

# Measuring Up

## Volume 2

Transit Partnership Training Proves  
to be a Smart Investment  
that Continues to Pay off



March 2007

## Preface

*Measuring Up* is the fruit of a long-term effort by the Community Transportation Center (the Center) and its staff, particularly lead author Xinge Wang, the Center's Assistant Director for Research, her partner in this work, Jack Clark, Director of Workforce Development, Lewis Clopton, Director of Program Development, and John Schiavone, who specializes in transit technology and training. The research effort behind the *Measuring Up* project builds on nearly six years of engagement by the Center with Pennsylvania's innovative statewide Keystone Transit Career Ladder Partnership.

The Keystone partners from transit labor and management have together blazed a trail that has become a model for agencies in many states. Their work together has been an education in the school of hard knocks. They started with a shared commitment to principles of labor-management partnership and developing a data-driven approach to addressing the skills crisis facing the transit industry across the country – a crisis created by new technology, cascading retirements, and the growing need for transit service.

This *Volume 2* in the *Measuring Up* series goes beyond earlier research by calculating transit return on its investment in this particular kind of partnership-based, data-driven training program. Previous *Measuring Up* publications in 2005 and 2006 showed that enhanced maintenance training through Pennsylvania's statewide Keystone Transit Career Ladder Partnership has not only (1) raised the knowledge and skill levels of transit maintenance employees, (2) led to improved effectiveness in diagnostics and repair, (3) yielded significantly reduced maintenance costs and improved vehicle reliability, and (4) were associated with significant savings in SEPTA's maintenance program.

This report seeks to isolate the contribution of the new training program from the other factors that simultaneously impact transit maintenance and operations. The wide range of changing conditions surrounding any transit training program – changes in fleet composition and age, weather, management strategies, workplace practices, the labor-relations climate, and so forth – make this further analysis a challenge. But it is a challenge the Center is committed to pursuing.

*Volume 2* builds on research conducted by the Center over the past five years. In 2003 *Pennsylvania Transit on the High Road* examined the history of Pennsylvania's innovative Keystone Transit Career Ladder Partnership and reported leadership impressions. In 2004 *Making a Difference* showed that workers receiving Keystone training and their supervisors perceived the program to be extremely valuable. The *Measuring Up* series seeks to explore quantitative changes in the key components of transit operations and their linkages to the new Keystone maintenance training. Its first volume was completed in January 2005.

*Measuring Up* has gone further than many studies in identifying the impacts of training for two reasons: the perseverance of the Center's research team and the thoughtful assistance provided by Pennsylvania's transit systems and unions, particularly at SEPTA and the Transport Workers Union, Local 234. Most importantly, however, this research was able to find and measure significant results because of the extraordinary effectiveness of the Keystone Transit Career Ladder Partnership and the training it has developed.

Finally, we want to acknowledge the Pennsylvania Department of Labor and Industry and the Federal Transit Administration. Their support made this study possible.



Brian Turner, Director

## Executive Summary

*Measuring Up – Volume 2* is part of the ongoing research work by the Community Transportation Center to examine the benefits of effective transit maintenance training programs. It is focused on the Keystone Transit Career Ladder Partnership (Keystone), a labor-management initiative to address critical skills shortages in the Pennsylvania transit industry on a unique partnership-based, data-driven basis. Begun in December 2001, the Keystone Partnership has continually provided training to more than 2,000 transit workers in some 34 transit properties.

The first volume of *Measuring Up* developed an initial quantitative analysis of the benefits of the partnership training through improved skills, more efficient maintenance activities and increased vehicle reliability. Using data from the vehicle maintenance information system at SEPTA (Southeastern Pennsylvania Transportation Authority), this new report attempts to present a more complete picture of the benefit side. More importantly, it aims to achieve an estimate of training's contribution by isolating the effect of non-training factors that coincided with Keystone, such as the age of the bus fleet, changes in maintenance policies and procedures and new productivity enhancement practices.

The most highly developed location for the Keystone Transit Partnership has been in the Philadelphia area, between SEPTA and the Transport Workers Union Local 234. The training partnership there is still very much a work in progress. Although founded on fundamental principles of labor-management training partnership and jointly developed data to guide its work, the Partnership has made important progress through the hard laboratory of years of trial and error work. The work has not been easy by any means. It requires real leadership from both the management and labor sides of the Partnership. The earlier history has been documented in previous reports by the Transport Center's research team, including *Pennsylvania Transit on the High Road* (2003), *Making a Difference* (2004), and the prior volumes of *Measuring Up* (2005 and 2006).

Over the past several years, significant cost reductions have been achieved at SEPTA through reduced labor time and materials needed for bus maintenance and repair jobs. A lower spare bus ratio helped SEPTA save further in terms of fleet procurement costs. Though non-training factors may be direct contributors to these savings, strong anecdotal evidence and existing industry research suggest that the continuous and effective Keystone training for the maintenance staff has played a key role in enabling the full returns from these other factors through a more skilled workforce and the positive labor-management dialogue.

After quantitatively isolating the effect of non-training factors, the Center estimated a range of return on investment (ROI) for Keystone training. Research findings indicate that the unique partnership-based, data-driven training program has produced very positive results for SEPTA and in turn, for the state of Pennsylvania that funded the project. A combined investment of \$2,625,127 in training through state government funding and employer match has produced a cost saving of between \$6,466,907 and

\$14,488,436 in bus maintenance and fleet procurement over a four year period. The resulting four-year ROI is estimated between 146% and 452%. The annual ROI rate, though initially low (36% to 198% in Year 1), has climbed to a stable 2 to 6 times the investment in subsequent years.

Monetary figures in this report represent only a partial picture of savings and benefits to the employer. For example, improvements in MDBF (mean distance between failure) following the hands-on preventive maintenance training have not yet been converted into a dollar value, although it is an important measure of better vehicle reliability that may largely be credited to training. Furthermore, continuous investments in training of the workforce produce multi-year benefits that go well beyond the current research observation period. These “capitalized” benefits from higher skill and organizational capacity have not been included in estimating the benefits to partnership training or the ROI in this paper.

The strongly positive returns on training investment analyzed in this report show that Pennsylvania transit properties have done a good job of managing the limited public resources available to the transit industry. Well designed investments in partnership-based, data-driven maintenance training have allowed SEPTA and TWU to create important efficiencies in maintenance, including additional upgrades not directly reflected in this report.

Beyond Pennsylvania, this research indicates it would be wise financial management for transit systems to invest their scarce budget resources in creating this kind of high quality labor-management partnership-based, data-driven expansion of training capacity. If other agencies can produce results similar to those achieved in Philadelphia, their investments in this kind of training will more than pay for themselves, and rather quickly. By acting strategically, the transit industry has an opportunity to save money, or “make money,” by investing in this kind of highly effective enhancement of maintenance training. This good stewardship of public transportation resources deserves recognition from the public and from policy makers who are striving to improve transportation and create more vital and livable communities.

# Measuring Up – Volume 2

## Partnership Training: A Smart Investment for Transit

### I. Keystone Updates

#### 1. Background

The longest operating, largest and so far the most successful of the statewide joint labor-management transit training partnerships supported by the Community Transportation Center, the Keystone Transit Career Ladder Partnership<sup>1</sup> (Keystone) is well underway in its sixth year of providing much needed skills training to Pennsylvania transit workers. The success of Keystone was not achieved without occasional conflicts and challenges. However, with the commitment and collaboration of both labor and management to make training work, it has continued to expand and diversify. At the January 2007 statewide Keystone meeting, John Vogel, director for workforce investment programs at the PA Department of Labor and Industry, commented, “The Keystone Transit Career Ladder Partnership is the best incumbent worker training program in the country.”

The Keystone program was initiated to address the growing skills crisis in the transit maintenance workforce. The combination of dramatic technological change, the approaching retirement of skilled employees and industry growth is producing skills shortages across the transit industry. Transit is experiencing unprecedented technological change, including clean propulsion, new real-time information systems and especially the proliferation of digital systems into all aspects of the industry, from geospatial automatic vehicle location and tracking to computer-based bus and rail car subsystems, diagnostics and repair.

Many current skilled workers are reaching retirement age. A recent analysis of the retirement trends of TWU Local 234 members working at SEPTA (Southeastern Pennsylvania Transportation Authority) shows that over 40% of the workers in skilled maintenance occupations will be eligible to retire by 2015<sup>2</sup> (see Figure 1). The severity of this skilled workforce exodus has already been felt by transit agencies. By June 2006, SEPTA had 40 vacancies in their 2<sup>nd</sup> class mechanic ranks.

With record high gasoline prices, increasing road congestion and improved transit services, American transit ridership in 2006 jumped to the highest level in nearly five decades<sup>3</sup>. More than 10 billion trips were taken on buses and rail lines. Over the last

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<sup>1</sup> The Partnership is funded by the Pennsylvania Department of Labor and Industry and supported by the Pennsylvania AFL-CIO. Its principal members are SEPTA (Southeastern Pennsylvania Transit Authority), the Amalgamated Transit Union (ATU), the Transport Workers Union (TWU), Port Authority of Allegheny County, and smaller transit properties organized in the Pennsylvania Public Transportation Association (PPTA).

<sup>2</sup> The contract between SEPTA and TWU Local 234 stipulates that collective bargaining members are eligible to retire with full benefits if they meet either one of the following requirements: 1) provided 30 or more years of service at SEPTA, 2) over 62 years old.

<sup>3</sup> “Americans Take More Than 10 Billion Trips on Public Transportation for the First Time in Almost Fifty Years,” APTA News Release, [http://apta.com/media/releases/070312\\_ten\\_billion.cfm](http://apta.com/media/releases/070312_ten_billion.cfm)