CREATING EFFICIENCY: AN EXAMINATION OF THE ALLOCATION OF SCHOOL FACILITIES RESOURCES IN THE CHICAGO PUBLIC SCHOOLS

By

NICOLE ASHLEY ANDERSON

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To my students at Theodore Herzl Elementary School

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LIST OF ABBREVIATIONS

ADA	Americans with Disabilities Act
CPS	Chicago Public Schools
CTU	Chicago Teachers Union
NCLB	No Child Left Behind

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Nicole Ashley Anderson

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Chair: Paul Zwick
Cochair: Dawn Jourdan
Major: Urban and Regional Planning

Chicago Public Schools(CPS) is currently facing a $600 million to $700 million budget shortfall for the 2012-2013 school year and will need to make major cuts in order to maintain a balanced budget. The purpose of this study was to examine the allocation of school facilities resources within CPS to determine if there is a systemic issue of misallocation of school facilities resources that if fixed, could provide the district with major cost savings. The study consisted of a three-part quantitative and qualitative analysis that included scoping the misallocation of facilities resources within the district, utilizing a data-driven rubric to select candidates for school closing, and completing a detailed policy analysis based on national best practices.

The results of the study indicated that there is a major mismatch between where students live and where schools are located. The issue is most severe on Chicago's South and West sides, where severely underutilized schools are clustered within high-poverty and minority community areas. A rubric that was created based on national best practices related to schools closings proved to be a useful preliminary identification tool for school closing candidate, as was demonstrated in an analysis of the most

underutilized community areas. Finally, the policy analysis clearly demonstrated that CPS is not addressing the current misallocation of school facilities resources. Even if the district were to target underutilization, CPS would need to greatly modify its current policies in order to provide more transparency for stakeholders.

CHAPTER 1
INTRODUCTION

Theodore Herzl Elementary sits on the end of a once great boulevard in Chicago. On the outside, the school is monolithic, covering nearly a full city block. However, the beautiful façade obscures the dismal state of the educational environment on the interior. The roof is leaking; the paint is peeling; the lighting is poor; there is no air conditioning; and an entire floor consists of nothing but empty classrooms. The vast school can hold 1320 students, but only 512 students attend today (Chicago Public Schools, 2008). Thus, the question arises as to whether or not the poor allocation of facilities resources as reflected by Theodore Herzl Elementary is an isolated case or a systemic issue that needs to be addressed. The goal of this research is to answer not only the question of whether or not the Chicago Public Schools (CPS) is efficiently allocating its school facilities resources, but also if the district is following national best practices related to school facilities planning in order to ensure that the district is making data-driven decisions that provide the most economic distribution of facilities.

A re-evaluation of CPS's facilities resources is a very timely endeavor given that the school district is currently facing a budget shortfall of between $600 and $700 million for the 2012-2013 school year. Policymakers warn that the budget deficit could balloon to $1 billion by 2014. CPS faced a similar budget issue for the 2011-2012 school year and was able to close a $700 million gap by cutting staff, renegotiating contracts, and raising taxes (Ahmed-Ullah, N.S. & Hood. J, 2012). CPS must continue to make deep cuts in order to continue operating with a balanced budget as required by state law.

Closing or consolidating schools such as Theodore Herzl could help to alleviate CPS's current budget shortfall. However, CPS is reticent to outright close schools

despite obvious examples of gross underutilization, because of the immense conflict that has plagued the district in its previous attempts to close schools, which is discussed in Chapter 2 of this study.

In addition to the current budget crisis, CPS is also under tremendous pressure to increase student achievement. In the new accountability era of No Child Left Behind (NCLB), the district has recently implemented several reform initiatives including the longer school day and an increase in the number of schools slated for "turnaround." These reforms are just the latest initiatives in a more than twenty-year struggle for Chicago to lose its reputation as the "worst school district in America," a moniker that it earned in 1987 (Banas & Byers, 1987). While graduation rates and test scores have improved immensely since the first system-wide reforms began in 1988, the district continues to underprepare the majority of its students to succeed in college or in career.

School facilities planning is one area of opportunity that CPS could use as a possible piece of the solution for not only the current financial crisis, but also for underperforming schools. Not only could a re-evaluation of the district's facilities resource allocation potentially save CPS millions of dollars in maintenance, operations, and capital costs, but it could also be used to better concentrate scarce educational resources into the city's lowest performing schools.

The district currently operates with many severely underutilized schools on the South and West sides; while near the suburbs, many of the schools are severely overcrowded. This spatial mismatch has been a result of disproportionate growth and decline across the city. The district has done little to adapt to the shifting demographics that have plagued the city for the last half-century, and is thus left with an inefficient

allocation of school capacity. Despite having lost over 100,000 students since 1975, the district currently operates more schools today than it did at that time (King, S, 1975 and Chicago Public Schools, 2012b). Moreover, the number of students enrolled in Chicago Public Schools continues to decline. Since 2000, CPS has lost nearly 30,000 students, resulting in empty classrooms in schools across the district.

In addition to underutilized schools, the district is facing a $4.9 billion backlog of capital projects due to poor planning, a lack of capital allocation, and a rapidly aging stock of school facilities (Chicago Public Schools, 2012a). More than half of CPS schools were constructed before World War II, which translates to high costs to taxpayers in order to maintain these schools and bring them up to code. Many of these older schools lack air conditioning, modernized plumbing, and Americans with Disabilities Act (ADA) accommodations.

As a means to improve the quality of the public schools in Chicago and to meet budgetary constraints, school facilities planning should be more closely examined as a possible source of savings as the district continues to struggle to balance its budget. Unfortunately, facilities issues are often ignored because of the political difficulties associated with school closings, consolidations, and redistricting.

The purpose of this paper is to determine the scope of the misallocation of school facilities resources, and whether or not the district is addressing facilities issues through its policies and actions through a comparison with national best practices. The analysis consisted of a three-part qualitative and quantitative case study that examines Chicago's current use of public school facilities, as well as CPS's current policies and actions related to school facilities planning.

First, Geographic Information Systems (GIS) was used to determine the scope of the misallocation of school facilities resources at the elementary-level by “community area.” Community areas were established by University of Chicago sociologists in 1920 and are an often-used level of analysis for the City of Chicago, since the Census honors the boundaries of the community areas when it delineates tracts (Encyclopedia of Chicago, 2005a). The community areas were prioritized by highest need for closing. Three of the top candidates were then used for the second quantitative analysis. For the second level of analysis, a rubric was used to illustrate how a data-driven methodology could provide much needed transparency for the district.

Based on the results of the spatial analysis, CPS’s current school facilities policies were examined in light of national best practices to determine if systemic changes could be made in the planning process in order to save additional money long-term. As a result of the three levels of analysis, recommendations were made as to how CPS could alter its school facilities planning policies to better serve every community area in the city with adequate public school facilities.

While more efficient facilities planning based on national best practices may only relieve a small portion of the current $700 million budget shortfall, CPS would be able to realize long-term savings as capital projects and school closings are incorporated as part of a long-term plan, in lieu of the haphazard planning that has played a significant role in shaping the district as it is today.

CHAPTER 2
CHICAGO'S PUBLIC SCHOOLS: A TUMULTUOUS HISTORY

The current state of the Chicago Public School system is dire. The district is facing immense budget constraints, increasing levels of accountability, and continuously deteriorating community approval as it attempts controversial reforms. CPS currently serves 404,151 students, of which 91.2% are minority and 87% are eligible for free or reduced lunch (Chicago Public Schools, 2012b). The high level of poverty within the school district puts even greater strains on an already overstressed system. This current predicament, however, is not the first time that CPS has been in crisis. The district has long struggled to adequately serve its overwhelmingly minority and poor population, which ballooned following World War II. The city and therefore its schools have largely been shaped by the unique demographics of the city that include massive population decline from 1950-1990, hyper-segregation, and disparities in opportunity based on income and race.

Impacts of Population Decline on Chicago Public Schools

Shifting demographics within the city have long had a profound impact on the city's schools. Chicago's population peaked in 1950 when 3,620,962 resided within the city limits (U.S. Census Bureau, 1951). As in most large urban areas in the Northeast and Midwest, Chicago's population began to shift dramatically throughout the 1950s and 1960s. While the city only lost approximately 70,000 residents during the 1950s, by 1960 the African American population had nearly doubled.

The1950s also brought a massive increase in the number of students enrolled in Chicago Public Schools. Between 1951 and 1962, the enrollment of CPS grew by 172,363 students ("Focus on the Individual," 1963). In response, CPS constructed 232

new buildings and additions to compensate for the immense growth in the school-aged population. The school district would continue to grow until it reached a peak of nearly 600,000 students in the late 1960s. However at that time, the city had already begun a precipitous decline in population that translated into fewer students in CPS as parents chose other school options.

The decline in population during the 1960s and 1970s was spurred in large part by "white flight." Areas that had once been considered white neighborhoods were "invaded" by blacks, leading to an ever-expanding area that was perceived by whites as the ghetto. At the same time, Chicago's expressways were being constructed and rapid transit was expanding to the suburbs. The combination of the fear of racial change and the proliferation of low-cost transportation options led to the exodus of many white families from the city. By 1960, nearly 400,000 white residents fled the city for the suburbs, as 345,391 African-Americans migrated in (U.S. Census Bureau, 1961).

The children that were left behind after white flight were increasingly lower-income and minority, requiring an even higher level of service than did their higher-income counterparts. By 1966, the schools were over 50% African-American for the first time; of the 571,233 pupils enrolled, 290,763 were African-American and 266,305 were white ("Chicago Pupils Over 50% Negro," 1966).

With the tax base eroding as higher-income residents fled to the suburbs, the schools became increasingly underfunded and quality suffered. The decreasing quality of education provided by the Chicago Public Schools continued the viscous cycle of educational quality decline and white flight.

By 1970 the population dropped by another 183,447 residents. When examined by race, the shift is much more stark. Over 500,000 white residents left the city, most settling in the burgeoning suburbs, while nearly 300,000 African-Americans migrated to the city (U.S. Census Bureau, 1971).

The rapid loss of residents and changing demographic patterns not only had profound impacts on the nature of the city, but also on the schools. In the mid-1960s, CPS reached its peak of nearly 600,000 students as the baby boomers moved through its schools (Encyclopedia of Chicago, 2005b). By 1975, the system had approximately 505,000 students remaining in its schools, a loss of nearly 100,000 students (King, 1975). Despite the leveling off of enrollment around 1966, the city continued to construct new classrooms, completing 1,193 classrooms between 1966 and 1971 (Hope, 1971). Finally in 1976, downtown administrators recognized that something needed to be done in order to compensate for the loss of nearly 100,000 students ("School Closings Considered," 1976). That year, school closings were proposed for the first time; however, not one school was shuttered that year.

Over the next several years, school closings on the scale of twenty to thirty-five per year would be proposed. However, each year protests and politics would severely diminish the number of schools closed, in most cases to around six to eight per year (Banas, 1977; Banas & O'Connor, 1980; Keegan 1981; Cawley & Rowley, 1980). The worst year in terms of lack of action regarding school closings was 1980, when the proposed closing of 23 schools was suspended indefinitely by Mayor Jane Byrne (Banas, 1980).

Not only was under enrollment becoming an issue in the mid-1970s, delayed maintenance was also creating a massive backlog that resulted in major strains on the budget. A study conducted by Alderman William Singer stated that,

> We found holes in roofs, peeling paint, bathrooms which did not meet minimal health standards, grossly inadequate lighting, and many other housekeeping items which were supposed to be corrected by the rehabilitation program. Yet, in school after school, we found broken promises from the board, inordinate delays, and ultimately, the wasting of large amounts of money. (Banas, 1975)

Visibly deteriorating school facilities exacerbated the already negative perception of the schools, which in turn continued to push higher income families out of CPS and into private schools and suburban schools. The dilapidation of school facilities due to delayed maintenance has been an ongoing issue in CPS and has resulted in a $4.9 billion backlog of projects (Chicago Public Schools, 2012a). Currently however, the district can only allocate approximately $100 million per year to capital investment (Chicago Public Schools, 2012a).

The scars of the failed school closings and inadequate maintenance of the late 70s and 80s are still evident throughout Chicago. CPS has lost another 100,000 students since 1975 and yet the net change in schools since that time is positive. There are more schools in 2012 (675) than there were in 1975 (666). Poor planning and execution have perpetuated a system where half-empty schools remain because closing them seems to be a politically impossible task.

The Nadir of Chicago Public Education

While Chicago's first attempts at school closings were unsuccessful, the city also saw the quality of its schools deteriorate quickly. As early as 1970, state legislators were decrying the state of the Chicago Public Schools. One report stated, " In 1970

more than half a billion dollars will be poured into financing the Chicago school system, which is as close to the point of collapse as many of the buildings that house it" ("State Study Finds," 1970). The study also cited poor test scores and high rates of violence as additional reasons for alarm. In 1974, school superintendent Redmond declared that Chicago city schools "have bottomed out and are on their way back up" (Lauerman, 1974). Unfortunately for students in Chicago, the nadir of public education in the city would not come until after another 13 years of decline.

In 1987, Secretary of Education William Bennett declared the Chicago Public Schools to be the "Worst in the Nation" (Banas & Byers, 1987). He cited the 43% dropout rate and the recent results of the ACT that showed that over half of Chicago's high schools scored in the bottom 1% of high schools nationwide. Chicago's mismanaged schools were finally being brought into the national spotlight.

Major Reforms

Bennett's nationally publicized remarks finally provided the motivation needed for true reform within the Chicago public Schools. His major suggestion was the dissolution of the "blob," or the centralized bureaucracy of the school district (Banas & Byers, 1987). The City of Chicago responded by creating and implementing the 1988 Chicago School Reform Act, which had a major focus on the decentralization and the democratization of the public school system.

The 1988 Chicago School Reform Act reallocated power from the central office to individual schools. Each school would have an elected Local School Council (LSC) that would consist of six parents, two community members, two teachers, and the principal (Siewers, 1988). The LSC was entrusted with the role of hiring and firing principals, giving community members and parents considerable control over their schools. The

creation of the LSC was considered a model for school districts across the nation. Elected LSCs are still a vital part of all of Chicago's non-charter and non-contract schools.

In 1995, the state turned over control of the schools to Mayor Richard M. Daley as part of the 1995 Chicago School Reform Act. Accountability was the major focus of the second set of reforms. If a school was placed on probation due to low academic performance or special education non-compliance, its LSC would have its power truncated.

The 1995 reforms were also responsible for the introduction of performance standards, the creation of more stringent retention policy, and the threat of reconstitution for low performance (Lipman, 2002). While many, including President Bill Clinton, ardently supported the1995 reforms, some researchers such as Lipman (2002) viewed the reforms as the corporatization of public education. Lipman (2002) also contends that the reforms reversed the decentralization set forth in the 1988 reforms.

Overall however, CPS realized major gains in test scores and dropout rates. Between 1990 and 2005, the percent of students at or above norms on the Iowa Test of Basic Skills (ITBS) in reading from grades 3-8 rose from 22.3% to 43.7%. The district has also seen a one point increase in average ACT scores from 16.2 to 17.2. Additionally, as compared to the 43% dropout rate in 1987, approximately 67% of CPS students now attain their diplomas by age 19 (Luppescu et al., 2011).

The last of the major reforms was introduced in 2004 when Mayor Richard M. Daley and Secretary of Education Arne Duncan announced Renaissance 2010, a school reform that focused on providing more high-performing choices for all students in

Chicago. One of the major components of Renaissance 2010 was the plan to close 60-70 schools and open 100 new schools in their place over a period of ten years (Luppescu et al., 2011). Overall between 2001 and 2009, eighty-two schools were closed, while 155 schools were opened (Luppescu et al,. 2011). The figure of 82 schools opened during this time period is somewhat skewed since oftentimes multiple small schools would reopen within the same facility that had previously housed a single school that had closed. In most school closings, the school has been replaced by a charter or contract school whose staff is outside the control of the Chicago Teacher's Union (CTU), which often works in direct opposition of the central office.

Overall, from the nadir of CPS in 1987 to the present, CPS has made immense gains in educational quality, however most schools in the district still perform far below their suburban counterparts. Even within CPS, there are major disparities between educational opportunities for high-income and low-income residents, and white and minority residents.

Recently, CPS has begun to focus on "turnaround" schools as a method to create positive change in chronically underperforming schools. A turnaround school retains its facility and students, but the entire faculty and staff are terminated. Outside education management companies operate the turnaround schools, which has caused outcry from supporters of traditional public education and the Chicago Teachers Union. Another point of contention is the selection process for turnarounds. Turnaround schools are selected based mainly on performance data, however the board has chosen to keep the other criteria private, leaving only speculation as to why specific schools are chosen. Despite an immense show of protest against the schools slated for

turnaround in 2012-2013, the district still plans to turn around 10 schools, the most in a given year to date.

CPS has decided to wholeheartedly pursue turnarounds as a reform policy. Based on preliminary data from the first turn around schools in 2005, the district has evidence that turnaround schools can be successful in implementing high levels of structure and accountability into schools that were once considered chronically underperforming. Hopefully, turnarounds will prove to be another positive step for CPS towards providing a quality education for all. Unfortunately, the district still has a long way to go to realize that goal.

Summary

For the past sixty years, CPS has failed to adapt in order to provide a high quality education for all of its students. This context is vital to understanding the current crisis, as well as policies that could be used as part of the solution. The current system is a result of decades of apathy from the upper and middle classes who take advantage of educational alternatives that are not readily accessible to lower-income residents. The current enrollment, which is only 9% white and 87% low-income, illustrates just how few middle- and upper-income parents choose public schools.

Since the beginning of the decline in the number of the students attending CPS schools in 1968, the city has done little to make the district the right size in terms of facilities so that it can adequately address the educational and social needs of its students. As shown over the past decade with reforms such as Renaissance 2010 and turnaround schools, changes in the district are politically charged and result in immense pushback from parents and community members. The pushback is a result of decades of failed educational policies that have led to the current crisis. While there have been

major gains in academic achievement, community members still lack the buy-in necessary in order to implement the level of change necessary to correct the current misallocation of educational resources.

Despite the immense conflict that would come as a result of proposed school closings or consolidations, something still needs to be done to address the excess capacity in many Chicago community areas that results an immense financial strain on the city. Without any school closings or consolidations, the district will continue to bleed money into operations and maintenance, or be forced to defer the maintenance and create an even poorer educational environment for its students.

CHAPTER 3
REVIEW OF THE LITERATURE

The focus of this literature review will be to establish the national best practices related to school facilities planning with a strong concentration on shrinking school districts. The issues and barriers related to school closings will also be identified. Throughout the review of literature, examples from other large cities that have successfully adapted their facilities in light of declining enrollments will be included to provide additional context for this analysis of school facilities planning in Chicago.

School facilities planning is an interdisciplinary process by which districts identify and prioritize school construction, renovations, maintenance, and school closings. Unfortunately, school facilities planning has rarely been done well in the past, leading to the inefficient allocation of facility resources and capital funding. If a company in the private sector were to use the same decision-making practices that have been the status quo in school facilities planning, that company would operate inefficiently and most likely be forced to close due to a mismatch between customer demand and store locations. Yet, since school facilities are a publically provided good, the same level of efficiency has not been demanded, except in times of fiscal crisis.

Recently however, there have been efforts to improve the methods that school districts use to allocate capital resources and make facilities decisions. The literature related to the process is still sparse, but the field is definitely growing as more states require comprehensive facility plans. Still, the majority of scholarly research focuses on the design-and-build aspects of school facilities planning, while overlooking the actual planning aspect. Despite the lack of research related directly to school facilities planning, there are several seminal documents that outline the best practices in school

facilities planning and planning for school closings. Additionally, much of the research related to school closings is from the mid-to-late 1970s and 1980s, when districts across the country were closing underutilized schools. Despite their age, the content of those articles is still relevant today and is useful in understanding the process of closing a school.

School Facilities Planning: A Process

Kelley Carey (2011, p1), a 35-year veteran of educational planning, defines school facilities planning as, “developing a five-year plan for schools renovation and construction, along with an attendance plan for all students.” By utilizing data to determine what facilities actions should be prioritized, school districts eliminate the waste associated with “piecemeal” planning. Additionally, school districts are better able to anticipate future needs in terms of new construction, renovation, or closures (Carey, 2011).

The five-year guideline is considered efficient because it provides enough forethought so that districts can prioritize and plan out their capital projects over several years, while also diminishing the possibility that shifts in demographics or policy changes will have major impacts on the viability of the plan, however the plan may cover a longer period of time. The 21st Century School Fund (2011), an organization dedicated to providing quality educational facilities for all students, suggests a slightly longer timeline, a six to ten year horizon.

The five-year to ten-year plan that is created through the process of school facilities planning should not be a static document. As new data becomes available each year, the district should update its plan accordingly.

The process of school facilities planning is also not just about the facilities in which students attend school. The district must also take into account educational programs and demographics. Carey (2011) refers to these three aspects--programs, facilities, and demographics--as the three vertices of the planning triangle. The first major step in the alignment of the three sides of the planning triangle is the creation of a long-term capital plan, or a master plan. Only once the district has created a master plan can it make smart and informed decisions in order to provide the most cost-effective allocation of school facilities resources.

The Master Plan

According the 21st Century School Fund (21st Century School Fund, 2011), an Educational Facilities Master Plan is defined as, "a written document that describes the school district's real estate and capital improvement plans for meeting these requirements over a 6-10 year period." In most cases, the plan relates to the needs of the district in terms of accommodating additional growth. However, urban districts in the Midwest and Northeast face unique challenges related to aging infrastructure and continued demographic shifts. Based on the current context of the district, the plan should include most, if not all of the following elements (21st Century School Fund, 2011):

- Space needs for schools,
- Administration and logistics,
- School closings and consolidations,
- Attendance boundary changes,
- Leasing,
- Joint use and co-locations,
- Schedule and estimated cost for major repairs,
- Modernization, and
- New Construction.

Depending on the context of the school district, the plan may have a specific focus. For example, the District of Columbia's master plan focuses on modernization

(District of Columbia Public Schools, 2010), because of years of neglect in terms of capital spending. The Richmond school district focuses on both modernization and school closings (Richmond City Public Schools, 2007) due to continuing declines in population and aging school facilities. As districts complete the steps necessary to create a master plan, leaders will be able to analyze the data to determine the correct focus of their master plan, whether it is expansion, contraction, or modernization.

The ultimate goal of the master plan, according to the City of Philadelphia (2011), is to "create an efficient use of school facilities that allows programs and resources to be aligned in a way that most benefits the education of the student." The master plan is the district's guide and resource for implementing changes in a district's allocation of facility resources.

Creating the Master Plan

The creation of a school facilities master plan is a multi-step process that requires an interdisciplinary team. Typically, school districts have isolated the task to the demographics department, however best practices suggest the use of a team that includes not only demographers and planners, but also educators, stakeholders, GIS specialists, transportation specialists, and architects (Carey, 2011). Instead of working separately on possibly competing objectives, the team or task force can work collaboratively to compile and manipulate data, set priorities, and organize public participation.

Carey (2011) outlines the major steps in the creation of a facilities master plan are as follows:

- Acquire good data,
- Set clear objectives,

- Develop alternative plans to meet needs and objectives,
- Assess alternatives plans,
- Derive a workable plan, and
- Review and update annually.

The first step, data collection, is requisite in order to create the foundation needed for the future analysis and recommendations. For school districts that have not previously used a master plan, the compilation of data may be very time consuming as there are many types of data necessary in order to provide the most accurate analysis possible. A non-comprehensive list of data necessary to create a facilities master plan includes, but is not limited to, current enrollment, demographics maps with land use and projected developments, a map of students by address, students attending schools outside their zoned school, renovation estimates, operations costs, site acreage, transportation maps, academic performance, and school design (Carey, 2011). Due to the diverse categories covered by the required data, cooperation between departments is vital, but can be difficult in large school district where departments are not used to interacting.

Once the data is compiled, two key calculations are required for every master plan: enrollment projections and school capacity calculations. Enrollment projections are designed to capture the growth or decline within the district as a whole and within each school so that decisions can be made as to whether the district needs to invest in new buildings or renovations, or the district needs to begin downsizing.

The calculation of the capacity of each school is the second major calculation used in the school facilities master plan. Capacity can be calculated by a variety of methods. The Portland Public Schools (n.d.) outlined several key methods in their long-range facilities plan. First, the net area method takes the gross square feet and subtracts the

area used for special education to determine the net area. The net area is the then divided by a square foot per student ratio to determine the capacity. While net area is simple to calculate it does not take into account the variances in common area space and can thus severely skew the capacity of a building.

A second method to calculate capacity is by number of classrooms. A district may choose a square footage requirement for a room to be counted as a regular classroom, or a programming requirement (for example, special education classrooms are exempt). Each regular classroom is then multiplied by a number that is determined by the district. In Chicago, the number used in the calculation is 30. Prior to 2011-2012, CPS also counted smaller classrooms and allocated 15 students per smaller classroom. The outcome of the elimination of the inclusion of smaller rooms is that many CPS schools are showing higher utilization rates than they would have in 2010-2011.

For CPS, the classroom model works better than the square foot model because of the high variability in school design. A square-foot-per-student measure that many work in an early 20th century building may not be appropriate for a school constructed in 2008. Therefore, the classroom method is the better fit for the City of Chicago.

School Facilities Planning in School Districts with Declining Enrollments

School districts, such as Chicago, where there has been a net loss in the number of students enrolled in the public schools, face a unique set of challenges. These districts must make difficult decisions in order to maintain efficiency in their allocation of school capacity. As discussed in the previous chapter, large Rustbelt cities underwent major population declines during the 1960s and 1970s, resulting in immense declines in total school populations and major shifts in the demographics of the students served. Lerman (1983) found that between the years of 1970 and 1978 districts with declining

enrollments closed an average of 500 schools per year. The vast majority of the research related to declining enrollments is from the late 1970s and early 1980s, as researchers were compiling and analyzing the actions of school districts that had made the politically unpopular decision to close schools. Best practices, such as criteria for closing, public involvement, and building re-use have been heavily researched, while the impacts of closings are less well known (Valencia, 1984). The goal of this section is to discuss the process of school closings, as well as establish the national best practices related directly to closings, such as the criteria used to identify schools, public involvement, and building re-use.

Savings Associated with School Closings

Proposed school closings are often a result of a combination of declining enrollment and fiscal crisis. Dean (1981) described the situation in major cities across the US in the late 1970s as, “the issue in communities is no longer whether schools should be closed, but rather which schools will be closed and when.” Most researchers, and even most citizens, accept the logical conclusion that school closings result in considerable savings. As school enrollments decline, the per-student cost of maintenance and operations skyrockets, creating major resource allocation inefficiencies that could be alleviated by school closings.

Several researchers have examined the resulting savings for school districts. The Pew Trust in their research for the School District of Philadelphia (2011) found in large school districts, there were small savings associated with school closings in the short-term unless the closings were also associated with layoffs. The Pew Trust also found that savings in the long-term were difficult to analyze, however they stressed the importance of finding an alternate use for the closed buildings in order to reach

maximum savings. In a study of Los Angeles, Krempasky (1990) found that in Los Angeles realized an average savings of $100,000, which would be approximately $215,000 today (1983 USD).

Krempasky (1990) outlined not only the savings of school closings, but also some of the unexpected costs. She cites the elimination of surplus administrators, janitorial staff, resource teachers, utilities, and future planned capital investment as areas in which school districts will realize cost-savings. In most cases these savings are at least partially offset by the immense cost of planning to close schools, maintaining or mothballing closed buildings, and security and insurance for closed buildings. Additionally, school closings are not simply associated with financial costs, there are also immense impacts real and perceived on the communities directly impacted by the school closings.

Richard Valencia (1984), who has been one of the most ardent and cited opponents to school closings, found that cost savings are often exaggerated in order to help convince citizens that the closings are warranted. He provided evidence from Seattle where the school district realized no true savings as a result of school closings. He does however concede that large school districts in the Rustbelt who have old building stocks would realize much larger savings due to an immense decrease in energy costs and modernization costs. He states that school closings in these districts would be justified, because operating underutilized schools in these districts is incongruously inefficient.

Identification of Candidates for School Closure

Once a school district has determined through its master planning process that school or schools need to be closed, the district must determine the criteria to be used

that are aligned with their priorities. The priorities for each school district will be different and will largely depend upon the policies of the district and the state in which the school is located. School closings for efficiency reasons are typically due to underutilization or gross disrepair. In some areas, school districts are beginning to use academic criteria to close chronically underperforming schools. The focus of this research is on closures for underutilization, however academic criteria are often used in the identification process for school closing candidates so they will also be discussed.

The Pew Charitable Trusts (2011), in their examination of six other districts where school closings have occurred in the last decade, advocates the use of the following criteria: academic performance, enrollment/population decline, percentage of students from outside boundary, academic program alignment/equity, neighborhood impact, sharing staff/resources, building condition, utilization, neighboring schools, potential to reduce excess space, feeder patterns, and reuse options. Many other researchers provide similar lists of criteria. The criteria selected depend largely upon the context of the city and data availability.

Public Involvement

School closings can be traumatic for communities, especially if they feel as though there may be an ulterior motive behind the closing or that the closing is discriminatory in nature based on race or income. The amount of public involvement in the planning process and the decision-making can vary on a scale from a board decision with no public input to a community-based planning model (Dean, 1981). Best practices call for community involvement from the earliest steps to ensure maximum buy-in from all stake holders. The Pew Charitable Trusts (2011) suggests that the community as a whole should be informed of the need to close schools long in advance

of the actual list being created. “Clear and consistent messaging” is necessary to gain public backing before citizens become emotionally invested in their drive to save their schools (Pew Trust, 2011 p. 11).

One major aspect of public involvement is the availability and accessibility of data that will be used in the school closing process. Once again, the Pew Trust (2011) advocates the publication of interactive data to include maps so that community members can verify that the district has the best interest of the students in mind. In Pittsburgh, where they are also facing declining enrollments, the Pittsburgh Public Schools invested $450,000 in compiling and publishing data related to all aspects of school facilities planning, including academic achievement (Temple et al, n.d.). The project, entitled VIPER (Visualizing Information for PPS Evaluation and Research) includes not just data, but also interactive mapping tools and a stakeholder dashboard to allow all citizens access to accurate and robust data. PPS believes that the availability of data will lessen the amount of pushback against its future school closings (Temple et al, n.d.).

The final major aspect of public participation occurs after the school list is released. Every school targeted for closing should have multiple opportunities to present its case as to why its schools should not be closed. The district must ensure that the participation is not just ceremonial, as Carey (2011) warns. She has found through her 35 years of experience that most public meetings consist of the district presenting its finding to the public, instead of community members having the opportunity to provide feedback and input. One way that districts can signal to community members that their feedback is important is the on-line publication of

transcripts from public participation meetings. Transcripts should be error-free and include all speakers.

In almost all cases, the public does not have the final decision on what schools are closed, but districts can continue to use best practices related to public involvement by ensuring that decision are made in a transparent manner using a data-driven methodology. When closing decisions and public input are to be examined and adjudicated by a hearing officer, the district must take extra precautions to ensure that the individual is in no way affiliated with the district (Carey, 2011; Pew Trust, 2011). When the school board makes the final decision, best practices suggest that the schools should be decided on in one vote following the compilation of the final list of candidates. By using one vote, the board ensures that no one neighborhood feels targeted (The Pew Trust, 2011).

Overall, districts should take positive steps to ensure that the public feels as though the decision is in the best interest of the students of the district and that their voice is heard. By providing the public with high levels of transparency in the decision-making process, the school district should, at minimum, reduce the pushback from parents.

Building Re-Use

Once a school closes, the district must determine what should be done with the remaining building. Schools are often the center point of communities so it is vital that, at minimum, the building should be kept from becoming a liability to the community. If a school can be leased or sold, the district may be able to exponentially increase the savings closing. Some suggested uses for vacant school buildings include (Carlson, 1991):

- Charter schools,
- Community centers,
- Senior housing,
- Private housing development,
- Other district needs (storage, administration, preschool),
- Homeless housing, and
- Commercial development.

However, since schools are typically closed in declining areas, districts often find it difficult to dispose of vacant schools. Districts must then spend money to maintain the buildings and keep them free of graffiti and vagrants, however the cost of security and insurance is much lower than the full cost of operating an underutilized school. Other school districts that have undergone major downsizing often find alternative uses for some of the buildings while most remain vacant. For example, Detroit has closed nearly 100 schools in the past decade. The city has demolished some, left many vacant, and has found alternative uses for handful. Still, the city estimates that they earn $5 million in revenue per year from the lease of school buildings (The Pew Trust, 2011). In Chicago, the majority of recently closed schools have found alternative uses as charter schools, which provide the residents of Chicago with more educational choices. Some areas though, such as Milwaukee, do not allow charter schools to occupy the buildings of former public schools, because the charter schools are viewed as lowering the already declining traditional public school enrollment. Overall, the district should have a plan in place to identify schools that have the best opportunity for alternative use and then those schools that should be mothballed or demolished.

Impacts of School Closings

While much research has been completed on the process of school closings, there is little literature on the impacts of school closings. Lipman (2002) has found that

school closings can have negative impacts on both attendance and achievement; however, the impacts can be offset by providing displaced students with opportunities to attend higher achieving schools. In the city of Chicago, the Chicago Consortium of School Researchers found that the impacts of school closings were minimal after one year in both reading and math (De La Torre, 2009). Enberg et al. (2011) found that in an anonymous school district that the academic performance of students depending on the quality of the receiving school. Thus, if high-achieving receiving schools can be identified then school closings may actually be considered an opportunity for students to attend a higher-achieving school. Overall, while school closings may have immediate negative impact, the goal is to create efficiencies with the school system so that educational resources can be better distributed through economies of scale.

Summary

As a whole, school facilities planning is a vital process for all school districts. The master plan serves as a guide for the district in order to make informed and researched decisions regarding the need for expansion, modernization, or downsizing. The best practices related to school facilities planning are especially necessary in school districts with declining enrollments. In order to efficiently allocate school capacity while minimizing community resistance, school districts should follow the best practices outlined in the table below. Even though there may still be pushback from the community, school district leaders can ensure that their decisions are in the best interests of all of the students in the school district moving forward.

Table 3-1. Master planning best practices

Master planning best practices
1. Create a comprehensive facilities plan with a five to ten year planning horizon
2. Prioritize capital projects over a span of five to ten years
3. Include school closings as part of its facilities master plan

Table 3-2. School closing best practices

School closing best practices
1. Inform public about need before release of school closing candidates
2. Use appropriate criteria for school closings that is made available to the public
3. Use non-biased hearing officers
4. Vote for school closings as a package
5. Find alternative uses for vacant schools

Table 3-3. Community participation and transparency best practices

Community Participation and Transparency Best Practices
1. Provide citizens with opportunities for input on the facilities master plan
2. Allow multiple opportunities for input on proposed closings
3. Focus on public input, not presentation of facts at public participation meetings
4. Provide access to the public of all non-confidential data used in planning for school closings

CHAPTER 4
METHODOLOGY

This study consists of a three-part quantitative and qualitative analysis used to determine the scope and geographic distribution of the misallocation of school capacity and facilities resources. Tables 4-1, 4-2, and 4-3 outline the questions that each section will answer, the methods used within that section, the data used, and possible improvements.

Part I: Scope and Distribution of the Misallocation of School Capacity and Facility Resources

The purpose of the first section of analysis is to determine the scope of the misallocation of school capacity and capital spending, as well as the spatial distribution of the misallocation. The section addresses three questions:

- What is the scope of the misallocation of school facilities resources?
- What areas have the highest rate of underutilization and should be targeted for closing?
- What areas have the highest rates of overcrowding and should be targeted for new construction or creative assignment policies?

In order to answer these three questions both GIS and Excel were used. First, current CPS enrollment data was compiled from the CPS website for all elementary schools and middle schools, not including charters. That data was entered into a spreadsheet so that each school had information regarding current enrollment, current calculated capacity, number of classrooms, percent utilization, and excess seats.

Next, geocoded CPS performance data and community area boundaries were imported into a GIS map. The capacity spreadsheet was also uploaded and joined to the CPS performance data using CPS designated school codes. The schools in the joined layer were then saved as a distinct shapefile to ensure that the join would be

permanent. The newly created shapefile was then joined to the community area boundaries. The new attribute table was exported to Excel as a .dbf for further analysis.

Once in Excel, a pivot table was created to analyze each community area based on total number of schools and the other aforementioned capacity criteria to prioritize the community areas where actions should be taken in terms of both closings and relief for overcrowding. Census data compiled by community area was also appended to the tables to add an additional layer of complexity. The Census data allowed the researcher to determine if there was additional latent demand within each community area. Based on all of the above criteria, three Community areas were selected for further analysis based on a ranking of highest need for school closings in terms of possible number of closings as calculated by the formula: Number of excess seats*.8/Average school capacity. Since the top three candidates were all located within the city's Westside, the fourth candidate, Englewood, was chosen instead of West Town to provide geographic diversity within the sample.

Part II: Selection of Closing Candidates Based on National Best Practices

The second section consisted of a quantitative analysis that takes a closer look at the selected community areas. The criteria for closing are discussed below and are based on the context of Chicago as established in Chapter 2. Based on the analysis of closing criteria, one possible iteration of a rubric to objectively rank schools within community areas was created to demonstrate one method CPS could use to provide an objective and data-driven selection process that would be transparent for the public. The community areas identified in Part I were used for the analysis for Part II.

The criteria selected for this analysis based on data availability and best practices were current utilization, capacity, year built as a proxy for energy and operations costs,

estimated capital costs, academic achievement, and number of schools within 0.75 miles. The rubric can be found in Appendix A.

Current Utilization

Current utilization was selected as one of the criteria based on national best practices and publically accessible data. Current utilization data was accessed from the Chicago Public Schools website. Each school has a PDF that outlines the current enrollment and capacity, which are used to calculate utilization. Utilization has the largest range, 0-60, because closing schools with higher utilizations would be more difficult in terms of student assignment. In this scenario, a highly utilized school would only be closed if the other criteria were at or near the lowest categories as compared to other schools within the community area.

Capacity

Capacity was selected based on national best practices, publically accessible data, and the Chicago context. Schools below 250 students do not have the capacity necessary to create the economies of scale necessary for a fully functional school. Small schools are not allotted full time resource teachers and are costly to operate, because they still require two administers. Schools between 500 and 1,000 students were given the highest ranking, because that equates to two to four homeroom classes per grade, which allows considerable flexibility for programming. Schools that could hold over 1,000 students were considered too large for the current Chicago context. In many areas, the density no longer exists to support such large school and students would have to commute longer distances than with the target capacity of 500 to 1, 000 students. The range for capacity, 0-30, is lower than that for enrollment, because a

school could be efficient regardless of size, whereas underutilized schools are by definition inefficient.

Year Built

Some sources (Carey, 2011) caution against using year built, but only in the case in which it is used as a proxy for capital needs. In this case, year built is used as a proxy for energy and operations costs. Many of the older schools lack sufficient electrical capacity, air conditioning, and efficient heating, and are thus much more expensive to operate. The range for year built is 0-30, the same as for capacity. Year built was compiled from the individual school assessments found on the Chicago Public Schools website.

Estimated Capital Needs

Estimated capital needs were selected as one of the criteria based on national best practices and the Chicago context. Capital needs vary widely in Chicago from less than $500,000 to over $15,000,000. Schools that will be more expensive to maintain are favored for closing, since their closure would save the district large amounts of money. The scale for capital needs is from 0-50, because just as with utilization, schools with high capital needs are inherently inefficient.

Academic Achievement

Academic achievement was selected as one of the criteria based on national best practices and the Chicago context. As a whole, Chicago is generally low performing, with only 128 of its 472 elementary schools achieving the status of Level 1, the highest ranking. Therefore, schools with high academic achievement are given great weight, since high-performing schools are so rare. A Level 1 school is scored as a 50, and a Level 2 school is scored as a 25. A Level 3 school is scored as 0. An interesting

analysis would be to do a correlation between percent utilization and academic achievement to see if parents are choosing to send their kids to higher performing schools if that is an available option. Academic achievement data was compiled from the City of Chicago Data Portal.

Nearby Schools

The number of schools located within 0.75 miles was selected as a criteria based on national best practices and the Chicago context. Typically the preferred walk distance is between 0.5 miles and 1 mile for school planning purposes. Three-quarters of a mile was selected since students may walk or ride the public bus for free if they are low-income. Additionally, only schools that were underutilized were included in the counts for nearby schools. The range is from 0-30 since CPS should ensure that no student is commuting longer than 0.75 to school. With actual address data and catchment areas, a more detailed analysis could be completed here. Given the publically available data, a simple GIS analysis shows the number of nearby schools.

Other Criteria Not Used

Other criteria that are typically used as part of school facilities planning were not used based on data availability and applicability to the City of Chicago. For example, building re-use potential could not be calculated or proxied based on any publically available data. The number of students outside their assigned schools was also not used, because there was no publically available data. Ethnic balance was considered not relevant to Chicago since most community areas are predominately one race. Change in enrollment was also not considered because of the high level of volatility in school enrollments over time given the reforms of Renaissance 2010.

The schools were ranked using a rubric that categorizes each criterion into several score bands. By using a rubric instead of a straight ranking and weighting, the disparities between schools in each category are more accurately scaled.

The formula was chosen based on not only national best practices, but also the Chicago context. Appendix A outlines the criteria, available rubric points, the data source, and a ranking description.

Once each school was weighted using the above rubric, the lowest totals were identified as candidates for closing. A secondary check was completed using excess seats to determine if the iteration was feasible. While CPS could use any number of weighting and ranking formulas, the example shown above simply provides one possible system CPS could use to make their criteria more transparent in order to protect themselves from political pushback and possible legal challenges.

Part III: Policy and Action Analysis

For the qualitative analysis, current CPS policies and actions were compared to national best practices as established in the review of literature. The best practices were broken down into three categories: master planning, school closings, community participation and transparency. The best practices can be found in Chapter 1, Figure 1-1, 1-2, and 1-3.

Summary

The three-part methodology presented here provides a multi-faceted analysis of the current state of school facilities planning in Chicago. While there are areas for improvement given better data availability, the methodology provides a definitive framework for answering the established research questions regarding whether or not Chicago efficiently utilizes its current public school facilities.

Table 4-1. Methodology: Part I

Questions	Type of analysis	Methods	Data used	Improvements
What is the scope of the misallocation of school facilities resources? What areas have the highest rate of underutilization and should be targeted for closing? What areas have the highest rates of overcrowding and should be targeted for new construction or creative assignment policies?	Quantitative Spatial	GIS: Spatial Join Excel: Pivot Tables, Ranking	Chicago Public Schools 2012 Utilization Data Chicago Public Schools 2010-2011 School Performance Data (Geocoded) Community Area Boundaries	No data related to student addresses is publically available. CPS will not release data to student researchers.

Table 4-2. Methodology: Part II

Questions	Type of analysis	Methods	Data used	Improvements
What criteria should be used for closing? What is one draft methodology that could be used to select schools for closing based on national best practices?	Quantitative Spatial	GIS: Spatial Join Excel: Weighting Formulas	CPS 2012 Utilization Data CPS 2010-2011 School Performance Data CPS School Capital Assessment Data	Additional criteria could be included if data was readily available.

Table 4-3. Methodology: Part III

Questions	Type of analysis	Methods	Data used	Improvements
Are CPS's current school facilities planning policies and actions addressing the issues of the current state of the allocation of facilities resources?	Qualitative	Policy Analysis	Press Releases Newspaper Articles Policy Statements	Interviews could provide additional evidence in place of speculation about future actions.

CHAPTER 5
RESULTS

The results of this analysis show that CPS's current allocation of capacity and facility resources is inefficient in that the majority of schools and community areas in Chicago are operating well below or well above the ideal capacity. The policy analysis illustrates that CPS is not utilizing all of the best practices outlined in the review of literature.

Part I

School-Level

As shown in Figure 5-1, Chicago Public Schools is currently operating with nearly half of its schools underutilized (less than 80% of capacity), including 110 schools that are severely underutilized (less than 60% of capacity). Additionally, sixty-six schools are considered overcrowded (greater than 120% of capacity). Only 28% of its current public school facilities are operating within the efficient range of 80% to 120%.

Community Area Level

When the schools are aggregated into the seventy-seven community areas (Figure 5-2), the distribution of school utilizations becomes more apparent. As a whole, at the elementary school (K-8) level CPS operates its 472 elementary schools at a 79% capacity, which on its face appears efficient. However, when the schools are aggregated by community areas, the geographic distribution of utilization rates illustrates that some areas of the city have far too many public school facilities. Twenty-nine of the 77 community areas are underutilized, while nine are considered severely underutilized. What was unexpected, however, was that 16 of the community areas would be considered overcrowded, which includes nine that are at 140% utilization.

Table 5-1 shows the community areas sorted by percent utilization for the entire area from smallest to largest. The lowest community area, Oakland, has a capacity utilization rate of only 38%, however it only has one school, so it is not a good candidate for further analysis. At the other end of the spectrum is West Eldson, which is currently operating at 189%.

Table 5-2 is sorted by number of excess seats. Four community areas, Austin, North Lawndale, West Town, Englewood, and Auburn Gresham have over 4,000 excess seats. On the other hand, as shown in Table 5-6, Belmont Cragin, Gage Park, Brighton Park, West Elsdon, East Side, South Lawndale, and Dunning (Table 5-1) all have more than 1,000 excess students. Based on the average size of a school in Chicago (704 students), those community areas need approximately 1.5 new schools.

Finally, Table 5-3 shows the community areas sorted by estimated number of schools for closing. The top community areas are North Lawndale (5.9 schools), Austin (5.4 schools), West Town (5.1 schools), Englewood (5.0 schools), Near West Side (4.2 schools). These are the community areas that will be used in Part II of the analysis.

Figure 5-1 shows a map of the community areas by percent utilization, which shows the spatial distribution of capacity utilization. Based on the map, the community areas that are underutilized, shown in red and orange, are concentrated on the south and west sides. The community areas that are overcrowded are located near O'Hare and Midway.

Part II

For Part II, the selected community areas were analyzed using the rubric shown in Appendix A. The results of that analysis are shown in Table 5-4 through Table 5-9

and Figure 5-2 through Figure 5-4 . The results show one possible ranking system that CPS could use in order to identify schools for closure.

North Lawndale

Overall, North Lawndale, shown in Table 5-4 and Table 5-5, needed approximately five schools to close. However only four could be closed based on the ranking criteria. The four schools that were identified as closing candidates were Roswell B. Mason (55), Theodore Herzl (60), Nathanial Pope (80), and Julia C Lathrop (90). Julia C Lathrop was selected from the four schools that tied at a 90 due to its small enrollment (83). The four schools combined represent the elimination of 3,870 seats in the community area, a capital savings of $24,460,000, and a displacement of 1,269 students. Assuming all students remain in community area schools, the capacity rate would be 92.2%. The map in Figure 5-3 shows the geographic distribution of the schools within the community area. The schools are evenly distributed across the community area.

Austin

Overall, Austin, shown in Table 5-5, needed approximately five schools to be closed. Based on the rubric, five schools could be closed with the resulting utilization of 88.2%. The five schools that would be closing candidates are Ronald McNair, Leslie Lewis, Louis Armstrong Math & Science, Horatio May, and Henry Nash. Combined, the schools represent the elimination of 4,140 seats, a savings of $29,088,000 in capital costs, and the displacement of 1,927 students. The map in Figure 5-4 shows that the schools are somewhat clustered and further analysis would need to be completed in order to determine if the school closing scenario would be feasible.

Englewood

Overall, Englewood, shown in Table 5-6, needed approximately four schools to be closed. Based on the rubric, four schools could be closed while keeping the community area's utilization efficient. The four schools identified as closing candidates were Daniel S. Wentworth, Perkins Bass, William A. Hinton, and Walter Reed. Walter Reed was selected over Benjamin Banneker because its closing would create a smaller loss of capacity within the community area. Combined, the four schools represent the elimination of 2,610 seats, a savings of $21,370,000, and a displacement of 1,094 students. The map in Figure 5-5 illustrates the even distribution of schools across the community area.

Part III

Tables 5-7, 5-8, and 5-9 provides a breakdown of best practices by category and shows whether or not CPS is currently using those best practices. Of the twelve best practices included in this analysis, CPS only follows three of them. Below is an analysis by category.

Master Planning

Master planning for school facilities is one area where CPS does not currently utilize all of the best practices, but is improving. In 2011, the Governor Quinn signed Public Act 097-0474, which requires CPS to complete annual capital reports, five-year capital plans, and a ten-year Educational Facilities Master Plan (Chicago Public Schools, 2012c). To date, only the one-year and five-year plans have been published. The ten-year plan is expected on January 1, 2013. Additionally, the district must complete bi-annual assessments of all of its facilities, release its capital budgets earlier,

and publish an annual report that outlines how the actions differed from the five-year plan.

In terms of the first two criteria listed in Table 5-7, CPS has made major strides towards the implementation of best practices. In some ways, CPS has even gone beyond best practices by providing detailed descriptions of each proposed capital project for the next five years within a sortable spreadsheet (Chicago Public Schools, 2012a). However, regarding the final best practice in the master planning category, based on the priorities outlined in the overview of the capital plan, CPS does not plan on including school closings in its ten-year Educational Facilities Master Plan. However, it cannot be definitively determined at this time as to whether or not closings will be included as part of the master plan.

School Closings

Currently, CPS's proposed school actions reflect a focus on closings for academics and not underutilization. For the 2012-2013 school year, seventeen schools have been selected for proposed school actions, yet ten of those schools are slated for turnaround, which means that their facilities will still be in the system (Hood & Ahmed-Ullah, 2011). For each turnaround, the district focuses strongly on how each of the schools has chronically failed to provide an adequate education to its students. Unfortunately, the only criteria that the district releases to community members relate to academics (Chicago Public Schools, 2011). One turnaround school for the 2012-2013 school year has been especially controversial. While Casals' students did score lower on the ISAT as compared to the district average (75.6% meeting state standards), the students did outperform 120 other elementary schools in CPS (Russo, 2012). Yet, CPS

has not released any other information related to Casals' proposed school action to clarify its decision. Therefore, CPS has failed to implement the first two best practices within School Closings.

Additionally, recommendations for closings are made by one hearing officer, Fred Bates, who has been hearing cases of reconstitution and closing since 1992 (Chicago Teachers Union, 2012). His website also states that he has served as the Inspector General for the district, which inevitably discredits his role as an unbiased hearing officer for the public (Bates Legal Group, 2012).

To make matters worse in the perspective of community members, each school is decided separately. If a school were to be taken off of the close list, there may be the perception of favoritism toward one area of town or one race, since the schools are hyper-segregated.

The one best practice that CPS has been able to apply relates to the use of vacant buildings. In most cases, the school either becomes a specialized magnet school or a charter school, which has fewer regulations. However, the district's ability to convert closed schools does not offset the negative impacts of their current school closing policies. Even though most of the proposed school actions are turnarounds, the non-transparent nature of the school closing process as is would make it difficult for the district to pursue a policy of closing schools for underutilization. Community members and stakeholders have already petitioned the Illinois legislature to issue a moratorium on all proposed school actions, not just turnarounds. The proposed moratorium illustrates how CPS is not currently using best practices in its school closing process.

Community Participation and Transparency

As with the school closing best practices, CPS also fails to meet most of the community participation and transparency best practices. First, there has been no evidence of community input on the facilities master plan, though the plan has not been releases, so there may be some community stakeholders involved in the process.

As for input on school closings, CPS provides three opportunities for input for each school. First, there is a hearing hosted by CPS at the school or local community organization (Chicago Public Schools, 2011). This hearing is open only to parents or legal guardians of students enrolled at the school who have proper identification. The focus of this first meeting is to present the district's evidence as to why the school should be turned around or closed, and then parents have the opportunity to ask questions and provide feedback. Then, each school has a hearing at the district's main offices in the Loop. Each school is allotted two hours for a presentation by CPS and then public comment. Each speaker is given two minutes and in most cases, not everyone who wishes to speak is given an opportunity. Finally, the district holds a regular school board meeting after which the board will vote on each proposed school action. At this meeting, speakers once again must limit themselves to two minutes. Overall, community members are given multiple opportunities for input, however their input is severely limited by time limits and a limit on the number of speakers during the allotted time.

In most of these meetings, CPS begins with a presentation of facts to the public to justify the proposed school action. While the district is armed with facts and statistics, the parents and community members are forced, in most cases, to respond with

emotion. The perception to parents is that the meetings are more about the district telling them what will be done, rather than the parents having an opportunity to provide feedback on what may be done.

Finally, CPS's data is not easily accessible for stakeholders who want to understand why specific schools are being selected for proposed school actions. The only data easily published on their website is selected demographic data back to 2000, metrics such as dropout rates, and test scores by school (Chicago Public Schools, 2012d). Other criteria that may be used for school closings, such as capital needs and capacity, are only found as PDFs for each individual school, which makes comparison difficult. Additionally, the data is cumbersome to locate as it is titled "Performance" (Chicago Public Schools, 2012d). While currently the data lacks true accessibility, the data related to the five-year capital plan does provide community members with increased access. The data is in a sortable spreadsheet that can be downloaded and manipulated in Excel. Each project also has a detailed description so that parents and community members can see where the district's money is being spent. Hopefully, CPS will continue to make strides towards better availability of data and thus, a higher level of transparency.

Table 5-1. Community Areas ranked by percent utilization

#	Community Area	Schools	Enrollment	Capacity	Excess seats	Excess students	Net excess seats	Utilization	Estimate of schools to close
1	Oakland	1	138	360	222	0	222	38%	0.5
2	West Garfield Park	8	2614	6180	3566	0	3566	42%	3.7
3	Grand Boulevard	6	1929	4260	2331	0	2331	45%	2.6
4	Avalon Park	2	682	1500	818	0	818	45%	0.9
5	Fuller Park	2	529	1140	611	0	611	46%	0.9
6	North Lawndale	14	4675	9810	5175	40	5135	48%	5.9
7	Riverdale	3	1009	2070	1061	0	1061	49%	1.2
8	Douglas	8	2132	4305	2173	0	2173	50%	3.2
9	East Garfield Park	10	3450	6900	3473	23	3450	50%	4.0
10	Pullman	4	998	1950	952	0	952	51%	1.6
11	Kenwood	5	1521	2970	1449	0	1449	51%	2.0
12	Woodlawn	7	2676	5190	2548	34	2514	52%	2.7
13	Auburn Gresham	10	4166	7770	3604	0	3604	54%	3.7
14	Englewood	14	5091	9270	4179	0	4179	55%	5.0
15	West Englewood	10	4195	7530	3335	0	3335	56%	3.5
16	Near West Side	12	4490	7950	3599	139	3460	56%	4.2
17	Roseland	10	4289	7410	3121	0	3121	58%	3.4
18	Washington Heights	8	2772	4590	1818	0	1818	60%	2.5
19	West Pullman	10	3233	5250	2017	0	2017	62%	3.1
20	Washington Park	4	2322	3750	1428	0	1428	62%	1.2
21	Greater Grand Crossing	9	3593	5790	2197	0	2197	62%	2.7
22	Austin	18	8846	14160	5314	0	5314	62%	5.4
23	West Town	17	7197	11520	4390	67	4323	62%	5.1
24	South Shore	8	3795	6060	2265	0	2265	63%	2.4
25	South Chicago	6	3332	5250	1918	0	1918	63%	1.8
26	Near North Side	6	2469	3870	1455	54	1401	64%	1.7

Table 5-1. Continued

#	Community Area	Schools	Enrollment	Capacity	Excess seats	Excess students	Net excess seats	Utilization	Estimate of schools to close
27	South Deering	4	1853	2730	877	0	877	68%	1.0
28	Humboldt Park	10	6034	8850	2922	106	2816	68%	2.5
29	Morgan Park	4	1680	2400	788	68	720	70%	1.0
30	Uptown	6	3893	5460	1567	0	1567	71%	1.4
31	Logan Square	11	7317	9840	2668	145	2523	74%	2.3
32	Lower West Side	10	5540	7290	1914	164	1750	76%	1.9
33	Hyde Park	4	1920	2517	620	23	597	76%	0.8
34	Chatham	8	3493	4500	1056	49	1007	78%	1.4
35	Rogers Park	5	3207	4050	1022	179	843	79%	0.8
36	Lincoln Square	4	2579	3210	672	41	631	80%	0.6
37	Near South Side	2	1230	1530	397	97	300	80%	0.3
38	Armour Square	2	1148	1380	232	0	232	83%	0.3
39	Lincoln Park	6	3252	3900	864	216	648	83%	0.8
40	New City	11	6972	8310	2201	863	1338	84%	1.4
41	Burnside	1	549	630	81	0	81	87%	0.1
42	Edgewater	4	3106	3540	528	94	434	88%	0.4
43	Garfield Ridge	4	2925	3270	682	337	345	89%	0.3
44	Lake View	10	5520	5970	859	409	450	92%	0.6
45	Bridgeport	5	3152	3360	501	293	208	94%	0.2
46	North Park	2	1217	1290	73	0	73	94%	0.1
47	Irving Park	8	5360	5640	698	418	280	95%	0.3
48	Chicago Lawn	7	7046	7350	730	426	304	96%	0.2
49	Mckinley Park	3	1338	1380	61	19	42	97%	0.1
50	South Lawndale	16	11593	11700	1193	1086	107	99%	0.1
51	Calumet Heights	6	1565	1530	205	240	-35	102%	-0.1
52	Hegewisch	2	956	930	32	58	-26	103%	0.0

Table 5-1.Continued

#	Community Area	Schools	Enrollment	Capacity	Excess seats	Excess students	Net excess seats	Utilization	Estimate of schools to close
53	Albany Park	7	5340	5160	218	398	-180	103%	-0.2
54	North Center	4	2705	2580	30	155	-125	105%	-0.2
55	Mount Greenwood	3	1487	1410	10	87	-77	105%	-0.1
56	Avondale	4	3618	3420	159	357	-198	106%	-0.2
57	West Ridge	8	6491	6120	194	565	-371	106%	-0.4
58	Belmont Cragin	10	10999	10320	804	1483	-679	107%	-0.5
59	Hermosa	3	2699	2520	3	182	-179	107%	-0.2
60	Ashburn	7	4797	4470	402	803	-401	107%	-0.5
61	Gage Park	8	8220	7200	463	1483	-1020	114%	-0.9
62	Beverly	4	1623	1410	0	213	-213	115%	-0.5
63	Norwood Park	7	3517	2970	230	777	-547	118%	-1.0
64	Brighton Park	7	6712	5460	83	1335	-1252	123%	-1.3
65	Portage Park	5	4983	4050	0	933	-933	123%	-0.9
66	Clearing	4	2071	1650	253	674	-421	126%	-0.8
67	Jefferson Park	2	1746	1380	0	366	-366	127%	-0.4
68	West Lawn	3	2525	1920	0	605	-605	132%	-0.8
69	Dunning	5	4047	3000	73	1046	-973	135%	-1.3
70	Forest Glen	3	1420	1050	0	370	-370	135%	-0.8
71	Edison Park	2	903	660	0	243	-243	137%	-0.6
72	Montclare	1	1301	930	0	371	-371	140%	-0.3
73	East Side	4	3786	2640	116	1262	-1146	143%	-1.4
74	Ohare	1	777	540	0	237	-237	144%	-0.4
75	Archer Heights	1	1486	870	0	616	-616	171%	-0.6
76	West Elsdon	2	2719	1440	0	1279	-1279	189%	-1.4
	Total	472	262,560	332,532	91,500	21,528	68,972	79%	78.1

Table 5-2. Community Areas sorted by excess seats

Rank	Community Area	Schools	Excess seats	Utilization	Capacity	Enrollment
1	Austin	18	5314	62.5%	14160	8846
2	North Lawndale	14	5175	47.7%	9810	4675
3	West Town	17	4390	62.5%	11520	7197
4	Englewood	14	4179	54.9%	9270	5091
5	Auburn Gresham	10	3604	53.6%	7770	4166
6	Near West Side	12	3599	56.5%	7950	4490
7	West Garfield Park	8	3566	42.3%	6180	2614
8	East Garfield Park	10	3473	50.0%	6900	3450
9	West Englewood	10	3335	55.7%	7530	4195
10	Roseland	10	3121	57.9%	7410	4289
11	Humboldt Park	10	2922	68.2%	8850	6034
12	Logan Square	11	2668	74.4%	9840	7317
13	Woodlawn	7	2548	51.6%	5190	2676
14	Grand Boulevard	6	2331	45.3%	4260	1929
15	South Shore	8	2265	62.6%	6060	3795
16	New City	11	2201	83.9%	8310	6972
17	Greater Grand Crossing	9	2197	62.1%	5790	3593
18	Douglas	8	2173	49.5%	4305	2132
19	West Pullman	10	2017	61.6%	5250	3233
20	South Chicago	6	1918	63.5%	5250	3332

Table 5-3. Community areas sorted by proposed school closings

Rank	Community Area	Schools	Enrollment	Capacity	Excess seats	Utilization	Estimate of schools to close
1	North Lawndale	14	4675	9810	5175	48%	5.9
2	Austin	18	8846	14160	5314	62%	5.4
3	West Town	17	7197	11520	4390	62%	5.1
4	Englewood	14	5091	9270	4179	55%	5.0
5	Near West Side	12	4490	7950	3599	56%	4.2
6	East Garfield Park	10	3450	6900	3473	50%	4.0
7	Auburn Gresham	10	4166	7770	3604	54%	3.7
8	West Garfield Park	8	2614	6180	3566	42%	3.7
9	West Englewood	10	4195	7530	3335	56%	3.5
10	Roseland	10	4289	7410	3121	58%	3.4
11	Douglas	8	2132	4305	2173	50%	3.2
12	West Pullman	10	3233	5250	2017	62%	3.1
13	Greater Grand Crossing	9	3593	5790	2197	62%	2.7
14	Woodlawn	7	2676	5190	2548	52%	2.7
15	Grand Boulevard	6	1929	4260	2331	45%	2.6
16	Humboldt Park	10	6034	8850	2922	68%	2.5
17	Washington Heights	8	2772	4590	1818	60%	2.5
18	South Shore	8	3795	6060	2265	63%	2.4
19	Logan Square	11	7317	9840	2668	74%	2.3
20	Kenwood	5	1521	2970	1449	51%	2.0

Table 5-4. North Lawndale school closing rubric results

School	Current enrollment		Capacity		Year built		Capital costs		Academic	Near		Sum
Roswell B Mason Elementary School	38.6%	10	1230	20	1922	10	$14,559,000	0	Level 3	0	3	15	55
Theodore Herzl Elementary School	38.8%	10	1320	20	1913	10	$5,959,000	20	Level 3	0	9	0	60
Nathaniel Pope Elementary School	36.9%	10	540	30	1905	10	$2,791,000	30	Level 3	0	5	0	80
Matthew A Henson Elementary School	34.7%	10	780	30	1960	20	$2,770,000	30	Level 3	0	9	0	90
Lawndale Elementary Community Academy	58.3%	20	870	30	1923	10	$4,240,000	30	Level 3	0	7	0	90
Julia C Lathrop Elementary School	10.6%	0	780	30	1963	20	$1,237,000	40	Level 3	0	6	0	90
Ambrose Plamondon Elementary School	70.8%	30	240	0	1903	10	$2,567,000	30	Level 2	25	3	0	95
Thomas Chalmers Specialty Elementary School	41.6%	10	690	30	1959	20	$2,019,000	40	Level 3	0	6	0	100
Dvorak Technology Academy	73.6%	30	750	30	1963	20	$4,695,000	30	Level 3	0	8	0	110
Frazier Prospective IB Magnet Elementary School	122.2%	60	180	0	Not Listed		Not Listed		Level 1	50	7	0	110
William Penn Elementary School	82.9%	50	510	30	1907	10	$4,524,000	30	Level 3	0	9	0	120
Crown Community Academy of Fine Arts Center Elementary School	41.3%	10	720	30	1961	20	$2,285,000	40	Level 2	25	6	0	125

Table 5-4. Continued

School	Current enrollment		Capacity		Year built		Capital costs		Academic	Near		Sum
James Weldon Johnson Elementary School	52.5%	20	690	30	1924	10	$2,004,000	40	Level 2	25	6	0	125
Charles Evans Hughes Elementary School	62.2%	30	510	30	1960	20	$2,075,000	40	Level 3	0	3	15	135

Table 5-5. North Lawndale school closing priority list with summary

School closing candidates	Enrollment	Capacity	Capital costs
Julia C Lathrop Elementary School	83	780	$1,237,000
Nathaniel Pope Elementary School	199	540	$2,791,000
Theodore Herzl Elementary School	512	1320	$5,959,000
Roswell B Mason Elementary School	475	1230	$14,559,000
Summary	1269	3870	$24,546,000

Table 5-6. Austin school closing rubric results

School	Current enrollment		Capacity		Year built		Capital costs		Academic	Near		Sum
Henry H Nash Elementary School	35.3%	10	1110	20	1896	5	$8,682,000	10	Level 3	0	5	0	45
Horatio May Elementary Community Academy	44.8%	10	1020	20	1905	10	$9,096,000	10	Level 3	0	2	15	65
Louis Armstrong Math & Science Elementary School	35.2%	10	270	15	1969	20	$1,754,000	40	Level 3	0	5	0	85
Leslie Lewis Elementary School	53.3%	20	1050	20	1926	15	$4,895,000	30	Level 3	0	3	15	100
Ella Flagg Young Elementary School	68.2%	30	1620	20	1924	10	$5,522,000	20	Level 2	25	2	15	120
Ronald E McNair Elementary School	61.3%	30	690	30	1948	15	$4,661,000	30	Level 3	0	4	15	120
George Leland Elementary School	85.7%	50	210	0	1970	20	$1,494,000	40	Level 3	0	4	15	125
Robert Emmet Elementary School	66.5%	30	690	30	1913	10	$3,977,000	30	Level 2	25	6	0	125
Francis Scott Key Elementary School	55.0%	20	540	30	1907	10	$3,824,000	30	Level 2	25	4	15	130
Milton Brunson Math & Science Specialty Elementary School	69.9%	30	930	30	1892	5	$224,000	50	Level 3	0	4	15	130
Spencer Technology Academy	65.8%	30	1230	20	1904	10	$3,991,000	30	Level 2	25	3	15	130
Joseph Lovett Elementary School	67.6%	30	720	30	1927	15	$5,263,000	20	Level 2	25	2	15	135
Julia Ward Howe Elementary School of Excellence	91.3%	50	630	30	1896	5	$6,491,000	20	Level 1	50	6	0	155

Table 5-6. Continued

School	Current enrollment		Capacity		Year built		Capital costs		Academic		Near		Sum
Oscar DePriest Elementary School	58.9%	20	900	30	2004	30	<$1,000,000	50	Level 2	25	5	0	155
John Hay Elementary Community Academy	80.0%	50	690	30	1921	10	$4,386,000	30	Level 2	25	4	15	160
George Rogers Clark Elementary School	70.2%	30	420	15	1927	15	$1,085,000	40	Level 1	50	2	15	165
Edward K Ellington Elementary School	48.1%	20	780	30	2004	30	<$1,000,000	50	Level 2	25	4	15	170
Harriet E Sayre Elementary Language Academy	91.7%	60	660	30	1930	15	$3,856,000	30	Level 2	25	0	30	190

Table 5-7. Austin school closing priority list with summary

School closing candidates	Enrollment	Capacity	Capital costs
Ronald E McNair Elementary School	423	690	$4,661,000
Leslie Lewis Elementary School	560	1050	$4,895,000
Louis Armstrong Math & Science Elementary School	95	270	$1,754,000
Horatio May Elementary Community Academy	457	1020	$9,096,000
Henry H Nash Elementary School	392	1110	$8,682,000
Summary	1927	4140	$29,088,000

Table 5-8. Englewood school closing rubric results

School	Current enrollment		Capacity		Year built		Capital costs		Academic	Near		Sum
Daniel S Wentworth Elementary School	44.8%	10	810	30	1890	5	$5,053,000	20	Level 3	0	7	0	65
Perkins Bass Elementary School	45.3%	20	810	30	1895	5	$6,129,000	20	Level 3	0	7	0	75
William A Hinton Elementary School	39.5%	10	810	30	1965	20	$6,448,000	20	Level 3	0	6	0	80
Walter Reed Elementary School	24.4%	0	180	0	1963	20	$4,107,000	30	Level 2	25	4	15	90
Benjamin Banneker Elementary School	43.8%	10	690	30	1963	20	$2,580,000	30	Level 3	0	6	0	90
Amos Alonzo Stagg Elementary School	66.4%	30	810	30	1969	20	$4,640,000	30	Level 3	0	5	0	110
Carrie Jacobs Bond Elementary School	44.0%	10	780	30	1926	15	$4,503,000	30	Level 2	25	6	0	110
Simon Guggenheim Elementary School	97.0%	60	300	15	1964	20	$4,110,000	30	Level 3	0	8	0	125
Oliver Wendell Holmes Elementary School	42.7%	10	780	30	1960	20	$340,000	50	Level 3	0	4	15	125
Benjamin E Mays Elementary Academy	62.7%	30	480	15	2000	30	$2,916,000	30	Level 2	25	7	0	130
Joshua D Kershaw Elementary School	54.8%	20	480	15	2008	30	<$1,000,000	50	Level 2	25	5	0	140
Francis W Parker Elementary Community Academy	96.1%	60	840	30	1930	15	$9,055,000	10	Level 2	25	7	0	140
Jesse Sherwood Elementary School	62.3%	30	570	30	1951	20	$3,104,000	30	Level 2	25	3	15	150
Nicholson Technology Academy	49.9%	20	930	30	2008	30	<$1,000,000	50	Level 2	25	4	15	170

Table 5-9. Englewood school closing priority list with summary

School closing candidates	Enrollment	Capacity	Capital costs
Daniel S Wentworth Elementary School	363	810	$5,053,000
Perkins Bass Elementary School	367	810	$6,129,000
William A Hinton Elementary School	320	810	$6,448,000
Walter Reed Elementary School	44	180	$4,107,000
Summary	1094	2610	$21,737,000

Table 5-10. Master planning best practices comparison

Best practices	Does cps use best practices?	CPS policies and actions
Create a comprehensive facilities plan with a five to ten year planning horizon.	Not at this time	CPS does not currently have a comprehensive master plan, however one should be completed by January 1, 2013.
Prioritize capital projects over a span of five to ten years.	Yes	Just this past year, CPS released a prioritized list of capital projects for the FY2013 through FY2017.
Include school closings as part of its facilities master plan	No	School closings are not currently part of a more comprehensive plan.

Table 5-11. School closings best practice comparison

Best practices	Does CPS use best practices?	CPS policies and actions
Inform public about need before release of school closing candidates	No	Currently, Chicago is focusing on the need to close schools for academic reasons, and has thus neglected to inform the public of the massive need to close schools for underutilization.
Use appropriate criteria for school closings that is made available to the public	No	In both turnaround and school closing proceedings, very little details are made public as to the criteria used in identifying school closing candidates.
Use non-biased hearing officers	No	CPS currently uses hearing officers who are lawyers that are contracted to the city for other purposes, including arbitration with the Chicago Teacher's Union.
Vote for school closings as a package	No	Schools are approved one by one.
Find alternative use for vacant schools	Yes	The vast majority of closed CPS schools have been used for charter schools. Very few are vacant.

Table 5-12. Community participation and transparency

Best practice	Does CPS use best practices?	Current CPS policies and actions
Provide citizens with opportunities for input on the facilities master plan	No	To date, there has been no community input for the facilities master plan.
Allow multiple opportunities for input on proposed closings	Yes	The district allows three opportunities for each school action, though there are severe limits on how citizens may participate.
Focus on public input, not presentation of facts at public participation meetings	No	The majority of proposed school action meetings are focused on the presentation of data. Only after the presentation is public input allowed.
Provide access to the public of all non-confidential data used in planning for school closings	No	CPS publishes very little usable data to its website. The data that it does publish (academic achievement, demographics, mobility rates, etc.) is difficult to find. Additionally, many data files are published as PDFs on the individual school's website.

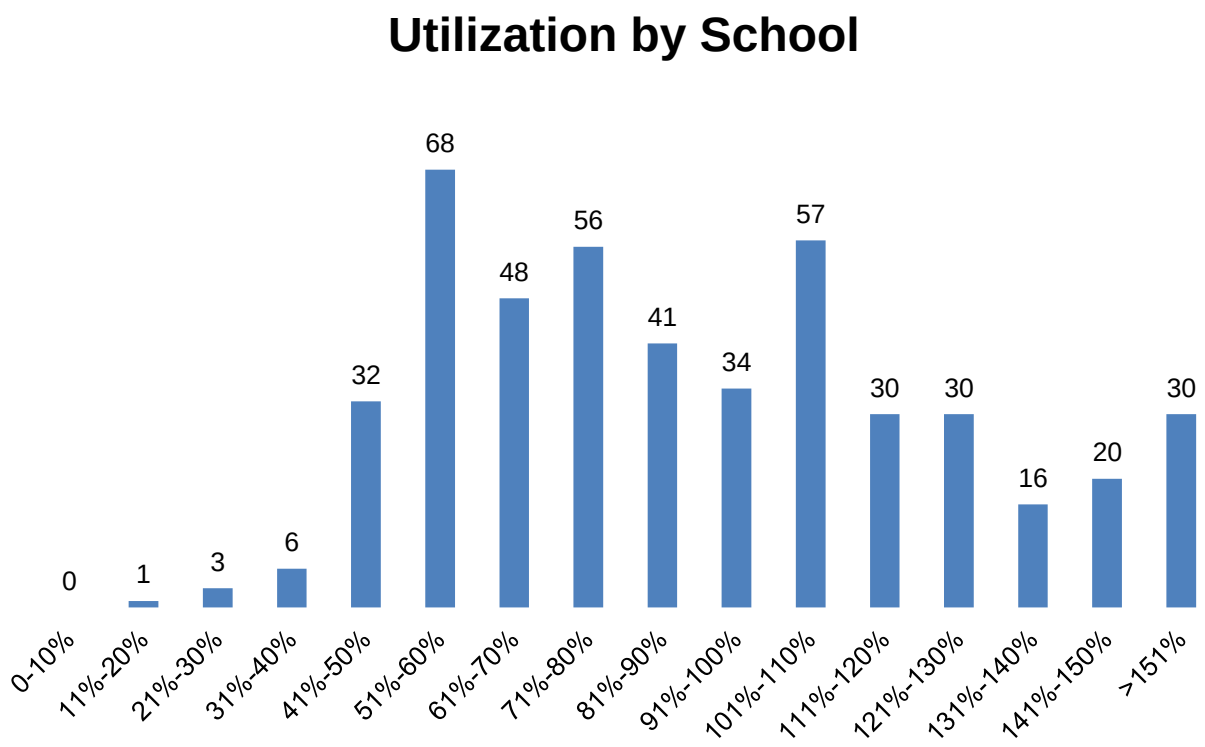

Figure 5-1. School level histogram

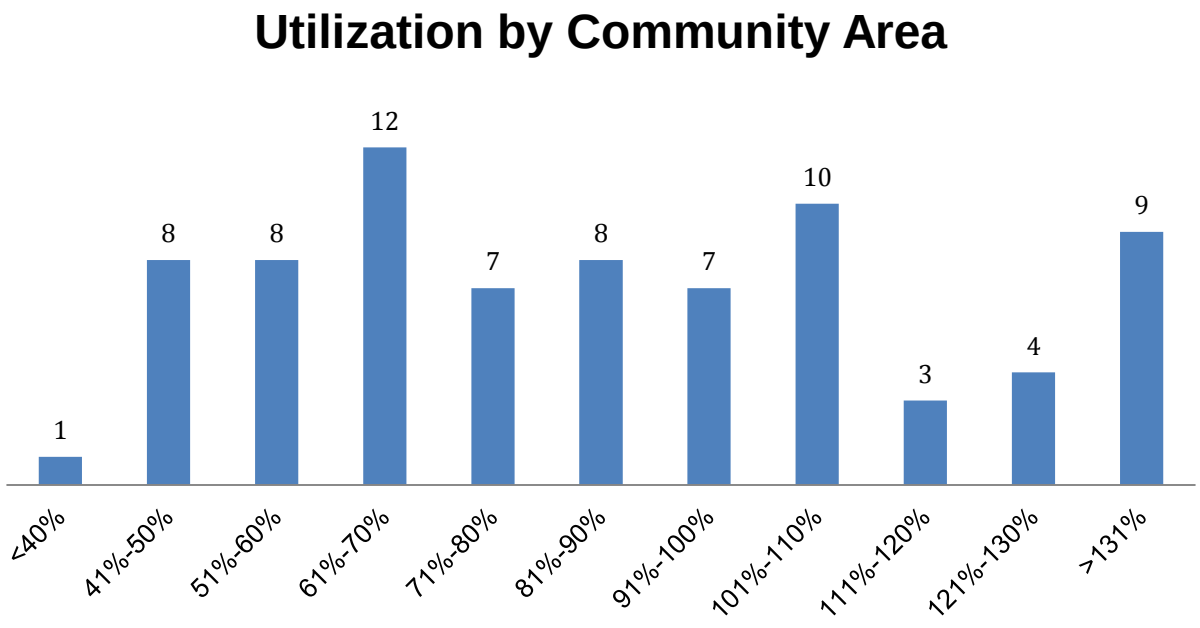

Figure 5-2. Utilization rates by community area

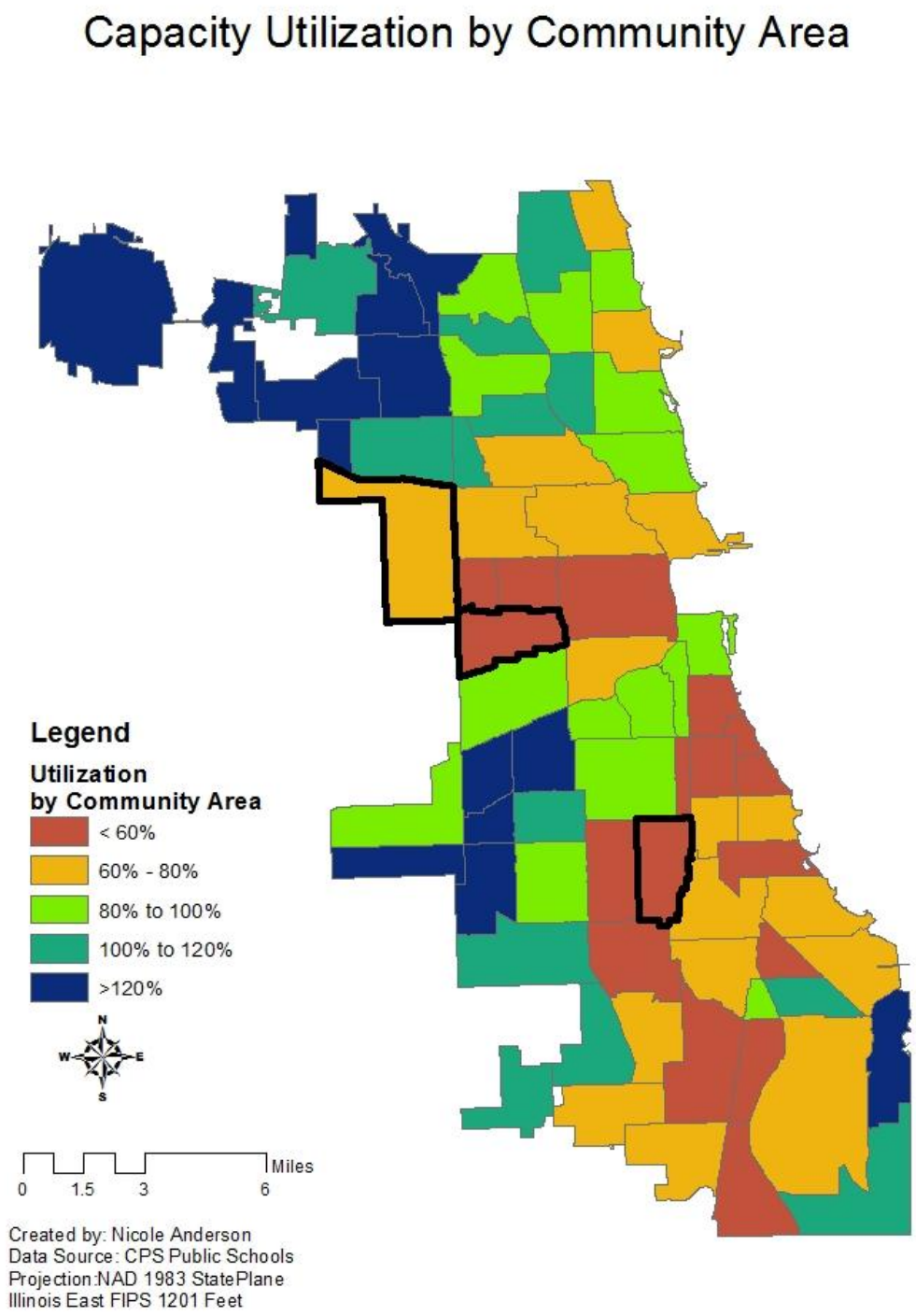

Figure 5-3. Map of Community Areas by percent utilization

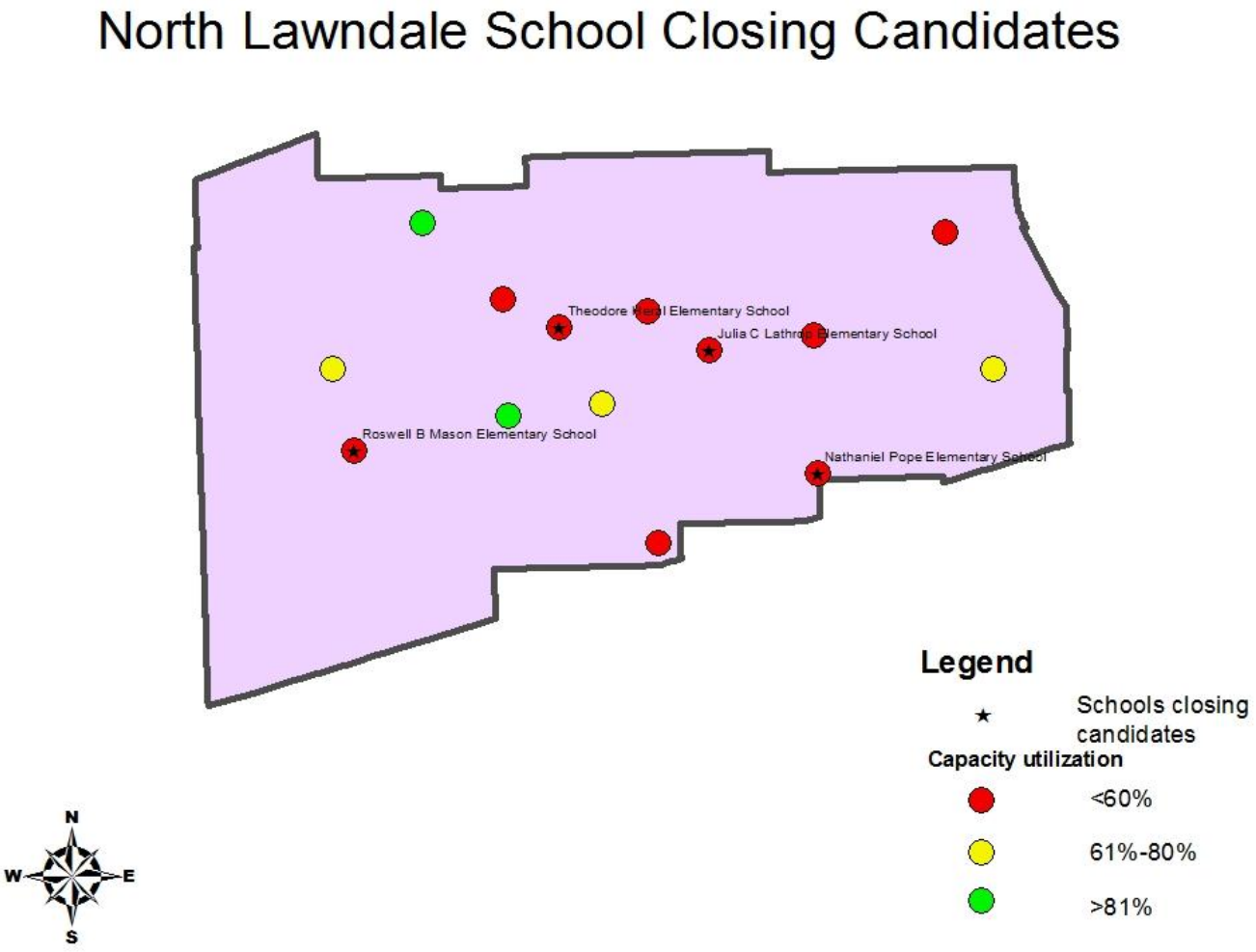

Figure 5-4. Map of North Lawndale school closing candidates

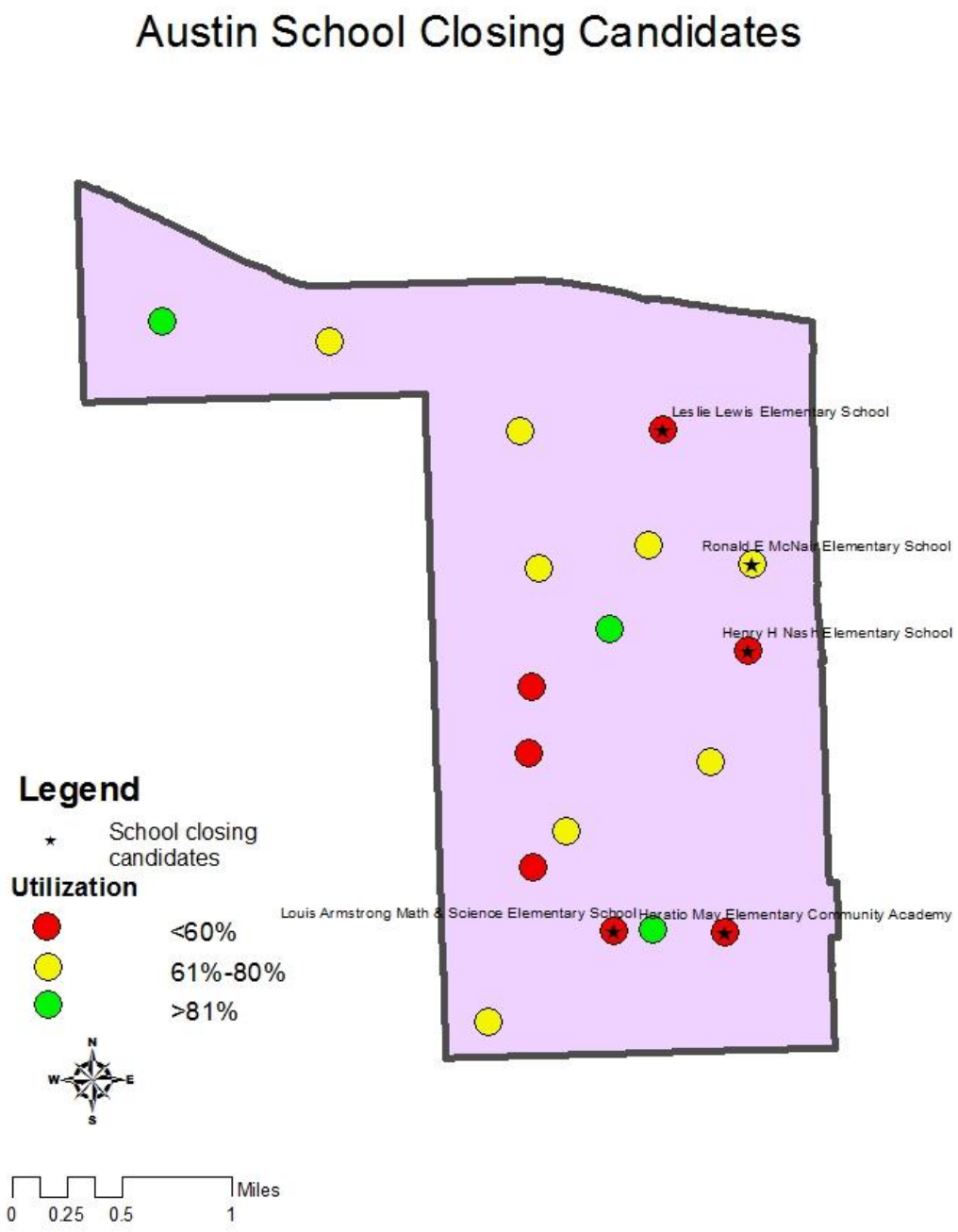

Figure 5-5. Austin school closing candidates

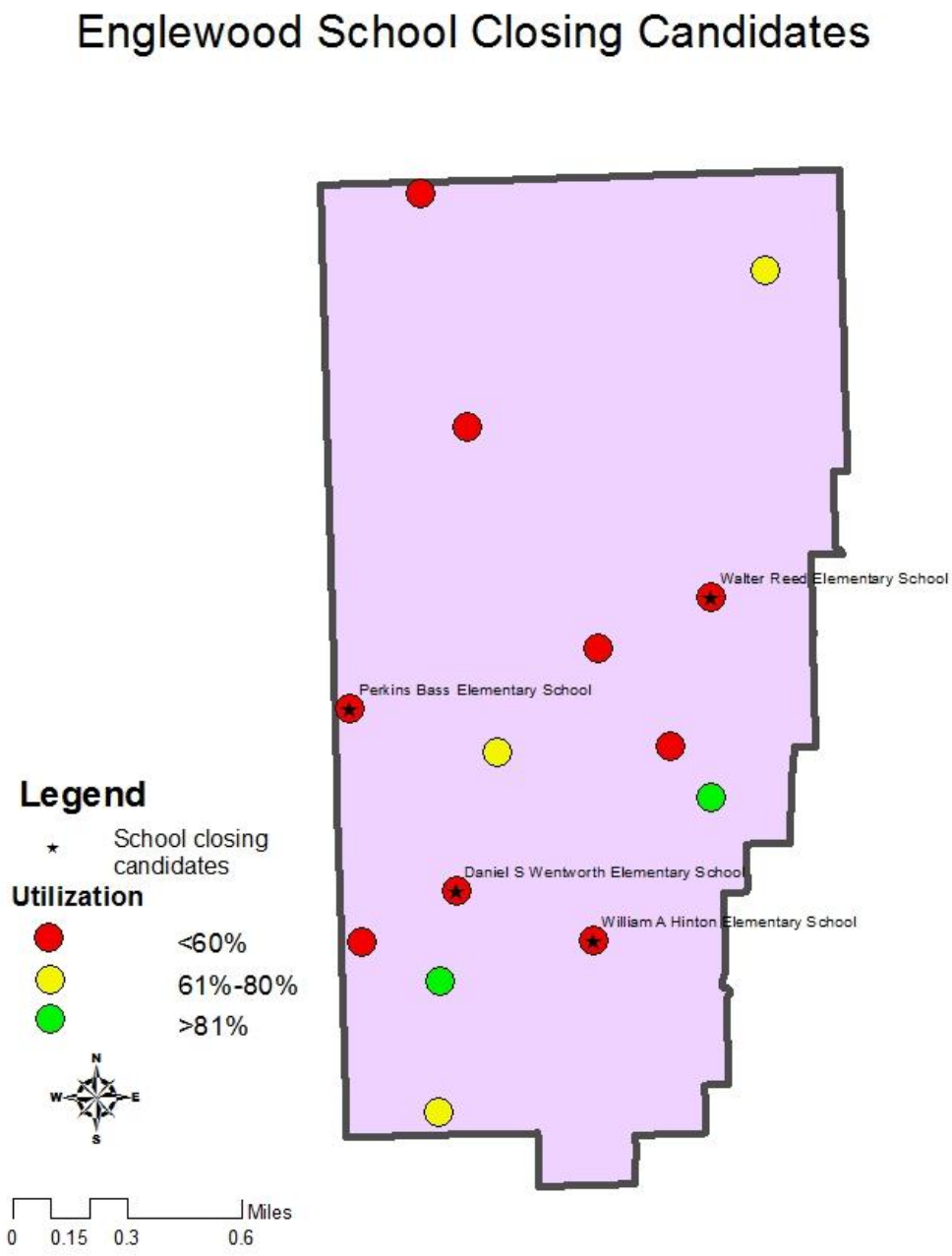

Figure 5-6. Englewood school closing candidates

CHAPTER 6
DISCUSSION

The results presented in the previous chapter illustrate that Theodore Herzl Elementary, the school presented in Chapter 1, is not an isolated case. The inefficient allocation of school capacity is a systemic issue that needs to be addressed. However, as shown in Part III of the analysis, the district is not currently taking the actions necessary to align its facilities with the current distribution of population.

Results of Part I

The results of Part I illustrate that there are many community areas that are not operating efficiently in terms of school capacity utilization. The district is spending millions of dollars in capital, operations, and space-based personnel to operate underutilized schools, when that scarce funding could be used elsewhere.

The most surprising finding is that the district as a whole operates in the efficient range (79%). However, when the schools are aggregated by community area and analyzed spatially, a pattern emerges that shows a clustering of the most underutilized community areas on the West and South sides. This pattern is consistent with the pattern found in Figure 6-1, which shows the number of children aged 5-14 by community area. Figure 6-1 also validates the finding that the schools near O'Hare and Midway should have the highest rates of overcrowding.

The results of Part I illustrate that a spatial mismatch exists between where students live and where schools are located. The severe underutilization on the South and West sides indicates that there are many opportunities for school closings in order to create efficiencies. The concentration of overcrowding near the suburbs also indicates that the facilities needs in these areas are being overlooked.

When combined with the results of Part I, Figure 6-2 illustrates that if CPS were to use the above analysis to target community areas for closing that minority residents would be disproportionately impacted. In the areas where school closings would occur if CPS were to take action against underutilization, the school-aged population is overwhelmingly black. Despite the fact that the closings would not themselves be racially discriminatory, if the courts were to find that the closings would have an impact on black students' access to equal education, the courts would rule against the district in the lawsuit... Though, one could argue that blacks are already deprived of equal educational opportunities as illustrated in Figure 6-3.

Figure 6-3 shows the number of high-performing schools in each community area. Once again, there appears to be a strong correlation between the areas where closings are necessary and a lack of accessibility to high-quality schools. In approximately one-third of the community areas, there are no high-performing schools (schools that are categorized as a Level 1). One theory that has been hypothesized is that the district is using turnaround schools to create high-performing schools in these community areas in order to provide better receiving schools for future school closings. If this is true, it would also explain why CPS has been focusing on turnarounds, instead of addressing the issue of underutilized schools.

The goal of Part I of this research was to establish the scope and distribution of the misallocation of school capacity and facilities resources. While the analysis was sufficient to show that there is a massive mismatch between school facilities resources and where students live, a more in-depth analysis could be completed using census data, student addresses, and school attendance boundaries. A more robust analysis

could be completed by determining how many CPS students reside within each school catchment area in order to determine if the resident population is sufficient to support each given neighborhood school. Currently, the analysis focuses on the system as is; however, school closings would require a more stringent transfer policy as capacities near efficiency, because more students would be attending their home schools.

Part II

The results of Part II illustrate that a simple, data-based methodology can be used to identify schools for closings. The rubric logically selected candidates for school closings that fit with the criteria set for by best practices. In each scenario, an equilibrium solution was able to be attained that placed the community area into the efficient category. The rubric served its purpose as an intuitive preliminary school closing identification tool.

North Lawndale

For North Lawndale, which is located on the cities Far West Side, the model identified four excellent candidates for closing. Roswell B. Mason, the school with the lowest score, was identified mainly due to its low utilization (38.6%), exorbitantly high capital needs ($14,559,000), and low academic performance (Level 3). Mason's location at the periphery of the community area decreases its suitability for closure; however, there are a sufficient number of nearby schools to accommodate Mason's students. Theodore Herzl, the impetus for this research, was the second school identified for closure. A combination of high capital needs ($5,959,000), low utilization (38.8%), high capacity (1320), and low academic achievement (Level 3) caused Herzl to be selected. Additionally, nine alternative schools are located within a 0.75 mile radius of the school, including three within a 0.25 mile radius. Pope was selected because of

its low utilization (36.9%), moderate capital costs ($2,791,000), and low academic achievement (Level 3). Finally, Lathrop, already slated to be phased-out, was identified as a candidate for closing. Lathrop was chosen over the other schools that scored a 90 based on the rubric, because of its small population (83). Overall, the four schools would be excellent candidates for closing based on criteria suggested by national best practices. By closing those four schools, the utilization rate would increase from 48% to 92%.

Austin

For the Austin community area, also located on the Far West Side, the model identified five candidates for closings. Henry M. Nash was identified due to its extremely low rate of utilization (35.3%), high amount of capital needs ($8,682,000), and low academic achievement (Level 3). Horatio May was selected due to low utilization (44.8%), high capital costs ($9,096,000), and low academic achievement (Level 3). The next candidate for closing was Louis Armstrong. While Armstrong had low capital needs, it was selected due to extremely low enrollment (35.2%) and small facility capacity (270). Leslie Lewis, the next candidate, was selected based on low utilization (53.5%), moderate capital costs ($4,895,000), and low academic achievement (Level 3). McNair had a similar profile and was thus selected for closing. Through the closings of those five schools, the districts utilization rate would increase from 62% to 88%, creating efficiency within the community area.

Englewood

In the Englewood community area, located on the city's South side, four schools were selected for closing. Wentworth, the school with the lowest score, was selected due to low utilization (44.8%), high capital costs ($5,053,000), and low academic

achievement (Level 3). Bass has a very similar profile and was thus also slated for closing. Hinton, a much newer school when compared to Bass and Wentworth, was also selected for closing due to low enrollment (39.5%) and high capital costs ($6,448,000). Reed was chosen over Banneker as the final school to be closed in Englewood, yet it is probably the most controversial of the selected schools. Reed is a Level 2 school, the highest level in Englewood. However, the school has very few students (44) and has a small capacity (180). The model's identification of Reed illustrates how the model effectively balances the different criteria. Overall, the closing of the schools selected in Englewood would result in an increase in the rate of utilization from 54.9% to 85.3%.

Limitations of the Model

Overall the model does an excellent job of balancing the different criteria so that no one factor leads to a schools selection. For example, Ellington has the fourth lowest utilization rate in Austin (48.1%). However, the facility was built in 2004 and has very low capital needs. Therefore, it was not among the schools selected for closing.

While no one criteria can condemn a school, certain criteria can help to ensure that a school is not selected for closing. For example, Carrie Jacobs Bond, located in Englewood, has a low utilization rate (44.0%), relatively moderate facilities needs ($4,110,000), and is relatively old (1926). However, Bonds is a Level 2 school that provides a higher quality education to its 343 students than do most other schools in the Englewood community area. Therefore, Bonds is justifiably kept off the close candidate list based on its superior academics.

While the draft model does an adequate job of selecting schools for closing within a community area, a robust statistical analysis would need to be completed in order to

verify that no two variables were highly correlated, and thus possibly skewing the outcome. Additionally, accurate operations data could be used in place of the year built proxy. Enrollment projects could also be used to help identify schools whose population will continue to decline, though that is still difficult given the volatility of the school population in CPS. Overall, a rubric, such as the one presented in Chapter 4, would be easy for the public to understand and would provide community members with the often sought after transparency that is so lacking in CPS.

Part III Policy Recommendations

The qualitative analysis revealed that Chicago's current policies and actions related to school facilities planning are not adequately addressing the misallocation that was scoped in Part I of the analysis. First, CPS must determine that it needs to re-evaluate its allocation of resources. Only once it determines that an issue exists, can it take positive steps to ameliorate the situation. Since CPS has not yet released their facilities master plan, it is unknown as to whether they will be addressing underutilization through the master plan.

If the district decides that it is going to take action related to school closings, it needs to ensure that community members are made aware of the scope of the issue related to underutilization. All residents need to be informed of and internalize the need for school closings long before any close list is released. The criteria for closing also need to be set before the close list is released to ensure that citizens do not feel as though the criteria had been manipulated to favor a certain outcome.

Affected community members need to have many opportunities to provide input on not only their school's place in the community, but they should also have input into the reassignment plan for displaced students. The public participation meetings need to

allow for open discussion and should be well documented. Parents and community members should also have access to all data used in the analysis, and mapping tools should also be incorporated so that stakeholders can visualize the issue.

Overall, CPS needs to provide higher levels of transparency to its stakeholders, not only in its school closings decisions, but in all proposed school actions. Turnarounds have been especially contentious, mainly due to the arbitrary nature of the schools selected for turnaround. While the district may have a solid methodology and plan, those details have not been released to the public. Stakeholders are left to concoct their own reasons as to why their school was selected for turnaround or closing.

One other area of change could be in the focus of proposed school actions. Since Mayor Rahm Emanuel took office, school closings have been increasingly related to academics instead of efficiency. The issue with focusing on academics is that community members feel as though the selection of their school is an affront on their community. A focus on efficiency takes the emotion out of the argument and could decrease community resistance.

Overall, the policy analysis shows that major changes need to be put in place so that CPS can operate an efficient school system in terms of facilities. The underutilization of facilities is a systemic issue that if alleviated, could provide the district with additional funds that could be used to improve the quality of education in the classroom.

Further Research

The topic of the allocation of school capacity and facilities resources within the City of Chicago is fascinating and could be explored at a much greater depth. First, a more comprehensive analysis could be completed that compares the changes in

demographics with the opening and closings of schools across the district from the early 1900s to today in order to understand how CPS's prior decision-making has created the facilities issue that is seen today. Historical census data would be necessary, as well as detailed facilities information for every school every constructed or closed within the city.

Another interesting area of research related to this topic would be to complete the model from Part II of the analysis for each community area that was identified to need at least one school closed. The process would need to be iterative and include a very strong GIS component. Presumably, the model would be completed for the highest priority community area first, and subsequently schools would be removed from the system. Data related to the home addresses of students would be needed in order to reassign students from closed schools.

The research presented here could also be applied to other school districts with declining enrollments to determine if school closings are necessitated. The model from Part II would need to be adjusted to accurately reflect the range of each variable; however the criteria used would most likely stay consistent.

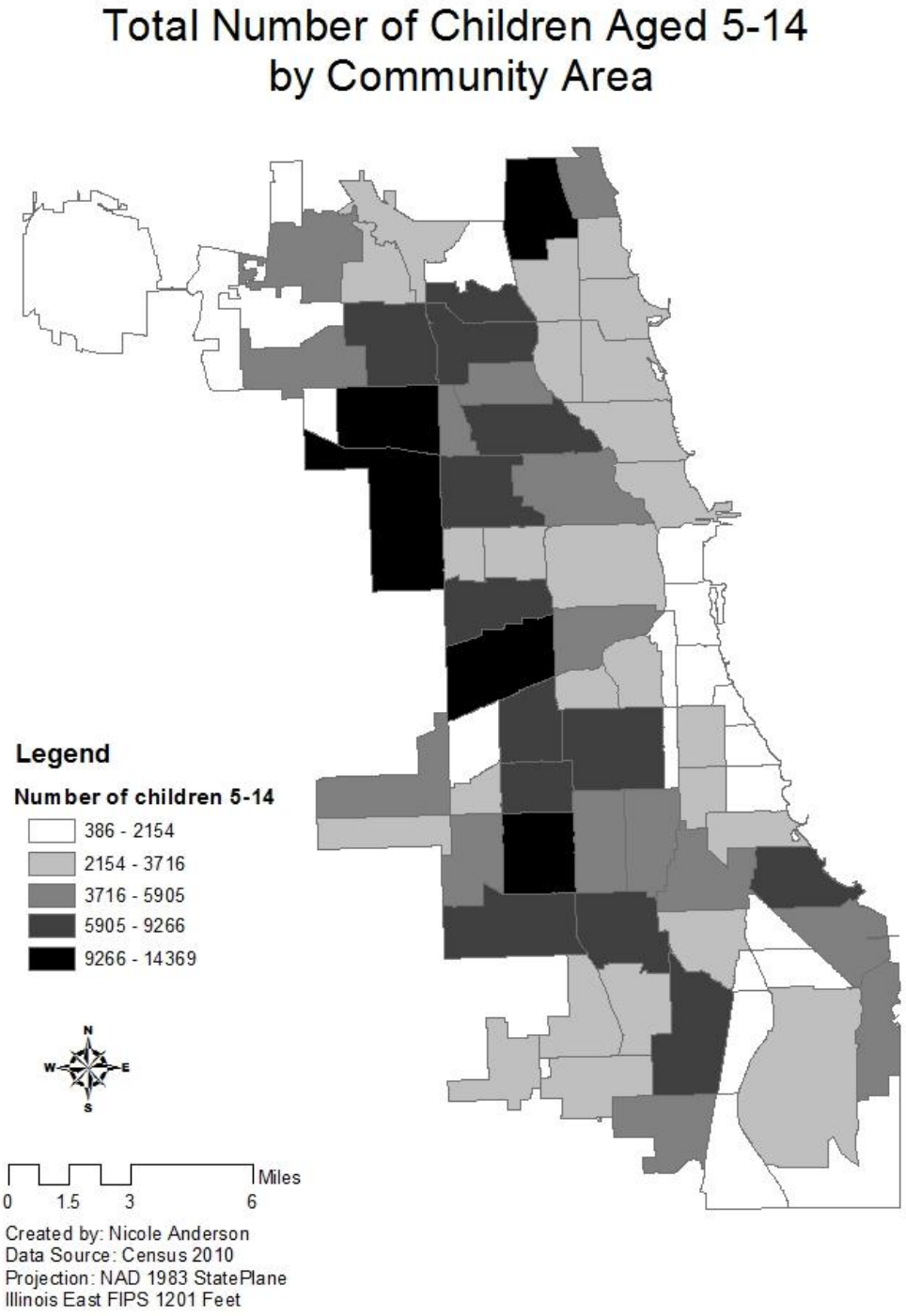

Figure 6-1. Total number of children aged 5-14 by Community Area

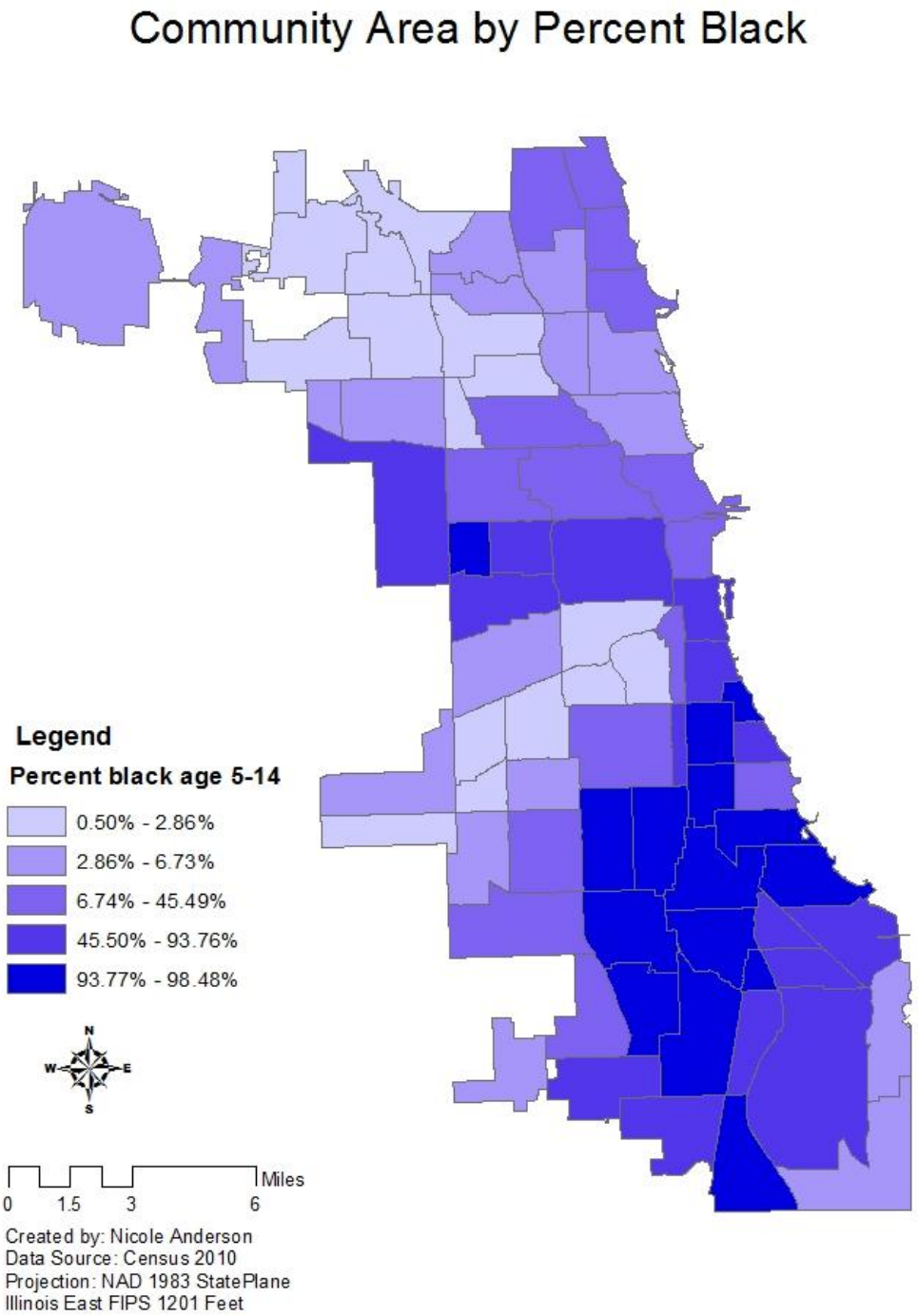

Figure 6-2. Community Area by percent black

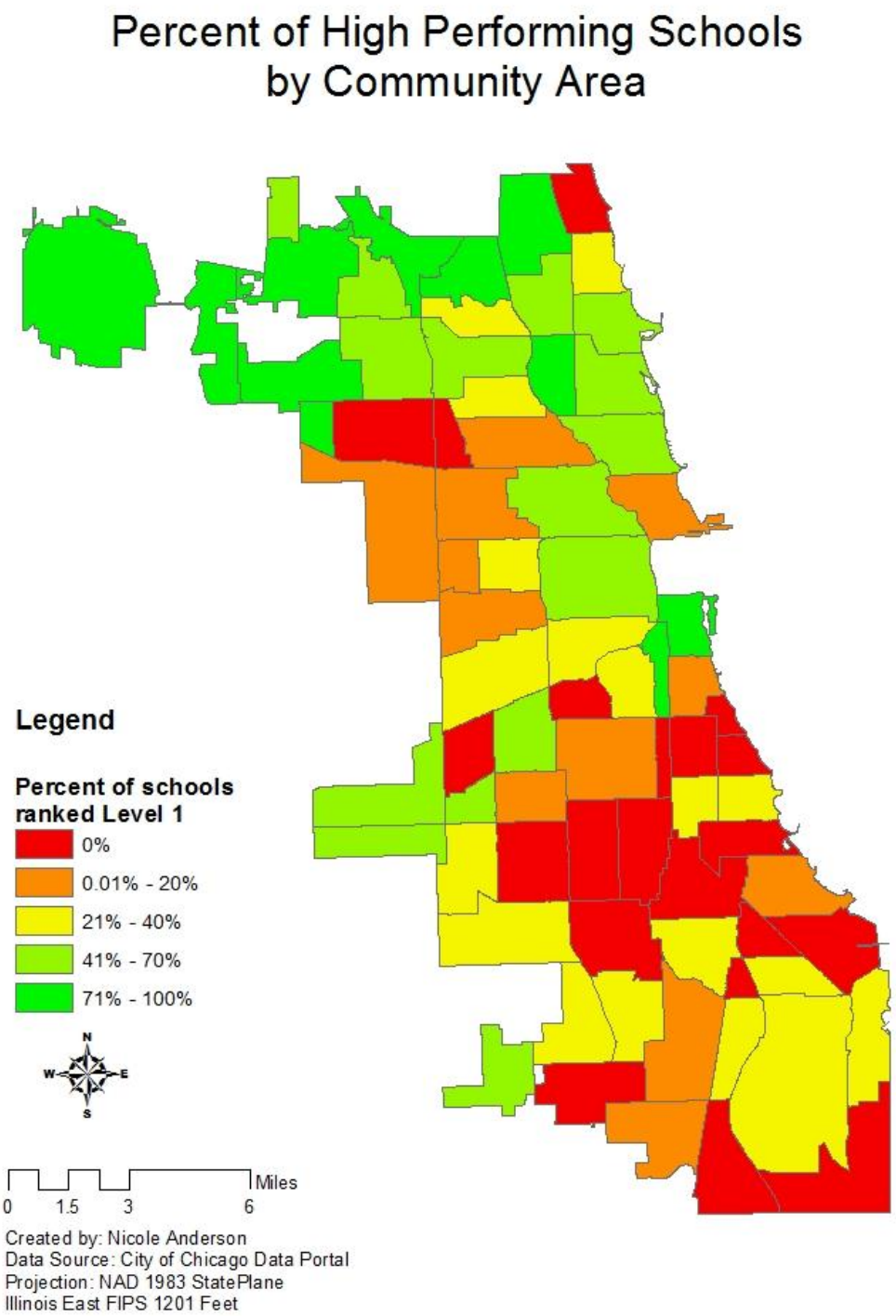

Figure 6-3. Percent of high performing schools by Community Area

CHAPTER 7
CONCLUSION

As the results have shown, the allocation of school facilities in the City of Chicago is not efficient. On the South and West sides, the majority of the schools are underutilized, while many are severely underutilized. Yet, near the suburbs, many of the schools are overcrowded. The inefficient allocation of resources creates major inefficiencies in the system as taxpayers are funding half-empty schools that cannot be brought up to standard due to a $4.9 billion backlog of capital projects. While the conditions of many underutilized schools warrant closing, the district continues to ignore the glaring facilities inefficiencies, presumably because of the political strife that has been associated with school closings in the past.

The model presented in Part II of this study illustrates how the district could use a simple, data-based model as a preliminary tool to identify schools for closing. The model balances schools based on criteria related to utilization, operations, academic achievement, and impact on the system. The model identified excellent candidates for closing, including Theodore Herzl, the impetus for this research. By using a simple rubric, such as the one presented in this research, CPS could prevent some of the backlash that is inherent in school closings.

Even if the district were to pursue a policy of closing schools due to underutilization, CPS would need to make major changes to its school closing policies. Currently, the district's policies do not provide enough transparency and are thus highly controversial. CPS, though, is making major strides in school facilities planning by creating a master plan to guide its decisions, which will inevitably increase transparency for the public.

Further research related to the misallocation of resources in Chicago would provide an even more thorough argument for school closings in Chicago. A GIS-based model could be created to efficiently reallocate students to other underutilized schools as schools are selected for closing by a simple and intuitive model, such as the one presented in Part II of the analysis. Hopefully the model could illustrate how schools in Chicago could be closed with minimal impacts on the ability of students to walk to school and have their school be a part of their community.

Overall, CPS is facing a major budget shortfall for not only FY2012-2013, but for each year in the foreseeable future. Thus, the district must take action to align its facilities with the student population. If not, its facilities will continue to deteriorate and schools will continue to be unable to provide the resources that its students so desperately need, since money is being spent on the facilities and not in the classroom.

APPENDIX
SCHOOL IDENTIFICATION RUBRIC

Table A-1. School identification rubric

Criteria	Data Source	Rubric Points		Justification
Current Utilization	CPS School Space Utilization Report	0-30%	0	Favors schools that are closer to ideal utilization
		30-45%	10	
		46-60%	20	
		61-75%	30	
		75-90%	50	
		>90%	60	
Capacity	CPS School Space Utilization Report	<250	0	Favors schools between 500 and 1000 students, the most efficient school size for Chicago
		251-500	15	
		501-1000	30	
		>1000	20	
Year Built	CPS School Assessment	<1880	0	Favors schools that are lower cost to operate Year built used as a proxy for operating costs
		1881-1900	5	
		1901-1925	10	
		1926-1950	15	
		1951-1975	20	
		1976-1990	25	
		>1991	30	
Capital Needs	CPS School Assessment	<$1m	50	Favors schools that are lower cost to maintain
		$1m-$2.5m	40	
		$2.5m-$5m	30	
		$5.01-$7.5m	20	
		$7.51m-$10m	10	
		>$10m	0	
Academic Achievement	City of Chicago Data Portal	Level 1*	50	Favors schools that have higher academic achievement
		Level 2	25	
		Level 3	0	
Number of Schools Within .75 miles	GIS Analysis	0-1	30	Favors schools with fewer nearby alternatives Based on number of schools within.75 miles
		2-4	15	
		>4	0	

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BIOGRAPHICAL SKETCH

Nicole Anderson earned her Bachelor of Arts in history and geology before pursuing her Master of Arts in Urban and Regional Planning. Through her study of history and planning, she became particularly interested in educational disparities based on residence. Before completing her thesis, she applied for and was accepted to Teach For America. She moved to Chicago in June of 2011 and spent six months teaching at Theodore Herzl Elementary before deciding to move on. While every day was a struggle in the classroom, she was able to witness first-hand the inefficiencies of the Chicago Public School system that would become the impetus for this research.

Nicole will be relocating to Charlottesville, Virginia, in the fall of 2012 to begin law school at the University of Virginia. She hopes to work for a large corporate firm where she can specialize in real estate transactions, a specialty where she can apply the planning knowledge she gained while completing her master's degree in urban and regional planning.