Kids in Crisis,
Cobwebs in Classrooms

WILL Report on Milwaukee's underutilized schools shows that reform is needed right now

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EXECUTIVE SUMMARY

Since at least 2010, controversy has surrounded Milwaukee's numerous vacant and underutilized public school buildings. In September 2013, a WILL Report concluded that nearly all of the vacant MPS buildings received interest to be purchased or leased by a private school in the Milwaukee Parental Choice Program or a non-MPS affiliated public charter school. Yet, MPS refused to cooperate. And, while MPS cites to the few empty buildings that it has sold or leased to MPS-affiliated charter schools, reports and news articles continue to show the staggering number of empty MPS buildings[1] and the appalling lengths that Milwaukee officials will go to in order to prevent choice and charter schools from purchasing the vacant buildings.[2]

Although the vacant MPS buildings have attracted the attention of the media and public – and rightfully so – there has been little discussion about the MPS school buildings that are currently operating at far below their capacity. There are many reasons why underutilized schools deserve a close study. A school building that is operating below its capacity may signal an inability to attract students, perhaps due to low performance or increased competition. There may be something about the school, whether measured or not readily observed, that keeps students away. Consequently, as enrollment and performance decline, these schools may be forced to abruptly close, which would add to Milwaukee's growing portfolio of unused schools.

In addition, from an educational resource allocation standpoint, it is inefficient for a public school district to have a large portion of its space unused. If a school, for example, has a dozen classrooms empty, then perhaps it should consider leasing the space to a charter school or private school in the choice program. Any underutilized schools that are poor-performing may be prime candidates for charter school takeovers.

Our report seeks to start a conversation about underutilized MPS schools – their academic performance, whether it is an issue in other cities, and what, if anything, policymakers can do about it. By comparing MPS' building capacity information to the most recent school enrollment data, we were able to determine the utilization rate for every MPS school. While there is no generally accepted rule about what constitutes an "underutilized" school, we labeled any MPS school that is operating at less than 60% capacity as "underutilized." This is a less aggressive metric than what was used by Chicago Public Schools during its consolidation efforts a few years ago. The average utilization rate at MPS is also 80%, so it would seem noteworthy if a school was operating at less than 60% capacity.

The following are 10 takeaways from our report:

[1] *Milwaukee Journal Sentinel* (2014). "Sold, repurposed, still vacant — an update on MPS buildings," by Erin Richards, November 27, 2014. http://www.jsonline.com/news/education/sold-repurposed-still-vacant--an-update-on-mps-buildings-b99398435z1-284117061.html
[2] *Wall Street Journal* (2014). "Progressive War on Kids," January 31, 2014. http://www.wsj.com/articles/SB10001424052702304428004579351112676821436.

1. There are currently at least 17 MPS buildings that are vacant, which have cost taxpayers over $1.6 million since 2012 in utilities alone. These buildings have been empty for, on average, 7 years.

2. Our data, using MPS' methodology, shows that there are currently 27 MPS schools operating at or below 60% capacity. Of these, there are 13 buildings operating below 50% of the capacity.

3. On average, the underutilized schools – those operating at less than 60% capacity – are lower performing than the other MPS schools and have nearly twice as many police calls and a much higher habitual absenteeism rate. These schools educate more economically disadvantaged students. They demand our immediate attention.

4. Eighty percent of the underutilized schools – 22 schools in total – received either an "F" ("Fails to Meet Expectations") or a "D" ("Meets Few Expectations") in DPI's most recent Report Card. They include some of the lowest-performing schools in Milwaukee. Given the poor academics and declining enrollment of some of these schools, they are at risk of soon becoming empty.

5. Underutilized schools are more likely to experience enrollment decline. This is concerning because these schools may eventually become vacant.

6. It is highly unlikely that MPS is purposefully keeping these low-performing schools underutilized. The average student-teacher ratios for underutilized schools (18) is less than those schools that are not underutilized (20).

7. Overall, more than 25% of the total MPS building capacity that is for educating students is either empty or underused. This includes vacant MPS school buildings and the unused portions of schools that are operating

8. A severe shortage of quality public schools exists in the vicinity of the underutilized schools. Out of the 52 closest schools, only 7 scored a "C" or better on the State Report Card. The City should find ways to increase quality educational options for children.

9. One of the ways this can happen is to allow private schools in the choice program, public charter schools, and traditional public schools expand into the unused and underutilized MPS buildings. This can be accomplished by allowing these schools (in the case of successful traditional public schools or charter schools) to take over the administration of the failing schools, leasing out space in underutilized MPS schools, or consolidating MPS schools and leasing or selling the leftover empty building. Doing so will also decrease the number of underutilized schools that are supported by state and local taxpayers but not being used.

10. However, because of the poor track record of Milwaukee officials in dealing with the unused schools problem, any serious solution to the underutilized facilities issue will likely have to come from the state legislature.

I. Introduction

A. The story of Milwaukee Public Schools

It is almost indisputable that education is the great driver of upward social mobility (Mathur & McCloskey, 2014). For most children, it is at least a necessary, if not sufficient, condition for success. Without a high-quality education, children will find it difficult to advance in life and achieve their potential. A lack of education leaves many stuck in poverty, unable to achieve the American dream.

Therefore, Milwaukee simply cannot address its poverty crisis without first fixing its education system. The public school system in Milwaukee has, for some time now, been very poor. Milwaukee Public Schools' (MPS) graduation rate is floundering at 60.6%.[3] Reading proficiency is a shocking 8% for the 50 MPS schools that educate predominately low-income, black students.[4] About seven out of every ten MPS students, or 70% of the total student body, are habitually truant, i.e. absent from school for an extended period of time without an excuse.[5] The State's Report Card gave 53 MPS schools the lowest score possible of "Failing to Meet Expectations." More than 31,000 students are enrolled in these schools.[6]

The struggling MPS system has led many parents to exercise school choice by leaving failing MPS schools to attend independent public charter schools or private schools in the Milwaukee Parental Choice Program. Since 2009, the total enrollment at MPS has declined by 11%. This coincided with an increase in enrollment at private schools in the choice program by 33% and independent charter schools by 175%.[7]

This decline in enrollment at MPS has resulted in both the closure of MPS schools and buildings operating below capacity. Empty buildings cost taxpayers substantial amounts of money in maintenance and utility costs. The City currently owns at least 17 MPS buildings that are empty. These facilities have cost taxpayers over $1.6 million since 2012 just in utilities.[8] As a recent Pew report noted (2013), vacant school buildings, if kept empty for too long, "can become eyesores that cast a pall over neighborhoods and attract vandalism and other illicit activity." (p. 1). MPS' current

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[3] *Milwaukee Journal Sentinel* (2014). "Wisconsin graduation rate rises while MPS' edges down," by Erin Richards, May 8, 2014. http://www.jsonline.com/news/education/wisconsin-graduation-rate-rises-while-mps-edges-down-b99265610z1-258505011.html

[4] [4] Journal Sentinel PolitiFact Wisconsin (2014). "Alberta Darling says reading proficiency is 8% at 50 low-income and high-minority schools," by Dave Umhoefer, December 5, 2014. http://www.politifact.com/wisconsin/statements/2014/dec/05/alberta-darling/alberta-darling-says-reading-proficiency-8-50-low-/

[5] *Milwaukee Neighborhood News Service* (2014). "Special Report: Nearly three-quarters of MPS high school students labeled 'truants'," by Kelly Meyerhofer, November 17, 2014. http://www.milwaukeenns.org/2014/11/17/special-report-nearly-three-quarters-of-mps-high-school-students-labeled-truants/

[6] Based on public data from DPI.

[7] *Milwaukee Journal Sentinel* (2014). "Amid signs of life, MPS' piece of the pie keeps shrinking," by Alan J. Borsuk, December 6, 2014. http://www.jsonline.com/news/education/amid-signs-of-life-mps-piece-of-the-pie-keeps-shrinking-b99403015z1-284982751.html

[8] Milwaukee Public Schools. *Supplemental Information, Utility Budget*. This takes into account the cost of natural gas, electric, water, storm water, and snow and ice. It is likely, however, that this significantly underestimates the cost of maintenance as it does not consider other costs such as security for the building, landscape, personnel to maintain the building, and any completed or needed capital improvements

vacant buildings have, on average, sat empty for nearly 7 years. See Table A.1 in Appendix A for a list and details about vacant buildings in MPS.

In addition to declining enrollments generally, these schools may have systemic problems that keep kids away. If an underutilized school has a declining enrollment, these are the buildings that may be the next ones to close, which would compound the vacant facilities problem.

B. MPS and city officials block choice expansion into unused MPS facilities

And yet, to quote Albert Einstein, "in the middle of difficulty lies opportunity." Milwaukee's independent charter schools and private schools in the choice program are some of the best schools in the city. There is solid evidence that academic outcomes for students in these schools are at least as good, and by some measures better, as similar students in MPS (Wolf, 2012; Witte et al., 2012). More fundamentally, private schools participating in the choice program are not a "system" with common management or characteristic. Some of the best schools in Milwaukee are private schools which are able to serve low-income children because of the school choice program.

As mentioned above, these schools are growing, as more parents are choosing to send their kids there. Some of the highest performing schools, such as HOPE Christian Schools, Milwaukee College Prep, St. Anthony School of Milwaukee, and St. Marcus Lutheran School, are continually looking for space to expand.[9] Given the ambitious growth plans of these schools and MPS having so much empty building space available for education, it would seem to be the perfect public policy to sell that space to expanding choice and charter schools. This would give more children and parents access to very popular schools, and it would give private and charter school leaders the ability to expand into valuable school space. Taxpayers would no longer have to pay to maintain empty MPS space, and the revenue from selling empty buildings would go towards improving existing MPS schools, potentially giving relief to property taxpayers.

There is certainly opportunity to expand quality seats. In 2013, a WILL Report showed that there were, at the time, about 20 empty facilities – and choice and charters had, over the years, expressed interest in purchasing or leasing nearly every single building. However, Milwaukee officials have chosen to block the expansion of choice and charter schools into unused and underutilized buildings. This hostility comes in many forms: local administrative policies that ban sales of facilities to certain non-MPS schools, the failure of MPS to keep a public list of what buildings are empty and underutilized, Milwaukee Mayor Tom Barrett's insistence of charging a "school choice tax" as a condition on selling or leasing empty buildings, and the creation of last-minute "deals" done solely to thwart the sale of facilities to schools in the choice program in high demand by Milwaukee families.

[9] *Milwaukee Journal Sentinel* (2014). "Wisconsin voucher programs march toward 30,000 student threshold," by Erin Richards, December 8, 2014. http://www.jsonline.com/news/education/wisconsin-voucher-programs-march-toward-30000-student-threshold-b99403663z1-285131261.html

C. Shining light on the underutilized schools issue

With all the attention placed on empty MPS buildings, there has been little discussion of existing MPS schools that are operating below capacity. We hardly know anything about the types of schools that are underutilized and what, if anything, policymakers could do about it.

This report explores the MPS schools that are operating at far less than maximum student capacity and recommends possible solutions. Many of these schools are underperforming – this may be why they have a declining enrollment – and are prime for reform. Underutilized buildings may bring opportunities for consolidation, to lease the open classrooms to charter or choice schools ("co-location"), or a charter school takeover. But, action may have to come from the state legislature as MPS and the City have proven time and again to be hostile to changing the status quo.

II. Unused School Space in Other Cities

MPS schools are not unique in experiencing declining enrollment and increasing unused space in its schools. These challenges are facing other urban public school districts across the country, including Detroit, Kansas City (MO), Pittsburgh and Washington, D.C. (Pew, 2011). However, Milwaukee – with a robust choice program – enjoys options that other urban districts do not.

Pew conducted an analysis on school closings in these cities, plus Chicago and Milwaukee, and found that unused buildings are often located in declining neighborhoods and are difficult to sell or lease. In these six cities, districts possessed over 200 vacant properties in their portfolios.[10] The report notes that buildings that stand vacant for too long "can become eyesores that cast a pall over neighborhoods and attract vandalism and other illicit activity" (p. 1).

Since 2005, these districts were able to sell, lease, or reuse about half of their empty buildings (Pew, 2013).[11] Sales prices were often much lower than projections, which is a pattern likely due to unfavorable conditions that include old age and their locations in declining areas.

A follow-up analysis examined what happens to closed schools in 12 urban school districts and concluded that the majority of sales were made to charter schools. Buildings were also sold to buyers who used the buildings for alternative uses such as creating housing, homeless shelters, community centers, and office space. It can be challenging for districts to find buyers, however.

Like MPS, Chicago Public Schools (CPS) has struggled with a declining enrollment and a surge in empty public school buildings. CPS has also faced a financial crisis for several years. As of 2013, enrollment at 330 schools, which is more than half of all public schools in the district, was operating at less than 80% of capacity, and 139 were operating at less than half capacity, including charter schools.[12] This led the district to close 50 elementary schools and consolidate others.[13]

[10] Detroit stands in its own category with 92 unused buildings.
[11] The additional districts are Atlanta, Cincinnati, Cleveland, Philadelphia, St. Louis, and Tulsa.
[12] *Chicago Tribune* (2012). "CPS releases list of underused schools for 2012-13: Effect on shutting schools and the closing committee's role is uncertain," by Noreen S. Ahmed-Ullah, December 5, 2012. http://articles.chicagotribune.com/2012-12-

III. WILL Analysis on Underutilized MPS schools

In an attempt to further shine light on MPS schools, WILL performed an analysis on underutilized MPS buildings. The full list of the underutilized schools and their characteristics is in Appendix B. Our findings show:

1. Our data, using MPS' methodology, shows that there are currently 27 MPS schools operating at or below 60% capacity.

2. These underutilized schools are more likely to be failing schools (labeled "Fails to Meet Expectations" on DPI's Report Card grades).

3. Students in underutilized schools are more likely to be habitually truant than students in non-underutilized schools.

4. Underutilized schools are more likely to experience enrollment decline.

5. Underutilized schools, on average, have more emergency 9-1-1 calls per student from the school compared to non- underutilized schools.

6. Underutilized schools, on average, serve a higher percentage of economically disadvantaged students, students with disabilities, and Black students. They serve a lower percentage of Hispanic and English Language Learner students.

7. Over 25% of the total MPS building capacity for educating students is either empty or underused. This is calculated by totaling MPS building capacity and then dividing it by enrollment. It includes the vacant school buildings and the unused portions of schools that are operating.

A. Methodology for calculating underutilization

Our analysis relies on building capacity data from MPS's *Long-Range Facilities Master Plan* (2011). We chose a measure used in the report, known as "building capacity," which is based on a formula that accounts for the number of total regular classrooms in a building and adjusts the count for special rooms (e.g. art, music, computer labs) and space for special education. Capacity assumes each regular classroom can educate 27 students. Further description of the methodology is located in Appendix C. The building capacity was compared with the latest enrollment data to produce a utilization percentage. For example, the utilization rate for a school with a building capacity for 1,000 students and an enrollment of 700 students is 70%. This is how MPS calculates utilization,

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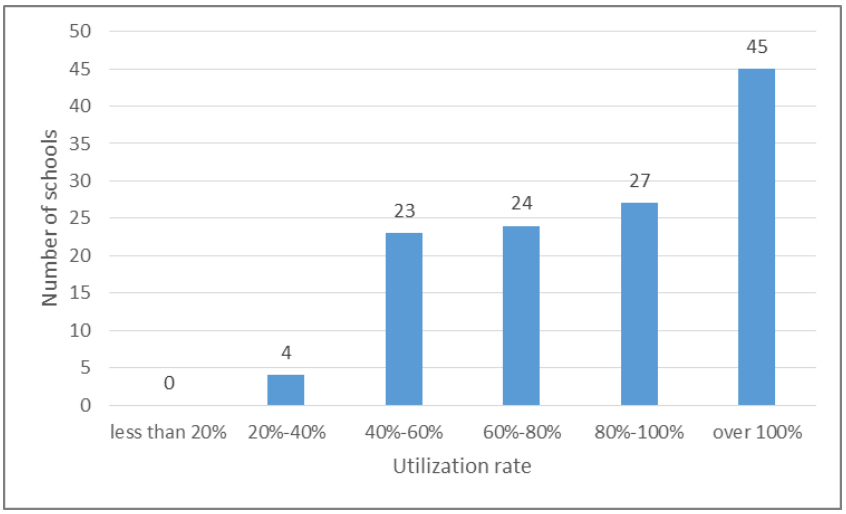
05/news/ct-met-cps-closing-commission-20121205_1_ceo-barbara-byrd-bennett-school-closings-charter-schools (accessed 12/2/2014).

[13] *Chicago Tribune* (2014). "Year later, much has been learned about school closings," by Noreen S. Ahmed-Ullah, June 14, 2014. http://www.chicagotribune.com/news/ct-chicago-school-year-ends-met-20140615-story.html

i.e. enrollment divided by building capacity.[14] Figure 1 below shows the breakdown of MPS schools for various utilization rates.

Figure 1: Distribution of building utilization rates among MPS schools



While there is no generally accepted hard rule for deeming a school as "underutilized," we selected 60% and below to define what buildings are "underutilized." In other words, we consider a school to be "underutilized" if its enrollment is below 60% its building capacity. Imagine a school building with 10 standard classrooms and a capacity to educate about 270 students. If it operated at 60%, then it would actually be serving only 162 students and four of the ten classrooms could be empty.

We believe that our rule provides a fairly conservative estimate and reasonable starting point. Chicago Public Schools initially chose an 80% utilization rate as its cutoff when it started making plans for consolidation and eventually lowered this cutoff to 70%. We started at this point and lowered it by an additional 10 percentage points to arrive at a more conservative number.[15] The overall utilization rate for all operating MPS schools is 80%, so the 27 schools operating at less than 60% are significantly below the overall rate.[16] Table B.1 provides performance and demographic information about these schools. Although it is often necessary for schools to operate below capacity in order to have flexibility for its operations, 40% of unused space seems quite excessive and inefficient.

B. Limitations of methodology

This paper is not without its caveats. As we mention above, there is no widely accepted rule of thumb for regarding a school facility as "underutilized." Moreover, as far as we are aware, there is no academic research on the topic of underutilization and its effects on measurable student

[14] See Long-range facilities Master Plan (2011).
[15] Using CPS's cutoff would produce 38 MPS buildings below 70% utilization.
[16] This overall rate is for school buildings currently being used and excludes vacant buildings. It is also consistent with the *Master Plan's* estimate of 81% for overall utilization of MPS facilities in 2011 (p. 49).

outcomes. This report also does not discuss overcrowding, which reflects another dimension of the facilities issue that has seemingly received little attention but should be addressed in the future.

In calculating utilization rate, we are using MPS' own methodology, i.e. enrollment divided by building capacity. We are using building capacity data from 2011 because we were unable to obtain the data for 2014 from MPS. We filed an open records request with MPS in May 2014, asking for building utilization data and were told it would cost over $5,000 in search costs. It is also highly unlikely that the building capacity has changed since 2011. Because some schools have changed names or buildings since 2011, our methodology and research included a thorough search of public information on existing MPS schools that we claim are underutilized.

As for our policy recommendations, we are not proposing a hard plan on what to do to underutilized schools (e.g. school X and school Y should be consolidated into school Z). Any action taken must be based on a transparent and rigorous needs assessment.

The question is: can public discourse benefit more from the information set out in this paper than not having this information at all? We believe the answer is "yes." It offers a starting point for the district, the city, parents, policymakers, and other interested citizens to discuss how they want these publicly controlled facilities to be managed.

C. Results

We identified 27 school buildings in MPS that are currently operating at less than 60% capacity.[17] Table 1 provides the descriptive statistics for underutilized schools and schools not underutilized. The average underutilized school enrolls 425 students while the average enrollment for schools not underutilized is 587. Compared to the prior year, underutilized schools on average experienced enrollment decline (3.1%) while non-underutilized schools experienced little change. Oddly, while the average underutilized schools operate at half capacity, the average school that is not underutilized operates at over 100% capacity.[18] Compared to schools not underutilized, the typical underutilized school educates more Black students, more students with disabilities, and more economically disadvantaged students while serving fewer Hispanic students, fewer white students, and fewer students with limited English proficiency. The average habitual truancy rate in the underutilized schools group is 62%, compared to 38% for schools not underutilized.[19]

We obtained data from School Choice Wisconsin on 911 calls made from MPS schools (School Choice Wisconsin 2014). Nearly twice as many police calls were made from underutilized schools than schools not underutilized. In per student terms, the rate for underutilized schools was more than double the number of calls per student in schools not underutilized.

[17] We compared addresses of the schools listed in the *Master Plan* report with MPS's online school directory and dropped schools with different addresses. Details are provided in Appendix C.
[18] There is a positive correlation between schools' accountability ratings and whether a school's utilization rate exceeds 100 percent. This does not imply that crowded schools cause higher accountability ratings, however. Given that the focus of this report is on underutilized buildings in MPS, we do not conduct detailed analysis on over-utilized buildings.
[19] Wis. Stats. § 118.16(1)(a) defines "habitual truant" to mean a pupil who is absent from school without an acceptable excuse under s.118.16(4) and s.118.15 for part or all of 5 or more days on which school is held during a school semester. Further information about this metric is located at http://spr.dpi.wi.gov/spr_tru_q%26a.

Table 1: Summary statistics for all MPS schools and underutilized schools

	Underutilized Schools	Schools Not Underutilized
	average	average
Enrollment	425	587
Change in enrollment 2013 to 2014	-3%	0%
Capacity	840	610
Utilization in 2014	49%	103%
Change in utilization 2011 to 2014	-5%	4%
Report Card rating score (average)	50.0	57.3
Habitual truancy rate†	62%	38%
Number of police calls per student	0.83	0.32
Asian	3%	6%
Black	88%	51%
Hispanic	4%	26%
White	5%	16%
Students with disabilities	25%	20%
Economically disadvantaged	93%	82%
Limited proficiency in English	2%	10%

Sources: capacity data are from MPS Long-Range Master Facilities Plan (2011); student data are from Wisconsin Department of Instruction
Notes: Wis. Stats. § 118.16(1)(a) defines "habitual truant" as a pupil who is absent from school without an acceptable excuse under s.118.16(4) and s.118.15 for part or all of 5 or more days on which school is held during a school semester.
† The number of habitual truants is based on a count throughout the year while enrollment (the denominator) is based on the count of students on a specified day in September. Therefore, it is possible for a school to have a truancy rate that exceeds 100 percent if enough students were absent on the day official enrollment is counted.

We also summarize Report Card results for the two groups.[20] Table 2 compares the frequency for Report Card rating categories between the groups of underutilized schools and schools not underutilized. Almost two-thirds of the underutilized schools (17 schools) received the lowest rating assigned by DPI ("Fails to Meet Expectations," or the equivalent of an "F" letter grade). This is a higher percentage than the one-third of MPS schools that are not underutilized. Overall, more than 31,000 students in MPS currently attend failing schools.

An additional five underutilized schools meet "few expectations" (or the equivalent of a "D" letter grade). Many non-underutilized schools fall into this category. In total, more than 55,000 students in MPS attend either a "D" or "F" school.

A somewhat higher share of schools not underutilized meets or exceeds expectations; almost one-quarter of these schools receiving a "B" or "C" compared to 15% of underutilized schools. A much higher proportion of underutilized schools are failing its students – almost double the rate of schools not underutilized. Unfortunately, the data do not tell us the reason for these patterns.[21]

[20] We follow the MacIver Institute's method of assigning letter grades to each accountability rating.
[21] The data do not allow us to examine a causal relationship between underutilization and school outcomes, and it is plausible that causality cuts in both directions. While we might be confident that low performance is a driving factor of utilization (poor performance drives kids away, at least to some degree), these schools may receive lower accountability ratings because of declining

Table 2: Report Card ratings for all MPS schools and underutilized schools†

		underutilized schools		schools not underutilized	
Report Card ratings	*Letter Grade*	*Number*	*Percent*	*Number*	*Percent*
Significantly Exceeds Expectations	A	0	0.0%	0	0.0%
Exceeds Expectations	B	2	7.4%	6	5.9%
Meets Expectations	C	2	7.4%	19	18.6%
Meets Few Expectations	D	5	18.5%	42	41.2%
Fails to Meet Expectations	F	17	63.0%	33	32.4%

Source: Report Card data are from Wisconsin Department of Education
Notes: an underutilized school is a school with enrollment less than 60% capacity
† Three schools, including one underutilized school, received an "Alternate Rating – Needs Improvement" rating and are not included in this table.

We have considered the possibility that MPS intentionally keeps certain schools underutilized because they want a low student-to-teacher ratio for the low-performing schools?[22] Our data suggests that this is unlikely. If the student-to-teacher ratio is purposefully kept low, then we should see an inverse relationship between student-to-teacher ratios and schools being identified as underutilized. That is, the data should tell us that, on average, underutilized schools have a significantly lower student-teacher ratio. The average student-teacher ratios for underutilized schools and schools not underutilized are 18 and 20 students per teacher, respectively, indicating that classes in underutilized schools, on average, are slightly smaller. The difference between the means, however, is not statistically significant.[23]

In total, the sum of all the unused space in currently occupied MPS schools and the unoccupied MPS facilities is at least 25% of MPS' total building capacity.[24]

D. Access to quality schools

Are there quality public schools available to educate students currently enrolled in underutilized schools? To find out, we identify the five schools nearest each of the 27 underutilized schools.[25] We exclude duplicate observations from the sample. This leaves us with 52 unique schools in the sample, of which 22 are underutilized and 30 are not underutilized. Of this group, only 7 schools scored a "C" or above.

Each of the five nearest schools are within a 1.5 mile radius of the underutilized school. The mean distance for the sample is about 0.7 miles, indicating that schools are on average close to each other. Of course this is not surprising in an urban district like Milwaukee.

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enrollment (i.e. perhaps due to losing high-performing students). In other words, are schools underutilized because they're bad, or are they bad because they're becoming smaller?

[22] A substantial body of research on class size is inconclusive and produces no consensus that reductions in class size have systematic benefits for students (Cicero, 2013).

[23] The p-value for a difference-in-means t-test is 0.397, implying insufficient evidence in the data to detect a significant difference in student-to-teacher ratios between underutilized and non-underutilized schools.

[24] This estimate is consistent with the *Master Plan's* estimate of 73% for overall utilization of MPS facilities in 2011 (p. 49). Our figure is based on dividing MPS's total enrollment by the total capacity of buildings reported in the *Master Plan*

[25] We compute the distance for every building-pair combination by using the Haversine formula. Details are located at http://www.movable-type.co.uk/scripts/gis-faq-5.1.html.

Because we already broke down Report Card results for the underutilized schools, we look at this information for nearby schools that are not underutilized. Table 3 below shows Report Card results for the pool of nearby schools that are not underutilized. More than 80% are graded "D" or "F" on the Report Card ratings. Only one school near any of the underutilized schools received a "B," and four received a "C." Given the falling enrollment in these schools and their failure to meet the expectations as defined by the report card, there is a clear need for quality educational options in the vicinity of the underutilized and (mostly) underperforming schools. So what should we do with the underutilized schools that are failing its students? If quality public educational options nearby are limited, then more must be done to make quality seats available to these students.[26]

Table 3: Report Card ratings for nearby MPS schools not underutilized

Report Card ratings	**Equivalent letter grade**	**Number**	**Percent**
Significantly Exceeds Expectations	A	0	0.0%
Exceeds Expectations	B	1	3.4%
Meets Expectations	C	4	13.8%
Meets Few Expectations	D	7	24.1%
Fails to Meet Expectations	F	17	58.6%

Notes: We compute the distance between each facility by applying the Haversine formula their latitude/longitude coordinates. One school received an "Alternate Rating – Needs Improvement" score on the Report Card.
Source: Latitude and longitude data were obtained from the National Center for Education Statistics. Enrollment and Report Card data are from the Wisconsin Department of Public Instruction.

E. Enrollment trends

Lastly, we examine the relationship between utilization and enrollment changes between 2011-2014 to see if there is a difference between underutilized and non-underutilized schools.[27] Underutilized schools are more likely to experience enrollment decline. Underutilized schools experienced on average a 2.5% decline in enrollment since 2011. Schools over 60% capacity, on the other hand, experienced on average a 4% increase in enrollment since 2011. After controlling for school type and other factors, the percent enrollment change since 2011 for underutilized schools was about 4 to 6 percentage points lower than non-underutilized schools (See Table C.1 in Appendix C).

IV. Policy Recommendations

So, here is where things stand. MPS has more failing schools – which are responsible for educating over 31,000 children – than any other school district in Wisconsin. While MPS is a very large district, these students comprise 40% of its enrollment. As parents have left these failing schools, MPS school buildings have closed and sit empty or are currently operating significantly below capacity. According to MPS' records, there are at least 17 empty school buildings. MPS utility

[26] IFF provides a geo-spatial mapping tool for Milwaukee public schools that maps out the locations for public, private, and charter schools and provides performance and demographic information for 2013-14. http://www.iff.org/milwaukeeschools
[27] The appendix includes detailed results. We estimate regression models that include the mean annual change in enrollment for each school over the sample period as the dependent variable. Our models control for a set of school characteristics that include an identifier for underutilized schools, an identifier for charter schools, an identifier for schools that received a "Fails to Meet Expectations" rating, and an indicator for school type (high school).

records show that taxpayers have spent over $1.6 million on those buildings since 2012 on costs relating to utilities (gas, electricity, and water).[28] *See Appendix A.* In addition, this report concludes that there are at least 27 MPS schools that are operating below 60% maximum capacity. These schools are, on average, lower performing than the rest of MPS.

In dealing with underutilized and vacant MPS schools, there is no "one size fits all" solution. Each school and building presents its own opportunities and challenges. Here are a few of the policy tools that officials should consider.

A. Consolidating underutilized schools into one school

A common solution for handling underutilized schools is to merge two small schools into one school, and sell or lease the leftover vacant facility. Consolidating two schools into one school building brings potential costs and benefits. Proponents of large schools have long argued that students could benefit from large schools because more courses can be offered to larger groups of students (Kuziemko 2006). Arguments for large schools also include the economies of scale associated with larger schools and benefits from increased diversity in their students and teachers. On the other hand, arguments against large schools point to empirical studies that found no real difference in the number, size, or quality of courses offered in small and large schools (Kuziemko 2006). Rather, advocates for small schools argue that stronger connections are present between communities and smaller schools as well as teachers and students within smaller schools.

Research on the academic effects of consolidation is mixed, however, and rigorous research is scarce.[29] The Pew (2011) report notes that the effect of closures on student academic achievement "appears to be minimal." On the other hand, other studies find negative impacts from school consolidation, s*ee* Mills, McGee, and Greene (2013) and Kuziemko (2006), though these studies examine a large number of rural schools and did not parse out effects by urbanicity. It is important to note, however, that these studies do not explain why size matters, so we cannot confidently extrapolate the results to Milwaukee.

When deciding whether to consolidate or close buildings, policymakers should consider the academic performance of the schools to be merged, location of the schools, and leadership of the person who would lead the merged school. Though most underutilized schools in MPS are failing, a handful perform satisfactorily and two exceed expectations as defined by the state report card. It may not be in the City's best interest to merge and close these few schools given that they perform relatively well. But clearly most underutilized schools are failing its students, and nearly all of the

[28] It is difficult to get an accurate measure on what this costs taxpayers. MPS is constantly altering its definition of unused schools (i.e. the "shell game"), it is very hard – if not impossible at times – to obtain records from MPS, and, for the records that are easily attainable, they only cover certain utility costs of buildings which does not include costs relating to security, grounds keeping, and general maintenance.

[29] Most studies, perhaps due to data limitations, do not control for important factors. Unless school assignments when consolidation occurs are randomly assigned (which they are not), these methodological limitations could result in bias. Only a few studies have been able to make statistical adjustments to account for such factors. One of these, which employs methods to account for endogeneity issues, found positive impacts from school consolidation on returns to education and educational attainment (Berry & West, 2008). This analysis, however, employs 1980 U.S. Census data, and it did not examine any school or district level data after 1966. Therefore, these findings likely do not extend to the contemporary education environment.

schools nearby are "D" or "F" schools. Therefore, a case might be made for closing those schools or transferring control.

Once a school is consolidated, the question then becomes: what to do with currently empty buildings and buildings that will close in the future? Ideally, these buildings would be re-opened, leased, or sold to high-achieving schools without regard to sector (e.g. high-achieving "A" or "B" schools in MPS). Without interested buyers, though, vacant buildings will sit, and the City will accumulate costs from these empty buildings, including securing the building, security, utilities, and maintenance.

B. Co-location of multiple schools in one building

Although consolidation has increased in many urban areas, it is not the only option. "Co-location" occurs when multiple schools share one building. Some cities will lease the unused space in occupied public school buildings to charter or private schools. Each school owns or uses a set of classrooms and school space, and they typically share large amenities such as a gym or library.

This option is particularly prevalent in cities, usually bigger ones, where most schools are small but the buildings tend to be large. [30] In New York City, for instance, *over half of all* of its traditional public schools and public charter schools share building space. Charter schools, which make up around 8% of all of the schools, can occupy public building space without paying rent. [31] This makes sense, since the taxpayers own the buildings. In Milwaukee, however, many non-MPS affiliated charter schools have to pay rent when they lease city-owned buildings.[32]

Besides New York City, sharing building space is also common in Chicago, Los Angeles, and Denver, among other cities. In Chicago, the movement to co-locate was led by former Chicago Public Schools Superintendent and current U.S. Secretary of Education Arne Duncan. At least 12% of Chicago's public schools, including public charters, share space.[33] In 2000, California voters passed Proposition 39 which mandates "public school facilities should be shared fairly among all public school pupils, including those in charter schools."[34] The Los Angeles Unified School District (LAUSD) currently has over 100 co-located charter schools.[35]

The benefits of co-location are many, including more efficient use of public school buildings and tax dollars, allowing the best schools to expand, and more educational options for parents. On the other hand, co-location could raise coordination issues when multiple schools have to share amenities. They would have to coordinate when to use the cafeteria, gymnasium, libraries,

[30] Of course, in general demand for space in New York City, whatever the purpose, is high.
[31] New York City Charter School Center (2013). *Co-Location: How Public Schools Share Space in New York City, 2012-2013*. http://www.nyccharterschools.org/sites/default/files/resources/nyccsc_colocation_fact_sheet.pdf (accessed 12/5/2014).
[32] MPS negotiates with each school on an individual basis.
[33] *New York Times* (2008). "In Cramped Spaces, Small School Benefits," by Elissa Gootman, December 20, 2008. http://www.nytimes.com/2008/12/21/education/21shared.html?_r=2&ref=education&
[34] LAUSD (2011). *Policy on Co-Locations for District School Facilities' Use Pursuant to Education Code Section 47614 (Proposition 39)*, Policy Bulletin, July 7, 2011. http://achieve.lausd.net/cms/lib08/CA01000043/Centricity/Domain/106/Proposition%2039%20Policy%20on%20co-locations-07-01-11.pdf
[35] Los Angeles Unified School District (2014). *Charter Schools Directory 2014-15*. http://achieve.lausd.net/cms/lib08/CA01000043/Centricity/Domain/106/Charter%20Schools%20Directory%202014-15%20Complete.xls

computer labs, playgrounds, etc. Education officials in New York City, however, say that the benefits of co-location outweigh the costs.[36]

A recent evaluation found that co-location neither helps nor harms traditional public schools in terms of student academic growth (Winters, 2014). Co-location certainly has not hindered New York's Harlem Success Academy, an independent charter school which shares spaces in many of its 22 schools and boasts some of the best test scores in the state.[37]

There is, at least, one example of co-location in Milwaukee. Currently, Carmen High School of Science and Technology (South Campus), an independent charter school, shares space with ALBA (Academia de Lenguaje y Bellas Artes), an MPS instrumentality charter.

C. Allow schools to takeover failing, underutilized MPS schools

An additional policy tool would be to allow charter and choice schools to takeover low-performing, underutilized MPS schools. This is an idea that is gaining momentum throughout the country, and has been administered by the state, city, and public school district. The conversion from traditional public school to public charter school frees the school of many of the regulations that accompany a traditional public school, and allows more experimentation with teaching methods. Typically, the new school will educate the children of the previous public school, but often they can choose whether to re-hire the teachers and principals.

This concept is not unheard of in Milwaukee. In January 2014, then-MPS Superintendent Gregory Thornton, prior to his departure, pushed for a measure that, among other things, would transform some of the failing MPS schools into non-MPS charter schools. However, the Milwaukee Public Schools Board of Directors, by a vote of 8-1, decided not to take the resolution up.[38]

Of course, this solution requires a willing charter school to takeover an existing MPS school. In the past, Milwaukee College Prep, a highly successful charter, has contacted MPS about taking over six failing schools, several of which are "underutilized," to be independent charters. MPS did not pursue the offer.

While the takeover model usually involves independent charter schools, policymakers could take advantage of the vibrant and successful Milwaukee Parental Choice Program. One option could be to allow these schools, especially the ones with ambitious expansion plans, to sign a charter agreement with the city to take over a failing MPS school. Alternatively, the failing MPS schools could be closed and, immediately, sold to a private school in the choice program.[39]

For example, St. Marcus Lutheran School, a high quality private school in the choice program, has attempted to do the latter option. Even though 89% of their students are from low-income families,

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[36] *New York Times* (2008). "In Cramped Spaces, Small School Benefits," by Elissa Gootman, December 20, 2008. http://www.nytimes.com/2008/12/21/education/21shared.html?_r=2&ref=education&

[37] These schools ranked in the top 1% and 3% in math and English Language Arts, respectively, among all schools in the state. http://successacademies.org/about/#results

[38] *Milwaukee Journal Sentinel* (2014). "MPS board stalls decision on converting struggling schools to charters," by Andrew Phillips, January 30, 2014. http://www.jsonline.com/news/education/mps-board-stalls-decision-on-converting-struggling-schools-to-charters-b99195300z1-242875921.html

[39] This could include a stipulation that the school would have to educate the children currently occupying the school.

93% of St. Marcus students end up graduating from a traditional high school. They have bold plans to expand, seeking to educate thousands more low-income children in Milwaukee. In the last two years, St. Marcus has made two very public offers to purchase empty MPS buildings, Malcolm X and Lee, in order to expand its school there. MPS and the City denied the offers (see next page for more). But, private schools could occupy MPS facilities and educate low-income children, if MPS or the Milwaukee Common Council were cooperative.

States across the country have been implementing a "Recovery School District" as a way to deal with failing schools and underutilized facility space. Under a Recovery School District, failing schools are closed, reorganized, and re-opened under the control of the RSD or a charter school. The Superintendent of the RSD, usually appointed by the governor or a board, could have the power to unilaterally takeover failing schools, turn them into charter schools, or sell facilities to private schools.

An RSD was created in Louisiana in 2003 to transform failing, underutilized schools. As a result of the RSD, all but 5 of New Orleans' 89 public schools have been turned into charter schools.[40] The results have been impressive. Before Hurricane Katrina, the city's graduation rate was 54.4%.[41] Last year, the rate for the schools in the RSD was 77%.[42] Test scores have also improved.[43]

Since the enactment of Louisiana's Recovery School District in 2003, other states created their own authorities for overtaking failing schools, including Connecticut, Massachusetts, Michigan, and Tennessee (Public Impact, 2014).

V. Who Will Lead The Reform Efforts?

While policy tools exist to fix the unused and underutilized schools issue, there remains one giant hurdle: the intransigence of the MPS School Board and officials in the Milwaukee government.

Wisconsin state law allows the sale of unused and underutilized buildings if a resolution is approved by both the Common Council and MPS. But, MPS, for years, has been unwilling to sell or lease empty buildings to private schools in the choice program and non-MPS affiliated charter schools. The following are just some of the many disappointing examples of MPS not willing to take actions related to the facilities issue that would expand options and access to better education for Milwaukee's children:

- MPS plays a "shell game" with its buildings, constantly changing the number of unused school buildings it has based upon who is asking. *See* 2013 WILL Report. They also refuse to adopt a real-time portfolio that shows the current status of its unused and underutilized buildings. *Id.*

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[40] *The Times-Picayune* (2013). "Recovery School District will be country's first all-charter district in September 2014," by Danielle Dreilinger. December 19, 2013. http://www.nola.com/education/index.ssf/2013/12/recovery_school_district_will_3.html
[41] *The Washington Post* (2013). "In New Orleans, major school district closes traditional public schools for good," by Lyndsey Layton. May 28, 2014. http://www.washingtonpost.com/local/education/in-new-orleans-traditional-public-schools-close-for-good/2014/05/28/ae4f5724-e5de-11e3-8f90-73e071f3d637_story.html
[42] *Id.*
[43] *Id.* "On average, 57 percent of students performed at grade level in math and reading in 2013, up from 23 percent in 2007, according to the state."

- Last year, we identified charter and choice school interest in purchasing or leasing nearly every single vacant facility. *Id.*
- For instance, in July 2012, Woodlands, a high-performing independent charter school,[44] sent MPS a letter of intent to purchase or lease one of three vacant school buildings: Dover, 88th Street, or Hayes Elementary. On August 31, 2012, without any justification, MPS declined the offers. *Id.* Those buildings are still empty. *See Table A.1*.
- St. Lucas, a private school in the choice program, was in discussions to buy Dover, an empty MPS school.[45] MPS refused to cooperate. Dover is now "set" to be turned into housing for teachers, "TeachTown." Nonetheless, it is still empty.
- In August 2013, St. Marcus tried to purchase Malcolm X. The MPS Board refused, opting to enter into negotiations with a newly-formed corporation, 2760 Holdings LLC, to turn Malcolm X into a community center. In the deal, MPS would have netted zero profit and had an option to reacquire it after 10 years. To no one's surprise, the deal fell through in September 2014. Malcolm X sits empty, instead of educating 900 new children from St. Marcus.
- St. Marcus also tried to purchase Lee, an empty MPS building that holds 700 children. Although St. Marcus ran into major problems from the City (see next page), the MPS Board decided not to take any action on St. Marcus proposal. Instead, they listened to an offer to turn Lee into an MPS instrumentality charter – i.e. an extension of MPS – that would be run by a leader of the Milwaukee teacher's union. To no one's surprise, again, that transaction never occurred, and Lee sits empty.
- The MPS Board voted last year not to allow independent charters to take over failing MPS schools.[46]

Fortunately, the Milwaukee Common Council has the ability to sell or lease unused or underutilized buildings without needing MPS' approval. 2011 Act 17 permits the Common Council to school buildings that have been "unused or underutilized for at least 12 consecutive months" if a resolution is adopted. Wis. Stat. § 119.60(2). Before the Common Council can sell an *underutilized* building, "the Common Council shall adopt by resolution a set of criteria under which the common council may or may not find that the city-owned property used for school purposes is underutilized." Wis. Stat. § 119.60(2m)(a)2.

And yet, overall, the Common Council has been disappointing in their refusal to address the facilities issue. Consider:

- Despite obtaining the power in 2011 to sell buildings unilaterally, the Common Council has not sold or leased a single MPS building, which the City owns. In fact, for most of that time, the City's policy was to only sell the buildings declared surplus by MPS. They just recently, in October 2014, passed an ordinance that specified the criteria for selling underutilized and unused buildings.[47]

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[44] All eighth grade students achieved proficient or higher in reading, math, language, and science.
[45] *Milwaukee Journal Sentinel* (2014). "Debate flares up again over Milwaukee Public Schools' empty buildings," by Erin Richards, October 9, 2013. http://www.jsonline.com/news/education/debate-flares-up-again-over-milwaukee-public-schools-empty-buildings-b99117025z1-227164181.html
[46] *Milwaukee Journal Sentinel* (2014). "MPS board stalls decision on converting struggling schools to charters," by Andrew Phillips, January 30, 2014. http://www.jsonline.com/news/education/mps-board-stalls-decision-on-converting-struggling-schools-to-charters-b99195300z1-242875921.html
[47] https://milwaukee.legistar.com/LegislationDetail.aspx?ID=1476295&GUID=450615E9-E34C-4072-A6F8-687FA92141D2&Options=ID%7C&Search=130662&FullText=1

- When St. Marcus offered to purchase Lee for its appraised value, as well as to pay property taxes, Milwaukee Mayor Tom Barrett demanded that St. Marcus pay an additional $1.3 million as a "school choice tax" solely because St. Marcus is in the choice program. This ended the deal.
- The Common Council approved the sale of Malcolm X to 2760 Holdings LLC on a 11-4 vote. The deal (as described on the prior page) was a sham transaction done solely to prevent St. Marcus from obtaining the building. This should raise serious questions about some members' sincerity to reform the facilities issue.
- To some members' credit, the Common Council is considering a resolution that would allow the City to market six unused and underutilized buildings.[48] But, as our report concludes – 17 vacant facilities and 27 MPS schools operating at less than 60% capacity – this is only the very tip of the iceberg. Furthermore, Milwaukee has an existing ordinance that would allow the City to continue to prevent independent charters and schools in the choice program from purchasing or leasing the unused and underutilized facilities.[49] It is far too little and much too late.

VI. Conclusion

Milwaukee Public Schools currently operates far from its efficiency frontier. Their facilities portfolio includes at least 17 empty school buildings, many of which it has refused to sell to interested high-performing schools. MPS also has 27 schools currently in use that are operating at less than 60% of building capacity. These underutilized schools, on average, do not educate students as well as schools that are not underutilized. They are also schools that tend to be located near other failing schools. The district and the City can take actions to expand the quality of education for these students. Co-location and takeover by charter and choice schools are two potential alternatives that should be up for public discussion. These reforms are already underway in several other states and so far have demonstrated success.

Given the dire state of the MPS system, reform is needed immediately. But, "if past is prologue," help is unlikely to come from MPS or the city, so, perhaps, it is time for the state to take bold actions.

"The school building has not been used for pupil instruction on a daily, school day basis for the preceding 15 consecutive months and less than 40 percent of the square footage in the school building is used for administration, continuing or professional development, recreation or storage."

[48] City of Milwaukee (2014). *Resolution determining that certain Milwaukee Public Schools' properties are underutilized and directing the Department of City Development to market the properties, in the 6th, 10th and 15th Aldermanic Districts*. Final action December 16, 2014. https://milwaukee.legistar.com/LegislationDetail.aspx?ID=2075454&GUID=8DFC0C6B-C5EB-47FB-B9D4-BF7FD420A0C7&Options=ID%7cText%7c&Search=141319

[49] *See* Milwaukee Ordinance 304-49, City Disposal of School-Purpose Property. City ordinance mandates that members of the Common Council, when considering offers to purchase empty facilities, take into account the "[t]ax consequences of the sale, conveyance or lease for the city and taxpayers, including the impact of the taxpayer share of the Milwaukee parental choice program, if applicable." While this likely refers to the long-debated and complex "funding flaw" of the MPCP, the ordinance does not define how the Common Council is supposed to calculate tax consequences.

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Appendix A

Table A.1: List of vacant MPS school facilities[Ŧ]

No.	Building	Current status	Notes	Year closed	Utilities since 2012†
1	Carleton Elementary, 4116 W. Silver Spring Drive	Vacant	Declared surplus by MPS, transferred to the City	2008	$ 139,038
2	Centro del Nino, 500 E. Center St.	Vacant	Declared surplus by MPS, transferred to the City	2005	$ 21,860
3	Douglass Elementary, 3409 N. 37th St.	Vacant	Remain under MPS control	2006	$ 42,181
4	Edison Middle School, 5372 N. 37th St.	Vacant	Remain under MPS control	2006	$ 126,312
5	Eighty-eighth Street School, 3575 S. 88th St.	Vacant	Remain under MPS control	2002	$ 69,421
6	Fifth Street School, 2770 N. 5th Street	Vacant		2002	$ 106,682
7	Fletcher Elementary, 9520 W. Allyn St.	Vacant	MPS says it will use for "staging and storage"	2010	$ 106,329
8	Garfield Elementary, 2215 N. 4th St.	Vacant	Declared surplus by MPS, transferred to the City	2005	$ 48,266
9	Hayes Bilingual, 2431 S 10th St, Milwaukee, WI 53215	Vacant		2013	$ 168,262
10	Lee Elementary, 921 W. Meinecke Ave.	Vacant		2009	$ 99,733
11	Malcolm X Academy, 2760 N. 1st. St.	Vacant	MPS notes plans to move Rufus King IB HS here in fall 2016	2006	$ 203,879
12	Milwaukee School of Entrepreneurship, 6914 W. Appleton Ave.	Vacant	Transferred to the City	2012	$ 21,364
13	Philipp Elementary, 4310 N. 16th St.	Vacant		2005	$ 85,505
14	Thirty-seventh Street School, 1715 N. 37th St.	Vacant	Remain under MPS control	2004	$ 60,022
15	Wheatley, 2442 N. 20th Street	Vacant		2012	$ 124,205
16	Wisconsin Avenue Elementary, 2708 W. Wisconsin Ave.	Vacant	Remain under MPS control	2006	$ 117,031
17	Dover School, 619 E. Dover St.	Vacant	Earmarked for residential development, "TeachTown"	2012	$ 78,362
				Total spending on utilities since 2012:	**$ 1,618,452**

Sources: Milwaukee Public Schools; Milwaukee Journal Sentinel (2014). "Sold, repurposed, still vacant — an update on MPS buildings," by Erin Richards, November 27, 2014. http://www.jsonline.com/news/education/sold-repurposed-still-vacant--an-update-on-mps-buildings-b99398435z1-284117061.html
† Utility figures are based on 2012 amounts and include the sum of gas, electricity, steam, water, and snow/ice.

Ŧ According to the *Milwaukee Journal Sentinel*, since 2010 MPS has taken some actions on vacant buildings by selling three, leasing three, and re-opening two.

Appendix B

Table B.1: Underutilized schools summary statistics

school	school type	building capacity	enrollment 2014	utilization 2014	overall Report Card rating	% prof/adv in WKCE math	% prof/adv in WKCE reading	habitual truancy rate	police calls per student
Whitman ES	K-5 ES	452	249	55%	Exceeds Expectations	47%	29%	25.1%	0.14
Bay View MS/HS	MS/HS	1518	907	60%	Fails to Meet Expectations	7%	11%	74.8%	0.95
Milw Acad of Chinese Lang ES	K-8 ES	783	418	53%	Fails to Meet Expectations	10%	10%	44.0%	0.33
Groppi HS (alternative school)	HS	678	249	37%	Alternate Rating - Needs Improvement	n/a	n/a	134.1%	1.42
Siefert ES EC	K-5 ES	641	306	48%	Meets Few Expectations	20%	7%	49.6%	0.27
Brown Street Academy	K-5 ES	732	318	43%	Fails to Meet Expectations	4%	4%	69.9%	0.43
Metcalfe ES	K-8 ES	533	313	59%	Fails to Meet Expectations	6%	6%	62.0%	0.99
Milwaukee French Immersion School	K-5 ES	786	443	56%	Exceeds Expectations	45%	37%	12.1%	2.64
Holmes ES	K-8 ES	786	339	43%	Meets Few Expectations	4%	4%	60.6%	0.39
Washington HS IT	HS	1731	826	48%	Fails to Meet Expectations	n/a	6%	95.3%	1.22
Clarke Street ES	K-8 ES	641	331	52%	Fails to Meet Expectations	8%	3%	75.5%	0.70
North Division HS**	HS	1579	519	33%	Fails to Meet Expectations	4%	4%	82.3%	0.91
Jackson ES	K-5 ES	786	362	46%	Meets Expectations	4%	3%	61.8%	n/a
Hopkins Lloyd Comm	K-8 ES	732	397	54%	Fails to Meet Expectations	3%	1%	64.1%	0.58
Sherman ES	K-8 ES	840	467	56%	Fails to Meet Expectations	7%	2%	55.4%	0.64
Auer Avenue ES	K-8 ES	668	256	38%	Fails to Meet Expectations	4%	n/a	71.2%	0.80
LaFollette ES	K-8 ES	560	269	48%	Fails to Meet Expectations	5%	5%	71.5%	0.52
King Jr ES	K-8 ES	867	495	57%	Fails to Meet Expectations	3%	3%	80.5%	0.61
Keefe Avenue ES	K-8 ES	759	366	48%	Fails to Meet Expectations	4%	2%	63.2%	0.25
BEAM (Business and Economics Academy of MIlwaukee)**	K-8 ES	1494	781	52%	Fails to Meet Expectations	13%	6%	0.6%	0.54
Franklin ES (Benjamin Franklin School)	K-8 ES	759	313	41%	Meets Expectations	10%	5%	78.9%	0.59
Barbee Montessori	K-5 ES	506	297	59%	Fails to Meet Expectations	5%	n/a	50.6%	4.92
Kilbourn ES	K-5 ES	506	266	53%	Fails to Meet Expectations	3%	6%	34.5%	0.26
Browning ES	K-5 ES	894	342	38%	Meets Few Expectations	9%	5%	72.6%	0.24
Bryant ES	K-5 ES	506	256	51%	Meets Few Expectations	14%	7%	35.9%	0.19
Kluge ES	K-5 ES	786	386	49%	Meets Few Expectations	18%	14%	47.9%	0.15
James Madison Academic Campus HS	HS	1751	1017	58%	Fails to Meet Expectations	1%	5%	98.2%	0.66

Data sources: Milwaukee Public Schools, Wisconsin Department of Instruction, and School Choice Wisconsin
** North Division High School is an instrumentality charter school and BEAM is a non-instrumentality charter

Table B.2: Underutilized schools summary statistics

School	% Asian	% Black	% Hispanic	% White	% SPED	% Econ Disadv	% ELL	enroll % chg 2013 to 2014
Whitman ES	4.4%	18.5%	27.3%	46.6%	24.1%	76.3%	2.0%	-5%
Bay View MS/HS	2.8%	54.0%	29.7%	12.0%	21.2%	90.8%	7.9%	-35%
Milw Acad of Chinese Lang ES	19.9%	72.0%	3.3%	3.8%	12.2%	98.1%	20.3%	5%
Groppi HS (alternative school)	0.8%	87.1%	8.0%	3.6%	23.7%	81.5%	2.8%	-39%
Siefert ES EC	2.3%	93.5%	2.9%	1.3%	17.3%	96.4%	0.0%	-1%
Brown Street Academy	0.0%	97.5%	0.6%	1.3%	19.5%	98.1%	0.0%	6%
Metcalfe ES	0.0%	97.4%	1.9%	0.6%	25.6%	97.1%	0.0%	-9%
Milwaukee French Immersion School	3.6%	64.3%	5.4%	26.0%	7.7%	58.9%	0.2%	1%
Holmes ES	1.2%	95.9%	2.4%	0.6%	36.6%	98.2%	0.0%	-10%
Washington HS IT	3.4%	92.3%	0.4%	3.8%	31.5%	89.5%	3.8%	12%
Clarke Street ES	0.9%	94.9%	0.9%	3.3%	26.6%	99.7%	0.0%	-10%
North Division HS**	0.0%	98.7%	0.2%	1.2%	32.2%	89.4%	0.0%	19%
Jackson ES	0.8%	96.4%	0.6%	2.2%	31.2%	97.8%	0.0%	10%
Hopkins Lloyd Comm	0.0%	96.2%	1.3%	2.3%	31.5%	96.7%	0.0%	-7%
Sherman ES	0.4%	95.1%	1.3%	3.0%	18.4%	96.1%	0.0%	0%
Auer Avenue ES	0.0%	96.5%	0.8%	2.7%	33.2%	98.0%	0.0%	-22%
LaFollette ES	0.0%	97.0%	1.1%	1.9%	35.3%	93.7%	0.7%	1%
King Jr ES	0.2%	95.4%	1.2%	3.2%	24.6%	97.4%	0.0%	-1%
Keefe Avenue ES	0.0%	98.1%	0.5%	1.1%	26.5%	97.5%	0.3%	-5%
BEAM (Business and Economics Academy of MIlwaukee)**	0.0%	98.8%	0.8%	0.4%	12.0%	98.3%	0.0%	8%
Franklin ES (Benjamin Franklin School)	1.0%	95.2%	1.9%	1.6%	32.3%	98.7%	0.0%	-12%
Barbee Montessori	1.3%	92.3%	2.4%	3.7%	17.8%	89.9%	0.3%	-1%
Kilbourn ES	3.0%	89.5%	2.3%	5.3%	19.5%	95.5%	0.0%	-1%
Browning ES	0.9%	93.6%	2.3%	2.9%	28.1%	94.2%	0.0%	11%
Bryant ES	6.3%	87.1%	1.6%	4.3%	32.8%	92.6%	2.0%	4%
Kluge ES	12.4%	78.0%	5.4%	3.9%	17.1%	96.9%	8.3%	1%
James Madison Academic Campus HS	3.7%	91.7%	0.8%	3.4%	29.8%	86.8%	1.6%	-2%

Data sources: Milwaukee Public Schools, Wisconsin Department of Instruction, and School Choice Wisconsin
** North Division High School is an instrumentality charter school and BEAM is a non-instrumentality charter

Appendix C

A. Measuring Building Capacity

Our analysis relies on data from MPS's *Long-Range Facilities Master Plan* (2011). There are various approaches to measure the concept of "facility utilization," or capacity. For example, one method for computing school building capacity is "program capacity" and takes into account how the facility is being used at the time based on programs offered by a school. Thus, if programs change, then the estimated capacity will change.

We use instead a measure used by MPS for constructing a long-term plan for its facilities portfolio, known as "building capacity." The *Master Plan* report uses this approach. This method is based on a formula that accounts for the number of total regular classrooms in a building and adjusts the count for special rooms (e.g. art, music, computer labs) and space for special education. Capacity assumes each regular classroom can educate 27 students. Somewhat different formulas are used for elementary and secondary schools. The formula for secondary schools applies an "efficiency factor" to regular classes that accounts for the fact that scheduling will not use all teaching space all the time and that some classes are smaller than standard classes.

The utilization rate, which we evaluate for the 2013-14 school year, is defined by a simple equation:

$$U_j = E_j / C_j$$

where U_j is the utilization rate for school j, E_j is the number of students enrolled in school j during 2013-14, and C_j is school j's estimated building capacity as reported in the *Master Plan*.

While the capacity data in the *Master Plan* is based on the most recent information collected at the time of the report, the fact that the data are a few years old is unlikely to pose reason for concern. Factors that might affect capacity estimates since then include significant changes to the structure of school buildings (e.g. the addition of additional rooms that could potentially be used to hold classes). We don't have reason to believe that substantial changes have been taken that would lead to wildly different capacity estimates in 2014.

As a check, we compare the addresses of each underutilized school listed by MPS as of 7/5/2011 with the addresses in the school's online directory (searched as of 12/1/2014). We dropped one school with a different address. We also dropped any schools that closed (checked using the Wisconsin Department of Instruction's WISEdash public database). There were six underutilized schools open during 2011 that closed since.

B. Enrollment trends

We next examine the relationship between underutilization and enrollment changes between 2011 and 2014. To do this, we estimate the following OLS model:

$$ENROLL\_CHG_j = \alpha + \beta CAPACITY60_j + \delta CHARTER_j + \theta RATING\_F_j + \eta HS_j + \varepsilon_j$$

where subscript *j* indicates an individual school, ENROLL_CHG is the percent change in enrollment during the sample period for school j, CAPACITY60 is an identifier for underutilized schools (=1 if the utilization rate is below 60%), CHARTER is an indicator for charter schools, RATING_F is an identifier for schools that received a "Fails to Meet Expectations" rating, HS is an indicator for a school that serves high school grades, and ε is an error term. It follows that the base (comparison) groups for these variables are non-underutilized schools, non-charter schools, schools that did not receive "F" Report Card grades, and schools that do not serve high school grades, respectively.

Columns (1) to (3) in Table C.1 indicate that, on average, underutilized schools experienced lower enrollment growth than non-underutilized schools. After controlling for other factors, the coefficient becomes statistically insignificant, though it remains negative. Including demographic variables such as race and FRL do not change the results (not shown).

Table C.1: Regression results (dependent variable= percent change in enrollment 2011-2014)

Model	(1)	(2)	(3)
Less than 60 percent utilization	-0.064**	-0.059*	-0.046
	(0.031)	(0.032)	(0.031)
charter school			0.184***
			(0.037)
Accountability rating "F"		-0.020	-0.012
		(0.027)	(0.026)
High school			-0.009
			(0.034)
Constant	0.039***	0.045***	0.017
	(0.014)	(0.017)	(0.017)
Observations	136	136	129
R-squared	0.031	0.034	0.191

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Notes: the base (comparison) groups are non-underutilized schools, non-charter schools, schools that did not receive "F" accountability grades, and schools that do not serve high school grades
Example of how to read this table: in column 3, the estimate on underutilized schools of -0.046 implies that the percentage change in enrollment from 2011 to 2014 for the average underutilized school, on average, was 4.6 percentage points lower than non-charter schools, controlling for other factors.