

# Facilities Condition Assessment Program

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## 4th and Highland Parking Garage

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May 2011



## Facilities Condition Assessment Program—4th and Highland

### Introduction

4th and Highland parking structure is located at 324 West Highland Avenue. The parking structure is bounded by Highland Avenue to the south, 4th Street to the west, and an alley to the east. The structure was developed in 1988.

The parking structure contains eight parking levels made accessible by entrances/exits at 4th Street and Highland Avenue with an overflow entrance/exit on Juneau Avenue. 4th and Highland parking structure comprises approximately 338,000 square feet of floor area and 982 parking spaces. The commercial space adjacent to 4th and Highland is leased.

The overall condition of the 4th and Highland parking structure is good, as indicated by the Facility Condition Index rating of 0.02. Fiscal Year 2012 pertains to the most significant near term year of repairs. These repairs pertain to sealer application, joint repairs, and concrete surface repairs.

### Procedures

The Facilities Condition Assessment Program (FCAP) is a 20 year-forecast of the property and analysis of the capital improvement expenditures. It involves two aspects: the physical analysis and financial analysis. The physical analysis includes an onsite inventory and condition assessment of components that will require capital improvement expenditures within the scope of the 20 year study. The financial analysis includes project scheduling/coordination and cost estimation of these projects.

FCAP includes information about the property components and the project schedules. The report serves as a long-term strategic tool to position property fiduciaries to make decisions to best serve its owners.

### Component Inventory

The information within the Facility Condition Assessment Program is derived from:

- On-site, visual, non-invasive inspections
- Review of consultant's reports
- Facilities Development and Management historic data

The components inventoried and scheduled for capital improvement within this report meet the following criteria:

- City of Milwaukee responsibility
- Limited Useful Life (UL) expectancy
- Predictable Remaining Useful Life (RUL) expectancy
- Greater than \$25,000 minimum threshold (some exceptions apply)
- Requirements by local codes

\*Note: The property lease was unavailable at the time of our report. Therefore, the report can not ascertain City of Milwaukee property ownership.



### Categorization of Components

This report inventories the physical property components located at the facility. The inventoried property components are organized into one of the following categories:

- City of Milwaukee Responsibility
- O+M Responsibility
- Long Lived
- Others

*City of Milwaukee Responsibility* pertains to components that are funded by the City of Milwaukee capital expenditures. These components are the primary focus within this report and the coordinated capital budget.

*O+M Responsibility* pertains to those components that require maintenance or replacement less than the minimum capital threshold of \$25,000. These components are usually repaired or replaced from O+M funds.

*Long Lived* pertains to components that are funded through the City of Milwaukee capital program. However, these expenditures are projected beyond the 25 year scope of capital budget.

*Others* pertains to components that are repaired/replaced/maintained by an entity other than City of Milwaukee.

### Component Inventory

The property components at 4th and Highland are categorized as follows:

#### City of Milwaukee Responsibility

##### Structural Components

- Concrete, Elevated, Surface Repairs
- Concrete, Elevated, Sealer Application
- Concrete, On-Grade
- Expansion Joints
- Paint Finish Application
- Sealant, Joints

##### Services Components

- Electrical, Secondary Distribution
- Electrical, Branch Circuits and Panels
- Electrical, Emergency Back-up Units, Batteries
- Electrical, Emergency Back-up Units, Replacement
- Elevators, Traction, Hoist and Controls
- Light Fixtures, Replacement
- Light Poles and Fixtures



## Facilities Condition Assessment Program—4th and Highland

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- Operators and Pay Stations

### Parking Garage Finish Components

- Doors, Replacement
- Lobby/Offices, Upgrade
- Windows/Doors, Curtain Walls

### Commercial Components

- Fire Warning System
- Roof, Replacement

### O+M Responsibility

- Elevator Penthouse, HVAC
- Roofs, Flat Stairwells
- Routine Diagnostics/Maintenance
- HVAC Units, Interim Repairs and Maintenance

### Others

- Office Tower (Building Owner)

## Report Information

The written report includes a combination of information about the City of Milwaukee Responsibility components, including:

- Component Inventory
- Condition Assessment
- Photo-documentation

This information is intended to serve as a summary from the aggregation of in-house inspections, consultants reports, historic data, and the capital budget. In addition, projects funded for ADA compliance are included within the anticipated costs of capital projects.

## Capital Budget

The capital budget for the property is included on two spreadsheets. The first spreadsheet contains the anticipated capital projects for years 2011 through 2023. The second spreadsheet contains the anticipated capital projects for years 2024 through 2036. Information on the spreadsheets includes:

- Component Name
- Quantity
- Units
- 2011 Unit Cost
- 2011 Replacement Cost
- Useful Life (UL)
- Remaining Useful Life (RUL)



## Facilities Condition Assessment Program—4th and Highland

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- First Year Funds Requested

*Component Name* pertains to the element which is projected for capital improvement.

*Quantity* includes the measured amount of each component at the property.

*Units* pertains to the measurement used to determine quantity. The units within the report are as follows:

- LF = Linear Feet
- SF = Square Feet
- EA = Each
- LS = Lump Sum

*2011 Unit Cost* pertains to the estimated cost per unit measurement for capital improvement. These costs are derived from RS Means Cost Works, Marshall & Swift/Boeckh, AME, Inc., historic data, and other resources.

*2011 Replacement Cost* pertains to the estimated cost of the capital improvement project. It is derived by multiplying the *Quantity* by *2011 Unit Cost*.

*Useful Life* (UL) pertains to the time frame in years wherein a component is anticipated to remain functional provided it receive proper maintenance. UL is also referred to as Service Life.

*Remaining Useful Life* (RUL) pertains to the estimated service life remaining for any given component. It coincides with the anticipated year of the capital expenditure.

*First Year Funds Requested* pertains to the year in which the capital expenditure is anticipated.

*Deferred Capital* pertains to projects that have been identified for capital repairs but have yet to be completed. The aggregated summation of deferred maintenance projects corresponds to the FCI.

*CRV* Current Replacement Value is the insurance estimate for reconstruction of the facility in today's dollars.

*FCI* Facilities Condition Index is the relationship between the aggregated summation of deferred capital projects divided by the Current Replacement Value of the facility. This proportion provides a measure to analyze the condition of the property, compare with other properties, and cross reference with City of Milwaukee guidelines. The City of Milwaukee guidelines are as follows:



Condition	FCI Rating
Good	0.0-0.099
Fair	0.10-0.20
Poor	>0.20

### Limitations of Inspection

The inspection conducted by City of Milwaukee Facilities Development and Management Section and its representatives is limited to those components that are observed and identified by mere visual observation. Inspections conducted by the City of Milwaukee Facilities Development and Management Section does not include:

- (a) Any probing, boring, excavation, or other invasive means of property inspection
- (b) Testing for or identification of any hazardous materials in any form
- (c) Identification of construction, structural, design, or other defects that may violate local, state, international, or other building codes and/or regulations, or any kind
- (d) Identification of any defects that are not readily apparent by mere visual observation including, but not limited to structural defects, leaking pipes, foundational damage, and electrical wiring hazards or defects.



## Facilities Condition Assessment Program—4th and Highland

### Concrete, Elevated

4th and Highland comprises 305,000 square feet of elevated floor slabs. The concrete is treated with a water sealer.

The water sealer protects solvents, liquids, etc. from penetrating into the concrete, thereby increasing the longevity of the elevated concrete structure.

The elevated structural slab exhibits very few areas of deterioration in the form of cracks. However, various columns and shear walls exhibit local deterioration.

The useful life of sealer application is up to three years. Parking should apply the sealer at Floors 2-4 by 2011 and Floors 5-8 by 2012. Subsequent applications should be conducted every six years thereafter.

In addition, Parking should conduct concrete surface repairs at his time.

### Concrete On-Grade

4th and Highland comprises approximately 24,000 square feet of on-grade concrete at the basement level parking. The concrete exhibits large cracks at the north side, but is in good condition otherwise..

Parking should budget for partial replacement of on-grade concrete by 2016 and ten years thereafter.

### Photographs



Elevated concrete floor slab

### Expansion Joints, Replacement

4th and Highland contains approximately 920 LF of expansion joints. The useful life of an expansion joint is 15 years. Parking should budget for expansion joint replacements by 2016 and again by 2031.

### Photographs



Elevated concrete floor slab

### Paint Finish Application, Pipes

4th and Highland contains various metal components (handrails/doors/precast panel railings/connections/etc.) throughout the garage. These components are in good to fair condition with the onset of rust beginning.

Parking should budget for metal component painting for Floors LL-4 by 2011, and Floors 5-8 by 2012. Subsequent paint finishes should be conducted every 15 years thereafter.



### Sealants, Joints

4th and Highland is a modular precast structure. Where modular units come together, sealant (caulk) bridges the threshold. Approximately, 32,000 linear feet of sealant is located at 4th and Highland.

The useful life of sealant is up to 15 years. Parking should conduct sealant replacement at Floors LL-4 by 2011, and Floors 5-8 by 2012. Subsequent replacement is likely every 10 years thereafter.

### Electrical

4th and Highland comprises two levels of electrical distribution: Secondary, Branch Circuits/Panels. The condition of these components is reported as good.

The useful lives for the electrical systems is as follows: Secondary = 45 years, Branch Circuits/Panels = 30. The useful life is dependent upon function and environment.

Based on condition, parking should anticipate replacement of the Secondary distributions by 2031. Replacement of the Branch Circuits/Panels is anticipated by 2018.

4th and Highland also includes Emergency Back-up Units. The useful life of the Emergency Back-up Units is 30 years. Parking should anticipate its replacement by 2031. Batteries should be replaced every 10 years beginning by 2014.

**Elevators, Traction**

Two elevators serve 4th and Highland parking. The useful life of traction elevators hoists and controls is up to 45 years. Parking should anticipate their upgrade by 2031.

**Light Fixtures, Replacement**

4th and Highland contains approximately 410 light fixtures. The useful life of light fixtures is up to 25 years. Based on condition, Parking should fund light fixture replacement by 2031.

**Photographs**



Light fixture

## Facilities Condition Assessment Program—4th and Highland

### Light Poles and Fixtures

4th and Highland contains approximately 4 light poles and fixtures at the 8th level. The useful life of light fixtures is up to 30 years. Based on condition, Parking should fund light fixture replacement by 2018.

### Operators and Pay Stations

4th and Highland contains:

Item	Quantity
Entrance Ticket Operator	3
Exit Ticket Operator	5
Gate Operators	8
Ticket Pay Station	4

The useful life of these components and operating systems is up to 12 years. Parking should anticipate its replacement by 2019 and 2031. Interim repairs/replacements and upgrade to individual components should be funded by O+M.

### Photographs



Operators and Pay Stations

## Facilities Condition Assessment Program—4th and Highland

### Doors, Replacement

4th and Highland comprises 39 steel doors, 14 glass doors, and 2 overhead doors.

The useful life of metal exterior doors is up to 35 years. Based on the varied conditions, Parking should anticipated phased replacement of 13 doors every six years beginning by 2018.

### Photographs



Metal door

### Lobby/Offices, Renovations

4th and Highland contains an administration office and elevator lobby. Parking should budget for hallway renovation every 15 years beginning by 2028.

### Photographs



Administration office

### Windows/Doors Curtain Walls

4th and Highland contains curtain walls at the each stairwell and the commercial space. The condition of the components is fair overall.

The useful life of window and curtain walls is up to 45 years. Parking should budget replacement of the window/curtain walls by 2028.

### Photographs



Part of skylight at south stairwell  
curtain wall

### Fire Warning System

The fire warning system is comprised of a central alarm panel and various detection alarm devices. The useful life for this system is up to 25 years. Parking should anticipate its replacement by 2017.

**Roof, Replacement**

4th and Highland commercial space contains a roof that comprises 70 squares. The useful life of the roof is up to 20 years. Parking should budget replacement of the window/curtain walls by 2017.

**Photographs**



Roof at commercial



**4th and Highland  
Parking Structure**

	Quantity	Units	2011 Unit Cost	2011 Captial Cost	UL	RUL	20 Year Total Cost	First Year Funds Requested	Deferred Capital	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Structural Components</b>																			
<b>Lower Level - 4th Floor</b>																			
Concrete, Elevated, Surface Repairs	1	SF	\$110,000	\$85,000	15	0	\$212,000	2011	\$85,000	\$85,000									
Concrete, Elevated, Sealer Application	1	SF	\$85,000	\$85,000	6	0	\$439,000	2011	\$85,000	\$85,000						\$100,000			
Concrete, On-Grade Repairs	1	SF	\$38,000	\$38,000	90+	5	\$100,000	2016	\$0						\$43,000				
Expansion Joints, Replacement	1	LF	\$65,000	\$65,000	15	5	\$185,000	2016	\$0						\$74,000				
Paint Finish Application	1	LS	\$85,000	\$85,000	15	0	\$212,000	2011	\$85,000	\$85,000									
Sealant, Joints Replacement	1	LS	\$125,000	\$125,000	10	0	\$486,000	2011	\$125,000	\$125,000									\$159,000
<b>5th Floor - 8th Floor</b>																			
Concrete, Elevated, Surface Repairs	1	SF	\$115,000	\$90,000	15	1	\$230,000	2012	\$0		\$92,000								
Concrete, Elevated, Sealer Application	1	SF	\$90,000	\$90,000	6	1	\$476,000	2012	\$0		\$92,000						\$108,000		
Expansion Joints, Replacement	1	LF	\$70,000	\$70,000	15	5	\$199,000	2016	\$0						\$80,000				
Paint Finish Application	1	LS	\$95,000	\$95,000	15	1	\$243,000	2012	\$0		\$98,000								
Sealant, Joints, Replacement	1	LS	\$150,000	\$150,000	10	1	\$599,000	2012	\$0		\$154,000								
<b>Services Components</b>																			
Electrical, Secondary Distribution	1	LS	\$150,000	\$150,000	45	20	\$256,000	2031	\$0										
Electrical, Branch Circuits and Panels	1	LS	\$80,000	\$80,000	30	7	\$96,000	2018	\$0								\$96,000		
Electrical, Emergency Back-up Units, Batteries	1	LS	\$25,000	\$25,000	10	3	\$62,000	2014	\$0			\$27,000							
Electrical, Emergency Back-up Units, Replacement	1	LS	\$75,000	\$75,000	30	20	\$128,000	2031	\$0										
Elevators, Traction, Hoist and Controls	2	EA	\$190,000	\$380,000	45	20	\$647,000	2031	\$0										
Light Fixtures, Replacement	410	EA	\$260	\$106,600	25	20	\$182,000	2031	\$0										
Light Poles and Fixtures, 8th Floor	4	EA	\$5,400	\$21,600	30	7	\$26,000	2018	\$0								\$26,000		
Operators and Pay Stations	1	EA	\$300,000	\$300,000	12	8	\$371,000	2019	\$0									\$371,000	
<b>Parking Garage Finish Components</b>																			
Doors, Replacement, Phased	13	EA	\$2,700	\$35,100	35	7	\$150,000	2018	\$0								\$42,000		
Lobby/Offices, Upgrade	1	LS	\$39,000	\$39,000	30	4	\$43,000	2028	\$0				\$43,000						
Windows/Doors, Curtain Walls (including Skylights)	14,200	SF	\$70	\$994,000	45	17	\$1,563,000	2028	\$0										
<b>Commerical Components</b>																			
Fire Warning System	1	LS	\$75,000	\$75,000	25	6	\$88,000	2017	\$0							\$88,000			
Roof, Replacement	70	SQ	\$700	\$49,000	20	6	\$57,000	2017	\$0							\$57,000			

<b>Total 20 Year Cost</b>							\$7,050,000	<b>Total Annual Cost</b>	\$380,000	\$436,000	\$0	\$27,000	\$43,000	\$197,000	\$245,000	\$272,000	\$371,000	\$159,000
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Notes								<b>CRV</b>	\$19,620,658	\$20,150,416	\$20,694,477	\$21,253,228	\$21,827,065	\$22,416,396	\$23,021,638	\$23,643,223	\$24,281,590	\$24,937,193
								<b>FCI</b>	0.02									

- 1) FY is Fiscal Year. FY is the calendar year.
- 2) UL is Useful Life and RUL is Remaining Useful Life
- 3) The annual building materials inflation rate estimate is estimated at 2.70%
- 4) Current Replacment Value (CRV) growth rate is estimated at 2.70%

**4th and Highland  
Parking Structure**

	Quantity	Units	2011 Unit Cost	2011 Capital Cost	UL	RUL	20 Year Total Cost	First Year Funds Requested	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Structural Components</b>																			
<b>Lower Level - 4th Floor</b>																			
Concrete, Elevated, Surface Repairs	1	SF	\$110,000	\$85,000	15	0	\$212,000	2011						\$127,000					
Concrete, Elevated, Sealer Application	1	SF	\$85,000	\$85,000	6	0	\$439,000	2011			\$117,000						\$137,000		
Concrete, On-Grade Repairs	1	SF	\$38,000	\$38,000	90+	5	\$100,000	2016						\$57,000					
Expansion Joints, Replacement	1	LF	\$65,000	\$65,000	15	5	\$185,000	2016											\$111,000
Paint Finish Application	1	LS	\$85,000	\$85,000	15	0	\$212,000	2011						\$127,000					
Sealant, Joints Replacement	1	LS	\$125,000	\$125,000	10	0	\$486,000	2011									\$202,000		
<b>5th Floor - 8th Floor</b>																			
Concrete, Elevated, Surface Repairs	1	SF	\$115,000	\$90,000	15	1	\$230,000	2012							\$138,000				
Concrete, Elevated, Sealer Application	1	SF	\$90,000	\$90,000	6	1	\$476,000	2012				\$127,000						\$149,000	
Expansion Joints, Replacement	1	LF	\$70,000	\$70,000	15	5	\$199,000	2016											\$119,000
Paint Finish Application	1	LS	\$95,000	\$95,000	15	1	\$243,000	2012						\$145,000					
Sealant, Joints, Replacement	1	LS	\$150,000	\$150,000	10	1	\$599,000	2012	\$196,000									\$249,000	
<b>Services Components</b>																			
Electrical, Secondary Distribution	1	LS	\$150,000	\$150,000	45	20	\$256,000	2031											\$256,000
Electrical, Branch Circuits and Panels	1	LS	\$80,000	\$80,000	30	7	\$96,000	2018											
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Electrical, Emergency Back-up Units, Replacement	1	LS	\$75,000	\$75,000	30	20	\$128,000	2031											\$128,000
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Light Fixtures, Replacement	410	EA	\$260	\$106,600	25	20	\$182,000	2031											\$182,000
Light Poles and Fixtures, 8th Floor	4	EA	\$5,400	\$21,600	30	7	\$26,000	2018											
Operators and Pay Stations	1	EA	\$300,000	\$300,000	12	8	\$371,000	2019											
<b>Parking Garage Finish Components</b>																			
Doors, Replacement, Phased	13	EA	\$2,700	\$35,100	35	7	\$150,000	2018				\$50,000							\$58,000
Lobby/Offices, Upgrade	1	LS	\$39,000	\$39,000	30	4	\$43,000	2028											
Windows/Doors, Curtain Walls (including Skylights)	14,200	SF	\$70	\$994,000	45	17	\$1,563,000	2028							\$1,563,000				
<b>Commerical Components</b>																			
Fire Warning System	1	LS	\$75,000	\$75,000	25	6	\$88,000	2017											
Roof, Replacement	70	SQ	\$700	\$49,000	20	6	\$57,000	2017											

<b>Total 20 Year Cost</b>							\$7,050,000	<b>Total</b>	\$196,000	\$0	\$117,000	\$212,000	\$0	\$311,000	\$283,000	\$1,563,000	\$339,000	\$456,000	\$1,443,000
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Notes								<b>CRV</b>	\$25,610,497	\$26,301,980	\$27,012,134	\$27,741,461	\$28,490,481	\$29,259,724	\$30,049,736	\$30,861,079	\$31,694,328	\$32,550,075	\$33,428,927
								<b>FCI</b>											

- 1) FY is Fiscal Year. FY is the calendar year.
- 2) UL is Useful Life and RUL is Remaining Useful Life
- 3) The annual building materials inflation rate estimate is estimated at 2.70%
- 4) Current Replacement Value (CRV) growth rate is estimated at 2.70%



# 4th and Highland 20 Year Projected Capital Needs

