opened in 1955 train ridership declined more precipitously. The automobile and airplane soon became the prevalent mode of passenger transport (Gelbwasser, 2000). In 1955 the station was put up for sale by its then owner, the New York Central Railroad. No buyers were found. The last passenger train departed Union Station in 1964. After that a small station located adjacent to Union Station served Amtrak for almost 40 years. With no buyers in place, Union Station was abandoned.
Union Station Redevelopment

The building owners did not maintain or protect the building from vandals and the environment. In 1968 the New York Central Railroad merged with the Pennsylvania Railroad. Two years later the merged company, PennCentral went bankrupt. It was later reconstituted as Conrail, in 1976 and survived until 1998. For several years it was not possible to determine who even owned Union Station. It soon became known as a meeting place for homeless people and drug users.

Over the years plenty of people had plans to revive Union Station. Beginning in the late 1970’s a series of studies and proposals were presented by a range of would-be developers. Four college students took control of the building in 1978. The oldest, Ara Eresian Jr. was just 24. The students, all friends, purchased the building with a $10,000 cash deposit with an option to buy the building from Penn Central. Within months the project unraveled, after the students were charged with bilking investors that had been drawn into their scheme (also known as “hawking the title”). The students kept all the money, never intending to develop the building. In addition, it was learned that Ara Eresian was involved with a half dozen other properties that had burned down under suspicious circumstances.

In 1983, Raymond LaRosa bought Union Station from the bankrupt Penn Central for $201,500 in cash. He proposed to develop a retail development that he likened to Boston’s Quincy Market. After five years, nothing ever came of the project. In 1988, LaRosa was convicted of money laundering. He had paid for the building in cash “using
18 cashiers checks, presumably to get around the requirement of banks to report cash transactions of $10,000 or more to the government (Bunker, 1988). The money used to purchase the building was drug money. He was sentenced to six months in prison (McNiff, 1988).

In 1987 another potential developer, Angelo Scola bought control of the station from LaRosa, and proposed to privately finance a convention center in the station. By this time the city administration had begun to focus development plans at other downtown sites. They were already planning to build a convention center next to the Worcester Centrum arena. Increasingly, the Union Station site was seen as interfering with downtown revitalization.

A series of important developments took place that focused more attention on Union Station. In 1989, the Massachusetts Bay Transportation Authority (MBTA) announced
that it had completed a feasibility study that recommended expanding commuter rail service to Worcester from Boston (Telegram and Gazette, 1989). The MBTA was required to build more public transportation as part of an agreement the state made with the federal government to mitigate the environmental impacts of the Central Artery (Big Dig) project. Two new stations were proposed for Worcester. Eventually, the city persuaded the state to have only one station and to locate it near downtown. After discussing the possibility of building a small terminal near the existing Union Station, the city’s Office of Planning and Community Development convinced the state to focus on one station near the existing building, either by reusing the building or constructing something new nearby.

In response to the MBTA development, the Worcester Regional Transit Authority commissioned a study by Wallace Floyd Associates, an architectural engineering firm in Boston to determine if Union Station could be reused as a transportation hub for “busses, limousines, and taxi service” (Telegram and Gazette, June 22, 1990). The report estimated that renovation costs and interest payments could total $22 million. The existing structure was also considered to be too large for the proposed new use. The report, published in 1991 recommended demolition of the building and replacement with a new, smaller transportation center (Wallace Floyd, 1991). The local newspaper, the Worcester Redevelopment Authority, and the Worcester Regional Transit Authority also advocated for demolition (Telegram and Gazette, March 26, 1991).
Two important developments happened next. The Federal Aid to Highway Act of 1991 was passed, creating the Intermodal Surface Transportation Efficiency Act, or ISTEA. With the passage of ISTEA, $32 billion of federal money was made available to the states. Individual states could decide how to spend the money. The second major event happened locally. As talk of Union Station’s demolition grew, local residents and preservationists organized and became more vocal in their call for restoration. In 1992 Preservation Worcester, a local preservation group urged the city to completely restore the building and use it for a transportation center (Arsenault, 1999). The preservation group was also responsible for putting Union Station on Historic Massachusetts’ “endangered” buildings list, and helped lobby for Mass Historical and federal preservation funding. Later the Union Station Alliance was formed to organize community support and build awareness, and to lobby elected officials.

Given an identified source of potential funding (ISTEA) and the growing involvement of residents and preservationists, the Worcester Regional Transportation Authority conducted another study by the same firm that had previously called for building demolition. This time the firm recommended reusing the existing building for an intermodal transportation center.

Union Station’s future was secured in March 1994. Peter Blute, a Republican congressman from nearby Shrewsbury, and a member of the House Public Works and Transportation Committee was able to get $20 million dollars from the National Highway System Authorization Act dedicated to the Union Station renovation. (Nilson, 1994).
In 1995 the City and the Worcester Redevelopment Authority bought the building from the last private owner for $50,000. The money came from federal ISTEA funds along with state funding. The building was listed on the state and national register of historic places. Michael Latka, the head of the Worcester Redevelopment Authority at the time credits “the Massachusetts Historical Commission Grant contribution of one-hundred-thousand dollars, and the Federal Funding through ISTEA and its successor TEA-21 as being responsible for saving the building and redeveloping it as an intermodal transportation center (Arsenault, 1999 p. 108).

The Union Station Building Program

The complete restoration of Union Station began in 1995. The original terra cotta clad towers were rebuilt. Inside the building, 80,000 square feet of space was renovated. All of the interior finishes were refurbished or replaced to approximate the original design. Work also included installing new stain glass skylights over the main spaces, new stairways, and wheelchair accessibility upgrades to comply with the Americans with Disabilities Act.

The main components of the project completed to date include Amtrak passenger rail service (one train to Albany and points west, and one train to Boston per day), MBTA commuter rail service to Boston’s South Station (10 roundtrip trains each weekday), and local (WRTA) bus service. Berths for intercity buses (Peter Pan Bus Lines and
Greyhound) have recently been completed and a 500 car parking garage is currently under construction. The Blackstone Valley bike path will eventually connect to the station as will additional city buses. 48,000 square feet of commercial space was created as part of the renovation for lease. The building's commercial tenants consist of a restaurant and The Franklin D. Roosevelt American Heritage Center Museum, dedicated to showcasing FDR and Eleanor Roosevelt memorabilia, and information about the New Deal era (Telegram and Gazette, May 25, 2004). A significant portion of commercial spaces are not currently leased. The project, substantially complete in 1999 cost $33 million.
Union Station exterior, showing new towers built to replicate original conditions, 1999. Photo: Finegold + Alexander Architects.
Chapter 3

Measuring Success

When announcing federal funding for the Union Station project, Massachusetts Congressman Peter Blute predicted the new development would "bring a huge infusion of federal dollars into Massachusetts" and that like other projects it would "spur economic growth" (Worcester Telegram and Gazette, May 13, 1999). When construction began, Worcester City Council members said that the renovated Union Station would eventually become "a hub for additional development efforts" in areas adjacent to the station (Kotsopoulos, June 2, 1994).

Has Union Station lived up to these expectations? Do local conditions exist that will contribute to the project’s success? What indicators suggest that the project is contributing to economic development? In order to address these questions, the Master's Project compiled information from the following main sources:

- Economic statistics, compiled from a range of data available from the U.S. Census Bureau, the Massachusetts Department of Employment, Worcester Department of Economic development and other related agencies and publications.
• Interviews, conducted with several community stakeholders, including the Central Massachusetts Planning Commission, the Oak Hill Community Development Corporation and the University of Massachusetts Transportation Center.

• Extensive site visits and neighborhood photo documentation taking place between Fall 2005 and Spring 2006.

**Do local conditions contribute to the projects success?**

The literature review suggests that a variety of local conditions affect the degree to which transportation projects impact economic development. These include the following:

- Accessibility: Does the transportation service provide a degree of accessibility that was not present before?
- State of the local economy: Does it support revitalization and growth?
- Public policy: Does it support economic development?
- Public transportation use: Does the city and its residents support public transportation, thus increasing its value and impact?
- Is land available for new development?
Union Station provides new access to Boston

Union Station provides Worcester with commuter rail service to Boston, a transportation option that was not previously available. Public transportation is more likely to impact economic development when it provides a new service that provides a higher degree of accessibility to a particular market. Union Station establishes an important connection between Worcester and the Boston metropolitan area.

Worcester commuter train ridership vastly exceeds original estimates, with virtually all riders being new public transportation users. Most new riders are commuting from Worcester to Boston for employment. The city of Worcester is currently advocating for more weekday train service to Boston. As more trains are added, the value of the station increases, and the economic benefits to Worcester should grow. Union Station is one of the few intermodal centers in Massachusetts to include commuter rail. The presence of commuter rail fills a demonstrable need and is most likely the most valuable part of the Union Station project.

Worcester’s location, and the existing rail network can contribute to the project’s success.

The state of Connecticut has recently announced plans to study commuter rail service between Worcester’s Union Station and New London, with service connecting to New York City. Massachusetts and Rhode Island are currently looking at the possibility of re-
introducing commuter rail service from Worcester to Providence. In both instances trains
will run along existing railroad right-of-ways in place since the 1800’s. This additional
service, not possible without the Union Station project, will increase the value of the
intermodal center and will help attract future development.

*Union Station provides a cost effective option to car travel.*

The Worcester Mayor’s office cites a MassInc report indicating that the number of
workers in Massachusetts who spend at least 90 minutes commuting to work each day
has increased from 11% to 18% between 1980 and 2000. Between 1992 and 2002 the
number of cars registered in Massachusetts increased by 48% (Murray, 2005).
The Mayor’s report also estimated that during rush hour, the car commute to Boston
could take up to two hours (Murray, 2005). The commuter rail service is an attractive
option since the train trip to Boston takes only 1-1/4 hours. The literature review
indicates that more commuters will choose public transportation if it provides cost
benefits. A monthly commuter rail pass amounts to a round trip fare of approximately
$10 per day. Given today’s gasoline prices (nearly $3.00/gallon in April 2006), this cost
is far less than the fuel, maintenance and parking expenses associated with car travel to
Boston.
Worcester’s economy is growing.

The literature indicates that public transportation improvements are more likely to be successful in cities with a healthy economy. Indicators such as jobs creation, population growth, and private sector development projects suggest an economic turnaround is underway for Worcester and the surrounding area.

The Worcester economy shows signs of growth, based in part by new residents and businesses attracted to the area’s relatively low cost land and home prices. A report by the Worcester Municipal Research Board (2001) references a study by “Mass Inc –The Heinz Foundation” that suggests “a major reason for the exodus of highly skilled workers from Massachusetts is the high cost of living in the Boston area”, and that employees are taking advantage of the more affordable housing in the Worcester area. (WMRB, 2001, pg.3).

A Boston Globe article in 2000 states that Worcester’s central location and access via commuter rail make it an attractive option for metropolitan Boston homeowners looking for more space. The article states that Boston residents are “cashing in on soaring property values to buy single family homes” in Worcester (Boston Globe, August 12, 2000).

An April, 2006 Globe article indicates that for 2005, Worcester County and western Massachusetts were the only regions in the state to have an increase in the number of
home sales from the previous year (Boston Globe, April 9, 2006). According to the U.S. Census, Worcester county is the fasted growing part of Massachusetts. On the December 31, 2004 Boston Business Journal list of the fastest growing communities in Massachusetts, 13 of the top 25 communities were in Worcester County.

Recent economic indicators for the city of Worcester and Worcester County suggest that the local economy is healthy and beginning to show signs of growth. A recent report by the Worcester Regional Research Bureau (2005) shows that for the first time since 2000, the city has enjoyed a net gain of jobs. Also, from 2000 to 2005, the value of Worcester’s residential property and commercial/industrial tax base increased by 84.9%. And for 2005, the value of residential and commercial new construction totaled $167 million, an increase of 17% from the previous year.

As this momentum builds it will help reinforce other downtown development initiatives, and including those that will bring more density and development to the Union Station neighborhood.
Median House Prices 2005

Worcester | $241,620
Boston    | $544,000
Somerville| $435,000
Westborough| $424,900
Harvard   | $545,000

Source: The Warren Group 2005

Worcester Population

1990: 169,800
2000: 172,648
2001: 174,123
2002: 175,130
2003: 175,587
2004: 175,966

2001-2004 = Estimates
Source: U.S. Census
Other developments will compliment Union Station, adding density and vitality to the downtown area, and supporting future growth.

Many new public and private developments have recently been completed, or are planned to attract residents and new investment to downtown Worcester. These will compliment the Union Station project and will help spur additional economic development, in turn enhancing the value of all downtown projects.

Construction recently started on the 75 acre Massachusetts Biotechnology Park, located three miles from Union Station. A new minor league pro baseball team, the Worcester Tornadoes has recently begun playing in a downtown stadium. Other developments include a new Hilton Garden Hotel, a new state courthouse, new public library, a reconstructed common and the new Rt. 146/Mass Turnpike interchange improvements, making it easier to get from the Mass Turnpike to downtown. Plans for a major new state mental hospital were recently announced for Worcester.

Worcester is also beginning to leverage the value of its nine colleges and universities. Worcester Polytechnic Institute, Clark University, Holy Cross College and the UMass Medical School have all made major investments in the city. A new University of Massachusetts School of Pharmacy campus, including new housing for pharmacy students was recently completed downtown.
Public policy is in place to support the Union Station.

From the initial stages of the Union Station project, the city of Worcester and its economic development department envisioned the intermodal project as one piece of a larger plan to revitalize downtown. This was made clear in the 1993 feasibility study by Wallace Floyd and Associates. Based on the consultants’ experience with similar intermodal stations in Lowell and Hartford, the report concluded that Union Station "is unsustainable without a complimentary development scenario" (Wallace, Floyd, 1993). The report also cautioned that for the station to fully realize its potential, it would need to be better connected to downtown. The city responded by commissioning a series of studies to determine what kinds of developments could be built to augment the renovated station.

A major policy decision at the beginning of the project was to locate the MBTA commuter rail component at only one location, in Union Station. The MBTA had originally proposed two stations for Worcester, with one being on the edge of the city. The city convinced the MBTA to only have one station, and to locate it at the Union Station site. The overall impact that commuter rail has on the Union Station development and downtown in general was strengthened by focusing commuter rail activity in one place.
In 2001, the city of Worcester began developing a plan to create the "Washington Square Development District" with "Union Station as its centerpiece". The plan recognizes that the Union Station area presents "a unique development opportunity", but that it will need the support of "a lively mixed use district" to help it reach it be successful (Wallace, Floyd, 2001, p.5).

In 2004 the city created an "Action Agenda" to coordinate various downtown development projects in order to provide maximum benefits to the community. One of the goals of the "Action Agenda" is to promote Transit Oriented Development (TOD) and smart growth initiatives. The city sees the restored Union Station as the catalyst for the creation of a dense, pedestrian oriented development adjacent to the intermodal center. (Sasaki, 2004).

"City Center" may be the turning point for downtown development.

As part of the "Action Plan", the city held a community design charrette for citizens and downtown stakeholders. Part of the charrette focused on the redevelopment of the Worcester Common Outlet Mall, and ways to make Union Station more accessible to downtown. A major design element of the charrette was the long popular idea of reopening Front Street, a major street that bordered the city's common, but that had been blocked with the construction of the shopping mall.
After the charrette, several developers expressed interest in the area around Union Station. On June 22, 2004 Berkeley Investments, Inc. of Boston acquired the Worcester Common Outlets mall. The one million square foot mall was part of a large 1970's urban renewal development that also included two large office towers and a large parking garage that was built over a section of the abandoned Front Street. The parking garage created a barrier that blocked off Union Station and isolated Union Station from Main Street and the central business district.

Berkeley Investments proposed to demolish the shopping mall and build a combination of housing, retail and office space on the 22 acre site. The project includes 150 condominiums, two new office towers, and shops and restaurants. Executives at Berkeley Properties are quoted in news articles as saying that two things influenced their decision to locate in Worcester: A city leadership that wants change, and the site's location, within a 5 minute walk to the city's transit hub, Union Station (Sutner, 2006). In announcing the development Berkeley representatives noted that the project will take advantage of a "demographic shift from eastern Massachusetts" (Commonwealth Magazine, Growth and Development Extra, 2006 p.69)

The project is a public/private initiative estimated to cost $563 million. It includes $92 million of public money for infrastructure improvements. In order to help finance the public improvements, Worcester has initiated a system used in other parts of the country, tax incremental financing (TIF). Worcester was the first community in the state to have what they called "District Improvement Financing" (DIF) approved by the state
government. The city issues bonds to fund infrastructure work for the project, and the bonds are paid off with taxes raised by the new development.

Along with the City Center development, the city is planning to reconfigure Washington Square, the area just outside of Union Station. The new "square" will be smaller than the existing one, and will be more pedestrian friendly. The enormous existing traffic rotary will be scaled down to create new parcels of land for development. The work will help reconnect the station with downtown and Shrewsbury Street.
What indicators suggest that Union Station is contributing to economic development?

A number of indicators identified in the literature review suggest that the Union Station development is responsible for new economic development.

Ridership

Commuter rail ridership from Worcester to Boston has greatly exceeded initial estimates. The Worcester Municipal Research Bureau (2000) cites a 1997 report for the MBTA projecting that by 2001 daily weekday inbound ridership at the Worcester station would reach 414 passengers (WMRB, 2000). Typical morning boardings in Worcester are more than twice that. The MBTA ranks Union Station as number 20 out of 124 commuter rail stations in terms of ridership, with more than 900 boardings on some weekdays (MBTA 2005 Audit, MBTA website).

Ridership is likely to increase as traffic congestion worsens and as more trains are added between Boston and Worcester. In 2005, an article in the Boston Globe quotes the mayor of Worcester saying that the city wants to buy the tracks from Union Station to Boston so that number or trains can be increased to lessen “crowding that is regularly forcing passengers to stand” (Johnson, 2005).

The increased ridership indicates that commuters value the public transportation service that is available at Union Station. This means that property near the station will most
likely become more valuable, which in turn should result in additional investment, economic development and revitalization.

*Property Values*

An article in the Boston Globe (Grillo, 2000) reported that “realtors are bullish on Worcester and credit the commuter rail for a surge in property values”. For the first six months in 2000, the median sales price for a single family home in Worcester jumped from $119,000 to $126,000. An article in CommonWealth Magazine by Shaun Sutner (2006) suggests that the 2 percent (total 176,000) population increase in Worcester since 2000 is due in part to residents in the Boston area moving in. At the same time Boston population has decreased by 3.6%.

![Median House Price Worcester](image-url)

Source: The Warren Group 2005
The article suggests that with the new residents have come “Starbucks, Home Depot, Lowes, half a dozen new supermarkets” (Sutner 2006, p.69). Also, triple deckers are being converted to condominiums for the first time. Steve Cook, of the Oak Hill Community Development Corporation makes the point that “the increase in Worcester's housing prices is due in part to the development of Union Station and direct train service to Boston” (interview).

*The renovated station has helped attract other development projects nearby.*

In addition to the City Square project, already mentioned, Union Station has been the impetus for numerous other nearby development projects. Several of the historic mill buildings adjacent to the historic Blackstone Canal are being renovated. And the city is proposing to uncover portions of the canal as a major tourist attraction. A bicycle network that runs along the former canal from Rhode Island is also being built. The Telegram and Gazette quotes a property owner who has recently sold his 4-1/2 story brick building to a developer as saying that "the area is just booming, every building has been sold recently". The article notes that the building is less than a half mile from the commuter rail station (Kievra, 2006).

The Worcester Redevelopment Authority is currently targeting nearby Shrewsbury Street for new development. The street, which is already a viable commercial district of mainly Italian restaurants is located around the corner from Union Station. When Front Street is reopened to traffic, Shrewsbury Street will once again be connected to downtown.
The city has already installed new sidewalks, trees and lamp posts. New restaurants are opening, and old mill buildings are being bought and redeveloped for mixed use, prompted by their proximity to Union Station.

A 41 unit condominium complex is underway in a former bicycle manufacturing factory. The developer suggested the following scenario, In the morning "you can walk down to Dunkin' Donuts', and after work you can hit a bucket of balls at the nearby golfing range" noting that the new development was close to MBTA commuter rail service to Boston (Kush, 2003).

Jobs

According to a report by the Worcester Municipal Research Bureau (2006), after years of job losses, the city of Worcester has begun to experience job gains for the first time since 2000. Hundreds of construction jobs were created to rebuild Union Station. More
construction jobs have been created by other nearby developments. Perhaps more importantly, the intermodal center provides accessibility to more jobs, (closer to Boston) than would be available to residents otherwise. The income generated from these jobs is transferred to the local economy. Also Union Station is a catalyst for a range of other developments that will create permanent jobs.

*Union Station is helping leverage federal transportation funds for other nearby developments.*

Recent federal TEA-21 legislation provides funding for transportation related development projects. Congressmen Jim McGovern recently secured $6.5 million in federal funding for rehabilitation of the historic Rome Building as a multi-use visitor center as part of a larger Union Station development project. The recently passed Massachusetts state transportation bond bill provides $17.5 million for work on re-watering a portion of the historic Blackstone Canal adjacent to Union Station.

*Other benefits*

In addition to the benefits already mentioned, Union Station provides a number of indirect benefits. Litman (2004) suggests benefits to non users such as noise and pollution reduction, and safety should also be considered. These types of benefits are not easily quantified, but play a role in the city’s economy in various ways.
Among these benefits are:

- The presence of the intermodal center provides value to people that don’t use it, because it increases the overall attractiveness of a “first rate” city.

- Environmental benefits:
  Reuse of an existing building conserves building materials and energy.
  Less pollution and ozone depletion.
  Energy Conservation reuse of material.

- Equity/social benefits:
  Where many public transportation systems serve relatively wealthy suburbs (Boston and San Francisco), the MBTA Worcester commuter line serves a relatively poorer population and makes more jobs accessible to them.

- Historic Preservation.
  The preservation of a well known, and much loved landmark, adds immeasurable value for residents and visitors.

There are many reasons to believe that the Union Station project has impacted economic development. Increased ridership, rising house prices, and nearby development all suggest that the project has become the catalyst for revitalization that its supporters envisioned. At the same time, the local economy continues to improve, and signs point
to increased positive momentum and optimism. Even so, both Union Station and the city face challenges that will most likely require continued public sector funding and support in order for the long term economic development goals to be met. See Appendix A for a description of challenges.
Chapter 4

Lessons Learned

The Master’s Project shows that Union Station has helped spur downtown revitalization in Worcester. Several nearby development projects are underway that take advantage of their proximity to the intermodal center. Real estate prices for nearby buildings are rising, and commuter rail ridership has greatly exceeded initial estimates. Over time, increased traffic congestion and rising gasoline prices should further strengthen Union Station’s role as an important transportation center.

In light of this success, Union Station can provide valuable lessons for other cities planning similar intermodal facilities. These lessons include the following:

1. In order to be successful, intermodal centers must provide a service that will attract riders. Much of Union Station’s success is due to the new, convenient access it provides workers commuting to Boston. Cities that don’t have commuter rail (and that rely on local bus, intercity bus, and Amtrak) can create added value, and attract riders by making connections to popular locations such as shopping malls, colleges, and tourist attractions. Marketing promotions and publicity will also help attract riders.

2. Cities benefit when an intermodal center is located in the center of downtown. The central business district can reinforce the intermodal center and vice versa.
Downtown areas provide activity and a captive audience of workers and shoppers that can help make the center more vital. In turn the center can become a civic focal point for downtown. A facility located even a few blocks outside the downtown area will suffer from a lack of vitality, and in turn will be less attractive to potential users, limiting its impact on revitalization.

3. Local government should implement policies to help support transit oriented development adjacent to the intermodal facility. These policies include zoning changes that make it easier to convert existing commercial buildings to residential use, and zoning changes that reduce the required number of parking spaces needed for commercial and residential use. Cities and states can also provide financial incentives to developers, such as loans and tax benefits to help attract development.

4. Very few intermodal centers can support retail use. Intermodal centers (including Union Station) attract most users during rush hour, with relatively few patrons using the building during other parts of the day. This limited activity has not been enough to support retail use. The snack bar at Union Station is closed most of the day, and a Blues Club that occupied part of the second floor, recently closed. The city is currently looking for other tenants to occupy the remaining available commercial space. Other uses that generate a significant amount of their own traffic have a better chance at success.
5. Intermodal facilities will be more viable if they are combined with other “activity centers”. Part of Union Station is used for the Franklin Delano Roosevelt museum. The building’s configuration allows for easy bus drop off for school children and others visiting the museum. The Holyoke intermodal center is planning to share space with a branch of the local community college. Westfield is planning to have a hotel associated with its new intermodal center. These facilities can help support each other and can help make the intermodal center more active throughout the day.

6. Preservation has value. The rebirth of a major civic landmark has helped create a sense of hopefulness and pride in Worcester. Union Station’s restored towers can be seen for miles around, making it a major focal point for the city. The building’s prominence has added value to other nearby development projects. A newer building, of lesser stature (a one story modern building was once proposed to replace Union Station) would most likely not have the same kind of impact.

7. Parking revenues can help offset operational costs. The City of Worcester currently operates Union Station at a loss of several hundred thousand dollars each year. A new parking garage currently under construction is expected to reduce this loss significantly. Similar facilities in Hartford and Lowell also use parking revenues to offset operational costs.

8. Finally, an intermodal facility is one piece of a larger economic development effort. It can help revitalize downtown, but it can’t do it alone. Intermodal centers must be part of an overall strategy to attract residents, shoppers, and businesses to the downtown area.
Appendix A

Some challenges that impact the Union Station project and long term downtown revitalization in Worcester.

*Union Station operating costs.*

It costs the city of Worcester approximately $440,000/year to operate Union Station.

Much of the commercial space inside the building is not rented. One high profile tenant, a nightclub, recently closed, casting doubt on the building’s ability to attract other tenants.

New development plans are being proposed for the building, but it is doubtful that the building can be operated for the long term without some form of public assistance.

*Not all social and economic indicators are positive.*

Even though many indicators suggest a healthy economy, social and economic challenges exist that may limit future growth and development. These include:

Poverty: 20.9% of families with children live below the poverty level. Worcester is ranked 11th of 351 cities and towns in Massachusetts for families living below poverty level (Kids Count website).
Median income

Worcester has one of the lowest median incomes in the state, $35,623 (Mass.Dept of Labor). It is ranked No. 337 of 351 cities and towns for median income of family with children under 18 years old. Pittsfield at 42,085 is ranked 320, Boston at 36,412 is ranked 340, Greenfield at 41,713 is ranked 322, Holyoke at 25,670 is ranked 349.

Taxes

In 2004, Worcester had the highest commercial and residential tax rates of any of its bordering communities. This is thought to discourage commercial investment, and may over the long term impact residential development.

Schools

MCAS scores are below the state average. In 2003, 43% of Worcester’s 8th graders passed the Math exam, compared to the state average of 71%. Boston had a passing rate of 53% (Worcester Regional Research Bureau).

Use of traditional public transportation is low

According to the 2003 Regional Transportation Plan, produced by the Central Massachusetts Planning Commission, “the most disturbing trend in Massachusetts is the tendency towards sprawl development” (CMPC, p. 2-12). Sprawling, suburban development increases the reliance on automobiles and discourages the use of mass transportation.
According to the U.S. Census, American Community Survey, nearly 1/3 of the nation’s public transportation commuters live in New York City. Overall, just 5% of the American population uses public transportation to get to work. In Suffolk County (Boston), 30% of commuters use public transportation to get to work. In Worcester County only 1-2 percent of commuters take public transportation to work (WRTA, U.S.Census).

Commuter rail expansion

The MBTA doesn't own the tracks between Worcester and Framingham, making expansion of service difficult if not impossible. So far CSX, the owner's of the track, has blocked attempts to increase service beyond 10 round trips per weekday to Boston.

Gentrification

As more and more residents move from the eastern part of the state to Worcester, existing residents fear that they may be losing some of their identity as the city becomes increasingly seen as a bedroom community for Boston. Also, as house prices rise, traditional Worcester residents, many of them middle class or low income, may be priced out of the market.
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