# METRO TRANSIT
# PHYSICAL INVENTORY AUDITS

***BRAKE SHOP***
***EAST METRO GARAGE***
***HEYWOOD GARAGE***
***FAREBOX/ELECTRONIC REPAIR***
***NORHTSTAR – BIG LAKE***
***SYSTEM-WIDE CYCLE COUNTS***

***PROGRAM EVALUATION AND AUDIT***

METROPOLITAN
COUNCIL

June 2013

# INTRODUCTION

## *Background*

The Txbase System, implemented in 1995-96, consists of interactive computer software designed to provide an integrated inventory control, inventory management, purchase order management, materials requisition management and accounts payable matching system. Twelve stockrooms, the Central Warehouse Floor storage and the Central Warehouse Carousel use Txbase to control and account for parts and supplies used in Metro Transit operations.

To ensure timely, cost-effective maintenance for Metro Transit vehicles, many commonly used parts and equipment are stored at any one of the 12 stockrooms plus the two Central Warehouse storage facilities. On-site inventory availability is critical to the maintenance and safe operation of Metro Transit buses, trains and facilities. This presents challenges for accurate accounting for inventory and continuing control of stockrooms that are not staffed at all hours but that require access, 24 hours a day, seven days a week. When the inventory count is incorrect, the value of inventory will be misrepresented. Beyond the immediate financial implications, errors in inventory counts can generate excessive ancillary costs associated with searching for missing stock and unnecessary expediting of incoming and outgoing materials. It can also drive changes in forecasts resulting in shortages or excess and obsolete inventory. As a result, stockrooms have been viewed by Metro Transit and Program Evaluation and Audit (Audit) as relatively high risk and Audit has reviewed three to four stockrooms annually for procedural compliance, accuracy of records, and identification of possible missing items.

Stockkeepers at each stockroom are required to conduct daily inventory cycle counts Monday through Friday (Metro Transit Material Management *Policy 06.06.07, rev. 4, July 22, 2009, Cycle Counts).* A cycle count consists of a Txbase generated random selection of a predetermined number of part numbers depending upon the stockroom for which the stockkeeper physically counts the quantity and compares that to the Txbase inventory. Any part number variance of ten physical units or $50 requires that the lead stockkeeper identify the reason for the variance.

Audit began monitoring daily stockroom inventory cycle count variance data in September 2008 as an additional method for assessing risk. Stockrooms with variance rates exceeding 10% are selected for review as are stockrooms in which significant internal control problems had been identified during prior audits. Neither of these conditions applies to any of the stockrooms selected, although the Heywood garage did record a 9% variance rate. All stockrooms were selected for review because they had last been audited in January 2010.

## *Scope*

Audits were conducted at the Brake Shop, Heywood garage, East Metro garage, the Farebox/Electronic Repair and the Northstar-Big Lake stockrooms. Samples were drawn from all inventory items listed in Txbase as of the closing of inventory transactions on the day prior to the day the actual count was taken.

## *Methodology*

After eliminating inventory items with zero extended cost, Audit selected a statistically significant, random sample with a 95% level of confidence and a 5% error rate plus a judgmental sample of the highest extended value items. Universe and sample stratification data based on average unit cost for the three stockrooms are included at Exhibit I. Audit physically counted the selected inventory items and compared that count to the quantity stated in Txbase. The following methods of inquiry were also used:

- Differences were noted and discussed with Material Management and Maintenance personnel.
- Findings and results were recorded and summarized.
- The implementation of prior audit recommendations was reviewed.
- Inventory Management and Bus Maintenance policies and procedures were reviewed.
- Initial daily cycle count results were monitored and analyzed.
- Independent cycle counting studies were reviewed.

## *Assurances*

This audit was conducted in accordance with the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing* and the U. S. Government Accountability Office's *Government Auditing Standards*.

# OBSERVATIONS

Physical inventory counts were performed at the Brake Shop and East Metro garage stockrooms on February 13, 2013, the Heywood garage and Farebox/Electronic Repair stockrooms on February 15, 2013 and at the Northstar Big Lake stockroom on February 19, 2013. Observations regarding those audits follow. Statistical data is also summarized in the exhibits listed below which are included at the end of this report.

- Exhibit I: Universe & Sample Stratification Data for the five stockrooms.
- Exhibit II: Preliminary Statistical Data Summary for the five stockrooms. This is the raw data gathered at the time of physical inventory count.
- Exhibit III: Adjusted Statistical Data Summary for the five stockrooms. This is the raw data adjusted for appropriate reconciling reasons.
- Exhibit IV: Cycle Count Summary Data
- Exhibit V: Researchable Cycle Count Judgmental Sample – Reasons for Variances
- Exhibit VI: Researchable Cycle Count Judgmental Sample – Results by Calendar Quarter
- Exhibit VII: Human Variance Factor Analysis
- Exhibit VIII: Variance Summary
- Exhibit IX: Comparative Prior Audit Data

## *Variance Factors*

Based upon best practices research conducted independently by the Manager and Audit and ensuing discussions between Audit, the Manager and Metro Transit Finance management personnel, the variance factors used to evaluate inventory effectiveness and efficiency have been revised as follows:

| Description | Previous Factor | Revised Factor |
|---|---|---|
| Random Sample Net Variance | 1.00% | 0.50% |
| Random Sample Absolute Variance | 3.00% | 1.50% |
| Combined Random/Judgmental Sample Net Variance | 1.00% | 0.50% |
| Combined Random/Judgmental Sample Absolute Variance | 3.00% | 1.50% |
| Item # Variance | 5.00% | 3.00% |

## *Variances Exceeding the Acceptable Range*

Audit initially identified variances at each of the five stockrooms under review. The Material Management Manager (Manager) reviewed the preliminary results and provided documentation explaining many individual variances. The following table identifies the five instances in which overall variances exceeded the factors stated above:

| Stockroom | Variance Factor | Variance Factor Ceiling | February 2013 Results | Exceeds Ceiling By |
|---|---|---|---|---|
| Brake Shop | Item # Variance | 3.00% | 10.69% | 7.69% |
| Heywood Garage | Random Absolute Variance | 1.50% | 1.64% | 0.14% |
| East Metro Garage | Item # Variance | 3.00% | 6.21% | 3.21% |
| Farebox/Electronic Repair | Random Net Variance | 0.50% | 0.58% | 0.08% |
| Farebox/Electronic Repair | Item # Variance | 3.00% | 6.95% | 3.95% |

## *Brake Shop*

Initial review by Audit found 21 variances. After the Manager reviewed the preliminary sample results and provided documentation explaining seven variances, 14 remained. Adjusting for these items, Audit estimates a revised net overage of $267 and absolute variance of $2,011 from the $190,255 total Brake Shop inventory.

The net result is an Item # Variance of 14 from the 131 items sampled. This number of variances exceeds the acceptable range by 10. See Exhibits I, II, III, VIII and IX for additional statistical information.

Compared to the April 2009 audit, each variance factor has improved substantially (Exhibit IX). The current results show moderate improvement since the 2010 audit and the item number variance continues to show substantial improvement from one audit to the next.

## *East Metro Garage*

Initial review by Audit found 15 variances. After the Manager reviewed the preliminary sample results and provided documentation explaining four variances, 11 remained. Adjusting for these items, Audit estimates a revised net excess value of $513 and absolute variance of $2,827 from the $621,343 total East Metro garage stockroom inventory.

The eleven remaining variances are five over the acceptable number. See Exhibits I, II, III, VIII and IX for additional statistical information.

The East Metro garage has made substantial improvement in all five variance factors compared to the April 2008 audit. However, compared to the most recent January 2010 audit, while two variance factors have improved, three have shown negative results (two of which remain well within the acceptable range) However, the item number variance factor which increased from 2.26% to 6.21% after having decreased from 13.14% in 2008 (see Exhibit IX for details).

## *Heywood Garage*

Audit initially found 20 varainces. The Manager reviewed the preliminary sample results and provided documentation explaining 15 variances. Adjusting for these items, Audit estimates a revised net shortage of -$2,427 and absolute variance of $9,223 from the $874,904 total Heywood garage stockroom inventory.

The net result is within an acceptable range for all but the random sample absolute variance. In addition, compared to the January 2010 audit, each variance factor has shown substantial improvement. See Exhibits I, II, III and VIII and IX for additional statistical information.

The Heywood garage has made substantial improvement in all five variance factors compared to the January 2010 audit. In particular, the item number variance decreased from 9.89% to 3.26% (see Exhibit IX for details). In 2010, none of the variances was within its acceptable range; in 2013, four of them are.

## *Farebox/Electronic Repair*

Audit initially found 14 variances. The Manager reviewed the preliminary sample results and provided documentation explaining three variances. Adjusting for these items, Audit estimates a revised net overage of $5,489 and absolute variance of $13,382 from the $1,626,909 total Farebox/Electronic Repair stockroom inventory.

The net random sample variance is .08 greater than the newly revised variance factors but would have been within range based on the previous variance factors. However, eleven item # variances remain which is six over the acceptable number. See Exhibits I, II, III, VIII and IX for additional statistical information.

The Farebox/Electronic Repair stockroom has made substantial improvement in all five variance factors compared to the April 2008 and April 2009 audits. However, compared to the most recent January 2010 audit, the opposite is true; all five variances were lower in 2010 than they are now, although three are still within the acceptable range. In particular, the item number variance increased from 2.65% (2010) to 6.92% (2013) after having decreased from 14.88% in 2008 (see Exhibit IX for details).

## *Northstar Facility*

Audit initially found three variances. The Manager reviewed the preliminary sample results and provided documentation explaining two variances. Adjusting for these items, Audit estimates a revised net overage and absolute variance of $178 from the $2,474,569 total Northstar Facility stockroom inventory.

The net result is that all variance factors were within their acceptable range. See Exhibits I, II, III, VIII and IX for additional statistical information.

The results of this audit are substantially the same as those achieved during the initial review of the Northstar Facility stockroom in January 2010, an impressive result considering there have been three intervening years in which additional errors could have been incurred.

## *Stockroom Cycle Counting*

Inventory cycle counting goals include:

- understanding the reason for errors
- correcting the processes affecting them
- eliminating the need for an annual 100% physical inventory
- efficient use of resources

Inventory items are assigned A, B or C classifications in accordance with the best business practices of The Association of Operations Management. Excluding the three highest valued items, the top 70% are classified as A items, 71% to 89% as B items, and the remaining 11% as C Items. A items are counted once every 120 days (3 times/yr), B items once every 180 days (2 times/yr) and C items once a year.

In prior years these classifications were calculated by multiplying item unit price by the total number issued throughout Metro Transit over the previous 12 months. That same practice was employed through the first eight months of 2012. However, beginning September 1, 2012, Metro Transit changed from using system-wide data to using the following inventory groups:

- Bus parts and general supplies (Warehouse, Carousel, five bus garage, Brake Shop, Body Shop and Unit Overhaul stockrooms)
- Electronic/farebox supplies
- Light rail vehicles and rail system supplies (LRT Facility and Rail Support Facility stockrooms)
- Northstar supplies

Standard cycle counts were then calculated for each individual stockroom, the central warehouse and the central warehouse carousel operation (see Exhibit IV). Prior to September 1, 2012, the standard cycle count (standard number) for the five garages, the Rail Support Facility and the LRT Facility was 40, for the Central Warehouse and Carousel combined it was 80 and for the five specialty stockrooms it was 25.

Taken together, the Central Warehouse Floor storage and the Carousel is the only facility in which all items needed at more than one stockroom can be found. The number of items stocked in each stockroom affects the number of items Txbase chooses for counting each day.

The number of inventory items stocked in each of the stockrooms under review is as follows (as a reference, the combined Central Warehouse facilities stock 15,051 items):

| | Total Inventory Items |
|---|---|
| ● Brake Shop | 1,566 |
| ● Heywood Garage | 5,867 |
| ● East Metro Garage | 5,263 |
| ● Northstar – Big Lake | 2,689 |
| ● Farebox/Electronic Repair | 2,808 |

Audit has monitored daily cycle count reports from each stockroom since 2009. Comparing the number of items in which variances occurred to the number of items counted yields a variance rate. Since 2009, rail and specialty stockroom cycle counts have resulted in lower variance rates than garage stockrooms. For 2012 those variance rates are 1.21%, 2.79% and 6.34%, respectively (see below and Exhibit IV for additional detail).

| Stockroom Type | 2009 | 2010 | 2011 | 2012 | Average | Change 11-'12 | Change 09-'12 |
|---|---|---|---|---|---|---|---|
| Garage | 7.61% | 5.52% | 6.14% | 6.34% | 6.40% | -0.20% | 1.27% |
| Rail | 3.67% | 3.35% | 1.61% | 1.21% | 2.46% | 0.40% | 2.46% |
| Specialty | 3.78% | 1.80% | 3.70% | 2.79% | 3.02% | 0.91% | 0.99% |
| Overall | 5.98% | 4.23% | 4.54% | 4.18% | 4.73% | 0.36% | 1.80% |

The actual individual stockroom 2012 variance rates ranged from 0.21% for the Farebox/Electronic Repair stockroom to 9.56% for the Heywood garage stockroom. Audit recommends that such variances be less than 3.0%. Six stockrooms achieved this goal. The remaining seven stockrooms fell between 4.28% and 9.56%.

As a total, stockroom variances have improved since 2009, declining by 1.80 percentage points. Most of that improvement was made between 2009 and 2010 when the overall variance rate declined by 1.75 percentage points. Since 2010, only the rail stockrooms have improved; both the garage and the specialty stockrooms have shown increasing cycle count variances. The most significant decline has been at the East Metro garage (8.70 percentage points – Exhibit IV). Most of this improvement was between 2009 and 2010. Although variances have decreased by 2.56 percentage points since 2010, they have actually risen between 2011 and 2012.

Variance rates increased significantly at the Heywood garage (6.16 percentage points) and the Brake Shop (4.38 percentage points) stockrooms. Both stockrooms incurred significant increases (5.00 and 4.27 percentage points, respectively) between 2010 and 2011 and again (1.55 and 2.99 percentage points, respectively) between 2011 and 2012. Internal controls were improved at the Brake Shop during 2009 by placing parts that had previously been located in open maintenance work areas into a secured stockroom. As a result, the Brake Shop variance rate dropped from 24.26% (2008) to 3.86% (2009) to 0.98% (2010). However, since 2010 the Brake Shop cycle count variance has climbed to 8.24%. Likewise, from a low of 3.01% in 2010, the Heywood garage cycle count variance has risen to 9.56% in 2012.

Metro Transit Material Management *Policy 06.06.07, rev. 4, July 22, 2009, Cycle Counts,* states that “the lead stockkeeper of each stockroom will research each discrepancy where the absolute variance is greater than $50 or the physical count is incorrect by ten or more items.”

Such variances are identified electronically and a standard form is prepared for their review. As a way to clarify and systemize reasons for variances, an additional form was introduced in 2011 by the Manager providing a step by step guide to the review process. When a stockkeeper completes the research, the results are electronically placed in a shared location for management review.

Considering only those variances that exceeded $50, Audit identified 276 for calendar year 2012, a significant reduction from the prior three year totals of 526 (annualized), 420 and 425 (see Exhibit VII). Audit reviewed a judgmental sample of 189 from those 276 variances. The following six reasons for variances were identified.

| | | |
|---|---|---|
| Miscounting during the cycle count | 55 | 29.10% |
| Reason for variance not known | 35 | 18.52% |
| Finding the item in an incorrect location | 35 | 18.52% |
| Transaction not recorded when taken from or returned to stock | 31 | 16.40% |
| Correction of past error | 12 | 6.35% |
| Miscellaneous | 21 | 11.11% |
| Total | 189 | 100.00% |

Stockkeeper miscounting (55 instances in which the item was miscounted that day and an additional 12 instances in which a previous cycle count error was corrected) was the most common reason (67 instances – 35%) for variances. Tied for second at 35 instances (19%) each were finding the item in an incorrect location and “reason unknown.” Obtaining parts from the stockroom without charging them to a work order and returning parts to the stockroom without adding them back into inventory (31 instances – 16%) was the fourth most common reason given by stockkeepers for cycle count variances.

While decreasing from 27% to 19%, over the past four years, “unknown reason” is the most common reason for a cycle count variance, accounting for 193 (24%) of the 797 sampled variances over the four year period 2009 – 2012 (*Exhibit VII*). Audit also determined that 65% of all variances for that same period were the result of correctable errors (correction of previous error, incorrect counting, not charged out of or brought back into inventory, and found in a different location). Due to a significant increase in the number of initial counting errors from 34 to 55, this percentage has jumped from 64% in 2011 to 70% in 2012, offsetting the substantial reduction in “unknown reason” variances (*Exhibit VII*). Correction of previous errors and counting inventory incorrectly fall within the stockkeeper’s realm of control while charging inventory out and bringing it back into inventory and finding inventory in different locations involves the interaction of Maintenance as well as Materials Management personnel.

# CONCLUSIONS

*1. Brake Shop – Internal controls are adequate to ensure safeguarding of assets. However, adherence to established controls can be strengthened to assure accurate inventory counts are recorded.*

Four of the five variance indicators tracked by Audit are within prescribed ranges, three of which improved over the results from the most recent January 2010 audit. However, the number of inventory items for which variances appeared exceeded the prescribed limit by 10 (14 vs. 4). These results show moderate improvement since the 2010 audit, and even though it remains high (10.69%), the item number variance continues to improve from one audit to the next.

*2. East Metro Garage – Internal controls are adequate to ensure safeguarding of assets. However, adherence to established controls can be strengthened to assure accurate inventory counts are recorded.*

Four of the five variance indicators tracked by Audit are within prescribed ranges, two of which improved over the results from the most recent January 2010 audit; two of which did not. In addition, the item number variance exceeded the 3.0% rate by five (11 vs. 6), increasing from 2.26% in 2010 to 6.21% in 2013 after having decreased from 13.14% in 2008. Compared to the April 2008 results, the East Metro garage has made substantial improvement in all five variances.

*3. Heywood Garage – Internal controls are adequate to ensure safeguarding of assets. However, adherence to established controls can be strengthened to assure accurate inventory counts are recorded.*

Four of the five variance indicators tracked by Audit are within prescribed ranges, and all of the variances improved over the results from the January 2010 audit. The only variance exceeding the prescribed limit was the random sample absolute variance which missed meeting its ceiling by 0.14 percentage points. Although it met the 3.0% item number variance limit, a substantial number of item number variances (21) were identified in the initial counts prior to adjustments for those items that were either located or Txbase was properly adjusted.

*4. Farebox/Electronic Repair – Adherence to established internal controls can be strengthened to ensure the safeguarding of assets and the accurate recording of inventory.*

The current results show substantial improvement over the audits conducted in 2008 and 2009. However, two of the five variance factors fell outside their acceptable limits, one by only 0.08%. Compared to the 2010 audit results, in which all variances were within acceptable limits, the current results are challenging. Since 2010, each variance has increased (although three remain in the acceptable range), with the item number variance increasing from 2.65% in 2010 to 6.92% in 2013 after having previously decreased from 14.88% in 2008.

*5. Northstar Facility – Internal controls are adequate to ensure accurate inventory reporting and proper safeguarding of assets.*

The five variance indicators tracked by Audit came well within their acceptable ranges and very similar to those achieved during the initial audit which occurred a few months after revenue service began. To achieve the same level of accuracy and accountability after three years of service is commendable.

*6. System – Wide Cycle Counting: Daily cycle counting is an internal control established to ensure accurate inventory reporting and safeguarding of assets. The following actions are needed to strengthen this control:*

- *More attention to obtaining accurate information while conducting cycle counts.*
- *Additional variance research diligence.*
- *Greater adherence to standard operating procedures by stockroom, Bus Maintenance and Farebox Repair personnel.*

Variances can be attributable to:

- stockkeeper inattention during the initial cycle counting process (miscounted, correction of past error – 35.45% in 2012),
- possible stockkeeper and/or Bus Maintenance and Farebox Repair personnel inattention to standard operating procedures (not recording the transaction when taken from or returned to stock, items found in incorrect locations – 35.12% in 2012), and
- unknown reasons, which decreased to 19% in 2012, after three years at about 26%.

Overall, internal controls have decreased in effectiveness for initial counting variances due to personnel inattention to cycle counting processes and standard operating procedures. The total variance for those types of variances has increased from 34 in 2011 to 55 in 2012, offsetting the substantial reduction in “unknown reason” variances.

# RECOMMENDATIONS

Program Evaluation and Audit recommendations are categorized according to the level of risk they pose for the Council. The categories are:

- **Essential** – Steps must be taken to avoid the emergence of critical risks to the Council or to add great value to the Council and its programs. Essential recommendations are tracked through the Audit Database and status is reported twice annually to the Council's Audit Committee.

- **Significant** – Adds value to programs or initiatives of the Council, but is not necessary to avoid major control risks or other critical risk exposures. Significant recommendations are also tracked with status reports to the Council's Audit Committee.

- **Considerations** – Recommendation would be beneficial, but may be subject to being set aside in favor of higher priority activities for the Council, or may require collaboration with another program area or division. Considerations are not tracked or reported. Their implementation is solely at the hands of management.

- **Verbal Recommendation** – An issue was found that bears mentioning, but is not sufficient to constitute a control risk or other repercussions to warrant inclusion in the written report. Verbal recommendations are documented in the file, but are not tracked or reported regularly.

## *Stockroom Inventory Management*

1. **(Significant) Metro Transit should:**
   - **Ensure that employees adhere to current policies and**
   - **Provide periodic training to Material Management, Bus Maintenance and Farebox Repair personnel to increase awareness and adherence to those controls.**

The Northstar Facility is the only stockroom that maintained a consistent and acceptable level of both preliminary and adjusted item number variance accuracy of the five stockrooms audited. Audit results indicate improvement soon after new controls had been put in place. However, the initial improvement waned as time passed resulting in the five variances outside of the acceptable ranges.

Reducing the types of errors listed under *Stockroom Cycle Counting,* should have a positive influence on reducing all variances. Variance rates can be reduced to acceptable levels by adhering to current procedures and providing employees periodic training on all inventory controls. Recording accurate inventory quantities allows Metro Transit to manage inventory in an effective and efficient manner.

Ensuring that employees adhere to current policies is a repeat recommendation from the 2012 Metro Transit Physical Inventory Audits report. Material Management, Bus Maintenance,

Farebox Repair and Metro Transit management personnel are encouraged to find a solution to the rising inventory variances, particularly the item number variance.

***Management Response:*** *Every day, the Material Manager and Supervisors provide coaching, training and (if necessary) discipline to ensure that employees adhere to current policies. Management will also conduct formal semi-annual training on inventory control, emphasizing customer service, material management procedures and policies, as well as cycle count processes.*

*Management will continue to pursue practices that improve and complement the current internal controls. Sources for such practices include other transit agencies, The Association of Operations Management (APICS) and private industry networks of professional material managers and planners.*

***Staff Responsible:*** *Manager, Material Management; Supervisor/Material Planner – Bus and Supervisor/Material Planner - Rail*

***Timetable:*** *Began April 2013 and continuous thereafter.*

## *System-Wide Cycle Counting*

**2. (Significant) Metro Transit should:**

- **Ensure that employees adhere to current procedures,**
- **Review practices and implement complementary processes where applicable, and**
- **Conduct periodic training on all controls to all applicable Material Management personnel.**

Cycle counting is an important control. In 2009, stockkeeper variance research was added. Variances declined with both of these controls as seen by the results of annual inventory audits conducted by Audit. However, cycle count variances attributable to stockkeepers initially recording an incorrect count have increased from 34 in 2011 to 55 in 2012. In addition, "reason unknown" variances, although decreasing significantly from the previous two years (49% in 2012), have accounted for the greatest number of variances since 2009.

Metro Transit needs to continue to reduce the number of "unknown reason" variances while reversing the upward swing in initial counting errors. Implementing new controls, greater adherence by stockroom, Bus Maintenance and Farebox Repair personnel to current procedures, more care in initially recording transactions and periodic employee training can lead to increased effectiveness of the cycle counting process and greater accuracy of recorded inventory.

***Management Response****: Management agrees that cycle counting is an important control. Management also agrees that the significant increase in cycle counting errors that were due to stockkeepers counting the item incorrectly needs to be addressed and fixed. Management will publish and review with personnel the "counted incorrectly" metric. When necessary, additional training will be provided to ensure counting is done accurately.*

*Management will continue to pursue practices that improve and complement the current internal controls. Sources for such practices include other transit agencies, The Association of Operations Management (APICS) and private industry networks of professional material managers and planners. For example, one practice presented to Metro Transit via APICS is the concept of cycle counting the same items every day for a couple of months. This will allow Metro Transit to more easily identify trends in errors and thereby improve inventory control practices, which will increase cycle count accuracy.*

*Management will identify the most common items that have inventory adjustments and begin a process of counting those items every day for two months. That data will then be analyzed in an attempt to identify the root causes for their adjustments.*

***Staff Responsible:*** *Manager, Material Management and Inventory Control Analyst*

***Timetable****: Counted incorrectly metric tracking and training will begin in July 2013*
*Cycle counting process changes will begin August 2013*

**Metropolitan Council**
**Program Evaluation & Audit**
**Metro Transit Physical Inventories – February 13, 15 & 19, 2013**

## Exhibit I: Universe and Sample Stratification Data

**Brake Shop (February 13, 2013)**

| Average Extended Cost | Size of Universe | Size of Sample | Value of Universe | Value of Sample |
|---|---|---|---|---|
| $0 to $350 | 1,280 | 69 | $59,612 | $2,527 |
| $351 to $1,200 | 86 | 39 | 52,210 | 23,281 |
| $1,201 to $4,000 | 27 | 20 | 57,351 | 42,568 |
| **Sub-Total** | **1,393** | **128** | **$169,173** | **$68,376** |
| **100% Judgmental Sample** | | | | |
| $4,001 and above | 3 | 3 | 21,082 | 21,082 |
| **Total** | **1,396** | **131** | **$190,255** | **$89,458** |

**East Metro Garage (February 13, 2013)**

| Average Extended Cost | Size of Universe | Size of Sample | Value of Universe | Value of Sample |
|---|---|---|---|---|
| $0 to $250 | 3,762 | 72 | $151,256 | $2,575 |
| $251 to $900 | 346 | 60 | 152,610 | 26,757 |
| $901 to $5,000 | 86 | 39 | 143,680 | 61,990 |
| **Sub-Total** | **4,194** | **171** | **$447,546** | **$91,322** |
| **100% Judgmental Sample** | | | | |
| $5,001 and above | 6 | 6 | 173,797 | 173,797 |
| **Total** | **4,200** | **177** | **$621,343** | **$265,119** |

**Heywood Garage (February 15, 2013)**

| Average Extended Cost | Size of Universe | Size of Sample | Value of Universe | Value of Sample |
|---|---|---|---|---|
| $0 to $250 | 4,383 | 72 | $191,351 | $3,961 |
| $251 to $900 | 411 | 62 | 182,026 | 26,809 |
| $901 to $5,000 | 109 | 44 | 189,055 | 85,524 |
| **Sub-Total** | **4,903** | **178** | **$562,432** | **$116,294** |
| **100% Judgmental Sample** | | | | |
| $5,001 and above | 6 | 6 | 312,472 | 312,472 |
| **Total** | **4,909** | **184** | **$874,904** | **$428,766** |

**Metropolitan Council**
**Program Evaluation & Audit**
**Metro Transit Physical Inventories – February 13, 15 & 19, 2013**

## Exhibit I: Universe and Sample Stratification Data

**Farebox/Electronic Repair (February 15, 2013)**

| Average Extended Cost | Size of Universe | Size of Sample | Value of Universe | Value of Sample |
|---|---|---|---|---|
| $0 to $1,300 | 2,325 | 71 | $320,490 | $10,640 |
| $1,301 to $4,000 | 133 | 47 | 306,577 | 98,880 |
| $4,001 to 17,000 | 38 | 25 | 324,401 | 239,783 |
| **Sub-Total** | **2,496** | **143** | **$951,468** | **$349,303** |
| **100% Judgmental Sample** | | | | |
| $17,001 and above | 16 | 16 | 675,441 | 675,441 |
| **Total** | **2,512** | **159** | **$1,626,909** | **$1,024,744** |

**Northstar – Big Lake (February 19, 2013)**

| Average Extended Cost | Size of Universe | Size of Sample | Value of Universe | Value of Sample |
|---|---|---|---|---|
| $0 to $2,500 | 2,374 | 71 | $595,362 | $19,706 |
| $2,501 to $10,000 | 132 | 47 | 638,720 | 215,126 |
| $10,001 to 30,000 | 36 | 24 | 626,840 | 423,577 |
| **Sub-Total** | **2,542** | **142** | **$1,860,922** | **$658,409** |
| **100% Judgmental Sample** | | | | |
| $30,001 and above | 10 | 10 | 613,647 | 613,647 |
| **Total** | **2,552** | **152** | **$2,474,569** | **$1,272,056** |

**Metropolitan Council**
**Program Evaluation & Audit**
**Metro Transit Physical Inventories – February 13, 15 & 19, 2013**

## Exhibit II: Preliminary Statistical Data Summary

| Random Sample | Brake Shop | East Metro Garage | Heywood Garage | Farebox/ Electronic Repair | Northstar Facility |
|---|---|---|---|---|---|
| Shortages | 11 | 9 | 9 | 4 | 1 |
| Overages | 9 | 5 | 10 | 10 | 2 |
| Value of Sample Shortages | (644) | (239) | (679) | (239) | (112) |
| Value of Sample Overages | 781 | 51 | 1,061 | 4,654 | 433 |
| Net Sample Variance Value | 137 | (188) | 382 | 4,415 | 321 |
| Sampled Inventory Shortage % | -0.94% | -0.26% | -0.58% | -0.07% | -0.02% |
| Sampled Inventory Overage % | 1.14% | 0.06% | 0.91% | 1.33% | 0.07% |
| **Total Random Sample Inventory** | | | | | |
| Value of Estimated Shortages | (2,418) | (1,806) | (9,295) | (3,947) | (166) |
| Value of Estimated Overages | 2,338 | 3,002 | 18,196 | 13,212 | 730 |
| Net Projected Variance | (80) | 1,196 | 8,899 | 9,265 | 564 |
| Net Projected Variance% | -0.05% | 0.27% | 1.58% | 0.97% | 0.03% |
| Absolute Variance | 4,756 | 4,808 | 27,490 | 17,159 | 896 |
| Absolute Variance % | 2.81% | 1.07% | 4.89% | 1.80% | 0.05% |
| **Judgmental Sample** | | | | | |
| Shortages | 1 | 1 | 2 | 0 | 0 |
| Overages | 0 | 0 | 0 | 0 | 0 |
| Value of Sample Shortages | (137) | (26,659) | (12,318) | 0 | 0 |
| Value of Sample Overages | 0 | 0 | 0 | 0 | 0 |
| **Random & Judgmental Combined** | | | | | |
| Value of Estimated Shortages | (2,555) | (28,465) | (21,613) | (3,947) | (166) |
| Value of Estimated Overages | 2,338 | 3,002 | 18,196 | 13,212 | 730 |
| Net Projected Variance | (217) | (25,463) | (3,417) | 9,265 | 564 |
| Net Projected Variance % | -0.11% | -4.10% | -0.39% | 0.57% | 0.02% |
| Absolute Variance | 4,893 | 31,467 | 39,808 | 17,159 | 896 |
| Absolute Variance % | 2.57% | 5.06% | 4.55% | 1.05% | 0.04% |
| Total Variance Items | 21 | 15 | 21 | 14 | 3 |
| Variant Item Number Ratio | 15.27% | 8.47% | 11.41% | 8.81% | 1.97% |
| Acceptable # of Variance Items | 4 | 6 | 6 | 5 | 5 |
| Acceptable Variant Item Ratio | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% |

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**Exhibit III: Adjusted Statistical Data Summary**

| Random Sample | Brake Shop | East Metro Garage | Heywood Garage | Farebox/ Electronic Repair | Norstar Facility |
|---|---|---|---|---|---|
| Shortages | 7 | 7 | 3 | 4 | 0 |
| Overages | 6 | 4 | 3 | 7 | 1 |
| Value of Sample Shortages | (154) | (192) | (183) | (239) | 0 |
| Value of Sample Overages | 235 | 28 | 161 | 4,435 | 60 |
| Net Sample Variance Value | 81 | (164) | (22) | 4,196 | 60 |
| Sampled Inventory Shortage % | -0.22% | -0.21% | -0.16% | -0.07% | 0.00% |
| Sampled Inventory Overage % | 0.34% | 0.03% | 0.14% | 1.27% | 0.01% |
| **Total Random Sample Inventory** | | | | | |
| Value of Estimated Shortages | (735) | (1,157) | (5,825) | (3,947) | 0 |
| Value of Estimated Overages | 1,139 | 1,670 | 3,398 | 9,435 | 178 |
| Net Projected Variance | 403 | 513 | (2,427) | 5,489 | 178 |
| Net Projected Variance% | 0.24% | 0.11% | -0.43% | 0.58% | 0.01% |
| Absolute Variance | 1,874 | 2,827 | 9,223 | 13,382 | 178 |
| Absolute Variance % | 1.11% | 0.63% | 1.64% | 1.41% | 0.01% |
| **Judgmental Sample** | | | | | |
| Shortages | 1 | 0 | 0 | 0 | 0 |
| Overages | 0 | 0 | 0 | 0 | 0 |
| Value of Sample Shortages | (137) | 0 | 0 | 0 | 0 |
| Value of Sample Overages | 0 | 0 | 0 | 0 | 0 |
| **Random & Judgmental Combined** | | | | | |
| Value of Estimated Shortages | (872) | (1,157) | (5,825) | (3,947) | 0 |
| Value of Estimated Overages | 1,139 | 1,670 | 3,398 | 9,435 | 178 |
| Net Projected Variance | 267 | 513 | (2,427) | 5,489 | 178 |
| Net Projected Variance % | 0.14% | 0.08% | -0.28% | 0.34% | 0.01% |
| Absolute Variance | 2,011 | 2,827 | 9,223 | 13,382 | 178 |
| Absolute Variance % | 1.06% | 0.46% | 1.05% | 0.82% | 0.01% |
| Total Variance Items | 14 | 11 | 6 | 11 | 1 |
| Variant Item Number Ratio | 10.69% | 6.21% | 3.26% | 6.92% | 0.66% |
| Acceptable # of Variance Items | 4 | 6 | 6 | 5 | 5 |
| Acceptable Variant Item Ratio | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% |

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### Exhibit IV: Cycle Count Summary Data

**January 1 - December 31, 2012**

| Stockroom | Cycle Count Days | Before 9/1/12 Std. # | After 9/1/12 Std. # Note 3 | Days Std. # Count | Days No Var. | % No Var. | % Std Counted | Actual # Selected | Variances # | Variances Rate | 2011 Var. | 2010 Var. | 2009 Var. | 11-'12 % Point Delta | 09-'12 % Point Change | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ruter | 252 | 40 | 24 | 115 | 105 | 25.59% | 55.51% | 6,025 | 460 | 7.63% | 9.26% | 8.43% | 8.24% | 1.63% | 0.61% | |
| East Metro | 247 | 40 | 22 | 123 | 163 | 57.20% | 36.00% | 5,502 | 251 | 4.56% | 4.26% | 7.12% | 13.34% | -0.30% | 8.78% | |
| South | 253 | 40 | 23 | 125 | 124 | 61.42% | 44.09% | 5,710 | 286 | 5.01% | 3.72% | 3.86% | 6.67% | -1.29% | 1.66% | |
| Nicollet | 237 | 40 | 21 | 92 | 177 | 65.53% | 36.17% | 4,740 | 203 | 4.28% | 4.68% | 5.40% | 7.63% | 0.40% | 3.35% | |
| Heywood | 251 | 40 | 25 | 125 | 75 | 45.24% | 33.73% | 6,015 | 575 | 9.56% | 8.01% | 3.01% | 3.40% | -1.55% | -6.16% | |
| Garage Total | 1,240 | | | 580 | 644 | 50.76% | 41.20% | 27,992 | 1,775 | **6.34%** | 6.14% | 5.52% | 7.61% | -0.20% | 1.27% | |
| LRT Facility | 255 | 40 | 23 | 91 | 204 | 83.00% | 24.51% | 5,856 | 105 | 1.79% | 1.26% | 1.73% | 4.73% | -0.53% | 2.94% | |
| Northstar | 239 | 25 | 12 | 95 | 237 | 88.09% | 17.87% | 2,881 | 7 | 0.24% | 1.67% | 2.06% | 0.52% | 1.43% | 0.28% | |
| Rail Support Facility | 108 | 40 | 8 | 55 | 99 | 55.00% | 75.00% | 1,069 | 7 | 0.65% | 2.78% | N/A | N/A | 2.13% | N/A | 2 |
| Rail Total | 602 | | | 241 | 540 | 83.14% | 25.38% | 9,806 | 119 | **1.21%** | 1.61% | 3.35% | 3.67% | 0.40% | 2.46% | |
| Central Warehouse | 260 | 80 | 63 | 67 | 148 | 26.15% | 14.62% | 12,346 | 261 | 2.11% | 4.00% | 3.78% | 3.55% | 1.89% | 1.44% | 4 |
| Body Shop | 204 | 25 | 8 | 83 | 182 | 88.79% | 14.95% | 1,858 | 32 | 1.72% | 1.70% | 0.88% | 2.23% | -0.02% | 0.51% | |
| Elec/Fare Repair | 193 | 25 | 14 | 78 | 188 | 75.96% | 23.08% | 2,902 | 6 | 0.21% | 2.71% | 4.59% | 3.16% | 2.50% | 2.95% | |
| Brake Shop | 204 | 25 | 8 | 60 | 132 | 80.45% | 13.41% | 1,614 | 133 | 8.24% | 5.25% | 0.98% | 3.86% | -2.99% | -4.38% | |
| Unit Overhaul | 224 | 25 | 15 | 122 | 129 | 63.03% | 45.50% | 3,677 | 192 | 5.22% | 3.80% | 3.24% | 5.26% | -1.42% | 0.04% | |
| Specialty Total | 1,085 | | | 410 | 779 | 64.65% | 22.20% | 22,397 | 624 | **2.79%** | 3.70% | 1.80% | 3.78% | 0.91% | 0.99% | |
| All Stock Areas | 2,927 | | | 1,231 | 1,963 | 62.00% | 31.11% | 60,195 | 2,518 | **4.18%** | 4.54% | 4.23% | 5.98% | 0.36% | 1.80% | |

**Note:**
1. Large and bolded numbers are used in the report narrative.
2. The Rail Support Facility began service in October 2011. Therefore, it was not included in prior audits.
3. The Standard number was changed on September 1, 2012 for every stockroom to more accurately reflect individual stockroom activity.
4. With the change in standard numbers, the Central Warehouse was divided into two areas, the warehouse floor and the carousel; the floor having a standard number of 37 and the carousel of 26. For this report, they are combined.

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## Exhibit V: Researchable Cycle Count Judgmental Sample - Reasons for Variances

| | | | | Judgmental Sample - Reason For Variance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stockroom | # of Var. | Variance Value Total | Variance Value Av. | Reason Not Known | Not Charged Out/In | Error in Count | Found in Different Location | Found at Different Site | Misc. | Correct Prior Error | No Re-search | Total |
| 1 - Fare/Elec Repair | 1 | (52) | (52) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2 - Brake Shop | 5 | (19,802) | (3,960) | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 5 |
| 3 - Unit Overhaul | 8 | (583) | (73) | 0 | 1 | 1 | 2 | 0 | **4** | 0 | 0 | 8 |
| 4 - Ruter Garage | 32 | 1,655 | 52 | 0 | **9** | 7 | 2 | 1 | 2 | 1 | 0 | 22 |
| 5 - East Metro | 39 | 239 | 6 | 7 | 5 | 6 | 4 | 0 | 1 | 4 | 0 | 27 |
| 6 - South Garage | 14 | (350) | (25) | 4 | 1 | 4 | 1 | 0 | 0 | 1 | 0 | 11 |
| 7 - Nicollet Garage | 14 | (2,529) | (181) | 1 | 2 | 1 | 4 | 0 | 0 | 1 | **2** | 11 |
| 8 - Heywood Garage | 37 | 2,710 | 73 | 4 | 6 | 12 | 1 | 0 | 3 | 0 | 0 | 26 |
| 9 - LRT Facility | 21 | 7,946 | 378 | 4 | 2 | 4 | 3 | 0 | 3 | 0 | 0 | 16 |
| 10 - Cntrl Warehouse | 100 | (18,037) | (180) | **15** | 1 | **18** | **12** | **3** | 3 | **5** | 1 | 58 |
| 11 - Body Shop | 2 | 111 | 56 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 12 - Northstar | 1 | (62) | (62) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 13 - Rail Support Fac | 2 | 2,125 | (96) | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| | **276** | **(26,629)** | **(96)** | **35** | **31** | **55** | **31** | **4** | **18** | **12** | **3** | **189** |

**Note: Bolded** numbers indicate the greatest # of variances for each category relative to the total # of variances at that stockroom.

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## Exhibit VI: Researchable Cycle Count Judgmental Sample - Results by Calendar Quarter

| | January - March 2012 | | | April - June 2012 | | | July - September 2012 | | | Oct - Dec 2012 | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # of | Variance Value | | # of | Variance Value | | # of | Variance Value | | # of | Variance Value | | # of | Variance Value | |
| **Stockroom** | **Var.** | **Total** | **Av.** | **Var.** | **Total** | **Av.** | **Var.** | **Total** | **Av.** | **Var.** | **Total** | **Av.** | **Var.** | **Total** | **Av.** |
| 1 - Fare/Elec Repair | 1 | (52) | (52) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | (52) | (52) |
| 2 - Brake Shop | 0 | 0 | 0 | 0 | 0 | 0 | 2 | (7) | (4) | 3 | (19,795) | (6,598) | 5 | (19,802) | (3,960) |
| 3 - Unit Overhaul | 3 | (567) | (189) | 1 | (54) | (54) | 3 | (129) | (43) | 1 | 167 | 167 | 8 | (583) | (73) |
| 4 - Ruter Garage | 15 | 891 | 59 | 4 | 370 | 93 | 5 | (87) | (17) | 8 | 481 | 60 | 32 | 1,655 | 52 |
| 5 - East Metro | 13 | 200 | 15 | 5 | (281) | (56) | 16 | 510 | 32 | 5 | (190) | (38) | 39 | 239 | 6 |
| 6 - South Garage | 3 | 80 | 27 | 1 | (384) | (384) | 7 | 1,069 | 153 | 3 | (1,115) | (372) | 14 | (350) | (25) |
| 7 - Nicollet Garage | 10 | (2,566) | (257) | 1 | (170) | (170) | 0 | 0 | 0 | 3 | 207 | 69 | 14 | (2,529) | (181) |
| 8 - Heywood Garage | 21 | 2,381 | 113 | 5 | (905) | (181) | 5 | 718 | 144 | 6 | 516 | 86 | 37 | 2,710 | 73 |
| 9 - LRT Facility | 4 | 2,512 | 628 | 8 | (3,863) | (483) | 7 | 7,834 | 1,119 | 2 | 1,463 | 732 | 21 | 7,946 | 378 |
| 10 - Cntrl Warehouse | 41 | (13,488) | (329) | 22 | (9,889) | (450) | 20 | (851) | (43) | 17 | 6,191 | 364 | 100 | (18,037) | (180) |
| 11 - Body Shop | 0 | 0 | 0 | 1 | (75) | (75) | 0 | 0 | 0 | 1 | 186 | 186 | 2 | 111 | 56 |
| 12 - Northstar | 0 | 0 | 0 | 0 | 0 | 0 | 1 | (62) | (62) | 0 | 0 | 0 | 1 | (62) | (62) |
| 13 - Rail Support Fac | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2,125 | 1,063 | 0 | 0 | 0 | 2 | 2,125 | 1,063 |
| **Total** | **111** | **(10,609)** | **(96)** | **48** | **(15,251)** | **(318)** | **68** | **11,120** | **$164** | **49** | **(11,889)** | **($243)** | **276** | **(26,629)** | **(96)** |

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## Exhibit VII: Human Variance Factor Analysis

| | 2009 | 2010 | 2011 | 2012 | Total | % |
|---|---|---|---|---|---|---|
| Unknown Reason | 31 | 59 | 68 | 35 | 193 | 24.22% |
| Not charged out/Brought into Inventory | 24 | 58 | 58 | 31 | 171 | 21.46% |
| Counted Incorrectly | 18 | 28 | 34 | 55 | 135 | 16.94% |
| Found in Diff Location | 14 | 28 | 30 | 31 | 103 | 12.92% |
| Correction of previous error | 2 | 28 | 35 | 12 | 77 | 9.66% |
| Exception Report not posted by admin | 0 | 7 | 16 | 2 | 25 | 3.14% |
| Miskeyed Entry & Misc | 4 | 1 | 5 | 15 | 25 | 3.14% |
| Item was not researched by stockkeeper | 10 | 7 | 1 | 2 | 20 | 2.51% |
| Found at Diff Garage | 2 | 5 | 9 | 4 | 20 | 2.51% |
| Used wrong measurement when counting | 3 | 3 | 4 | 2 | 12 | 1.51% |
| Duplicate Stock Location | 4 | 5 | 2 | 0 | 11 | 1.38% |
| Cannibalized Part | 3 | 2 | 0 | 0 | 5 | 0.63% |
| **Total Judgmental Sample** | **115** | **231** | **262** | **189** | **797** | **100.00%** |
| **Total Population** | **263** | **420** | **425** | **276** | **1,384** | |

| | | | | | |
|---|---|---|---|---|---|
| **Unknown Reason** | 26.96% | 25.54% | 25.95% | 18.52% | **24.22%** |
| **Correct Previous Error** | 1.74% | 12.12% | 13.36% | 6.35% | **9.66%** |
| **Counted Incorrectly** | 15.65% | 12.12% | 12.98% | 29.10% | **16.94%** |
| **Not Charged Out/ Brought Into Inventory** | 20.87% | 25.11% | 22.14% | 16.40% | **21.46%** |
| **Found in Different Location** | 17.39% | 16.45% | 15.65% | 18.52% | **16.81%** |
| | **55.65%** | **65.80%** | **64.12%** | **70.37%** | **64.87%** |

**Note:** Audit began tracking this cycle counting in July 2009. Therefore, 2009 data is for 6 months.

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## Exhibit VIII: Variance Summary

| | Variance Ceiling | Brake Shop | East Metro Garage | Hey-wood Garage | Farebox/ Electronic Repair | Northstar Facility |
|---|---|---|---|---|---|---|
| **Variant Item Number Ratio** | 3.00% | 10.69% | 6.21% | **3.26%** | 6.92% | **0.66%** |
| **Random Sample Net Variance** | 0.50% | **0.24%** | **0.11%** | **-0.43%** | 0.58% | **0.01%** |
| **Random Sample Absolute Variance** | 1.50% | **1.11%** | **0.63%** | 1.67% | **1.41%** | **0.01%** |
| **Random & Judgmental Combined Net Variance** | 0.50% | **0.14%** | **0.08%** | **-0.28%** | **0.34%** | **0.01%** |
| **Random & Judgmental Combined Absolute Variance** | 1.50% | **1.06%** | **0.46%** | **1.05%** | **0.82%** | **0.01%** |

**Note: Bolded** items indicate variances meeting the Audit goal.

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## Exhibit IX: Comparative Prior Audit Data

| | Audit | Audited Actual | | | | Absolute | |
|---|---|---|---|---|---|---|---|
| | Goal | April | April | Jan. | Feb. | % Point | % |
| **Brake Shop** | (+ or -) | 2008 | 2009 | 2010 | 2013 | Change | Change |
| Random Net Variance | 0.50% | N/A | -14.19% | **-0.23%** | **0.24%** | 13.95% | 98.31% |
| Random Absolute Variance | 1.50% | N/A | 33.90% | 1.64% | **1.11%** | 32.79% | 96.73% |
| Combined Random/Judgmental Net Variance | 0.50% | N/A | -19.61% | **-0.21%** | **0.14%** | 19.47% | 99.29% |
| Combined Random/Judgmental Absolute Var. | 1.50% | N/A | 35.54% | **1.46%** | **1.06%** | 34.48% | 97.02% |
| Item # Variance | 3.00% | N/A | 29.03% | 16.67% | 10.69% | 18.34% | 63.18% |
| **Heywood Garage** | | | | | | | |
| Random Net Variance | 0.50% | N/A | N/A | 2.76% | **-0.43%** | 2.33% | 84.42% |
| Random Absolute Variance | 1.50% | N/A | N/A | 3.52% | 1.64% | 1.88% | 53.41% |
| Combined Random/Judgmental Net Variance | 0.50% | N/A | N/A | 2.21% | **-0.28%** | 1.93% | 87.33% |
| Combined Random/Judgmental Absolute Var. | 1.50% | N/A | N/A | 3.14% | **1.05%** | 2.09% | 66.56% |
| Item # Variance | 3.00% | N/A | N/A | 9.89% | **3.26%** | 6.63% | 67.04% |
| **East Metro Garage** | | | | | | | |
| Random Net Variance | 0.50% | 1.36% | 1.31% | **0.19%** | **0.11%** | 1.25% | 91.91% |
| Random Absolute Variance | 1.50% | 8.74% | 1.82% | **0.22%** | **0.63%** | 8.11% | 92.79% |
| Combined Random/Judgmental Net Variance | 0.50% | 1.13% | 0.99% | **0.15%** | **0.08%** | 1.05% | 92.92% |
| Combined Random/Judgmental Absolute Var. | 1.50% | 2.33% | 1.98% | **0.18%** | **0.46%** | 1.87% | 80.26% |
| Item # Variance | 3.00% | 13.14% | 13.19% | **2.26%** | 6.21% | 6.93% | 52.74% |
| **Farebox/Electronic Repair** | | | | | | | |
| Random Net Variance | 0.50% | -0.89% | -2.11% | **0.09%** | 0.58% | 0.31% | 34.83% |
| Random Absolute Variance | 1.50% | 2.17% | 2.68% | **0.11%** | **1.41%** | 0.76% | 35.02% |
| Combined Random/Judgmental Net Variance | 0.50% | 1.51% | -0.82% | **0.06%** | **0.34%** | 1.17% | 77.48% |
| Combined Random/Judgmental Absolute Var. | 1.50% | 2.33% | 1.98% | **0.07%** | **0.82%** | 1.51% | 64.81% |
| Item # Variance | 3.00% | 14.88% | 8.63% | **2.65%** | 6.92% | 7.93% | 53.29% |
| **Northstar** | | | | | | | |
| Random Net Variance | 0.50% | N/A | N/A | **0.003%** | **0.01%** | -0.007% | **Note 2** |
| Random Absolute Variance | 1.50% | N/A | N/A | **0.003%** | **0.01%** | -0.007% | **Note 2** |
| Combined Random/Judgmental Net Variance | 0.50% | N/A | N/A | **0.002%** | **0.01%** | -0.008% | **Note 2** |
| Combined Random/Judgmental Absolute Var. | 1.50% | N/A | N/A | **0.002%** | **0.01%** | -0.008% | **Note 2** |
| Item # Variance | 3.00% | N/A | N/A | **0.78%** | **0.66%** | 0.12% | 15.38% |

**Notes:** 1. Those measures falling within the Audit Goal are indicated in **Bold** type.
2. Percentage changes are not calculated, for differences are immaterial, rendering calculation meaningless.


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