

# FACILITY CONDITION ASSESSMENT

*Prepared for*

Ann Arbor Public Schools  
2555 South State Street  
Ann Arbor, Michigan 48104  
Jim Vibbart



FACILITY CONDITION ASSESSMENT  
OF  
NORTHSIDE ELEMENTARY  
912 BARTON DRIVE  
ANN ARBOR, MICHIGAN 48105

**PREPARED BY:**

EMG

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**EMG PROJECT #:**

129010.18R000-019.354

**DATE OF REPORT:**

July 2, 2018

**ONSITE DATE:**

February 8, 2018



engineering | environmental | capital planning | project management

**Immediate Repairs Report**  
**Northside Elementary**  
**7/2/2018**



Location Name	EMG Renamed Item Number	ID	Cost Description	Quantity	Unit	Unit Cost *	Subtotal	Deficiency Repair Estimate *
Northside Elementary	D30	885584	Air Conditioning, Central, Install	104000	SF	\$11.50	\$1,196,000	<b>\$1,196,000</b>
Northside Elementary	B20	871341	Exterior Wall, Joint Caulking 0" to 1/2", 1-2 Stories, Replace	300	LF	\$2.82	\$846	<b>\$846</b>
Northside Elementary	B20	848596	Exterior Wall, Brick or Brick Veneer, 1-2 Stories, Repoint	40000	SF	\$47.47	\$1,899,000	<b>\$1,899,000</b>
Northside Elementary	B20	870858	Exterior Wall, Aluminum Siding, 1-2 Stories, Replace	2500	SF	\$9.98	\$24,940	<b>\$24,940</b>
Northside Elementary	B20	870157	Exterior Wall, Joint Caulking 0" to 1/2", 1-2 Stories, Replace	300	LF	\$2.82	\$846	<b>\$846</b>
Northside Elementary	B20	870023	Louver, Aluminum, Replace	30	EA	\$925.31	\$27,759	<b>\$27,759</b>
Northside Elementary	B20	870008	Curtain Wall, Aluminum-Framed System w/ Glazing, Replace	50	SF	\$116.63	\$5,831	<b>\$5,831</b>
Northside Elementary	B20	870051	Exterior Door, Steel Insulated, Replace	2	EA	\$3,391.69	\$6,783	<b>\$6,783</b>
Northside Elementary	B30	848601	Roof, Single-Ply EPDM Membrane, Replace	44000	SF	\$12.10	\$532,312	<b>\$532,312</b>
Northside Elementary	B10	870030	Exterior Stair/Ramp Rails, Metal, Refinish	1500	LF	\$1.65	\$2,482	<b>\$2,482</b>
Northside Elementary	B10	848688	Interior Stair/Ramp Rails, Metal, Refinish	1500	LF	\$1.65	\$2,482	<b>\$2,482</b>
Northside Elementary	C2010	848669	Interior Wall Finish, Gypsum Board/Plaster/Metal, Prep & Paint	192000	SF	\$1.64	\$314,243	<b>\$314,243</b>
Northside Elementary	C2050	870245	Interior Ceiling Finish, Suspended Acoustical Tile (ACT), Replace	2500	SF	\$3.58	\$8,944	<b>\$8,944</b>
Northside Elementary	D20	870828	Service Sink, Floor, Replace	6	EA	\$1,839.44	\$11,037	<b>\$11,037</b>
Northside Elementary	D30	848652	Heat Exchanger, Steam-to-Water, 175 GPM, Replace	1	EA	\$22,089.00	\$22,089	<b>\$22,089</b>
Northside Elementary	D30	871134	HVAC System Ductwork, Sheet Metal, Replace	100	SF	\$32.25	\$3,225	<b>\$3,225</b>
Northside Elementary	D30	848632	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	848610	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	871337	Exhaust Fan, Roof Mounted, 501 to 800 CFM, Replace	1	EA	\$2,012.84	\$2,013	<b>\$2,013</b>
Northside Elementary	D30	848645	Exhaust Fan, Centrifugal, 801 to 2,000 CFM, Replace	1	EA	\$3,063.80	\$3,064	<b>\$3,064</b>
Northside Elementary	D30	871334	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	848677	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	848598	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	848664	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	848624	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	848587	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	848685	Exhaust Fan, Centrifugal, 801 to 2,000 CFM, Replace	1	EA	\$3,063.80	\$3,064	<b>\$3,064</b>
Northside Elementary	D30	848591	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>

**Immediate Repairs Report**  
**Northside Elementary**  
**7/2/2018**



Location Name	EMG Renamed Item Number	ID	Cost Description	Quantity	Unit	Unit Cost *	Subtotal	Deficiency Repair Estimate *
Northside Elementary	D30	848690	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	848629	Exhaust Fan, Roof Mounted, 10,001 to 20,000 CFM, Replace	1	EA	\$13,307.33	\$13,307	<b>\$13,307</b>
Northside Elementary	D30	848576	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	848604	Exhaust Fan, Roof Mounted, 10,001 to 20,000 CFM, Replace	1	EA	\$13,307.33	\$13,307	<b>\$13,307</b>
Northside Elementary	D30	848603	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	1	EA	\$2,325.15	\$2,325	<b>\$2,325</b>
Northside Elementary	D30	848619	Exhaust Fan, Roof Mounted, 10,001 to 20,000 CFM, Replace	1	EA	\$13,307.33	\$13,307	<b>\$13,307</b>
Northside Elementary	D30	848672	Heat Pump, Packaged (RTU), 11 to 15 Ton, Replace	1	EA	\$36,492.56	\$36,493	<b>\$36,493</b>
Northside Elementary	D50	870072	Electrical Distribution System, School, Upgrade	64000	SF	\$57.24	\$3,663,440	<b>\$3,663,440</b>
Northside Elementary	D50	870827	Switches, Receptacles, 120 V, 20 Amp, Replace	500	EA	\$145.27	\$72,636	<b>\$72,636</b>
Northside Elementary	G40	869989	Recessed Lighting, , Replace	2	EA	\$1,144.79	\$2,290	<b>\$2,290</b>
Northside Elementary	D70	848682	Fire Alarm System, School, Install	104000	SF	\$3.60	\$374,551	<b>\$374,551</b>
Northside Elementary	D70	869996	Magnetic Lock and Access Control Card Reader, 600 to 1,200 Pounds Force, Replace	1	EA	\$6,674.60	\$6,675	<b>\$6,675</b>
Northside Elementary		958700	Davis Bacon Prevailing Wages, Surcharge for Prevailing Wages, 10% surcharge for prevailing wages	129336.61	LS	\$1.15	\$148,737	<b>\$148,737</b>
Northside Elementary	G20	848701	Parking Lots, Asphalt Pavement, Mill & Overlay	50000	SF	\$3.77	\$188,623	<b>\$188,623</b>
Northside Elementary	G20	848592	Site Signage, , Replace/Install	1	EA	\$9,892.30	\$9,892	<b>\$9,892</b>
Northside Elementary	G20	848623	Basketball Backboard, , Replace	10	EA	\$10,850.98	\$108,510	<b>\$108,510</b>
Northside Elementary	G20	870026	Basketball Backboard, , Replace	2	EA	\$10,850.98	\$21,702	<b>\$21,702</b>
<b>Immediate Repairs Total</b>								<b>\$8,768,333</b>

\* Location Factor included in totals.



EMG Renamed Item Number	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	w/ Markup *	Subtotal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037RRR_RowGrandTotalLabel		
D30	848695	Air Compressor, Dual Compressor, Triple Head, 1.5 HP Each, Replace	20	10	10	1	EA	\$9,652.21	\$11,100.05	\$11,100											\$11,100										\$11,100	
D30	848640	Compressed Air Dryer, , Replace	15	3	12	1	EA	\$5,077.01	\$5,838.57	\$5,839												\$5,839									\$5,839	
	960804	Solar Instillation Project, Roof Mounted Solar Instillation, Install	20	12	8	351000	SF	\$1.00	\$1.15	\$403,650									\$403,650												\$403,650	
D30	848583	Boiler, Gas, 3348 MBH, Replace	25	15	10	1	EA	\$120,905.15	\$139,040.92	\$139,041											\$139,041										\$139,041	
D30	848608	Boiler, Gas, 3348 MBH, Replace	25	15	10	1	EA	\$120,905.15	\$139,040.92	\$139,041											\$139,041										\$139,041	
D30	848671	Chemical Feed System, , Replace	25	20	5	1	EA	\$10,642.24	\$12,238.58	\$12,239						\$12,239															\$12,239	
D30	848686	Air Separator, 4", Replace	15	10	5	1	EA	\$3,545.66	\$4,077.51	\$4,078						\$4,078															\$4,078	
D30	848647	Air Separator, 6", Replace	15	5	10	1	EA	\$6,624.65	\$7,618.35	\$7,618											\$7,618										\$7,618	
D30	870158	Shot Feed Tank, 5 GAL, Replace	25	13	12	1	EA	\$1,406.00	\$1,616.90	\$1,617												\$1,617									\$1,617	
D30	848663	Boiler Return Condensate Tank, 125 GAL, Replace	25	7	18	1	EA	\$9,700.00	\$11,155.00	\$11,155																		\$11,155			\$11,155	
D30	848652	Heat Exchanger, Steam-to-Water, 175 GPM, Replace	35	54	0	1	EA	\$15,777.86	\$22,089.00	\$22,089	\$22,089																					\$22,089
D30	848650	Ductless Split System, Single Zone, 1 Ton, Replace	15	11	4	1	EA	\$3,221.22	\$3,704.40	\$3,704				\$3,704															\$3,704		\$3,704	
D30	870851	Ductless Split System, Single Zone, 1.5 to 2 Ton, Replace	15	7	8	6	EA	\$4,473.11	\$5,144.08	\$30,864									\$30,864												\$30,864	
D30	871134	HVAC System Ductwork, Sheet Metal, Replace	30	30	0	100	SF	\$15.00	\$32.25	\$3,225	\$3,225																				\$3,225	
D30	870856	Unit Ventilator, 751 to 1,250 CFM (approx. 3 Ton), Replace	15	11	4	35	EA	\$8,444.15	\$9,710.77	\$339,877				\$339,877															\$339,877		\$339,877	
D30	870859	Unit Ventilator, , Replace	15	10	5	25	EA	\$12,727.00	\$15,908.75	\$397,719				\$397,719																	\$397,719	
D30	870865	Duct Heater, Hydronic, Replace	15	4	11	25	EA	\$2,698.52	\$3,103.30	\$77,583											\$77,583										\$77,583	
D30	848667	Air Handler, Exterior, 1850 CFM, Replace	15	3	12	1	EA	\$11,419.83	\$13,132.81	\$13,133												\$13,133									\$13,133	
D30	848684	Air Handler, Exterior, 1500 CFM, Replace	15	3	12	1	EA	\$11,419.83	\$13,132.81	\$13,133												\$13,133									\$13,133	
D30	848694	Air Handler, Exterior, 9025 CFM, Replace	15	3	12	1	EA	\$45,895.13	\$52,779.40	\$52,779												\$52,779									\$52,779	
D30	848658	Make-Up Air Unit, 14,815 CFM, Replace	20	4	16	1	EA	\$61,112.86	\$70,279.79	\$70,280																	\$70,280				\$70,280	
D30	848632	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	15	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848610	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	15	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	871337	Exhaust Fan, Roof Mounted, 501 to 800 CFM, Replace	15	55	0	1	EA	\$1,750.30	\$2,012.84	\$2,013	\$2,013															\$2,013					\$2,013	
D30	848645	Exhaust Fan, Centrifugal, 801 to 2,000 CFM, Replace	15	15	0	1	EA	\$2,664.18	\$3,063.80	\$3,064	\$3,064															\$3,064					\$3,064	
D30	871334	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	15	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848677	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	15	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848598	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	15	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848664	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	15	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848624	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	15	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848587	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	15	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848685	Exhaust Fan, Centrifugal, 801 to 2,000 CFM, Replace	15	50	0	1	EA	\$2,664.18	\$3,063.80	\$3,064	\$3,064															\$3,064					\$3,064	
D30	848591	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	30	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848690	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	30	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848629	Exhaust Fan, Roof Mounted, 10,001 to 20,000 CFM, Replace	15	50	0	1	EA	\$11,571.59	\$13,307.33	\$13,307	\$13,307															\$13,307					\$13,307	
D30	848576	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	30	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848604	Exhaust Fan, Roof Mounted, 10,001 to 20,000 CFM, Replace	15	50	0	1	EA	\$11,571.59	\$13,307.33	\$13,307	\$13,307															\$13,307					\$13,307	
D30	848603	Exhaust Fan, Centrifugal, 251 to 800 CFM, Replace	15	30	0	1	EA	\$2,021.87	\$2,325.15	\$2,325	\$2,325															\$2,325					\$2,325	
D30	848619	Exhaust Fan, Roof Mounted, 10,001 to 20,000 CFM, Replace	15	50	0	1	EA	\$11,571.59	\$13,307.33	\$13,307	\$13,307															\$13,307					\$13,307	
D30	848617	Exhaust Fan, Centrifugal, 730 CFM, Replace	15	12	3	1	EA	\$2,021.87	\$2,325.15	\$2,325				\$2,325														\$2,325			\$2,325	
D30	848687	Exhaust Fan, Centrifugal, 1059 CFM, Replace	15	9	6	1	EA	\$2,664.18	\$3,063.80	\$3,064							\$3,064														\$3,064	
D30	848622	Exhaust Fan, Centrifugal, 300 CFM, Replace	15	9	6	1	EA	\$2,021.87	\$2,325.15	\$2,325							\$2,325														\$2,325	
D30	848651	Exhaust Fan, Centrifugal, 300 CFM, Replace	15	9	6	1	EA	\$2,021.87	\$2,325.15	\$2,325							\$2,325														\$2,325	
D30	848595	Exhaust Fan, Centrifugal, 300 CFM, Replace	15	9	6	1	EA	\$2,021.87	\$2,325.15	\$2,325							\$2,325														\$2,325	
D30	848698	Exhaust Fan, Centrifugal, 6500 CFM, Replace	15	9	6	1	EA	\$5,570.04	\$6,405.54	\$6,406							\$6,406														\$6,406	
D30	848699	Exhaust Fan, Centrifugal, 300 CFM, Replace	15	9	6	1	EA	\$2,021.87	\$2,325.15	\$2,325							\$2,325														\$2,325	
D30	848620	Exhaust Fan, Centrifugal, 300 CFM, Replace	15	9	6	1	EA	\$2,021.87	\$2,325.15	\$2,325							\$2,325														\$2,325	
D30	871336	Exhaust Fan, Centrifugal, 801 to 2,000 CFM, Replace	15	4	11	1	EA	\$2,664.18	\$3,063.80	\$3,064												\$3,064									\$3,064	
D30	871335	Exhaust Fan, Centrifugal, 801 to 2,000 CFM, Replace	15	4	11	1	EA	\$2,664.18	\$3,063.80	\$3,064																						

EMG Renamed Item Number	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	w/ Markup *	Subtotal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037RRR_RowGrandTotalLabel	
D30	848678	Distribution Pump, Heating Water, 5 HP, Replace	20	9	11	1	EA	\$5,518.88	\$6,346.72	\$6,347												\$6,347								\$6,347	
D30	848643	Distribution Pump, Heating Water, 5 HP, Replace	20	9	11	1	EA	\$5,518.88	\$6,346.72	\$6,347												\$6,347								\$6,347	
D30	870134	Distribution Pump, Heating Water, Replace	20	7	13	1	EA	\$1,000.00	\$1,000.00	\$1,000														\$1,000						\$1,000	
D30	870052	Cabinet Heater, Hydronic, Replace	20	17	3	50	EA	\$3,179.94	\$3,656.93	\$182,846			\$182,846																	\$182,846	
D30	870205	Air Conditioner, Window/Thru-Wall, 1.5 to 2 Ton, Replace	10	2	8	14	EA	\$2,588.52	\$2,976.80	\$41,675								\$41,675										\$41,675		\$41,675	
D30	870848	Radiator, Hydronic Baseboard (per LF), Replace	50	38	12	2000	LF	\$132.77	\$152.69	\$305,371												\$305,371								\$305,371	
D30	870842	Cabinet Heater, , Replace	20	4	16	10	EA	\$3,179.94	\$3,656.93	\$36,569																	\$36,569			\$36,569	
D30	848672	Heat Pump, Packaged (RTU), 11 to 15 Ton, Replace	15	28	0	1	EA	\$31,732.66	\$36,492.56	\$36,493	\$36,493														\$36,493					\$36,493	
D30	870940	Heat Pump, Packaged (RTU), 10 Ton, Replace	15	9	6	1	EA	\$15,325.27	\$17,624.06	\$17,624						\$17,624														\$17,624	
D30	870986	Heat Pump, Packaged (RTU), 6 Ton, Replace	15	9	6	1	EA	\$15,325.27	\$17,624.06	\$17,624						\$17,624														\$17,624	
D30	871032	Heat Pump, Packaged (RTU), 6 Ton, Replace	15	9	6	1	EA	\$15,325.27	\$17,624.06	\$17,624						\$17,624														\$17,624	
D30	870972	Heat Pump, Packaged (RTU), 10 Ton, Replace	15	9	6	1	EA	\$15,325.27	\$17,624.06	\$17,624						\$17,624														\$17,624	
D30	848606	Heat Pump, Packaged (RTU), 10 Ton, Replace	15	9	6	1	EA	\$15,325.27	\$17,624.06	\$17,624						\$17,624														\$17,624	
D30	870999	Heat Pump, Packaged (RTU), 6 Ton, Replace	15	4	11	1	EA	\$15,325.27	\$17,624.06	\$17,624												\$17,624								\$17,624	
D30	870138	Building Automation System (HVAC Controls), Upgrade	20	7	13	104000	SF	\$5.36	\$6.17	\$641,355													\$641,355							\$641,355	
D40	848594	Sprinkler System, Full Retrofit, School (per SF), Renovate	50	46	4	104000	SF	\$6.25	\$7.19	\$747,919				\$747,919																\$747,919	
D40	870151	Fire Extinguisher, Replace	15	4	11	20	EA	\$356.54	\$410.02	\$8,200												\$8,200								\$8,200	
D50	848584	Variable Frequency Drive (VFD), 5 HP Motor, Replace	20	10	10	1	EA	\$4,748.96	\$5,461.30	\$5,461												\$5,461								\$5,461	
D50	848696	Variable Frequency Drive (VFD), 5 HP Motor, Replace	20	10	10	1	EA	\$4,748.96	\$5,461.30	\$5,461												\$5,461								\$5,461	
D50	870072	Electrical Distribution System, School, Upgrade	40	54	0	64000	SF	\$49.78	\$57.24	\$3,663,440	\$3,663,440																			\$3,663,440	
D50	870827	Switches, Receptacles, 120 V, 20 Amp, Replace	20	55	0	500	EA	\$126.32	\$145.27	\$72,636	\$72,636																			\$72,636	
G40	869989	Recessed Lighting, , Replace	20	20	0	2	EA	\$995.47	\$1,144.79	\$2,290	\$2,290																			\$2,290	
G40	848631	High Pressure Sodium Lighting Fixture, 250 W, Replace	20	10	10	25	EA	\$719.95	\$827.94	\$20,699												\$20,699								\$20,699	
D70	870906	School Clock System, , Replace	15	4	11	1	EA	\$4,261.42	\$7,031.34	\$7,031												\$7,031								\$7,031	
G40	848609	LED Lighting Fixture, Basic, 20 W, Replace	20	5	15	25	EA	\$180.19	\$207.21	\$5,180															\$5,180					\$5,180	
D50	870199	Lighting System, Interior, School, Upgrade	25	15	10	63776	SF	\$15.36	\$17.67	\$1,126,789												\$1,126,789								\$1,126,789	
	947079	Intercom Master Station, Replace	20	19	1	1	EA	\$3,814.50	\$4,386.67	\$4,387		\$4,387																		\$4,387	
D70	870840	Sound System, , Replace	15	7	8	1	EA	\$2,318.93	\$4,985.70	\$4,986								\$4,986												\$4,986	
D50	945810	Clock and Bell System, Wireless or Ethernet Enabled, Up To 100 Total Clocks / Bells, Replace	15	14	1	104000	SF	\$0.51	\$0.59	\$60,996		\$60,996														\$60,996				\$60,996	
D70	870170	Clock, , Replace	15	13	2	20	EA	\$320.18	\$368.20	\$7,364			\$7,364															\$7,364		\$7,364	
D70	848682	Fire Alarm System, School, Install	20	20	0	104000	SF	\$3.13	\$3.60	\$374,551	\$374,551																			\$374,551	
D70	869996	Magnetic Lock and Access Control Card Reader, 600 to 1,200 Pounds Force, Replace	20	20	0	1	EA	\$5,804.00	\$6,674.60	\$6,675	\$6,675																			\$6,675	
	947077	Security/Surveillance System, Cameras and CCTV, Install	10	9	1	104000	SF	\$4.35	\$5.00	\$519,925		\$519,925										\$519,925								\$519,925	
D70	870188	Emergency/Exit Combo, Replace	10	7	3	40	EA	\$687.51	\$790.64	\$31,626				\$31,626											\$31,626					\$31,626	
D30	870829	Laboratory Exhaust Hood, 4 LF, Replace	15	4	11	1	EA	\$2,633.87	\$3,028.95	\$3,029												\$3,029								\$3,029	
E10	871344	Commercial Kitchen, Food Service Equipment (Allowance), Replace	5	1	4	1	EA	\$25,000.00	\$28,750.00	\$28,750					\$28,750						\$28,750				\$28,750					\$28,750	
C10	870862	Bleacher, Telescoping Manual, 21 to 30 Tier, Replace	20	4	16	500	EA	\$551.00	\$633.65	\$316,825																\$316,825				\$316,825	
C10	870163	Kitchen Cabinet, Base and Wall Section, Wood, Replace	20	5	15	2000	LF	\$467.63	\$537.78	\$1,075,555															\$1,075,555					\$1,075,555	
D20	870846	Bathroom Vanity Cabinet, Wood, with Sink Top, Replace	20	5	15	10	EA	\$1,082.84	\$1,245.27	\$12,453															\$12,453					\$12,453	
	958700	Davis Bacon Prevailing Wages, Surcharge for Prevailing Wages, 10% surcharge for prevailing wages	1	1	0	129336.61	LS	\$1.00	\$1.15	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$148,737	\$2,974,742
G20	870831	Roadways, Concrete Curb & Gutter, Replace	25	20	5	5000	LF	\$24.00	\$27.60	\$138,000						\$138,000														\$138,000	
G20	848701	Parking Lots, Asphalt Pavement, Mill & Overlay	25	25	0	50000	SF	\$3.28	\$3.77	\$188,623	\$188,623																			\$188,623	
G20	848637	Parking Lots, Asphalt Pavement, Seal & Stripe	5	0	5	50000	SF	\$0.38	\$0.44	\$21,821						\$21,821					\$21,821				\$21,821					\$21,821	
G20	848655	Pedestrian Pavement, Sidewalk, Concrete Large Areas, Replace	30	20	10	50000	SF	\$9.00	\$10.35	\$517,500												\$517,500								\$517,500	
G20	848592	Site Signage, , Replace/Install	20	20	0	1	EA	\$8,602.00	\$9,892.30	\$9,892	\$9,892																			\$9,892	
G20	869978	Site Furnishings, Park Bench, Metal/Wood/Plastic, Replace	20	10	10	20	EA	\$487.03	\$560.08	\$11,202												\$11,202								\$11,202	
G20	869973	Site Furnishings, Bike Rack, Replace	25	10	15	2	EA	\$1,090.00	\$1,253.50	\$2,507															\$2,507					\$2,507	
G20	848623	Basketball Backboard, , Replace	10	10	0	10	EA	\$9,435.64	\$10,850.98	\$108,510	\$108,510											\$108,510								\$108,510	
G20	870026	Basketball Backboard, , Replace	10	10	0	2	EA	\$9,435.64	\$10,850.98	\$21,702	\$21,702											\$21,702								\$21,702	
G20	848668	Play Structure, Small, Replace	20	17	3	1	EA	\$18,975.00	\$21,821.25	\$21,821				\$21,821																\$21,821	
G20	848581	Play Structure, Large, Replace	20																												



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# 1 Executive Summary

## 1.1 Property Information and General Physical Condition

The property information is summarized in the table below. More detailed descriptions may be found in the various sections of the report and in the Appendices.

Property Information		
Address:	912 Barton Drive, Ann Arbor, Washtenaw, MI 48105	
Year Constructed/Renovated:	1939 Remodeled 2014-2016	
Current Occupants:	Ann Arbor Schools	
Percent Utilization:	100%	
Management Point of Contact:	Ann Arbor Public Schools, Jim Vibbart, Facilities Manager 734.320.3613 phone vibbart.j@aaps.k12.mi.us email	
Property Type:	Classrooms	
Site Area:	17 acres	
Building Area:	104,000 SF (Estimated)	
Number of Buildings:	1	
Number of Stories:	2	
Parking Type and Number of Spaces:	68 spaces in open lots	
Building Construction:	Masonry bearing walls and metal-framed decks.	
Roof Construction:	Flat roofs with built-up membrane.	
Exterior Finishes:	Brick	
Heating, Ventilation & Air Conditioning:	Roof top units, air handlers, boilers, unit ventilators, makeup air units, heat exchangers and cabinet unit heaters.	
Fire and Life/Safety:	Fire sprinklers, hydrants, smoke detectors, alarms, strobes, extinguishers, pull stations, alarm panel and exit signs.	
ADA :	This building does not have any major ADA issues.	
All 104,000 square feet of the building are occupied by a single occupant, Ann Arbor Schools. The spaces are mostly classrooms, laboratory spaces, supporting restrooms, gymnasium, administrative offices, mechanical and other utility spaces.		
The following table identifies the unit types and mix at the subject property:		
Most of the interior spaces were observed in order to gain a clear understanding of the property's overall condition. Other areas accessed included the site within the property boundaries, exterior of the property and the roof. All areas of the property were available for observation during the site visit.		
Key Spaces Not Observed		
Room Number	Area	Access Issues
Kitchen	Kitchen	Staff was busy cooking
A "down unit" or area is a term used to describe a unit or space that cannot be occupied due to poor conditions such as fire damage, water damage, missing equipment, damaged floor, wall or ceiling surfaces, or other significant deficiencies. There are no down units or areas.		
Assessment Information		
Dates of Visit:	2/8/2018	
On-Site Point of Contact (POC):	Jim Vibbart	
Assessment and Report Prepared by:	James Cuellar	

Property Information	
Reviewed by:	Paul Prusa Technical Report Reviewer for Andy Hupp Program Manager <a href="mailto:arhupp@emgcorp.com">arhupp@emgcorp.com</a> 800.733.0660 x6632

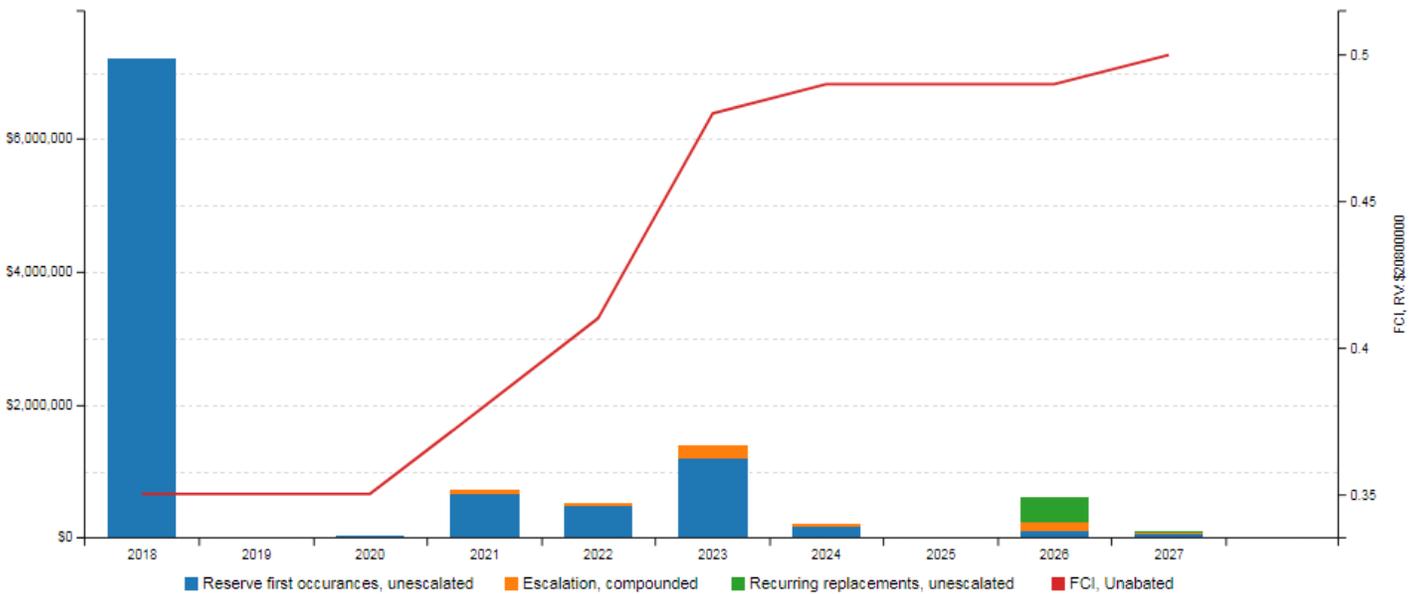
### 1.2 Key Findings

**Site:** The parking lot has multiple cracks from erosion. A cost allowance to repair and/or replace these deficient attributes is included in the cost tables.

**Architectural:** Isolated portions of the mortar joints along the brick are cracked around the property. A cost allowance to repair and/or replace these deficient attributes is included in the cost tables.

**MEPF:** The older section of the building has original wiring that should be replaced. Some mechanical components in the building are original and are antiquated. A cost allowance to repair and/or replace these deficient attributes is included in the cost tables

### 1.3 Facility Condition Index (FCI)



One of the major goals of the FCA is to calculate the FCI, which gives an indication of a building’s overall condition. Two FCI ratios are calculated and presented, the Current Year and Ten-Year. The Current Year FCI is the ratio of Immediate Repair Costs to the building’s Current Replacement Value. Similarly, the Ten-Year FCI is the ratio of anticipated Capital Reserve Needs over the next ten years to the Current Replacement Value.

FCI Condition Rating	Definition	Percentage Value
Good	In new or well-maintained condition, with no visual evidence of wear, soiling or other deficiencies.	0 to .05
Fair	Subjected to wear and soiling but is still in a serviceable and functioning condition.	> than .05 to .10



FCI Condition Rating	Definition	Percentage Value
Poor	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.	> than .10 to .60
Very Poor	Has reached the end of its useful or serviceable life. Renewal is now necessary.	> than .60

The graphs above and tables below represent summary-level findings for the FCA. The deficiencies identified in this assessment can be combined with potential new construction requirements to develop an overall strategy that can serve as the basis for a portfolio-wide capital improvement funding strategy. Key findings from the assessment include:

Key Finding	Metric	
Current Year Facility Condition Index (FCI) $FCI = (IR)/(CRV)$	0.35	Poor
10-Year Facility Condition Index (FCI) $FCI = (RR)/(CRV)$	0.52	Poor
<b>Current Replacement Value (CRV)</b>	104,000 SF * \$200 / SF = \$20,800,000	
Year 0 (Current Year) - Immediate Repairs (IR)	\$7,203,784	
Years 1-10 – Replacement Reserves (RR)	\$3,602,492	
<b>Total Capital Needs</b>	<b>\$10,806,276</b>	

Further detail on the specific costs that make up the Immediate Repair Costs can be found in the cost tables at the beginning of this report.

## 2 Building Structure

### A10 Foundations

Building Foundation		
Item	Description	Condition
Foundation	Slab on grade with integral footings	Good
Basement	Concrete slab and concrete walls	Good

#### Anticipated Lifecycle Replacements

- No components of significance

#### Actions/Comments:

- The foundation systems are concealed. There are no significant signs of settlement, deflection, or movement. The basement walls appear intact and structurally sound. There is no evidence of movement or water infiltration.

### B10 Superstructure

B1010 Floor Construction & B1020 Roof Construction		
Item	Description	Condition
Framing / Load-Bearing Walls	Masonry walls	Good
Ground Floor	Concrete slab	Good
Upper Floor Framing	Steel beams	Good
Upper Floor Decking	Concrete, cast-in-place	Good
Balcony Framing	None	--
Balcony Decking	None	--
Balcony Deck Toppings	None	--
Balcony Guardrails	None	--
Roof Framing	Steel beams or girders	Good
Roof Decking	Metal decking	Good

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Caulk minor cracking	<input checked="" type="checkbox"/>	Monitor cracking for growth	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Anticipated Lifecycle Replacements:**

- No components of significance

**Actions/Comments:**

- The superstructure is exposed in some locations, which allows for limited observation. Walls and floors appear to be plumb, level, and stable. There are no significant signs of deflection or movement.

B1080 Stairs					
Type	Description	Riser	Handrail	Balusters	Condition
Building Exterior Stairs	Concrete stairs	Closed	Metal	Metal	Good
Building Interior Stairs	Wood-framed with ceramic tile treads	Closed	Metal	None	Good

**Anticipated Lifecycle Replacements:**

- Hand rails paint
- Concrete stairs

**Actions/Comments:**

- Stair railing paint is worn and missing and multiple locations. Painting is recommended.

### 3 Building Envelope

#### B20 Exterior Vertical Enclosures

B2010 Exterior Walls		
Type	Location	Condition
Primary Finish	Brick veneer	Fair
Secondary Finish	Metal siding	Good
Accented with	Stone veneer	Fair
Soffits	Concealed	Good
Building sealants	Between dissimilar materials, at joints, around windows and doors	Poor

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Graffiti	<input type="checkbox"/>	Efflorescence	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input checked="" type="checkbox"/>

**Anticipated Lifecycle Replacements:**

- Exterior paint
- Metal siding
- Caulking
- Masonry re-pointing
- Louvers

**Actions/Comments:**

- Isolated portions of the mortar joints along the brick veneer are cracked in small sections throughout the perimeter of the building. The damaged mortar joints must be cleaned and re-pointed.
- There are isolated areas of missing sealant in a small section on the west side of the building. The damaged sealant must be replaced.
- The metal siding has significant portions of the paint that are damaged and faded. The metal siding must be repainted.
- The metal siding has significant portions that are damaged by fire on the east side of the building. The metal siding requires replacement.
- The wall vents are damaged and rusted. The damaged wall vents require replacement.

B2020 Exterior Windows				
Window Framing	Glazing	Location	Window Screen	Condition
Aluminum framed, fixed	Double glaze	Throughout	<input type="checkbox"/>	Good
Aluminum framed, operable	Double glaze	Throughout	<input checked="" type="checkbox"/>	Good



B2050 Exterior Doors		
Main Entrance Doors	Door Type	Condition
	Metal, insulated	Fair
Secondary Entrance Doors	Metal, hollow	Fair
Service Doors	Solid core wood	Fair
Overhead Doors	None	--

**Anticipated Lifecycle Replacements:**

- Windows
- Exterior doors
- Curtain wall glazing

**Actions/Comments:**

- There are isolated areas of curtain wall windows that are damaged, faded and missing sections. These windows are part of a small green house on the north-west side of the property. The damaged curtain wall windows require replacement. A budgetary cost is included.
- The loading doors for the boiler room was covered by aluminum sheet metal and is damaged. The doors also leak water into the basement. The boiler loading doors require replacement. A budgetary cost is included.

**B30 Roofs**

B3010 Primary Roof			
Location	Older Sections of Building	Finish	Single-ply membrane
Type / Geometry	Flat	Roof Age	25 Years
Flashing	Sheet metal	Warranties	None reported
Parapet Copings	Exposed copings	Roof Drains	Internal drains
Fascia	Metal Panel	Insulation	Rigid Board
Soffits	Exposed Soffits	Skylights	No
Attics	Steel beams	Ventilation Source-1	Power Vents
Roof Condition	Poor	Ventilation Source-2	--

B3010 Primary Roof			
Location	Building	Finish	Single-ply membrane
Type / Geometry	Flat	Roof Age	3 - 5 Years
Flashing	Sheet metal	Warranties	Yes
Parapet Copings	Exposed copings	Roof Drains	Internal drains
Fascia	Metal Panel	Insulation	Rigid Board

B3010 Primary Roof			
Soffits	Exposed Soffits	Skylights	No
Attics	Steel beams	Ventilation Source-1	Power Vents
Roof Condition	Good	Ventilation Source-2	--

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Drainage components broken/missing	<input type="checkbox"/>	Vegetation/fungal growth	<input type="checkbox"/>
Blocked Drains	<input type="checkbox"/>	Debris	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

Degradation Issues			
Observation	Exists At Site	Observation	Exists At Site
Evidence of roof leaks	<input checked="" type="checkbox"/>	Significant ponding	<input type="checkbox"/>
Excessive patching or repairs	<input type="checkbox"/>	Blistering or ridging	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Anticipated Lifecycle Replacements:**

- EPDM roof membrane
- Access hatch
- Ladder
- Roof flashings (included as part of overall membrane replacement)
- Parapet wall copings (included as part of overall membrane replacement)

**Actions/Comments:**

- The roof finishes vary in age. Information regarding roof warranties or bonds was not available. A copy of the warranty was requested but was not available. The roofs are maintained by an outside contractor.
- According to the POC, there are active roof leaks. There is evidence of active roof leaks.
- There is evidence of roof deck or insulation deterioration. The roof substrate and insulation should be inspected during any future roof repair or replacement work.
- Roof drainage appears to be adequate. Clearing and minor repair of drain system components should be performed regularly as part of the property management’s routine maintenance and operations program.
- The field of the roofs have significant areas of physical damage, seam failure, blistering, ridging, throughout the older sections of the building. The roof membranes require replacement.



## 4 Interiors

### C10 Interior Construction

C1030 Interior Doors		
Item	Type	Condition
Interior Doors	Solid core wood	Good
Door Framing	Metal	Good
Fire Doors	No	--
Closet Doors	Solid core wood	Good

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Improperly adjusted door closures	<input type="checkbox"/>	Damaged/loose door hardware	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

C2010 Wall Finishes; C2030 Floor Finishes; C2050 Ceiling Finishes: The following table generally describes the locations and typical conditions of the interior finishes within the facility:

#### Interior Finishes - Northside Elementary

Location / Space	Finish	Quantity (SF)	Condition	Action	RUL	Est Cost	
Throughout building	Floor	Carpet Standard-Commercial Medium-Traffic	20,800	Fair	Replace	3	\$150,931
	Ceiling	Gypsum Board/Plaster	10,000	Fair	Prep & Paint	5	\$19,366
	Ceiling	Suspended Acoustical Tile (ACT)	70,000	Fair	Replace	3	\$217,770
	Floor	Vinyl Tile (VCT)	104,000	Fair	Replace	5	\$499,262
	Wall	Gypsum Board/Plaster/Metal	260,000	Poor	Prep & Paint	0	\$370,032
	Floor	Ceramic Tile	1,500	Fair	Replace	20	\$23,633
	Ceiling	Suspended Acoustical Tile (ACT)	35,000	Good	Replace	16	\$108,885
	Ceiling	Suspended Acoustical Tile (ACT)	2,500	Poor	Replace	0	\$7,778
Restroom	Floor	Epoxy Coating	5,000	Fair	Prep & Paint	3	\$43,701
Multi-purpose room	Floor	Wood Strip	3,600	Fair	Sand & Refinish	2	\$13,239
Throughout building	Floor	Ceramic Tile	5,000	Good	Replace	46	\$78,775
Computer Lab	Floor	Wood Strip	700	Fair	Sand & Refinish	2	\$2,574

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Loose carpeting/flooring	<input type="checkbox"/>	Minor areas of stained ceiling tiles	<input type="checkbox"/>
Minor paint touch-up	<input type="checkbox"/>	Areas of damaged/missing baseboard	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Anticipated Lifecycle Replacements:**

- Carpet
- Vinyl tile
- Wood floor refinishing
- Interior paint
- Epoxy floor coating
- Suspended acoustic ceiling tile
- Interior doors and hardware
- Toilet partitions
- Bleachers
- Cabinets
- Basketball backstops

**Actions/Comments:**

- The interior areas appear to be last renovated in around 2008.
- The interior walls have significant portions of the paint that are damaged and faded. The walls must be repainted.
- The ceilings have isolated areas of water stained and damaged areas. The damaged ceiling tiles require replacement.

## 5 Services (MEPF)

### D10 Conveying Systems

D1030 Vertical Conveying (Building Elevators) – Building 1			
Manufacturer	Unknown	Machinery Location	Ground floor or basement adjacent to shaft
Safety Stops	Electronic	Emergency Communication Equipment	Yes
Cab Floor Finish	Vinyl-tiled	Cab Wall Finish	Plastic-laminated wood
Cab Finish Condition	Fair	Elevator Cabin Lighting	F42T12
Hydraulic Elevators	1 cars at 2100 LB each		
Overhead Traction Elevators	None		
Freight Elevators	None		
Machinery Condition	Fair	Controls Condition	Fair
Other Conveyances	None	Other Conveyance Condition	--

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Inspection certificate not available	<input checked="" type="checkbox"/>	Inspection certificate expired	<input type="checkbox"/>
Service call needed	<input type="checkbox"/>	Minor cab finish repairs	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Anticipated Lifecycle Replacements:**

- Elevator controls
- Hydraulic machinery
- Elevator cab finishes

**Actions/Comments:**

- The elevators are serviced on a routine basis. The elevator machinery and controls are the originally installed system.
- The emergency communication equipment in the elevator cabs appears to be functional. Equipment testing is not within the scope of the work.

### D20 Plumbing

D2010 Domestic Water Distribution		
Type	Description	Condition
Water Supply Piping	Copper	Good
Water Meter Location	Basement	

Domestic Water Heaters or Boilers	
Components	Water Heaters
Fuel	Natural gas
Boiler or Water Heater Condition	Fair
Supplementary Storage Tanks?	No
Adequacy of Hot Water	Adequate
Adequacy of Water Pressure	Adequate

D2020 Sanitary Drainage		
Type	Description	Condition
Waste/Sewer Piping	Cast iron	Fair
Vent Piping	Cast iron	Fair

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Hot water temperature too hot or cold	<input type="checkbox"/>	Minor or isolated leaks	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Plumbing Systems - Northside Elementary**

Location / Space	Component	Component Description	Quantity	Unit	Condition	Action	RUL	Subtotal
Restroom	Lavatory	Vitreous China	20	EA	Fair	Replace	10	\$11,453
Pump Room	Water Heater	High Efficiency, 71 to 120 GAL	1	EA	Fair	Replace	6	\$15,965
Pump Room	Backflow Preventer	1"	1	EA	Good	Replace	12	\$1,276
Pump Room	Backflow Preventer	1"	1	EA	Good	Replace	10	\$1,276
Boiler room	Water Softener	10 GAL	2	EA	Fair	Replace	3	\$11,311
Restroom	Toilet	Tankless (Water Closet)	40	EA	Fair	Replace	5	\$33,719
Throughout	Urinal	Vitreous China	4	EA	Good	Replace	15	\$4,774
Mechanical room	Water Filter		1	EA	Good	Replace	13	\$8,976
Basement	Sump Pump	3 HP	1	EA	Fair	Replace	2	\$2,063
Throughout	Drinking Fountain	Refrigerated	20	EA	Good	Replace	6	\$25,150
Lab	Emergency Eye Wash & Shower Station		1	EA	Fair	Replace	11	\$2,115
Janitor closets	Service Sink	Floor	6	EA	Poor	Replace	0	\$9,597
Restrooms	Bathroom Vanity Cabinet	Wood, with Sink Top	10	EA	Good	Replace	15	\$10,828

**Anticipated Lifecycle Replacements:**

- Water heaters
- Toilets
- Urinals
- Sinks
- Vanities
- Emergency eye wash and shower stations
- Backflow preventers



- Drinking fountains
- Water softeners
- Water filters
- Sump pump

**Actions/Comments:**

- The plumbing systems appear to be well maintained and functioning adequately. The water pressure appears to be sufficient.
- The service sinks are in poor condition and are antiquated. The service sinks are recommended for replacement.

**D30 Building Heating, Ventilating, and Air Conditioning (HVAC)**

Building Central Heating System	
Primary Heating System Type	Steam boilers
Heating Fuel	Natural gas
Location of Major Equipment	Mechanical rooms
Space Served by System	Entire building

Distribution System	
HVAC Water Distribution System	Two-pipe
Air Distribution System	Variable volume
Location of Air Handlers	Rooftop, exterior
Terminal Units	Unit ventilators
Quantity and Capacity of Terminal Units	Quantity and capacity of cabinet units, unit ventilators, unit heaters difficult to determine without construction drawings. Quantity and capacity of units are estimated.
Location of Terminal Units	Along ceilings

Packaged, Split & Individual Units	
Primary Components	Package units
Cooling (if separate from above)	performed via components above
Heating Fuel	Natural gas
Location of Equipment	Rooftop
Space Served by System	Multiple areas

Supplemental/Secondary Components	
Supplemental Component #1	Cabinet Heaters
Location / Space Served	Classrooms

Supplemental/Secondary Components	
Condition	Fair
Supplemental Component #2	Wall heaters
Location / Space Served	Hallways
Condition	Fair
Supplemental Component #3	Makeup Air Units
Location / Space Served	Multiple areas
Condition	Fair
Supplemental Component #4	Unit ventilators
Location / Space Served	Classrooms
Condition	Fair

Controls and Ventilation	
HVAC Control System	BAS, hybrid pneumatic/electronic system
HVAC Control System Condition	Fair
Building Ventilation	Roof top exhaust fans
Ventilation System Condition	Poor

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Ductwork/grills need cleaned	<input type="checkbox"/>	Minor control adjustments needed	<input type="checkbox"/>
Leaking condensate lines	<input type="checkbox"/>	Poor mechanical area access	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

Degradation Issues			
Observation	Exists At Site	Observation	Exists At Site
Heating, Cooling or Ventilation is not adequate	<input checked="" type="checkbox"/>	Major system inefficiencies	<input checked="" type="checkbox"/>
HVAC controls pneumatic or antiquated	<input checked="" type="checkbox"/>	Obsolete refrigerants: R11, R12, R22, R123, R502	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Mechanical Systems - Northside Elementary**

Location / Space	Component	Component Description	Quantity	Unit	Condition	Action	RUL	Subtotal
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Boiler room	Boiler	Gas, 2,501 to 4,200 MBH	1	EA	Fair	Replace	10	\$120,905
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Fair	Replace	12	\$2,022
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Fair	Replace	6	\$2,022
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Pump Room	Distribution Pump	Heating Water, 3 HP	1	EA	Good	Replace	10	\$4,652
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Utility closet	Exhaust Fan	Roof Mounted, 10,001 to 20,000 CFM	1	EA	Poor	Replace	0	\$11,572
Roof	Heat Pump	Packaged (RTU), 6 to 10 Ton	1	EA	Fair	Replace	6	\$15,325
Boiler room	Boiler	Gas, 2,501 to 4,200 MBH	1	EA	Fair	Replace	10	\$120,905
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Fair	Replace	3	\$2,022
Roof North	Exhaust Fan	Roof Mounted, 10,001 to 20,000 CFM	1	EA	Poor	Replace	0	\$11,572
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Fair	Replace	6	\$2,022
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Fair	Replace	6	\$2,022
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Roof South	Exhaust Fan	Roof Mounted, 10,001 to 20,000 CFM	1	EA	Poor	Replace	0	\$11,572
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Pump Room	Compressed Air Dryer		1	EA	Fair	Replace	12	\$5,077
Pump Room	Expansion Tank	31 to 60 GAL	1	EA	Fair	Replace	22	\$2,483
Pump Room	Distribution Pump	Heating Water, 5 HP	1	EA	Fair	Replace	11	\$5,519
Roof	Exhaust Fan	Centrifugal, 801 to 2,000 CFM	1	EA	Poor	Replace	0	\$2,664
Boiler room	Distribution Pump	Heating Water, 3 HP	1	EA	Fair	Replace	5	\$1,500
Pump Room	Air Separator	8"	1	EA	Good	Replace	10	\$6,625
Roof	Ductless Split System	Single Zone, 0.75 to 1 Ton	1	EA	Fair	Replace	4	\$3,221
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Fair	Replace	6	\$2,022
Pump Room	Heat Exchanger	Steam-to-Water, 106 to 130 GPM	1	EA	Poor	Replace	0	\$19,722
Roof	Make-Up Air Unit	12,001 to 20,000 CFM	1	EA	Good	Replace	16	\$61,113

**Mechanical Systems - Northside Elementary**

Location / Space	Component	Component Description	Quantity	Unit	Condition	Action	RUL	Subtotal
Boiler room	Boiler Return Condensate Tank	101 to 175 GAL	1	EA	Fair	Replace	18	\$9,700
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Roof	Air Handler	Exterior, 1,201 to 2,000 CFM	1	EA	Fair	Replace	12	\$11,420
Pump Room	Chemical Feed System		1	EA	Fair	Replace	5	\$10,642
Roof	Heat Pump	Packaged (RTU), 11 to 15 Ton	1	EA	Poor	Replace	0	\$31,733
Pump Room	Distribution Pump	Heating Water, 3 HP	1	EA	Fair	Replace	10	\$4,652
Pump Room	Heat Exchanger	Steam-to-Water, 106 to 130 GPM	1	EA	Good	Replace	32	\$15,778
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Fair	Replace	12	\$2,022
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Pump Room	Distribution Pump	Heating Water, 5 HP	1	EA	Fair	Replace	11	\$5,519
Roof	Air Handler	Exterior, 1,201 to 2,000 CFM	1	EA	Good	Replace	12	\$11,420
Roof	Exhaust Fan	Centrifugal, 801 to 2,000 CFM	1	EA	Poor	Replace	0	\$2,664
Pump Room	Air Separator	4"	1	EA	Fair	Replace	5	\$3,546
Roof	Exhaust Fan	Centrifugal, 801 to 2,000 CFM	1	EA	Fair	Replace	6	\$2,664
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Poor	Replace	0	\$2,022
Boiler room	Distribution Pump	Heating Water, 3 HP	1	EA	Fair	Replace	5	\$1,500
Boiler room	Distribution Pump	Heating Water, 3 HP	1	EA	Fair	Replace	8	\$1,500
Roof	Air Handler	Exterior, 8,001 to 10,000 CFM	1	EA	Fair	Replace	12	\$45,895
Pump Room	Air Compressor	5 HP	1	EA	Fair	Replace	10	\$9,652
Roof	Exhaust Fan	Centrifugal, 5,001 to 8,000 CFM	1	EA	Fair	Replace	6	\$5,570
Roof	Exhaust Fan	Centrifugal, 251 to 800 CFM	1	EA	Fair	Replace	6	\$2,022
Throughout Mechanical room	Cabinet Heater	Hydronic	50	EA	Fair	Replace	3	\$158,997
Throughout	Distribution Pump	Heating Water, 3 HP	1	EA	Fair	Replace	13	\$1,000
Throughout	Building Automation System	HVAC Controls	104,000	SF	Fair	Upgrade	13	\$557,700
Boiler room	Shot Feed Tank	5 GAL	1	EA	Fair	Replace	12	\$1,406
Throughout	Air Conditioner	Window/Thru-Wall, 1.5 to 2 Ton	14	EA	Fair	Replace	8	\$36,239
Laboratory	Laboratory Exhaust Hood	4 LF	1	EA	Good	Replace	11	\$2,634
Throughout	Cabinet Heater	Hydronic	10	EA	Good	Replace	16	\$31,799
Throughout	Radiator	Hydronic Baseboard (per LF)	2,000	LF	Fair	Replace	12	\$265,540
Throughout	Ductless Split System	Single Zone, 1.5 to 2 Ton	6	EA	Fair	Replace	8	\$26,839
Classrooms	Unit Ventilator	751 to 1,250 CFM (approx. 3 Ton)	35	EA	Fair	Replace	4	\$295,545

**Mechanical Systems - Northside Elementary**

Location / Space	Component	Component Description	Quantity	Unit	Condition	Action	RUL	Subtotal
Classrooms	Unit Ventilator	1,501 to 2,000 CFM (approx. 5 Ton)	25	EA	Fair	Replace	5	\$349,993
Throughout	Duct Heater	Hydronic Packaged (RTU), 6 to 10	25	EA	Good	Replace	11	\$67,463
Roof	Heat Pump	Ton Packaged (RTU), 6 to 10	1	EA	Fair	Replace	6	\$15,325
Roof	Heat Pump	Ton Packaged (RTU), 6 to 10	1	EA	Fair	Replace	6	\$15,325
Roof	Heat Pump	Ton Packaged (RTU), 6 to 10	1	EA	Fair	Replace	6	\$15,325
Roof	Heat Pump	Ton Packaged (RTU), 6 to 10	1	EA	Good	Replace	11	\$15,325
Roof	Heat Pump HVAC System	Ton	1	EA	Fair	Replace	6	\$15,325
Roof	Ductwork	Sheet Metal Centrifugal, 251 to 800	100	SF	Poor	Replace	0	\$3,000
Roof	Exhaust Fan	CFM Centrifugal, 251 to 800	1	EA	Good	Replace	11	\$2,022
Roof	Exhaust Fan	CFM Centrifugal, 251 to 800	1	EA	Good	Replace	11	\$2,022
Roof	Exhaust Fan	CFM Centrifugal, 251 to 800	1	EA	Poor	Replace	0	\$2,022
Roof	Exhaust Fan	CFM Centrifugal, 801 to 2,000	1	EA	Good	Replace	11	\$2,664
Roof	Exhaust Fan	CFM Centrifugal, 801 to 2,000	1	EA	Good	Replace	11	\$2,664
Roof	Exhaust Fan	Roof Mounted, 501 to 800 CFM	1	EA	Poor	Replace	0	\$1,750

**Anticipated Lifecycle Replacements:**

- Boilers
- Air handling units
- Distribution pumps and motors
- Heating coils
- Unit ventilators
- Heat pumps
- Ductless split systems
- Package units
- Hydronic cabinet heaters
- Heat exchangers
- Air separators
- Shot feed tanks
- Expansion tanks
- Air compressor
- Air compressor dryer
- Rooftop exhaust fans
- Laboratory exhaust hood
- Condensate return tank and pumps
- Window air conditioners
- Building automation system
- Baseboard heaters

**Actions/Comments:**

- The HVAC systems are maintained by an outside contractor. Records of the installation, maintenance, upgrades, and replacement of the HVAC equipment at the property have been maintained since the property was first occupied.
- The HVAC equipment varies in age. HVAC equipment is replaced on an "as needed" basis.
- The Trane makeup air unit with serial number A93C07251 exhibits rust, mold and is heavily weathered. There is a slight smell of gas coming from inside the metal cabinet around the gas valve. The POC was made aware of the situation. The makeup air unit must be replaced.
- The ductwork on the roof attached to the Trane unit with serial A93C07251 shows signs of mold, deterioration and damage. The damaged ductwork must be replaced.
- Some exhaust fans are antiquated, in disrepair and heavily weathered. Some exhaust fans are recommended for replacement.
- The heat exchanger case is dated 1964. The heat exchanger is antiquated. The heat exchanger is recommended for replacement.
- The hydronic cabinet heaters are antiquated. The hydronic cabinet heaters are recommended for replacement.
- The facility HVAC is controlled using an outdated pneumatic system supplied by an air compressor. For modernization, reliability, and increased control, full conversion to a web-based direct digital control (DDC) platform is highly recommended.

**D40 Fire Protection**

Item	Description					
Type	None					
Sprinkler System	None	<input checked="" type="checkbox"/>	Standpipes	<input type="checkbox"/>	Backflow Preventer	<input type="checkbox"/>
	Hose Cabinets	<input type="checkbox"/>	Fire Pumps	<input type="checkbox"/>	Siamese Connections	<input type="checkbox"/>
Sprinkler System Condition	--					
Fire Extinguishers	Last Service Date			Servicing Current?		
	July 2017			Yes		
Hydrant Location	North parking lot					
Siamese Location	None					
Special Systems	Kitchen Suppression System		<input type="checkbox"/>	Computer Room Suppression System		<input type="checkbox"/>

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Extinguisher tag expired	<input type="checkbox"/>	Riser tag expired (5 year)	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Anticipated Lifecycle Replacements:**

- Fire extinguishers

**Actions/Comments:**

- The vast majority of the building is not protected by fire suppression. Due to its construction date, the facility is most likely "grandfathered" by code and the installation of fire sprinklers not required until major renovations are performed. Regardless of when or if installation of facility-wide fire suppression is required by the governing municipality, EMG recommends a retrofit be performed. A budgetary cost is included.



D50 Electrical

Distribution & Lighting			
Electrical Lines	Underground	Transformer	Pad-mounted
Main Service Size	1200 Amps	Volts	120/208 Volt, three-phase
Meter & Panel Location	Next to MDP-1	Branch Wiring	Copper
Conduit	Metallic	Step-Down Transformers	No
Security / Surveillance System	Yes	Building Intercom System	Yes
Lighting Fixtures	T-8, LED		
Main Distribution Condition	Fair		
Secondary Panel and Transformer Condition	Fair		
Lighting Condition	Good		

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Improperly stored material	<input type="checkbox"/>	Unsecured high voltage area	<input type="checkbox"/>
Loose cables or improper use of conduit	<input type="checkbox"/>	Poor electrical room ventilation	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Anticipated Lifecycle Replacements:**

- Circuit breaker panels
- Switchboards
- Interior light fixtures
- Variable frequency drives

**Actions/Comments:**

- The onsite electrical systems up to the meters are owned and maintained by the respective utility company.
- The electrical service and capacity appear to be adequate for the property's demands.
- The electrical service appears to be adequate for the facility's needs. However, due to the age of the panels, switchboards and increasing difficulty of obtaining replacement parts over time, lifecycle replacements are recommended per above.
- The older section of the building has antiquated wiring throughout the building. A complete electrical retrofit is recommended in the older section of the building.
- The switches and receptacles are antiquated, missing covers and are considered a fire hazard. The switches and receptacles require replacement.



D60 Communications

D6060 Public Address Systems						
Item	Description					
Communication Equipment	Public Address System	<input checked="" type="checkbox"/>	Nurse Call System	<input type="checkbox"/>	Clock	<input checked="" type="checkbox"/>

D70 Electronic Safety and Security

D7010 Access Control and Intrusion Detection / D7050 Detection and Alarm						
Item	Description					
Access Control and Intrusion Detection	Exterior Camera	<input checked="" type="checkbox"/>	Interior Camera	<input checked="" type="checkbox"/>	Front Door Camera Only	<input type="checkbox"/>
	Cameras monitored	<input type="checkbox"/>	Security Personnel On-Site	<input type="checkbox"/>	Intercom/Door Buzzer	<input type="checkbox"/>
Fire Alarm System	Central Alarm Panel	<input checked="" type="checkbox"/>	Battery-Operated Smoke Detectors	<input type="checkbox"/>	Alarm Horns	<input checked="" type="checkbox"/>
	Annunciator Panels	<input type="checkbox"/>	Hard-Wired Smoke Detectors	<input type="checkbox"/>	Strobe Light Alarms	<input type="checkbox"/>
	Pull Stations	<input checked="" type="checkbox"/>	Emergency Battery-Pack Lighting	<input checked="" type="checkbox"/>	Illuminated EXIT Signs	<input checked="" type="checkbox"/>
Fire Alarm System Condition	Poor					
Central Alarm Panel System	Location of Alarm Panel		Installation Date of Alarm Panel			
	Office		30+ years			

**Anticipated Lifecycle Replacements:**

- Central alarm panel
- Alarm devices and system
- Time clocks system
- Sound/PA system

**Actions/Comments:**

- The fire alarm systems appear somewhat antiquated and not up to current standards. Due to the age of the components and apparent shortcomings, a full modernization project is recommended. A budgetary cost is included.
- One card access reader is detached from the wall. The card access reader requires remounting or replacement. A budgetary cost is included.

## 6 Equipment & Furnishings

### E10 Equipment

The cafeteria kitchen includes the following major appliances, fixtures, and equipment:

E1030 Commercial Kitchen Equipment		
Appliance	Comment	Condition
Refrigerators	Up-right	Good
Freezers	Up-right	Good
Ranges	Electric	Good
Ovens	--	--
Griddles / Grills	--	--
Fryers	--	--
Hood	--	--
Dishwasher	--	--
Microwave	<input checked="" type="checkbox"/>	--
Ice Machines	<input type="checkbox"/>	--
Steam Tables	<input type="checkbox"/>	--
Work Tables	<input checked="" type="checkbox"/>	Good
Shelving	<input type="checkbox"/>	--

**Anticipated Lifecycle Replacements:**

- Commercial kitchen equipment

**Actions/Comments:**

- No significant actions are identified at the present time. On-going periodic maintenance is highly recommended.

## 7 Sitework

### G20 Site Improvements

G2020 Parking Lots & G2030 Pedestrian Walkways		
Item	Material	Condition
Entrance Driveway Apron	Asphalt	Poor
Parking Lot	Asphalt	Poor
Drive Aisles	Asphalt	Poor
Service Aisles	Asphalt	Poor
Sidewalks	Concrete	Fair
Curbs	Concrete	Fair
Pedestrian Ramps	None	--
Ground Floor Patio or Terrace	None	--

Parking Count				
Open Lot	Carport	Private Garage	Subterranean Garage	Freestanding Parking Structure
68	-	-	-	-
Total Number of ADA Compliant Spaces			4	
Number of ADA Compliant Spaces for Vans			1	
Total Parking Spaces			68	

Site Stairs			
Location	Material	Handrails	Condition
None	--	--	--

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Pavement oil stains	<input type="checkbox"/>	Vegetation growth in joints	<input type="checkbox"/>
Stair/ramp rails loose	<input type="checkbox"/>	Stair/ramp rail needs scraped and painted	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

Degradation Issues			
Observation	Exists At Site	Observation	Exists At Site
Potholes/depressions	<input checked="" type="checkbox"/>	Alligator cracking	<input checked="" type="checkbox"/>
Concrete spalling	<input checked="" type="checkbox"/>	Trip hazards (settlement/heaving)	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Anticipated Lifecycle Replacements:**

- Asphalt seal coating
- Asphalt pavement
- Concrete pavement
- Sidewalks
- Curbs
- Site stairs
- Flag poles

**Actions/Comments:**

- The asphalt pavement exhibits significant areas of failure and deterioration, such as alligator cracking, transverse cracking, extensive raveling, heavy overall surface wear, and localized depressions throughout the entire parking lot. All of the paving must be overlaid with new asphalt paving in order to maintain the integrity of the overall pavement system. Milling and paint stripping is recommended as part of the overall repair work.

G2060 Site Development	
Property Signage	
Property Signage	Post mounted wood
Street Address Displayed?	No

Site Fencing		
Type	Location	Condition
Chain link with metal posts	Around property perimeter	Good

Refuse Disposal				
Refuse Disposal	Common area dumpsters			
Dumpster Locations	Mounting	Enclosure	Contracted?	Condition
South parking lot	Asphalt paving	None	Yes	Fair



Other Site Amenities			
	Description	Location	Condition
Playground Equipment	Plastic and metal	East and West	Fair
Tennis Courts	--	--	--
Basketball Court	--	--	--
Swimming Pool	None	--	--

**Anticipated Lifecycle Replacements:**

- Signage
- Playground equipment
- Benches
- Bike racks
- Basketball backboards

**Actions/Comments:**

- The property currently lacks adequate identification signage. The lack of adequate signage may impede the timely arrival of emergency services personnel and equipment. New identification signage must be installed.
- The basketball backboards show signs of damage. The basketball backboard require replacement.

G2080 Landscaping		
Drainage System and Erosion Control		
System	Exists At Site	Condition
Surface Flow	<input checked="" type="checkbox"/>	Good
Inlets	<input type="checkbox"/>	--
Swales	<input type="checkbox"/>	--
Detention pond	<input type="checkbox"/>	--
Lagoons	<input type="checkbox"/>	--
Ponds	<input type="checkbox"/>	--
Underground Piping	<input type="checkbox"/>	--
Pits	<input type="checkbox"/>	--
Municipal System	<input type="checkbox"/>	--
Dry Well	<input type="checkbox"/>	--

**Anticipated Lifecycle Replacements:**

- No components of significance

**Actions/Comments:**

- There is no evidence of storm water runoff from adjacent properties. The storm water system appears to provide adequate runoff capacity. There is no evidence of major ponding or erosion.

Item	Description						
Site Topography	Slopes down away from the building down to the property lines.						
Landscaping	Trees	Grass	Flower Beds	Planters	Drought Tolerant Plants	Decorative Stone	None
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Landscaping Condition	Fair						
Irrigation	Automatic Underground		Drip		Hand Watering		None
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>
Irrigation Condition	--						

Retaining Walls		
Type	Location	Condition
None	--	--

**Anticipated Lifecycle Replacements:**

- No components of significance

**Actions/Comments:**

- The topography and adjacent uses do not appear to present conditions detrimental to the property. There are no significant areas of erosion.

**G30 Liquid & Gas Site Utilities**

G3060 Site Fuel Distribution	
Item	Description
Natural Gas	Gas service is supplied from the gas main on the adjacent public street. The gas meters and regulators are located along the exterior walls of the building. The gas distribution piping within the building is malleable steel (black iron).

**Anticipated Lifecycle Replacements:**

- No components of significance

**Actions/Comments:**

- The pressure and quantity of gas appear to be adequate.
- The gas meters and regulators appear to be functioning adequately and will require routine maintenance.
- Only limited observation of the gas distribution piping can be made due to hidden conditions.

### G40 Electrical Site Improvements

G4050 Site Lighting					
Site Lighting	None	Pole Mounted	Bollard Lights	Ground Mounted	Parking Lot Pole Type
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Good				
Building Lighting	None		Wall Mounted	Recessed Soffit	
	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Good				

Maintenance Issues			
Observation	Exists At Site	Observation	Exists At Site
Isolated bulb/lamp replacement	<input type="checkbox"/>	Discolored/dirty lens cover	<input type="checkbox"/>
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Anticipated Lifecycle Replacements:**

- Exterior lighting

**Actions/Comments:**

- Missing and damaged exterior recessed light fixtures are located in the new section of the building. Some of the light fixtures require replacement to provide necessary levels of night lighting for security.



## 8 Ancillary Structures

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Not applicable. There are no major accessory structures.

## 9 Opinions of Probable Costs

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Cost estimates are attached at the front of this report (following the cover page).

These estimates are based on Invoice or Bid Document/s provided either by the Owner/facility and construction costs developed by construction resources such as *R.S. Means* and *Marshall & Swift*, EMG's experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, and whether competitive pricing is solicited, etc. ASTM E2018-08 recognizes that certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

### 9.1 Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, EMG opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its effective age. Projections of Remaining Useful Life (RUL) are based on continued use of the Property similar to the reported past use. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be derived from an actual take-off, lump sum costs or allowances are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

### 9.2 Immediate Repairs

Immediate repairs are opinions of probable costs that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) material building or fire code violations, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

### 9.3 Replacement Reserves

Replacement Reserves are for recurring probable expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, EMG's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

EMG's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system's or component's respective replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined in the Immediate Repair Cost Estimate

## 10 Purpose and Scope

### 10.1 Purpose

EMG was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record at municipal offices, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

#### CONDITIONS:

The physical condition of building systems and related components are typically defined as being in one of five conditions: Excellent, Good, Fair, Poor, Failed or a combination thereof. For the purposes of this report, the following definitions are used:

Excellent	=	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	=	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	=	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	=	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	=	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	=	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Throughout sections 5 through 9 of this report, each report section will typically contain three subsections organized in the following sequence:

- A descriptive table (and/or narrative), which identifies the components assessed, their condition, and other key data points.
- A simple bulleted list of Anticipated Lifecycle Replacements, which lists components and assets typically in Excellent, Good, or Fair condition at the time of the assessment but that will require replacement or some other attention once aged past their estimated useful life. These listed components are typically included in the associated inventory database with costs identified and budgeted beyond the first several years.
- A bulleted cluster of Actions/Comments, which include more detailed narratives describing deficiencies, recommended repairs, and short term replacements. The assets and components associated with these bullets are/were typically problematic and in Poor or Failed condition at the time of the assessment, with corresponding costs included within the first few years.

**PLAN TYPES:**

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the “why” part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the “best” fit, typically the one with the greatest significance. The following Plan Types are listed in general weighted order of importance:

Safety	=	An observed or reported unsafe condition that if left unaddressed could result in an injury; a system or component that presents a potential liability risk.
Performance/Integrity	=	Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses a risk to overall system stability.
Accessibility	=	Does not meet ADA, UFAS, and/or other handicap accessibility requirements.
Environmental	=	Improvements to air or water quality, including removal of hazardous materials from the building or site.
Modernization/Adaptation	=	Conditions, systems, or spaces that need to be upgraded in appearance or function to meet current standards, facility usage, or client/occupant needs.
Lifecycle/Renewal	=	Any component or system in which future repair or replacement is anticipated beyond the next several years and/or is of minimal substantial early-term consequence.

## 10.2 Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a general statement of the subject Property’s compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey, but will help identify exposure to issues and the need for further review.
- Perform a limited assessment of accessible areas of the building(s) for the presence of fungal growth, conditions conducive to fungal growth, and/or evidence of moisture. EMG will also interview Project personnel regarding the presence of any known or suspected fungal growth, elevated relative humidity, water intrusion, or mildew-like odors. Potentially affected areas will be photographed. Sampling will not be considered in routine assessments.
- List the current utility service providers.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, in order to gain a clear understanding of the property’s overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report.
- Prepare a mechanical inventory list.

## 11 Accessibility and Property Research

### 11.1 ADA Accessibility

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of “areas of public accommodations” and “commercial facilities” on the basis of disability. Regardless of its age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Buildings completed and occupied after January 26, 1992 are required to comply fully with the ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of compliance to the extent allowed by structural feasibility and the financial resources available. As an alternative, a reasonable accommodation pertaining to the deficiency must be made.

During the FCA, a limited visual observation for ADA accessibility compliance was conducted. The scope of the visual observation was limited to those areas set forth in *EMG’s Abbreviated Accessibility Checklist* provided in Appendix D of this report. It is understood by the Client that the limited observations described herein does not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of EMG’s undertaking. Only a representative sample of areas was observed and, other than as shown on the Abbreviated Accessibility Checklist, actual measurements were not taken to verify compliance.

At a school property, the areas considered as a public accommodation besides the site itself and parking, are the exterior accessible route, the interior accessible route up to the tenant lease lines and the interior common areas, including the common area restrooms.

The facility generally appears to be accessible as stated within the defined priorities of Title III of the Americans with Disabilities Act.

Accessibility Issues			
Component	Major Issue	Moderate Issue	Minor Issue
Parking	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exterior Accessible Route	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Interior Accessible Route	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Restrooms	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Elevators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

A full ADA Compliance Survey may reveal aspects of the property that are not in compliance.

Corrections of these conditions should be addressed from a liability standpoint but are not necessarily code violations. The Americans with Disabilities Act Accessibility Guidelines concern civil rights issues as they pertain to the disabled and are not a construction code, although many local jurisdictions have adopted the Guidelines as such.

### 11.2 Flood Zone and Seismic Zone

According to the Flood Insurance Rate Map, published by the Federal Emergency Management Agency (FEMA) and dated April 3, 2012, the property is located in Zone X, defined as an area outside the 500-year flood plain with less than 0.2% annual probability of flooding. Annual Probability of Flooding of Less than one percent.

According to the 1997 Uniform Building Code Seismic Zone Map of the United States, the property is located in Seismic Zone 1, defined as an area of low probability of damaging ground motion.

## 12 Certification

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Ann Arbor Schools retained EMG to perform this Facility Condition Assessment in connection with its continued operation of Northside Elementary, 912 Barton Drive, Ann Arbor, Michigan, the "Property". It is our understanding that the primary interest of Ann Arbor Schools is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager's walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in-depth studies were performed unless specifically required under Section 10 of this report. This assessment did not include engineering calculations to determine the adequacy of the Property's original design or existing systems. Although walk-through observations were performed, not all areas were observed (See Section 10 for areas observed). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared on behalf of and exclusively for the use of Ann Arbor Schools for the purpose stated within Section 10 of this report. The report, or any excerpt thereof, shall not be used by any party other than Ann Arbor Schools or for any other purpose than that specifically stated in our agreement or within Section 10 of this report without the express written consent of EMG.

Any reuse or distribution of this report without such consent shall be at Ann Arbor Schools and the recipient's sole risk, without liability to EMG.

**Prepared by:** James Cuellar,  
Project Manager

**Reviewed by:**



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## 13 Appendices

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- Appendix A: Photographic Record
- Appendix B: Site Plan
- Appendix C: Supporting Documentation
- Appendix D: Pre-Survey Questionnaire

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## Appendix A: Photographic Record

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#1:	NORTH EAST ELEVATION
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#2:	NORTH WEST ELEVATION
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#3:	NORTH ELEVATION
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#4:	SOUTH WEST ELEVATION
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#5:	SOUTH ELEVATION
-----	-----------------



#6:	SOUTH EAST ELEVATION
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#7:	CLASSROOM
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#8:	CLASSROOM
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#9:	PUMP ROOM
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#10:	BOILER ROOM
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#11:	LOCKERS
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#12:	PARK BENCH
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#13:	INTERIOR DOOR
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#14:	ELEVATOR
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#15:	WINDOWS
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#16:	WINDOWS
------	---------



#17:	INTERIOR WOOD DOORS
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#18:	STONE VENEER
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#19:	METAL SIDING
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#20:	CLAY BRICK
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#21:	EXTERIOR DOORS
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#22:	CARPET
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#23:	VINYL TILE (VCT)
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#24:	CERAMIC TILE
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#25:	HARDWOOD FLOOR FINISH
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#26:	WATER HEATER
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#27:	DRINKING FOUNTAIN
------	-------------------



#28:	LAVATORY
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#29:	TOILET
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#30:	URINAL, VITREOUS CHINA
------	------------------------



#31:	TOILET PARTITIONS
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#32:	EXHAUST FAN
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#33:	EXHAUST FAN
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#34:	HEAT EXCHANGER
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#35:	STEAM BOILER CONDENSATE RETURN TANK
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#36:	EXPANSION TANK
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#37:	LOW PRESSURE STEAM BOILER
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#38:	LOW PRESSURE STEAM BOILER
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#39:	OLDER EXHAUST FAN
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#40:	AIR COMPRESSOR
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#41:	PUMPS
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#42:	PUMPS
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#43:	MAKEUP AIR UNITS
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#44:	AIR HANDLERS
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#45:	RTU
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#46:	CABINET HEATER
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#47:	MAIN SWITCHBOARD
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#48:	VFD
------	-----



#49:	LIGHTING SYSTEM
------	-----------------



#50:	ELECTRICAL DISTRIBUTION SYSTEM
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#51:	PARKING LOTS
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#52:	PARKING LOTS
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#53:	SIDEWALK
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#54:	SIDEWALK
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#55:	PLAYGROUND EQUIPMENT
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#56:	PLAYGROUND EQUIPMENT
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#57:	BASKETBALL BACKSTOP
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#58:	BUILDING MOUNTED LIGHTING
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#59:	EXTERIOR LIGHTING
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#60:	LIGHT POLES
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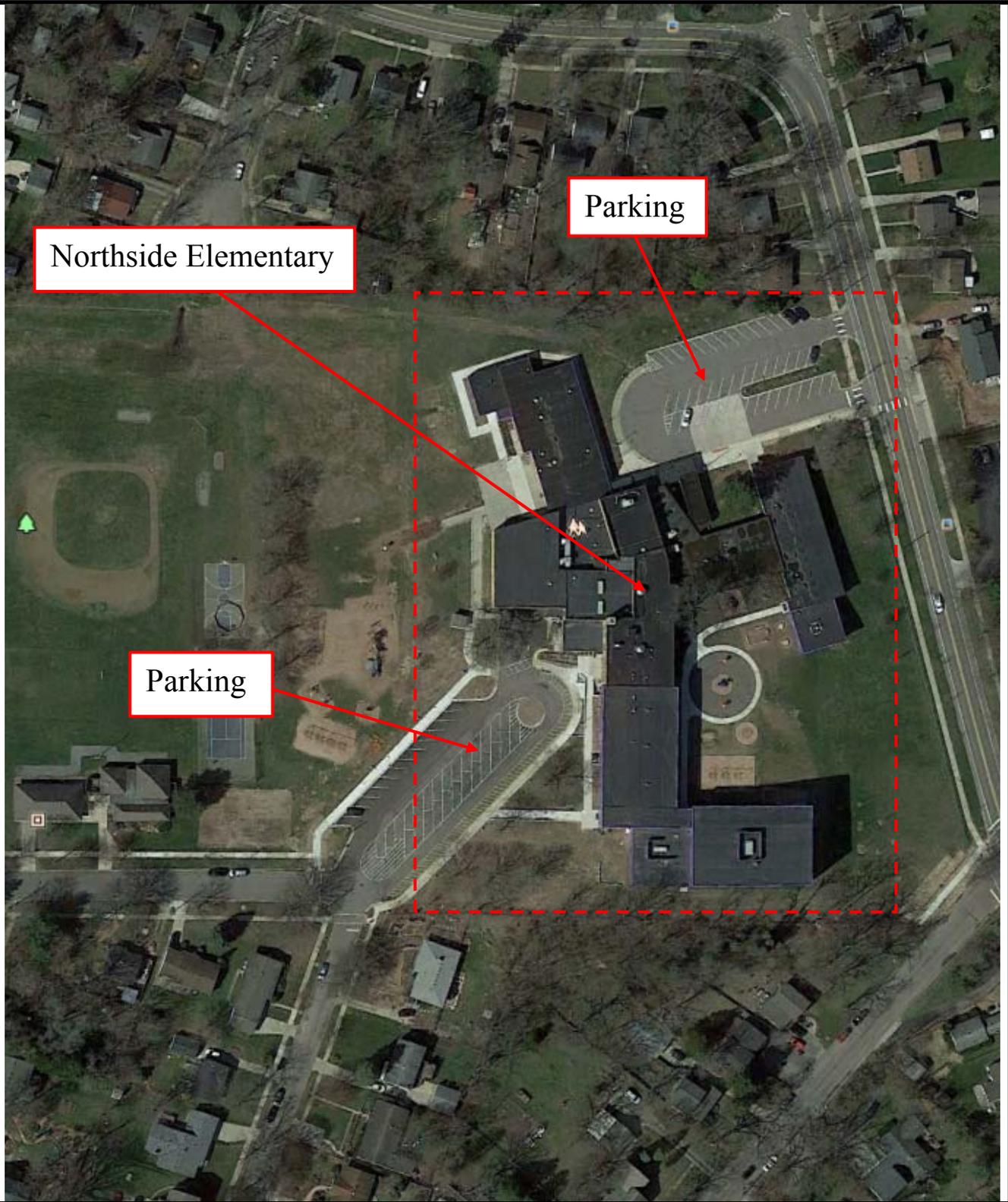
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## Appendix B: Site Plan

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Site Plan



Northside Elementary

Parking

Parking



**Project Name:**  
Northside Elementary

**Project Number:**  
129010.18R000-019.354

**Source:**  
Google Earth Pro

**On-Site Date:**  
February 8, 2018

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## **Appendix C: Supporting Documentation**

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# Flood Map

## National Flood Hazard Layer FIRMette



### Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

	Without Base Flood Elevation (BFE) Zone A, V, AE, AH
	With BFE or Depth Regulatory Floodway Zone AE, AO, AH, VE, AR
	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee. See Notes, Zone X
	Area with Flood Risk due to Levee Zone D
	Area of Minimal Flood Hazard Zone X
	Effective LOMRs
	Area of Undetermined Flood Hazard Zone D
	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	Cross Sections with 1% Annual Chance Water Surface Elevation
	Coastal Transect
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Digital Data Available
	No Digital Data Available
	Unmapped



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/21/2018 at 8:42:02 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

0 250 500 1,000 1,500 2,000 Feet 1:6,000



**Project Name:**  
Northside Elementary

**Source:**  
FEMA Map Number: 26161C0261E  
Dated: April 3, 2012

**Project Number:**  
129010.18R000-019.354

**On-Site Date:**  
February 8, 2018

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## **Appendix D: Pre-Survey Questionnaire**

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**THE PRE-SURVEY QUESTIONNAIRE WAS NOT  
RETURNED TO EMG**

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On the day of the site visit, provide EMG's Field Observer access to all of the available documents listed below. Provide copies if possible.

INFORMATION REQUIRED	
<ol style="list-style-type: none"> <li>1. All available construction documents (blueprints) for the original construction of the building or for any tenant improvement work or other recent construction work.</li> <li>2. A site plan, preferably 8 1/2" X 11", which depicts the arrangement of buildings, roads, parking stalls, and other site features.</li> <li>3. For commercial properties, provide a tenant list which identifies the names of each tenant, vacant tenant units, the floor area of each tenant space, and the gross and net leasable area of the building(s).</li> <li>4. For apartment properties, provide a summary of the apartment unit types and apartment unit type quantities, including the floor area of each apartment unit as measured in square feet.</li> <li>5. For hotel or nursing home properties, provide a summary of the room types and room type quantities.</li> <li>6. Copies of Certificates of Occupancy, building permits, fire or health department inspection reports, elevator inspection certificates, roof or HVAC warranties, or any other similar, relevant documents.</li> <li>7. The names of the local utility companies which serve the property, including the water, sewer, electric, gas, and phone companies.</li> </ol>	<ol style="list-style-type: none"> <li>8. The company name, phone number, and contact person of all outside vendors who serve the property, such as mechanical contractors, roof contractors, fire sprinkler or fire extinguisher testing contractors, and elevator contractors.</li> <li>9. A summary of recent (over the last 5 years) capital improvement work which describes the scope of the work and the estimated cost of the improvements. Executed contracts or proposals for improvements. Historical costs for repairs, improvements, and replacements.</li> <li>10. Records of system &amp; material ages (roof, MEP, paving, finishes, furnishings).</li> <li>11. Any brochures or marketing information.</li> <li>12. Appraisal, either current or previously prepared.</li> <li>13. Current occupancy percentage and typical turnover rate records (for commercial and apartment properties).</li> <li>14. Previous reports pertaining to the physical condition of property.</li> <li>15. ADA survey and status of improvements implemented.</li> <li>16. Current / pending litigation related to property condition.</li> </ol>

Your timely compliance with this request is greatly appreciated.