



**City of Baltimore**

**Department of Transportation**

**Quadrennial Performance Audit  
for Fiscal Years 2010, 2011, 2012 and 2013**

**Prepared by:**



**HAMILTON ENTERPRISES, LLC**

CONSULTANTS AND CERTIFIED PUBLIC ACCOUNTANTS

**November 20, 2015**

***Prepared by:***

Hamilton Enterprises, LLC  
9111 Edmonston Road, Suite 407  
Greenbelt, MD 20770  
Tel: (301) 474-0147  
Fax: (301) 474-0146  
E-mail: [info@usfti.com](mailto:info@usfti.com)

***Submitted to:***

City of Baltimore  
via email

Yoanna Moises, Principal Program Assessment  
Analyst ([yoanna.moises@baltimorecity.gov](mailto:yoanna.moises@baltimorecity.gov))

Cc: Lindsay Wines, Deputy Director, Department of  
Transportation ([lindsay.wines@baltimorecity.gov](mailto:lindsay.wines@baltimorecity.gov))

TRANSMITTAL LETTER

To: Yoanna Moises, Principal Program Assessment Analyst  
Cc: Lindsay Wines, Deputy Director, Department of Transportation  
Baltimore City Council

**Date:** November 20, 2015

**Subject:** Performance Audit of the Department of Transportation

This letter transmits Hamilton Enterprises, LLC's ("Hamilton") final report detailing the results of our performance audit of the Department of Transportation for the fiscal years (FY) 2010, 2011, 2012 and 2013. The final report contains our audit findings and recommendations for the five performance measures selected. In addition, the final report includes DOT's responses to the findings and Hamilton's reply to those responses.

We would like to take this opportunity to express our appreciation for the courtesy and cooperation the Department of Transportation extended to our auditors.

Sincerely,

*Hamilton Enterprises LLC*

## Table of Contents

<b>I. Executive Summary</b> .....	1
<b>II. Background</b> .....	2
<b>III. Objectives, Scope and Methodology</b> .....	4
<b>IV. Audit Results</b> .....	7
<b>1. Service: 500 – Street and Park Lighting</b> .....	7
<b>2. Service: 683 – Street Management</b> .....	10
<b>3. Service: 684 – Traffic Management</b> .....	13
<b>4. Service: 689 – Vehicle Impounding and Disposal</b> .....	14
<b>5. Service: 692 – Bridge and Culvert Management</b> .....	15
<b>V. Recommendations</b> .....	16
<b>VI. Audit Responses</b> .....	17
<b>1. Service: 500 – Street and Park Lighting</b> .....	18
<b>2. Service: 683 – Street Management</b> .....	19
<b>3. Service: 684 – Traffic Management</b> .....	20
<b>4. Service: 689 – Vehicle Impounding and Disposal</b> .....	20
<b>5. Service: 692 – Bridge and Culvert Management</b> .....	21

## I. Executive Summary

November 2015

### Audit Report Highlights

#### Why We Did This Audit

This audit was conducted as part of the Council Bill 12-0053, which amended the City Charter to require “Principal Agencies” to undergo a performance audit once every four years.

#### What We Recommend

The Department of Transportation needs to reevaluate the processes and controls surrounding the performance measurement process and implement the appropriate controls, accountability, and oversight to ensure that the measurements are useful and accurate.

### Background

Hamilton Enterprises, LLC (“Hamilton”), an independent public accounting firm, was contracted by the City of Baltimore to conduct a performance audit of five Department of Transportation management performance measures.

This report is intended solely for the information and use of the Department of Transportation and those charged with Baltimore City governance and is not intended and should not be used by anyone other than those specified parties.

Our work was conducted in accordance with Generally Accepted Governmental Auditing Standards (GAGAS) issued by the U.S. Government Accountability Office (GAO). Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

### Objectives and Scope

The objectives of this audit were to assess the reliability, validity, or relevance of five performance measures concerning program effectiveness and efficiency for the Department of Transportation for the fiscal years ending June 30, 2010 through June 30, 2013.

### What We Found

We found instances where the Department of Transportation was unable to provide supporting documentation to substantiate the amounts reported for the target and/or actual performance measures reviewed within the scope of this audit.

During the period of our audit, the Department of Transportation did not maintain adequate policies, procedures, and internal controls relating to the measurement, evaluation and reporting of performance measures. Further, the Department did not demonstrate a system of accountability and oversight for the estimating, measuring, or reporting of the performance measures.

*Hamilton Enterprises LLC*

Greenbelt, Maryland  
November 20, 2015

## II. Background

Beginning with fiscal year (FY) 2011, the City implemented outcome budgeting to align resources with results by incorporating agency performance into the budgeting process. Each Principal Agency's actual performance is tracked against a set of performance measurement targets. These metrics are tracked in CitiStat<sup>1</sup> based on citizen service requests into the City's non-emergency service request line (311) and statistical reports, called templates, prepared by the agencies on a bi-weekly basis.

In August of 2012, the City of Baltimore enacted Council Bill 12-0053. This Bill amended the City Charter to include Article VII, Section 4.5 "Agency Audits". The Amendment was approved in November 2012 through a publicly balloted vote. Article VII, Section 4.5 requires Principal Agencies to undergo a financial statement and performance audit once every four years. The scope of these audits would encompass the preceding four years. The 13 Principal Agencies are identified in **Figure 1**.

The process by which to complete these audits is detailed in the Department of Budget and Finance policy AM 404-5 "Quadrennial Audits Policy". These audits are to be performed in accordance with generally accepted government auditing standards (GAGAS) and federal and state law. Hamilton was selected to perform the performance audit of the Department of Transportation (DOT).

---

<sup>1</sup> A city-wide data management system that collects and tracks agency performance for use in budgeting and by City management to monitor and improve performance across all City services.

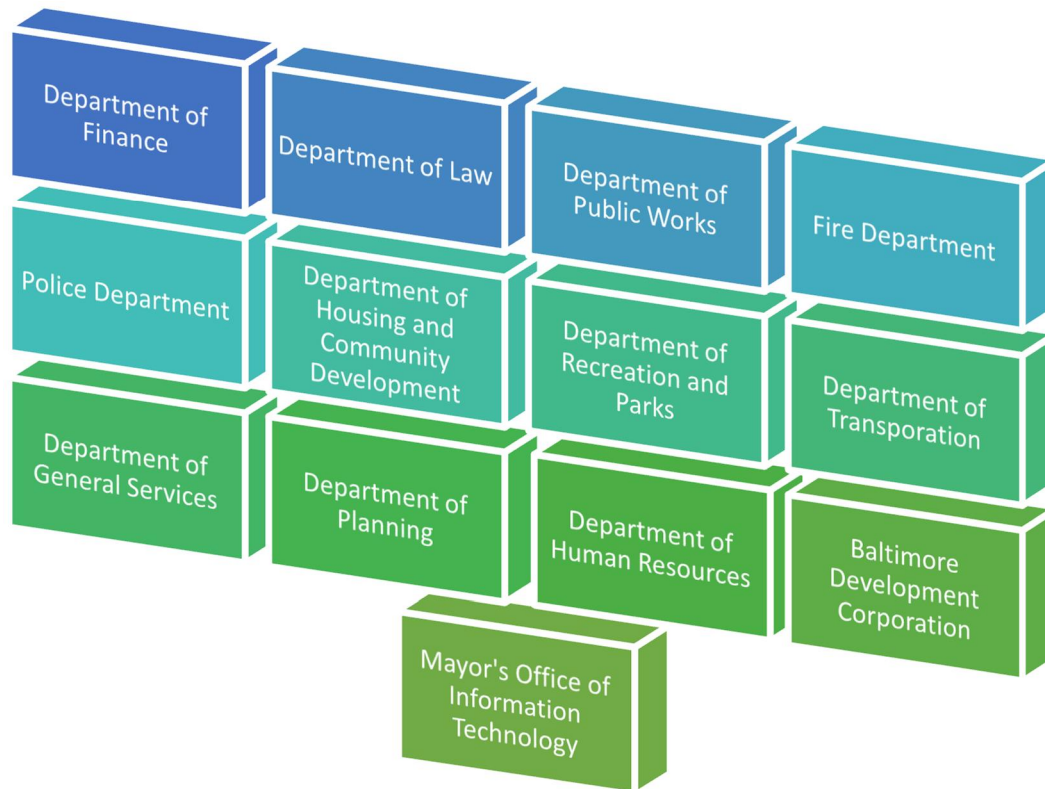


Figure 1 - 13 Principal Agencies

The DOT is responsible for the construction, reconstruction and maintenance of public streets, bridges and highways and the maintenance of streetlights, alleys and footways and the conduit system. Other duties include: the management of traffic movement, the inspection and management of City construction projects including testing and inspection of construction materials; and the preparation of surveys. Capital and federal funds are allocated for engineering, design, construction and inspection of streets and bridges in the City of Baltimore. The DOT's FY 2013 budget was \$168,697,220 with 1,459 positions.

The DOT maintains nearly 4,300 miles of roadways, including 305 bridges and culverts. The City's road network is composed of 540 miles of collector streets and 1,460 miles of local streets. About 8.1% of statewide vehicle miles traveled occur on City roadways. This amounts to 3.5 billion vehicle miles per year. The DOT maintains 3,600 miles of sidewalks, 1,100 miles of alleys, and 80,000 roadway and pedestrian lights throughout the City.

The Agency is responsible for maintenance of the orderly and safe flow of traffic; conducting studies affecting pedestrian and vehicular safety; and providing and maintaining traffic signals, signs, and pavement markings. The Agency maintains about 1,300 signalized intersections, over 250,000 traffic and informational signs, and over 4.5 million linear feet of lane markings.

The DOT maintains and repairs all open air malls across the city; operates a vehicle storage facility; conducts the sale of abandoned and/or unclaimed vehicles at public auctions; and is responsible for the removal and impounding of illegally parked abandoned or disabled vehicles.<sup>2</sup>

### III. Objectives, Scope and Methodology

#### Audit Objective

This audit was conducted to assess the reliability, validity, or relevance of five performance measures “to determine whether the agency is operating economically and efficiently and whether corrective actions for improving its performance are appropriate.”<sup>3</sup>

#### Scope

The scope of this audit was to select five performance measures from the measures maintained by the DOT during the FYs ending June 30, 2010 through June 30, 2013. We were provided a listing of ninety-two (92) performance measures related to sixteen services offered by the DOT. No performance measure targets were available for FY 2010 as the City had not yet implemented outcome budgeting.

#### Methodology

To select the five performance measures for evaluation, we performed a risk assessment of the DOT's services and the related performance measures. The risk assessment began with gaining an understanding of each of the services by meeting with the DOT administration. We then developed risk categories and provided a risk rating to each category to calculate an overall risk rating of the service, see **Figure 2**.

---



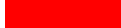
<sup>2</sup> Source: 2013 City of Baltimore Budget, page 231

<sup>3</sup> Source: Quadrennial Audits Policy, page 2

Service Number	Service Name	Risk Category						Overall Rating
		Operational	Financial	Audit Benefit	Compliance/Liability	Public Perception	Public Safety	
500	Street and Park Lighting	2.00	3.00	2.00	2.00	3.00	3.00	2.50
548	Conduits	3.00	2.00	3.00	1.00	1.00	1.00	1.83
683	Street Management	3.00	3.00	2.00	1.00	3.00	2.00	2.33
684	Traffic Management	3.00	3.00	2.00	2.00	2.00	2.00	2.33
685	Special Events Support	1.00	1.00	1.00	1.00	1.00	1.00	1.00
687	Inner Harbor Services - Transportation	1.00	1.00	1.00	1.00	2.00	2.00	1.33
688	Snow and Ice Control	2.00	2.00	1.00	1.00	3.00	2.00	1.83
689	Vehicle Impounding and Disposal	2.00	2.00	3.00	3.00	3.00	1.00	2.33
690	Complete Streets and Sustainable Transportation	1.00	2.00	1.00	1.00	2.00	1.00	1.33
691	Public Rights-of-Way Landscape Management	1.00	2.00	1.00	1.00	1.00	1.00	1.17
692	Bridge and Culvert Management	2.00	2.00	2.00	3.00	3.00	3.00	2.50
693	Parking Enforcement	2.00	2.00	1.00	2.00	3.00	2.00	2.00
694	Survey Control	2.00	1.00	1.00	1.00	1.00	1.00	1.17
695	Dock Master	1.00	1.00	1.00	1.00	1.00	1.00	1.00
696	Street Cuts Management	1.00	1.00	2.00	1.00	2.00	2.00	1.50
697	Traffic Safety	3.00	3.00	1.00	2.00	2.00	2.00	2.17

Figure 2 - DOT Service Risk Assessment

The risk categories included:

Legend	
	= Low Risk
	= Medium Risk
	= High Risk

- **Operational Risk:** relates to the size and complexity of the operations within the service and whether the service is new to the Agency or experienced significant changes in funding, authority, practices or procedures.
- **Financial Risk:** relates to the amount of funds allocated by the City/Department to the service.
- **Audit Benefit:** relates to the value added in performing audit procedures within this service. This category utilizes our professional judgment to determine areas that we believe would benefit from our evaluation.
- **Compliance/Liability:** considers the risks with maintaining laws and regulations surrounding the service and the associated legal liability that could potentially affect the City/Department.
- **Public Perception:** considers the interests of the people within the City of Baltimore. Highly visible or important issues facing the City are perceived to have a higher risk.
- **Public Safety:** considers the risk of the safety of the citizens of the City of Baltimore.

Once an overall risk rating was assigned to each service we inspected the performance measures within the highest risk service areas. Each service contains three to five measures focusing on effectiveness, efficiency, outcome, and output. During the time of our assessment, the DOT was



in the process of enhancing and improving their performance measures, so many of the measures used during the years under audit were no longer in use for FY 2016 and forward. We did not find value in reviewing measures that the DOT has deemed no longer relevant, and we excluded these measures from our selection process. We evaluated the relevance and usefulness of the remaining performance measures and used our professional judgment to suggest five performance measures for evaluation.

We solicited feedback from the DOT, Bureau of Budget and Management Research, City Council, and the Director of Finance on our five suggested performance measures. In an effort to provide the City of Baltimore and the DOT with the highest audit value, we incorporated this additional feedback and insight into our selection.

The following measures were selected for evaluation:

1. **Street and Park Lighting - Service 500**
  - a. “% of inspected streets meeting City roadway lighting standards”
  - b. Measure Type: Effectiveness
2. **Street Management - Service 683**
  - a. “% of streets meeting acceptable pavement condition standard”
  - b. Measure Type: Effectiveness
3. **Traffic Management - Service 684**
  - a. “Cost per traffic control sign installed”
  - b. Measure Type: Efficiency
4. **Vehicle Impounding and Disposal - Service 689**
  - a. “# of property damage claims filed”
  - b. Measure Type: Effectiveness
5. **Bridge and Culvert Management - Service 692**
  - a. “% of bridges more than 50 years old with Bridge Sufficiency Rating below 50”
  - b. Measure Type: Effectiveness

For each measure identified above, we were provided the contact information for the Division Chief or Operations Bureau Chief. We performed a walkthrough with the appropriate City representatives to gain an understanding of the measure and the process and internal controls surrounding its measurement and reporting. For each performance measure, we requested supporting documentation for the target and actual amounts reported.

## IV. Audit Results

### 1. Service: 500 – Street and Park Lighting

<u>Performance measure</u>	<u>FY11 Target</u>	<u>FY11 Actual</u>	<u>FY12 Target</u>	<u>FY12 Actual</u>	<u>FY13 Target</u>	<u>FY13 Actual</u>
% of inspected streets meeting City roadway lighting standards	80%	80%	80%	85%	90%	90%

Figure 3: Actual and Target Performance Measures in the Budget

#### Performance Measure Background

This was a new measure in FY 2010 so there was no actual performance reported for that year. From discussions with DOT representatives, the purpose of this measure is to provide the percentage of all inspected Baltimore City streets meeting roadway lighting standards. This performance measure is designed to aid in the measurement and the improvement of lighting conditions and to evaluate the effectiveness of the replacement of traditional lighting systems with new LED lighting systems.

The current practice performed by the DOT is as follows:

The DOT receives calls into the 311 system for a street light with a condition of “too bright/too dark”. These calls drive the measure noted above. Once a call is received, the DOT will dispatch an inspection group to the location.

Upon arrival the inspection group will locate the light and perform a visual inspection. In addition to the visual inspection, a light meter reading is taken by measuring the foot candle power (fcp) next to the light and halfway between the inspected light and the next closest light as shown in **Figure 4**. These two readings are then averaged and compared to the roadway lighting standards. The appropriate light meter reading depends on the location and purpose of the light.

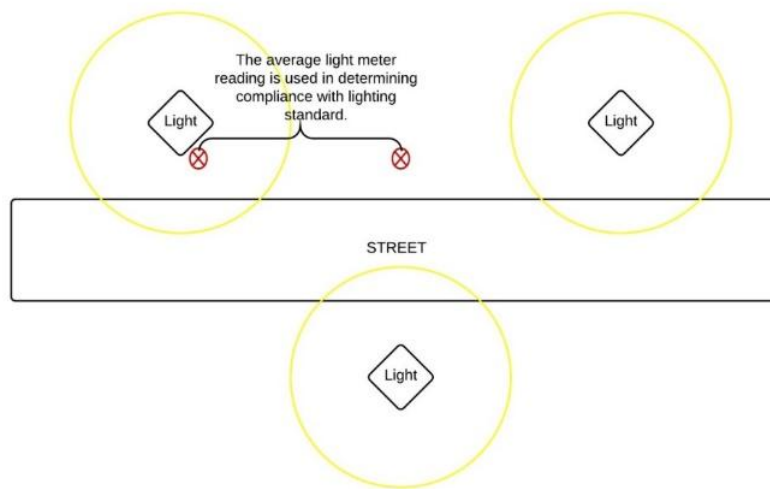


Figure 4 - Light Meter Reading Method

## Findings

### *No supporting documentation for target performance measurements*

The DOT was unable to provide any documentation related to the budgeted targets for this measure. The target amount contained in the City budget has been rolled forward throughout the years and arbitrarily increased in FY 2013.

### *Incomplete and unsupported data relating to actual performance measurements*

The DOT was unable to provide data to support the actual performance measurements reported for FY 2011 to FY 2013, shown in **Figure 3**. CitiStat did not track data for this performance measure in FY 2011 and we are unaware of any mechanism to do so. We calculated the actuals based on data tracked in CitiStat from 311 calls for FY 2012 and 2013 and found significant differences from the reported actuals, see **Figure 5**. Based on our calculations it appears that only 60% and 65% in FY 2012 and FY 2013, respectively, of inspected streets met roadway lighting standards versus the 85% and 90% reported.

Performance Measurement		FY 2010	FY 2011	FY 2012	FY 2013
# of streets inspected for roadway lighting standards	1	X	X	149	179
# of streets inspected that met roadway lighting standards	1	X	X	90	116
% of inspected streets meeting roadway lighting standard - Actual	C	X	X	60%	65%
% of inspected streets meeting roadway lighting standard - Reported Actual	2	X	80%	85%	90%
% of inspected streets meeting roadway lighting standard - Target	2	X	80%	80%	90%

1 - Source: CitiStat

2 - Source: Baltimore City budget documents

C - Calculated field

Figure 5 - Street Lighting Performance Measurement Analysis

***Actual performance is not accurately reported in the budget document***

The actual method and the amount recorded are only driven by calls from residents that are received by the 311 system reporting that lights are “too bright” or “too dark”. The entirety of the City’s street lights are not evaluated, only those reported to have an issue.

The actual performance measured is a reactive procedure, not a proactive one. There is no practice currently performed to measure the percentage of all the street lights within the City meeting the roadway lighting standards as required by the measure.

***Lack of internal controls/policy for maintaining performance measurements***

The DOT provided no evidence of policies, procedures, internal controls, or accountability for the measure including recording, reviewing, and reporting the performance measure.

## 2. Service: 683 – Street Management

<u>Performance measure</u>	<u>FY10 Actual</u>	<u>FY11 Target</u>	<u>FY11 Actual</u>	<u>FY12 Target</u>	<u>FY12 Actual</u>	<u>FY13 Target</u>	<u>FY13 Actual</u>
% of streets meeting acceptable pavement condition standard	63%	59%	58%	58%	58%	59%	62%

Figure 6: Actual and Target Performance Measures in the Budget

### Performance Measure Background

The City of Baltimore receives federal funds related to the maintenance of street pavement conditions in addition to local funding from the City. The DOT's budget for street repair and maintenance is comprised of approximately 80% federal funding and 20% local funding. Federal Highway Administration funds can be used only on the Federal routes. For local or neighborhood streets 100 percent is local funding.

The DOT contracts an outside company to perform the evaluation of city street conditions periodically and issue a Pavement System Preservation Report. This Report is a city-wide evaluation of pavement conditions within the City of Baltimore. Currently, the City is responsible for approximately 5,000 individual lane miles.

Typically, this evaluation is performed every three to four years. DOT's last two evaluations took place in 2009 for 2008 and 2014 for 2013. These evaluations are conducted in accordance with the standards used by the Federal Highway Administration and Army Corp of Engineers.

The Pavement System Preservation Reports rate the pavement conditions based on the Pavement Condition Index (PCI) as shown below in **Figure 7**.



Figure 7 - Street Maintenance Pavement Condition Index

This measure is useful in the planning and maintenance of City streets. Each evaluation provides the DOT with the condition of each street and allows them to determine maintenance schedules to improve the condition where necessary.

**FY 2010 Lane Mile Distribution by Condition State**

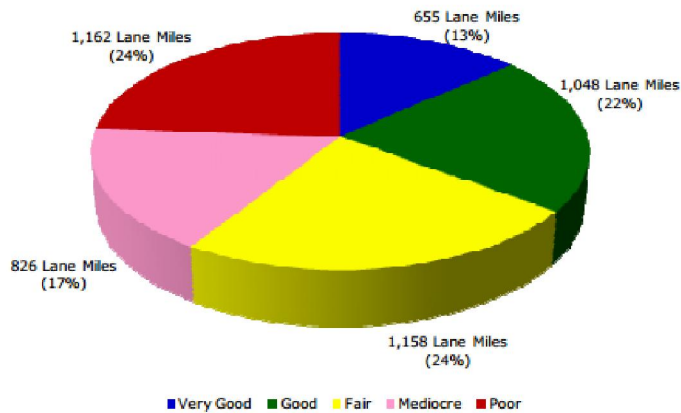


Figure 8 - Estimated FY 2010 Pavement Condition

The 2009 Pavement System Preservation Report provided estimated pavement conditions in FY 2010 if all FY 2009 projects were completed. **Figure 8** illustrates that an estimated 59% of city roadways would meet the acceptable pavement standard.

The 2009 Pavement System Preservation Report also provided estimated pavement conditions in FY 2011. **Figure 9** illustrates that an estimated 60% of city roadways would meet the acceptable pavement standard.

**FY 2011 Lane Mile Distribution by Condition State**

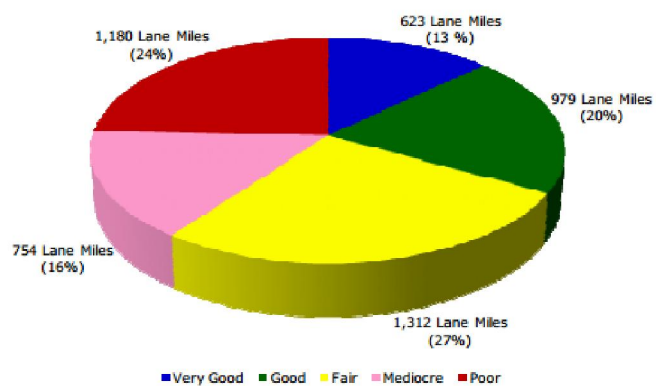


Figure 9 - Estimated FY 2011 Pavement Condition

**2013 Network Condition Distribution (by Pavement Area)**

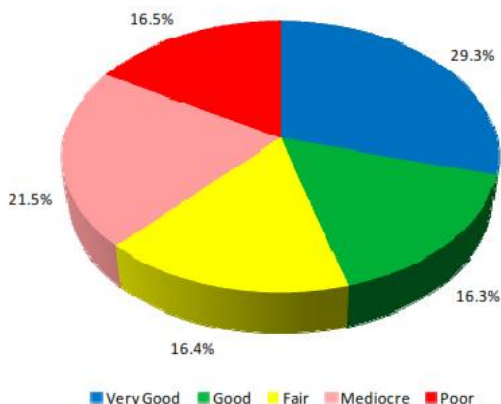


Figure 10 - Actual FY 2013 Pavement Condition

The 2013 Pavement System Preservation Report provides the actual pavement conditions in FY 2013. **Figure 10** shows that 62% of city roadways met acceptable pavement conditions.

## Findings

### ***Budgeted target reported differed from supporting documentation***

Other than reducing the target to 58% in FY 2012, the budgeted target has remained at 59%, which represents the actual pavement conditions in FY 2009. This is inconsistent with the FY 2012 budget which describes an increase in the number of lane miles resurfaced and the Pavement System Preservation Report issued for 2009 which detailed estimates of subsequent year's conditions if certain repairs were made of 59% in FY 2010 and 60% in FY 2011. The DOT representatives were unable to provide any documentation to support the reported targets.

### ***Incomplete and unsupported data relating to actual performance measurements***

CitiStat did not track any data for this performance measurement and we are unaware of any mechanism in place to do so. No evidence was provided to support the actual performance measures reported except for FY 2013.

Performance Measurement		FY 2010	FY 2011	FY 2012	FY 2013
% of streets meeting acceptable pavement condition standard - CitiStat	1	X	X	X	X
% of streets meeting acceptable pavement condition standard - Actual	2	X	X	X	62%
% of streets meeting acceptable pavement condition standard - Reported Actual	3	63%	58%	58%	62%
% of streets meeting acceptable pavement condition standard - Reported Target	3	X	59%	58%	59%

1 - Source: CitiStat

2 - Source: Final System Preservation Report - 2009 & 2013

3 - Source: Baltimore City budget documents

Figure 11 - Street Management Performance Measurements

### ***Lack of internal controls/policy for maintaining performance measurements***

The DOT provided no evidence of policies, procedures, internal controls, or accountability for the measure including recording, reviewing, and reporting of the performance measure.

### 3. Service: 684 – Traffic Management

<u>Performance measure</u>	<u>FY11 Actual</u>	<u>FY12 Target</u>	<u>FY12 Actual</u>	<u>FY13 Target</u>	<u>FY13 Actual</u>
Cost per traffic control sign installed	\$665.75	\$665.75	\$776.06	\$686.00	\$700.00

Figure 12: Actual and Target Performance Measures in the Budget

#### Performance Measure Background

This was a new measure for FY 2012, so there were no targets set in FY 2010 or FY 2011. From discussions with DOT representatives, this measure is designed to monitor the costs associated with producing and installing traffic control signs. Traffic control signs include signage fabricated and installed such as speed limit, street, and other related signs. The costs associated with the signage include materials, time to produce, and time to install.

DOT representatives related that these figures are calculated and reported using a “template” produced by a previous employee and has not been evaluated or updated since its creation. Representatives were unable to provide the “template” for our review.

According to DOT representatives, the information is forwarded from the Traffic Division, entered into the “template” by an administrator and then reported to the CitiStat system. During our discussions of the reported data within CitiStat, DOT representatives described these figures to be grossly overstated and include other signage categories inappropriate to this performance measure, i.e. countdown pedestrian signals. The inclusion of these inappropriate costs would materially skew the data of the intended measure due to their higher cost.

Representatives confirmed that this measure is not used by the department in decision making and there is no oversight in its reporting.

#### Findings

##### *No supporting documentation for actual performance or budgeted target amounts*

The DOT representatives were unable to provide any documentation to support the actual measures reported in CitiStat or budget documents. Hamilton also did not receive supporting documentation to substantiate the target amounts.

##### *Lack of internal controls/policy for maintaining performance measurements*

The DOT provided no evidence of policies, procedures, internal controls, or accountability for the measure including the recording, reviewing, and reporting of this performance measure.



#### 4. Service: 689 – Vehicle Impounding and Disposal

<u>Performance measure</u>	<u>FY10 Actual</u>	<u>FY11 Target</u>	<u>FY11 Actual</u>	<u>FY12 Target</u>	<u>FY12 Actual</u>	<u>FY13 Target</u>	<u>FY13 Actual</u>
# of property damage claims filed	36	30	18	24	21	25	12

Figure 13: Actual and Target Performance Measures in the Budget

#### Performance Measure Background

Damage claims typically are seeking monetary payout for damage to vehicles towed by the department. These legal cases and settlement costs are paid by the City of Baltimore.

When a claim is filed with the Towing Department, it is handled by their investigator. To determine if the claim is valid, the investigator will evaluate the claim by reviewing the cameras on the premises as well as the pictures taken of the vehicle upon arrival to the impound lot. If the claim is determined to be valid, it is submitted to the legal department for processing. If the investigator determines the claim is invalid, the claimant will be notified that no further action will be taken, hence the claim is denied.

A typist within the Towing Department will retrieve case information from the legal department's systems, compile the information, and enter it into CitiStat for reporting purposes.

Management indicated that this measure is not utilized widely within the department.

#### Findings

##### *No supporting documentation for actual performance or budgeted target amounts*

The DOT representatives were unable to provide any documentation to support the actual measures reported in CitiStat or budget documents. Hamilton also did not receive supporting documentation to substantiate the target amounts.

##### *Lack of internal controls/policy for maintaining performance measurements*

The DOT provided no evidence of policies, procedures, internal controls, or accountability for the measure including recording, reviewing, and reporting of the performance measure.

## 5. Service: 692 – Bridge and Culvert Management

<u>Performance measure</u>	<u>FY10 Actual</u>	<u>FY11 Target</u>	<u>FY11 Actual</u>	<u>FY12 Target</u>	<u>FY12 Actual</u>	<u>FY13 Target</u>	<u>FY13 Actual</u>
% of bridges more than 50 years old with a Bridge Sufficiency Rating below 50	14.60%	14.30%	14.60%	14.30%	14.30%	13.50%	14.00%

Figure 14: Actual and Target Performance Measures in the Budget

### Performance Measure Background

The City of Baltimore receives federal funds related to bridges and their maintenance. If the DOT does not meet the eligibility requirements of the Federal Highway Administration (FHA) it could potentially lose this funding.

The FHA requires that all bridges over twenty feet in length be inspected every two years. In cases where there is noted substantial concern, a bridge will be required to have an inspection every year. Bridges that are fewer than 20 feet in length are required to be inspected every four years. Pedestrian bridges are not subject to the Sufficiency Rating Standards but are inspected every 6 years.

All bridge inspections are performed according to the Bridge Inspectors Reference Manual issued by the FHA. The DOT utilizes qualified contractors to perform bridge inspections.

Each bridge inspection is logged into the InspectTech system. InspectTech is a provider of mobile inspection and asset management solutions, which allows the City to more effectively collect, analyze and manage inspection data. This software allows the City to perform inspections electronically and generate Bridge Inspection Reports (BIR). It also allows the DOT to store prior reports for future reference.

Each Bridge Inspection Report is reviewed, signed and stamped with a seal to ensure that it meets the Department's standards.

### Findings

#### *No supporting documentation for actual performance or budgeted target amounts*

The DOT representatives were unable to provide any documentation to support the actual measures reported in CitiStat or budget documents. Hamilton also did not receive supporting documentation to substantiate the target amounts.

### *Lack of internal controls/policy for maintaining performance measurements*

The DOT provided no evidence of policies, procedures, internal controls, or accountability for the measure including recording, reviewing, and reporting of the performance measure.

## **V. Recommendations**

The lack of oversight, accountability, and internal controls surrounding the measurement of performance within the DOT undermines the intent of the performance measurement process as a whole. To achieve the full benefits of outcome budgeting, significant changes are needed. A system of accountability and oversight at the DOT level needs to be implemented that requires all measures be valid, reliable, and verifiable. The reliability and validity of the performance measures are critical to their usefulness in budgeting and measuring performance to achieve strategic goals.

The DOT should develop procedures in coordination with each service to link the performance measurement to its mission and strategic goals, and confirm its usefulness in measuring achievement of those goals. Performance targets should be defined with funding and resource availability in mind. The methods and reporting mechanisms needed to capture each performance measure and the frequency in which that data will be captured should be defined with the understanding that the cost and effort of obtaining the performance data should not exceed the value of the data so obtained. For example, in the case of street maintenance, obtaining an actual PCI every 3 years may be sufficient to plan street maintenance, set performance targets, and estimate actual PCI (based on the completion of planned maintenance) during the convening years. The procedures should also include how the measures will be verified for data validity and reliability.

To enhance the evaluation of performance measures that capture actual costs, the DOT would benefit by creating a total cost comparison approach. Measuring only direct material and labor cost does not provide a complete picture of the amount of expenditures incurred in completing each performance measure in a cost efficient manner. By developing an enhanced timekeeping system, a direct charge methodology of directly associated costs, and an indirect cost allocation method, the DOT could make logical comparisons between budget and actual cost associated with each performance measure. Consistent development of budget and actual cost will improve the validity of the cost data for reliable performance comparisons.

Each measure should have a service representative (with the appropriate knowledge, experience, and/or training) responsible for the measurement, recording, and reporting of budgeted and actual performance. The representative should be required to document all supporting information in a manner that could be evaluated by a third-party for accuracy, validity, and correctness.

The DOT should consider implementing quarterly reviews with the services to provide oversight into the performance measurement process and accountability for the achievement of

performance objectives. Quarterly reviews would allow the DOT to identify problems early, take necessary corrective action, and adjust strategies and resource allocations accordingly.

## VI. Audit Responses

Please see attached DOT's detailed response to the audit results. We have provided a summarized version below with our responses.

DOT provided four general recommendations to improve the Performance Measurement Process on a city-wide basis:

- Institute an annual process to allow agencies to justify why a measure may no longer be relevant and propose a replacement measure early in the calendar year.
- Allow agencies the final determination on what measures should be reflected in budgetary documents if they will be held responsible through the audit process.
- Provide training for agencies staff in proper calculation and documentation.
- Reduce the number of performance measures tracked between CitiStat and the outcome budgeting process. DOT currently tracks over 330 measures for CitiStat in addition to the measures tracked for the budget process (though some overlap). If the data cannot be utilized to make decisions about operations or is useful in budgetary decisions, it should be eliminated or consolidated with other measures.

DOT is undergoing a full scale assessment of all performance measures in its budget documents and that it reports to CitiStat to determine if the measures are relevant to operations and worthwhile to budgetary decisions. Additionally, it is working to implement Performance Measure Review Procedures (copy provided with comment responses) which will require Divisions to source all data and provide documentation for how data is calculated, tracked and/or collected. A point of contact responsible for each measure will be designated. As referenced in the audit, DOT has already eliminated a number of performance measures that could not be properly documented or were irrelevant to operations and budgetary management.

Hamilton's response: DOT is taking significant actions to improve the relevancy, validity and reliability of its performance measures, through training, documentation and accountability. Adding a review of the target and actual measures, by someone other than the individual who prepared them, such as the Division Chief, to confirm the accuracy of the calculations and review the interrelationships for reasonableness would strengthen the reliability and usefulness of the measures.

## 1. Service: 500 – Street and Park Lighting

### *No supporting documentation for target performance measurements*

DOT's response: DOT did not have a baseline of data when developing the targets as this measure was not tracked prior to the implementation of outcome budgeting and believes the FY 2013 target was increased due to the planned installation of approximately 11,000 LED fixtures, however this cannot be confirm as the person responsible for the target is no longer with DOT.

Hamilton's response: Hamilton considers this a concurrence with the finding.

### *Incomplete and unsupported data relating to actual performance measurements*

DOT's response: DOT agrees that the data in the CitiStat template does not match data recorded in the budget documents. DOT recommends altering the performance measure to reflect actual data collection in CitiStat and using this data to report actual performance in the budget.

Hamilton's response: Hamilton agrees this action is sufficient to address the finding.

### *Actual performance is not accurately reported in the budget document*

DOT's response: DOT agrees that there is no practice to proactively measure the percentage of all street lights that meet the lighting standards. DOT proposes a change to clarify that the performance measure relates only to streets inspected in response to 311 calls.

Hamilton's response: Hamilton agrees this action will clarify what the measure is capturing and in combination with reporting actual performance based on streets inspected in response to 311 calls is sufficient to address the finding.

### *Lack of internal controls/policy for maintaining performance measurements*

DOT's response: DOT agrees that additional steps can be taken to improve internal controls and accountability for this and other performance measures. DOT will maintain a spreadsheet of the data used to calculate the target and actuals beginning with FY 2017 targets and FY 2015 actuals.

Hamilton's response: Hamilton urges DOT to maintain detailed backup to support the amounts reflected in the spreadsheet, and develop procedures to address our recommendations.

## 2. Service: 683 – Street Management

### *Budgeted target reported differed from supporting documentation*

DOT's response: DOT believes that based on a significant reduction in state Highway User Revenue (HUR) funding (a primary fund source for resurfacing), improvements to roadways were not expected to improve from the levels reported in the 2009 report. They agree that the target for “# of lane miles resurfaced” increased for FY 2012, but that actual performance was well below their target. DOT believes the targets are justified.

Hamilton's response: Hamilton agrees that DOT can set the performance target based on the actual result of a prior FY, but the justification for this should be documented and maintained with its budget support. Additionally, if the target varies from this percentage, as it did in FY12, DOT should document the assumptions and calculations used to derive the target percentage. Finally, assumptions should be applied consistently across the performance measures, and any cross-impacts evaluated to avoid unrealistic performance targets, such as the FY 2012 “# of lane miles resurfaced”.

### *Incomplete and unsupported data relating to actual performance measurements*

DOT's response: The attached 2013 Pavement Systems Preservation Report reflects a condition level of 62% not 64%.

Hamilton's response: Based on the additional evidence provided, Hamilton concurs that the FY 2013 actual amount is supported by the 2013 Pavement Systems Preservation Report. We have incorporated the result from this report and revised our finding to clarify that FY 2013 was the only year in which supporting documentation was provided. No documentation was provided to support how the FY 2010 through FY 2012 actual performance measurements reported were calculated.

### *Lack of internal controls/policy for maintaining performance measurements*

DOT's response: DOT uses consultants to calculate the Network Condition and recommend funding levels required to maintain an acceptable pavement condition. These firms use proprietary software to perform their analysis and DOT is unable to provide Hamilton a copy for review.

DOT monitors roadway work performed weekly. An “Operation Orange Cone List” is developed bi-weekly to record resurfacing locations, schedule, date completed, and lane miles achieved. This data is used by the consultants to prepare a new condition report.

Hamilton's response: The use of proprietary software to develop funding recommendations does not preclude DOT from developing performance measurement controls and procedures as described in our recommendations. DOT is tracking resurfacing locations, schedule, and lane

miles achieved; these metrics can be utilized to estimate the overall pavement condition for use in the reporting of actual and any needed adjustment to target performance measurements. The Pavement Management surveys should be reviewed by DOT for reasonableness and consistency with underlying data points for use as a comparison between target and achieved amounts, and a tool for setting future year targets.

### **Service: 684 – Traffic Management**

#### ***No supporting documentation for actual performance or budgeted target amounts***

DOT's response: DOT agrees that there was not proper documentation to support the underlying data that is recorded in the CitiStat template.

Hamilton's response: Hamilton concurs.

#### ***Lack of internal controls/policy for maintaining performance measurements***

DOT's response: DOT agrees that there was no internal control review for this performance measure. In addition, this measure does not accurately reflect cost savings, and should be eliminated and replaced.

Hamilton's response: Hamilton recommends that DOT incorporate the recommendations made in this report as it improves and tracks this measure going forward.

### **3. Service: 689 – Vehicle Impounding and Disposal**

#### ***No supporting documentation for actual performance or budgeted target amounts***

DOT's response: DOT agrees. With the departure of the previous Chief of Towing, DOT is unsure how previous targets were determined, and recommends Hamilton interview the new Chief to gain insight on how this measure will be tracked moving forward.

Hamilton's response: Future years are not within the scope of this audit. Hamilton recommends that DOT incorporate the recommendations made in this report as it tracks this measure going forward.

#### ***Lack of internal controls/policy for maintaining performance measurements***

DOT's response: DOT agrees. DOT will maintain a spreadsheet data used to calculate the target and actuals beginning with FY 2017 targets and FY 2015 actuals.

Hamilton's response: Hamilton urges DOT to maintain detailed backup to support the amounts reflected in the spreadsheet, and develop procedures to address our recommendations.

#### 4. Service: 692 – Bridge and Culvert Management

*No supporting documentation for actual performance or budgeted target amounts*

DOT's response: DOT disagrees that no support was made available, as the bridge inspection reports were provided, but states that the support for the targets and actual calculations would need to be recreated. DOT commits to maintain a spreadsheet of the data used to calculate the target and actuals beginning with FY 2017 targets and FY 2015 actuals.

Hamilton's response: Hamilton confirms that lack of documentation supporting the calculation of actual and target performance measures is the cause of this finding, and agrees with DOT's decision to maintain spreadsheets supporting the calculations going forward. It is expected that these spreadsheets would be supported by and consistent with the underlying bridge inspection reports.

*Lack of internal controls/policy for maintaining performance measurements*

DOT's response: DOT will maintain a spreadsheet of the data used to calculate the target and actuals beginning with FY 2017 targets and FY 2015 actuals.

Hamilton's response: DOT should also develop internal controls and procedures to address our recommendations.

#### ATTACHMENTS

Agency's full response is attached





The Department of Transportation (DOT) has received the draft Quadrennial Performance Audit for FY 2010, 2011, 2012 and 2013 from Hamilton Enterprises, LLC. DOT has responded to the findings of the audit below.

#### General Comments on Performance Targets and Actuals Development

Since Outcome Budgeting's implementation in the City of Baltimore in Fiscal 2011, agencies were required to submit performance measurement targets and actuals for each service. Fiscal 2010 performance targets were not available for audit review as they were not required part of the budget process and had not yet been created. After the implementation of outcome budgeting, DOT shifted its Citistat template to align with the Outcome Budgeting process for Fiscal 2012. During the Fiscal 2011 budget process, DOT worked with the Bureau of the Budget and Management Research (BBMR) to develop output, efficiency, effectiveness and outcome measures for each of its services. A number of these measures were being recording in some way through Citistat while for others the measures were newly created and the documentation process may not have been determined when they were developed.

Although DOT was unable to provide documentation specifically backing up the determined target in some cases, DOT does not believe that the target did not have some level of support and justification when it was created. Targets are developed early in the budget planning process, limiting the data available to use as a baseline during the early years of Outcome Budgeting submissions. For example, when building the target for Fiscal 2013 (compiled in fall 2011), the most recent data available to an agency would be data from Fiscal 2011. For Fiscal 2011 and Fiscal 2012, insufficient actuals data would have existed, and target development was in many cases based on supervisors' knowledge of operations. As previously stated, Fiscal 2010 targets were not developed as Outcome Budgeting had yet to be implemented.

The quadriennial audit requirement did not exist during the time Fiscal 2011 – Fiscal 2013 targets and actuals were recorded and there was no policy as part of the budget submission to retain documentation for submitted data. In some cases, measures and targets may have been developed that have now been determined to be irrelevant to current operations.

#### Internal Control and Review Process

Since Fiscal 2013, DOT's administration has changed and internal controls, documentation retention and performance management have become a priority. DOT is working on a number of internal control reviews to improve efficiencies and identify potential weaknesses across the agency. Specifically in relation to the scope of this audit, DOT is undergoing a full scale assessment of all performance measures it has in its budget documents and that it reports to Citistat to determine if the measures are relevant to operations and worthwhile to budgetary decisions. A copy of the procedure that will be followed is attached to this response. Divisions will be required to source all data and provide documentation for how data is calculated, tracked and/or collected. A point of contact responsible for each measure will be designated. As referenced in the audit, DOT has already eliminated a number of performance measures that could not be properly documented or were irrelevant to operations and

budgetary management. DOT worked with Hamilton Enterprises, LLC in determining which measures should be reviewed for this audit as part of its overall performance measurement assessment.

-----  
**1. Service: 500 – Street and Park Lighting**

**Findings**

*No supporting documentation for target performance measurements*

The Department of Transportation was unable to provide any documentation related to the budgeted target for this measure. The target amount contained in the City budget has been rolled forward throughout the years and arbitrarily increased. Hamilton Enterprises, LLC noted no documentation to substantiate the targeted estimates.

**DOT RESPONSE**

DOT began tracking this measure for Citistat in Fiscal 2012 when it realigned its template with the services breakdown for Outcome Budgeting. The measure was created during the implementation of Outcome Budgeting for Fiscal 2011. DOT does not have record as to why the measure was selected. DOT did not have a baseline of data when developing the target for Fiscal 2011. As evidenced by Hamilton’s review, this measure was not tracked for Citistat in Fiscal 2011 or in years prior.

Had this measure been tracked prior to the development of Outcome Budgeting, data would have been available to use as a basis for the Fiscal 2012 and Fiscal 2013 performance targets. DOT believes that the Fiscal 2013 target was increased due to the planned installation of approximately 11,000 LED fixtures, however this cannot be confirmed as the person responsible for the target is no longer with DOT.

The charts below reflect the data that was required for submission to BBMR for Fiscal 2012 and Fiscal 2013 performance measures.

Performance Measurements as reflected in Fiscal 2012 Budget Agency Detail Volume II

**Performance Measures**

Type	Measure	FY10 Actual	FY11 Target	FY12 Target
Output	# of street light outage service requests completed	1,120	1,080	1,050
Efficiency	Operating and maintenance cost per street light	\$288.12	\$257.28	\$255.22
Effectiveness	% of street light outage service requests completed on time	73%	74%	85%
Effectiveness	% of inspected streets meeting City roadway lighting standards	New Measure	80%	80%
Outcome	% of citizens rating street lighting services good or excellent	59.5%	54%	59%

Performance Measurements as reflected in Fiscal 2013 Budget Agency Detail Volume II

**Performance Measures**

Type	Measure	FY11 Actual	FY12 Target	FY13 Target
Output	# of street light outage service requests completed	361	1,050	1,000
Efficiency	Operating and maintenance cost per street light	\$297.14	\$250.00	\$250.00
Effectiveness	% of street light outage service requests completed on time	95%	85%	95%
Effectiveness	% of inspected streets meeting City roadway lighting standards	80%	80%	90%
Outcome	% of citizens rating street lighting services good or excellent	59.0%	59%	59%

The Citistat template only records data from the 311 system (citizen complaints). DOT also inspects all City gateways weekly and primary routes bi-weekly. Data is tracked internally. When the prior DOT administration developed the targets and reported actuals it may have included this data along with the 311 data tracked in the Citistat template. DOT cannot confirm this at this time.

*Incomplete and unsupported data relating to actual performance measurements*

The Department of Transportation was unable to provide data to support the actual performance measurements reported for FY2011 to FY2013, shown in Figure 2. CitiStat did not track data for this performance measure in FY2011 and we are unaware of any mechanism to do so. We calculated the actuals based on data tracked in CitiStat for FY 2012 and 2013 and found significant differences from the reported actuals. It would appear that of the streets inspected, only 60% and 65% in FY 2012 and FY 2013, respectively, met roadway lighting standards versus the 85% and 90% reported.

*Figure 6 - Street Lighting Performance Measurement Analysis*

Performance Measurement		FY 2010	FY 2011	FY 2012	FY 2013
# of streets inspected for roadway lighting standards	1	X	X	149	179
# of streets inspected that met roadway lighting standards	1	X	X	90	116
% of inspected streets meeting roadway lighting standard - Actual	C	X	X	60%	65%
% of inspected streets meeting roadway lighting standard - Reported Actual	2	X	80%	85%	90%
% of inspected streets meeting roadway lighting standard - Target	2	X	80%	80%	90%

1 - Source: CitiStat

2 - Source: Baltimore City budget documents

C - Calculated field

**DOT RESPONSE**

DOT agrees with the finding that data recorded in the Citistat template does not match data recorded in the budget documents. If the measure needs to continue to be tracked in the budgetary documents, DOT recommends altering the narrative of the performance measure to better reflect actual data collection. The proposed change is “% of inspected streets in response to 311 calls meeting City roadway lighting standards.” Data that is recorded in the Citistat template from the 311 system will then be used for outcome budgeting reporting.

*Actual performance is not accurately reported in the budget document*

The actual practice and the amount recorded are only driven by calls from residents that are received by the 311 system reporting that lights are “too bright” or “too dark”. The entirety of the City’s street lights are not evaluated, only those reported to have an issue. The actual performance measured is a reactive procedure, not a proactive one. There is no practice currently performed to measure the percentage of all the street lights within the City meeting the roadway lighting standards as required by the measure.

**DOT RESPONSE**

DOT agrees that there is currently no practice to proactively measure the percentage of all street lights throughout the City meeting lighting standards. The measure does not state that it is tracking all City streets, but rather inspected streets. The proposed alteration above will clarify that the measure is specifically discussing those inspected in response to 311 calls. DOT does not have the manpower to inspect all City streets on an annual basis at this time.

*Lack of internal controls/policy for maintaining performance measurements*

The City of Baltimore and the Department of Transportation provided no evidence of policies, procedures, internal controls, or accountability for the measure including recording, reviewing, and reporting of the performance measure.

**DOT RESPONSE**

Although service requests utilized for this measure are tracked in the 311 system and reported on the Citistat template, DOT agrees that additional steps can be taking to improve internal controls and accountability for this and other performance measures. In response to the audit, and understanding future reporting requirements, DOT will maintain a spreadsheet of the data used to calculate the target and actuals beginning with Fiscal 2017 targets and Fiscal 2015 actuals to better track data in a format that is more easily accessible.

---

**2. Service: 683 – Street Management**

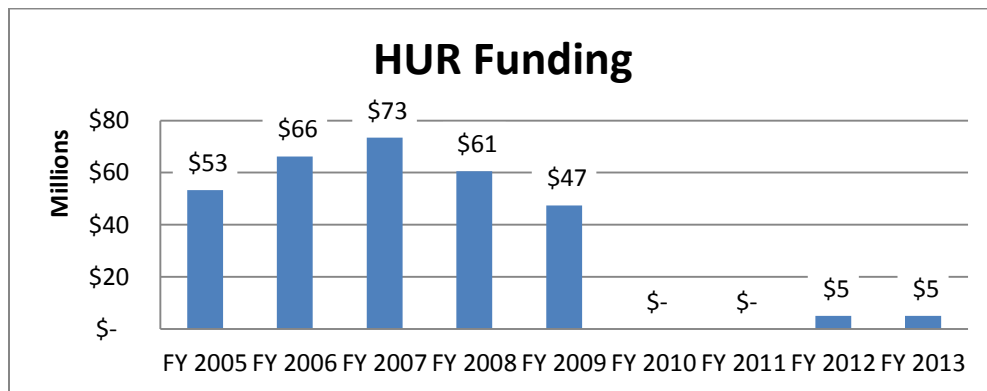
**Findings**

*Budgeted target reported different than supporting documentation*

Other than reducing the target to 58% in FY 2012, the budgeted target has remained at 59%, which represents the actual pavement conditions in FY 2009. This is inconsistent with the FY 2012 budget which describes an increase in the number of lane miles resurfaced and the Pavement System Preservation Report issued for 2009 which detailed estimates of subsequent year’s conditions if certain repairs were made of 59% in FY 2010 and 60% in FY 2011. The Department of Transportation representatives were unable to provide any documentation to support the reported targets.

**DOT RESPONSE**

Since Fiscal 2009, capital support for resurfacing declined significantly. The 2009 report did not account for the significant reduction in State Highway User Revenue (HUR) (a primary fund source for resurfacing). HUR funding was zeroed out in Fiscal 2010 and Fiscal 2011. Based on the reduced level of funding, improvements to roadways were not expected to improve from the levels reported in the 2009 report. Although the target increased for Fiscal 2012 for “# of lane miles resurfaced”, the actual performance was 188 lane miles, well below the target of 235. DOT believes that based on HUR funding and the 2009 report, its targets are justified.



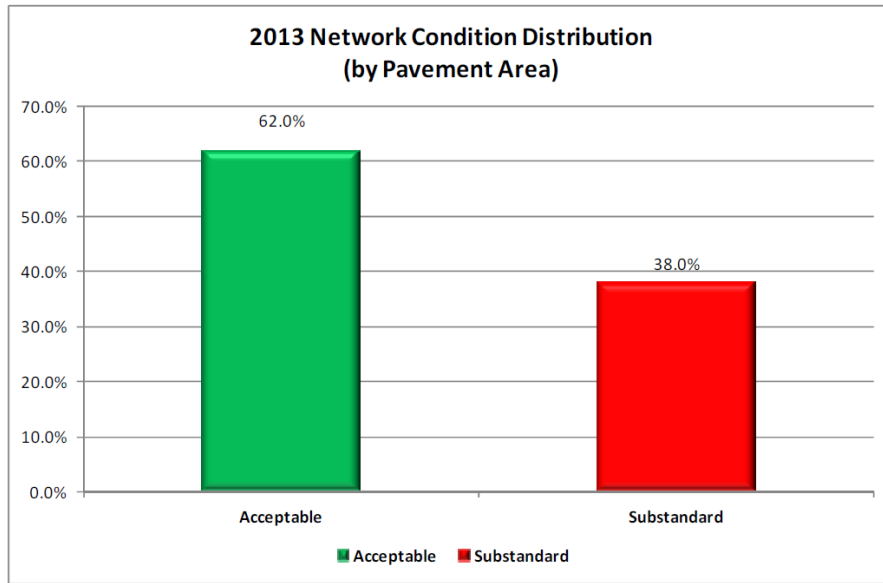
*Incomplete and unsupported data relating to actual performance measurements*

CitiStat did not track any data for this performance measurement and we are unaware of any mechanism in place to do so. No evidence was provided to support the actual performance measures reported. The Pavement System Preservation Report issued for 2013 reported actual condition levels of 64%, while the Department of Transportation reported 62%.

**DOT RESPONSE**

Citistat does not track this data since it’s done on an annual basis versus a bi-weekly basis. The 2013 report reflects a condition level of 62% not 64%. See attached Pavement System Preservation Report. Chart below is from referenced report. The report has been provided to Hamilton Enterprises, LLC.

Figure ES.4: Network Condition (2013)



Source: City of Baltimore PMS 2013: Pavement System Preservation Report – Volume I

*Lack of internal controls/policy for maintaining performance measurements*

The City of Baltimore and the Department of Transportation provided no evidence of policies, procedures, internal controls, or accountability for the measure including recording, reviewing, and reporting of the performance measure.

**DOT RESPONSE**

Axiom Engineering performed the Pavement Management survey in 2008/09, while DOT used Amec Foster Wheeler consulting company in 2013/14. Both firms have recommended the funding level much higher than the annual allocation to maintain the roadway network condition level reported on respective reports. Based on the actual lane mile completed (construction performed) the consulting company will provide DOT a new Network Condition, which will help us establishing next year's goal. Budget process for the upcoming fiscal year begins early in previous fiscal year so at times there is a delay in data that is available. Consulting company uses proprietary software for analysis so DOT is unable to maintain a copy in-house of the software and is unable to provide a copy to Hamilton Enterprises, LLC for their review.

In terms of controls of monitoring working on roadways, DOT holds a weekly resurfacing meeting with employees responsible for resurfacing work and the progress is monitored. DOT keeps a bi-weekly record of resurfacing list called "Operation Orange Cone List" where resurfacing locations, schedule, date completed, lane miles achieved are recorded. This database is used by the Consulting Company to prepare a new condition report for DOT. Operation Orange Cone list of one of the reporting periods is attached, and all weekly resurfacing meeting minutes are also available.

-----

### 3. Service: 684 – Traffic Management

#### Findings

##### *No supporting documentation for actual performance or budgeted target amounts*

The Department of Transportation representatives were unable to provide any documentation to support the actual measures reported in CitiStat or budget documents. Hamilton Enterprises, LLC noted no documentation to substantiate the targeted estimates as well.

#### **DOT RESPONSE**

The Citistat template reflects the data that was utilized for the performance measure actuals, however DOT agrees that there was not proper documentation to support the underlying data that is recorded in the Citistat template.

##### *Lack of internal controls/policy for maintaining performance measurements*

The City of Baltimore and the Department of Transportation provided no evidence of policies, procedures, internal controls, or accountability for the measure including recording, reviewing, and reporting of the performance measure.

#### **DOT RESPONSE**

DOT agrees that there was no internal control review for this performance measure. Due to turnover in management in the Traffic Division, there is no record of how the targets published in the budget documents were determined. During the audit, DOT Administration and Traffic determined what items were included for the calculation of the actuals on the Citistat template (which was the source document used to report actuals for the budget documents) but came to the conclusion that it was an improper measure to demonstrate the value of the Traffic Management service. The measure includes the cost of a number of different items, which in turn does not provide an adequate measure for any of the items since some are more costly than others. The chart below is a list of all components included in creating the “Cost per traffic control sign installed.”

Signals Installed	Handboxes Installed
Signals Removed	Handboxes Removed
Signals Repaired	Handboxes Repaired
Poles Installed	Control Boxes Replaced
Poles Removed	Control Boxes Repaired
Poles Painted	Control Boxes Painted
Pole Bases Installed	Cables Installed
Pole Bases Removed	Cables Removed
Pole Bases Repaired	Cables Repaired
Conduit Installed	Detectors Installed
Conduit Removed	Detectors Repaired
Conduit Repaired	Push Buttons Installed
Miscellaneous	Push Buttons Repaired

Combining all of these items together does not result in a worthwhile measure that can inform decision making or accurately reflect measures for cost savings. DOT believes that this measure should be eliminated and replaced with a measure that more accurately demonstrates the work done in Traffic Management.

---

#### 4. Service: 689 – Vehicle Impounding and Disposal

*No supporting documentation for actual performance or budgeted target amounts*

The Department of Transportation representatives were unable to provide any documentation to support the actual measures reported in CitiStat or budget documents. Hamilton Enterprises, LLC noted no documentation to substantiate the targeted estimates as well.

**DOT RESPONSE**

During the audit process, Hamilton Enterprises, LLC interviewed the Chief of Towing. The Chief resigned shortly after the interviews and DOT had difficult tracking down documentation after his departure.

DOT is unsure how the previous chief determined targets for the given fiscal years.

DOT recommends Hamilton Enterprises, LLC interviews the new Chief of Towing Operations to gain insight on how this measure will be tracked moving forward.

*Lack of internal controls/policy for maintaining performance measurements*

The City of Baltimore and the Department of Transportation provided no evidence of policies, procedures, internal controls, or accountability for the measure including recording, reviewing, and reporting of the performance measure.

**DOT RESPONSE**

DOT agrees that improvements must be made in terms of internal controls for performance measures. In response to the audit, and understanding future reporting requirements, DOT will maintain a spreadsheet of the data used to calculate the target and actuals beginning with Fiscal 2017 targets and Fiscal 2015 actuals to better track data in a format that is more easily accessible.

---

#### 5. Service: 692 – Bridge and Culvert Management

*No supporting documentation for actual performance or budgeted target amounts*

The Department of Transportation representatives were unable to provide any documentation to support the actual measures reported in CitiStat or budget documents. Hamilton Enterprises, LLC noted no documentation to substantiate the targeted estimates as well.

**DOT RESPONSE**

DOT disagrees that no documentation was provided to Hamilton Enterprises, LLC. During the conducted interview, the location of bridge inspection report hard copies (which include bridge sufficiency ratings) were shown to the interviewer who was informed that all reports are available daily during normal business hours for review. According to staff interviewed, these records were not reviewed by Hamilton Enterprises, LLC.

In order to calculate the actuals data each year, the following procedure is followed:

1. Obtain all of the current Bridge Sufficiency Ratings (BSR) for the targeted year (records are available for review)
2. Count up the number of bridges with a BSR that is less than 50.
3. Divide that number by the total number of bridges with a BSR and multiply by 100.

In order to calculate the target for each year, the following procedure is followed

4. Obtain all of the current Bridge Sufficiency Ratings (BSR) for the current year (records are available)

5. Count up the number of bridges with a BSR that is less than 50.
6. Determine which of those bridges were recently replaced or rehabilitated. This would cause the BSR to increase during the next inspection to a number greater than 50.
7. Subtract the number of bridges that were recently replaced or rehabilitated from the number of bridges with a BSR that is less than 50.
8. Divide that number by the total number of bridges with a BSR and multiply by 100.

DOT does not currently have the manpower to go back and recreate four years' worth of targets and actuals. There are hundreds of bridges in the city and each report would need to be reviewed and the BSR recorded for each year in order to recreate the procedure that was done each year when determining targets and actuals. In response to the audit, and understanding future reporting requirements, DOT will maintain a spreadsheet of the data used to calculate the target and actuals beginning with Fiscal 2017 targets and Fiscal 2015 actuals to better track data in a format that is more easily accessible.

*Lack of internal controls/policy for maintaining performance measurements*

The City of Baltimore and the Department of Transportation provided no evidence of policies, procedures, internal controls, or accountability for the measure including recording, reviewing, and reporting of the performance measure.

**DOT RESPONSE**

As stated previously, DOT will maintain a spreadsheet of the data used to calculate the target and actuals beginning with Fiscal 2017 targets and Fiscal 2015 actuals to better track data in a format that is more easily accessible.

**General Recommendations for Performance Measurement Process Improvement**

- As the quadriennial audit process continues and agencies continue to review performance measures, there needs to be an annual process in place where agencies can justify why a measure may no longer be relevant and propose a new measure. The process should begin earlier in the calendar year versus when the budget documents are being put together.
- Agencies should have final determination on what measures should be reflected in budgetary documents if they will be held responsible through the audit process.
- Training for agencies should be provided for agencies on how to better calculate and document measures. Many staff members have been told to record data but without additional skills in how to do so.
- DOT recommends reducing the number of performance measures tracked between Citistat and the Outcome Budgeting process. DOT currently tracks over 330 measures for Citistat in addition to the measures tracked for the budget process (though some overlap). If the data cannot be utilized to make decisions about operations or is useful in budgetary decisions, it should be eliminated or consolidated with other measures.



**Objective:** Determine the supporting methodology and documentation for each DOT performance measure that are reported in the annual budget submissions and on the Citistat template.

**Background:** DOT a preliminary review of all performance measures in summer 2014. This aligned with the beginning of its first quadrennial audit being conducted by Hamilton Enterprises, LLC (Hamilton) to review five performance measures from Fiscal 2010 to Fiscal 2013. DOT worked with Hamilton to identify five measures that needed in depth analysis to determine source documentation and data validity. Based on a high-level preliminary assessment done by DOT, a number of performance measures reported on for DOT services state their documentation as “the Citistat template.” However, when divisions have been questioned about the underlying data, how it was calculated or to produce records to support figures, they were unable to provide details.

The following outlines the steps that are either in progress or will be taken as part of the performance measure review.

1. Create a database of all performance measures for DOT (both Citistat and outcome budgeting) including all known data points.
2. Determine any discrepancies in reported data, focusing on those data points that overlap between Citistat and the budget process.
3. Identify who is responsible for collecting data for each measure and determine the performance driver for that measure (person responsible for ensuring targets are met or explaining any shortfalls in performance). The person collecting data may or may not be the same person who is responsible for driving performance.
4. Determine if there is a procedure or formula for measures currently being collected.
  - a. If YES
    - i. Determine if the process or formula is accurate and the best way to measure said data
    - ii. Determine if process is up to date (for example if reliant on budgetary data, is that formula updated annually?)
    - iii. Determine how long it takes to collect data
  - b. If NO
    - i. Determine how data was being recorded previously?
    - ii. Can a procedure be developed?
5. If no documentation exists and no procedure can be determined, develop suggestions for replacement measure.
6. Determine if existing measures are relevant to budgetary decisions or operational decisions
  - a. Does its existence help managers better manage operations?
  - b. Does it properly measure the goals of the service and/or staff performance

#### Requirements Fiscal 2017 and beyond

- 1) Each year when targets and actuals are reported to administration for incorporation into outcome budgeting submissions the following will be required:
  - a) Source of actual data
  - b) Documentation to back up actual being reported
  - c) Justification for target being recommended



Department of Transportation
ORANGE CONE LIST - Projects To Be Under Construction
Spring, Summer & Fall 2011



Summary table with 4 columns: Metric, Value, Remaining Metric, Remaining Value. Includes Total Number of Sites Completed (122), Total Cost of Sites Completed (\$47,703,489), Total Lane Miles Completed (69.26), etc.

Main project list table with 17 columns: FY, Acct, Project Name, From, Blk #, To, Blk #, Type, Proj. Days, Status, PM, CPS, CD, LD, Lane Miles, Contract No., Sector. Lists individual projects like 32nd St. E., Argonne Drive Bridge, Banger St, etc.



Department of Transportation
ORANGE CONE LIST - Projects To Be Under Construction
Spring, Summer & Fall 2011



Summary table with 4 columns: Metric, Value, Description, and another Value. Includes rows for Total Number of Sites Completed (122), Total Cost of Sites Completed (\$47,703,489), Total Lane Miles Completed (69.26), etc.

Legend table with 4 columns: Color, Shape, Description. Includes rows for Total Number of Sites Completed (Red square), Total Cost of Sites Completed (Red square), etc.

Main project list table with 17 columns: FY, Acct, Project Name, From, Blk #, To, Blk #, Type, Proj. Days, Status, PM, CPS, CD, LD, Lane Miles, Contract No., Sector. Contains numerous rows of project details.



**Department of Transportation**  
**ORANGE CONE LIST - Projects To Be Under Construction**  
**Spring, Summer & Fall 2011**



Total Number of Sites Completed	122	Remaining No. of Sites To Be Under Const in 2011	147
Total Cost of Sites Completed	\$47,703,489	Cost of Remaining Sites To be Under Const in 2011	\$149,914,980
Total Lane Miles Completed (DOT - TEC)	69.26	Remaining LM To Be Under Construction in 2011	55.36
Total Lane Miles Completed (DOT-Maintenance)	42.40	Remaining LM To Be Under Construction in 2011 (Maintenance)	47.97
Total Number of Sites under Construction	38	Total Lane Miles Resurfaced by DPW in 2011	
Total Cost of Sites under Construction	\$80,520,044	Total Bike Markings Lane Miles	3.50
Total Lane Miles of Sites under Construction	67.13		

FY	Acct	Project Name	From	Blk #	To	Blk #	Type	Proj. Days	Status	PM	CPS	CD	LD	Lane Miles	Contract No.	Sector			
08	CIP	527-301	Broering Hwy		Holabird Ave	1800	Colgate Creek	3000	RECON - FED	365	Const 2011 11	Shahid		1	46	6.26	TR08046	4	
08	CIP	509-185	Central Ave Phase I		Baltimore St		Unit N	Madison St	700 N	RECON/STSCP - FED		Const 2011 10	Scott	Allan	1,12	44	3.50	TR08310	4
03	CIP	514-207	Charles St		25th St	2500	University Pkwy	3500	RECON - FED		Const 2011 12	Lok	Andy	12,14	40	6.00	TR10301	1,2	
11	CIP	514-844	Eastern Ave		Broadway	1600	Haven St	4000	RESURF- FED		Const 2011 09	Kevin	Emory	1	46	6.40	TR11303	4	
11	CIP	514-844	Federal St		Erdman Ave	3600	N. Highland Ave	3500	RESURF- FED		Const 2011 09	Kevin	Emory	2	45	1.38	TR11303	4	
02	CIP	506-412	Frederick Ave Br(2206, 48.7		Over Gwynns Falls & CSX				BR. RECON - FED		Const 2011 10	Greg	Gene	9	44	0.23	TR02350	3	
11	CIP	514-843	Hilton Pkwy		Monastery Ave	300	North Ave	1700	RESURF- FED		Const 2011 09	Uttam	Roshan	7,8	40,44	7.82	TR11302	3	
09	CIP	514-837	Howard Street Arch Bridge		I-83				BR. REHAB - LOC	240	Const 2011 11	Scott	Gene				TR09028	3	
09	CIP	507-416	I-83		Union Ave		Madison St		BR. REHAB - LOC		Const 2011 10	Scott	Gene	11			TR10004	4	
09	CIP	527-327	Inner Harbor East - Parcel D Ph III		Along Aliceanna St				Bulkhead STSCP		Const 2011 10	Shahid	Andy	1	46		TR10314	4	
08	CIP	512-070	Intersection Caton Ave		at Wilkens Ave				Geometric Improv		Const 2011 10	Lok	R. Fields	10	44	0.20	TR09030	3	
08	CIP	512-073	Intersection 41st St		at Falls Rd				Geometric Improv		Const 2011 10	Lok		7	40	0.10	TR09031	2	
08	CIP	512-071	Intersections SE		Boston @ Clinton, Boston @ Ponca, O'Donnell St @ Cut-Off, O'Donnell@Ponca, O'				Intersection Upgrd		Const 2011 09	Kirin		1	46		TR08017	4	
04	CIP	527-176	Jones Falls Trail II		Maryland Ave		Lee St		Bike Trail		Const 2011 09	Nafisi	John	40,44	46		TR04318	4	
05	CIP	508-365	Key Hwy Phase II		Lawrence St	1400	I-95	1800	STSCP - FED		Const 2011 12	Manmohan	Roy	10	46		TR05045	4	
11	CIP	514-843	Light St		Key Highway	700	Wells St	1100	RESURF- FED		Const 2011 09	Uttam	Roshan	10	46	3.36	TR11302	3	
11	CIP	514-843	Maryland Ave/ Cathedral St		North Ave	1500	Monument St	700	RESURF- FED		Const 2011 09	Uttam	Roshan	11,12	40	3.22	TR11302	3	
11	CIP	514-844	Monument St		Haven St	4100	Pulaski Hwy	4900	RESURF- FED		Const 2011 09	Kevin	Emory	2	45	2.15	TR11303	4	
11	CIP	514-844	Moravia Park Dr		Pulaski Hwy	6600	Amberwood Rd	6000	RESURF- FED		Const 2011 09	Kevin	Emory	13	46	2.93	TR11303	4	
11	CIP		Oakdale Rd.		Hawthorne Rd.	200	Ridgewood Rd	300	RESURF - LOC		Const 2011 10	Kevin	Bruce	6	41	0.42	TR11018	2	
09	CIP	527-033	Orchard Ridge Phase II		Arbor View, Strawberry Field La, Sinclair Lane				Infrastructure Development		Const 2011 10	Lozano	Roy	13	45	1.28	TR10018	4	
05	CIP	508-454	Reisterstown Rd		Northern Pkwy		City Line		STSCP - FED		Const 2011 11	Manmohan		5	41	5.61	TR05309	2	
03	CIP	508-363	Sinclair Lane Br		Over CSX	1900			BR. REHAB - FED		Const 2011 10	Tony	Gene	13	45		TR03333	1	
09	CIP	508-616	West Baltimore Stscop Poject		Commonwealth Ave - Pulaski St to Bentalou, Pulaski St - Broad Ave to Forest Hill				STSCP - FED		Const 2011 09	Nafisi		9			TR09303	3	
08	CIP	508-460	York Rd		Glenwood Ave	5200	Cold Spring La/43rd St	4700	REHAB- FED		Const 2011 10	Lok	Roshan	4,14	43	4.50	TR08047	1	
11			42nd Street		Hickory Ave.	1100	Falls Rd.	1100				R. Branch		14	40	0.18		2	
11			Abell Ave.		E.33rd St.	3300	University Pkwy.	3300				R. Branch		14	43	0.12		1	
11			Aikens St.		Lafayette Ave.	1800	North Ave.	1800				R. Branch		12	45	0.24		4	
11			Airy Hill Ave.		Bethnal Rd.	500	Beechfield Ave.	600				R. Branch		8	44	0.32		3	
11			Aisquith St.		Montpelier St.	2600	Friendship St.	2600				R. Branch		14	45	0.16		1	
11			Alson Dr.		Cooks Ln.	4900	Chapel Gate Ln.	4900				R. Branch		8	41	0.25		3	
11			Barney St.		Webster St.	500	Covington St.	600				R. Branch		10	46	0.4		4	
11			Beason St.		Lowman St.	1200	Hull St.	1400				R. Branch		10	46	0.35		4	
11			Belt St.		Fort Ave.	1500	Randall St.	1500				R. Branch		10	46	0.17		4	
11			Bentalou St. S.		Wilkens Ave.	600	Eagle St.	600				R. Branch		9	44	0.14		3	
11			Benton Hgts. Ave.		Hamilton Ave.	5600	Montana Ave.	5600				R. Branch		3	43	0.47		1	
11			Bloom St.		Druid Hill Ave.	400	Mc Culloh St.	400				R. Branch		11	44	0.13		3	
11			Brookfield Ave.		Lennox St.	2100	Whitlock St.	2200				R. Branch		7	40	0.76		2	
11			Bruce St. N.		Lexington St.	200	Mulberry St.	300				R. Branch		9	44	0.15		3	
11			Brunt St.		Laurens St.	1800	Robert St.	1800				R. Branch		11	44	0.08		3	
11			Buena Vista		Clipper Hgts.	3500	36th St.	3500				R. Branch		7	40	0.21		2	
11			Callow Ave.		Reservoir St.	2200	Druid Pk. Lake Dr.	2400				R. Branch		7	40	0.89		2	
11			Cedargarden Rd		Long Island Ave.	4900	Wickham Rd.	4900				R. Branch		8	44	0.14		3	
11			Chase St. E.		Charles St	Unit	St. Paul Street	Unit				R. Branch		11	40	0.26		4	
11			Chesterfield Ave.		Cliffmont Ave.	3600	Ravenwood Ave.	3900				R. Branch		13	45	0.71		1	
11			Chinquapin Pkwy.		Gleneagle Rd.	5800	Northern Pkwy.	6000				R. Branch		4	43	0.54		1	
11			Chinquapin Pkwy.		Lake Ave.	6100	Cedarcroft Rd.	6100				R. Branch		4	43	0.65		1	
11			Cledenin St.		Madison Ave.	1100	Druid Hill Ave.	1200				R. Branch		11	44	0.26		3	
11			Colborne Rd.		Wildwood Pkwy.	4100	Woodington Rd.	4100				R. Branch		8	41	0.23		3	
11			Cottage Ave.		Springhill Ave.	3800	Shirley Ave.	3900				R. Branch		6	40	0.38		2	
11			Covington St.		Randall St.	1600	Dead End	1800				R. Branch		10	46	0.74		4	
11			Decker Ave. N.		Hoffman St.	1400	Federal St.	1500				R. Branch		13	45	0.33		4	
11			Derby Manor Dr.		Springhill Ave.	3800	Keyworth Ave.	3800				R. Branch		6	40	0.3		2	
11			DeSoto Rd.		Wilkens Ave.	900	Cowan Ave.	1000				R. Branch		8	44	0.38		3	
11			Dillon St.		Linwood Ave.	2900	Ellwood Ave.	3000				R. Branch		1	46	0.47		4	
11			Dolfield Ave.		Sequoia Av/Hilton St	3300	Belle Ave.	3400				R. Branch		6	41	1.2		2	
11			Druid Pk. Lake Dr.		Mt. Royal Terr./Park Av.	700	Lakeview Ave.	700				R. Branch		7	40	0.41		2	
11			E. Lanvale St.		Patterson Pk. Av.	2300	Milton Ave.	2400				R. Branch		13	45	0.43		4	
11			East Ave. S.		O'Donnell St.	1100	Elliott St.	1100				R. Branch		1	46	0.2		4	
11			Ellamont St. S.		Georgetown Rd.	1600	Herkimer St.	1600				R. Branch		10	44	0.21		3	
11			Ellwood Ave. N.		Hoffman St.	1400	Federal St.	1500				R. Branch		13	45	0.33		4	
11			Elmhurst Rd. W.		Roland Ave	Unit	Club Rd.	Unit				R. Branch		6	41	0.24		2	
11			Elmley Ave.		Erdman Ave.	3600	Chesterfield Ave.	3800				R. Branch		13	45	0.91		1	
11			Elmora Ave.		Erdman Ave.	3600	Chesterfield Ave.	3800				R. Branch		13	45	0.91		1	
11			Etting St.		Robert St.	1900	Bloom St.	2000				R. Branch		11	44	0.19		3	
11			Exeter St.		Low St	300	Gay St.	300				R. Branch		12	44	0.15		4	
11			Fagley St. S.		Lombard St.	100	Chestle Pl.	300				R. Branch		2	46	0.31		4	
11			Fait Ave.		Kenwood Ave.	2700	Lakewood Ave.	2700				R. Branch		1	46	0.27		4	
11			Fayette St. W.		Gilmor St.	1600	Monroe St.	1800				R. Branch		9	44	0.72		3	
11			Ferndale Ave.		California Blvd.	3000	Gwynn Oak Ave.	3200				R. Branch		5	41	0.83		2	
11			Foster Ave.		Essex St.	2300	Milton Ave.	2400				R. Branch		1	46	0.42		4	
11			Glover St. S.		Fleet St.	600	Hudson St.	800				R. Branch		1	46	0.38		4	
11			Goodwood Garden		Hillside Rd.	300	Club Rd.	300				R. Branch		6	41	0.17		2	
11			Gorsuch Ave.		Loch Raven Rd.	1300	Kirk Ave.	1400				R. Branch		14	43	0.59		1	
11			Gough St.		Ellwood Ave.	3100	East Ave.	3100				R. Branch		1	46	0.19		4	
11			Gough St.		East Ave.	3200	Highland Ave.	3300				R. Branch		1	46	0.32		4	
11			Gough St.		Eaton St.	3800	Haven St.	4000				R. Branch		2	46	0.41		4	
11			Guilford Ave.		E.33rd St.	3300	University Pkwy.	3300				R. Branch		14	43	0.31		1	
11			Heath St.		Boyle St.	500	Covington St.	700				R. Branch		10	46	0.52		4	
11			Henry St.		Fort Ave.	1500	Randall St.	1500				R. Branch		10	46	0.22		4	
11			Herkimer St.		Forest Hill Ave.	2900	Dead End	3100				R. Branch		10	44	0.66		3	
11			Hickory Ave.		41st. Street	4000	42nd Street	4000				R. Branch		14	40	0.2		2	
11			Hign St. N.		Low St	300	Gay St.	300				R. Branch		12	44	0.15		4	
11			Homewood Ave.		Kirk Ave.	2100	22nd Street	2100				R. Branch		12	43	0.24		1	
11			Hope St.		Lafayette Ave.	1800	North Ave.	1800				R. Branch		12	45	0.19		4	
11			Howard Pk. Ave.		Hampshire Ave.	3200	Gwynn Oak Ave.	3200				R. Branch		5	41	0.48		2	
11			Ingram Rd. /rear		Hillen Rd.	1600	Fenwick Ave.	1600				R. Branch		3	43	0.18		1	
11			Inverness Ave.		Georgetown Rd.	1600	Washington Blvd.	1800				R. Branch		10	44	0.76		3	
11			Jackson St.		Fort Ave.	1500	Barney St.	1700	</										



**Department of Transportation**  
**ORANGE CONE LIST - Projects To Be Under Construction**  
**Spring, Summer & Fall 2011**



Total Number of Sites Completed	122	Remaining No. of Sites To Be Under Const in 2011	147
Total Cost of Sites Completed	\$47,703,489	Cost of Remaining Sites To be Under Const in 2011	\$149,914,980
Total Lane Miles Completed (DOT - TEC)	69.26	Remaining LM To Be Under Construction in 2011	55.36
Total Lane Miles Completed (DOT-Maintenance)	42.40	Remaining LM To Be Under Construction in 2011 (Maintenance)	47.97
Total Number of Sites under Construction	38	Total Lane Miles Resurfaced by DPW in 2011	
Total Cost of Sites under Construction	\$80,520,044	Total Bike Markings Lane Miles	3.50
Total Lane Miles of Sites under Construction	67.13		

FY	Acct	Project Name	From	Blk #	To	Blk #	Type	Proj. Days	Status	PM	CPS	CD	LD	Lane Miles	Contract No.	Sector
11		Lakewood Av. N.	Ashland Ave.	900	Eager St.	900				R. Branch		13	45	0.19		4
11		Laurens St.	Pennsylvania Ave.	600	Fremont Ave.	600				R. Branch		11	44	0.28		3
11		Lexington St. W.	Gilmor St.	1600	Monroe St.	1800				R. Branch		9	44	0.72		3
11		Linwood Ave. S.	Fait Ave.	800	Dillon St.	900				R. Branch		1	46	0.37		4
11		Madison Av.	Bloom St.	2100	North Ave.	2100				R. Branch		11	44	0.21		3
11		Midvale Rd.	Longwood Rd.	0	Cul-De-Sac	0				R. Branch		6	41	0.29		2
11		Milford Av.	Liberty Heights Av.	3600	Belle Ave.	3700				R. Branch		5	41	0.61		2
11		Milford Av.	Belle Ave.	3800	Post Rd.	3900				R. Branch		5	41	0.59		2
11		Milton Ave. N.	Eager St.	1000	Chase St.	1000				R. Branch		13	46	0.44		4
11		Montford Ave. S.	Fait Ave.	800	Boston St.	800				R. Branch		1	46	0.16		4
11		Moore Ave.	Arion Ave.	2500	Old Harford Rd.	2600				R. Branch		3	43	0.53		1
11		Newington Ave.	Park Ave.	700	Brookfield Ave.	900				R. Branch		7	40	0.79		2
11		Nonwood Ave.	Howard Pk. Ave.	4700	Hillsdale Rd.	4800				R. Branch		5	41	0.47		2
11		Oakdale Rd.	Hawthorne Rd.	200	Wilmslow Rd	100				R. Branch		6	41			2
11		Oliver St. E.	Patterson Pk. Av.	2300	Milton St.	2400				R. Branch		13	45	0.52		4
11		Oliver St. W.	Mt. Royal Ave.	1	Maryland Ave.	1				R. Branch		11	40	0.28		3
11		Pall Mall Rd.	Springhill Ave.	3800	Keyworth Ave.	3800				R. Branch		6	40	0.31		2
11		Park Place	Moore Ave.	7100	Glencoe Rd.	7100				R. Branch		3	43	0.12		1
11		Parkin St.	Hollins St.	1	Mc Henry St.	200				R. Branch		11	44-46	0.57		3
11		Parkman Ave.	Georgetown Rd.	1600	Washington Blvd.	1800				R. Branch		10	44	0.76		3
11		Piedmont Ave.	Ellamont St.	3000	Longwood St.	3100				R. Branch		7	40	0.44		2
11		Poole St.	Clipper Hgts.	3500	36th St.	3500				R. Branch		7	40	0.28		2
11		Port St. S.	Fait Ave.	800	Hudson St.	800				R. Branch		1	46	0.13		4
11		Potomac St. N.	Hoffman St.	1400	Oliver St.	1400				R. Branch		13	45	0.24		4
11		Puaski St. S.	Wilkins Ave.	500	Eagle St.	500				R. Branch		9	44	0.13		3
11		Regester St.	Lafayette Ave.	1800	North Ave.	1800				R. Branch		12	45	0.19		4
11		Reservoir St.	Mt. Royal Terr.	600	Brookfield Ave.	800				R. Branch		7	40	1.07		2
11		Robb St.	Montpelier St.	2500	Gorsuch Ave.	2500				R. Branch		14	45	0.16		1
11		Roland View Ave.	Springhill Ave.	3800	Keyworth Ave.	3800				R. Branch		6	40	0.32		2
11		Rose St. S.	Eastern Ave.	500	Hudson St.	800				R. Branch		1	46	0.53		4
11		Rosebanks Ave.	Bellona Ave.	400	York Rd.	400				R. Branch		4	43	0.33		1
11		Rosedale St.	Piedmont Ave.	2500	Hanlon Ave.	2500				R. Branch		7	40	0.13		2
11		Rosedale St. S.	Lohrs Lane	1	Baltimore St.	1				R. Branch		8	44	0.17		3
11		Rutland Ave.	Lanvale St.	1700	Lafayette Ave.	1700				R. Branch		12	45	0.21		4
11		Sheffield Rd.	Loch Raven Blvd.	1500	Fenwick Ave.	1500				R. Branch		3	43	0.48		1
11		Springhill Ave.	Greenspring Ave.	2400	Park Heights Ave.	2600				R. Branch		6	40	0.58		2
11		St. Gemma Rd.	Cooks Ln.	4900	Dead End	4900				R. Branch		8	41	0.4		3
11		St. George's Rd	Roland Ave.	700	West Dead End	700				R. Branch		5	41	0.17		2
11		Stafford St.	Beechfield Ave.	4900	Long Island Ave.	4900				R. Branch		8	44	0.34		3
11		Stamford Rd.	Lindsay Rd.	800	County Line	1100				R. Branch		8	41	0.58		3
11		Stonewood Rd.	Loch Raven Blvd.	1500	Fenwick Ave.	1500				R. Branch		3	43	0.45		1
11		Taylor Ave.	Frederick Ave.	300	County Line/alley	400				R. Branch		8	44	0.25		3
11		The Alameda	33rd St.	3300	35th St.	3400				R. Branch		14	43	0.74		1
11		Underwood Rd.	Stratford Rd	4400	Old Cold Spring La.	4400				R. Branch		4	43	0.4		1
11		Valleybrook Rd.	Cooks Ln.	1300	County Line	1300				R. Branch		8	41	0.52		3
11		Walker Ave.	York Rd.	500	Weidner Ave.	500				R. Branch		4	43	0.62		1
11		Wedgewood Rd.	St. Gemma Rd.	1000	County Line	1100				R. Branch		8	41	0.52		3
11		Weldon Ave.	Hickory Ave.	1100	Falls Rd.	1100				R. Branch		14	40	0.14		2
11		Westwood Ave.	Mount St.	1700	Fulton Ave.	1700				R. Branch		7	40	0.22		3
11		Westwood Ave.	Fulton Ave.	1800	Monroe St.	1800				R. Branch		7	40	0.23		3
11		Westwood Ave.	Monroe St.	1900	Smallwood St.	2100				R. Branch		7	40	0.7		3
11		Wheeler Ave.	Edmondson Ave.	600	Lafayette Ave.	800				R. Branch		9	40	0.7		3
11		Wickham Rd. S.	Stafford St.	400	Williston St.	400				R. Branch		8	44	0.51		3
11		Williston St.	Chapelgate Rd.	5100	Random Rd.	5100				R. Branch		8	44	0.23		3
11		Wilson St.	Druid Hill Ave.	400	Mc Culloh St.	400				R. Branch		11	44	0.12		3

■ Construction Completed in 2011     
 ■ Sites Under Construction     
 ■ CY 2011 Projects