# PA Pennsylvania Transit

## On the High Road

# The Keystone Transit Career Ladder Partnership
# The First Two Years


COMMUNITY TRANSPORTATION DEVELOPMENT CENTER

TRANSPORTATION CENTER

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# Executive Summary

This report is part of a larger case study that chronicles the development of the Keystone Transit Career Ladder Partnership from the earliest discussions in Philadelphia in the winter and spring of 2001 through the end of its second program year in June 2003 as a statewide transit partnership training program.

One of five pilot locations in a national Transit Technology Career Ladder Program, supported by the Community Transportation Development Center (Transportation Center), Keystone started in Philadelphia and expanded to a statewide program. Keystone built strong labor-management partnerships dedicated to addressing a major skills gap caused by the introduction of new technology into buses and trains and by the rapidly changing demographics of the maintenance work force in Pennsylvania's transit industry.

Participants committed themselves to working through active labor-management groups that could make decisions affecting training and they explicitly avoided discussions and decisions affecting the labor contract. A policy level body was necessary, but so were joint work groups that could be closer to the day-to-day problems.

A basic ground rule was that decision making would be "data-driven." Prior positions and old fights had to be set aside to make room for information that could be examined by the work groups or an independent outside observer.

The initial work plan laid out five related steps in this data-driven process:

1. Determining the specific skills needed to do the various jobs in the transit system.
2. Assessing the actual job skills of over 800 maintenance personnel against the standards of those skill requirements
3. Creating a detailed skill gap analysis by comparing the skill requirements analysis with the assessed skills
4. Developing curriculum to progressively close the gaps between needed skills and current skills
5. Delivering training based on that curriculum on a pilot basis prior to further training delivery down the road.

In addition, the Year 1 work plan called for 107 workers to receive training in the initial funding period between December 2001 and June 30, 2002.

The Keystone training partnership has met and exceeded its goals in every stage of its development:

- Instead of training 107 workers in year one, 134 went through training.

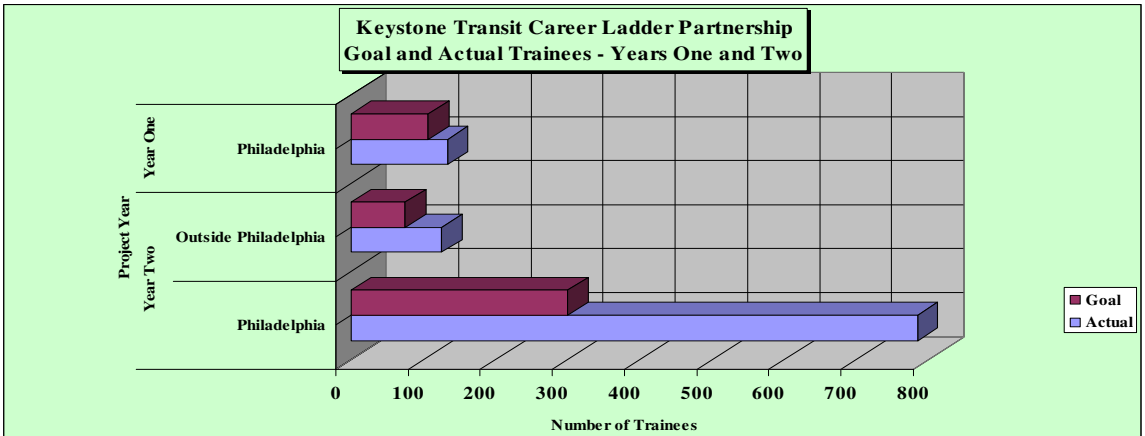
- Long-standing feuds on elevator and escalator maintenance were put aside, and new training covering programmable logical controls and other new technologies for elevator and escalators were put in place.
- A partnership decision process led to the hiring of Educational Data Systems, Inc. (EDSI) to work with the partners at SEPTA and eventually with partners statewide to define job tasks, assess workers skills and develop a skills gap analysis to shape the development of curriculum.

As the process unfolded in Philadelphia with the Southeastern Pennsylvania Transportation Authority (SEPTA) and its principal union, Transport Workers Union (TWU) Local 234, a statewide transit project took shape with active support from the PA AFL-CIO, the Amalgamated Transit Union (ATU) and the Pennsylvania Public Transportation Association (PPTA). Keystone set a statewide goal of putting 75 people through training in systems outside Philadelphia.

By June 2003, Keystone had offered training to 125 workers from more than 20 Pennsylvania transit systems. Courses included basic and advanced electrical systems, bus and van brakes, preventative maintenance and air conditioning. Courses were taught by national training vendors, by a retired union mechanic and by a maintenance manager active in the statewide training committee. Evaluations of the courses by training participants and by their supervisors were universally positive.

In Philadelphia, for the year ending June 30, 2003, Keystone set a goal of training 300 workers in classes that ran 14,016 hours. Keystone actually trained 785 workers in 21,304 training hours. See Figure 1. Keystone Goal and Actual Trainees – Year One and Two.

**Figure 1.**




| | Year Two | | Year One |
|---|---|---|---|
| | Philadelphia | Outside Philadelphia | Philadelphia |
| Goal | 300 | 75 | 107 |
| Actual | 785 | 125 | 134 |

Prior to Keystone, little, if any, maintenance training was available for the smaller transit properties outside Philadelphia. While SEPTA had some training available, classes were often not filled, and the failure rate for trainees was high. Keystone created a dynamic of data-driven program improvement and increased credibility among managers and workers alike for training.

The training has mattered according to all the measures available so far. Supervisors report fewer instances of buses sent back for rework after a repair. Workers voice new confidence in their ability to analyze and solve problems related to new technology. Top managers see a trend line tying improving skills to improving overall performance.

Keystone has also brought about a change in the work atmosphere. A seasoned and hard-bitten bus manager at SEPTA talks about a new level of respect between supervisors and workers. Data gleaned from an analysis of how people actually do their jobs begins to inform discussions on job descriptions. In the face of a major budget crisis, Pennsylvania's transit industry is pulling together rather than facing off big properties against small properties.

Enormous challenges remain, but the story of Keystone is important. Thirty-nine individuals, top transit managers, union officials, front-line supervisors and workers, project staff, funders and consultants, took part in individual interviews for this case study. The Transportation Center, with a lot of help from its partners, surveyed workers and managers about their experience and attitudes towards training. Data from those surveys will be available in a companion report to this case study. Further work will also explore how the benefits of training can be measured.

This case study, then, is the beginning of telling Keystone's story. The Transportation Center looks forward to developing later reports on Keystone and to participating in the ongoing story of the Keystone Transit Career Ladder Partnership.

## Background to the Keystone Transit Training Partnership

"If a labor-management training partnership can work in Philadelphia between SEPTA and the Transport Workers, it can work anywhere."

Transit industry leaders from labor and management as well as front-line supervisors and workers echo that sentiment repeatedly eighteen months into a unique statewide labor-management partnership for building transit skills. Labor and management stakeholders around Pennsylvania had been virtually unanimous in recognizing the urgency of addressing skill gaps as transit equipment and systems take on a host of new technologies. From the beginning they showed an interest in increased transit training. And they were amazed that a new partnership training model seemed to have taken root in Philadelphia with its stormy labor-management climate.

In 2001 the Keystone Transit Career Ladder Partnership started in response to problems of skill shortages and new technologies that are pervasive in Pennsylvania and nationally. Digital electronics systems have been flooding into transit along with new propulsion systems and revolutionary communications breakthroughs providing real-time information to transit riders and employees alike. Many of these new technologies make transit more user friendly, combining with ever-worsening traffic congestion to produce record increases in transit ridership since 1995.[1]

By definition, applying yesterday's skills to tomorrow's technologies results in major skill shortages. Demographic changes in the transit workforce and growing ridership are further heightening those skill shortages, as large numbers of experienced workers are retiring. [2] In the face of these growing needs for new skills, the transit industry urgently needs to upgrade the generally weak level of training investment within transit systems.

Philadelphia was one of five large transit systems that served as pilot projects for the national Transit Technology Career Ladder Partnership program.[3] The national initiative was organized by the nonprofit Community Transportation Development Center with seed funding from the US Department of Transportation, Federal Transit Administration beginning in early 2001.

The partnership model for workforce development derives from a wide body of successful experience in other industries. By working together on shared goals with mutually developed data and analysis, labor and management within an industry or region can effectively accomplish goals that are important to both sides: improved skill, improved service quality and greater customer satisfaction. Competing on this "high road" of higher skills, higher quality, and better technology is understood to be good for workers, good for employers, and also good for their communities.[4] In unionized industries, labor-management partnerships can produce better choices that are more readily accepted, develop

more effective training systems, and create more stable, durable workplace change than other approaches.

The original idea in Pennsylvania was to build a pilot program in Philadelphia between SEPTA and their largest union, Local 234 of the Transport Workers Union of America. Pennsylvania's internal geography quickly raised a telling question: Why Philadelphia? And what about the rest of the state?

After a round of consultations with TWU, SEPTA, the Pennsylvania AFL-CIO and Pennsylvania's other principal transit union, the Amalgamated Transit Union, agreement was reached to develop the natural logic of a statewide program. The problems of new technology and skill shortages were shared, the shortfall of existing training opportunities were shared. Moreover, access to a potential statewide program serving the entire state, not just one part of it, enhanced access to funding resources in the state capitol.

## The Philadelphia Story

So the work of building the Keystone transit training partnership began in Philadelphia, but within this larger framework. Despite the stormy local history, organizing the training partnership there proved successful. If observers from the rest of the state were amazed that a partnership could take root between SEPTA and TWU, they were no more surprised than the Philadelphians themselves. The concept of working together to achieve common goals did not come easily. One SEPTA manager said that Philadelphia's transit system had more strikes over the last thirty years than any other transit system in the country. A bitter 40-day strike in 1998 destroyed whatever remnants of labor-management good will that remained from collaborative efforts in the early 1990s, according to an official of the Transport Workers Union. Another manager summed up mutual expectations at the start of the training program: "Most of the managers, including me, thought the union was pushing training so that their members could get paid for a few hours of not working. Most of the hourly workers thought management was going to use training as a weapon against them". Workers thought, he explained, that SEPTA was going to use training to document that they didn't know what they needed to know for their job.

Despite that background, the two sides decided in 2001 to give the proposed training partnership a try, if only tentatively at first. Both saw massive technological changes and a demographic turnover in the work force causing severe skills shortages. Both labor and management committed themselves to working together on training despite differences on other issues. On money, on issues of discipline and work organization, SEPTA and TWU Local 234 continued to disagree. On the need for training, they found common interest.

## Skills Shortages, New Technologies and Insufficient Training

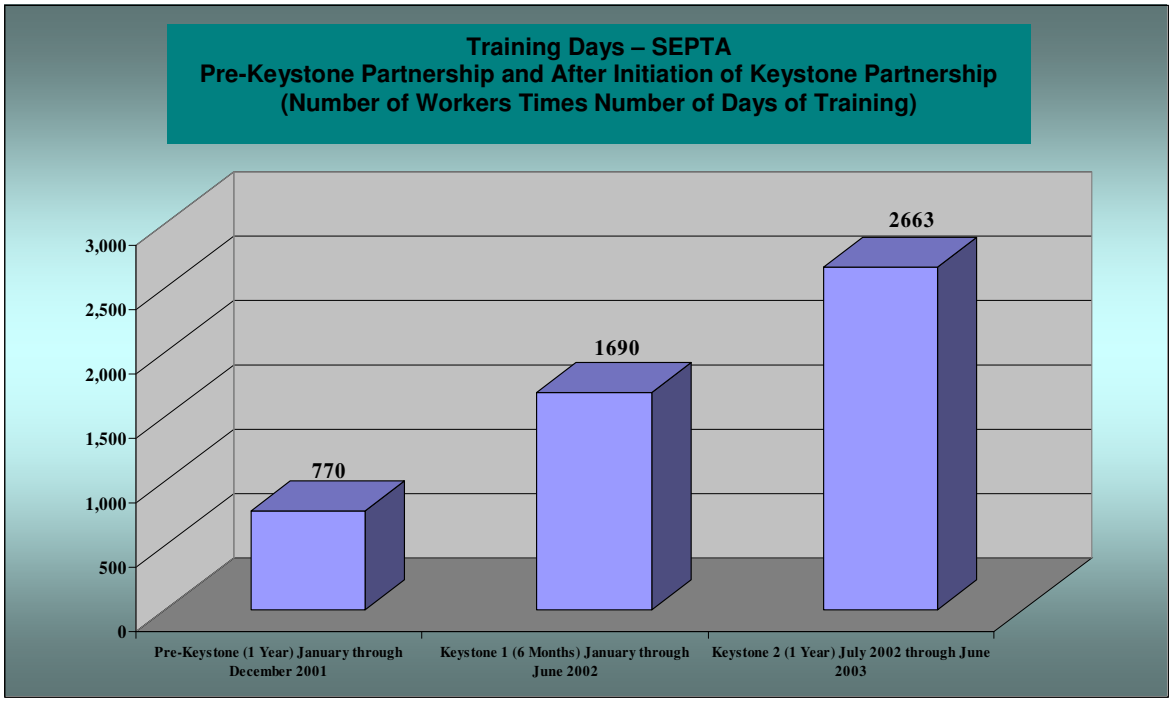
Events at SEPTA since the 1980s had compounded the skill shortages resulting from new technology and demographic turnover. SEPTA management had, said one management representative on the current steering committee, "dug ourselves into a hole and we needed a good training program to dig ourselves out." One result of the 1998 strike had been an early retirement program for senior workers. This and successive events compounded the skill shortages found in transit statewide and nationwide. [5] Skilled maintenance technicians in bus, in rail, in underground power and in facilities took the early out. An earlier management retirement program had led to a similar exodus among maintenance supervisors. Front-line workers, supervisors, union officials and top SEPTA management agreed that the net effect was a massive loss of skill and knowledge. When Keystone started, SEPTA had a 25 percent vacancy rate for bus mechanic first class and a 54 percent vacancy rate for bus mechanic second class.

Further compounding the problem, according to several senior SEPTA managers, was the fact that SEPTA paid for the early retirement by negotiating a lower entry-level wage and a longer progression to top wage for new hires. As a result recruiting skilled workers off the street became very difficult. Managers spoke of a need for SEPTA to grow its own skilled mechanics from its current workforce.

In Philadelphia as in the national transit industry, new technology was a major driver of massive skills shortage. With the increasing procurement of new buses with more and more built-in microprocessors over the last 5 to 10 years, old maintenance skills had become simply obsolete. "Gone are the days of the screwdriver and you can find out which piston is missing," said a manager in bus, "for basically all the diagnostics done on a vehicle, you have to plug into some type of laptop or software that tells you where to go". The impact of technological changes was even more dramatic on the light rail side. Because of the longer service life of rail cars, "we've really gone through a 30 or 40 year jump," explained a union leader who used to work on rail. "It was a shock to membership because they worked for 20 or 30 years on this car that was brought in here in the 60s. And now all of a sudden he's working on a car that was brought here in the new millennium".

In spite of the severe skills shortages and rapidly changing technologies, however, existing training inside SEPTA in early 2001 was, by all accounts, not producing the needed results. In 2001, the last year before Keystone, SEPTA had 770 training days. By June 2003, training days had increased by more than 300%. See Figure 2. on following page, Training Days – SEPTA Pre-Keystone Partnership and After Initiation of Keystone.

## Figure 2.


Training Days – SEPTA
Pre-Keystone Partnership and After Initiation of Keystone Partnership
(Number of Workers Times Number of Days of Training)
3,000
2,500
2,000
1,500
1,000
500
0
770
1690
2663
Pre-Keystone (1 Year) January through December 2001
Keystone 1 (6 Months) January through June 2002
Keystone 2 (1 Year) July 2002 through June 2003

# Partnership Initiation and Development

## Starting Keystone - the First Year's Goals

The Transport Workers Union initiated discussions with SEPTA soon after US DOT funding became available in early 2001. They brought in the Community Transportation Development Center, the new nonprofit founded at the beginning of that year by Sonny Hall, the TWU International President to develop the new national training partnership program.

Harry Lombardo, TWU International Vice President and Trustee of Local 234, and Brian Turner, the director of the Transportation Center, met with SEPTA General Manager Jack Leary in early April, of 2001, not long after the original USDOT grant for the national program. Leary assigned SEPTA managers to work with Turner and Lombardo. Turner indicated that public funds could be available to help pay for training; SEPTA managers showed even greater interest with that possibility. On the union side, Lombardo at that time appointed the staff representing maintenance workers to work on the training program. After a series of meetings of that group, in August the Local created a committee of maintenance workers from bus repair, rail, facilities and underground power to discuss union goals for the training program. On a parallel track SEPTA's senior managers for human resources and organizational development began a series of consultations with bus and rail operations managers from the bus and rail divisions to define goals for a training project. SEPTA managers and Turner developed a detailed budget. The Transportation Center staff communicated with both groups, sometimes conducting a local version of shuttle diplomacy to help keep the two sides moving in the same direction.

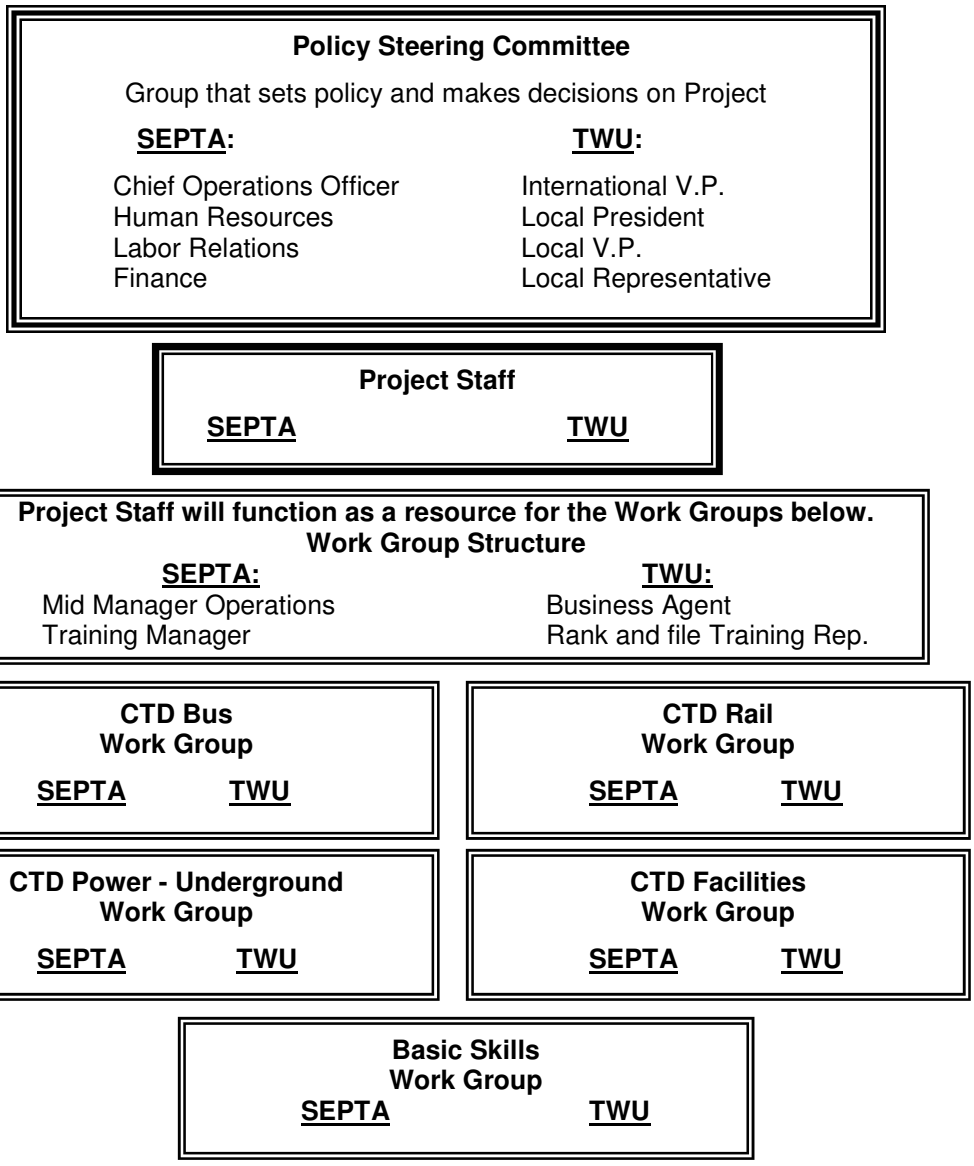
The Center and the Philadelphia partners were working closely with PA AFL-CIO President Bill George, a long time proponent of union sponsored workforce development programs. Late one afternoon in early August 2001, Bill George called Turner and told him that the Commonwealth's Secretary of Labor and Industry would be interested in seeing a proposal for a transit training program - the next morning. After many subsequent meetings with SEPTA, both major unions, and the PA AFL-CIO, and many drafts of proposals and budgets, in early December 2001, the Department of Labor and Industry awarded the Keystone Transit Career Ladder Partnership a $718,000 grant for building the training partnership through June 2002. Keystone was underway.

A detailed work plan (see full year one proposal in Appendix A) spelled out what Keystone would do. The first step was building a balanced joint labor-management partnership process between SEPTA and TWU Local 234. This started at the senior policy-making level, with four senior leaders from each side in regular monthly meetings and with smaller subcommittees taking on specific tasks and bringing their proposals back to the policy committee. This joint top-level process was quickly matched with two-plus-two working groups in the four

divisions initially targeted for skill development initiatives: bus maintenance, rail maintenance, underground power, and facilities – specifically elevators and escalator maintenance. See Figure 2. Keystone/Philadelphia Organization Chart.

**Figure 2. Keystone Transit Career Ladder Partnership**

**SEPTA and TWU Local 234 Project Organization Chart**




With the partnership framework in place, Keystone Philadelphia was ready to take on the core work of providing needed training. This work was done through what Keystone participants statewide refer to as a "data driven process," consisting of five linked steps:

1. Determining the specific skills needed to do the various jobs in the transit system.

2. Assessing the actual job skills of over 800 maintenance personnel against the standards of those skill requirements, and developing surveys and focus groups to determine workers' and supervisors' attitudes toward training.
3. Creating a detailed skill gap analysis by comparing the skill requirements analysis with the assessed skills
4. Developing curriculum to progressively close the gaps between needed skills and current skills
5. Delivering training based on that curriculum on a pilot basis prior to further training delivery down the road. The goal for the first year was that 107 workers would receive training.

According to the original plan, work in Pittsburgh would follow closely behind Philadelphia, and then the Keystone Partnership would reach out the rest of the transit properties in the state.

Pittsburgh, it turned out, was mired in its own labor-management problems and through June 2003 had not yet participated in Keystone. Work in the rest of the state happened a little faster than planned.

## Early Decisions and the Partnership Challenge

In Philadelphia, the project was funded, and work needed to begin. To collect and analyze all that data, Keystone needed to hire someone to work with the new partnership. The Transportation Center worked with representatives of the joint policy steering committee to develop a request for proposals and seek a vendor or vendors to perform the multiple tasks. Working together to select a vendor was the first joint decision for TWU and SEPTA. Despite some disagreements about the merits of the leading candidates, the committee agreed to hire Educational Data Systems Incorporated (EDSI) to work with the Partnership to do the full range of job task analysis, skills assessment, gap analysis and development of new curriculum.

On a parallel track the experienced pollster Vic Fingerhut was chosen to conduct the surveys and focus groups. Fingerhut brought more than thirty years of national polling experience to the task, including extensive background in doing employee surveys in labor-management settings.

Keystone moved on a quick schedule. EDSI was selected as the vendor on February 13, 2002. On February 22, Keystone held a launch meeting with EDSI, SEPTA and TWU. Management and labor from bus, rail, facilities and underground power came together to learn about the process of analyzing job tasks, assessing skills, defining a skills gap and developing curriculum. EDSI outlined its proposed process flow and started scheduling visits to conduct an overall organizational assessment.

According to EDSI's lead Keystone manager, a key to the success of their assessment and curriculum-building activities with Keystone was that – uniquely in their experience – they carried out their work in partnership with the division-based working groups and the overall Philadelphia policy steering committee. Having a neutral party interested in getting objective facts helped the workgroups get past old hostilities and stay on task. Working with key union and management leaders enriched the expertise available to EDSI and increased the workplace enthusiasm and buy-in for the whole project.

Getting this work moving in the right direction was not without its growing pains. One specific assignment from EDSI highlighted the tension between TWU and SEPTA while also pointing to possibilities of working together. To define job tasks, EDSI needed to interview subject matter experts, who were among the best first class bus mechanics or millwrights. They had to be people everyone agreed were good at their jobs. Labor and management could not agree on a process to select subject matter experts jointly. Managers were convinced that the union would treat the selection as a political patronage plum. Unionists were equally adamant that SEPTA would choose the foreman's favorites rather than people who knew their jobs. Facing a stalemate, the two sides drew up separate lists. When the lists were compared, there was 90 percent overlap in the selection of subject matter experts. One bus manager described that as a turning point for management: "We became convinced that the union had no hidden agenda here. They wanted good training for their members. We wanted the same thing."

That breakthrough did not translate into immediate harmony. Juan Torres of SEPTA management and Stu Bass of TWU Local 234 tell the same story about an early joint meeting to set policy direction. The meeting lasted one hour; the fights over the minutes for the meeting went on for more than six hours. Taking minutes and keeping track of assignments was proving almost as difficult for the work groups. Preliminary findings from focus groups with both supervisors and maintenance workers showed promising and troubling trends. Among both supervisors and workers support for training and for labor-management partnership training was overwhelming. Yet mutual suspicions and mistrust stood as huge obstacles. Workers believed that foremen picked their favorites to get training. Supervisors expressed the view that most workers wanted training to get time off productive work. The conflicts over mentoring and minutes reflected deep divisions between the two sides.

Work continued to move forward, however, in spite of these conflicts. EDSI was reporting back to a monthly meeting of the work group members. Most of the initial training was in bus maintenance, and that group met very regularly. In rail, facilities and underground power, the joint work groups began to function and to define needs.

Bass, as a direct result of intervention by TWU International President Sonny Hall, became the lead union coordinator on the project, and Torres became

SEPTA's point person for Keystone. Clarifying the roles of these two lead people proved crucial. Keystone needed someone on the management side and someone on the labor side who had both vision of what the training could become and an ability to execute decisions. Both Torres and Bass filled that role in Year One in Philadelphia. In Year Two, Torres took on new responsibilities, and John Buckner, the director of technical training for SEPTA, became the management lead while Bass continued as the TWU point person for Keystone.

After very detailed interviews with the subject matter experts to determine skills needed, Keystone and EDSI were ready to move on to assessing the skills of the maintenance work force. In the four areas that were defined as priority areas, SEPTA had more than 800 workers. The logistics were daunting, and immediate policy questions came up. Would the assessments occur during work time or did they need to be scheduled for breaks? Who would organize the actual assessment, introduce EDSI staff and so forth? SEPTA agreed that assessments would take place during work time, at the beginning or end of a shift. SEPTA also agreed to coordinate the process and communicate to front-line supervisors that the skill assessment was a high priority. TWU committed itself to have union staff or work group leaders at every assessment to assure workers that this was a union-supported effort. Working with both sides, EDSI took on an exhausting schedule of covering shift changes in large 24-7 operation. In a two-week period, the assessments were complete.

## Beginnings of a Statewide Program

While this work was underway in Philadelphia, Keystone began to be a statewide effort. Through the PA AFL-CIO, a very capable outreach staff consisting of Bob Garraty, Tom Mathews and John Remark were hired to conduct surveys of both labor and management in the smaller transit properties across Pennsylvania. Their work began in March, 2002.

Involving transit labor from the rest of the state was a high priority, and the Amalgamated Transit Union (ATU) was the key organization. ATU represents workers at Pittsburgh's Port Authority Transit and most of the smaller, Class 3 properties throughout the state. ATU involvement was expected to flow naturally as Pittsburgh became involved. When it became clear that Pittsburgh would not be involved in Keystone soon, Jimmy Fenton, the Financial Secretary of Local 85 in Pittsburgh and the president of the statewide ATU Conference Board, worked with the Transportation Center to organize a statewide ATU meeting specifically on the Keystone Transit Career Ladder Partnership. That meeting took place March 23, 2002 in Harrisburg and brought together union leaders from Erie to the Lehigh Valley. Enthusiasm for a training program was high. Local ATU leaders returned to their properties with news that training funds might be available through a statewide initiative.

To connect with transit management leaders in the rest of the state, the Transportation Center and the Keystone outreach staff attended the April 2002

annual meeting of the Pennsylvania Public Transportation Association (PPTA) in Hershey at the invitation of PPTA Director Martha Pierce. FTA Regional Administrator Susan Schruth in her address the conference highlighted the importance of the Keystone Transit Career Ladder Partnership and FTA's sponsorship of the national program. Several senior management leaders expressed interest in learning more. Eric Wolf, the general manager from AMTRAN in Altoona, took particular interest and played an ongoing leadership role in trying to bring together efforts of the PPTA Maintenance Training Committee, the existing PennTrain initiative and the Keystone project.

The PPTA Maintenance Committee had identified training as a major need. PPTA was working with the Pennsylvania Department of Transportation (Penn DOT) to administer PennTrain, an initiative with limited federal funds that targeted training needs for the smallest rural properties. Wolf inquired about the use of Keystone funds to support some training already planned by PPTA and PennTrain. The Transportation Center responded that the funds could be used for maintenance training that was already planned, but that since the grant was a labor-management partnership grant, some statewide structure reflecting a partnership needed to be put in place.

The Keystone outreach staff and the Transportation Center began planning for a statewide conference that would take place in Harrisburg in June 2002.

## Building the Partnership, Getting Results

Back in Philadelphia, Keystone activity continued to move forward.

Bus mechanic training was the major focus of Keystone's early work in Philadelphia. The work group in bus (Automotive Equipment Maintenance or AEM) met every two weeks. It began addressing an issue that plagued SEPTA's recent bus mechanic training programs: a high failure rate on the practical exam.

At SEPTA people moved into training by passing a written test showing some knowledge of mechanical principles. The training itself consisted of 200 hours of classroom time (five consecutive 40-hour weeks). Trainees then moved back to their garages and within 60 working days each trainee faced a hands-on performance test. Prior to Keystone, only about half of the trainees who had succeeded in the classroom were able to pass this practical test. The success rate on the practical test showed some improvement in early Keystone training, but too many trainees were failing. The union complained that front-line managers did not give trainees enough chance to practice their new skills. SEPTA management acknowledged that pressure to meet deadlines caused supervisors to assign people to jobs they already knew well, but trainers and managers charged that individual trainees did not take enough responsibility for their learning and practicing skills.

One potential solution to the lack of hands-on experience for trainees was to assign a mentor to each trainee. The mentor selection process triggered new conflict between management and the union. TWU insisted that the union should choose the mentors. SEPTA balked at that demand. After weeks of deadlock, management and labor came to agreement literally by a handshake between Lou Curley, the acting manager for bus operations, and David Szczepanski, then a business agent for Local 234 TWU. The handshake occurred at the first meeting of a working group set up to address issues between policy steering committee meetings. The union proposed that it post for mentors and then nominate a list of mentors. Because bus was the area where mentors were immediately needed, Curley could object if he could demonstrate to the union the mentor nominee's lack of qualification. With a process in place to choose mentors, the policy committee addressed the role of exactly what mentors would do. The policy committee decided to engage the services of Jim Martin, the retired director of the Philadelphia Area Labor Management committee (PALM) and a veteran in mediating SEPTA-TWU disputes. Martin agreed to run training sessions for mentors, for front-line supervisors and for work group members as part of the Keystone process.

Meanwhile, the AEM work group grappled with individual cases to improve the success rate for trainees. Can we delay the performance test on this individual until a mentor has a chance to work with him? Everyone agrees that this trainee is strong in several areas but needs work on brakes. How can we address that? Can we create a system to help people succeed rather than giving up on them when they fail part of the test? Answers were found on a case-by-case basis. The data-driven, problem-solving model was taking root at the work group level.

Beyond the bus division, the facilities maintenance work group was also making remarkable progress, and quickly. SEPTA and TWU had a particularly rancorous history around the maintenance of elevators and escalators. A union member of the steering committee notes that this was also an area of public controversy with Philadelphia newspapers regularly criticizing SEPTA's elevator and escalator maintenance. One management participant recalls that in the early meetings of the facilities work group, one side or the other would storm out of the meeting. A TWU participant noted that for years both sides had acknowledged the need for training for workers maintaining elevators and escalators, but the training never happened. In just a few months of meetings, using EDSI data to help define skill gaps, the two sides agreed on a training approach. Bringing in one of equipment vendors for training would not work because SEPTA bought equipment from several different vendors. EDSI staff helped define a scope of work for a training vendor and researched qualifications of firms to provide specialized training. Through a competitive bid process, overseen by the Center, the work group chose an outside vendor, Lewellyn Technology, to provide training, and Module 1 of elevator/escalator maintenance reached all E and E specialists by the end of June.

By June 30, 2002 108 maintenance workers had completed a technical training course. Another 26 individuals had been trained as mentors or work group members. Keystone surpassed its Year One goal of training 107 workers.

EDSI began reporting back to the workgroups on its curriculum recommendations in the late spring. Labor and management reviewed the recommendations course by course and even line by line. They found that new technology wasn't necessarily reflected in job descriptions but the detailed task analysis showed that new technology had affected a lot of jobs. How this all got translated into training was proving to be a challenge. That challenge would be partially addressed in the second year of Keystone.

Even in the hectic startup in seven months of Keystone's first year, the training partnership established a pattern that would be repeated and amplified in the next year. The partnership met and exceeded its performance goals while accomplishing important milestones that were not even in their original work plan.

## Keystone's Transition from Year 1 to Year 2

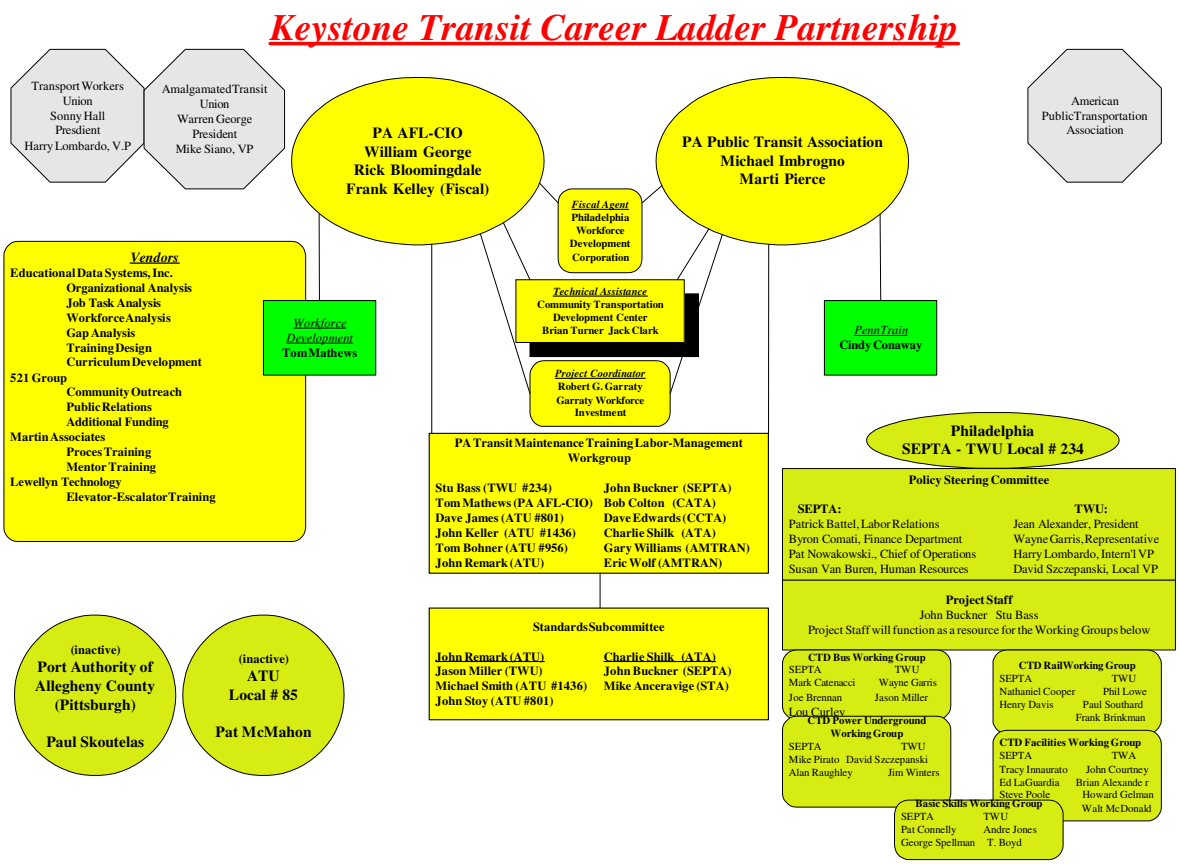
Keystone's first program year was only seven months long, and it was coming to an end June 30, 2002. Before that first year ended, several notable achievements were logged.

On June 18, 2002, the first statewide Keystone conference drew participants from labor, management and state government, from SEPTA and from smaller properties in Allentown, Altoona, Harrisburg, Johnstown, Johnsonburg and Erie, from general managers, assistant general managers, maintenance managers and from union shop stewards to international vice presidents of the TWU and ATU, the director of the Pennsylvania Public Transportation Association and the president of the Pennsylvania AFL-CIO. The PA AFL-CIO released a preliminary version of their statewide survey of training needs. Philadelphia reported on its very substantial activities. The agreement to use Keystone funds for training PPTA had already planned was formalized. Jimmy Fenton and John Remark agreed to work with Eric Wolf and Charlie Shilk of the PPTA maintenance committee to ensure labor input into curriculum for the courses already planned and to develop a future structure for statewide labor-management oversight of training. John Vogel, the director for Work Force Investment of the Pennsylvania Department of Labor and Industry, addressed the meeting. He said that the Department wanted to see more work in industry sectors and that the Keystone Transit Career Ladder Partnership was the broadest and deepest industry partnership he had seen.

Shortly after that meeting, the Department of Labor and Industry (DLI) committed to a second year of Keystone funding at $1,275,000. The Transportation Center encouraged a transfer of day-to-day administration of the funds to a Pennsylvania organization. A June 25, 2002 meeting at PPTA explored the creation of a non-profit specifically to oversee Keystone. Lacking a consensus

among the major stakeholders on that approach, DLI awarded the funds to the PA AFL-CIO as the fiscal agent, and President Bill George designated Bob Garraty to coordinate Keystone activities. See Figure 3. Statewide Organization Chart.

**Figure 3. Statewide Organization Chart**



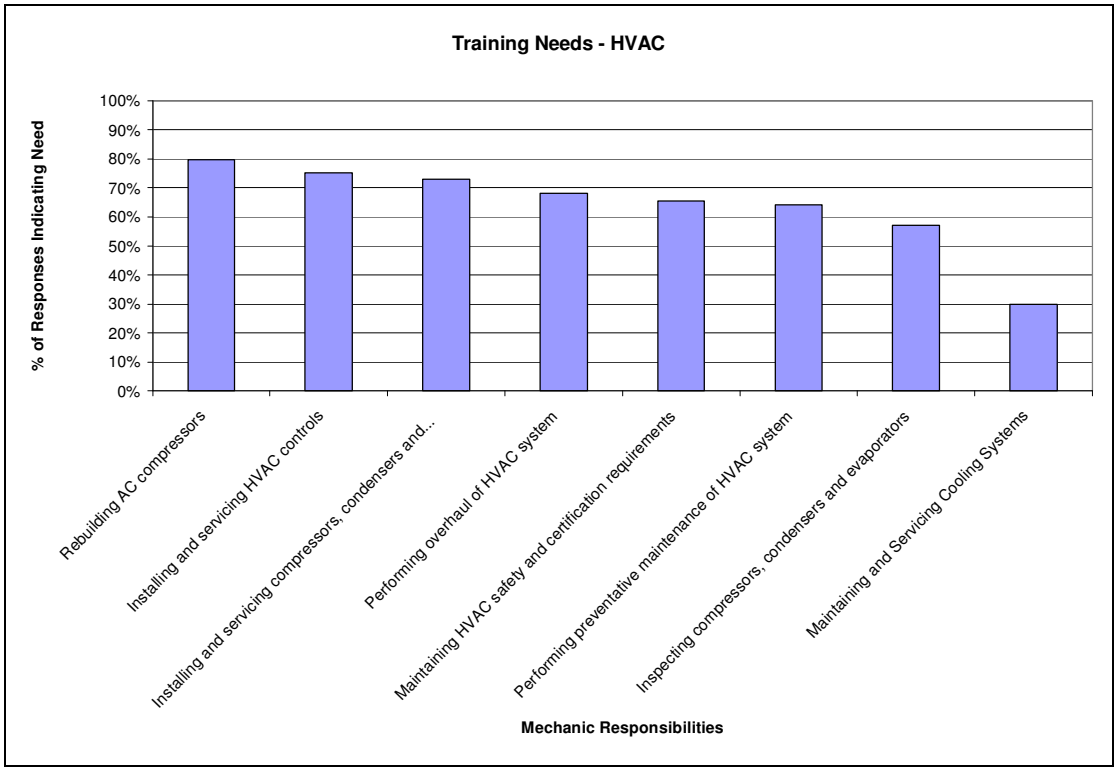

The first challenge of Year 2 was stretching the $1.2 million to cover a statewide effort. In the first seven months of Keystone, more than $650,000 was spent mostly in Philadelphia. For the second year, everyone agreed to a basic formula tying funding to the percent of transit workers at a property. SEPTA had 59 percent of the transit workers in the state, Port Authority Transit in Pittsburgh had 30 percent, and the smaller properties had 11 percent. Those were the budget allocations. Everyone understood that if Port Authority did not participate, Pittsburgh's share would be distributed to SEPTA and the smaller transit properties later in the year.

Even before Year 1 had ended, EDSI had begun to conduct analyses of transit properties across the state. By adapting what was learned at SEPTA, EDSI was able to save time and money on the statewide work. Keystone outreach staff accompanied EDSI and learned to do some of the work directly.

Initial organizational analyses, done in June 2002, covered Cambria County Transit Authority (CamTran) in Johnstown, Altoona Metro Transit (AMTRAN) in Altoona, Capital Area Transit (CAT) in Harrisburg, and Lehigh Valley Transportation Authority (LANTA) in Allentown. That grew, in the second year of Keystone, to full-scale job task definition, skills assessment and gap analysis covering those properties plus Williamsport's City Bus and State College's Centre Area Transportation Authority.

EDSI data on the smaller properties reflected the skills gap in Philadelphia and nationally. The rapid introduction of new technology made it hard to keep skills current, and the smaller properties had no training capacity internally. One manager active in the statewide maintenance committee noted that the data from EDSI "confirmed what we thought we knew" about the skills gap. For example, Figure 4 below shows the percent of people that responded to the self assessments stating that they have training needs is specific tasks related to HVAC work (total population of 77 transit maintenance mechanics).

**Figure 4.**




Starting in October 2002, Keystone-funded training was launched outside Philadelphia. Doug Greenwood, a maintenance manager at Cambria County Transit Authority in Johnstown and an active member of the statewide maintenance committee, offered a basic electricity course over four days.

By the end of June 2003, 76 individual workers from 23 separate transit systems had attended at least one Keystone maintenance training course (See Tables 1 –

4 on following pages for Keystone I and II Training Activities and Results). Some attended more than one course so that the number of training class seats filled for the year was 125. Courses included electricity, electronics, air conditioning, preventative maintenance and brakes.

In year 2 Philadelphia, after several months of data gathering and pilot training, geared up for large-scale training. More than 700 training seats were filled during Keystone 2. Fifty-seven employees, mostly in bus maintenance, received promotions, a significant increase in the number of promotions compared to prior years. Most of the training, across occupations, was in-grade training. Rail mechanics, for example, faced maintenance challenges on a new line of rail vehicles. SEPTA had last purchased rail vehicles more than thirty years ago. The technology had jumped from mid-1960s designs to the advanced electronics of the 21st century. The rail working group put a priority on learning computer skills as an essential tool to handle daily maintenance. In facilities, millwrights and elevator-escalator specialists continued taking the Lewellyn courses, modules one and two. SEPTA electricians were trained on the electrical code. Using the skills gap analysis data, the work group in Underground Power designed a course on cable splicing and troubleshooting. A union member recognized by everyone as a subject matter expert taught the course.

**Table 1. Keystone I Training - Philadelphia 12/01 - 06/02**

**Training Goal for Keystone I:** **107**
**Actual Number Trained:** **151**

| Course | Bus | Elevator/Escalator | General | Total |
|---|---|---|---|---|
| Bus 1st Class | 16 | | | **16** |
| Bus 2nd Class | 17 | | | **17** |
| Bus 3rd Class | 21 | | | **21** |
| Bus General Helper | 7 | | | **7** |
| Welding | 23 | | | **23** |
| Elevator/Escalator | | 24 | | **24** |
| Workgroup Training | | | 11 | **11** |
| Mentor Training | | | 15 | **15** |
| Additional Training NEC | | | 17 | **17** |
| **Grand Total** | **84** | **24** | **43** | **151** |

## Table 2. Keystone II Training Budget and Activities - Philadelphia 07/02 - 06/03

| | Bus Training | | | Rail Training | | | Under Ground Power | | |
|---|---|---|---|---|---|---|---|---|---|
| | Budgeted | Y-T-D | Balance | Budgeted | Y-T-D | Balance | Budgeted | Y-T-D | Balance |
| Regional Instructor | $ - | $ 12,004 | $ (12,004) | $ - | $ 1,127 | $ (1,127) | $ 10,348 | $ 8,900 | $ 1,448 |
| Student wages | $ 90,258 | $ 116,926 | $ (26,668) | $ 33,847 | $ 24,161 | $ 9,686 | $ 9,026 | $ 13,187 | $ (4,161) |
| Mentor Labor | $ 1,920 | $ 2,975 | $ (1,055) | $ 600 | $ 2,169 | $ (1,569) | $ 180 | $ - | $ 180 |
| Training Aides | $ 17,100 | $ 5,000 | $ 12,100 | $ 12,050 | $ 12,480 | $ (430) | $ 3,000 | $ - | $ 3,000 |
| Vendors | $ - | $ - | $ - | $ 11,960 | $ - | $ 11,960 | $ 2,690 | $ - | $ 2,690 |
| Total Training Dollars | $ 109,278 | $ 136,905 | $ (27,627) | $ 58,457 | $ 39,936 | $ 18,520 | $ 25,244 | $ 22,087 | $ 3,157 |
| # Students | 120 | 398 | | 55 | 155 | | 28 | 103 | |
| # Training Days | 1000 | 1673 | | 375 | 286 | | 100 | 168 | |

| | Elevator/Escalator | | | Millwrights | | | Electricans | | |
|---|---|---|---|---|---|---|---|---|---|
| | Budgeted | Y-T-D | Balance | Budgeted | Y-T-D | Balance | Budgeted | Y-T-D | Balance |
| Regional Instructor | $4,139 | $ - | $4,139 | $ - | $ 621 | $ (621) | $ - | $ - | $ - |
| Student wages | $15,795 | $ 9,337.43 | $6,458 | $ 4,513 | $ 9,523 | $ (5,010) | $ 4,513.00 | $ 15,052.51 | $ (10,539.51) |
| Mentor Labor | $600 | $ - | $600 | $ - | $ - | $ - | $ - | $ - | $ - |
| Training Aides | $17,500 | $ - | $17,500 | $ - | $ - | $ - | $ 9,000.00 | $ 16,481.49 | $ (7,481.49) |
| Vendors | $32,740 | $ 21,600.00 | $11,140 | $ 10,650 | $ 10,800 | $ (150) | $ 1,490.00 | $ 16,000.00 | $ (14,510.00) |
| Total Training Dollars | $70,774 | $30,937 | $39,837 | $15,163 | $20,944 | ($5,781) | $15,003 | $47,534 | ($32,531) |
| # Students | 35 | 23 | | 10 | 32 | | 52 | 61 | |
| # Training Days | 175 | 113 | | 50 | 151 | | 52 | 207 | |

| | Woodland / Electronics | | |
|---|---|---|---|
| | Budgeted | Y-T-D | Balance |
| Regional Instructor | $ - | $ - | $ - |
| Student wages | $ - | $ 5,881.62 | $ (5,881.62) |
| Mentor Labor | $ - | $ - | $ - |
| Training Aides | $ 33,760.00 | $ 77,243.50 | $ (43,483.50) |
| Vendors | $ 2,000.00 | $ 11,700.00 | $ (9,700.00) |
| Total Training Dollars | $ 35,760.00 | $ 94,825.12 | $ (59,065.12) |
| # Students | 0 | 13 | |
| # Training Days | 0 | 65 | |

| | Budgeted | Y-T-D |
|---|---|---|
| Number of students | 300 | 785 |
| Number of Training Days | 1,752 | 2663 |
| Number of Training Hours | 14,016 | 21,304 |

| | |
|---|---|
| Cost per trainee | $ 934.32 |
| Cost per trainee hour | $ 52.33 |
| Cost per trainee day | $ 418.63 |

## Table 3. Keystone II Training - Philadelphia 07/02 - 06/03

**Training Goal for Keystone II Philadelphia:** **300**

**Actual Number Trained:** **785**

| Course | Bus | Rail | Underground | Elevator/Escalator | Millwright | Electrican | Total |
|---|---|---|---|---|---|---|---|
| Automatic Stop Announcement System | 39 | | | | | | **39** |
| Bus 1st Class In-grade or Promotional | 143 | | | | | | **143** |
| Bus 2nd Class In-grade or Promotional | 61 | | | | | | **61** |
| Bus 3rd Class In-grade or Promotional | 51 | | | | | | **51** |
| Cummins Diagnostics | 4 | | | | | | **4** |
| Bus General Helper | 3 | | | | | | **3** |
| Engine & Micro Meter | 13 | | | | | | **13** |
| HVAC Specialist | 25 | | | | | | **25** |
| Mechanic 1st | 7 | | | | | | **7** |
| Mechanic 2nd | 5 | | | | | | **5** |
| New Flyer Electric Vendor | 3 | | | | | | **3** |
| New Flyer Inspection Vendor | 3 | | | | | | **3** |
| NF Hybrid Introduction | 8 | | | | | | **8** |
| M4 Automatic Train Control (ATC) | | 16 | | | | | **16** |
| Introduction to Computers | | 68 | | | | | **68** |
| M4 Auxiliary Inverters | | 12 | | | | | **12** |
| M4 Loop Testing | | 3 | | | | | **3** |
| M4 Low Voltage Power Supply (LVPS) | | 22 | | | | | **22** |
| M4 Subway Overview | | 1 | | | | | **1** |
| M4 Propulsion | | 23 | | | | | **23** |
| Power Supply Troubleshooting | | 2 | | | | | **2** |
| Chembre Bonding System | | | 34 | | | | **34** |
| Underground Refresher | | | 29 | | | | **29** |
| Electrical Theory | | | 8 | | | | **8** |
| Energy Delivery System | | | 30 | | | | **30** |
| Basic Electric Pre Module I | | | | 3 | 10 | | **13** |
| Lewellyn Module I | | | | 3 | 21 | | **24** |
| Lewellyn Module II | | | | 17 | | | **17** |
| Circuit Board Repair | | 19 | | | | | **19** |
| Electrician Refresher | | | | | | 40 | **40** |
| Analysis of 2002 National Electrical Code | | | | | | 16 | **16** |
| Mentor Training | 31 | 8 | 2 | | 1 | 1 | **43** |
| **Total** | **396** | **155** | **103** | **23** | **32** | **76** | **785** |

## Table 4. Keystone II Training - Smaller Properties 12/02 - 06/03

**Training Goal for Keystone II - Smaller Properties:** **75**

**Actual Number Trained:** **125**

| Organization | Basic Electric | Bus/Van Brake | Prev. Maint. | Advanced Electric | A/C Prev. Maint. | TOTAL |
|---|---|---|---|---|---|---|
| AMTRAN | 5 | 3 | 4 | 2 | 5 | **19** |
| ATA | 5 | 4 | 2 | 2 | 2 | **15** |
| Baker's Transportation | | 1 | | | | **1** |
| Blair Senior Services | 1 | 2 | 1 | 1 | 1 | **6** |
| CAMTRAN | 2 | 5 | 3 | 3 | | **13** |
| CAT | 5 | | 3 | | 2 | **10** |
| CATA | 2 | 3 | 3 | 3 | 4 | **15** |
| COLT | | 1 | 1 | | | **2** |
| Cumberland County | 1 | | | | | **1** |
| Endless Mountains | 2 | 1 | 2 | 2 | 3 | **10** |
| Erie Metro Transit | | 1 | | | | **1** |
| INDIGO | 1 | | | | | **1** |
| LANTA | 5 | | | | | **5** |
| Luzerne County | 1 | 1 | 1 | | | **3** |
| Monroe County | | | | | 1 | **1** |
| Perry County | 1 | 1 | 1 | | | **3** |
| Red Rose Transit | 1 | | | | | **1** |
| Schuylkill Transporation | | | | | 2 | **2** |
| Town & Country Transit | 2 | 1 | 1 | 1 | 2 | **7** |
| USTA | | | 1 | | | **1** |
| Williamsport | 2 | 1 | 1 | 1 | 1 | **6** |
| York County Transit | | | | | 2 | **2** |
| **Total** | **36** | **25** | **24** | **15** | **25** | **125** |

* 76 individual workers from 22 transit properties have been trained by June 2003.

## Impact of Training

How do we know if Keystone training partnership makes a difference? The Transportation Center is still collecting data that will be analyzed in a companion report later in 2003. But there is ample evidence of positive impacts, both from program statistics and from statements of program participants.

A maintenance manager in a good-sized rural transit property tells the story of a bus that had an electrical fire. "Everything burned in there, the wires, the electrical harnesses, everything. For months, the bus sat there, and no one wanted to touch it. Two of our mechanics came back from Doug Greenwood's basic electrical course, and they rewired the bus, got it working and got it back on the road."

Most of the measures of Keystone's impacts won't be quite that dramatic. As several participants have noted, even if training has improved skills and improved overall maintenance operations, conclusively proving causality is not easy.

Several measures, though, are extremely clear. First, Keystone was organized in response to a demand for more training. The numbers of workers trained and the range of courses delivered, both in Philadelphia and statewide have risen dramatically.

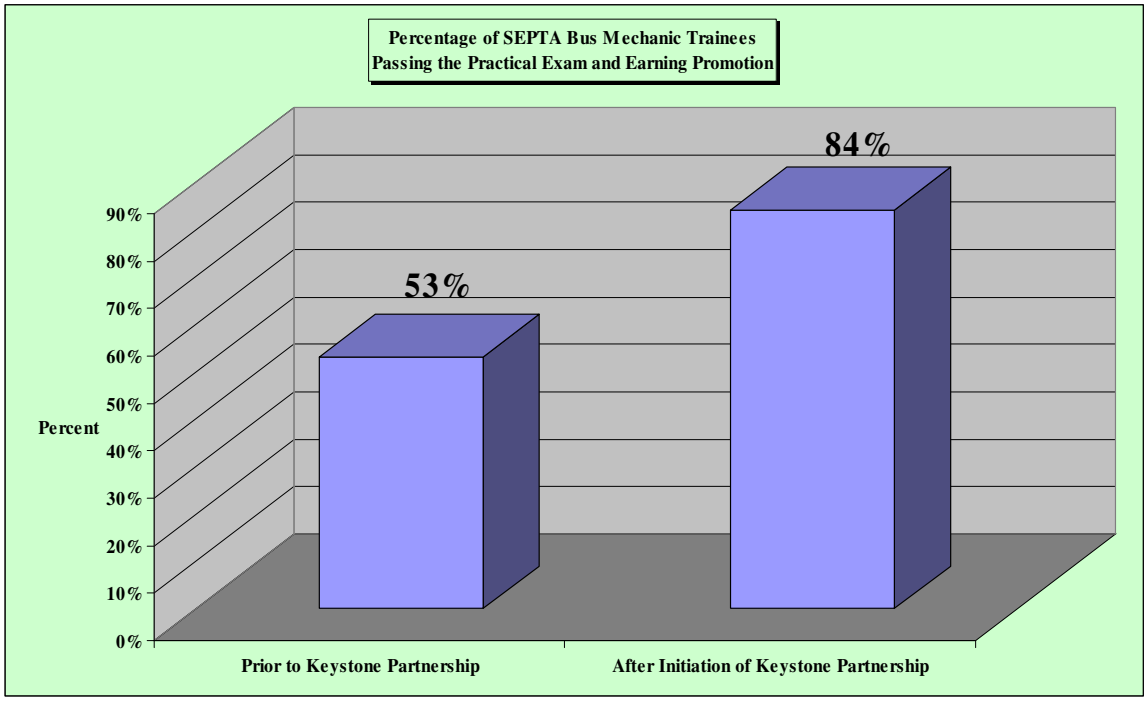
Those who have gone through training and their immediate supervisors are in a strong position to judge the quality of the training. Supervisors in Philadelphia and across the state have a history of some reluctance to send workers to training. They still have a priority to get buses repaired and back on the road as quickly as possible. Cutting the workforce by one or two for training while keeping the same workload increases pressure in the shops. Yet under Keystone supervisors are showing less reluctance to send people for training, according to many managers, because they're seeing the time as an investment in increased skills. Workers also show enthusiasm for the training. One measure there is that people return for more courses. Statewide, 76 distinct individuals attended training, filling 125 seats for the year. That shows a substantial return rate and support both from workers and their supervisors. TWU Keystone leaders at SEPTA were asked how training was viewed on the shop floor. All responded positively. The problems they tended to cite centered on new demands for training that were hard to meet.

The quality of Keystone training courses for smaller properties was also highly rated by participants. For instance, 100% of the trainees in one basic electrical class responded to an evaluation questionnaire by saying they agreed or strongly agreed that the course was strong on topics related to instructor teaching skills, handouts and materials, hands-on training on equipment, and interactions with instructor and fellow technicians. Among the 25 mechanics attending the

seminar, all agreed that they would recommend the seminar to current workers or new hires in their systems. More than half of the participants believed that this training would help them tackle maintenance problems faster and easier by enabling them to read schematics and understand other basics of electricity that could only be obtained through systematic training. Workers also felt confident enough that they could troubleshoot and figure out the most efficient solution because of what they had learned in the training. When asked about benefits of the training to their transit properties, many participants mentioned that Keystone courses could produce fewer breakdowns and road calls because of more and better preventative maintenance and better grasp of electricity knowledge.

Another important improvement has come in the area of the effectiveness of the training offered. Counting the bodies filling the classroom seats does not necessarily reveal how effective the training is. Prior to Keystone, 53 percent of the bus mechanic trainees at SEPTA passed the practical exam. Now, 84 percent of bus mechanic trainees are passing the practical exam and earning promotion (See Figure 5.)

**Figure 5.**




Front-line managers consistently report that skills have improved and overall maintenance quality is better. Several managers cite a reduction in repair work being returned to be fixed again. Many cite a new ability of workers to understand and diagnose problems more effectively. At SEPTA detailed computer records are kept on a computer-based Vehicle Maintenance Information System (VMIS). Part of VMIS tracks and sets a norm for how long a

job should take. A bus supervisor notes that the norm for many jobs has been heading down since training has been increased. A management member of the steering committee reports that SEPTA maintenance and operations records show steady improvement since Keystone's increase in training. He's quick to add that buying new equipment and other factors have also contributed to this improvement, but he is just as emphatic that training has made a real difference.

## Challenges Ahead

The Keystone Transit Career Ladder Partnership has met and exceeded its immediate goals and has opened possibilities for new areas of work and improvement in the Pennsylvania transit systems. But the Partnership faces challenges as it moves forward:

- ***Pittsburgh.*** To be a truly statewide program, Keystone needs participation from the state's second largest transit system. Staff and leaders have worked to secure this participation. As Keystone enters its third year of funded activity, top leaders at PAT Transit and Local 85 of the Amalgamated Transit Union are seriously considering their participation in Keystone.

- ***Philadelphia.*** Keystone has flourished even though SEPTA and TWU Local 234 have a history of sharp conflict. There's substantial evidence that the Keystone training has strong support from both workers and supervisors in maintenance. Most workers at SEPTA are outside the maintenance categories. Training has become an area of high consensus. Issues around compensation will be areas of high conflict. In March 2004, the labor contract at SEPTA expires. If past is prologue, negotiations may be difficult. Local 234 is politically divided. With a high conflict atmosphere and division within the union, maintaining Keystone's momentum could prove difficult. How deeply rooted is Keystone among SEPTA's managers and workers? Do workers outside maintenance see Keystone as a potential asset to help them climb a career ladder into well-paid technician jobs?

- ***Budget cuts.*** Like most states, Pennsylvania is suffering a fiscal crisis. Transit is facing cuts. Experienced transit professionals identify opposite pressures from these cuts. When times get tough, training is traditionally the first function to lose. However, the opposite pressure coexists that forces systems to get more from maintenance because the budget isn't there for new vehicles or an endless supply of parts. In tough times, transit systems need mechanics, not parts changers. For large and small properties, the most immediate challenge is going to be maintaining service with reduced resources. By upgrading the skills of the maintenance workforce, Keystone may be able to contribute to increased efficiency. Or training could become a casualty of the budget cuts. With the labor and management partnership that Keystone has developed, the Pennsylvania transit industry also has the potential to reach out and build stronger ties to the communities it serves. Career ladder programs that involve outreach to the community for good entry-level jobs with a chance for advancement would expand the stake of communities now served in a good transit system. Broader alliances could help transit win the support needed to secure needed funding for increased services. Can Keystone

help create that dynamic even as the budget ax is falling? That is a major challenge that may determine much of the transit industry's future.

# Conclusions

## 1. Partnership Works in creating training program results that may have been impossible without a joint labor-management effort.

Some of these beneficial results were the direct effects of primary program goals – particularly the increases in training, skills, and promotions tied to increased learning. Many of Keystone's benefits, however, were indirect effects that were not originally anticipated by most if any Keystone leaders.

Growing trust and cooperation between previously hostile parties in the world of maintenance has been a dramatic outcome from the Keystone Transit Career Ladder Partnership. Exactly how far this trust extends and how much it influences the overall tenor of transit labor-management relations, especially in Philadelphia, is a subject for further study. The development of growing cooperation could seem to make Keystone and this case study part of a large body of work on labor-management cooperative programs. The Keystone Transit Career Ladder Training Program was not designed or adopted as a labor-management cooperation program. The goal for both parties in Keystone is and has been to train workers for technologically demanding jobs and to fill major skill gaps. Keystone is committed to a partnership principle as a means to achieve that goal. Both management and labor have an interest in a better-trained workforce. Both must have meaningful voice in what the training is and how that training is achieved.

The Pennsylvania experience bears out the validity of that partnership model. Look at the elevator/escalator training in Philadelphia. Since at least 1998 both parties have recognized a need for training. For years, nothing happened. Within two months of convening the facilities work group, the TWU and SEPTA had organized and conducted a high-quality elevator-escalator training program. More broadly, one SEPTA management representative to the policy committee noted that prior training efforts required individuals to take initiative on their own to sign up for classes. That manager's perception was confirmed in the focus groups and attitude surveys. A substantial group of workers believed that SEPTA management would not respond to worker ideas for improved training. Many expressed skepticism about who got selected from training, suspecting supervisor biases.

A training program supported by both the union and management fundamentally changes that dynamic on the shop floor. More workers were interested in training that had union support. Because of the active joint work groups, once-skeptical workers came to realize that they had substantial influence over the direction of training. The training department

itself found its role increased and its communication with operations managers and front-line supervisors improved. Supervisors who had been skeptical for their own reasons saw training as increasing the skills of their direct reports and improving the effectiveness of their operations. Union officials and higher level managers who had put their credibility on the line to start a partnership process were able to take next steps because the training was working and winning over former skeptics on both sides. More trust and more cooperation has indeed grown from the process, but the goal remains improved training. The means of achieving that goal through partnership proved crucial

**2. A data-driven, problem-solving model works.**

A basic ground rule in Keystone is to use data-driven decision making. The partnership made a large initial investment in collecting the data to drive this process: defining required skills, assessing current workforce skills, and developing the skills gap analysis process. From the policy steering committee to the work groups, the effort to tie decision making to data was intense. Falling back to ideological postures and old feuds was a constant threat, but when data was used well, the results were powerful. For example, with the AEM group looking case by case at where trainees were in the process, labor and management could get beyond blame-fixing on why so many people failed the performance test and start coming up with solutions to improve the success rate. Similarly, the workgroup in Underground Power was able to design and run a course on cable splicing and trouble shooting by analyzing the EDSI data on skills gaps.

**3. A statewide approach works through economies of scale and by building a wider, more effective coalition for action.**

Building a critical mass of transit union leaders and managers across the state creates a sense of momentum, seriousness, and stability that would not be present in an initiative in a single transit system. This finding reflects the parallel results in the benefits to each state (or local) program from being part of a national effort. The methods, tools, resources and curriculum that are needed in each location are broadly similar to those developed and used elsewhere. These economies of scale reduce the effort required to do a good job in each individual location. Likewise, opportunities for learning from the experience in other local training partnerships speeds up the learning curve in each location, reducing costs and uncertainties for starting down the road toward increased training. Finally and obviously, for the more than twenty smaller transit systems and their local unions, the creation of a shared training system allows them to participate in training that none of them could afford to create for themselves acting alone. For them, the choice is between a collective multi-site initiative or essentially nothing.

A statewide training partnership in a public service industry also works politically. Keystone is not located in one area of Pennsylvania, but operates in principle throughout the state. One experienced observer notes that with state grant funds, it's always good to have something that reaches a lot of legislators. SEPTA as the largest transit system in the state receives the greatest share of state transit aid. That can cause resentment among the smaller properties. Keystone has changed that dynamic. SEPTA participates in statewide meetings to plan training. SEPTA has offered the smaller properties space in their training classes and is exploring sending out trainers to help with training needs of smaller properties. Participants in the statewide maintenance committee see SEPTA as a partner, not as the big Philadelphia property hogging all the resources. The Pennsylvania public transit community is more united than it has traditionally been as it faces its most severe budget crisis in a decade.

On a different level, the statewide approach works in another important way. The partnership training approach is a step along a "high road" approach to modernizing the transit industry. By embracing upgrading of workers' skills and enhancing of workers' ability to diagnose and solve problems, transit properties involved in Keystone are turning away from solutions that call for lower wages, more outsourcing, the use of technology to "dumb down" the work process. In other industries, high road approaches have often been isolated to a particular company. These islands of innovation are easily swamped by the generally low standards of their industry. By reaching out statewide, Keystone changes the industry standard not just at one property but across the state's transit industry.

**4. Being part of a national program works in building effective in-state training partnerships.**

In Keystone's initiation, the Community Transportation Development Center played a large role. A management representative to the Philadelphia policy committee recalls that Pennsylvania was one of five pilot sites and that there was some competition to see who would get a strong program going first. Pennsylvania, as Keystone participants see it, won that competition, and Keystone is the strongest of the national transit career ladder partnership programs to date. Keystone participants take pride in that accomplishment. Being tied to a national project also helps Keystone. The American Public Transportation Association and the two major unions (ATU and TWU) are paying more attention to Keystone because they are hoping to adapt lessons from the career ladder partnership work there. The national work reinforces the point about high road partnerships. If you can change the norms of the public transit industry in a large state, you can envision changing national norms. Through the national program, that

discussion is taking shape. That synergy strengthens Keystone and the national program simultaneously.

**5. Training works - as a starting point for joint labor-management initiatives, as a basis for improving skills, quality and productivity, and as a foundation for broader organizational change.**

As noted throughout the body of this case study, training proved to be a high consensus area even when labor and management were at loggerheads about other issues. So training works as an area where both sides can come together and achieve goals. Training works, too, in that training improves skills and ultimately improves the quality of transit service offered to the public. The section above on the Impact of Training addresses this point explicitly. The reader will note that the evidence on training's impact is anecdotal. The stories are so consistent that they become strong evidence. More work is needed to document that case here. Supervisors cite a reduced rate of repairs being sent back for rework. That can be quantified. With the VMIS data tracking at SEPTA, a lot of research on the effects of training could be done. Qualitative and quantitative research will document that training is a good investment. The Center will work with Keystone to pursue this study further.

Furthermore, partnership training helps build a solid foundation of technical knowledge and skills among the internal workforce, thus making it possible for the maintenance department to provide high quality in-house service. Throughout our interviews, both SEPTA and smaller property managers expressed less satisfaction with the reliability of manufacturer's extended warranty service or otherwise contracted out work. Yet one reason managers considered outside contractors a necessity in the first place is the lack of skills of the inside workforce. "Improving the skill level of our people definitely will save us money, will enable us to do more things ourselves and particularly with the newer technologies", said an operations manager.

On the other hand, unionists saw hopes through the Keystone activities for workers to regain confidence in performing top-notch maintenance work and to secure their jobs. "Before training, managers would say our guys aren't knowledgeable enough, and we have to outsource that work. It was the easiest answer and the hardest one for me to fight because when I did fight to keep the work in-house, our guys didn't know how to do it. So we lost a lot of work through that." A union work group member recollected, " Training has made the company aware of the abilities of the mechanics and they are willing to work with the union more to be able to keep it in-house as opposed to automatically a knee-jerk reaction – send it out." Even though results may not be evident at this stage of the Keystone project, both parties see it as a trend in the long run that more and more work will be brought

back in house with well-designed training programs targeted at areas of existing or future skill shortages.

### 6. The Keystone Partnership can open doors to closer working relationships with the broader community.

In Philadelphia, the policy committee has formed a large working subcommittee with participation throughout the organization to look at Apprenticeship, Basic Skills and Community Outreach. Two years ago, TWU and SEPTA could not have had a discussion on any one of those issues. Across the state and in Philadelphia, the career ladder approach offers an opportunity for the public transit industry to redefine its relationship with the communities it serves. Transit jobs are good, working class jobs with family-sustaining wages. With career ladder opportunities built in, transit jobs become very attractive for young people, for workers who have lost jobs in other sectors and for people trying to enter or re-enter the job market. Transit employers and transit unions can fashion partnerships that reach out to communities to help fill this jobs. In doing so, they will solidify support for transit in the communities it serves.

### 7. The Keystone Partnership Opens New Possibilities for Innovation.

A management representative to the policy committee in Philadelphia noted that one function Keystone served was to incubate a lot of new ideas. "We can't act on everything at once, but it's a good forum, and these ideas are heard." This manager notes that Keystone is one of the few forces moving SEPTA in the direction of a more functional organization with a flattened hierarchy and more self-directed teams. A very specific example concerns job descriptions that haven't kept pace with technology. Job descriptions are clearly an area for collective bargaining, and everyone wants to keep Keystone out of the collective bargaining process. At the same time, EDSI's detailed reports offer an opportunity to take a fresh look at how technology has redefined what people do every day. The Philadelphia policy steering committee agreed to ask EDSI to issue an exceptions report, which would explain where the job task analysis departs from the formal job description. The Keystone work groups will look at these reports and then pass them on to a union-management collective bargaining committee dealing with job descriptions. At the operational level, a bus manager recalls his experience as a front-line supervisor and contrasts it with a new atmosphere after the Keystone training. "You give a guy a repair job on a bus, and he tells you that there are other problems that need to be fixed. You're a supervisor, you're trying to meet the line, and you figure he's a wise guy giving you a hard time. He wants to slow you down, he wants all day to work on one bus. Now, there's new way of looking at the same thing. The supervisor figures, I just invested time to train this guy. Maybe I should listen to him. If we take longer on to repair this bus maybe it won't be back for other repairs

so soon. There's a new level of respect on the shop floor." Statewide and in Philadelphia, maintenance managers and maintenance workers express a sense of being valued more because of the training. Managers and union representatives on all levels see a possibility of less reliance on outsourcing as Keystone helps to upgrade the skills of the transit work force. In Philadelphia, a policy committee discussion on training in rail leads to a wide-ranging discussion on how SEPTA buys its new equipment and how the procurement can be better coordinated with plans for training. Union representatives note that if front-line maintenance workers are consulted prior to the purchase, they may be able to help make the new equipment more efficient.

Starting with training, Keystone has opened a world of possibilities.

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[1] For those seeking more detailed information on the impact of new technologies in transit, see the website for the Community Transportation Development Center (www.transportcenter.org) and the specific presentation by Professor Robert Paaswell. See also the 2003 Briefing Paper for Policy Makers issued by the Keystone Transit Career Ladder Partnership. Available from Keystone Transit Career Ladder Partnership, 231 State Street, Harrisburg PA 17101

[2] A study conducted by the Center for Urban Transportation at the University of South Florida in 2001, "Where are the Future Maintenance Technicians Coming From?" estimated that 39 percent of technicians would be retiring in the next ten years.

[3] See Transportation Center website for other locations and reports on progress from other locations

[4] There is a large literature on High Road Partnership models. The AFL-CIO Working for America Institute published "A High Roads Partnership Report." The Aspen Institute, the Ford and Rockefeller Foundations have all highlighted workforce development initiatives organized by industry sector.

[5] As indicated in endnote 4, the skills shortage in transit is a national problem. The American Public Transportation Association addressed it in an August 2001 publication entitled, "Workforce Development: Public Transportation's Blueprint for the 21st Century." APTA has also established a Workforce Development Initiative. The US Department of Transportation has identified workforce development as part of its strategic plan.

# Appendix A

# Keystone Transit Career Ladder Partnership For Incumbent Workers and New Hires

## Background

Rapidly changing transit technologies, related skill shortages and job vacancies pose critical challenges to public transportation systems throughout the State of Pennsylvania. The most effective way to resolve these skill shortages is a collaborative approach to providing training for incumbent workers to move up industry career ladders targeted to areas of shortage. At the center of the Keystone Partnership are Pennsylvania's largest mass transit union – the Transport Workers Union (TWU) Pennsylvania's largest mass transit system, the Southeastern Pennsylvania Transit Authority (SEPTA) – who will work together in developing and piloting new curriculum across a range of occupations experiencing skill shortages in this first program year. Facilitating this partnership is the Community Transportation Development Center (TRANSPORT CENTER), a nonprofit organization created to support transportation industry partnerships for workforce development and industry development. To extend this partnership to the other mass transit systems in the State, TRANSPORT CENTER will work with the Pennsylvania AFL-CIO, the Amalgamated Transit Union, which together represent the transit workforce in Pennsylvania's smaller mass transit systems. Providers of post-secondary education, including community and technical colleges, will be brought into the Partnership as potential training delivery and certification organizations. As the fiscal agent, the TRANSPORT CENTER will ensure effective partnership development and delivery of career ladder training.

As the Partnership program makes it possible for larger numbers of incumbent workers to receive training needed to progress into middle and higher rungs of industry career ladders, larger numbers of entry-level job openings will become available for community members. As the Partnership develops and provides that training for incumbent workers, it will then also recruit, train and provide support for new hires starting their transit industry careers. Both efforts address important public goals: The incumbent worker training can avert layoffs as new technology is introduced and strengthen the delivery of community transportation services, and potential new hires will be recruited among dislocated workers, youth, and those re-entering the workforce from public assistance and from other sources. Additional community organization partners will be brought into the Partnership to help build community outreach for recruiting potential new hires and supporting their entry into transit careers.

## Mass Transit is a Critical Industry for Pennsylvania's Communities

Mass transit systems across Pennsylvania provide invaluable service to urban and rural populations, seniors and youth, the disabled, those without transportation services and the public at large. Total mass transit employment in Pennsylvania is 17,000. These numbers are expected to rise as Pennsylvanians continue to shift to rail and bus transportation alternatives for local transportation needs. Presently mass transit is the chosen mode of transportation in Pennsylvania at a level second only to New York, Illinois and the Washington D.C. metro area. Pennsylvania transit systems account for

the fourth and the thirteenth largest mass transit systems in the nation. The two largest systems have the bulk of employees - SEPTA with 9,031 and PAT Transit with 3,188.

The rapid integration of new propulsion and communications technologies is transforming the world of transit and the skill requirements of its occupations. At the same time the booming economy of the nineties, worsening road congestion and the promise of rider-friendly transit technologies have generated a resurgence in transit ridership – up 21 percent nationally in the past five years. Shortages of skilled workers are a common feature of transit systems nationwide. As of the first quarter of 2001 total transit ridership in Pennsylvania has grown to an estimated level of over 416 million trips annually.

## Collaborative work among transit unions, transit management and community groups is necessary for a successful transition to 21st century transit systems with 21st century skills.

A partnership linking management and transit unions can be a powerful catalyst for creating effective, reliable, modern systems and building quality training and career ladder systems. This partnership can be the most effective way to assess training needs from the perspective of front line employees in concert with operations management and design the most efficient systems to deliver services to Pennsylvania's communities.

The Keystone Transit Career Ladder Partnership will build upon activities undertaken to date in Southeastern Pennsylvania, then expand to involve transit systems and labor organizations throughout the State in building the career ladder program.

The Community Transportation Development Center, with support from the US Department of Transportation, is working in Pennsylvania and four other initial states to develop high quality transit career ladder training programs focused on new technologies and skill shortages. San Francisco, California, Houston, Texas, Miami, Florida and New York City are other areas where such programs are in development.

As part of this broader U.S. Department of Transportation-funded transit technology/skills planning program, TWU Local 234 in Southeastern Pennsylvania and SEPTA have been working with the Community Transportation Development Center to explore approaches for:

- Partnership development for the purpose of joint projects in career ladder training and for other programs
- Identifying skill requirements of new transit technologies
- Assessing the current skills of the SEPTA workforce
- Develop curriculum and support systems for career advancement in occupational skill sets impacted by new technologies – rail and bus vehicular maintenance, underground power operations, and facilities/escalator/infrastructure maintenance.

With support from the State of Pennsylvania, this program will grow into a full program of assessment, curriculum development, and delivery of upgrade training and mentoring systems for incumbent workers. As those tasks roll forward, the initial Partnership

organizations will reach out to key community organizations and their local Workforce Investment Boards to identify candidates as potential new hires for the initial rungs of transit career ladder programs.

There are significant advantages and efficiencies associated with developing this kind of program on a statewide basis. The challenges of widespread skill shortages and rapid technological change are similar across public transportation systems in the state, and significant economies of scale can be achieved by developing related solutions among the transit systems and unions across the state.

It is anticipated that assessment, curriculum, and training delivery systems developed in Pennsylvania's largest mass transit systems will accelerate the development of similar activities that are urgently needed in the smaller systems throughout the State. We expect that the underlying system of partnership development can be transferred to the other transit properties, especially given the leadership role of SEPTA and the TWU, ATU, and the Pennsylvania AFL-CIO on a statewide basis. The Partnership will develop a statewide project steering committee for transit skill development and career ladders. We anticipate that curriculum and trainers developed in Pennsylvania's largest transit systems will be in a position to provide training and guidance on training development to smaller transit properties as their programs develop.

Within the first six months a joint project committee will be established for SEPTA-TWU and an initial assessment report completed. Following a startup period of workforce survey and focus groups, skills assessment and curriculum development, training on the new curriculum is planned to commence in March 2002. The existing curriculum at SEPTA for bus mechanics will be reviewed and revised early in the process, and expanded training under this revised curriculum will begin in January 2002.

Another step in achieving the efficiencies of a statewide approach is the outreach to include the smaller regional systems and their unions, including those in Reading, Harrisburg, Johnstown, Lancaster, York, Erie, the Allentown/Bethlehem/Lehigh Valley area, Williamsport, Wilkes-Barre, as well as rural areas. The initial base of experience would be shared from successful development in Southeastern Pennsylvania. A statewide conference and planning meeting will be held to share experience and resources among all participating systems in Pennsylvania.

Although these activities are projected for the state of Pennsylvania, it is anticipated that there will be many beneficial connections with other programs currently under development in other states, namely California, Texas, New York and Florida. As a large jurisdiction with respect to mass transit capabilities, Pennsylvania also has an opportunity to provide a cutting edge program model of training development in new technologies. At the present time Pennsylvania also has the only statewide program.

## Proposal Summary

To get to scale in designing and delivering training for transit career ladders throughout the State, a number of goals have to be addressed through specific activities:

- *Prioritizing areas of skill shortage to be addressed in this program through a data-driven assessment process.* This involves developing data and analysis on current and future skill shortages, building in part on emerging analyses of skill

requirements of new transit technologies, and then assessing the present skills of the incumbent workforce.
- *Developing and refining technology/skills curricula and training delivery and certification systems* to meet these areas of transit skill shortage
- *Creating skill development and career ladder opportunities for new entrants* – especially youth, displaced workers, and workers re-entering the work force from public assistance – that are integrated with programs for incumbent workers.

## Fostering a Statewide Transit Technology/Skills Partnership

To address these skill shortages on a statewide basis, the Partnership will:

- Initiate labor-management-community dialogue on these issues in Philadelphia, Pittsburgh and other cities and towns with public transportation systems.
- Develop a coordinated statewide approach for addressing transit skill development needs across the regional transit systems, developing common resources and certification standards that can be used within each region.

## Partner Organizations

- Transport Workers Union (TWU)
- Southeastern Pennsylvania Transportation Authority (SEPTA)
- Community Transportation Development Center – TRANSPORT CENTER (fiscal agent)
- Amalgamated Transit Union (ATU)
- Pennsylvania AFL-CIO
- Community organizations
- Secondary and post-secondary education and training providers

## Critical Career Occupations and Skill Sets

Several immediate priority areas have been identified in Southeastern Pennsylvania (and nationally) as heavily impacted by new technology and experiencing critical skill shortages now. These include:

***1. Bus and Rail Car Maintainers*** – Electronic maintenance diagnosis systems and digital & microprocessor-based subsystems are becoming pervasive in new buses and rail cars, along with cleaner bus engine systems. New skills are needed to supplement the traditional mechanical and electro-mechanical skills of bus maintainers and car maintainers. Shortages are especially acute for more highly skilled vehicle mechanics. SEPTA has recently upgraded its training and career ladder for bus maintenance, and PAT Transit and ATU have developed a rail maintenance training program.

***2. Underground and Substation Power Maintainers*** – A program would be developed between first, second and third class Maintainers to ensure progression along the skill levels. There are vacancies in these titles. New jobs are being created at a rapid rate, with difficulties in hiring and retention of skilled personnel.

3. ***Facilities Mechanics*** - A program would be developed among first and second class millwrights to ensure progression along the skill levels. There are vacancies in these titles. New jobs are being created at a rapid rate, and there is difficulty hiring and retaining skilled personnel.

Among incumbent workers, the initial focus will be on moving workers up career ladders in technically oriented occupations – from base level to more advanced positions for mechanics and maintainers – and from entry level positions such as cleaners and helpers into the beginnings of technical career ladders. A special focus will be placed on workers who are threatened with displacement by new technologies. It is estimated that approximately 35 per cent of hourly workers in mass transit in Philadelphia are minorities.

Where successful training programs are found to exist already elsewhere in the state or in other jurisdictions for specific classifications of employees, these will be examined closely in developing Partnership curricula and programs.

## Work Plan: Assessment, Curriculum Development, Training Delivery

Initially, through the SEPTA and TWU and later in other transit systems, the Career Ladder Partnership will follow a work plan to assess specific areas of skill needs, and to develop and deliver the curriculum. The steps in this work plan are as follows

1. Develop the partnership structure between the unions and management to develop and conduct the career ladder activities. Partnership development will occur first in Southeastern Pennsylvania and then proceed to creating a statewide transit skills network, including a statewide stakeholder conference.

2. Develop a survey and focus groups of workers in technical occupations and managers in the operations and support functions that will measure the baseline of experience with skill requirements and new technologies training. This survey data will be gathered jointly for the most efficient training design. Focus groups will be used as a second method to deepen understanding of data gathered from surveys.

3. Develop and implement [a] an assessment of the skill requirements for transit occupations experiencing skill shortages and [b] an assessment of the baseline capabilities of the current transit workforce to use those technologies. The gap analysis linking these objective skill requirements and existing workforce skills will be a major driver in curriculum development. Results of the survey and assessment will also be used to determine the best methods and mechanisms for delivering training.

4. Develop curriculum and create career ladder support systems such as mentoring for:

   a. Incumbent workers advancing up career ladders to meet critical areas of skill shortages, including workers needing to strengthen their foundation skills to prepare them for career ladder advancement training, and

   b. New hires from populations of youth, dislocated workers, workers re-entering the work force from public assistance, and other sources.

5. Develop outreach and recruitment systems for potential new hires into entry-level transit jobs, connecting to One Stop Centers, local Workforce Investment Boards and community and transit advocacy organizations.

6. Pilot test this curriculum, training delivery systems, and related career support systems with representative groups of incumbent workers in SEPTA.

7. Provide the same training delivery for new hires in Pennsylvania mass transit.

To support this work, the Keystone Transit Career Ladder Partnership will build ongoing dialogue linking transit workers and their unions, transportation agencies, community groups and secondary and post-secondary education providers. This dialogue will focus on changing transit technologies, jobs, skill requirements and their impacts on local and regional communities within Pennsylvania. As this work is developed in Pennsylvania and other states, the Partnership will aim to develop common standards for skill certification that can support greater labor market efficiency in helping workers find new jobs and helping transit systems (and other employers) identify skilled workers to hire.
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## Budget Summary

The attached budget itemizes the costs of program delivery of this project.

1. **Prior to delivery of training**, the newly formed Partnerships will:

   (a) conduct a workforce and manager background survey and focus groups that will develop accurate data on areas of skill shortage, past training experience. This will be coupled with
   (b) an assessment of (i) the skills required in the jobs currently experiencing skill shortages and (ii) the workforce skills of current employees, including managers. This survey, dual assessment and resulting gap analysis report will be made jointly to obtain input from the perspective of front-line employees and management at a cost of $47,000.
   (c) Curriculum development for career upgrade courses and design of related mentoring systems, in courses defined by the partnership for career ladder movement in jobs. Curriculum development costs for new courses for rail vehicle mechanics, infrastructure maintainers and underground power maintainers are anticipated. The total projected cost for curriculum development and consulting arrangements with equipment vendors for specialized in-house training capacity is $41,000.

2. **Training Delivery.** Training delivery is divided into four categories:

   (a) Expanded training in areas for which training programs have previously been established - a current training program for bus/automotive mechanics at SEPTA that will be upgraded after review by the Partnership. Costs for delivery enhancements for Automotive/Bus Mechanics are projected at $171,600.

(b) Pilot delivery of new occupational career upgrade curricula and mentoring programs for SEPTA hourly employees are projected for Rail Vehicle Mechanics, Underground Power Maintainers, and Facilities Mechanics, as well as Helpers and will begin after March 15, 2001, after new curriculum has been developed and delivery and certification systems determined. Costs for training in these titles are projected to total of $106,600.

(c) Mentoring for upgrade trainees will be established early in this program year and expand as new groups of workers enter and complete their training. The mentoring budget is $57,600.

(d) Development and pilot implementation of a program for recruiting new hires, including from targeted populations, with necessary orientation, training, and mentoring support, along with basic skills training for incumbent workers and development of e-learning versions of these courses are projected to cost $51,200 in this first program year.

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(e) Consultant services for classroom training will be used to adapt and deliver curriculum from outside agencies and vendors for $35,000.

**3. Staffing for the partnership**, with a project director based in Philadelphia and a statewide outreach coordinator based in Harrisburg but with extensive travel around the state, is anticipated to cost $148,164, including travel expenses, over the initial program year.

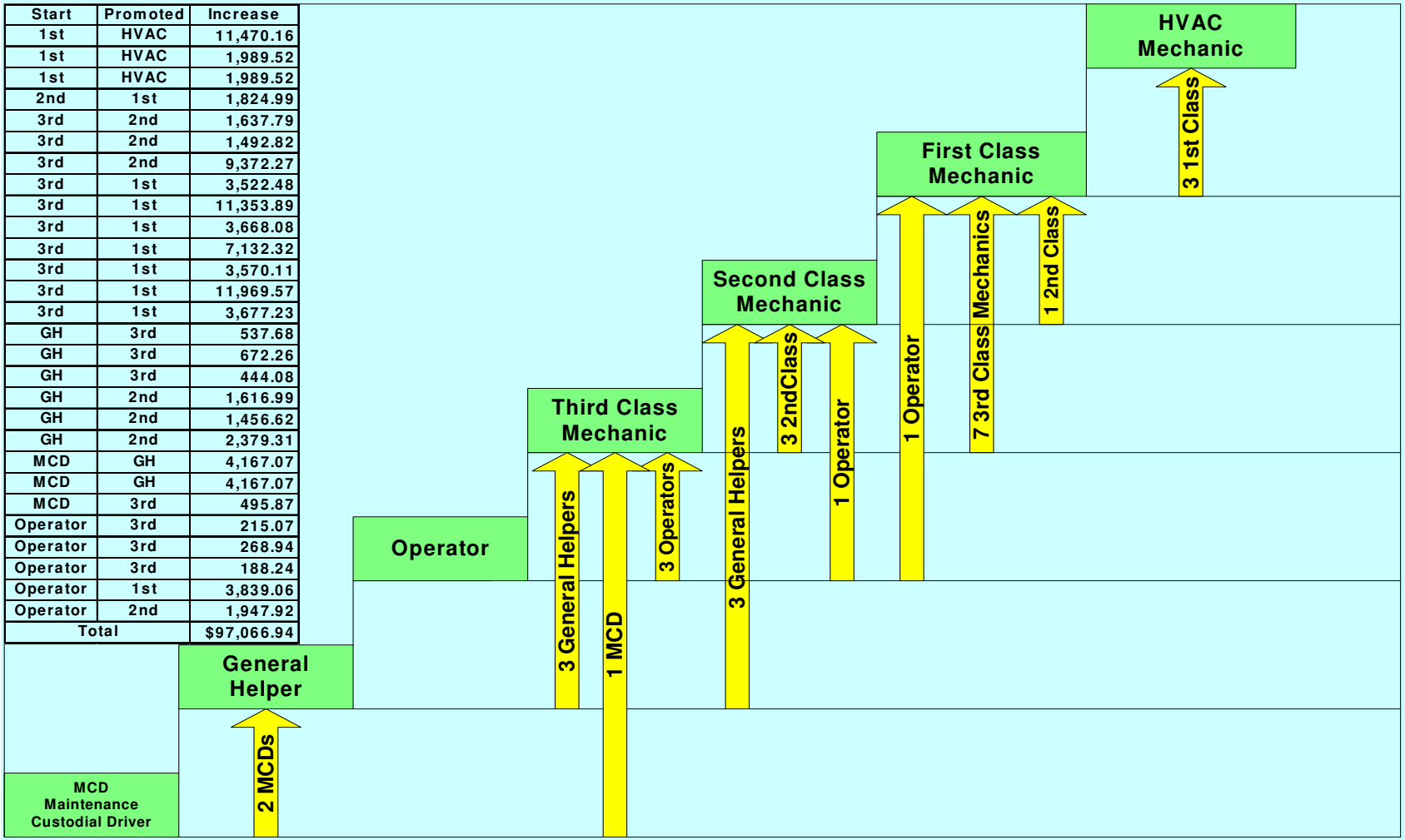
The total combined costs for the activities in the months of the first year are $683,164.

Future costs for an anticipated second program year (July 1, 2002 - June 30, 2003) are estimated at $1.5-2.5 million. This will involve rollout of the full spectrum of career ladder upgrade training for current employees and recruitment and training of new entrants in transit systems throughout Pennsylvania, with further expansion of training at SEPTA as well.

# Appendix B

## Keystone Transit Career Ladder Partnership Promotions - Philadelphia Portion

| Start | Promoted | Increase |
|---|---|---|
| 1st | HVAC | 11,470.16 |
| 1st | HVAC | 1,989.52 |
| 1st | HVAC | 1,989.52 |
| 2nd | 1st | 1,824.99 |
| 3rd | 2nd | 1,637.79 |
| 3rd | 2nd | 1,492.82 |
| 3rd | 2nd | 9,372.27 |
| 3rd | 1st | 3,522.48 |
| 3rd | 1st | 11,353.89 |
| 3rd | 1st | 3,668.08 |
| 3rd | 1st | 7,132.32 |
| 3rd | 1st | 3,570.11 |
| 3rd | 1st | 11,969.57 |
| 3rd | 1st | 3,677.23 |
| GH | 3rd | 537.68 |
| GH | 3rd | 672.26 |
| GH | 3rd | 444.08 |
| GH | 2nd | 1,616.99 |
| GH | 2nd | 1,456.62 |
| GH | 2nd | 2,379.31 |
| MCD | GH | 4,167.07 |
| MCD | GH | 4,167.07 |
| MCD | 3rd | 495.87 |
| Operator | 3rd | 215.07 |
| Operator | 3rd | 268.94 |
| Operator | 3rd | 188.24 |
| Operator | 1st | 3,839.06 |
| Operator | 2nd | 1,947.92 |
| Total | | $97,066.94 |

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