



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Innovative Financing Strategies for Developing New Train Stations in Rhode Island

Dr. Farhad Atash, Professor of Planning, Landscape Architecture Program,
University of Rhode Island, Kingston, RI 02881

Dr. Talia McCray, Assistant Professor, College of Business Administration,
University of Rhode Island, Kingston, RI 02881

Abstract

In order to reduce traffic congestion that adversely affects the quality of life, Rhode Island is exploring and implementing creative financing partnerships to build new intermodal train stations, where train tracks already exist. One of the greatest challenges in conceptualizing intermodal train stations is the financing aspect of these projects. The primary objective of this paper is to identify creative financing strategies and tools for the proposed train stations in Rhode Island. The focus is on public-private partnerships that would be appropriate for financing train station infrastructure and the economic development of its surrounding area.

Acknowledgement

The research for this paper was funded by the University of Rhode Island Transportation Center.

1. INTRODUCTION

In order to reduce traffic congestion that adversely affects the quality of life, Rhode Island is exploring and implementing creative financing partnerships to build new intermodal train stations, where train tracks already exist. One of the greatest challenges in conceptualizing intermodal train stations is the financing aspect of these projects.

According to the 2005 Urban Mobility Report, “congestion continues to grow in America’s urban areas. Despite a slow growth in jobs and travel in 2003, congestion caused 3.7 billion hours of travel delay and 2.3 billion gallons of wasted fuel. The average annual delay for every person using motorized travel in the peak periods in the 85 urban areas studied climbed from 16 hours in 1982 to 47 hours in 2003. This represented a long-term change of 31 hours during the 1982-2003 period. In the Providence Urban Area, the annual hours of delay per traveler was 5 in 1982, 17 in 1993, 31 in 2002, and 33 in 2003. Given the long-term change of 28 hours during the 1982-2003 period, the Providence Urban Area was ranked 26th among the 85 urban areas studied in the country in terms of annual delay per traveler during this period” (Schrank and Lomax 2005).

The Road Information Program (TRIP) calculated that, “growth in vehicle travel in Rhode Island is increasing at a rate significantly higher than new lane capacity, resulting in longer travel times for motorists” (TRIP 2004). From 1990 to 2000, the population in Rhode Island increased by 4.5%, which matched the increase found in the number of drivers who drove alone, 4.7%. The number of vehicles per household in 2000 was 1.61, which represented a decrease of -0.8 in 1999. The increase of individuals taking public transportation only rose by a negligible 0.1%. The average travel time to work in 2000 was 22.5 minutes, which represented a 3.3% increase from 1990. Vehicle travel is expected to increase 25% by 2020, to 10.1 billion vehicle miles of travel (TRIP 2004). From 1995 to 2002, the percentage of congested highways in Rhode Island rose from 30 to 37%, respectively (TRIP 2004).

Currently, the State of Rhode Island has three active train stations: Providence (servicing Massachusetts Bay Transportation Authority (MBTA), and Amtrak); Kingston; and Westerly (which both service only regional Amtrak trips). The State of Rhode Island is considering the development of seven new train stations in Warwick, Wickford Junction (Town of North Kingstown), East Greenwich, Pawtucket, Cranston, Quonset Point (Town of North Kingstown) and Charlestown. Figure 1 shows the location of the seven proposed and the three existing stations in Rhode Island. Collectively these stations will serve major urban (Providence, Pawtucket, Warwick and Cranston) and rapidly growing suburban communities of the state (North Kingstown, East Greenwich, South Kingstown, Westerly and Charlestown).

Two proposed stations in Warwick and Wickford Junction (in the Town of North Kingstown) have recently been approved for financing as an extension of the MBTA commuter rail service to Boston. It will be the first increase in commuter rail service to Rhode Island since 1988, when service from Providence to Boston was restored after a seven-year break. The ground breaking of Warwick Intermodal Train Station happened in July 2006 after about 10 years of planning. The Rhode Island Department of Transportation (RIDOT) is expecting the construction of the Wickford Junction Station to begin in Spring 2007. The RIDOT is close to an agreement on the fee for using

The primary objective of this paper is to identify creative financing strategies and tools for the proposed train stations in Rhode Island. The focus is on public-private partnerships that would be appropriate for financing train station infrastructure and the economic development of its surrounding area. The public-sector stakeholders will include: municipal government, state government and agencies (i.e., Rhode Island Department of Transportation, Rhode Island Public Transit Authority, Rhode Island Airport Corporation, and Rhode Island Economic Development Corporation), redevelopment agencies, and the federal government. In conjunction with the public sector stakeholders, the private partners such as developers, lenders and landowners may serve many purposes.

Public-Private Partnerships represent a cooperative, flexible, and unique financial solution to implementing the train station infrastructure and the development of its surrounding area. Public-Private Partnerships can have many different forms including partnerships where the public and private sector jointly exist, the private sector is minimally involved, the private sector takes primary responsibility of the project, or the private sector retains control and operates the project.

In order to accomplish the paper's objective, the authors first draw upon the current experiences in the State of Rhode Island with the proposed Warwick Intermodal Train Station at T.F. Green Airport and Wickford Junction Train Station in North Kingstown, follow up with studies of other intermodal station development projects across the country, and finally develop a creative finance "toolbox" for the remaining proposed train stations in Rhode Island that are at varying stages in the planning process. It is suggested that partnerships that pool resources, share risks, and nurture close working relationships among public and private sectors are essential to the implementation of successful intermodal train station projects in Rhode Island and elsewhere in the U.S.

2. PROFILE OF TWO PROPOSED TRAIN STATIONS IN RHODE ISLAND

2.1 Warwick Intermodal Station

The City of Warwick is centrally located in Rhode Island, approximately ten miles south of Providence. Since 1991, more than \$210 million has been invested in constructing a new two-story terminal building, access roads, parking facilities and related improvements for Rhode Island's major airport, T.F. Green (Cameron et.al. 2005). The original proposal for a \$15 million dollar train station located at the Airport occurred in July 1997 (Lieberman 1997). Today, site control and remediation have been achieved and the ground breaking for construction happened in July 2006.

There were three general purposes behind the development of an intermodal station near the T.F. Green Airport in Warwick, Rhode Island. First, developing an intermodal train station could help to relieve peak hour traffic congestion on the I-95 highway corridor. It would provide better access to the T.F. Green Airport from Providence, as well as extend the Boston commuter rail connection. Second, the Warwick Station has potential to stimulate economic redevelopment in Warwick, Rhode Island. Finally, utilizing an intermodal station to access the T.F. Green Airport has potential to reduce traffic congestion and harmful air emissions caused by shuttle buses serving hotels and rental car companies in the surrounding areas.

One aspect that makes this project so complex is the number of stakeholders involved in its development. Stakeholders can be divided up into three groups. First, the station funders are comprised of the Federal Highway Administration (FHWA), the State of Rhode Island, and the rental car companies, which collect Customer Facility Charges (CFC). Currently eight rental car companies operate at T.F. Green Airport, taking up 160 spaces of parking (Cameron et.al. 2005). Additional rental companies are located near the primary access road to the Airport.

Second, the surrounding land-owners must be taken into account. This includes constituents of Warwick, the newly developed Warwick Intermodal Zone (WIZ) and Gateway Zone, as well as the Rhode Island Airport Corporation and the Warwick Station Redevelopment Agency (WSRA). A final category of stakeholders includes Amtrak, MBTA, Bullfinch Companies, a Massachusetts Developer selected in 2000 by Warwick Station Redevelopment Agency to oversee the redevelopment of the district, and other private and public interests.

The land that has now been purchased for the construction of the Warwick Intermodal Train Station was previously Baylis Chemical Disposal Company. Because of its use, this area was identified as a brownfield site. The site was purchased by RIDOT, right-of-ways were created, and the site was remediated early in the project development stages. Funding for much of this work came from the initial FHWA grant with Rhode Island's required state match. The tracks for this station are already in place and are regularly used by Amtrak.

There is a supportive mixture of surrounding uses for the development of an intermodal train station in Warwick. Highly important to the concept of intermodalism, the Airport is located in close proximity to the proposed station. Also surrounding the station are areas of dense commercial and residential development. Upon conceptualization of the station Master Plan, the Warwick City Council established the WSRA. This Agency quickly named a Station Redevelopment District comprised of an Intermodal District (22-acres of land that connects the station to the Airport), and a Gateway District (48-acre transitional area) (Cameron et.al. 2005, Depaul 1998, Anon 1998).

The RIDOT using Transportation Equity Act for the 21st Century (TEA-21) funds purchased the land that the station will be constructed on. Other surrounding parcels are still privately owned, and many are included in a Master Plan as potential future acquisition for economic development. The land assembly and acquisition within the district is a major challenge for the redevelopment agency.

There is also added complexity to this project from the scale of infrastructure being proposed. There are three major aspects of this project. First, a large, fully functional train station will be located on site. The station will include ticket sales and commercial operations. Second, a car rental facility and parking garage will be constructed. "The parking garage will have 1,000 spaces for MBTA rail commuters and 2,200 spaces for the rental-car fleets now based on airport property" (Rhode Island Airport Corporation 2006). The eight rental car companies currently located in the Airport parking area will relocate to the new garage. Additional car rental companies located along the primary access road to the Airport will also relocate into the garage, freeing up some traffic congestion created by shuttle buses (Cameron et.al. 2005). Finally, a 1,250-foot, elevated, enclosed skywalk, with moving sidewalks will connect the

car rental facility to T.F. Green Airport (Rhode Island Airport Corporation 2006). This aspect of the infrastructure eliminates the need for shuttle buses.

Finding adequate funding for this station has been a challenge since the proposal was introduced. The project was initially estimated at approximately \$160 million (Devine 2005). In July 2006, the total cost of the project was estimated at \$222.5 million. The FHWA grants and a TIFIA loan (Transportation Infrastructure Finance and Innovation Act) will cover 40 and 19 percent of the total cost of the project respectively. The remaining cost will be covered by revenue bonds (16 percent), State grants (10 percent) and Customer Facility Charge (CFC) during construction (15 percent). A CFC of \$3.75 for each car rental transaction at the Green Airport was put in place in January 2001 as a means to pay off project debt (Rhode Island Airport Corporation 2006).

“The design phase of the project is nearly complete with some final engineering and architectural plans needed for the skywalk and rental car facility. The upcoming schedule for the project includes securing remaining right-of-way (Amtrak air rights), completing engineering in 2006, selecting a construction manager and finally securing bids for construction contracts in Fall/Winter 2006. The project is expected to be complete with train service commencing in mid-2009” (Rhode Island Airport Corporation 2006).

2.2 Wickford Junction Station

The Wickford Junction site was historically used as a train station. The station was closed in the 1980s due to lack of use. In the early 1990s, a Comprehensive Plan was created for North Kingstown calling for increased transit mode availability and intermodalism (Town of North Kingstown 2001). In the 1990s, the owner of the land where the station is proposed developed a shopping center with a Walmart and Staples as the anchor stores, and additional retail surrounding them. A train station was an aspect that the owner wished to incorporate in a later development phase.

Discussions about the construction of a station, which would serve as an extension of the MBTA commuter rail line, have produced plans and designs. Public involvement was met through the completion of a public workshop to gather information from the constituents of the area. Although this project was proposed after the Warwick Station, it is expected that its construction will begin in Spring 2007. Plans for the station were submitted in summer of 2005 (Rizzo 2005, Devine 2005, Cohen 2005).

The construction of a transit station in North Kingstown, Rhode Island serves two primary purposes. First, as previously mentioned, traffic congestion is an increasing concern for the State of Rhode Island. Construction of a commuter rail station in North Kingstown provides public transportation to Providence and Boston for people living in southern Rhode Island. This would reduce the amount of daily traffic on RI Routes 1, 4 and I-95. Second, Wickford Junction is part of a larger “Washington County Commuter Rail” Plan. Developed by Pare Engineering in 2005, the plan analyzes the impact of a commuter rail line in Washington County and its potential for TOD (PARE Engineering Corporation 2005). The development of Wickford Junction is the first of what is proposed to be three new stations in the southern part of the state, all of which would be an extension of MBTA.

As with Warwick, the stakeholders for Wickford Junction can be broken up into three groups. However, unlike Warwick, Wickford's stakeholders are far fewer in number. First, the funding parties for Wickford are only two—Federal Transit Administration (FTA) and a private developer. Second, the surrounding land is owned by one individual and the residential community is low density. Finally, MBTA, Amtrak, and the Town of North Kingstown and its constituents also have stakes in this project.

The proposed area for construction was historically used as a train station. However, the new station would be on the opposite side of the tracks as the previous one. The tracks are already in place and are regularly used by Amtrak.

Abutting the proposed site for the train station is the Wickford Junction Shopping Center. Since the same developer proposing the station owns the Shopping Center no conflicts are foreseeable. On the outskirts of the proposed area is low-density development. High-density developments are restricted in this area because of the existence of Hunt Aquifer, which provides restrictions on density and growth in the proposed station area (Cohen 2005). Additionally, Route 4 the primary route from southern to northern Rhode Island is located less than a mile from the proposed development and it offers an easy access to the station area. Private developer Robert Cioe owns, and will continue to own, the land that the station will be constructed on, and the surrounding areas.

This station will not include an actual station structure, just a platform, but will include a mixed-use parking garage. The size of the parking garage has not been determined at the time this report was written, but will hold either 500 or 1,000 cars (Rizzo 2005, Cohen 2005). Since no station will be present the parking garage will have a variety of uses inside to serve the daily needs of the commuters. Potential mixed-uses include a dry cleaner, coffee shop, and possibly a day care facility. The garage will be built and maintained by private developer, and will not become responsibility of the State.

The funding for this project will be a public-private partnership providing a more balanced mixture of public and private funding sources. The public sector funding is expected to be from Federal Transit Administration (FTA) through the New Starts Program. The State has agreed to match 20%. This will generate a total of \$31 million for this project (Devine 2005). The public funding will be used to make the necessary improvements on the rail lines, construct the platform, and to purchase five double-decker passenger cars at a cost of \$ 2 million each. Future maintenance of the platform and rails will be performed by the public sector. In addition to the land, the additional funding for the project will be provided by the private developer for the construction and maintenance of the parking garage. Private funding will also be used to develop retail activities and a day-care center on the first floor of the garage.

3. TRAIN STATION FINANCING STRATEGY AND TOOLBOX

In addition to the Warwick and Wickford Junction train stations, five other locations in Rhode Island have been considered as potential sites for new stations. These five projects are at the early stages of planning and none of them have received funding. Of the five projects, the Town of East Greenwich is further ahead in its planning process. The RIDOT has considered East Greenwich to have a commuter rail station

after the Warwick and Wickford Junction stations are operational. The City of Pawtucket, located to the north of Providence, is undertaking a feasibility study and site assessment of an old station building in order to restore commuter rail service to Boston and Providence. The City of Cranston, located just to the south of Providence and north of the proposed Warwick station, has also begun the early stages of planning for a future train station. The city has recently petitioned the State of Rhode Island to initiate a study for building a train station in Cranston. West Davisville and Charlestown are both identified for train stations but no formal proposal has yet been prepared.

3.1 Financing Strategy

Public-private partnerships (PPP) represent a cooperative, flexible, and unique financial solution to implementing the train station infrastructure and the development of its surrounding area. PPPs are not only a solution to constrained government resources, but improve the quality and delivery of public services (United Nations Economic Commission for Europe 2002). “PPPs refer to contractual agreements formed between a public agency and private sector entity that allow for greater private sector participation in the delivery of transportation projects. Traditionally, private sector participation has been limited to separate planning, design or construction contracts on a fee for service basis – based on the public agency’s specifications. Expanding the private sector role allows the public agencies to tap private sector technical, management and financial resources in new ways to achieve certain public agency objectives such as greater cost and schedule certainty, supplementing in-house staff, innovative technology applications, specialized expertise or access to private capital. The private partner can expand its business opportunities in return for assuming the new or expanded responsibilities and risks” (Federal Highway Administration 2006).

“PPPs provide benefits by allocating the responsibilities to the party (either public or private) that is best positioned to control the activity that will produce the desired result. With PPPs, this is accomplished by specifying the roles, risks and rewards contractually, so as to provide incentives for maximum performance and the flexibility necessary to achieve the desired results. The primary benefits of using PPPs to deliver transportation projects include:

- Access to new sources of private capital.
- Substitution of private resources and personnel for constrained public resources.
- Project cost savings.
- Expedited completion compared to conventional project delivery methods.
- Improved quality and system performance from the use of innovative materials and management techniques” (Federal Highway Administration 2006).

The goal of public-private partnership is that it will give the transportation industry the ability to increase the number and amount of transportation investments. “Public-private partnerships can be applied to a large range of transportation functions across all modes. These include: Project conceptualization and origination; design; financial planning and finance; construction; operation; maintenance; toll collection; and program management. These activities are typically bundled into contract packages reflecting the

public agency's objectives related to: schedule and cost certainty; innovative finance; or transfer of management and/or operational responsibility.

PPPs can have many different forms including partnerships where the public and private sector jointly exist, the private sector is minimally involved, the private sector takes primary responsibility of the project, or the private sector retains control and operates the project. Many consider this to be a "win-win" situation where the developer gains by having increased accessibility near train stations and the transit agency saves on costs related to construction and maintenance of the facility (Landis et.al., Cervero et.al. 2002). These business arrangements can be of the form where revenue is shared and/or costs are shared.

The maximum benefits from a public-private partnership are derived for a transit project when the private partner is involved at the earliest stage in the project's development. The developer can assist the public entity in developing a plan of finance which best achieves the goal of building the transit system. The purpose of a plan of finance is to obtain equitable financial contributions from the many, disparate benefactors of the transit project's development including the state, local government, local landowners and businesses, and the traveling public (Kane et al. 2002).

"Of all highly developed nations, the U.S. is among those in the earliest stages of PPP implementation. Internationally, particularly in Europe, PPPs have proven their value time and again. The United Kingdom currently implements the most PPPs, but other countries such as Australia, Germany, New Zealand, Norway, and South Africa also have taken the lead in implementing these programs" (Saunders 2006). In the U.S., tax laws have generally precluded mixing of tax exempt financing with private equity/debt or revenue sharing. This has reduced the number of public-private partnerships (Yarema 2006).

PPPs should be strongly encouraged, taken lessons learned from Europe, where they are common forms of financing. A successful partnership relies on the strengths of each partner. The public sector has the power to resolve land assembly problems, ensure that the site is development-ready, ease the entitlement process, contribute land, and fund infrastructure costs. Private developers bring the real estate savvy, the contacts with end users, and the understanding of financial resources. Smoothing the entitlement process keeps private sector developers confident, on track, and on schedule – and helps make it possible for them to assume the risks and to produce an outcome that reflects both the community vision and the market reality (Dunphy et al. 2004).

"Many States have laws and regulations that directly or indirectly inhibit PPPs. Strictures range from requirements for low-bid awards on construction contracts to prohibitions against design-build or outsourcing certain agency functions. There are also prohibitions against tolling or commingling public and private funds. Even in States where PPP arrangements are not specifically prohibited in regulations, laws, or State constitutions, experience indicates that specific State legislation can minimize the risks of litigation and delay. FHWA has offered help in this regard through a project to develop model legislation and illustrative contract language to help States enable PPPs" (Saunders 2006). As of 2006, 21 U.S. States have enacted statutes that enable the use of various PPP approaches for the development of transportation infrastructure (Federal Highway Administration 2006).

SAFETEA-LU promotes the application of public-private partnerships by providing tools such as Private Activity Bonds (PABs) that would allow for up to \$15 billion in tax-exempt financing to be mixed with private equity (Yarema 2006). Access to lower-cost bond financing should permit much greater private sector investment and risk taking. It should be noted that a private entity cannot directly issue PABs; a governmental “conduit” bond issuer is still required.

SAFETEA-LU has also authorized a total of \$610 million through 2009 to pay the subsidy cost of supporting Federal credit under TIFIA. It also established a new State Infrastructure Bank (SIB) program that allows all states to enter into cooperative agreements with USDOT to establish infrastructure revolving funds eligible to be capitalized with Federal transportation funds. Finally, Section 150 of SAFETEA-LU stipulates that the current design-build regulations be revised to permit transportation agencies to issue requests for proposals, proceed with awards of design-build contracts, and issue notices to proceed with preliminary design work prior to completion of the National Environmental Policy Act process. The \$50 million floor on the size of contracts that can use design-build contracting without special approval also will be eliminated” (Saunders 2006).

3.2 Financing Toolbox

“PPPs can include both innovative contracting and innovative financing. The former has limited private investment but significant private sector involvement in design, construction, and operation, while the latter involves the private sector bringing money to the table, accepting some financial risk, and taking some level of responsibility for the success or failure of the project” (Saunders 2006). Figure 2 shows the proposed financing toolbox for train station projects in Rhode Island. The three boxes in the toolbox represent three sources of transportation financing. First, the box on the left represents sources that have been traditionally used to develop transportation infrastructure and transit systems. This includes federal funds, bonds, state appropriations for transportation as well as property taxes, general funds and user fees.

Second, the center box represents sources that are traditional in nature, but used in new, innovative ways. This includes the Federal Transit Administration’s (FTA) discretionary New Starts program, the Transportation Infrastructure Finance and Innovation Act (TIFIA), the Railroad Rehabilitation and Improvement Financing Program (RRIF), Grant Anticipation Notes (GANS) and State Infrastructure Bank (SIB). Also, included are locally generated special assessments, developer exactions, parking charges and sales taxes.

Finally, the largest box on the right represents true alternative, innovative contracting and financing methods that are often less common in today’s financing world. These innovative methods are necessary for addressing financing challenges for today’s transportation construction. This includes alternative contracting methods such as concessions and DBOM (design, build, operate and maintain) as well as alternative financing sources such as advertising, naming rights, air rights, customer facility charges (CFCs), and privatization of parking garages.

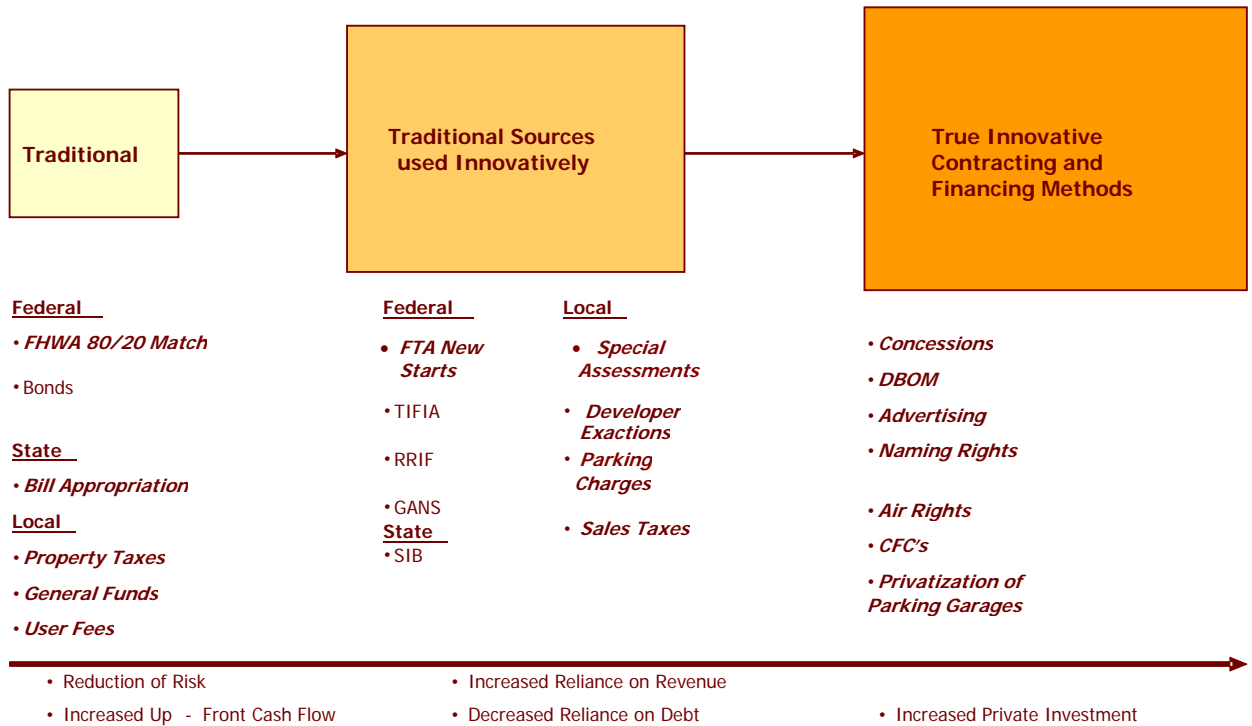
The toolbox depicts the opportunity to move away from relying on traditional sources, and move towards embracing innovative financing methods. While traditional

sources have historically worked to finance the construction of America's infrastructure, rising costs and depleting federal and state resources have made them increasingly competitive. Finding new and innovative ways to use traditional funding methods is key to stretching resources further. Many of these sources, such as TIFIA, GANS and SIB, are sources of debt meaning they must be repaid. Using truly innovative sources are more important than ever to a project's construction. While innovative sources have not been as commonly used in the United States, their popularity is growing as their benefits become more visible. By creating partnerships between the public and private sector, projects can be developed in a timely, cost efficient manner.

Movement along the boxes (from the left to the right) shows a number of benefits that should encourage public and private sectors to seek new, creative methods of creating a budget for transportation development. The following are benefits received from moving to more innovative ways of financing:

- Increase the reliance on revenue sources and decrease the reliance on debt.
- Adequacy of cash flow in relation to debt reduces the overall project risk.
- Greater project certainty equals increased investment if there is a market opportunity.

Figure 2. Train Station Financing Toolbox



* All *Italicized* items are sources of revenue, non -*Italicized* items are sources of debt.

4. CONCLUSION AND RECOMMENDATIONS

The State of Rhode Island has actively pursued the development of a number of new intermodal train stations and extending the MBTA service to stations south of the city of Providence such as Warwick and North Kingstown. This major initiative will promote the greater use of public transit in the state and help to reduce the dependency on automobile as the primary mode of transportation for commuting to work places in Rhode Island and Boston Area. Two projects have already been approved in Warwick and Wickford. If RIDOT approves the additional proposed stations, Rhode Island will have 10 train stations. Constraints that must be considered include: addressing how each station will impact the entire system, the proximity between stations, and the frequency between trains. Currently the proposed schedules are limited. A small number of trains will operate in the early morning and late evening for commuters.

In conclusion, the paper suggests the following recommendations. First, Rhode Island should try to balance spatial distribution of future jobs and housing opportunities throughout the state, while keeping an emphasis on linking the two with alternate forms of transit. Second, in the early stages of development the public sector should play a major role to address the community and environmental impacts of the project. Public funding can spark an interest, which could provide opportunities to tie in private investments. Third, connectivity between intermodal stations should be maximized to further reduce traffic congestion. Finally, given the high cost of developing new stations, it is suggested that these projects be planned and developed in a number of phases supported by a single master plan and an overall financing package.

The future financing of new train stations in Rhode Island will require using a variety of sources, specifically truly innovative sources. In the past, the State of Rhode Island has used alternative sources of financing for transportation projects, including bonds, State Infrastructure Bank and TIFIA. Like other states, Rhode Island has a limited experience in using the public-private partnership approach to finance its transportation projects. By creating different forms of partnerships between the public and private sectors, train station infrastructure and the development around it can be built in a timely and cost efficient manner in the future.

REFERENCES

- Ankner, W. *Financing Intermodal Transportation*. Reconnecting America, 2003.
- Anon. "Overseeing Warwick Station." *The Providence Journal*, November 19, 1998.
- Anon. "Federal bill could jump-start stalled Warwick train station." *The Providence Journal*, February 21, 2004.
- Atash, F., T. McCray and J. Sick. *Developing Intermodal Train Station Projects in Rhode Island*. Paper presented at the Annual Transportation Research Board Meeting, Washington, D.C., January 2006.
- Barbarisi, D. "Cranston hopes to become rail destination." *The Providence Journal*, April 18, 2005.

- Cameron, L., B. Dixon, A. Hahn, B. Persinova, S. Snead, J. Tootoo, and R. Watson. *The Warwick Intermodal Train Station Study*. A study sponsored by the University of Rhode Island Transportation Center, March 2005.
- Cervero, R., C. Ferrell, and S. Murphy. *Transit-Oriented Development and Joint Development in the United States: A Literature Review*. Transit Cooperative Research Program, Report No. 4, Federal Transit Administration, Washington, D.C., October 2002.
- Cohen, M., Former Director of Planning for Town of North Kingstown. *Unpublished Work*, May 25, 2005
- DePaul, T. "Downtown Warwick prompts optimism, questions early response to Mayor Lincoln D. Chaffee's plan for a new development area near T.F. Green Airport appears positive." *The Providence Journal*, June 21, 1998.
- DePaul, T. "Almost done with the dirty work." *The Providence Journal*, January 27, 2006.
- Devine, S., Rhode Island Department of Transportation, Intermodal Planning, Chief, Program Development. *Unpublished Work*, April 25, 2005.
- Dunphy, R., R. Cervero, F. Dock, M. McAvey, D. Porter, and C. Swenson. *Developing Around Transit: Strategies and Solutions that Work*. Urban Land Institute, Washington, D.C., 2004.
- Federal Highway Administration, U.S. Department of Transportation. *Innovative Finance Primer*, Washington, D.C., 2002.
- Federal Highway Administration, U.S. Department of Transportation. "Concession arrangements: Extending the reach of the public sector." *Innovative Finance Quarterly*: Summer 2003." <http://www.fhwa.dot.gov/innovativefinance/ifq93.htm>. Accessed March 9, 2006.
- Federal Highway Administration, U.S. Department of Transportation, "Public-Private Partnerships." <http://www.fhwa.dot.gov/ppp/>. Accessed November 8, 2006.
- Federal Highway Administration, U.S. Department of Transportation. "SAFETEA-LU Innovative Finance Provisions: September 29, 2005." <http://www.innovativefinance.org/>. Accessed November 8, 2006.
- Federal Railroad Administration, U.S. Department of Transportation. Railroad Rehabilitation and Improvement Financing (RRIF). <http://www.fra.dot.gov/us/content/268>. Accessed March 9, 2006.
- Federal Transit Administration, U.S. Department of Transportation. "Grants & Financing." <http://www.fta.dot.gov/>. Accessed November 8, 2006.
- Hedlund, K. and N. Smith. "SAFETEA-LU Promotes Private Investment in Transportation." http://innovativefinance.org/news_innovations/. September 29, 2005.

- Howell, J. "DOT seeks to salvage Warwick station." *Warwick Beacon*, August 3, 2004.
- Kane, C., B. Redd, and B. Gordon. *Innovative Financing Solutions for Rail Transit Projects Using a Public Private Partnership*. Commuter Rail/Rail Transit Conference Proceedings, American Public Transportation Association, Baltimore, Maryland, June 2002.
- Landis, B. "Commuter rail soon to extend to South County." *The Providence Journal*, February 13, 2006.
- Landis, J., R. Cervero, and P. Hall. "Transit joint development in the USA: An inventory and policy assessment." *Environment and Planning C*, Vol. 9, No. 4, 2002, pp. 431-452.
- Lieberman, E. "Airport neighbors question impact of land plan." *The Providence Journal*, July 2, 1997.
- Miami Intermodal Center, Florida Department of Transportation.
<http://www.micdot.com/Default1.htm>. Accessed February 13, 2006.
- PARE Engineering Corporation. *Washington County Transit-Oriented Development Planning Strategy: Assessment of Growth Potential*. Sponsored by Town of North Kingstown, Washington County Regional Planning Council, and Rhode Island Statewide Planning. March 31, 2005.
- Parker, J. Miami Intermodal Center. A presentation at the University of Rhode Island, Kingston, RI, October 15, 2004.
- Portland International Airport. www.portofportland.com/PDX_home.aspx. Accessed February 14, 2006.
- Reid, S. Connecting Planes, Trains, and Automobiles: An Automated People Mover for Warwick, Rhode Island, USA. Paper presented at the Annual Transportation Research Board Meeting, Washington, D.C., January 2004.
- Rhode Island Airport Corporation. RIAC Breaks Ground on Warwick Intermodal Facility, July 17, 2006.
- Rizzo, R., Federal Highway Administration, Transportation Planner. *Unpublished Work*, April 15, 2005.
- Saunders, M. "Bridging the financial gap with PPPs." *Public Roads*. Vol. 70, No. 1, July/August 2006.
- Schneider, J.B. "Selecting and evaluating intermodal stations for intercity high speed ground transportation." *Transportation Quarterly*. Vol. 47, No. 2, 1993, pp. 221-245.
- Schrank, D. and T. Lomax. *The 2005 Urban Mobility Report*. Texas Transportation Institute, Texas A&M University System, May 2005.
<http://mobility.tamu.edu/ums/>. Accessed July 23, 2005.

- The Port Authority of New York and New Jersey. www.panynj.gov. Accessed February 14, 2006.
- The Road Information Program (TRIP). *Making the Grade in Rhode Island: A Report Card on the Condition of Rhode Island's Roads and Bridges and an Analysis of the Ability of its Transportation System to Provide Safe and Efficient Mobility*. Washington, D.C., 2004. <http://www.tripnet.org/RhodeIslandStudyOct2004.pdf>. Accessed July 23, 2005.
- Town of North Kingstown. *Town of North Kingstown Comprehensive Plan 5-Year Update*, Adopted by the Town Council July 9, 2001.
- Transit Cooperative Research Program. *Financing Capital Investment: A Primer for the Transit Practitioner*. Chapter 5: Financing Mechanisms, Report 89, 2003.
- United Nations Economic Commission for Europe. *A Review of Public-Private Partnerships for Infrastructure Development in Europe*. Presented at the first meeting of the UNECE PPP Alliance, Working Part on International Legal and Commercial Practice, March 12, 2002.
- United States General Accounting Office. *Public-Private Partnerships: Terms Related to Building and Facility Partnerships*. April 1999. GAO/GGD-99-71. <http://www.gao.gov/special.pubs/Gg99071.pdf>. Accessed February 17, 2006.
- Yarema, Geoffrey S. "Recent trends and innovations" Panel Presentation on Public Private Initiatives: New Concepts in Transportation Project Delivery, Transportation Research Board Annual Meeting, Washington, D.C., January 2006.