

Measuring Up:

A Review of Four Selected Area Practices at Peer Transit Properties with Recommendations for Operational Continuous Improvements at TriMet

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Introduction

There can be no goal more important in delivering quality service than that of continually meeting customer expectations. Customer excellence through quality service is achieved by: understanding and improving operational processes; identifying problems quickly and systematically; instituting change; establishing valid and reliable service performance measures, and measuring customer satisfaction and other performance outcomes. To meet customer expectations, management is held accountable for providing safe, efficient and inclusive service. From the customer's perspective, nothing less is acceptable.

Within public transit, achieving this same goal is reachable but complicated. Public transit agencies, unique organizations by the nature of their creation, funding sources, relationships and structure, have complex operations. The present day challenge is to deliver quality service while meeting customer needs as the complexity of issues related to finances and resources increases. Often operational changes require conflicting demands on the agency, e.g., the mandate to increase the resources needed to accomplish change while aggressively cutting costs to remain economically viable. Historically the culture within these organizations has posed barriers to change, reinforced by long-standing policies, programs and regulatory frameworks. Frequently change is seen as hard; sometimes it is much easier to maintain the status quo.

As hard as change can be, many public transit agencies are up to this challenge. Best-in class properties who strive to keep the focus on the customer experience provide quality service with a systematic approach that evaluates, adapts and sustains the effort. This managed continuous improvement process supports an enabling environment for change. Success in public transit is meeting customer needs through quality service supported by management accountability and front-line employee performance.

Background

During Spring/Summer 2013, TriMet, the public agency that operates mass transit in Portland, began an extensive continuous improvement review within its operations with the goal of improving service delivery. As part of the larger agency-wide initiative, TriMet executive management requested an in-depth review of the following four critical practice areas: the operations control center (OCC), right-sizing of bus transportation management (At TriMet a station is a bus garage.), front-line employee communication, and bus operator training. These four areas were chosen because each is a critical component for providing quality service management. Descriptions of the four practice areas are:

- **Operations Control Center (OCC)** – The OCC serves as the main location from which service for bus and rail systems are controlled and operational decisions are made regarding normal and non-normal operations. The command facility is the primary point of contact for all internal and external coordination of service. Standard operating procedures (SOP's) guide the OCC's functional authority for system operations.

- **Right-Sizing of Bus Transportation Management** – The manager to bus operator ratio creates a work environment that supports face-to-face interactions and follow-thru to ensure safety, customer service, service reliability and work rule adherence.
- **Front-line Employee Communication** – The most effective communication methods are used to deliver information, gain feedback and ensure front-line employees receive current agency information and answers to their questions and concerns.
- **Bus Operator Training** – A comprehensive on-going bus operator training program provides effective new, refresher and on-going training on industry practices and CDL standards. The curriculum uses professional trainers to provide cost-effective delivery methods and emphasizes safety, customer service and other topics important to the bus operator role.

With regard to this study TriMet wanted to contrast its operations against those of its peers in order to understand the operational practices that helped or hindered success in these areas. The review findings would provide the basis for recommendations for improvement.

Study Goals and Management Questions

The goals of the review process were:

- To document TriMet’s practices in the areas of operational control center, right-sizing of bus transportation management, front-line employee communication and bus operator training
- To identify best practices for these four areas as demonstrated by a group of peer transit properties
- To compare TriMet’s practices in these four areas against those of its peer transit properties
- To offer recommendations that will support a continuous improvement in these four areas within TriMet

Based on TriMet documents, executive management wanted answers to the following specific questions:

- Has transportation operations created an organizational control structure that takes full use of the tools offered through the new computer assisted dispatching/automatic vehicle location (CAD/AVL) and radio systems, improves the relationship between the field staff and control/dispatch staff, improves communication channels to customers and ensures delivery of reliable service?
- Does the bus transportation management to bus operator ratio create an environment that generates face-to-face interactions and easy access to managers, as well as an excellent follow-thru to ensure customer service, safety, reliability and attendance standards are addressed, and that consistent discipline is applied?
- Does bus transportation management employ the most effective communication channels to deliver information, gain feedback and ensure bus operators receive responses to their questions and concerns?

- Does transportation operations offer a comprehensive on-going training program for the bus operator which focuses on safety and customer service, while enlisting the most cost-effective delivery methods?

Methodology

To determine TriMet practices, face-to-face interviews were conducted during the months of March, April and May 2013, with operations executive management, bus transportation management, station agent representatives, bus operators, customer service management, safety and security executive management, communications management, and an information technology project manager. In all 32 interviews and two review meetings were conducted throughout operational sites. On-site observations were also conducted in garage report areas, during operator sign-up for work schedules, and on in-revenue service buses. A list of TriMet interviewees is provided in the Table 1 of this report.

Five peer public transit properties were chosen for the comparison study. Each property is similar to TriMet with regard to: service area, numbers of riders served; service modes offered; number of garages, revenue bus fleet size, and number of bus operators in workforce. Data for outsourced work were excluded from totals. For the review of the operations control center, an additional property was included as it was considered best-in-class. With a prepared interview schedule as shown on Table 2, the transit properties interviewed by telephone for all four areas included: DART (Dallas), Metro Transit (Minneapolis), RTD (Denver), SDMTS (San Diego), and UTA (Utah). MARTA (Atlanta) was interviewed on the development of its command center. During the months of April and May 2013, 15 interviews were conducted and included operations executive management, bus transportation management, training directors, human resources and labor relations management, control center management, and a control center project engineer. In addition supporting documents including organizational charts, presentations, training materials and program documents were received to supplement responses. A list of peer property interviewees is provided in Table 3 of this report.

General Observations on TriMet Practices

Based on TriMet interviews and a document review, the following general observations on TriMet's four areas of practice are offered:

Operations Control Center (OCC)

- There is consensus within transportation operations management that the new OCC systems and upgrades associated with AVL/CAD, radio and ARINC scada (supervisory control and data acquisition) will require a culture change for the dispatching and field operations personnel. With the co-location of the bus and rail control operations, as well as the recent reorganization joining the dispatching/controlling functions with field operations in a single organizational unit, an important step has been taken to foster culture change. Accountability is now within one

unit. The two new OCC assistant manager positions are seen as critical to the culture change success. Both have experience related to supervising front-line employees along with a customer service background. For too long the control center lacked on-site management oversight but it is believed that the recent hires go a long way toward alleviating past problems.

- Prior to the recent arrival of the new deputy general manager, there has been no formal executive review process which includes the Operations Division and the supporting divisions and departments to assess implementation progress. Scheduled review meetings with all supporting groups, such as Information Technology, Security, Maintenance, Service Performance Analysis, Planning, Scheduling, Customer Service, Marketing, Revenue, Human Resources, Training and Public Affairs, in attendance are not held.
- A good deal of effort has been given to design the new control center space which will be housed in the remodeled Operations Center in Southeast Portland in a way that will foster good working conditions for front-line employees, management review of day-to-day work activities as well as incident response actions, and collaboration among supporting organizational units during emergencies. The goal is to enhance customer service with timely and reliable information about normal service and service interruptions.
- Initial standard operating procedures were being written by a consulting company, IBI, with assistance from operations. A new TriMet hire within operations has assumed this responsibility. A planned approach for the OCC SOP's that lays out all the impacts on existing policies and procedures by the OCC enhancements is being developed. This is seen as a critical function for the development of the new control center.
- There is an understanding that training personnel on the new systems is very important. Training dispatchers has been on-going as the AVL/CAD systems are rolled out but hasn't been ideal as the system wasn't in full use. With the final bus installation now in place, a trainer from INIT, the AVL/CAD contractor, is offering on-site training sessions with the dispatchers. On-going training re-enforcement is still in the planning stage.
- The Service Performance and Analysis staff understand that the implementation of new systems often bring challenges in reporting information and is ready to work with the OCC management on the development of metrics.

Right-Sizing of Bus Transportation Management

- Within bus transportation management, there is the widely held belief that the low ratio of manager to operators makes for reactive management rather than a proactive management culture. While Center Street garage has recently hired an assistant manager both Powell and Merlo garages have vacancies. Assistant managers speak of wanting to do more coaching and

counseling and wanting to spend more time out in the system but believe they are unable to do this because of the responsibilities for the large number of operators they oversee. Also those interviewed want more time for supervision to handle operator safety and employee problems.

- Bus transportation management is a diverse group with varied backgrounds (outside hires vs. internal promotions). Outside hires express desire for more business techniques and systems and seem impatient with the informal nature of many activities. Most managers claim to have limited exposure to operations executive management with wide spread belief among bus transportation management that executive management should be more visible in garages by coming into their offices, attending retirements, and celebrating the “unsung heroes.” Assistant managers claim to have limited cross communication with their peers and believe this has led to a lack of continuity across garages.
- Managers believe that more time is expended on the problem employee than on the good employee. One-on-one counseling is the predominate method of employee communication. There appears to be little management contact in the field or on the road – most interactions are within the confines of the office space. Many operator walk-ins appear throughout the day at management’s door. Often an operator will want to see a manager in anticipation of an issue that may be coming up. Assistant managers do give out private cell phone numbers and say that they are available 24/7 to deal with bus operator issues. Management also call bus operators at home on Regular Days Off (RDOs) for information and follow-up. Operator issues include: On-Time-Performance (OTP), attendance, customer complaints, worker’s compensation and grievances. Assistant managers deal with many operators on handling customer service and cross-cultural communication issues.
- The Service Improvement Process (SIP) which is the system by which customer comments are tracked raises many concerns by management – such as process, time and anonymity of some complaints. There are complaints about the lack of speed regarding information – everything takes time and it is hard to close the loop on investigations. Management is interested in the new AVL information but wants more information on how to use it. Also they are somewhat apprehensive that it will add to their work load.
- Station agents who are responsible for ensuring operators are performing their daily work assignments have informal authority over bus operators. One third of this group is new to the position. They have more direct contact with bus operators than management does. There seems to be little interaction between station management and the station agents, as well as little communication among station agents themselves. There is a one day supervisory training session but it is limited in scope and is focused on agency rules and regulations. There were complaints about consistency among station agents across garages but all interviewed saw the new manager – workforce utilization position, held by a former station agent, as a good opportunity to counteract the challenges and issues raised across the garages.

Front-Line Employee Communication

- Within TriMet there is joint responsibility for employee communication. The corporate communication unit has a manager whose responsibility is to handle formal communication methods for the agency employee population. Such methods typically include written communication through print and TriNET, the agency intranet website for employees. A full array of written materials is prepared throughout the year. Confidential employee surveys are also used to gain employee feedback by work group. The corporate manager for employee communication does use informal face-to-face communication methods with front-line staff, building on the relationships developed over time with this population. Attending bus operator sign-up to share information and get feedback is an example of this.
- With regard to formal communication methods, the transportation unit provides written newsletters for the front-line employees, operator notices and operational bulletins. Corporate, transportation operations and union written materials are posted on bulletin boards in report rooms. As part of their job responsibilities, bus transportation management use informal face-to-face communication methods in their interaction with bus operators. Also station agents as part of administering the work have daily face-to-face interaction with the drivers and are important as they oversee daily work assignments and time keeping.
- A formal and informal method for communication is available in garages. A flat panel screen is located in the report areas and is used for broadcasting internally prepared employee communication and training information. According to management relief operators who travel on a bus to replace an operator in the field are informal sources of information to their peers.
- In trying to create good internal communication within operations, a new internal communication plan has been developed by a transportation task force with the aim of promoting a consistent employee message for enhancing employee engagement, customer satisfaction and quality service. The plan places more emphasis on internal communication and proposes a consistent communication approach for report areas and bulletin boards. The plan also promotes more face-to-face communication time with operations management at all levels and operators in small group settings and during sign-up. There is a proposal to pilot an employee communication group in the bus transportations unit which would function as a clearinghouse or internal focus group for input on organizational issues. Recognizing the importance of supervisors in communicating with operators, the plan proposes to prepare supervisory scripts so this work group can become more knowledgeable about corporate and operational issues and serve as an employee resource.

Bus Operator Training

- The bus operator training curriculum for new hires, refresher and problem drivers, reflects industry practice and the state's commercial driver's license (CDL) standards for teaching bus operators to drive safely. The instructional content for new hire training is a mixture of standard classroom training as well as field and in-revenue training. Instructors are former bus operators.
- The accelerated new hire training schedule of 22 bus operators every six weeks places training and logistical burdens on the bus operator training unit who oversee these employees for the six week training period as well as for the six months probationary period. The trainer to new bus operator trainee ratio is 1:2. With the increased responsibility for the large numbers of bus operator trainees during the last few years, there has been little time for curriculum correction or improvement. New topics mandated by the agency are introduced quickly into the curriculum. In addition the training unit uses an older software package to prepare the flat screen presentations.
- The six month probationary program is standard for the industry and provides a strong ride check program during revenue service. In addition during probation there is a monthly class on special topics including customer service, ADA, defensive driving, bus radio procedures, fares and operations control.
- In 2010 an annual program for bus operator refresher training with yearly certification was implemented. This training brings eight to ten operators together in an eight hour class for a special review on a topic important to station operations. Recertification training costs \$900K and takes 5 ½ months to train non-trainee, experienced bus operators (<900). There was a suggestion to have registration for recertification at sign-up to help with training administration and staffing issues. Based on a review of customer complaints bus transportation management stresses the need for refresher training in customer service and cross-cultural communication and new training initiatives are being developed in these two areas.
- An important issue in bus operator training is the inconsistency in the CDL scoring by trainers; there are plans to purchase a bus simulator system which will be used to deal with this issue. As part of recertification training, it is believed that the bus simulator will provide accurate scoring by establishing a skill baseline from which future test scores can be evaluated.
- Because of the low ratio of trainer to bus operators, according to management new bus operators respect trainers and look to them for on-going assistance and guidance, especially during the probationary period when trainers supervise trainees. Field supervisors who are responsible for road conditions have limited interaction with bus operators although both are out in the system together.

Identification of Peer Best Practices

In the transit industry public transit properties are a product of legal mergers, funding mechanisms, organizational structures, and collective bargaining rules. No two are similar. Union representation for bus operators and supervisory levels varied among all of the properties studied with no consistent model employed. All properties had ATU representation but in the right-to-work states of Texas and Utah union membership is voluntary for all titles. In the other three properties, ATU represented bus operators but supervisors varied from non-union representation, to some union representation at some supervisory levels, to membership in a municipal association or agreement unit. At Metro Transit even some lower level managers were covered by professional benevolent agreements. However there was consistency among peer properties that bus operators are a major focus for labor relations and employee services.

In spite of the many organizational differences, there were themes that emerged from a review of peers that offer standards for TriMet to review its practices. Listed below are the peer best practices:

- **Operations Control Center** - Quality service needs to be controlled and managed with a central perspective from a central location. Consistency within operations is the way to change culture. Among peers MARTA emerged as the strongest in transforming the operational culture by developing a centralized control center for operations with explicit benefits for customer service, safety and security, and effective operations. MARTA offers a sophisticated comprehensive, integrated systems approach with detailed industry, stakeholder and user-driven requirements that produces a highly organized change management structure, a business re-engineering process, and a continuous training curriculum and recertification process. MARTA emphasizes that the command center project is more about successful business transformation than it is a technology upgrade. To the project engineer responsible for its implementation, quality over speed is important. Highlighting its organizational importance, the MARTA control center has been renamed the integrated operations command center. The other properties interviewed support the overall philosophy espoused by MARTA's actions. Metro Transit, UTA and RTD have long-term goals for a centralized control center and DART is in the early stage process of planning for its development.
- **Right-Sizing of Bus Transportation Management** – All garages are lean in management numbers compared to bus operators. The manager to operator level ratios among the peer agencies vary somewhat but according to all bus management peers what is important is the delivery of employee performance and employee relations services to represented employees. No matter what the ratio of managers to operators, garage management, supervisors and dispatchers serve as a team in the transportation organization. Bus transportation management stresses the need to be clear and consistent among their garages on what criteria define performance levels and in how this is communicated to all employees. At all five peer properties performance review discussions, both informal and formal, are incorporated for all personnel levels from operator, to garage and field supervisor, to management within the

operations structure. Supervisors at garages perform entry-level management functions, such as counseling and coaching, a core employee relations function emphasized in specialized training programs. Two properties worked to lessen the management load in one critical area. Understanding the importance of customer needs but also realizing the limits of a manager's time, RTD and Metro Transit have centralized the review of bus videos for customer complaints so as to provide more time for management – operator interaction.

- **Front-Line Employee Communication** – Properties use a mixture of written and face-to-face communication methods. All peer agencies use informal bus forums for manager – operator interaction and three use flat screens for information sharing. Both DART and UTA have provided significant funding to deliver employee programs and services to the bus operator workforce. At DART and UTA operations management stress the need to recognize that the agency should be the main communication source for their front-line employees with all levels of management visible to employees through a planned and sustained effort. At DART mandatory quarterly safety meetings and the bi-annual two day refresher training serve as examples of the property's support for face-to-face communication. By providing small group meetings on such important topics as management's proposal for health and pension benefits during a contract impasse, UTA's practice supports the words of the interviewee who said, "Written communication is efficient but face-to-face communication is effective." All properties stress management visibility in the garage and in the field as a key element to front-line communication.
- **Bus Operator Training** – Training bus operators is considered costly but a worthwhile investment at all properties. Four properties followed the basic APTA bus driver standards; only UTA has made some recent changes in its bus driver training program. The property has not only scaled back from six to five weeks of classroom instruction but does not offer refresher training in an effort to save training funds. UTA claims positive on-going safety results but the results could not be verified by this research. This is a controversial practice and remains to be seen if it becomes a best practice. At all peer properties bus operator training is overseen by a manager but classroom and line training is provided by former bus operators who tend to be represented. UTA and SDMTS have strict performance standards and criteria by which each new bus operator is evaluated. These standards become the topics for the training curriculum. Ten is the ideal number for new bus operators in a starting class with a ratio of one trainer to every two bus operators. Standard classroom teaching methods on subject matters is the instructional method most used, while Metro Transit and UTA incorporate computer based training and evaluation questions for some instruction including customer service, right-to-know and AVL-prepared street map reading. Properties try to offer as much revenue service training as possible with four weeks as the average amount of time on the road. Offered bi-annually for two days, DART refresher training provides in-depth topic discussion as well as a chance to meet with executive operations management. DART also uses video from SMART DRIVE, cameras and sensors in the bus, as an operator training approach to observe bad habits behind the wheel.

Professionalism of trainers is a major concern to all peer properties since the training workforce is composed of former bus operators who while well-intentioned may have inconsistencies in evaluating and reporting. Metro Transit provides yearly training designed to enhance the trainer's teaching and coaching skills.

Peer Properties vs. TriMet Findings

The four areas are of concern to all transit properties and are on-going areas of management effort in providing improved service delivery and customer service. Appropriately TriMet has identified these four areas for a continuous improvement review. A comparison of the four practice areas by TriMet and its peer properties offers the following findings:

- Among all properties there is total agreement that the **operational control center** is the most important element in the service management model with each indicating the control center is solely in charge of service and incident management (Table 4). All properties envision a centralized control center for all transportation and incident services with integrated systems; a strong management structure with oversight of field operations; a trained workforce; established SOP's, and excellent communication and collaboration among other departments such as IT, police/security, customer communication, scheduling/ service planning and maintenance. MARTA and DART, in the process of centralizing all control centers under a new organizational structure, recommend a name change to command center with a direct reporting relationship to a COO or equivalent title. Except for MARTA, TriMet was more advanced than the other agencies with a co-location, systems upgrade, and a single management structure for bus and rail services. TriMet is well-positioned to develop follow best practices in developing its control center.
- With the exception of Metro Transit, with regard to **right-sizing of bus transportation management** among peers, the ratio of managers to bus operators was fairly consistent and reflected a higher ratio of operators per manager than the TriMet ratio shows (Table 5). At these four properties operations management were satisfied that the transportation work at their garages was adequately supported by these ratios. Overall management responsibilities were consistent for the areas of service delivery, safety, customer complaints and workforce supervision. At two properties the viewing of camera tapes for safety and customer complaints was centralized with non-operational units in charge. With the exception of UTA, all other peer properties had a consistent ratio of supervisors to bus operators. Whatever the numbers all peer properties emphasized the pushing down of responsibility from management to supervisors. This is reflected in the supervisory workforce taking on the responsibilities of coaching and counseling of operators. Properties considered the close relationship of supervisors to operators to be an asset in managing transportation services and performance. Excluding Metro Transit and TriMet, supervisors at the other properties were responsible, in addition to timekeeping, payroll and dispensing work, for overseeing a team of bus operators

and for holding corrective action discussions with them. Supervisors received professional skill training to support these activities. At DART and UTA, the transformation of the supervisory role took over five years to establish. Finally all peer properties at a minimum hold a yearly performance discussion conducted by either assistant managers or supervisors and use operational scorecards or reports that contrast individual bus operator performance on attendance, safety, customer complaints and rule/policy compliance against the larger pool of agency bus operators. In this area, there are some lessons learned for TriMet to review and decide what course of action to take.

- In **front-line employee communication**, TriMet was equal to its peers in using traditional communication methods for this hard-to-reach workforce (Table 6). The written communication methods of newsletters, GM notes, bulletins, memos, reports and payroll stuffers are used at all agencies to inform operators. In addition to these methods, the intranet, sign-in computer messages, flat screen panel presentations and even podcasts were employed. UTA's communication methods support its philosophy that written communication is efficient but face-to face communication for bus operators is more effective. All peer properties offer open houses and drop-in forums for informal bus operator communication. RTD, DART and UTA stressed the importance of getting the agency messages across to operators in well-planned, small group meetings with executive management presence and strong supporting materials. These three properties have increased their operation's budget to cover small group meetings, as often as quarterly, on safety, benefits, customer service, and other important topics. TriMet transportation operations recognize that it needs to do better in communication with front-line employees and has developed a plan to achieve these goals. Success will be achieved when the plan's components are executed in a consistent manner through the three garages, resulting in increased employee engagement. A redesigned report area for the Center Street garage (eventually to be adapted to other garages) offers a planned physical setting to enhance formal and informal interaction among managers, station agents and bus operators.
- All properties provide basic and remedial **bus operator training** and with the exception of UTA, refresher training with the highest percentage of organizational training dollars devoted to bus operator training (Table 7). Among properties including TriMet, performance standards are consistent while actual performance metrics are limited. Basic content and instructional methods among the properties are similar and build on industry standards, state regulations and company specific information. All curricula include training on safety, customer service, civil rights and Americans with Disabilities Act (ADA). Refresher training varies from none at UTA, to one day at most properties, to two days bi-annually at DART. At all properties because trainers are former bus operators with varying skill levels in training and curriculum development, professionalization of trainers is a key concern. Whatever their training limitations, most importantly all properties considered their trainers as crucial to the transfer of basic skills, knowledge and attitudes to the trainee bus operator as they assimilated into the transportation organization. While TriMet's bus operator training program is consistent with that of its peers,

TriMet differed on its plans to use a bus simulator for future training (Table 8). With the exception of RTD, the discussion with properties offered strongly negative viewpoints about the effectiveness and efficiency of its use in bus operator training and highlighted potential machine up-keep problems, union issues, and operator discomfort. A review of the literature on bus simulators revealed that for medium sized properties the purchase can be controversial because of its cost but for the past 10 years large agencies have documented its success in identifying and remedying driving problems as well as trainer inadequacies. Transit Cooperative Research Program (TCRP) research shows that implementation requires careful planning and piloting before introduced formally into basic, refresher or remedial training. Often consultants experienced in bus simulators are used to strengthen the planning process. TriMet has a strong bus operator training program that with some additional resources and assistance can strengthen its work in promoting a culture of safety and customer service within TriMet.

TriMet Continuous Improvement Recommendations

With regard to these four areas of study, how does TriMet measure up to its peers and what are answers to the questions posed by senior management? TriMet's bus-related operations are for the most part consistent with those in its peer agencies. All properties including TriMet were on a par with each other with similar practices employed. Interviews revealed that what is similar among all properties is a bus operations culture that can be reactive, risk-avoidance and conservative in its outlook. For some properties this is a reaction to the on-going economic conditions. According to DART, Metro Transit, RTD and UTA, as the rail operation has grown over the past few years with new extensions, bus operations has had funding and service cuts while simultaneously pressured to serve its customers in a more efficient manner. In addition within this fiscal environment, bus operations has had to increase its bus operator workforce in order to provide replacements for its workforce who transfer to become rail operators for service expansion. In turn this situation has set up an on-going mindset that sees the bus operations as a step-child to rail operations. Responding to this issue has been the basis for recent bus funding improvements in DART, UTA and Metro Transit, with TriMet following this pattern with its most recent budget increases for bus transportation.

In response to executive management's questions on how TriMet is doing in these four areas, the answer is varied and more complicated. TriMet is advancing in the right direction in implementing its operational control center and should proceed ahead in a systematic manner. In the right-sizing of bus transportation management, increased management hiring beyond a total of 10 managers is not the answer. Rather more effort, such as encouraging station agents and field supervisors to take a more pro-active role with operators and streamlining work processes, needs to take place within the bus transportation environment to foster more agency engagement with its bus operator workforce. In dealing with front-line communication, transportation operations has developed an appropriate plan but now must put actions behind the words, set priorities for implementation and proceed with a measureable plan. Finally the bus operator training program while effective should be reevaluated to include concrete performance criteria for driving competently and safely and for providing excellent customer service.

The findings from this study support a continuous improvement model to enhance delivering high quality service within TriMet. A strong foundation for system excellence exists but can be improved with some additional management effort. Specific recommendations for achieving service excellence with regard to the operations control center, right-sizing of bus transportation management, front-line employee communication, and bus operator training are offered:

Operations Control Center

- The operations control center should be renamed the TriMet Integrated Command Center (ICC) and report directly during its start-up and initial period of operation to the new Deputy General Manager position to emphasize its criticality in supporting quality service management.
- An executive team headed by the Deputy General Manager and composed of the Executive Director of Operations, the Executive Director of Safety & Security and the Chief Technology Officer should be formed to review and monitor the progress on a monthly basis. Additional review meetings should include all supporting departments, such as Information Technology, Security, Maintenance, Service, Performance and Analysis, Scheduling, Customer Service, Marketing, Revenue, Human Resources, Training and Public Affairs. Quarterly project reports should be given at the Leadership Team Meeting.
- Protocols are crucial to the success of incidence management. Consulting resources should augment the internal development of the SOP's necessary for the command center's operations. All protocols should establish that the command center management is in charge of incident management and directs the field and road operations staff. Successful incident management requires collaboration among Safety and Security, Customer Communications, Maintenance, Information Technology and Public Affairs. During incidents all TriMet units should be involved and have assigned responsibilities. All appropriate departments should review and sign-off on SOP's.
- The ICC has the dual responsibility for controlling operations as well as delivering customer information. Keeping customers informed is a component of delivering high quality service with accountability resting on the command center and not in field operations. The ICC is accountable for customer information and must work with the agency customer services unit to provide simple, accurate, and current information in a timely basis. It is crucial that TriMet's customer information whether in normal or non-normal situations should precede customers' social media messaging. The new ICC location with customer services in the same building will provide the basis for strong and immediate response to customer informational needs. All parties should work together to make sure both operational decisions and customer service information are handled concurrently with the same attention.

- With new technology being implemented, the Service Performance and Analysis staff should be developing a plan on what information should be captured, how it should be captured, and how it should be reported. Metrics that track the following benefits might include: improved incident management, reduced response time, improved departmental communications, increased customer communications; improved on-time-performance, real-time vehicle data, and service adjustment.
- Training dispatchers and controllers on new systems, initially and on a refresher basis, is crucial and adequate resources should be made available for this effort. This is an important element to system implementation and should be monitored closely for issues. Ultimately training capabilities will need to be in-house since on-the-job training will be an on-going function. Special attention for future plans in this area need to be developed.
- The dispatchers and controllers are competent and will require the on-site support provided by the two assistant manager positions as the new systems are introduced. A new team approach for dispatchers and controllers needs to be implemented. While this approach will be new and possibly resisted, the assistant manager function can play an important role in promoting this change. In addition team building with supporting departments should be undertaken.
- ICC management must introduce field supervision to the transformed concept of integrated command management and review responsibilities as outlined in the revised SOP's.
- The new radio system needs special attention and new procedures as the installation of the bus radio system will be completed prior to the rail radio system. There needs to be operating procedures as well as maintenance procedures (system acceptance after 4 months with warranty for 5 years). Again the various users need to review and develop operating procedures, as necessary. Information Technology, Bus Maintenance Technicians, and Rail Communication Technicians need to develop training and maintenance procedures.

Right-Sizing of Bus Transportation Management

- There should be a total of 10 (with three managers and seven assistant managers) within the bus transportation management structure to oversee delivery of bus services to conform with the four peer ratios of managers to operators. The total number of 10 includes a transportation manager for each of the three garages as well as the number of assistant transportation managers dependent upon the number of bus operators reporting to that location. The Center Street garage with its recent hire has one manager and three assistant managers and is at full strength with four. Merlo garage needs to hire an additional assistant station manager for a total of one manager and two assistant managers and Powell garage needs to replace a recent vacancy to achieve the total of one manager and two assistant managers.

- With full staffing the transportation director and all three bus transportation managers should be responsible for consistent practices among the three garages. The seven assistant managers should have standardized responsibilities for employee support.
- In addition to the annual performance discussion between the assistant manager and the bus operator, on a quarterly basis more informal discussion as a means for recognizing, coaching or counseling should be introduced. This should not be a discipline session but a discussion of trends. An established format and script should be developed to provide consistency during these discussions.
- There should be more management visibility at all bus facilities. (The redesigned report area at Center Street garage will offer this opportunity.) Every week there should be an open forum at each garage with a manager out in the report room to take questions. Quarterly meetings and brown bag meetings should also be held. Managers and assistant managers should walk the floor. A manager should be present during the entire sign-up process and occasionally at the station agent window to establish management visibility.
- The role of the field supervisor should be reviewed and enhanced with additional training in communication and coaching for the bus operator. Emphasis on informal discussion techniques with bus operators should be stressed.
- With the new manager for workforce utilization position, there should be a review for consistent practices among all three garages and the development of updated SOP's. The manager and the Human Resources partner should conduct a review of station agent responsibilities and skills in dealing with the bus operator. In addition to handling work assignments possibly a pilot could be undertaken to have a small number of trained station agent volunteers assigned to a select number of new bus operators as a way for station agents to build more personal contact and follow-through with this group. A script on potential topics for discussion could be developed.
- Transportation Operations, Customer Service and Safety should work together to determine if the review of customer complaints on bus video packs can be centralized under Safety with an additional headcount to provide this function. This would free-up bus transportation management to spend more time with bus operators rather than researching tapes.

Front-line Employee Communications

- With the hiring of the new manager for technical services, operations management should use its newly developed communication plan to set priorities and to pilot communication methods to determine the efficacy of the many approaches outlined. Both short and long term programs should be developed.

- Based on the communication plan, operations management should develop an immediate six month action plan with measurable outcomes to achieve improved front-line employee communications. The programs should highlight small group and face-to face communication opportunities and be announced to all employees.
- Using agency resources within transportation operations, human resources, bus operator training and employee communication, a special communication model for the new bus operator that supports the agency's on-boarding program from recruitment through training and probation until the first anniversary should be developed. This program should reflect written, group and face-to-face communication methods and should incorporate station operations, training and employee communication. Trainers, station agents, field supervisors, and possibly an experienced and well-respected driver might serve as an informal mentor. Employee engagement for this target population builds a foundation for better employee relations. A year's program pilot with evaluation measures, possibly using a control group, could be implemented in one of the garages. If successful, the bus operator support system (BOSS) program could be rolled out to the other two garages.
- If funding is available, pilot an hour long semi-annual safety meeting (offered 3X at each locations) with senior operations and supporting management visibility and with a set agenda and content to support the safety initiatives within TriMet.
- Train station agents and field supervisors on communication skills and encourage informal communication with bus operators. Develop performance measures to evaluate management and assistant management success in handling front-line employee communication.
- Bus recertification training is a special time to communicate with bus operators and extra attention should be given to content and methods. The small nature of the class lends itself to a focus group approach as well as to bus operator surveys.

Bus Operator Training

- Existing bus operator competencies and performance criteria need to be updated with new SOP's and incorporated into measures for performance observations and testing. Supporting departments such as Safety, Human Resources and Labor Relations should be involved in the process.
- While the existing bus operator training program is consistent with industry standards and best practices, there should be an annual review of content, methods and costs to determine potential areas for improvement. New operator training results in safety performance and customer complaints should be part of the review. Safety, Human Resources and Labor

Relations should be involved with the review. The continuation of refresher training should be supported and include important agency-wide topics for review. Operations should review training's request for refresher registration during sign-up.

- There should be a special program, called job sight observations, which has field supervisors observe operators driving on the road using a checklist of performance criteria. The development of a pilot to test the program and determine the needed supervisory skills should be reviewed. Once established the observation results can be added to the operator's annual review for discussion and follow-up.
- The addition of the bus simulator to bus operator training offers important opportunities for enhancing the training experience. However, given the complexities of the system, in addition to its initial cost, the bus simulator implementation will require additional consulting monies to determine how best to incorporate the system into basic and refresher training. Development will include setting objectives, establishing performance criteria, designing appropriate training scenarios, and training the trainer. Prior to the formal procurement of the simulator, bus training operations should prepare a formal review of its advantages, disadvantages and its return-on-investment in savings on training hours and costs. According to the TCRP report, large properties see positive outcomes while medium-sized agencies are not as supportive. The report should establish the anticipated outcomes and plan how best to achieve those results. Safety, Human Resources and Labor Relations should be brought into this review process.
- Additional resources are needed to develop more agency-specific materials for training and for flat screen communication. An updated version of Authorware software should be purchased to produce more internally produced materials. Also the use of podcasts for training scenarios can be used. The large number of trainees every two weeks puts a strain on training resources and staff so any methods which can maintain training standards but save time and costs should be explored.

The Challenge

As TriMet embarks on its quality service initiative through a continuous improvement model, bus transportation operations has a strong foundation for making solid enhancements in each of the areas studied. However what needs to be articulated for the operations workforce at all levels from executives to bus operators are the three key questions: Where are we now, where do we want to be and how do we get there? A general discussion of some of the key concepts that need to be articulated and an example of how it might be approached in moving bus transportation toward a quality service model is listed below:

- **Consistency** - Developing a continuous improvement culture will require a consistent top-down message and standardization among practices and performance expectations at all levels for all employees within the station transportation organization. Quality service needs to be

controlled and managed with a standardized perspective among key organizational units, operating in a clear manner.

- **Collaboration** - Other departments within TriMet are critical to the success of operations and are supporting partners in changing the culture. There should be collaboration among these groups to advance the quality service initiative.
- **Success** - Operations needs to be clear on what criteria defines bus operator performance levels and communicates that to all operators in a consistent manner through recruitment, training, probation and on-going performance discussions.
- **Centralization** - There may be opportunities for centralizing some responsibilities of bus transportation management and redirecting them to other centralized areas within TriMet. The bus video review within garages offers such an opportunity.
- **Change** - Transforming organizational culture by developing the integrated command center or by enhancing the field operations and station agent responsibilities to address supervisory skills in an informal manner are important operational change actions.
- **Communication** - Operations should be the main communication source for their front-line employees with all levels of supervision and management visible to employees through a planned effort of individual and group communication methods.
- **Priorities** - Given the costs involved for supporting individual and group communication methods, the operations front-line employee communication plan should set priorities and measureable outcomes to achieve improved communications.
- **Focus** - The new bus operator should be an important employee focus for TriMet. Employee support for this target population builds a foundation for long-term employee engagement. Developing an employee support process that focuses on the new bus operator through hiring, training and probation until the first anniversary will be set an industry-wide standard.
- **Self-review** - Bus operator training requires an annual review of performance standards, content, methods and costs to determine potential areas for review. Operator safety performance and customer complaints should be included. Other non-operational units should be included in the review.
- **Accountability** - With the development of a formal evaluation process that promotes the systematic development of measureable outcomes for quality service, accountability will be established.

Conclusion

TriMet has implemented an important initiative to deliver high quality service through continual improvements. As part of the review of key operational practices that directly impact service delivery, the agency has highlighted the four areas of operational control center, right-sizing of bus transportation, front-line employee communication and bus operator training as crucial to achieving this goal. Reviewing both TriMet practices and those of its peers in the transit industry, this study found that TriMet measured up to the standards of the properties studied and has a strong operational foundation to improve how it delivers high quality service to its customers. Based on this review, specific recommendations were made to enhance operational practices in these four areas. Additionally a discussion of critical components to the challenge of operational change was reviewed and highlighted with references to the recommendations previously offered. By implementing a culture that supports these improvements, station transportation will establish its accountability for providing safe, efficient and quality service. Its measure of success will be in customer satisfaction.

Table 1: TriMet Interviews

Topics	Interviewees
General Introduction to Operations & Review Areas	Shelly Lomax, Executive Director Harry Saporta, Executive Director Olivia Clark, Executive Director David Auxier, Executive Director Hayden Talbot, Transportation Director
Control Center	Denis Van Dyke, Director AJ O'Connor, IT Project Manager Drew Blevins, Director Ed Rosney, Manager Steve Callas, Manager Kurtis McCoy, Analyst Tom Nielsen, Director Jay Jackson, Manager Don Allison, Manager Dan Caulfield, Director General discussion with controllers and dispatchers
Right-Sizing Bus Transportation Management & General Introduction to Bus Transportation Operations	Evelyn Warren, Manager Robert Romo, Manager Lyle Pereira, Manager Jean Cook, Assistant Manager Mark Poulson, Assistant Manager Greg Larson, Assistant Manager Leonard Lambert, Assistant Manager Phil Davis, Assistant Manager (former)
Front-line Employee Communication	JC Vannatta, Director Jessica Bucciarelli, Manager Fritz Benz, Station Agent Mike Arronson, former Station Agent, now Manager
Bus Operator Training	Allen Morgan, Manager Barry Chapman, Manager

Table 2: Peer Property Interview Schedule with TriMet Goals

1. **Control Center** – create a centralized organizational structure for rail and bus systems that takes full advantage of the tools offered through the new AVL/CAD system, radio system and enhancements to ARINC scada system; establishes the protocol between Control/Dispatch and Field Staff; improves communication channels to customer and ensures delivery of reliable service.

Discussion questions:

- Organization of control center – where located on organizational chart
 - Systems employed in center
 - Job description of manager/dispatchers/controllers and field staff/salary/unionized (?)
 - All staffing levels for 24/7 operations
 - Protocols or SOP's for operation – who is in charge control center or field
 - Relationship of center to other departments, i.e. Security, Customer Information, Planning and etc.
 - Implementation lessons learned
2. **Right-Sizing of Bus Transportation Management** – employ a manager to employee (bus operator) ratio that creates an environment that generates face-to-face interactions and easy access to managers, excellent follow-through to ensure safety, customer service, reliability and attendance issues are addressed and that consistent discipline as needed, is applied.

Discussion questions:

- Number of garages/depots in system
 - Number of bus operators in each location
 - Description of manager and supervisory responsibilities
 - Ratio of manager to supervisor to bus operator – actual vs. ideal
 - Communication process with bus operators – manager, union and peers
 - Customer complaint investigation
3. **Communications with Front-line Employees** – employ the most effective communication channels to deliver information, gain feedback and ensure employees receive responses to their questions and concerns. Want to make sure employees have good access to managers, supervisors and communication tools that work (flat screens, web, flyers, pouch information and etc.)

Discussion questions:

- What general methods are used to disseminate basic agency information: HR, department, agency performance, mission and goals
- What methods are used to communicate the following personal information: customer complaints, safety issues, workers comp, FMLA
- What areas are frontline employees most interested in

- What areas do frontline employees have the least amount of understanding
- Are there techniques for rail and bus employees that work best for each group
- Are there techniques for field supervisors that work best

4. **Bus Operator Training** – establish a comprehensive training program system for operators (new, probationary, recertification and problem operators) especially focusing on performance, safety and customer service. Enlist the most cost-effective methods including opportunities for non-traditional approaches.

Discussion questions:

- What are performance standards for bus operator
- Describe various training programs for each population; classroom numbers
- Percent performance based vs. classroom lecture; OJT training
- Topics, hours of training
- Describe training organization –trainers skills in driving and training – professionalization of trainers
- Ratio of operators vs. trainers
- Important topics for review
- Simulator use
- Field observation
- Non-traditional methods of training – e-learning and other methods

Table 3: Peer Property Interviewees

Peer Agency	Interviewees
DART (Dallas)	Tim Newby, VP, Operations Larry Gaul, Director, Command Center
Metro Transit (Minneapolis)	Vince Pelligrin, Chief Operating Officer Brian Funk, Director Brian Laird, Director John Humphrey, Director
RTD (Denver)	Austin Jenkins, Director Bruce Abel, Director
SDMTS (San Diego)	Claire Spielberg, Chief Operating Officer
UTA (Utah)	Nancy Malecker, Manager Kim Ulibarri, Manager Grantley Martley, Director Jonathan Yip, Manager Bill Lloyd, Coordinator
MARTA (Atlanta)	David Springstead, Senior Director

Table 4: Comparison of Control Center at Peer Properties and TriMet

Property	Existing Structure	Future Plans	Incident Accountability	Staffing	Issues
MARTA	Decentralized control centers for bus, rail, police and paratransit	Centralized command centers	Control center in charge	Future staffing plans for upgraded personnel	New CC requires “transformational” business re-engineering; Ops & IT take the lead; will report to COO
DART	Decentralized control centers with bus, rail and police on same floor	Centralized command center	Control center in charge	Will use existing represented staff from across other centers with manager and asst. mgr.	High capital costs require ROI decision by executive mgmt.; recommendation to report to COO
Metro Transit	Decentralized control center with bus cc responsible for police and commuter rail dispatching	Would prefer centralized command center but long range plans have not been developed	Control center in charge	No lead titles for represented staff; co-location has helped with police communication	Has radio problems but must wait until state upgrade plans in place; uses teambuilding bet bus and rail
RTD	Decentralized control centers for bus and rail	No change	Control center in charge	Non-represented staff; control and field staff in same operation and cross-trained	Bus/took 3 yrs. to include street supervisors, service planning and scheduling. Rail/ had to institute fast pace changes to conform with upcoming line openings
SDMTS	Decentralized control centers for bus and rail	No change	Control center in charge	Controls dispatchers and field ops; cross-trained staff; coordinates maintenance road calls	None
UTA	Decentralized control centers with bus dispatching for police and covering CCTV’s	Centralized command center with addition of light rail and paratransit	Control center in charge	Staff cross- trained in bus and police dispatching	Used ISO 9000 as model for bus and police consolidation; quality over speed/took 3 yrs.
TriMet	Centralized with bus and rail co-located and field supervision with single management	Move to new centralized location at Center St.	Control center in charge	Now has mgr., asst. mgrs. and, lead supervisor & field supervisors; security and customer comm. desks	Bus and rail upgraded systems; training required; new SOP’s required; must be ready for PMLR opening

**Table 5: Comparison of Right-Sizing of Bus Transportation Management with Peer Properties and TriMet
(January 2013 Headcount)**

Property	Garages	Operators	Managers	Supervisors	Ratio Mgrs.:Ops.	Ratio Sups.:Ops.
DART	3	1200	12 *(sr. mgr., mgr. & asst. mgr.)	21	1:133*	1:57
Metro Transit	5	1470	29 (mgr. & asst. mgr.)	27** (dispatchers)	1:51	1:54
RTD	3 (internal)	952	6*** (mgr., asst. mgr. & floating mgr.)	17	1:159	1:56
SDMTS	2 (internal)	525	4 (mgr.)	15	1:131	1:35
UTA	3	818	5 (mgr.)	42	1:164	1:19
TriMet	3	1059	9 (mgr. & asst. mgr.)	27**(station agents)	1:118	1:39

* The one senior manager at each garage is not involved with day-to-day operations or supervising; ratio of managers to supervisors excludes the senior manager.

** These personnel do not have supervisory responsibilities for bus operators.

*** The floating manager covers vacations and works on special projects.

Table 6: Comparison of Front-Line Employee Communication at Peer Properties and TriMet

Property	Methods	Responsibility	Special Programs	Issues
DART	Written; media/internet; group; face-to-face	Operations and dedicated mgr.	Operator Scorecard; bus refresher training; safety meetings; PACE supervisory training	Pushed “stuff down” levels; has budget commitment for programs; may matrix field supervisors to garage to have more operator discussion and supervision
Metro Transit	Written; media/internet; group; face-to-face	Operations	Friday open forums; annual 15 minute session bet asst. mgr. and operator	Budget demands/may develop scripts for employee session; preparing employee survey
RTD	Written; media/internet; group; face-to-face	Operations	Targeted groups meetings; Drop-in sessions w/GM, AGM & DAGM; 3X a year send service planners to meet with operators	Place emphasis on communication among all levels of organization, especially during rail construction and openings
SDMTS	Written & face-to-face	Operations	Train road supervisors to conduct employee discussions	Try to help new operators not be overwhelmed by system
UTA	Written, group, media/internet & face- to-face	Operations & Labor Relations	Yearly GM meeting; business unit head meeting 2X a year; small operator open forums led by Labor Relations; monthly review of personalized customer comment and reliability reports by supervisor and operator	Has budget commitment for programs and supervisory positions; in contract impasse, need to get accurate information out to employees; company pays for meeting attendance; rely on mgrs. and supervisors for contact
TriMet	Written, media/internet, group & face-to-face	Operations/dedicated mgr., & EE Communications	Ops programs based on communications plan will be developed by new manager who started on 6/1	Setting priorities; developing measures for program evaluation

Property	Length of New Bus Operator Training	Class Size	Performance Criteria	Content	Ratio Driving Instructor: Trainee	Instructor Training	Probation	Refresher /Recertification Training
DART	6 wks: 2 wks classroom & 4 wks on-the-road training & service	15 -22	Yes	Company and standard industry content	1:2	Yes	6 months/undercover ride checks; plans to implement 30, 60, 90 ride checks	Yes, every 2 years for 2 days on special topics
Metro Transit	5 wks: 1 wk classroom and 4 wks on-the road training & service	10	Yes – modules with performance and content tests	Company and standard industry content	1:2	Yes	6 months/15 FT, 80 & 140 (PT) ride checks	Yes, annual RTK, safety and other topics, and annual ride checks
RTD	6 wks: 2 wks classroom and then 4 wks of classroom & on-the road training & service	10	Yes – modules with performance tests	Company and standard industry content	1:1.6	Yes	90 days – ride checks 30, 60 & 90 days	Yes, 8 hour class on dedicated subject
SDMTS	8 wks: 2 wks classroom and 6 wks of classroom& on-the road e training & service	10	Yes – modules w/pre & post criteria	Company and standard industry content	1:3 or 4	Yes	6 months – two ride checks	Yes, annual 8 hour class; CDMV mandate
UTA	5 wks: 1 day classroom; 2nd day on bus; then mix of classroom and on-the-road	10	Yes – modules w/pre & post criteria; use TSI for testing	Company and standard industry content	1:2 w/1:1 in last wk	Yes	90 days includes classroom and operation instruction; 2 ride checks	No, only individualized as needed
TriMet	6 wks: ½ classroom; 2 wks driving instruction & 4 wks, classroom/on-the-road	22	Yes, content & driving performance standards; SOP update is behind	Company and standard industry content	1:2	Yes	6 months - 1 class per month in probation; ride checks per month w/6 initially performed	Yes, one day on special topics

Table 8: Comparison of Simulator Use by Peer Properties and TriMet*

Property	Simulator Use	Simulator History	Issues
DART	No	Had simulator 10 years ago but not impressed with it and no longer in use	Have a different two prong approach/use bus cameras and Smart Drive sensors to identify problems and train operators
Metro Transit	No	No interest in simulator as practice has shown ¼ of operators become ill	With training of PT & FT operators, time on the road is more valuable
RTD	No	Both Bus & Rail Ops interested in purchasing simulators	Want simulators but cost is major issue; have LR support; for now use bus video cameras to achieve results
SDMTS	No	None	Waste of \$\$ with buses and instructors available
UTA	No	No	Can replicate actual situations
TriMet	No	Training wants to purchase the new FAAC model	Will use simulator to set baseline for operators and monitor skills through career; also will be used in introductory and refresher training; will take staff time to incorporate into training programs

*While the peer properties interviewed do not offer simulator training, some other properties that use bus simulator systems include: MTA NYCT, NJT, SEPTA, PACE, HRT, OCTA and CT Transit. APTA has also organized an industry bus simulator group.