



Maywood Public Library District 2023-2033 Capital Needs Assessment

prepared by:



FINAL - August 2023

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Maywood Public Library District 2023-2033 Capital Needs Assessment

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2023-2033 Capital Needs Assessment **Introduction, Methodology, and Executive Summary**

In April of 2023, Williams Architects of Itasca, IL was commissioned by the Maywood Public Library District to perform a Capital Needs Assessment for the Library building and site. The intent of this Capital Needs Assessment is to identify and prioritize needed repairs and modifications to the Library facility over the next ten years, with capital cost estimate information that will allow the Library to plan for likely costs of needed repairs over the next ten years.

Licensed architects and engineers from Williams Architects and C.E. Anderson & Associates visited the Library in March and April of 2023 to perform a visual assessment of the Library site, structure, building envelope (exterior), interior, mechanical systems and infrastructure, electrical systems and infrastructure, plumbing systems, and fire protection systems. The facility was also evaluated for compliance with current life safety and accessibility codes and requirements. In addition to our team's own visual assessments and observations, construction documents and specifications from past projects were consulted and evaluated to ascertain intent and character of certain conditions. Our evaluation is limited to items that are readily visible and/or inferable from conditions observed by licensed professionals, and does not exclude the possibility that other undetectable, invisible, or latent conditions may exist within the Library facility.

Overall, the building is well maintained, in large part due to the efforts and diligence of the Library's staff. Except for a 2021-2022 project that replaced virtually all the Library's electrical and HVAC infrastructure due to a flood in the facility's basement, very few improvements or upgrades have taken place in the facility since its expansion in 1998. The third floor of the addition has been closed to the public, with most adult collections and services consolidated to the first floor of the building. Of greatest concern to our team is evidence of significant water infiltration and freeze-thaw damage at the original Carnegie portion of the building, which may have resulted in structural damage to the building's foundations. Further work to uncover and inspect for potential damage is recommended as part of this report's findings.

All the team's findings and associated recommendations and cost estimates are contained within this Report.

It is our pleasure to assist the Maywood Public Library District with this assessment effort. The Williams Team stands ready to assist the Library in any way we can with the findings herein. Please do not hesitate to contact us with any questions or concerns at any time.

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Maywood Public Library 2023-2033 Capital Needs Assessment Site

Following observations made at the site, there are several site related items that have been identified by our team below as areas of concern:

1. Asphalt pavement is in fair condition and should be replaced within the next three to five years. 57 total parking spaces are provided, of which 3 are accessible, meeting the requirements of the Illinois Accessibility Code.
2. Sidewalks are separated from curbs along the south side of the building due to settlement and seasonal freeze-thaw cycles, resulting in a trip hazard. Since most of the sidewalk surfaces are in good condition, it is possible to mudjack or raise the fallen sidewalk areas instead of replacing them and seal the joint between the sidewalk and curb.



Fig. 1- Sidewalks separated from curb, resulting in large gap and level change at curb.

3. Light bollards are severely corroded at locations in concrete, likely due to sidewalk salt exposure. They should be replaced with new lighted bollards with corrosion-resistant bases and LED lighting or eliminated altogether.



Fig. 2- Corroded light bollard bases.

4. Some areas of concrete sidewalks are severely damaged and cracked, requiring removal and replacement.



Fig. 3- Damaged/cracked sidewalk areas.

5. Sidewalks crossing driveways lack detectable warning surfaces in contrasting colors from sidewalk surfaces.



Fig. 4- Example of detectable tactile warning surface at locations where pedestrians cross paths of vehicular traffic.

6. A landscape irrigation system is provided with the controller located in the basement along the south wall. Staff reports the system is operational and in working order. Entering into an agreement with a company to perform annual maintenance is recommended.



Fig. 4a- Irrigation system controller.

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Structural

1. Lintels above windows in the Carnegie portion of the building are severely corroded, with masonry damage above and around each lintel location. The cause of this damage is most likely water infiltration from above attempting to escape the wall assembly. Since no flashing that can direct moisture out of the building exists, freeze-thaw cycles force moisture out of the building through the masonry. Each location will require installation of a new lintel and repair of the damaged masonry above each lintel.



Fig. 5- Example of masonry damage and lintel corrosion above window in Carnegie portion of building.

2. The extent of lintel damage and other signs of moisture intrusion evident from inside the building led our team to engage a structural engineer to perform a visual observation of the foundation and structure. While there are no signs of differential settlement in the foundations visible from the basement of the building, exposing the foundation wall from the exterior to confirm any settlement and further damage is recommended. Refer to Appendix A for a report from C.E. Anderson & Associates.

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Accessibility

1. Both hydraulic elevators in the facility are at least 25 years in age and are within ten years of their expected remaining service lives. No records were available to confirm the age of the elevator in the Carnegie portion of the building, though it appears to have been present when the building was expanded. Though there are no known operational issues with the elevators currently, modernization of the controls, replacement of machinery, and replacement of cab finishes is recommended within the next 10 years to avoid sudden and unpredictable maintenance and repair costs. The elevator in the Carnegie portion of the building should be prioritized as it is older and known to have obsolete components. Replacing the annunciators (the portion of the elevator that sounds a tone at each level) is recommended when this project is undertaken is recommended to comply with current audible signaling requirements for elevators within the Illinois Accessibility Code.



Fig. 6- Elevator door and cab at Carnegie portion of building

- Restrooms are compliant with the version of the Illinois Accessibility Code that was in place when the building was expanded and remodeled but are not compliant with current codes. Future renovations to restrooms may trigger compliance with current code requirements which will require single-user restrooms to be made larger to allow for adequate side transfer space for the toilet. The grab bar in both single user restrooms in the original portion of the building are 12" shorter than required to meet current codes.



Fig. 7- Inadequate side transfer space and rear grab bar length.

- Sinks at employee break areas and public areas do not have knee space underneath as required by current accessibility codes. Since most of the casework at these areas is in poor condition, knee space should be provided in conjunction with cabinet/counter replacement.



Fig. 8 - Lack of knee space at staff and public area sinks.

4. Accessible signage with Braille and contrasting colors is not provided at all rooms and public service areas. Though these signs are technically only required at restrooms and stairs, best practices in public buildings is to provide accessible signage at all rooms and ADA compliant (for size and contrast) signage/lettering at or above each functional section of the library to assist users with navigation through the facility.

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Life Safety

1. Handrails and guardrails at stairways within the Carnegie portion of the building are non-compliant with current building codes for height, continuity, and profile. They are not required to be upgraded as existing components not being altered as long as use of space does not change.



Fig. 9 & 10 - non-compliant handrails and guardrails at original portion of building.

2. Some exposed PVC piping was observed in above-ceiling areas that are used as a plenum for return air. This is a code violation as PVC piping is combustible. These sections of piping either need to be replaced with noncombustible material such as cast iron or insulated with a noncombustible insulation product.

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Building Envelope (Exterior) and Roof

1. Severe deterioration of masonry (brick and stone) is evident throughout the original Carnegie portion of the building from the exterior, most likely from water infiltration and freeze-thaw cycles. Unlike buildings of current vintage that are required by codes to incorporate provisions for moisture management and drainage, the original portion of the building has no drainage paths or flashings allowing moisture to escape; therefore, once water enters the wall assembly it tends to stay there until forced out by freeze-thaw cycles. There is significant mortar loss and, in some cases, cracked and spalled masonry, further contributing to moisture intrusion. The entire building will require mortar restoration through tuckpointing, replacement of damaged masonry to match existing, and cleaning to maintain structural integrity and stop further deterioration. As previously noted in the Structural section of this Assessment, observation of the foundation as well as observation of masonry walls and lintels from the interior of the original portion of the building are recommended to assess for further currently unobservable damage.



Fig. 11 - mortar loss as viewed from Carnegie portion roof

2. Several critical wall-roof junctions of the Carnegie portion of the building appear to have had more recent sealant repairs, indicating known water intrusion issues.



Figs. 12 and 13 – areas of sealant repair at various wall-roof intersections.

3. The original stone cap on the Carnegie portion of the building is severely degraded and stained and has a black residue in many locations. Further investigation is needed to determine the source of the black residue (it may be a mastic from a previous metal coping over the stone from a past roofing project)



Fig. 14 - stone cap degradation and black residue observed in several locations.

4. Condensate drains directly from rooftop cooling units onto roofing surfaces, sometimes creating ponding conditions which increase the chance for water intrusion through the roof. These should be piped as close to roof drains as possible.

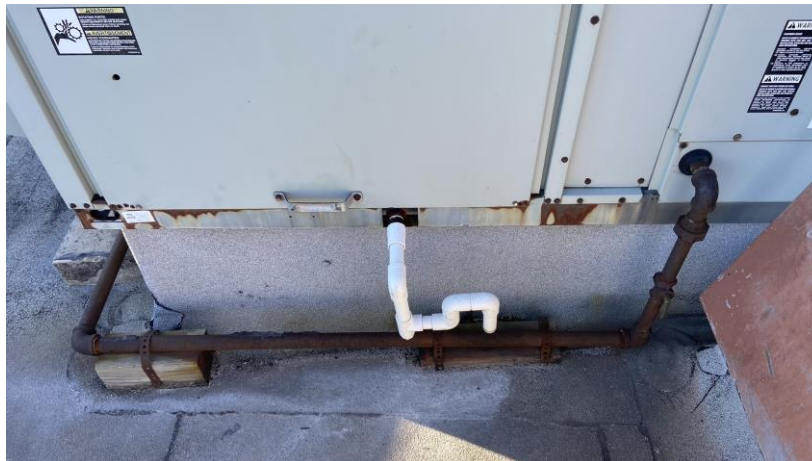
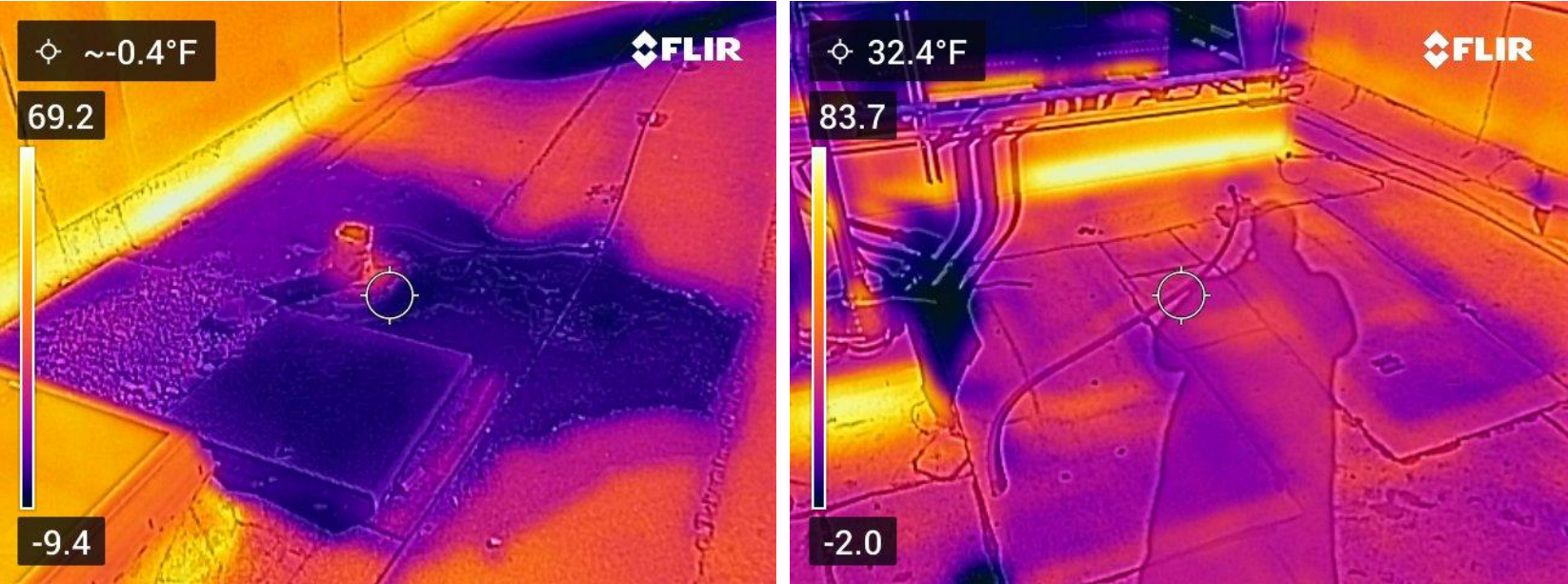


Fig. 15 - condensate drain from HVAC units onto roof surface.

5. The roofing system on both the Carnegie portion of the building as well as the addition is a modified bitumen system. These systems are high-quality systems that can last up to 35 years and most of the roof is in good condition. Our team used an infrared camera to assess areas of saturated roofing which would indicate areas of partial or total roofing system failure. Some areas of modified bitumen roofing are soft under foot and thermal imaging confirms saturated insulation underneath the roofing system. This is most evident around both roof hatches and to a lesser extent around HVAC units where the roof is not pitched enough to drain water away. These areas should be cut out and replaced with new insulation and roofing.



Figs. 16 and 17 - saturated insulation areas at addition and original portion of the building

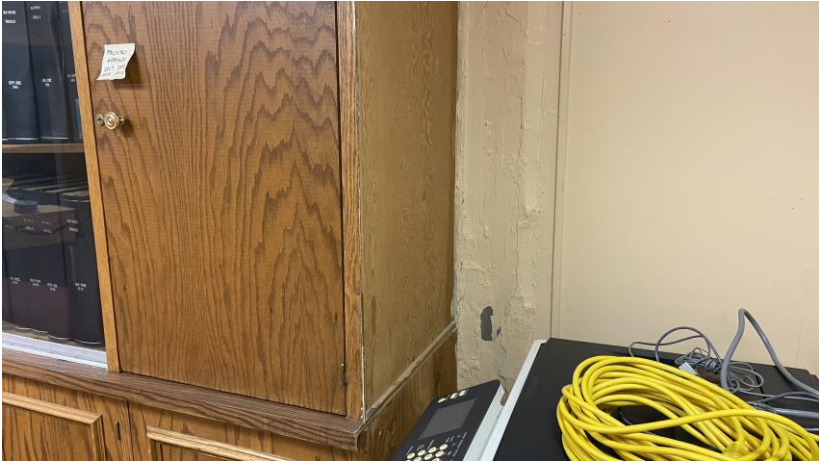
6. As the existing modified bitumen roof is approximately 25 years old and experiencing some areas of failure, replacement of the entire system should be considered within the next ten years. The system can be replaced with a similar system or another type of roofing with a thirty-year warranty. Tearing off the roof and insulation down to the structural deck would provide additional insulation increasing the energy efficiency of the structure.



Fig. 18 - modified bitumen roofing system at building rotunda.

7. Most of the 1998 addition has a standing seam metal roof. Though some minor corrosion was observed at seams, the roof system itself appears to be in good condition and should not require major repair or replacement within the next ten years.

8. The basement of the original portion of the building shows several signs of water intrusion and efflorescence. Though there are no known active leaks, the foundation wall should be exposed and observed from the exterior to evaluate any currently unobservable structural or water intrusion issues.



Figs. 19 and 20 - indications of water intrusion in basement of Carnegie portion of building

9. As previously discussed, our team used a thermal imaging camera to assess for any potential areas of moisture intrusion that may be undetectable to the naked eye. One finding of concern is at the north wall of the rotunda, which shows a temperature differential in a very specific area. Given that the temperature difference measured is only about 15 degrees, there is a possibility that only a very minor issue exists at this location. Removing a wood interior panel at this area to assess for damage and making repairs as needed is recommended to mitigate any potential unseen damage.

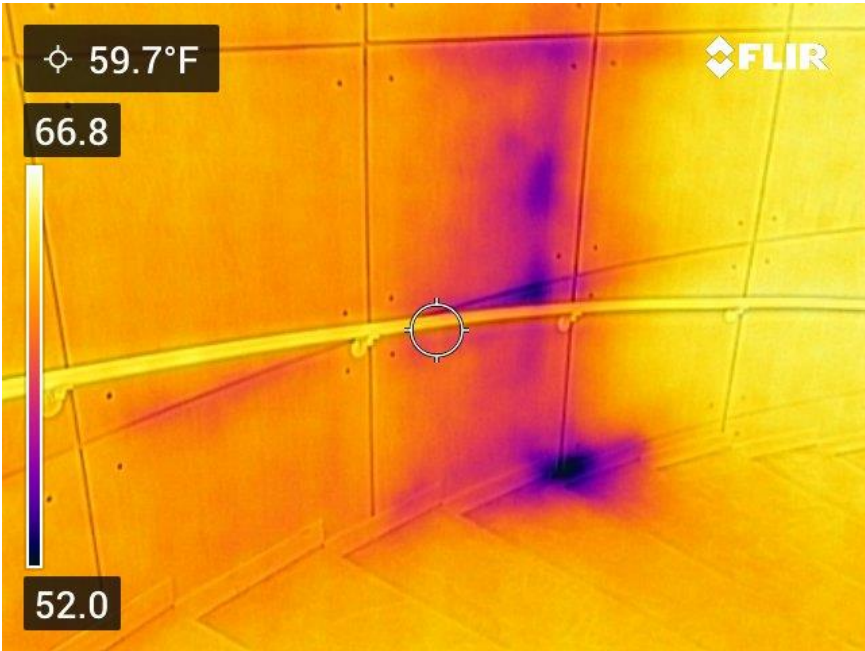


Fig. 19 - "cold spots" indicating possible moisture intrusion at rotunda interior.

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Interiors

1. Though many interior finishes are original to the 1998 building addition or before, most are in very good condition. This is likely due to good cleaning practice and to some extent lack of heavy use. However, some finishes - particularly second and third floor carpeting in the addition of the building - need replacement from a combination of wear and fading from sun exposure.



*Figs. 20 and 21 - second and third floor carpet in need of replacement.
(The third-floor carpet replacement could be deferred if the space will continue to be unused)*

2. Some areas of both the original portion of the building and the addition have damaged corners and wall surfaces. The addition of wall and corner protection at these areas will protect these areas from further damage and minimize need for ongoing painting and repair work.
3. The main meeting room in the original portion of the building has some damaged finishes, outdated technology infrastructure, and an operable wall system in need of replacement. Comprehensive remodeling of the space with new finishes, window treatments, A/V infrastructure, and HVAC improvements (later discussed in this Assessment) is recommended to improve usability and functionality of the space.



Fig. 22 - south half of main meeting room

4. There is significant noise from the basement chiller finding its way into first and second floor staff and public spaces. Further assessment of this issue revealed that there are several uninsulated copper circulation pipes that were installed in a new drywall chase running vertically between the basement and roof level that circulate fluid between the chiller in the basement and the remote condensing units on the roof. These uninsulated metal pipes are effectively broadcasting sound throughout the building from the chiller in the basement. The pipes should be insulated for both acoustic and thermal performance, and consideration should be given to demolishing the existing chases and reconstructing them with metal stud framing and fiberglass sound batt insulation if pipe insulation does not address the sound issue.
5. Toilet partitions at the first and second floor restrooms require replacement.
6. Please refer to the Accessibility section of this assessment report for additional interior items.

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Mechanical Systems and Infrastructure

1. Virtually all the building's mechanical equipment and infrastructure has been replaced in the last two years due to a flood of the basement that damaged all of the building's mechanical and electrical infrastructure. The replacement was handled by a contractor hired by the Library's insurance carrier. The system incorporates multiple boilers and air handling units serving the entire addition, while cooling is handled through rooftop cooling units. All of the control systems were replaced and variable frequency drives are provided on equipment to assist with energy efficiency. Being less than two years old and of proper commercial quality, there are no major areas of concern with respect to the new equipment.
2. Our team did notice significant air velocity and noise from the registers in the main meeting room. A possible explanation for this is that the spaces used to have supplemental radiant heat supplied from boilers; this piping and terminal units have been abandoned and units serving the meeting room replaced, yet ductwork serving the space was not modified. Since the older system relied on terminal radiant units, the ductwork was sized for ventilation and cooling loads and is likely undersized for the space. The noise is likely caused by the volume of airflow required to heat the space working through undersized ductwork and registers. Although it is possible to re-introduce radiant heating and adjust the rooftop units to provide ventilation only, a more sensible strategy may be to replace the ductwork serving these spaces so that it is properly sized. This will require removal and replacement of most (if not all) of the ceilings in the meeting room spaces, so it is recommended to accomplish this at the same time as the proposed renovation of the spaces.
3. Toilet exhaust fans do not appear to have been replaced as part of the HVAC replacement work and are at the end of their expected service lives. These should be replaced.
4. Though new control infrastructure was provided as part of the HVAC replacement project, the system appears to still be controlled by an older interface that existed prior to the system replacement in the first-floor building service/maintenance office. Replacement of the operating system with current web-based software will allow for remote monitoring and increased control.
5. When our team returned to the facility to investigate the chiller noise issue raised in our presentation of the draft of this assessment to the Library Board several areas of uninsulated supply and return copper piping serving boilers and chillers were observed. In general, all copper and cast iron piping in the building should be insulated.
6. Dedicated cooling for server and IT infrastructure was not observed. Introducing a ductless "mini split" system will extend life of server and networking equipment.

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Plumbing Systems and Infrastructure

1. Some plumbing fixtures in public restrooms are worn and require replacement with new fixtures within the next five years. Most of the public restroom faucets are spring-actuated with separate hot and cold supplies; replacement of these faucets with sensor-activated single temperature faucets with thermostatic mixing valves is recommended in all restrooms for safety purposes. The Library may also consider introducing sensor-actuated flush valves at toilets and urinals for hands-free operation.



Fig. 23 - public restrooms with older fixtures and spring-actuated faucets.

2. Two large sump pumps are provided in the basement of the addition and one in the original portion of the building to keep the building dry. One of the pumps was not operational at the time of our assessment visit.

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Fire Protection Systems and Infrastructure

1. Most of the building's fire protection infrastructure was recently replaced along with electrical and HVAC systems. A separate fire protection water service enters the building at the basement level, with a fire pump provided to increase water pressure from the municipal system. A backflow/backpressure prevention device is provided as required by code.



Fig. 24 - incoming fire protection service, fire pump, backpressure prevention device, and pump controller.

2. Some sprinkler head escutcheons/trims were noted as missing throughout the building. Although it is not necessary for operation of the sprinkler system, these are recommended to be replaced.
3. A new addressable fire alarm control panel was provided as part of the 2021-2022 system replacement. Fire alarm devices in the building appear to be newer, leading our assessment team to believe the new system also included new audio-visual "horn/strobe" devices.

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Electrical Systems and Infrastructure

1. Most of the building's electrical infrastructure was recently replaced along with fire protection and HVAC systems. The building is served by a 1600-amp service with a new main distribution panel and distribution panels within the basement that have been connected to existing branch panels throughout the building. A Generac emergency generator and control panel are provided for standby and emergency power use.
2. Most of the lighting in the facility is fluorescent or HID (metal halide) lighting. It does appear that site and parking lot lighting was recently replaced with LED technology. Although it is possible to retrofit existing fluorescent fixtures with LED tubes, we recommend one-for-one replacement of fluorescent and HID fixtures with new LED fixtures to eliminate ballasts from the building and improve energy efficiency. This replacement will also facilitate replacement of lamps within the tall rotunda space of the building. We understand some of the fixtures along the rotunda stairwell have already been upgraded.
3. All commercial buildings have exit signs and emergency lighting with battery backups. We suggest the Library check every device in the building on a monthly basis and replace batteries and/or fixtures as needed.

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Capital Cost Estimates and Prioritization

Following our assessment visits and discussion of findings with Library Staff, our team prepared preliminary estimates of cost for the items identified within this report and identified the ideal prioritization of these items over the next ten years. In order to accurately represent the probable costs of these projects, factors for constructor general conditions, overhead, and profit, professional services (architecture and engineering), design and construction contingencies, and - for future projects - escalation have been incorporated into these estimates.

The Williams Team worked with Library administration to develop a prioritized strategy for addressing the items identified within this Assessment that best aligns with likely available funding. In general, the recommended near-term projects address structural and water intrusion concerns with the original Carnegie portion of the building, while later projects focus on finish replacement and items that will reach the end of their expected service lives within the next ten years.

A summary of this information is included below. Please refer to the following pages for additional information and detail.

	Within 1 Year	1-5 Years	5 - 10 years	
Base Construction Trade Costs	\$ 370,500.00	\$ 2,096,800.00	\$ 1,257,500.00	
Constructor General Conditions, Overhead, & Profit - 18%	\$ 66,690.00	\$ 377,424.00	\$ 226,350.00	
Design Contingency - 10%	\$ 37,050.00	\$ 209,680.00	\$ 125,750.00	
Construction Contingency - 10%	\$ 37,050.00	\$ 209,680.00	\$ 125,750.00	
Subtotal - Unescalated Construction Costs	\$ 511,290.00	\$ 2,893,584.00	\$ 1,735,350.00	
Escalation - 3 Years @ 5 % (midpoint of 1-5 year timeframe)		\$ 434,037.60		
Escalation - 7.5 Years @ 5 % (midpoint of 5-10 year timeframe)			\$ 607,372.50	
Subtotal - Construction Costs With Future Escalation	\$ 511,290.00	\$ 3,327,621.60	\$ 2,342,722.50	
Architectural / Engineering Services Estimate	\$ 56,241.90	\$ 299,485.94	\$ 222,558.64	
				Ten-Year Total
Total Project Budget	\$ 567,531.90	\$ 3,627,107.54	\$ 2,565,281.14	\$ 6,759,920.58
Budget Per Year	\$ 567,531.90 (2024)	\$ 906,776.89 (2025-2028)	\$ 513,056.23 (2029-2033)	

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Maywood Public Library District
 Maywood, Illinois
 Assessment of Existing Conditions and Recommended Actions

Williams Architects
 8/7/2023

Category	Item No.	Condition	Recommendation	Priority of Work			Notes
				Within 1 Year	1-5 Years	5-10 Years	
Site	S						
Site	S-1	Sidewalks are separated from curbs and sinking, resulting in non-compliant cross slope.	Repair sidewalks by mudjacking or other method to lift sidewalks. Provide sealant between edge of sidewalk and curb.		\$ 25,000.00		
Site	S-2	Light bollards at/around entrance are severely rusted at bases from salt exposure.	Replace light bollards at entrance sidewalk or provide alternate means of lighting in this area.		\$ 20,000.00		
Site	S-3	Some sections of concrete sidewalks (particularly across entrance driveway) are heavily cracked, causing a trip hazard.	Partially replace damaged concrete sidewalk and drive sections.		\$ 15,000.00		
Site	S-4	Pedestrian sidewalks lack detectable warning surfaces in contrasting colors at vehicular crossing paths.	Add cast iron detectable warning surfaces at pedestrian crossings.		\$ 16,000.00		
Site	S-5	Parking lot pavement will require replacement in three to five years.	Mill and repave parking lot.		\$ 85,000.00		
Totals - Site				\$ -	\$ 161,000.00	\$ -	

Maywood Public Library District
 Maywood, Illinois
 Assessment of Existing Conditions and Recommended Actions

Williams Architects
 8/7/2023

Category	Item No.	Condition	Recommendation	Priority of Work			Notes
				Within 1 Year	1-5 Years	5-10 Years	
Accessibility	A						
Accessibility	A-1	Elevator equipment nearing end of expected service life.	Modernize elevator machinery, controls, and cab. (2 elevators total - perform Carnegie elevator modernization first)	\$ 140,000.00		\$ 140,000.00	
Accessibility	A-2	Sinks at employee break rooms not accessible.	Provide accessible knee space at sink (recommend replacing all cabinets and countertops - included in costs)		\$ 36,000.00		
Accessibility	A-3	Sinks at meeting room kitchen not accessible.	Provide accessible knee space at meeting room sink (recommend replacing all cabinets and countertops - included in costs)		\$ 18,000.00		
Accessibility	A-4	Accessible signage not provided throughout building.	Provide building-wide accessible signage		\$ 22,500.00		
Totals - Accessibility				\$ 140,000.00	\$ 76,500.00	\$ 140,000.00	
Life Safety	L						
Life Safety	L-1	Some PVC piping was observed in return air plenum areas, which is a potential fire hazard.	Replace PVC piping or insulate piping with noncombustible insulation product compliant with building codes.	\$ 5,000.00			
Totals - Life Safety				\$ 5,000.00	\$ -	\$ -	
Elevator	EL						
Addressed in Accessibility							

Maywood Public Library District
Maywood, Illinois
Assessment of Existing Conditions and Recommended Actions

Williams Architects
8/7/2023

Category	Item No.	Condition	Recommendation	Priority of Work			Notes
				Within 1 Year	1-5 Years	5-10 Years	
Building Envelope	BE						
Building Envelope	BE-1	Severe deterioration of mortar and masonry on original Carnegie portion of the building. Existing lintels severely corroded and require replacement.	Tuckpoint nearly all brick; replace severely damaged units with new matching units. Remove and replace existing lintels over windows.		\$ 1,100,000.00		
Building Envelope	BE-2	HVAC units drain condensate directly onto roof rather than to drainage.	Pipe unit condensate directly to all roof drains.		\$ 10,000.00		
Building Envelope	BE-3	Water infiltration at original Carnegie portion of building causing damage inside of walls and at building foundations.	Expose exterior of foundation walls to assess foundations for damage. Cost does not include addressing any damage found.	\$ 200,000.00			
Building Envelope	BE-4	Some areas of modified bitumen roofing are saturated with moisture and leaking through to spaces below.	Cut out and remove saturated roofing and insulation; patch in new.		\$ 50,000.00		
Building Envelope	BE-5	Existing low-slope roof will reach end of expected service life within next 10 years.	Tear off existing roofing and insulation and replace with new 30-year warranted system.			\$ 525,000.00	
Building Envelope	BE-6	Condensation/thermal issue apparent from thermal imaging at north wall of rotunda.	Remove portion of interior paneling and repair thermal break (most likely achievable via spray foam insulation). Cost does not include replacement of any damaged elements.		\$ 15,000.00		
Totals - Building Envelope				\$ 210,000.00	\$ 1,175,000.00	\$ 525,000.00	

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Williams Architects
 8/7/2023

Category	Item No.	Condition	Recommendation	Priority of Work			Notes
				Within 1 Year	1-5 Years	5-10 Years	
Interiors	I						
Interiors	I-1	Carpet in addition is severely worn and faded and requires replacement.	Replace carpeting. (+/-32000 SF)		\$ 225,000.00		
Interiors	I-2	Corners and high-impact wall surfaces damaged throughout building.	Add corner guards and wall protection at affected areas.			\$ 30,000.00	
Interiors	I-3	Large meeting rooms have damaged finishes and outdated technology infrastructure.	Comprehensively remodel main meeting room.		\$ 275,000.00		
Interiors	I-4	Toilet partitions in first and second floor restrooms are severely corroded and past expected service life.	Replace partitions with new solid plastic partitions. (Consider as part of complete restroom remodeling project)		\$ 30,000.00		
Totals - Interiors				\$ -	\$ 530,000.00	\$ 30,000.00	

Maywood Public Library District
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Williams Architects
 8/7/2023

Category	Item No.	Condition	Recommendation	Priority of Work			Notes
				Within 1 Year	1-5 Years	5-10 Years	
HVAC	HV.1	HVAC in meeting rooms is extremely noisy.	Change duct sizes to reduce velocity and noise OR limit airflow and re-introduce supplemental (baseboard) heating. Recommend completing at same time as meeting room remodeling (I-3) and replacement of RTU's (R-2) serving this area.		\$ 100,000.00		
HVAC	HV.2	Toilet room exhaust fans appear to be original to building and beyond expected service life.	Replace inline fans including roof curbs.			\$ 40,000.00	
HVAC	HV.3	Temperature controls are standalone with no way for remote monitoring or control.	Provide a web based Building Automation System so all HVAC equipment can be monitored/controlled remotely.			\$ 50,000.00	
HVAC	HV.4	MDF room has no way to reject heat from equipment.	Provide duct free split system cooling unit to cool room.			\$ 20,000.00	
HVAC	HV.5	Chiller supply and return piping to roof mounted condensing units are uninsulated and projecting noise into surrounding spaces.	Insulate all copper chiller supply and return piping with highest attenuating insulation possible. If insulation work does not address noise concerns, additional work may be required to address noise.	\$ 15,000.00			
Totals - HVAC				\$ 15,000.00	\$ 100,000.00	\$ 110,000.00	

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Williams Architects
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Category	Item No.	Condition	Recommendation	Priority of Work			Notes
				Within 1 Year	1-5 Years	5-10 Years	
Plumbing	P						
Plumbing	P.1	Some plumbing fixtures at public restrooms are worn or beyond expected service life.	Replace fixtures (Consider as part of complete restroom remodeling project)		\$ 45,000.00		
Plumbing	P.2	Lavatories do not have thermostatic mixing valves to limit water temperature to 110 degrees.	Provide point of use thermostatic mixing valves at all lavatories as well as sensor-operated faucets. (Faucets included in P-1 above)		\$ 4,800.00		
Totals - Plumbing				\$ -	\$ 49,800.00	\$ -	
Fire Protection	FP						
Fire Protection	FP.2	Existing heads are missing escutcheons and cover plates.	Provide escutcheons at missing locations.		\$ 2,500.00		
Totals - Fire Protection				\$ -	\$ 2,500.00	\$ -	
Electrical	E						
Electrical	E.1	Various lights contain fluorescent or HID lamps.	Replace existing fluorescent or HID lamps with energy efficient LED lamps or fixtures.			\$ 300,000.00	
Electrical	E.3	Lights located in rotunda are difficult to maintain due to height.	Consider replacing lights that are hard to reach with new LED fixtures.			\$ 150,000.00	
Electrical	E.4	Maintenance of existing battery powered exit signs and emergency lights.	Monthly maintenance and replace devices as needed.	\$ 500.00	\$ 2,000.00	\$ 2,500.00	Replace as needed. Cost is for one unit.
Totals - Electrical				\$ 500.00	\$ 2,000.00	\$ 452,500.00	

Category	Item No.	Condition	Recommendation	Priority of Work			Notes
				Within 1 Year	1-5 Years	5-10 Years	

Costs Summary

	Within 1 Year	1-5 Years	5 - 10 years	
Base Construction Trade Costs	\$ 370,500.00	\$ 2,096,800.00	\$ 1,257,500.00	
Constructor General Conditions, Overhead, & Profit - 18%	\$ 66,690.00	\$ 377,424.00	\$ 226,350.00	
Design Contingency - 10%	\$ 37,050.00	\$ 209,680.00	\$ 125,750.00	
Construction Contingency - 10%	\$ 37,050.00	\$ 209,680.00	\$ 125,750.00	
Subtotal - Unescalated Construction Costs	\$ 511,290.00	\$ 2,893,584.00	\$ 1,735,350.00	
Escalation - 3 Years @ 5 % (midpoint of 1-5 year timeframe)		\$ 434,037.60		
Escalation - 7.5 Years @ 5 % (midpoint of 5-10 year timeframe)			\$ 607,372.50	
Subtotal - Construction Costs With Future Escalation	\$ 511,290.00	\$ 3,327,621.60	\$ 2,342,722.50	
Architectural / Engineering Services Estimate	\$ 56,241.90	\$ 299,485.94	\$ 222,558.64	
				Ten-Year Total
Total Project Budget	\$ 567,531.90	\$ 3,627,107.54	\$ 2,565,281.14	\$ 6,759,920.58
Budget Per Year	\$ 567,531.90 (2024)	\$ 906,776.89 (2025-2028)	\$ 513,056.23 (2029-2033)	

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Maywood Public Library

2023-2033 Capital Needs Assessment

Appendix A: Structural Report

As previously discussed, a structural engineer was engaged as part of the assessment process to evaluate the existing foundation of the Carnegie portion of the building for potential settlement and related damage. The findings of that evaluation are included in the following report.

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May 2, 2023
Maywood Public Library District
121 S. 5thth Ave
Maywood, IL 60153
Attn.: Mr. Andrew Dogan
Structural Assessment of Foundations of Existing Carnegie Building.

Mr. Dogan:

CEA&A has been asked to review the existing condition of the foundations for the Carnegie portion of the Maywood Public Library. We reviewed the foundations on-site on Friday, April the 28th with Leighton Shell, and Daniel Eallonardo from the Maywood Public Library District.

The Existing library consists of the Carnegie portion of the Library was built in 1905 which has a partial depth basement with 2 stories above the lower level. The existing perimeter stone foundations carry the multi-wythe exterior brick masonry walls. We were not able to verify the existing floor and roof framing type during our visit. The library also has an addition from 1997. The addition from 1997 is outside of the scope of this report.

We were informed that the basement has issues with moisture at several locations throughout the basement. While most of the basement foundation walls are covered with finishes, the existing stone foundations that are exposed to view, are exhibiting signs of water infiltration. The efflorescence is very evident in much of the brick masonry, which is an indicator of moisture in the wall assembly.



Interior Stone Foundations with Efflorescence

The exterior of the Carnegie building is exhibiting cracking in the brick masonry walls at several locations. We noted that most of the existing steel lintels above the window openings are heavily corroded, and we believe that the lintel corrosion is the primary cause of the cracking in the exterior brick walls. As the steel lintels corrode, the steel expands and this expansion pushes the exterior brick wythe and causes the cracking. The existing steel lintels above the windows do not appear to be protected from the elements by either painting or galvanizing.



Cracks above Windows Due to Lintel Corrosion



Cracks above In-filled Windows Due to Lintel Corrosion

It was noted that some of the areas below the windows have deteriorated masonry. We believe that this deterioration is due to water infiltration, perhaps at the sill of the window, and is not related to any possible issues with the foundations.



Masonry Deterioration below Windows

The stone foundations that are visible from the exterior of the Carnegie addition appear to be in good to fair condition, as no cracks or signs of settlement were noted. It is important to note that it is possible the condition of the existing stone foundations may be deteriorated below grade due to the foundation wall's long-term exposure to moisture.

It is our opinion that the existing stone foundations of the Carnegie building are not exhibiting signs of excessive settlement, and that the exposed foundations are in fair condition, although signs of water infiltration are evident from the basement side of the foundations. For the remediation of the water intrusion, it is recommended the exterior of the Carnegie building be excavated to expose the existing stone foundation walls. In exposing the foundations, a more complete assessment can be made regarding the condition of the structural integrity of the foundations. After any required foundation repairs are made, a water-proofing membrane is to be installed on the outside face of the foundations walls, prior to backfilling.

We ask that the Building Engineer for the library verify if the geotechnical report for the 1997 addition to the library is available. The geotechnical report for that addition will provide some insight as to the elevation of the water table for the site, as well as the bearing capacity of the soil strata of the existing foundations. If the geotechnical report is not available, it may be recommendable to hire a geotechnical

engineer to drill 2 or 3 borings around the perimeter of the Carnegie building and to do a geotechnical report in order to ascertain the elevation of the water table, and the allowable soil bearing capacity.

It is also recommended the existing corroded steel lintels be replaced with new galvanized steel lintels. After the replacement of the steel lintels, repairs, such as tuck-pointing, should be made to the exterior brick masonry walls to reduce water infiltration.

Thank you.

If you need any further information, please contact us.

Sincerely,

C.E. Anderson & Associates

A handwritten signature in black ink, appearing to read 'JR', with a long horizontal stroke extending to the right.

Juan R. Moreno, S.E.

Vice President