Milwaukee County Needs to Commit to a Preventive Repair & Maintenance Program to Ensure Public Safety

October 2010

Committee on Finance and Audit

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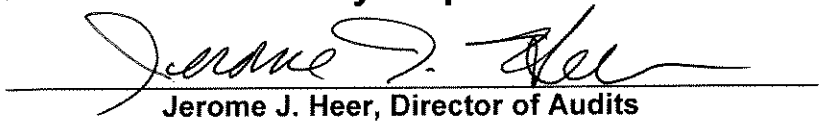

Jerome J. Heer, Director of Audits
Douglas C. Jenkins, Deputy Director of Audits

Audit Team
Jere A. Trudeau
Stanley M. Zaleski, CPA
Narcisia 'Edie' A. Bland
Linda Seroyer-Bryant

Review Team
Paul A. Grant, CPA

Administrative Support Team
Cheryl A. Hosp
Catherine M. Remiszewski

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Department of Audit

Milwaukee County

Jerome J. Heer • Director of Audits
Douglas C. Jenkins • Deputy Director of Audits

October 25, 2010

To the Honorable Chairman
of the Board of Supervisors
of the County of Milwaukee

We have completed an audit of Milwaukee County's efforts to maintain buildings in a manner that ensures the safety of the public and County employees.

The report identifies the need for a more coordinated approach to building safety inspections. In addition, we highlight the need for improved documentation of efforts to maintain facility safety and for a greater commitment to overall preventive maintenance.

A response from the Department of Transportation and Public Works is included as Exhibit 13. We appreciate the cooperation extended by administrators and staff throughout the County during the course of this audit.

Please refer this report to the Committee on Finance and Audit.

Jerome J. Heer
Director of Audits

JJH/cah

Attachment

cc: Milwaukee County Board of Supervisors
Scott Walker, Milwaukee County Executive
Cynthia Archer, Director, Department of Administrative Services
Terrance Cooley, Chief of Staff, County Board Staff
Jack Takerian, Director, Department of Transportation & Public Works
Steven Kreklow, Fiscal and Budget Director, DAS
Steve Cady, Fiscal and Budget Analyst, County Board Staff
Carol Mueller, Chief Committee Clerk, County Board Staff

City Campus, 9th Floor • 2711 West Wells Street
Milwaukee, Wisconsin 53208 • Telephone (414) 278-4206 • Fax (414) 223-1895

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Milwaukee County Needs to Commit to a Preventive Repair and Maintenance Program to Ensure Public Safety

Table of Contents **Page**

Summary 1

Background 7

Section 1: A consistently applied, coordinated approach for periodic building safety inspections is needed to address public safety concerns. 11

Section 2: Milwaukee County's inventory and assessment program needs to used as intended to document assessment results and corrective action. 26

Section 3: The County needs to establish and commit to a preventive maintenance policy for maintaining County facilities. 38

Exhibit 1 : Audit Scope 43

Exhibit 2 - Facilities Sampled for Condition Assessments - 2001–2010 44

Exhibit 3 - Summary of Estimated Repair Costs for 106 Buildings Evaluated 45

Exhibit 4 through 12 – Photographs of Safety Issues at Various County Facilities 48

Exhibit 13 - Management Response from the Department of Transportation and Public Works 64

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Summary

On June 25, 2010, the Chairman of the Milwaukee County Board of Supervisors called for an audit of Milwaukee County facilities to determine whether any safety concerns needed to be addressed. The directive followed the June 24, 2010 death of a young man and injury of two other individuals resulting from a façade piece falling from the County's O'Donnell Park parking structure. The Chairman's directive also referenced a critical State report on the condition of the County's behavioral health facility, and an incident in March of this year when a six-inch square section of concrete fell from near the top of the Milwaukee County Courthouse onto the pavement below. The Courthouse material fell during the night and there were no injuries. A month after the County Board's audit directive, on August 28th, a fiberboard panel fell from a wall inside a terminal at General Mitchell International Airport, injuring a passenger.

In addition to this audit, on June 30, 2010, the County Executive and the County Board Chairman also ordered an inspection of County-owned buildings that had not received a façade inspection within the past five years. The firm of Graef, USA Inc. was retained to conduct inspections of 106 buildings. The results of those inspections, issued by the Department of Transportation and Public Works under separate cover, identify an estimated $8.5 million in needed repairs to just the facades of those buildings. Almost $3.4 million of those items were considered priority repairs needed in the next year. **Section 1** of this report summarizes the buildings reviewed and the associated cost estimates.

Our audit was designed to identify steps that Milwaukee County has taken to proactively identify repair and maintenance items that may affect the safety of people visiting or working in County buildings. Further, we examined steps that have been taken to address any safety issues that have been identified. It is important to note that in addition to buildings and structures, the County owns and maintains several other types of infrastructure, such as roadways, parking lots, dams, and marinas, to name a few. In some (but not all) cases, the findings and recommendations related to buildings and structures can be extended to those County assets as well.

It is important to note that this report is not intended to address any specific issues related to the tragic death and injuries at O'Donnell Park. Law enforcement officials are conducting an investigation of that incident. Rather, our report is intended to comment on general procedures followed by Milwaukee County to ensure the safety of its facilities.

Background

Milwaukee County owns 902 buildings and structures of various types and sizes. In most cases, responsibility for repair and maintenance (R&M) of County buildings is decentralized and lies with the County department located within the building. R&M for all other buildings is performed by the Department of Transportation and Public Works' (DTPW) Facilities Management Division. Identifying and maintaining County infrastructure assets, including buildings, is an ongoing issue that has been addressed on numerous occasions by County Board action during the past two decades.

A consistently applied, coordinated approach for periodic building safety inspections is needed to address public safety concerns.

Despite having hundreds of buildings used by County employees and the general public, Milwaukee County does not have formal policies or procedures establishing general baseline requirements for the seven property management (PM) units responsible for repairing and maintaining County facilities. Consequently, the different PM units use their own, informal approaches for assessing the condition of buildings in their charge. Absent the structure and consistency that formal, uniform policies could provide, we found little to no emphasis on building assessments. Further, we noted varying degrees of emphasis on building safety inspections by the different PM units. Of particular concern is the manner in which the PM units have addressed the need to formally assess the safety and condition of their buildings over the past several years. Of 34 buildings sampled, only seven had assessments of any kind outside those conducted as part of a Countywide assessment program performed primarily from 2002–2007.

We made the following observations concerning the manner in which building safety issues were identified and addressed during the normal course of operations:

- In general, PM units lacked a formal, structured approach to inspecting buildings for conditions that could lead to potential safety issues. Lacking formal structure, some PM units operate on a reactive, rather than proactive, basis in terms of identifying and addressing potential safety hazards. DHHS was unique in its use of building inspection checklists, and preventive maintenance checklists were used by the Milwaukee County Transit System (MCTS) for other plant assets such as buses and heating/air conditioning equipment.

- Funding plays a significant role in the number and frequency of formal building assessments. Each PM unit establishes priorities for facilities needs in the County's capital budgeting process, but competing interests for limited resources preclude achievement of all PM units' priorities. With limited resources, PM unit managers tend to focus their efforts on short term 'brick and mortar' repairs, rather than for needed, yet costly, professional service expenditures for building assessments. Such costs are generally linked to corresponding major maintenance or capital

improvement expenditures. Only in rare instances are building assessment costs paid through operating budgets.

- PM managers generally consider formal assessments to be the responsibility of the Department of Transportation and Public Works Architecture and Environmental Services Section (AE&ES). Yet, according to AE&ES management, they only get involved with such activities when requested by the PM unit managers, and then only when funding is available. This disconnect symbolizes the importance of adequate coordination and funding for a service that is proactive in identifying safety and other facility deficiencies.

Specific Building Safety Concerns

To address the safety conditions at County facilities, we contacted managers at 17 locations with a high volume of public traffic. At each location, we conducted interviews related to major building concerns, toured facilities and took photographs of buildings. Our observations, detailed in this report, point to the need to incorporate routine physical inspections into an overall proactive approach to property management. Together with periodic facility assessments, inspections and evaluations, and scheduled preventive maintenance practices, a proactive regimen can help keep small problems from becoming large, expensive ones, and in the process extend the useful life of County buildings. More importantly, a proactive approach can help mitigate safety-related problems by identifying them before they become serious safety hazards.

Milwaukee County's inventory and assessment program needs to be used as intended to document assessment results and corrective action.

Milwaukee County has not followed through with a comprehensive program for assessing the condition of County buildings and structures. Started in the mid-1990's, the intent was to create a Countywide inventory of all facilities and to assess their condition, thereby improving the ability to budget for current and future repair and maintenance costs. However, budgetary cutbacks, along with higher priority funding demands throughout the years, have significantly limited the program's effectiveness. Problems we noted include:

- The County has no formal policy or procedures addressing the frequency or the manner by which the condition of County facilities need to be assessed. This is important to reduce potential threats to public and employee safety. Internal practices vary as to emphasis and level of scrutiny placed on this activity within the seven property management units that operate autonomously in the County.

- Staff at DPTW have been working off of a master list of 521 buildings to be formally assessed. The buildings are listed in the County's web-based property management system purchased in the late 1990s from VFA, Inc. (VFA). Only 66% of the 521 buildings have been reviewed as of October 2010. Included in the 34% not assessed are all buildings at the Airport and County Correctional Facility-South, and about two-thirds of the Parks buildings. Also not assessed are the Children's Court Center, Child and Adolescent Treatment Center, Museum, War Memorial Center and Marcus Center for the Performing Arts.

- Many of the facilities assessed initially have not been re-assessed since. Examples include the Courthouse Complex, Zoo and MCTS, which have not been assessed since 2002.

- Significant improvement is needed in the process for recording and updating noted building deficiencies and corrective actions into the VFA system. To put this into perspective, VFA lists 5,612 deficiencies as open, and 316 as closed.

Integration of VFA with County Work Order Systems

An important feature of VFA is its ability to maintain a detailed historical record of safety and maintenance problems identified with a particular building and the subsequent corrective action. Our review of support for corrective action of O'Donnell Park deficiencies served to highlight the fact that this important capability of VFA is not being used. Each of the seven property management units manage and record their R&M work via a work order system. Though none of the PM units use the same system, they each have similar functionality. However, none of the work order systems are linked to VFA. Thus, work order data related to any deficiency has to be manually entered into VFA by the property management unit staff to provide a complete picture of the identified deficiency and the resulting corrective action.

This has not been done by any of the PM units. According to AE&ES staff, the original intent was for each PM unit to update VFA with the work done to address each deficiency. According to property management unit staff we interviewed, training on the use of VFA was provided in the early stages of the County's building assessment program. However, the training was never put into constructive operational use. This is confirmed by information contained in VFA, which shows that the only status updates were done by AE&ES staff.

As a result, the information contained in VFA cannot be considered reliable. According to the data in VFA, there are 472 'life safety' deficiencies with an estimated cost of almost $5.5 million that have not been addressed by some type of corrective action. Of these, 308 deficiencies with an estimated cost of about $3.9 million were categorized as Priority 1 – Currently Critical. As such, the recommended action date to address the deficiency is generally within a year of the assessment. For this subset of 308 deficiencies, the action dates ranged from June 2003 to March 2008.

We examined a random sample of 20 items in this subset to determine the current status of each deficiency. The estimated cost of corrective action listed in VFA for these 20 items ranged from a low of $27 (expired fire extinguisher) to $109,000 (replacement of external doors necessary to prevent animal escape and staff injury at the Zoo). Sixteen items in our sample of 20 open items were in fact closed, either due to corrective action (nine) or as a result of the department disputing the validity of the original assessment (seven). Of the four items remaining open, two were not

addressed and two were potentially addressed, but no documents could be located to verify corrective action.

The value of VFA in managing buildings is dependent upon keeping VFA current, accurate and complete. *Without complete, up-to date, accurate information on repair work performed, VFA is an underutilized management tool that provides no assurance that high priority deficiencies, especially those related to public safety, have been resolved.*

The County needs to establish and commit to a comprehensive property management system.

DTPW management correctly notes that the County's five-year capital planning process forces each PM unit to prioritize its facilities needs. However, competing interests for limited funds, along with special restrictions that accompany some funding sources (e.g., federal transit funding is restricted from use for purposes other than transportation) often mean that items identified as a repair and maintenance need may not be funded. This reality only magnifies the importance of having an effective system in place to identify and prioritize infrastructure deficiencies that have immediate public safety implications.

The County has made a sizable investment in its infrastructure, especially in recent years. As pointed out in the highlights of the County Executive's 2011 Recommended Budget, Milwaukee County has spent and budgeted more than $936 million on infrastructure maintenance and improvements since 2003.

Capital Budgets

Over 62% of $891.2 million in capital budget expenditures during the period 2003—2010 are from the two most recent years, with nearly half coming from 2010 alone. This is due primarily to the County accelerating its Five-Year Capital Improvements Plan to take advantage of favorable municipal bond market conditions resulting from the federal government's 2009 economic stimulus plan. It is important to note, however, that the majority of these expenditures were not related to maintaining the safety of County buildings. A review of the Capital Improvement budgets over this period showed that about $107 million, or 12%, was for expenditures that could be considered related to buildings, with even less attributable to maintenance and safety of those structures.

Operating Budgets

Our review of operating accounts for major repair and maintenance expenditures over the period 2003 through 2010 shows a total expenditure of about $52 million, compared to the $45 million highlighted in the proposed 2011 budget. Our analysis shows repair and maintenance expenditures in operating budgets generally increased during the period 2003 through 2008, with a significant decrease (16.7%) in 2009. Expenditures in these categories in the 2010 budget are expected to increase by 43.7% over the previous year,

Conclusions

The first two sections of this report identify Milwaukee County's lack of a comprehensive plan of assessments, inspections and preventive maintenance supported by a system that accurately inventories, prioritizes and documents completed work. Although the VFA system provides a sound foundation from which to move forward, it is not updated and used to its potential, and integration with a work order system to properly document and update ongoing repairs and maintenance is needed.

In discussing this matter with DTPW staff, it was suggested that integration of these systems might best be achieved through an enterprise system such as GIS (Geographic Information System). The County participates in a public-private consortium (the Milwaukee County Automated Mapping and Land Information System, or MCAMLIS) that utilizes that software to provide an automated mapping base of the County for multiple purposes.

Lacking an effective, comprehensive plan for property management, the County's expenditures for infrastructure R&M is difficult to readily quantify, much less evaluate for effectiveness.

This report contains recommendations to address each of the issues identified in the audit. We wish to acknowledge the cooperation of the DTPW staff, as well as staff from all other County departments contacted during the course of the audit. A response from the Department of Transportation and Public Works is included as **Exhibit 13**.

Background

Milwaukee County owns 902 buildings and structures of various types and sizes. In most cases, responsibility for repair and maintenance (R&M) of County buildings is decentralized and lies with the County department located within the building. This includes the Airport, Parks, Zoo, Milwaukee County Transit System (MCTS), Department of Health and Human Services (DHHS), and County Correctional Facility – South. R&M for all other buildings is performed by the Department of Transportation and Public Works' (DTPW) Facilities Management Division. The following summarizes the seven County departments that perform R&M activities and the significant buildings under their purview.

DTPW - Facilities Management (44 buildings)
Major buildings maintained by Facilities Management include:

- Courthouse Complex (Courthouse, Criminal Justice Facility, Safety Building, Community Correctional Center)
- City Campus
- CATC
- Children's Court Center
- Research Park
- Fleet Management/Highway Maintenance

DTPW - Airport Division (125 buildings)

- All buildings and structures at General Mitchell International Airport and Timmerman Field.

Parks (501 buildings)

- All County park locations, including O'Donnell Park, the Domes, marinas, golf courses, etc.

Zoo (141 buildings)

- All buildings and structures at the Zoological Garden location.

DHHS (11 buildings)

- Behavioral Health Division
- Marcia P. Coggs Center

MCTS (23 buildings)

- All buildings and structures of MCTS.
- Downtown Transit Center (shared responsibility with Parks)

County Correctional Facility-South (34 buildings)

- All buildings and structures at former House of Correction location, including the Training Academy.

Department on Aging Senior Centers (Five Buildings)

- All buildings maintained by private vendor under contract with Department on Aging, with support upon provided by DPTW upon request.

In addition, the County owns 18 other buildings that are used by non-County entities under separate lease agreements. Responsibility for R&M activity generally resides with the lessee, with the County funding larger capital and major maintenance projects. Included in this group are:

- Milwaukee Public Museum
- War Memorial Center
- Marcus Center for the Performing Arts
- Villa Terrace Decorative Arts Museum and Gardens
- Charles Allis Art Museum
- Milwaukee County Historical Society

Other County Assets

In addition to buildings, the County is responsible for maintaining a significant investment in other infrastructure assets, including the following:

- Bridges (vehicle and pedestrian)
- Roads
- Parking lots
- Bike & hiking trails
- Walkways
- Marinas & boat launches
- Pools
- Golf courses
- Basketball & tennis courts
- Forestry
- Athletic fields
- Playgrounds
- Beaches & shorelines
- Stream banks & ponds
- Dams
- Signage
- Lighting
- Sewers

These other County assets were not included in the scope of our work, but are noted for informational purposes. Responsibility for the R&M for most of these resides with Parks and with DTPW. Except for pools, the systems used for property management of these various County infrastructure assets have not been integrated into the property management system used for all County buildings. As with buildings and structures, the extent to which ongoing R&M is performed on these assets also impacts the risk to public safety as well as the useful life of the asset.

For example, the pruning of low-hanging branches or removal of dead trees or branches can mitigate a significant safety issue. A tragic example of the safety issue involved with pruning occurred this summer in New York City, where a dead branch fell on a mother and six-month-old baby as they were posing for a picture at the Central Park Zoo, killing the baby. According to Parks Forestry, although it has no specific policy and procedures manual regarding its proactive tree-pruning activity, it has a program in place to proactively assess tree conditions in people-frequent areas, such as playgrounds, walks, parking lots, etc. It also responds to concerns brought to its attention regardless of source, including Parks staff, local municipalities, or the general public.

History

The issue of identifying and maintaining County infrastructure assets, including buildings, is an ongoing one that has been addressed on numerous occasions by County Board action the past two decades. The issue was often intertwined with the need to better manage the County's available office space, and improving the County's five-year capital budgeting process, as noted below:

- **File No. 93-224** – In 1993 a Capital Improvements Committee was established, composed of the Director of Transportation & Public Works (chairperson); Director of the Department of Administrative Services; two members appointed by the County Board Chairman; and a fifth member to be jointly appointed by the County Executive and County Board Chairman. The committee was directed to review all projects requested by department administrators, prioritize projects on a countywide basis along with financing recommendations to the County Executive for consideration as part of the County Executive's recommended budget. In addition, the Committee would review and update the County's five-year capital improvements plan, develop an inventory of existing capital assets, and begin a comprehensive condition assessment of all capital facilities. In 1996, the Courthouse Complex was the first facility assessed. Further assessments were discontinued until the completion of the project to computerize the floor plans of County buildings for future reference (AutoCAD).

- **File No. 99-542** – In September 1999, the Department of Audit performed a review of property management and concluded that Milwaukee County did not maintain a comprehensive, reliably accurate inventory of buildings and structures owned and leased by the County. The report proposed recommendations to address the need for a centralized property database and a formalized property management function.

  The County Board took action on the above audit report by forming an ad hoc work group to determine the property informational needs throughout the County, and consider the development of a long-range master plan that could be used to govern the utilization of County property. It also authorized the creation and maintenance of a comprehensive property database/information system that will meet the building, structures and land information needs of the various organizational units within the County. It was also expected that this system should work with all departments to ensure that a formalized Countywide approach to space utilization management. The current VFA facility management system, purchased in the late 1990s, is the resulting product of that directive.

- **File No. 05-310** - In 2004, the Department of Public Works and the Parks Department were merged into the Department of Parks and Public Infrastructure. One of the expectations with this merger was a consolidation of the two departments' property management functions to achieve efficiency and monetary savings. In June 2005, the Department of Audit issued a report at the direction of the County Board to determine the extent to which the merger was able to achieve projected savings and other operational efficiencies while maintaining previous performance. The report noted that the merger of the separate facility units took place in name only. Though the merger was ultimately dissolved, the audit noted that a consolidation or coordination of skilled trades and engineering services held promise for greater efficiencies.

- **File No. 07-71(a)(b)** – In September 2008, the Department of Audit and County Board Staff issued a joint memo analyzing a proposal to lease St. Michael's Hospital facility for use by the Behavioral Health Division. That memo included background that summarized the numerous inventory and assessment systems used by the County to track identified infrastructure deficiencies. The County has yet to consolidate the various systems used for inventorying,

assessing and maintaining all infrastructure assets as intended by County Board action (File No. 99-542).

- **File No. 10-052** – In December 2009, the Department of Audit issued a report on the status of the Parks' deteriorating infrastructure and alarming accumulated deferred repair and maintenance cost. The report called into question the reliability of reported deferred maintenance costs, concluding that a comprehensive, accurate and updated list of Parks infrastructure repair and maintenance needs was in order, and recommending a comprehensive assessment of current and future Parks developments, taking into consideration alternatives to reducing overall infrastructure costs.

Section 1: A consistently applied, coordinated approach for periodic building safety inspections is needed to address public safety concerns.

Milwaukee County does not have formal policies or procedures establishing general baseline requirements for the seven property management units responsible for repairing and maintaining County facilities.

Despite having hundreds of buildings used by County employees and the general public, Milwaukee County does not have formal policies or procedures establishing general baseline requirements for the seven property management (PM) units responsible for repairing and maintaining County facilities. Consequently, the different PM units use their own, informal approaches for assessing the condition of buildings in their charge. Absent the structure and consistency that formal, uniform policies could provide, we found little to no emphasis on building assessments. Further, we noted varying degrees of emphasis on building safety inspections by the different PM units.

As noted in the **Background** section of this report, the County has seven autonomously operated property management units that are responsible for repairing and maintaining buildings under their purview. With no overarching guidelines to follow, we found that no unit has approached its responsibilities in exactly the same manner.

Formal Assessments/Inspections

Of particular concern is the manner in which the PM units have addressed the need to formally assess the safety and condition of their buildings over the past several years. We asked each unit to provide us with copies of all assessments, inspection, evaluations, reviews, or similar analyses from 2001–10 for a sample of 34 buildings for which they were responsible. The results, summarized in **Exhibit 2**, suggest that little emphasis was placed on proactively identifying potential building safety issues. Of the 34 buildings in our sample, only seven had assessments of any kind outside those conducted as part of a

Countywide assessment program performed primarily from 2002–2007. Of those seven, only one was initiated by an PM unit.

Comprehensive Property Management System

Milwaukee County established the foundation for a comprehensive property management system in the mid-1990's.

Milwaukee County established the foundation for a comprehensive property management system in the mid-1990's. The intent was to create a Countywide inventory of all facilities and to assess their condition, thereby improving the ability to budget for current and future repair and maintenance (R&M) costs. According to Architectural, Engineering the Environmental Services (AE&ES) staff, the County purchased a property and building inventory software package from Vanderweil Facility Advisors (VFA) in the late 1990s. However, the amount paid for the package could not be readily identified. To avoid rising hardware and County internal support costs, DTPW modified its arrangement with VFA in 2001 to one in which the County paid annual licensing and usage fees.

The VFA system provides the means for documenting and tracking conditions with adverse public safety implications identified through building assessments.

The VFA system provides the means for documenting and tracking conditions with adverse public safety implications identified through building assessments. However, budgetary cutbacks, along with higher priority funding demands throughout the years, have curtailed the building assessment program, thereby significantly limiting VFA's effectiveness in documenting and monitoring building conditions. To date, the County has spent about $2.0 million for planned building assessments, plus an additional $519,000 for computer-related asset management software costs since 2001. This does not include computer-related costs for VFA prior to that time. The VFA system is addressed in further detail in **Section 2** of this report.

Property Management Unit Practices

The seven property management units play an important role in the manner in which safety and other building conditions are identified and subsequently repaired. From interviews with PM

unit managers and reviews of available policies and procedures manuals, we made the following observations concerning the manner in which building safety issues were identified and addressed during the normal course of operations:

In general, PM units lacked a formal, structured approach to inspecting buildings for conditions that could lead to potential safety issues.

- In general, PM units lacked a formal, structured approach to inspecting buildings for conditions that could lead to potential safety issues. Lacking formal structure, some PM units operate on a reactive, rather than proactive, basis in terms of identifying and addressing potential safety hazards. DHHS was unique in its use of building inspection checklists, and preventive maintenance checklists were used by MCTS for other plant assets such as buses and heating/air conditioning equipment.

- Funding plays a significant role in the number and frequency of formal building assessments. Each PM unit establishes priorities for facilities needs in the County's capital budgeting process, but competing interests for limited resources preclude achievement of all PM units' priorities.

  With limited resources, PM unit managers tend to focus their efforts on short term 'brick and mortar' repairs, rather than for needed, yet costly, professional service expenditures for building assessments. Such costs are generally linked to corresponding major maintenance or capital improvement expenditures. Only in rare instances are building assessment costs paid through operating budgets.

Generally, repair and maintenance issues come to light during the normal course of operations, such as phone calls or e-mails from County tenants, facility unit staff, or the general public.

- Generally, R&M issues come to light during the normal course of operations, such as phone calls or e-mails from County tenants, facility unit staff, or the general public. All property management units stated that identified safety issues received the highest priority for repair and maintenance work.

- Formal policies and procedures guiding operations vary widely and in some cases are non-existent.

- Affiliation with professional organizations can be very helpful in establishing policies and procedures designed to improve property management operations, and to keep current with best practices. Examples include the International Facility Management Association (IFMA), the Association for Facilities Engineering (AFE), and Building Owners and Mangers Association (BOMA). No PM unit reported a professional affiliation with such organizations, although DHHS stated it follows BOMA standards.

- PM managers generally consider formal assessments to be the responsibility of the Department of Transportation and Public Works Architecture and Environmental Services Section (AE&ES). Yet, according to AE&ES management, they only get involved with such activities when requested by the PM unit managers, and then only when funding is available. This disconnect symbolizes the importance of adequate coordination and funding for a service that is proactive in identifying safety and other facility deficiencies.

  From our sample, we identified only seven buildings that have been assessed outside of the VFA initiative. Four were for façade inspections performed in 2008 (December 2008 for Courthouse, City Campus and Community Correction Center). The others were a building assessment for the War Memorial Center (March 2002), initiated and paid for by the War Memorial Center; a roof assessment for Washington Park (September 2008) initiated by AE&ES; and an exterior wall assessment of the Marcia P. Coggs Center (May 2007) initiated by the PM unit that oversees that building.

  It should be noted that Parks has contracted for several inspections over the years for O'Donnell Park. However, this was in response to a known structural deficiency identified during construction of the facility. Inspections were needed to monitor problems with concrete pilings and cracks to ensure the problem was kept under control. Except for this known problem, as reported in our December 2009 audit of Parks infrastructure, the general 'preventive' maintenance policy for other Parks facilities is to repair something after it breaks.

  The significance of the driving force behind the O'Donnell Park assessments confirms the inconsistent approach to R&M through the use of building assessments practiced at the property management unit level. Specifically, it shows how infrequently buildings are proactively assessed, without the need for a specific driving force or occurrence to perform this needed task.

Façade Inspections

The County Board Chairman and County Executive ordered a general exterior inspection of County-owned buildings that had not received a façade inspection within the least five years.

In addition to this audit, on June 30, 2010, the County Board Chairman and County Executive ordered a general exterior inspection of County-owned buildings that had not received a façade inspection within the last five years. The City of Milwaukee has a façade inspection ordinance requiring periodic inspections that governs buildings five stories or higher. The County went beyond that requirement by performing its inspections for all 106 buildings over one story with masonry

exterior that had not had a façade or a building assessment within the last five years.

The firm of Graef, USA Inc. was retained to conduct the inspections. Separate reports for each location were issued, along with a final summary report, on September 22, 2010. The final summary report described how the work was generally organized and managed, with particular attention given to how potential hazardous situations to public safety were handled. It also provided budgetary cost estimates to repair all identified deficiencies.

A report identified more than $8.5 million in costs to repair building facades and other exterior deficiencies.

The report identified more than $8.5 million in costs to repair the facades and other exterior deficiencies. The costs were broken into two categories, depending on the urgency with which corrective action was recommended (see **Exhibit 3**). The cost of Priority 1 repairs, with action recommended within one year, totaled $3.4 million. The rest were considered Priority 2 maintenance items, with repairs recommended to be completed in the next two to three years.

The report concluded that none of the deficiencies posed an immediate threat to public safety or the structural integrity of the buildings.

Graef concluded that none of the deficiencies posed an immediate threat to public safety or the structural integrity of the buildings. In conducting the evaluations, 74 buildings were found to have few or minor deficiencies. The same conclusions ultimately were reached for the remaining 32 buildings, but only after additional investigations were conducted to determine the nature and severity of identified deficiencies. Potentially hazardous conditions were identified in 10 of the 32 cases, where the hazards were judged to potentially pose an immediate threat to public safety. The areas were barricaded until the hazards were removed, stabilized, or, after further examination, judged safe.

Although most of the deficiencies were considered minor in terms of public safety, the estimated cost of repairs was in some

instances substantial. In particular was the estimated $800,000 cost to re-caulk all faces of the Criminal Justice Facility. The report noted:

> "All building sealant joints should be replaced. Joints are, in general, showing aging and the control joints and corner quirk miter joints are failing. The sealant joint should be replaced and the previously repaired chipped precast panel corner should be checked at the ninth floor head level of the south elevation, east half, center narrow panel. It is recommended this work be completed within one year. In the event that funding cannot be obtained to replace all building sealant joints within one year, at a minimum, the control joints, corner quirk miter joints and any other failed joints must be replaced as recommended. The remaining deteriorated joints should be replaced within two years. This building should be visually evaluated every 5 years. Additional evaluations may be required based on the findings of future visual evaluations."

The Graef vice president in charge of the façade evaluations noted during a progress meeting that the cost of doing nothing would greatly exceed the cost of preventive maintenance if water is allowed to form behind the CJF panels.

Specific Building Safety Concerns

To address the safety conditions at County facilities, we contacted managers at 17 locations with a high volume of public traffic.

To address the safety conditions at County facilities, we contacted managers at 17 locations with a high volume of public traffic. At each location, we conducted interviews related to major building concerns, toured facilities and took photographs of buildings. We note that these visual inspections were conducted by auditors, not engineers, but several of our observations reflect a need for more thorough, professional inspections. Following is a list of 17 buildings visited.

- Charles Allis Art Museum
- Historical Society
- Marcus Center for the Performing Arts Center
- MCTS - Downtown Transit Center
- MCTS - Hillside Complex - Transit Administration Bldg.
- Milwaukee Art Museum
- Milwaukee Public Museum

- Parks Administration
- Kelly Senior Center
- Rose Senior Center
- Washington Park Senior Center
- Wilson Park Senior Center
- Villa Terrace Decorative Arts Museum & Gardens
- War Memorial Center
- Zoo - Education Center
- Zoo - Peck Welcome Center
- Zoo - Zoofari Conference Center/Maintenance Shop

Our concerns were varied, with some issues arising from the unique characteristics of the venues. For example, museums have special maintenance considerations, such as the need for temperature and humidity control to preserve precious artifacts, which go beyond those to ensure general public safety. Each of the conditions needs to be addressed to prevent further deterioration of the condition observed.

Milwaukee County Transit System (two buildings)

MCTS - Downtown Transit Center

Responsible PM Unit: Shared responsibility of MCTS and Parks.

Numerous building conditions were noted for the Downtown Transit Center, some potentially hazardous in nature to public safety. Conditions noted include:

- Visible cracks in exterior-facing concrete blocks.
- Rust from protruding metal bolts used in a previous façade reattachment completed 3-4 years ago.
- The ceiling in the garage area showed water damage.
- Spalling (cracking/flaking) of cement on the patio balcony directly above the pedestrian sidewalk has resulted in numerous loose concrete pieces that could easily fall off the balcony ledge.
- A three-story high block glass window has several cracked blocks.
- The restrooms on the first floor had sections held down with filament tape. Other sections of missing floor tiles were noted between the urinals that needs repairing.

- We noted holes in the sealant where pre-cast panels connected (this was also identified in the consultant façade inspection report).

- Exposed electrical wiring (not live wiring) in public waiting area.

- Rusted electrical and carbon monoxide boxes were noted in the garage area.

- A metal floor mat at the entrance of the building protrudes several inches when in use, creating a tripping hazard for the public.

- One exit lights burned out by main entrance.

- Rust throughout terrace railing system.

MCTS – Hillside Complex (Transit Administration Building):

Responsible PM Unit: MCTS

The exterior of the Transit Administration Building was in relatively good condition.

The exterior of the Transit Administration Building was in relatively good condition. Conditions needing to be addressed include:

- Loose metal ceiling tile located above the public entrance door requires securing.

- A window is missing from a bus shelter directly in front of the Hillside Building. According to MCTS, damage to bus shelters frequently occurs. Many bus shelters are leased to outside vendors for advertising purposes, who are responsible for repairing or replacing damaged shelters. In this particular case, the contractor is required to "within 4 hours of notice the contractor will remove, repair and /or replace shelter structures that have been damaged due to vandalism, accidents and acts of nature." It appeared that the window section had been missing for some time.

Senior Centers (four buildings)

Kelly Senior Center

Responsible PM Unit: Department on Aging contracts with a private vendor for routine maintenance of all the Senior Centers, with support from DTPW upon request.

According to staff, the Kelly Senior Center has problems with its foundation, causing uneven floors throughout the building, a

possible hazard to its elderly patrons and guests with walkers or other mobility aides. This calls into question the wisdom of a recently completed $217,181 restroom renovation for the center, instead of addressing the cause of this ongoing problem, or making decisions concerning the long-term viability of the structure.

Clinton Rose Park Senior Center

Conditions noted at Clinton Rose Senior Center include:

- Missing ceiling tiles in the rear entrance reveal light fixtures hanging, without proper support, from exposed wiring. (See **Exhibit 4-1**.)

- Broken concrete floor slabs at the main entrance create a potential tripping hazard. (See **Exhibit 4-2**).

- The center's dance floor was well worn, where we noted at least one loose parquet floor tile in a traffic area that had been secured by masking tape, creating a potential safety hazard.

- An interior sliding security gate designed to restrict access by rental groups and others to the area being used was not functional, resulting in possible increased vandalism.

- In the main dining room, we noted an unattached door that has been removed from its hinges, simply leaning in the doorway, creating a potential falling hazard.

Washington Park Senior Center

Conditions noted at Washington Park Senior Center include:

- Several indicators point to a significant potential safety hazard concerning the center's original overhead canopy structure covering entrance doors, including severe corrosion at the base of the poles supporting the canopy, and rotting wood at the top of the canopy. (See **Exhibit 5-1** & **5-2**.)

- The brick and mortar around the chimney area have become loose, capable of falling due to freezing and thawing conditions.

- The center is prone to rain damage during heavy rains. Because of ground settling, the pitch of the concrete around the center's north side does not allow for proper dispersal of heavy rainfall before reaching the building. Sandbags have been positioned in this area as a temporary fix. Mud jacking

is needed to bring concrete slabs to proper height to divert water away from the building.

- Rainwater also enters the building through the roof in several locations. We noted that curtains in the stage area were soaked with water, indicating a significant leakage problem that could pose a safety hazard for performers. (See **Exhibit 5-3**)

Wilson Park Senior Center

Conditions noted at Wilson Park Senior Center include:

- The center's hardboard exterior siding is susceptible to extreme swelling and buckling. The siding in some locations has warped to such an extent that portions of the siding, including the nails intended to secure the siding, has become detached from the building frame. (See **Exhibit 6-1**.)

- Water is leaking through the main hall window due to weather stripping and sealing problems. (See **Exhibit 6-2**.)

Museums (6 Buildings)

War Memorial Center

Responsible PM Unit: For each museum property, the lessee is responsible for routine maintenance, overseen by DTPW.

The War Memorial Center has a history of problems of moisture infiltrating the building.

The War Memorial Center has a history of problems of moisture infiltrating the building. This issue has caused problems not only with the building's prime tenant (War Memorial Center, Inc.), but also the adjoining Milwaukee Art Museum, which sub-leases space from the War Memorial Center for its collection. Problems noted include:

- Severely warped hardwood floors was noted in viewing areas subleased by the Art Museum for displaying artifacts, periodicals, books and paintings from its valuable collection. Some of the warped flooring has been nailed down to prevent reoccurrence. Other areas are so severe that they cannot be fixed by simply nailing them down, so the areas have been roped off to protect visitors from injury. This warping has occurred even though the Art Museum maintains a temperature and moisture controlled environment to protect its valuable collection of artifacts, periodicals, books and paintings from damage. (See **Exhibit 7-1**.)

- A large wall of thermal pane windows has damaged seals resulting in cloudy, foggy windows that allows cold air to enter the structure and cause condensation. Sunshades

installed and drawn to provide ultraviolet protection for the collection have exacerbated the moisture problem by preventing proper air movement against the windows. The resulting condensation dripping to the ground has resulted in slippery, wet floors that could be hazardous to visitors.

- Water pans are located in the ceiling rafters over the Art Museum's displayed collection to catch roof leaks.

- A capital project costing $31,428 was completed in April 2010 to restore offices, windows, carpeting, and walls ruined by excessive moisture. The moisture problems were again visible at the time of our visit only four months later, when we observed mold in carpets, blistered walls and paint chippings in the same office spaces. (See **Exhibit 7-2**.)

- The metal framework of the Birdcage Stairway, a glass enclosed structure, is rusting because moisture seeps through cracked, non-thermally insulated glass panes. Moisture forming on the metal steps during cold weather or rain also creates a hazardous conditions to the public. In fact, the Birdcage stairway is closed on days when ice forms from the condensation on the steps.

The issues relating to the War Memorial will be reviewed in greater detail in a more extensive audit directed by the County Board.

Villa Terrace Decorative Arts Museum & Gardens

Conditions noted at Villa Terrace include:

- Villa Terrace overlooks Lake Michigan and the Renaissance Garden, where wedding parties or other renters entertain guests. We noted the brick flooring on the east terrace and Mercury Courtyard had segments that were deteriorating, popping up and cracked. Accidents related to falls, slips, or trips could occur as a result of the uneven surface and loose bricks located on the terrace. (See **Exhibit 8-1.**)

- Villa Terrace's windows and doors are deteriorating to the point where they do not open or close properly. Staff noted that occasionally doors and windows will unexpectedly blow open, exposing the museum to weather conditions.

Charles Allis Art Museum

Conditions noted at Charles Allis Art Museum include:

- The Great Hall patio, used by wedding parties, receptions and other rental events, has missing, deteriorating, and cracked blue stone floor bricks, creating an uneven surface

and the potential for visitors to fall, slip or trip. According to a construction contractor, the type of bricks installed in the Great Hall patio was meant for a warmer climate and not conducive to Wisconsin's colder climate environment. (See **Exhibit 9-1**.)

- Loose roof and chimney bricks present a potential hazardous condition if the bricks would fall down on the public walking or standing underneath. (See **Exhibit 9-2**.)

- A second floor bedroom has significant water damage in one corner of the room, causing walls to decay and paint to peel.

Marcus Center for Performing Arts

We included the Marcus Center under the museum category due to its connection with the Milwaukee County War Memorial Center, Inc., an organization that consists of the War Memorial, Villa Terrace, Charles Allis Art Museum and the Marcus Center for the Performing Arts. Conditions related to the Marcus Center for the Performing Arts include:

- The ballet bar brackets on the west wall of the Ballet Room dance studio are loosely mounted, a condition that could cause injuries to dancers.

- The sidewalk patch work is scattered haphazardly throughout the Peck Pavilion and is not level because of the winter freeze and thaw conditions over the years. The open air Marcus Peck Pavilion space frame structure shows signs of corrosion and is in need of repair.

Historical Society

The Historical Society was closed to the public for the last three years and is in the process of undergoing a complete interior renovation.

The Historical Society was closed to the public for the last three years and is in the process of undergoing a complete interior renovation. The outside façade has ornate pillars, cornices and geometric motifs that has become a safety issue as a result of freezing and thawing conditions. We noted some evidence of scaling and cracking of the facade. The Historical Society is working with the County to determine responsibility for the cost of repairs.

Milwaukee Public Museum

Conditions noted at the Milwaukee Public Museum include:

- Moisture problems have caused parts of the building's marble façade to break off.

- Walls on the lower level of museum have severe surface deterioration near the lunchroom area. (See **Exhibit 10-1**.)

- Rain water enters the building from grates on the first floor and staff has placed black metal ceiling tiles to catch the rain and allow it to flow into buckets.

- Rain also enters the Pulicher Butterfly Wing where the staff has placed water socks on window displays to catch rainwater. (See **Exhibit 10-2**.)

- Storm window coverings installed in 1980 to limit water entering though windows are no longer working properly. Rain water continues to enter through some windows, at times traveling down inside walls to other floors. This was most notable in the taxidermy area.

Parks (one building)

Parks Administration Building

Conditions noted at the Parks Administration Building include:

- Slip-resistant stairway treads on the rear outside exit staircase are worn, creating a potential slipping hazard.

- Separate concrete stairs on the west side of the building are starting to crumble and chip. (See **Exhibit 11-1**.)

Zoo (3 Buildings)

Education Center

Responsible PM Unit: The Zoo is responsible for maintaining all Zoo buildings.

The Karen Peck Kartz Conservation Education Center officially opened to the public in 2005. The Education Center features eight classrooms, new computers and a "green roof" with environmentally friendly plantings. Because this building is only five years old, we observed only one potential safety issue. Chains designed to hold up florescent lightings and ceiling tiles had become unattached in some locations.

Peck Welcome Center

Conditions noted at the Peck Welcome Center include:

- Siding on the Animal Health Center has become detached in some locations.

- Segments of the hardwood floor have become warped due to moisture problems in the banquet halls, creating a tripping hazard. A new terrazzo floor that does not warp is planned for installation in 2011.

- The parking lot handicap ramp appears unsafe because of irregularity with patching asphalt on the ramp. Patch work could pose problems for people in wheelchairs or with other mobility difficulties.

Zoofari Conference Center:

Conditions noted at the Zoofari Conference Center include:

- Ceiling tiles in public areas appear to be on the verge of falling. (See **Exhibit 12-1**.)

- The main stage banister is not sturdy, posing a potential hazard to someone relying on it as a brace to prevent a fall.

Additional Perspective

While the $8.5 million cost estimate related to the façade evaluations is significant, it should be noted that this evaluation included fewer than 12% of all County buildings. Further, it was limited to only the buildings' exterior surfaces. Thus, it did not include fire suppression, elevators, electrical, foundations, floors, stairs, heating, ceilings, roofs or other building components. If similar results were found when more extensive and comprehensive reviews are performed, the potential repair costs could be substantial. These results can be attributed to some extent to the lack of routine building inspections and preventive maintenance by the County, which allows smaller problems to turn into much larger ones.

Conditions noted can be attributed to some extent to the lack of routine building inspections and preventive maintenance by the County.

A case in point is a condition identified during the façade review of the Downtown Transit Station. A broken metal fastener designed to keep a precast wall panel in place on the south wall allowed the panel to shift out from its fixed position to a point

where it could readily be seen during a visual inspection. In fact, the shift could be seen from internet Global Positioning System photos that appear to be more than two years old. Had this condition been allowed to go without repair, the potential existed for tragic consequences, as additional stress was placed on the remaining fasteners to keep the wall in place.

Conclusion

Our observations point to the need to incorporate routine physical inspections into an overall proactive approach to property management.

Our observations point to the need to incorporate routine physical inspections into an overall proactive approach to property management. Together with periodic facility assessments, inspections and evaluations, and scheduled preventive maintenance practices, a proactive regimen can help keep small problems from becoming large, expensive ones, and in the process extend the useful life of County buildings. More importantly, a proactive approach can help mitigate safety-related problems by identifying them before they become serious safety hazards.

We concur with the initiative in the County Executive's 2011 Recommended County Budget to complete the formal building assessment program begun in 1996, but which has been on hold since 2007. However, an action plan is also needed for ongoing, planned building assessments once all buildings have been initially assessed.

We recommend that DTPW:

1. *Draft a policy, for County Board consideration, establishing minimum standards for assessing, inspecting and maintaining proper building conditions.*

2. *Request sufficient funding to perform proactive, cyclical assessments and inspections of County-owned infrastructure assets.*

3. *Draft a framework for consolidating all property management functions within DTPW to ensure focused, streamlined building management in a manner that ensures the safety of the public and County employees.*

Section 2: Milwaukee County's inventory and assessment program needs to be used as intended to document assessment results and corrective action.

Milwaukee County has not followed through with a comprehensive program initiated in the mid-1990's for assessing the condition of County buildings and structures.

Section 1 noted the lack of a Countywide program for ensuring that County facilities are safe. In this section, we address the detailed systems that are needed to implement a building safety program. Milwaukee County has not followed through with a comprehensive program for assessing the condition of County buildings and structures. Started in the mid-1990's, the intent was to create a Countywide inventory of all facilities and to assess their condition, thereby improving the ability to budget for current and future repair and maintenance costs. However, budgetary cutbacks, along with higher priority funding demands throughout the years, have significantly limited the program's effectiveness. As a result, many of the program benefits expected from the County's significant investment in building assessments and the related property management system, have not been realized.

Problems we noted are summarized below and detailed in the remainder of this section:

- The County has no formal policy or procedures addressing the frequency or the manner by which the condition of County facilities need to be assessed. This is important to reduce potential threats to public and employee safety. Internal practices vary as to emphasis and level of scrutiny placed on this activity within the seven property management units that operate autonomously in the County.

- Staff at DPTW have been working off of a master list of 521 buildings listed in VFA to be formally assessed. Only 66% of the 521 buildings have been reviewed as of October 2010. Included in the 34% not assessed are all buildings at the Airport and County Correctional Facility-South, and about two-thirds of the Parks buildings. Also not assessed are the Children's Court Center, Child and Adolescent Treatment Center, Museum, War Memorial Center and Marcus Center for the Performing Arts.

- Many of the facilities assessed initially have not been re-assessed since. Examples include the Courthouse Complex, Zoo and MCTS, which have not been assessed since 2002.

- Significant improvement is needed in the process for recording and updating noted building deficiencies into the County's web-based property management system purchased in the late 1990s from VFA, Inc. To put this into perspective, VFA lists 5,612 deficiencies as open, as compared to 316 as closed.

History of VFA

The **Background** section of this report provides greater detail highlighting the County's directives and plans to identify all County buildings and structures, and then to assess their condition to improve the County's capital and major maintenance planning ability. Building assessments began in 1996 with the Courthouse Complex. Further assessments were delayed until late 1999, as efforts were directed in 1997-1999 toward creating computer drawings (AutoCAD) of County facilities. AutoCAD drawings provide easy retrieval of building specifications critical for future repair, modification, renovation or retrofitting work on a building.

Building assessments began in earnest in late 1999. Over $2 million was spent on assessing buildings and AutoCAD drawings from 1996 through 2007.

Building assessments began in earnest in late 1999. Reports by DTPW to the Committee on Transportation, Public Works and Transit indicate over $2 million was spent on assessing buildings ($1.7M) and AutoCAD drawings ($319,000) from 1996 through June 2007. However, only limited scope assessments directed to specific concerns have been performed since that time.

In addition, staff cuts have impacted VFA's usefulness for assessments that have been completed. According to AE&ES, a staff of nine has been reduced to one. As a result, the results of some completed assessments have not been entered into VFA, compromising the timeliness and completeness of the data contained in it. For example, the results of an assessment of the Washington Park roof in September 2008 has not been recorded in VFA.

O'Donnell Park Parking Structure

Example of Systemic VFA Problems

Few County structures have received the attention directed toward the O'Donnell Park parking structure since the tragic accident in June 2010. Shortly after the accident, public scrutiny was directed toward deficiencies recorded in the County's VFA asset management system, along with subsequent corrective action by the Parks Department to address them.

As of late June 2010, information recorded in VFA showed 33 open maintenance items for the O'Donnell Park Parking structure requiring corrective action, with an estimated repair cost of $590,238. VFA had them categorized from a priority standpoint as follows:

1 – Currently Critical (7 deficiencies)	$143,184
2 – Potentially Critical (10 deficiencies)	$159,156
3 – Necessary Not Yet Critical (10 deficiencies)	$214,258
4 – Recommended (5 deficiencies)	$68,184
5 – Does Not Meet Codes or Standards (1 deficiency)	5,456
Total Estimated Repair Cost (33 items)	**$590,238**

Our review of documentation provided by Parks to address O'Donnell Park parking structure deficiencies brought to light several problems concerning date maintained in VFA.

Our review of documentation provided by Parks to address O'Donnell Park parking structure deficiencies brought to light several problems concerning data maintained in VFA.

Of the 33 open deficiencies listed in VFA related to O'Donnell Park, all but one associated with an assessment performed in 2005. According to a memo from the Parks Director to the County Executive's Chief of Staff dated June 25, 2010, each of the open deficiencies listed in VFA have been addressed. Some have been repaired, while others have been addressed by ongoing maintenance and/or inspection.

We reviewed the support for 10 of the 27 deficiencies categorized as either currently critical, potentially critical, or

necessary but not yet critical. The associated estimated repair cost noted by VFA for the items we reviewed represented almost two-thirds of the $590,238 total estimated repair cost. Our review resulted in the following issues being noted:

- In five of the 10 deficiencies, Parks either followed the action recommended by the assessment team or pursued an acceptable alternative course of action to address the deficiency. This includes items that may not ever be considered completed or closed due to the nature of the problem. For example, Parks routinely hires a T&M contractor to repair aging expansion joints. Similarly, due to poor construction and design, problems related to cracks, leaks and corrosion will likely always be present, thus requiring ongoing repair work. Leaks in particular have been an ongoing concern. We observed numerous instances where pipes had failed and water was draining to parts of the structure that were not intended to be exposed to water. Parks agrees that until all drainage systems are redesigned and rebuilt, related deficiencies cannot be considered closed.

- In four of the 10 deficiencies, Parks did not agree with the conclusions reached by the VFA assessment team. For example, two overhead roll-down fire doors are located at the upper and lower elevator lobbies in the parking structure. During the emergency generator test, the roll-down fire doors came down in both of these lobbies due to the eight-second interruption of power to the fire alarm system. The doors are controlled by the lobby smoke detector. The two elevator lobbies are used heavily by employees and the public entering the Miller Pavilion. According to the assessment team, anyone who would be beneath the roll-down doors when activated by smoke or power interruption risks a potential for serious injury. The assessment team recommended that the roll down fire doors be replaced with the fire rated double doors with magnetic hold open devices.

  However, according to documentation provided by Parks, the existing fire doors are certified as in compliance with City of Milwaukee fire code. Also, the doors are inspected by an outside vendor that annually performs a rolling fire door inspection and drop test.

- No specific action was taken on one deficiency related to rusting of exterior metalwork. The VFA assessment team noted that painted metalwork, including handrails and guardrails, were showing signs of rusting, some severely. As a result, the rust is staining the adjacent concrete. Parks staff noted that the handrails and guardrails had just been repainted in 2003 and 2004, just a year or two prior to the VFA assessment team inspection. They further noted this is

a Priority 3 item that has been put on hold while the long-term viability of the O'Donnell Park structure is determined.

The VFA system information related to the status of deficiencies is not accurate.

These results brought to light two concerns related to VFA and the manner in which assessment results are handled. In the five deficiencies where recommended or alternative action was taken, such action was not entered into VFA. The impact on VFA , discussed in detail later in this section, is that the system information related to the status of deficiencies is not accurate.

In the five instances where Parks has not agreed with the assessment team's findings and conclusions, VFA does not indicate such disagreement. It should be noted that AE&ES staff, which generally initiates the assessments and coordinates assessment team activity, indicated that assessment results are generally discussed with the applicable PM unit upon completion of the field work. However, one other PM unit reported not being informed of the assessment team findings until after the deficiencies had been entered into VFA.

Current Status of O'Donnell Park Repair & Maintenance Costs

While VFA does not provide current information concerning the status of the O'Donnell Park Parking Structure, a recent consultant's report by INSPEC identified $1.9 million in needed maintenance repairs for the O'Donnell Park parking structure, as shown in **Table 1.**

Table 1
Current Estimated Repair & Maintenance Costs
For O'Donnell Park Parking Structure

Item	Cost
Repairs:	
Crack Monitoring	$21,120
Epoxy Injection	17,220
Epoxy Sealant	15,000
Repair Drain Leaders	25,600
Repair Spalls	4,800
Repair Expansion Joints	17,950
Repair Handrails	19,100
Replace Sealant	2,100
Repair Water Infiltration Source	100,000
Replace Landscaping & Paving	50,400
Subtotal for Repairs	$273,290
Contractor's Overhead & Profit	$50,442
Total Repair Cost	**$323,732**
Maintenance:	
Reseal Parking Deck	$1,500,000
General Maintenance	$ 120,000
Total Maintenance Cost	**$1,620,000**
Total Repair & Maintenance Cost	**$1,943,732**

Source: INSPEC report dated August 26, 2010.

The value of VFA in managing buildings is dependent upon keeping VFA current, accurate and complete.

Based on our review of O'Donnell it is clear that the value of VFA in managing buildings is dependent upon keeping VFA current, accurate and complete. Not only is it important to conduct periodic assessments to identify deficiencies, but also to perform the required work and record the results into VFA to give the complete repair and maintenance history of a building.

Integration of VFA with County Work Order Systems

The review of support for corrective action of O'Donnell Park deficiencies served to highlight an important feature of VFA that is not being used. Each of the seven property management units manage and record their R&M work via a work order system. Though none of the property management units use the same system, they each have similar functionality.

However, none of the work order systems are linked to VFA. Thus, work order data related to any deficiency has to be

Work order data related to any deficiency has to be manually entered into VFA. This has not been done by any of the PM units.

manually entered into VFA by the property management unit staff to provide a complete picture of the identified deficiency and the resulting corrective action. This has not been done by any of the PM units.

According to AE&ES staff, the original intent was for each PM unit to update VFA with the work done to address each deficiency. According to property management unit staff we interviewed, training on the use of VFA was provided in the early stages of the County's building assessment program. However, the training was never put into constructive operational use. This is confirmed by information contained in VFA, which shows that the only status updates were done by AE&ES staff.

In fact, with little or no use of the licenses by staff outside of AE&ES, at least five licenses costing the County $4,450 per year have been canceled over the years as a cost-saving measure. Currently, only six licenses remain active. Currently, PM staff at MCTS, DHHS and DTPW-Facilities Management does not have the ability to update VFA. Neither does staff at the Airport or County Correctional Facility-South, though it is not essential at this time since those facilities have not yet been assessed.

As a result, the information contained in VFA cannot be considered reliable. This lack of integration with work order systems partially explains why VFA currently shows such a high percentage of open deficiencies. From a VFA system standpoint, the status for an unknown number of corrected deficiencies should have been changed from 'open' to 'closed,' assuming the corrective action was sufficient and properly supported. **Table 2** summarizes the current status of all deficiencies that have been entered into VFA.

Table 2
Comparison of
Open vs. Closed Deficiencies in VFA
As of October 2010

	Open Deficiencies		Closed Deficiencies	
	No.	Amount	No.	Amount
1 – Currently Critical	1,000	$21,739,392	63	$3,355,011
2 – Potentially Critical	1,990	75,924,802	115	6,298,025
3 – Necessary Not Yet Critical	1,074	48,565,068	73	1,935,293
4 – Recommended	996	22,384,368	50	1,497,339
5 – Does Not Meet Codes/Standards	549	24,429,676	16	504,940
Total Estimated Repair Cost	**5,609**	**$193,043,306**	**317**	**$13,590,608**
Percent to Total	**94.7%**	**93.4%**	**5.3%**	**6.6%**

Note: This data in this table represents only buildings and pool deficiencies. Our December 2009 audit of Parks infrastructure identified over $200 million in deferred maintenance in just the Parks Department.

Source: Audit Department analysis of VFA data as of September 2010

As this shows, the vast majority of deficiencies remain open. This is of particular concern given that nearly 23% were considered a Priority 1 (Currently Critical) at the time of the assessment. By definition, the category of "Currently Critical" includes the following conditions that require immediate action to:

a. correct a cited life safety hazard
b. correct ADA barrier free accessibility
c. stop accelerated deterioration
d. return a facility to operation

VFA does not further break out the Priority 1 – Currently Critical deficiencies into these specific subgroups. It does, however, group all deficiencies into a number of categories, one of which is "Life Safety." **Table 3** shows the breakout of all deficiencies into the various categories.

Table 3
Summary of Open Deficiencies
By Category

Category	No. of Deficiencies	Amount	% of Total
Integrity	1,904	$90,616,895	46.9%
Code Compliance	1,014	$22,718,126	11.7%
Functionality	427	$20,175,234	10.5%
Accessibility	549	$14,609,078	7.6%
Energy	255	$13,833,057	7.2%
Beyond Useful Life	183	$12,907,733	6.7%
Life Safety	**472**	**$5,482,920**	**2.8%**
Appearance	117	$2,778,997	1.4%
Air & Water Quality	57	$2,269,459	1.2%
Reliability	103	$2,202,144	1.1%
Environmental	153	$1,838,786	1.0%
10 Other Categories (each < 1%)	375	$3,610,877	1.9%
All Open Deficiencies	**5,609**	**$193,043,306**	**100.0%**

Source: Audit Department analysis of VFA data as of September 2010

Thus, according to the data in VFA, there are 472 life safety deficiencies with an estimated cost of almost $5.5 million that have not been addressed by some type of corrective action. Of these, 308 deficiencies with an estimated cost of about $3.9 million were categorized as Priority 1 – Currently Critical. As such, the recommended action date to address the deficiency is generally within a year of the assessment. For this subset of 308 deficiencies, the action dates ranged from June 2003 to March 2008.

We examined a random sample of 20 items in this subset to determine the current status of each deficiency. The estimated cost of corrective action listed in VFA for these 20 items ranged from a low of $27 (expired fire extinguisher) to $109,000 (replacement of external doors necessary to prevent animal escape and staff injury at the Zoo). **Table 4** shows the current status of the 20 items reviewed.

Table 4
Current Status of 20 Items
Listed as Life/Safety Priority 1
Deficiencies in County VFA System

Current Status	No.	Estimated Action Cost
Item Closed—Corrective Action	9	$127,984
Item Closed—Original Assessment Disputed	7	116,948
Item Open—No Action	2	2,824
Item Open—Possible Action but No Documentation	2	8,942
Total	**20**	**$256,698**

Source: Milwaukee County VFA system and Dept. of Audit observation/verification.

As shown in **Table 4**, 16 items in our sample of 20 open items were in fact closed, either due to corrective action (nine) or as a result of the department disputing the validity of the original assessment (seven). Of the 4 items remaining open, two were not addressed and two were potentially addressed, but no documents could be located to verify corrective action.

According to AE&ES, deficiencies that have been closed in the VFA system were done so by AE&ES staff after reviewing the status with affected PM unit management. However, the practice of following up on corrective action taken has been sporadic. Nor did the reviews result in actual cost data or other fields related to the corrective action taken being updated.

The practice of not entering corrective action data into VFA can be problematic in other ways. According to Parks management, it took several days to identify what specific corrective action had been taken to address the O'Donnell Park deficiencies. This task could have been mitigated or perhaps entirely avoided if

work order data related to specific deficiencies had been entered into VFA.

Inaccurate Cost Estimates

Not updating VFA also negatively impacts cost estimates generated by the system.

Not updating VFA also negatively impacts cost estimates generated by the system. VFA includes a component that estimates the cost to correct cited safety and maintenance deficiencies, using a database of material costs and hourly labor rates for specific trades positions. This function also has a program that accounts for inflation and annual increases to established labor rates.

To illustrate, the system estimated it would cost $590,238 to repair all 33 O'Donnell Park deficiencies when a report was run in June 2010. The amount reported by VFA increased to $635,154 when the same report was run two months later, on September 20, 2010.

Over the span of many years, the impact on cost estimates can render meaningless cost projections that include large cost deficiencies that may have been corrected years ago. Depending on the number of large cost deficiencies from as far back as 2002 that have been corrected, the effect on the current estimates of $193 million to repair all open deficiencies noted VFA can negatively impact confidence in reports generated, and compromise its ability to be used for management and budget purposes.

An important feature of VFA is its ability to maintain a detailed historical record of safety and maintenance problems identified with a particular building and the subsequent corrective action.

An important feature of VFA is its ability to maintain a detailed historical record of safety and maintenance problems identified with a particular building and the subsequent corrective action. This fundamental feature provides an important chronology of ongoing maintenance and repair of buildings, or of any other asset maintained in VFA. It becomes a building block for future management decisions related to the building or asset. For example, a series of similar maintenance issues over time may

indicate a need for a major renovation rather than to continue costly repairs that will likely need to be repeated in the future.

Without complete, up-to-date, accurate information on repair work performed, VFA is an underutilized management tool that provides no assurance that high priority deficiencies, especially those related to public safety, have been resolved.

Without complete, up-to date, accurate information on repair work performed, VFA is an underutilized management tool that provides no assurance that high priority deficiencies, especially those related to public safety, have been resolved.

VFA software contains many fields that, if completed, could provide important, easy-to-access management data on a Countywide basis. Integrating VFA with the work order systems in use by the individual property management units could provide Countywide data for analysis, though it is uncertain at this point the extent to which each of the current work order systems could be interfaced. Whether automatically or manually updated, an updated VFA could provide an assortment of meaningful, relevant data relating to each building's condition. Conversely, the data currently provided by VFA related to building deficiencies for the most part is incomplete, dated and as a result, inaccurate.

If the system is to operate as intended, it is important for corrective action taken by the County to timely update VFA data.

We recommend that DTPW:

4. *Establish a protocol that ensures that data concerning repair and maintenance work completed to address identified deficiencies are input into VFA, and that completed work be archived as appropriate.*

5. *Ensure that assessment results are discussed with PM units prior to entering the data into VFA. If disagreement exists, establish a procedure for arbitrating the disagreement, and for subsequently identifying such deficiencies within VFA.*

6. *Require PM units to review all open deficiencies and update VFA to reflect their proper status, with emphasis directed toward Priority 1, Life Safety deficiencies initially.*

Section 3: The County needs to establish and commit to a comprehensive property management system.

Sections 1 and **2** of this report discussed the need for Milwaukee County to formalize a consistent, structured approach for building inspections, and to make more effective use of an existing system for documenting infrastructure deficiencies and corrective actions.

The County's five-year capital planning process forces each PM unit to prioritize its facilities needs. However, competing interests for limited funds often mean that items identified as a repair and maintenance need may not be funded.

This is not to say that Milwaukee County has no process in place to prioritize infrastructure needs. DTPW management correctly notes that the County's five-year capital planning process forces each PM unit to prioritize its facilities needs. However, competing interests for limited funds, along with special restrictions that accompany some funding sources (e.g., federal transit funding is restricted from use for purposes other than transportation) often mean that items identified as a repair and maintenance need may not be funded. This reality only magnifies the importance of having an effective system in place to identify and prioritize infrastructure deficiencies that have immediate public safety implications.

The County has made a sizable investment in its infrastructure, especially in recent years.

The County has made a sizable investment in its infrastructure, especially in recent years. As pointed out in the highlights of the County Executive's 2011 Recommended Budget, Milwaukee County has spent and budgeted more than $936 million on infrastructure maintenance and improvements since 2003. The breakdown of this amount is shown in **Table 5**.

Table 5
Milwaukee County Infrastructure
Maintenance and Improvement Expenditures
2003—2010

From Capital Budgets:		
2003 – 2009 (actual):	$470,915,175	
2010 (budget)	420,241,578	$891,156,753
From Operating Budgets:		
2003 – 2009 (actual):	$37,601,640	
2010 (budget)	7,714,545	$45,316,185
Total		**$936,472,938**

Source: Milwaukee County Executive's 2011 Recommended Budget.

Over 62% of the $891.2 million in capital budget expenditures from 2003–2010 are from the two most recent years, with nearly half coming from 2010.

Capital Budgets

Over 62% of the $891.2 in million capital budget expenditures from 2003–2010 are from the two most recent years, with nearly half coming from 2010 alone. This is due primarily to the County accelerating its Five-Year Capital Improvements Plan to take advantage of favorable municipal bond market conditions resulting from the federal government's 2009 economic stimulus plan. Bonds for this program need to be issued by January 1, 2011.

It is important to note, however, that the majority of these expenditures were not related to maintaining the safety of County buildings. A review of the Capital Improvement budgets over this period showed that about $107 million, or 12%, was for expenditures that could be considered related to buildings, with even less attributable to maintenance and safety of those structures.

For example, a look at the top 15 projects included in the $891 million in capital expenditures from 2003 through 2010 shows that only about 6% of the expenditures were for items that are related

to buildings and could conceivably include building maintenance. This information is presented in **Table 6**.

Table 6
Total Capital Projects
2003—2009

Description	Total Expenditures 2003--2010	Percent of Total
Runway Safety Area - NEPA Compliance	$71,371,763	17.2%
Fleet Equipment Acquisition	$51,068,277	12.3%
Bus Replacement Program	$46,257,706	11.2%
GMIA - In-Line Baggage	$40,278,168	9.7%
GMIA, Phase I Noise Mitigation Program	$37,945,467	9.2%
Reconsruct Hampton Avenue Hwy 100 to 124th	$30,856,143	7.5%
GMIA*, Phase II Noise Mitigation Program	$27,752,600	6.7%
D Concourse Improvements	$18,628,453	4.5%
GMIA - Snow Equipment Storage Building	$13,602,000	3.3%
Bus Replacement - Neoplan and Gillig	$13,517,868	3.3%
W. Good Hope Rd. Little Menomonee to N. 91st	$12,853,428	3.1%
W. Oaklahoma Ave. over Honey Creek	$12,710,756	3.1%
Behavioral Health Facility	$12,596,494	3.0%
West Rawson Avenue 6th to Ash	$12,585,693	3.0%
West Mill Road Construction	$12,027,961	2.9%
	$414,052,775	100.0%

*General Mitchell International Airport

Source: Milwaukee County Advantage system.

Operating Budgets

Our review of operating accounts for major repair and maintenance expenditures over the same period largely agrees with the figures included in the County Executive's 2011 Recommended Budget highlights. However, we removed certain accounts, such a those for land acquisition, and added others, such as those for repair and maintenance of buildings that were contained in operating accounts other than those classified in the 'major maintenance' series. Thus, our total for the period 2003 through 2010 is about $52 million, compared to the $45 million highlighted in the proposed 2011 budget. **Table 7** shows the results of that review.

Table 7
Milwaukee County
Major Repair & Maintenance Expenditures
from Operating Budgets
2003—2010

Account Description	2003	2004	2005	2006	2007	2008	2009	2010	Total
Prof Service -Cap/Major Mtce	$147,691	$107,430	$76,869	$1,619,953	$1,654,156	$714,671	$19,215	$92,532	$4,432,517
R/M - Bldg and Structures	$1,565,088	$1,617,702	$2,593,768	$2,517,280	$3,093,745	$3,133,521	$3,092,137	$3,357,267	$20,970,508
R/M - Grounds	$421,163	$290,104	$272,391	$338,295	$444,001	$817,780	$773,956	$1,013,697	$4,371,387
R/M - Storm Sewer Lines	$0	$298	$4,770	$0	$0	$0	$4,587	$0	$9,655
R/M - Water Lines	$0	$115	$554	$0	$0	$0	$16,271	$2,402	$19,342
R/M - Street, Parkway, Walks, Other	$150,444	$106,519	$37,455	$39,701	$49,212	$92,914	$125,755	$83,244	$685,244
Other Repair and Maintenance	$90,244	$108,048	$183,204	$153,157	$102,049	$93,282	$117,358	$159,459	$1,006,801
Major Maintenance Building	$1,177,657	$907,052	$1,340,400	$1,519,709	$1,321,107	$1,438,270	$1,359,777	$2,482,186	$11,546,158
Major Mtce - Land Improvements	$621,758	$521,405	$702,572	$1,077,020	$452,627	$534,086	$573,606	$1,473,060	$5,956,134
Major Maintenance - Equipment	$0	$0	$0	$0	$0	$0	$101,994	$10,200	$112,194
Other Capital Outlay	$243,383	$238,543	$248,421	$259,646	$486,887	$853,748	$212,429	$517,515	$3,060,572
	$4,417,428	$3,897,216	$5,460,404	$7,524,761	$7,603,784	$7,678,272	$6,397,085	$9,191,562	$52,170,512
% Change from Prior Year		-11.8%	40.1%	37.8%	1.1%	1.0%	-16.7%	43.7%	

*2010 is budgeted expenditures. All other years are actual expenditures.

Source: Milwaukee County Advantage system.

Repair and maintenance expenditures in operating budgets generally increased during the period 2003 through 2008, with a substantial increase in 2010.

As shown in **Table 7**, repair and maintenance expenditures in operating budgets generally increased during the period 2003 through 2008, with a significant decrease (16.7%) in 2009. Expenditures in these categories in the 2010 budget are expected to increase by 43.7% over the previous year,

Conclusions

The first two sections of this report identified Milwaukee County's lack of a comprehensive plan of assessments, inspections and preventive maintenance supported by a system that accurately inventories, prioritizes and documents completed work. Although the VFA system provides a sound foundation from which to move forward, it is not updated and used to its potential, and integration

with a work order system to properly document and update ongoing repairs and maintenance is needed.

In discussing this matter with DTPW staff, it was suggested that integration of these systems might best be achieved through an enterprise system such as GIS (Geographic Information System). The County participates in a public-private consortium (the Milwaukee County Automated Mapping and Land Information System, or MCAMLIS) that utilizes that software to provide an automated mapping base of the County for multiple purposes.

Lacking an effective, comprehensive plan for property management, the County's expenditures for infrastructure R&M is difficult to readily quantify, much less evaluate for effectiveness.

To improve its ability to plan and budget proper R&M resources, we recommend DPTW:

7. Develop a strategy and timetable for using existing systems in the County, and/or other available systems, to achieve a comprehensive property management system to become fully operational for preparation of the 2013 County Budget.

Exhibit 1

Audit Scope

In accordance with the directive of the County Board Chairman, the objective of this audit is to conduct an audit of maintenance all across Milwaukee County facility operations to determine if there are any issues that may impact the health and safety of our citizens and visitors. We conducted this performance audit in accordance with generally accepted government auditing standards. 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.

We limited our review to the areas specified in this Scope Section. During the course of the audit, we:

- Interviewed staff from six property management units responsible for repairing and maintaining County facilities to gain an understanding of the practices and procedures used to identify R&M issues, resolve the problems, and maintain a record of R&M activity performed. We extended these interviews to include outside agencies using County facilities under contract with Milwaukee County, such as the Milwaukee Public Museum, War Memorial, Villa Terrace, etc.

- Collected data on all formal assessments since 2001 on a sample of 40 County buildings.

- Reviewed facility assessment data contained in the County's computerized asset management system (VFA), along with the process by which data is entered and maintained by the DPTW – AE&ES staff.

- Determined the extent to which property management unit staffs interact with VFA in the normal course of operations.

- Analyzed capital and operating cost data on the amount spent by Milwaukee County in repairing and maintaining County facilities from 2003 – 2010, including facility unit staff directly involved with R&M tasks.

- Reviewed documentation relating to expenditures to address repair and maintenance items listed in VFA for the O'Donnell Park parking structure.

- Conducted research to identify performance measures and best practices relating to building repair and maintenance.

Facilities Sampled for
Condition Assessments
2001 - 2010

Exhibit 2

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Department on Aging:										
Rose Park Senior Center		**VFA** [4]								
Washington Park Senior Center					**Note 1**					
Wilson Park Senior Center		**VFA** [4]								
Airport:										
Airport - Concourse C										
Airport - Concourse D										
Airport - Concourse E										
Airport - Main Terminal Building										
Airport - Parking Structure & Addition										
Airport - Timmerman Field Admin. Building										
DPTW - Facilities Management:										
Children's Adolescent Treatment Center										
City Campus Building	**VFA**							**Note 2**		
Community Correction Center		**VFA**			**VFA**			**Note 2**		
Courthouse Complex		**VFA**						**Note 2**		
Safety Building		**VFA**						**Note 2**		
Medical Examiner		**VFA**								
Research Park - Technology Innovation Ctr.										
Vel Phillips Juvenile Justice Center										
DHHS:										
Marcia P. Coggs Human Service Center							**Note 1**			
MCTS:										
MCTS - Downtown Transit Center		**VFA** [1]								
MCTS - Transit Administration Building	**VFA**									
Parks:										
Mitchell Park Conservatory (Domes)				**VFA**						
O'Donnell Park Parking Structure		**VFA**				**VFA**	**Note 3**			
Parks Administration										
Lake Park Bistro										
Wehr Nature Center										
Zoo:										
Zoo - Education Center										
Zoo - Peck Welcome Center		**VFA**								
Zoo - Zoofari Conference Center		**VFA**								
Others:										
Charles Allis Art Museum			**VFA**							
Historical Society			**VFA**							
Milwaukee Public Museum										
Marcus Center for the Performing Arts										
Villa Terrace			**VFA**							
War Memorial		**Note 1**								

VFA - Assessments performed as part of the ongoing program to assess County buildings.

Note 1 - Assessments done outside of the VFA-initiated assessments.

Note 2 - The facades of these buildings were inspected to comply with City of Milwaukee Code

Note 3 - O'Donnell Park has been subject to ongoing inspections related to initial construction problems.

Note 4 - It appears the assessments for these buildings were performed in 2000, but data in VFA indicates 2002.

Source: Reports provided by DTPW and applicable facility management units.

Exhibit 3

Summary of Estimated Repair Costs for 106 Buildings Evaluated

Building	Estimated Repair Costs Priority 1	Priority 2	Total
Airport:			
GMIA Main Terminal (Landside)	$5,000	$341,000	$346,000
GMIA Concourse D	$304,000	$2,000	$306,000
GMIA Parking Structure	$32,000	$157,000	$189,000
Timmerman Terminal	$0	$136,000	$136,000
Timmerman Tower	$60,000	$49,000	$109,000
GMIA Frontier Food Service	$36,000	$30,000	$66,000
GMIA Main Terminal Building (Airside)	$15,000	$35,000	$50,000
GMIA Administration Building (Airside)	$5,000	$32,000	$37,000
GMIA Combined Maintenance	$13,000	$8,000	$21,000
GMIA Administration Building (Landside)	$0	$20,000	$20,000
GMIA Boiler House	$0	$20,000	$20,000
GMIA Int'l Arrivals Terminal (Landside)	$0	$20,000	$20,000
GMIA Concourse C	$7,000	$8,000	$15,000
GMIA Concourse E	$11,000	$0	$11,000
GMIA Maintenance Shed	$0	$10,000	$10,000
GMIA Maintenance Storage/ Air Cargo	$1,000	$5,000	$6,000
GMIA Crash and Fire Rescue Station	$0	$5,000	$5,000
GMIA Int'l Arrivals Terminal (Airside)	$1,000	$3,000	$4,000
GMIA Fertilizer Storage	$0	$0	$0
BHD:			
CATC	$0	$67,000	$67,000
Research Park			
M-01 Technology Innovation Center	$23,000	$31,000	$54,000
CCC:			
Juvenile Justice	$30,000	$135,000	$165,000
Courthouse Complex			
Safety Building	$512,000	$1,250,000	$1,762,000
Criminal Justice Facility	$818,000	$149,000	$967,000
Criminal Justice-South			
HOC Dormitory Building & Boiler House	$11,000	$40,000	$51,000
HOC Dairy Barn & Silos	$10,000	$18,000	$28,000
HOC Administration/600 & 400 Bed Dorm Addition	$0	$20,000	$20,000
HOC Surges Multi-Purpose Building	$0	$19,000	$19,000
HOC Recycling Building (Hog House #2)	$0	$18,000	$18,000
HOC Garage & Print Shop	$0	$10,000	$10,000
HOC Cold Storage Building (Slaughter House)	$1,000	$8,000	$9,000
HOC Creamery & Office	$0	$7,000	$7,000
HOC Kennel	$0	$5,000	$5,000
HOC Property Storage Building	$0	$5,000	$5,000
HOC Training Academy	$0	$3,000	$3,000
HOC Lotter Dormitory Building	$0	$2,000	$2,000
HOC Industrial Building, Lotter Annex	$0	$0	$0
DHHS:			
Marcia P. Coggs Human Services Center	$3,000	$44,000	$47,000

Exhibit 3

Summary of Estimated Repair Costs for 106 Buildings Evaluated

Building	Estimated Repair Costs Priority 1	Priority 2	Total
Senior Centers:			
Washington Park Senior Center	$130,000	$12,000	$142,000
Rose Park Senior Center	$0	$16,000	$16,000
Historical Museums:			
Trimborn Farm	$5,000	$40,000	$45,000
MCTS:			
Downtown Transit Station	$221,000	$100,000	$321,000
Fond Du Lac - Bus Storage Building A,B,C,D,E	$12,000	$115,000	$127,000
Fond Du Lac - Bus Storage Building F	$20,000	$85,000	$105,000
KK Complex - Maintenance Building	$31,000	$17,000	$48,000
Fond Du Lac - Maintenance Building	$6,000	$25,000	$31,000
Hillside - Fleet Maintenance	$10,000	$19,000	$29,000
Fiebrantz - Office/Lockers	$6,000	$21,000	$27,000
Fiebrantz - Maintenance Building	$0	$24,000	$24,000
Fond Du Lac - Operators Building	$15,000	$8,000	$23,000
Hillside - Storage	$1,000	$4,000	$5,000
Hillside - Transit Administration Building	$0	$4,000	$4,000
Fond Du Lac - Service Building	$0	$2,000	$2,000
KK Complex - Operations Transportation Building	$0	$2,000	$2,000
Parks:			
Sheridan Park Bathhouse	$80,000	$115,000	$195,000
South Shore Park Pavilion	$50,000	$65,000	$115,000
Central Maint. Service Garage and Warehouse	$6,000	$66,000	$72,000
Mitchell Park Domes	$7,000	$50,000	$57,000
Brown Deer Park Golf Clubhouse	$50,000	$1,000	$51,000
Bradford Park Bathhouse	$2,000	$24,000	$26,000
Greenfield Park	$0	$25,000	$25,000
Kosciuszko Park Service Building	$18,000	$5,000	$23,000
McCarty Park Bathhouse/Pavilion	$5,000	$15,000	$20,000
Wilson Park Boathouse	$15,000	$5,000	$20,000
Wash. Park Community Recreation Building	$0	$15,000	$15,000
Wilson Park Recreation Center	$3,000	$12,000	$15,000
Jacobus Park Pavilion	$3,000	$9,000	$12,000
Central Maint. Cold Storage Buildings	$5,000	$6,000	$11,000
Kern Park Pavilion	$4,000	$7,000	$11,000
Jackson Park Pavilion	$0	$10,000	$10,000
LaFollette Pavilion	$0	$10,000	$10,000
King Park Skate Shelter	$7,000	$1,000	$8,000
Carver Park Bathhouse	$0	$7,000	$7,000
Currie Park Golf Clubhouse	$0	$7,000	$7,000
Jackson Park Service Building	$2,000	$5,000	$7,000
King Park Community Center	$0	$7,000	$7,000
Smith Park Pavilion	$0	$7,000	$7,000
Grobschmidt Pool	$5,000	$1,000	$6,000
Jacobus Park Wading & Comfort Building	$0	$6,000	$6,000

Exhibit 3

Summary of Estimated Repair Costs for 106 Buildings Evaluated

Building	Estimated Repair Costs Priority 1	Priority 2	Total
Pulaski Park Bathhouse/Pavilion	$6,000	$0	$6,000
Jackson Park Bathhouse	$0	$5,000	$5,000
Mitchell Park Pavilion (Lagoon)	$1,000	$4,000	$5,000
Red Arrow Park Pavilion	$0	$5,000	$5,000
Brown Deer Park Boathouse	$0	$4,000	$4,000
Estabrook Park Comfort Station South	$0	$4,000	$4,000
Kosciuszko Park Community Center	$1,000	$3,000	$4,000
McCarty Park Comfort Station	$0	$4,000	$4,000
Lincoln Park Emil Blatz Recreation Building	$1,000	$2,000	$3,000
Dretzka Park Clubhouse	$0	$2,000	$2,000
Gordon Park Bathhouse/Pavilion	$0	$2,000	$2,000
Humboldt Park	$0	$2,000	$2,000
Milwaukee County Sports Complex Building	$0	$2,000	$2,000
Sherman Park Boys & Girls Club	$0	$2,000	$2,000
Whitnall Park	$0	$2,000	$2,000
Kletzsch Park Pavilion	$0	$1,000	$1,000
Kosciuszko Park Pelican Cove - Bathhouse	$1,000	$0	$1,000
Lindsay Park Bathhouse/Pavilion	$1,000	$0	$1,000
Pere Marquette Gazebo - Shelter	$0	$1,000	$1,000
Wash. Park Emil Blatz Temple of Music Bandshell	$0	$0	$0
Zoo:			
Aquatic & Reptile Center	$15,000	$104,000	$119,000
Small Mammals Building	$11,000	$105,000	$116,000
Administration Building	$45,000	$55,000	$100,000
Herb & Nada Mahler Family Aviary Building	$52,000	$37,000	$89,000
Stearns Family Apes of Africa	$0	$87,000	$87,000
Flamingo Café/Zoological Offices	$31,000	$51,000	$82,000
Pachyderm Building	$12,000	$60,000	$72,000
Primates of the World	$0	$35,000	$35,000
Ralph Envinrude Landing	$17,000	$10,000	$27,000
Giraffe Building	$0	$11,000	$11,000
Subtotal	**$2,811,000**	**$4,287,000**	**$7,098,000**
Design & Administration Costs @ 20%	**$562,200**	**$857,400**	**$1,419,600**
Grand Total	**$3,373,200**	**$5,144,400**	**$8,517,600**

Source: Report issued by Graef on September 22, 2010 titled "Milwaukee County Building Façade Evaluations - Final Summary Report and Budgetary Cost Estimates"

Clinton Rose Park Senior Center

Tour Date	Facilities' Name	Address	Tour Guide's Position
08/02/10	Clinton Rose Park Senior Center	3045 N. Dr. Martin L. King Drive Milwaukee, WI 53212	Department on Aging Assistant Director Fiscal & Support Services and Interfaith Director of Senior Center

Due to vandalism at Clinton Rose Senior Center a rear entrance has incurred damage with ceiling tiles missing exposing electrical light fixtures that hang down and the front entrance has loose tiles.

Clinton Rose Park Senior Center

Broken concrete floor slabs at the main entrance create a potential tripping hazard.

Washington Park Senior Center

Tour Date	Facilities' Name	Address	Tour Guide's Position
08/02/10	Washington Park Senior Center	4420 W. Vliet Street Milwaukee, WI 53208	Department on Aging Assistant Director Fiscal & Support Services and Interfaith Director of Senior Centers

The original overhead canopy structure covering entrance doors appears unsafe because of severe dry rot deterioration.

Washington Park Senior Center

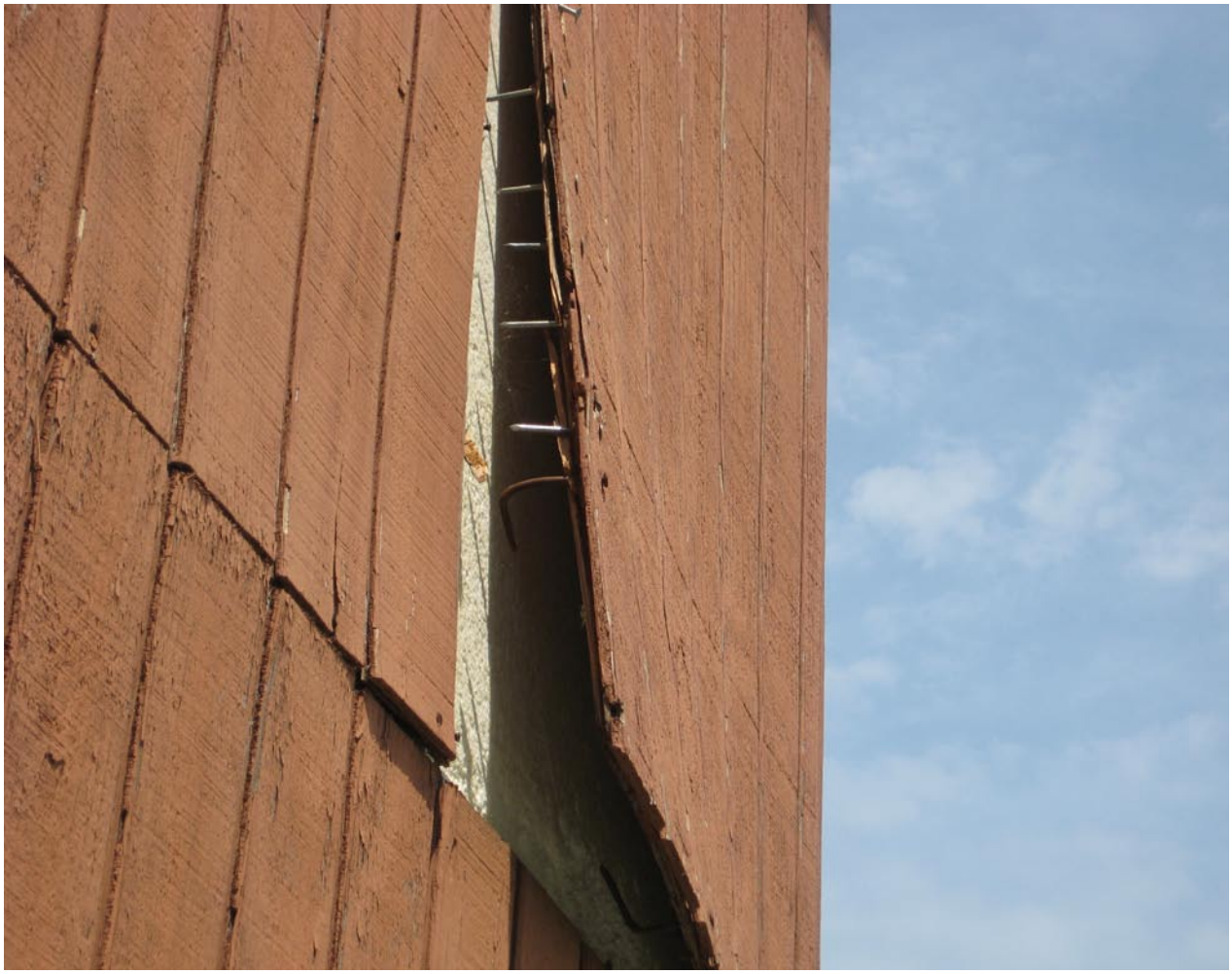
The Canopy has visible large holes that have rotten through the surface and appears unsafe for visitors entering or exiting the building.

Washington Park Senior Center

Rainwater also enters the building through the roof in several different locations.

Wilson Park Senior Center

Tour Date	Facilities' Name	Address	Tour Guide's Position
08/02/10	Wilson Park Senior Center	2601 W. Howard Avenue Milwaukee, WI 53221	Department on Aging Assistant Director Fiscal & Support Services and Interfaith Director of Senior Centers



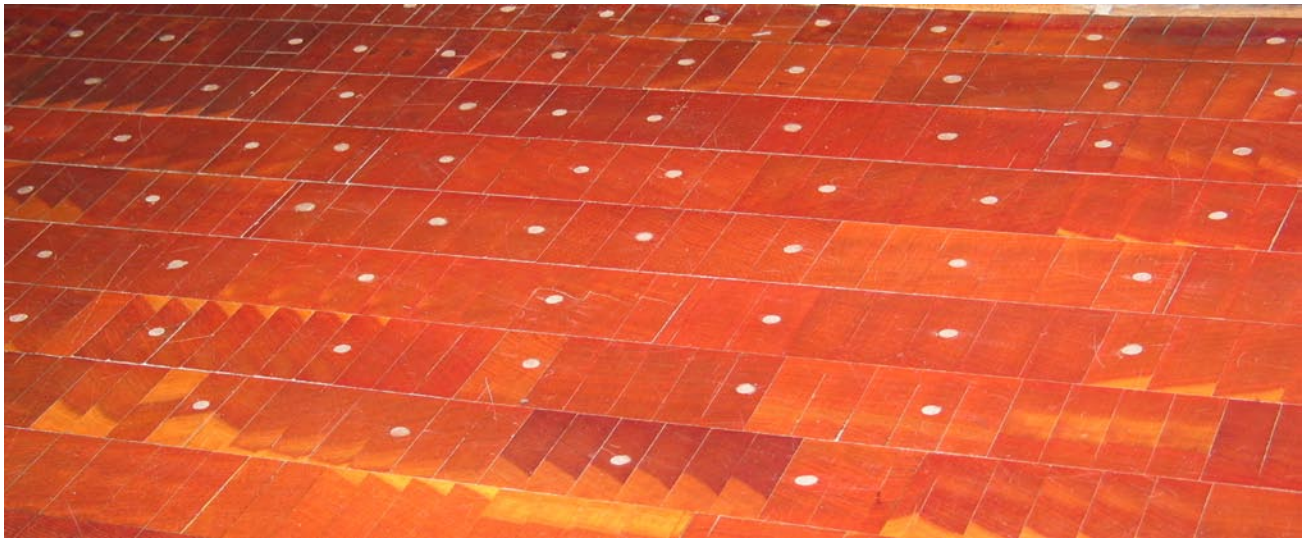
Hardboard siding is showing severe signs of distortion with nails that are literally detaching off the structure of the building. The loosely-pressed hardboard is susceptible to extreme swelling and buckling and can cause serious damage.

Wilson Park Senior Center

The main hall is experiencing water leakage from window due to weather stripping and sealing problems.

War Memorial

Tour Date	Facilities' Name	Address	Tour Guide's Position
09/01/10	War Memorial Center	750 N. Lincoln Memorial Dr. Milwaukee, WI 53202	Executive Director



Severely warped floors some of the warped flooring has been nailed down to prevent reoccurrence.

War Memorial

The moisture problems were again visible at the time of our visit only four months later, when we observed mold in carpets, blistered walls and paint chippings in the same office spaces.

Villa Terrace Decorative Arts Museum

Tour Date	Facilities' Name	Address	Tour Guide's Position
08/16/10	Villa Terrace Decorative Arts Museum & Gardens	2220 N. Terrace Avenue Milwaukee, WI 53202	Executive Director

Villa Terrace has loose bricks on the east terrace and Mercury Courtyard that are deteriorating, popping up and cracked, which could have the potential to be unsafe for visitors due to the risk of accidents that could occur.

Charles Allis Art Museum

Tour Date	Facilities' Name	Address	Tour Guide's Position
08/16/10	Charles Allis Art Museum	1801 N. Prospect Avenue Milwaukee, WI 53202	Executive Director

The Great Hall patio has missing, deteriorating, and cracked blue stone bricks and has the potential to be unsafe for visitors.

Charles Allis Art Museum

The roof and chimney area has bricks that are loose that needs tuck-pointing, which could present a potential accident if the bricks would fall down on the public walking or standing underneath.

Milwaukee Public Museum

Tour Date	Facilities' Name	Address	Tour Guide's Position
08/17/10	Milwaukee Public Museum	800 W. Wells Street Milwaukee, WI 53233	Director of Facilities and Operations

Walls on the lower level of museum have severe surface deterioration near the lunchroom area.

Milwaukee Public Museum

Rain also enters the Puelicher Butterfly Wing where the staff has placed water socks on window displays to catch rainwater.

Park Administration

Tour Date	Facilities' Name	Address	Tour Guide's Position
08/18/10	Park Administration Building	9480 Watertown Plank Rd. Wauwatosa, WI 53226	Parks Safety & Training Manager

The outside staircases are in poor condition at Parks Administration Building the rear exit staircase show evidence of decaying.

Milwaukee County Zoo – Zoofari Conference Center

Tour Date	Facilities' Name	Address	Tour Guide's Position
08/04/10	Zoo – Education Center	10001 W. Blue Mound Rd. Milwaukee, WI 53226	Administrative Maintenance and Facilities Specialist

The Zoofari Conference Center has sagging ceiling tiles that are on the verge on failing, which needs immediate attention because they are over the heads of visitors, before an accident occurrence.

COUNTY OF MILWAUKEE
INTEROFFICE COMMUNICATION

Date: October 25, 2010

To: Jerome J. Heer, Director of Audits

From: Jack H. Takerian, Director of Transportation and Public Works

Subject: Milwaukee County Department of Transportation and Public Works Response to the Audit of Preventative Repair and Maintenance Audit

The Department of Transportation and Public Works (DTPW) appreciates the review conducted by the Milwaukee County Department of Audit regarding preventative repair and maintenance of County owned facilities. DTPW staff has made every effort to provide Audit staff with quick and accurate information for this review. DTPW agrees with the importance of maintaining structures that are safe and accessible to all residents who use them.

Based on the findings of the audit, DPTW is providing the following comments:

1. *Draft a policy, for County Board consideration, establishing minimum standards for assessing, inspecting and maintaining proper building conditions.*

DTPW has begun to explore the possibility of establishing an Inspection Unit that would provide a facility condition assessment for PM Units within County Departments. The inspections performed by this unit would take into account the VFA, as well as pending capital requests for each building. The PM Units will be provided a list of deficiencies that the inspectors have found on each building. This notification process would provide a record of current building condition, and highlight the immediate necessary remedies that would make sure public safety is not compromised.

2. *Request sufficient funding to perform proactive, cyclical assessments and inspections of County-owned infrastructure assets.*

The process of performing assessments and inspections is the first step in understanding the extent of building condition. From the inspection, a determination must be made regarding the severity of the structural condition and the immediacy of the repair. Therefore, in terms of establishing funding for assessments and inspections, the process must be broken down into three parts; building assessment and inspection, cost of repair and the timeframe for repair. This must be done for interior as well as exterior assessments.

DTPW is proposing an Inspection Unit identified earlier. This unit will inevitably refine the inspection and assessment process over time producing better cost estimating for such services. In the mean time, establishing a cost base line for cyclical assessments and inspections will be based on recent work performed by the façade inspections done county owned buildings. Costs for façade evaluations are expected to be $350,000 to $400,000 annually based on inspections required by City ordinances. Necessary repairs

needed based on inspection findings are difficult to estimate given the variety of building materials and their costs and the extent of the needed repair.

Interior evaluations could be performed for a cost of roughly $150,000 to $200,000 annually assuming 120 buildings would be inspected once every 5 years. This level of analysis would be done using the expertise of the inspection unit with necessary repair work being the responsibility of the owner department.

3. *Draft a framework for consolidating all property management functions within DTPW to ensure focused, streamlined building management in a manner that ensures the safety of the public and County employees.*

DTPW agrees that consolidation of all county owned property should be under one property management function as proposed both by an earlier audit report as well as a previous budget request. A stand-alone Department could be created to ensure building management is streamlined and that maintenance of county owned property is prioritized in an unbiased manner with safety as the priority.

4. *Establish a protocol that ensures that data concerning repair and maintenance work completed to address identified deficiencies are input into VFA, and that completed work be archived as appropriate.*

DTPW staff will work with all PM Units to develop a process and procedure that ensures data concerning repair and maintenance work completed to address identified deficiencies are input into VFA, and that completed work is archived as appropriate. This will include access and training on the appropriate property management software.

5. *Ensure that assessment results are discussed with PM units prior to entering the data into VFA. If disagreement exists, establish a procedure for arbitrating the disagreement, and for subsequently identifying such deficiencies within VFA.*

DTPW staff will work with all PM Units to develop a process and procedure that ensures assessment results are discussed with PM Units prior to entering the data into VFA. A procedure for arbitrating any disagreement between DTPW and the PM Units will be developed that allows subsequent identifying such deficiencies within VFA.

6. *Require PM units to review all open deficiencies and update VFA to reflect their proper status, with emphasis directed toward Priority 1, Life Safety deficiencies initially.*

DTPW staff will work with all PM Units and DAS fiscal and budget staff to develop a process and procedure that requires PM Units to review all open deficiencies and update VFA to reflect their proper status, with emphasis directed toward budgeting in the operating or capital budget to address Priority 1, Life Safety deficiencies initially. Requested budget submittals will require back up documentation from the VFA database. This will process and procedure will include access and training on the appropriate property management software.

7. Develop a strategy and timetable for using existing systems in the County, and/or other available systems, to achieve a comprehensive property management system to become fully operational for preparation of the 2013 County Budget.

While some existing systems may be appropriate for certain activities, newer systems may be available that create a single source for warehousing data, estimating costs, track progress and generating reports for multiple users. Therefore, DPTW staff will perform an analysis of the current county data systems, along with the possible integration of new systems including enterprise GIS, to provide a streamlined approach to building condition and assessment management.

Respectfully submitted,

Jack H. Takerian, Director
Transportation & Public Works