SCHOOLS, NEIGHBORHOODS, AND STUDENT OUTCOMES IN DUBUQUE, IOWA

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Table of Contents

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Chapter 1: Executive Summary

This first chapter contains the Introduction, Project Statement, Methodology Overview, and Important Notes. These sections offer guidance for the rest of the document. Throughout the report, The University of Iowa School of Urban and Regional Planning students are referred to as the Schools Group.

1.1: Introduction

The Dubuque community has demonstrated a commitment to quality education, as evidenced through the City's Comprehensive Plan, the City's Sustainability Principles, the Youth Master Plan, and the award-winning Dubuque Campaign for Grade-Level Reading. The Dubuque Community School District's Strategic Plan calls for the district to offer a "21st-Century Education" for all of its students.

Dubuque Community School District (DCSD) elementary schools follow a neighborhood school model, where students generally attend the school closest to their neighborhood. These schools are relatively small—DCSD currently has 13 elementary schools, as compared to only three middle schools and two high schools. As a result, neighborhoods have a significant influence on their local school, and schools likewise have a significant influence on the surrounding neighborhood.

Across Iowa, school districts grapple with achievement gaps, where certain student subgroups—defined by race, ethnicity, disability, or socioeconomic status—do not perform as well as other groups. DCSD schools are not immune to this problem, where schools with high poverty rates demonstrably have fewer 3rd-grade students achieving reading proficiency than schools with low poverty rates.

DCSD's achievement gaps are explained in part by community development patterns. Neighborhood schools reflect the demographic and socio-economic characteristics of their surrounding area. With larger pockets of poverty in downtown Dubuque, the downtown elementary schools have correspondingly high poverty rates; accordingly, these schools suffer from low student proficiency rates.

The status quo is not sustainable. Keeping neighborhood schools open without making an effort to mitigate disproportionately high poverty rates in certain schools will only exacerbate current inequalities in achievement. Both DCSD and the City need to explore policy options that offer *every* Dubuque child the opportunity to succeed.

Through this report, the Schools Group supplements DCSD's efforts to develop a sustainable decision-making process by identifying demographic and community factors that affect elementary student performance, as measured by 3rd-grade reading scores. The Schools Group also identifies and describes the relationship between schools (as both facilities and academic programs) and their host communities; through community surveys, the group identifies community needs and preferences with regard to how elementary schools can best complement neighborhoods. This information provides the DCSD a process template for making future decisions, allowing the school district the ability to plan for future facilities needs in a way that is sensitive to student outcomes and neighborhood needs.

1.2: Project Statement

The Dubuque Community School District (DCSD) has requested an analysis of school and neighborhood factors that contribute to elementary school student achievement. This report provides an overview of the work performed between August 2012 and May 2013 by graduate students from The University of Iowa School of Urban and Regional Planning, and outlines potential next steps for both DCSD and the City of Dubuque to explore.

The Schools Group has developed several tools to assist DCSD and the City of Dubuque in developing sustainable long-range plans. The group has created a community survey, a production function, and a hedonic preference model. The community survey has been distributed to Dubuque residents on a trial basis. The production function, a tool which identifies factors critical to student performance and predicts future student performance, has been tailored specifically to DCSD. The hedonic preference model identifies how DCSD's schools affect home values in Dubuque (and thus affect perceptions of neighborhood quality). While providing immediate data, these tools are intended to be recyclable so that they may yield long-term utility to DCSD and the City of Dubuque.

The Schools Group has also identified policy options that DCSD and the City of Dubuque might wish to explore further. The group explores the impacts each of these policies might have on school demographics and district costs, in particular with regard to transportation. The group also identifies potential opportunities for collaboration between DCSD, the City, and the community at large. In sum, the exploration of these policy options will help further DCSD's efforts to educate Dubuque's children.

Following the lead of prior Field Problems projects, the Schools Group is releasing a short-format report for public reading, which briefly outlines the results of the hedonic model and student success production function. The short-format report calls on DCSD and the City to engage in stronger collaboration and improve data collection and analysis. The long-format report, meanwhile, offers more detailed methodologies, analyses, and policy options.

1.3: Methodology Overview

In its effort to identify a viable decision-making process, the Schools Group has relied on a literature review of academic disciplines, case studies from other cities, and data collected by both the project partners and the group itself. The group has developed a statistical model to predict student test scores and examine trade-offs, given a range of inputs. The group also distributed the community survey, although too few responses were gathered for significant analysis. The group identified which factors most influence student performance and developed a decision-making process that will allow the school district to anticipate a policy decision's impact on both student performance and community well-being. The group also identified a variety of policy options with regard to the future of DCSD elementary schools, including a "do nothing" option, school closure scenarios, and unconventional alternatives such as grade reconfiguration, i.e. taking two schools and creating one Grade K-2 facility and one Grade 3-5 facility. The group also considered costs associated with such facilities decisions, including student bussing.

This decision-making process can be further extended to other matters as the School Board finds appropriate. In addition, the group has identified roles for the City of Dubuque and other community stakeholders in the decision-making process to allow for optimal decision-making in light of current and future land use, affordable housing availability, changing demographics, and other factors.

Production Function

The Schools Group has developed a production function to quantify the impact that certain factors have on student performance. This model relies on statistical analysis and regression; the model isolates the key variables that most directly impact student performance. This model may enable policymakers to better anticipate the consequences of actions and to make more informed decisions.

Hedonic Model

The Schools Group used a hedonic model to capture the perceived effect a school has on a neighborhood. The hedonic model identifies the effect school characteristics have on housing prices, which is the implicit effect school characteristics have on neighborhoods. This method of analysis provides another tool for policymakers to make future decisions with regard to school construction, renovation, and relocation, and both DCSD and the City of Dubuque may find this information useful. The Schools Group is performing this particular analysis in response to various project partners indicating that they were interested in better understanding the value an elementary school has on its surrounding neighborhood.

Community Input

A major component of the Schools Group's efforts has been the development of a community survey. This survey is designed not only to identify the respondents' school trait preferences but also where they are willing to make trade-offs. Prior community input efforts in Dubuque have easily identified what an "ideal" school might be, but these efforts have not presented the public with the very real trade-offs inherent in real-world decision-making.

In addition to the surveys, the Schools Group has conducted several focus groups. These sessions allowed the Schools Group to better understand the needs and preferences of less-advantaged socioeconomic groups—arguably, the groups that would be least adaptive to *any* major policy set forth either by DCSD or the City of Dubuque. While turnout for these focus groups were low, they serve as a prototype for future efforts to engage specific demographics.

Framework for Collaboration

In light of several conversations with DCSD, the City of Dubuque, and other organizations, the Schools Group explored ways in which these entities can collaborate with one another more effectively. While there area already many instances of cooperation between DCSD and other agencies and nongovernmental organizations on routine matters, these processes can be formalized. Also, in light of the now-abandoned 2009 Facilities Study and ensuing discussion

over the closure of up to five elementary schools in 2010, the Schools Group will explore ways in which DCSD, the City of Dubuque, and other stakeholders can collaborate on major issues such as school closure and construction.

To gain a better understanding of the variety of collaborative relationships between individual schools and their community partners, DCSD elementary school principals were given a brief questionnaire. This questionnaire asked principals about which organizations their schools collaborate with and how frequently they interact. The questionnaire also asked about parental involvement at each school as measured by parent-teacher conference attendance and principals' general impressions, as more concrete data, i.e. volunteer hours by school building, was not tracked by DCSD at the time of this project.

1.4: Important Notes

Vocabulary

Throughout this report, several important terms and abbreviations are used:

- DCSD: Dubuque Community School District
- WDCSD: Western Dubuque Community School District (a separate entity from DCSD)
- ECIA: East Central Intergovernmental Association
- FRL: Free and Reduced Lunch; students qualify for government-subsidized school meals if their family income is at or below certain thresholds.
- School Catchment Area: the geographic footprint from which a school draws its students; for example, a student who lives in Eisenhower Elementary's designated catchment area will attend that school by default.
- Mobility (or percent mobility): a student is "mobile" when they attend a different school than they did in the previous year, for reasons other than graduation to middle school; if a school experiences 10% mobility, then 10% of the students enrolled in one year will not enroll in the following year.

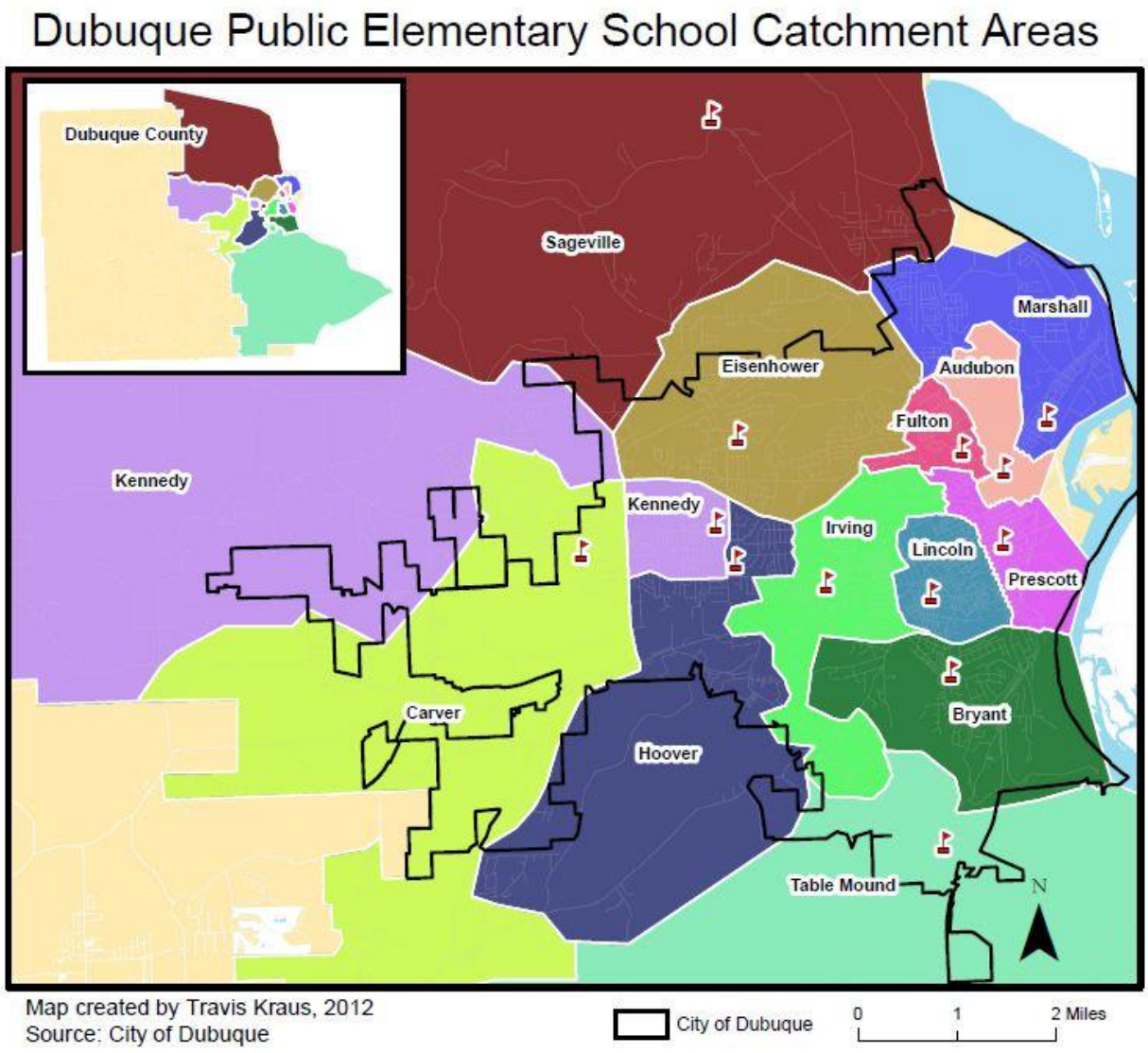
SINA and Title I SINA

The "Title I" designation for a school indicates that at least 40% of students in the building come from low-income families, as determined by US Census poverty estimates, and that the school receives special funding used for school-wide programs. As part of the No Child Left Behind Act, the United States Department of Education provides Title I funds to Local Education Agencies (LEAs) to "improve the learning of children from low- income families". The LEAs target schools with the highest percentages of children from low-income families (Iowa Department of Education, 2013).

Under the No Child Left Behind Act, a school that has not met Annual Yearly Progress (AYP) goals for reading or mathematics set by the state for two consecutive years is designated a "school in need of assistance", or SINA school families (Iowa Department of Education, 2013). Therefore, Title I SINA schools have both high percentages of children from low-income families and low academic achievement scores.

"Downtown Schools"

Throughout this report, references are made to "downtown" schools. These schools are Audubon, Fulton, Lincoln, Marshall, and Prescott. The map below depicts the thirteen elementary schools and their respective catchment areas.



Chapter 2: Background

This chapter offers the context for the Schools Group's efforts. The first section is a brief overview of DCSD and its interaction with other elements of the Dubuque community, focusing on DCSD's 2010 proposal to close up to five elementary schools. Next is a discussion of diversity and equity imbalances between DCSD elementary schools. These two sections give purpose to the Schools Group's subsequent efforts, as presented in later sections.

2.1: DCSD in Context

The Dubuque Community Schools District

DCSD currently consists of thirteen elementary schools, three middle schools, and two high schools. Elementary school sizes vary, with 2011-12 enrollments varying from 246 students at Hoover Elementary to 554 students at Carver Elementary. Prior to the 2005-06 school year, DCSD elementary schools ran through sixth grade; with the opening of Roosevelt Middle School in August 2005, DCSD switched to a more traditional school format where elementary schools ran through fifth grade and middle school began in sixth grade.

Generally, students attend elementary schools based on what catchment area they live in. DCSD follows a neighborhood school model; this model is more prevalent in downtown Dubuque, where every student lives within two miles of the school in their catchment area.

Open Enrollment

DCSD currently allows for open enrollment for all students, allowing students to attend school "in an attendance center other than the home center," or the school to which they would attend by default. Students may apply for open enrollment for documented medical or legal reasons; change of residence; familial links to the selected school (sibling in attendance or parent employed at the building); or other extenuating circumstances. Open enrollment is granted on the basis of appropriate programming for the student at the selected school, space within the selected school, and class size. Open enrollment runs for one full academic year, though there are no express provisions against renewing a student's application for subsequent years. Applications are reviewed by the Superintendent (or designee). Families can appeal the Superintendent's decision to the Educational Programs/Policy/Strategy committee of the School Board, and later to the full Board if so desired.

The open enrollment policy stipulates that open-enrolled students generally do not qualify for district-provided transportation, but may pay the cost of bussing if bussing is available. Students are exempt from paying for open enrollment transportation if the school they are leaving is a

designated Title I SINA school. This policy is intended to allow students the opportunity to seek a high-quality education at a better-performing school.

The State of Iowa requires that families be given the option to open enroll out of a Title I SINA school.

The implications of DCSD's open enrollment policy are discussed in greater detail in Section 5.2.

2009 Facilities Study and 2010 School Closure Proposals

In 2009, the DCSD undertook a Facilities Study. This study explored various school closure, renovation, and construction options for the school district. The objective behind the Facilities Study was to take advantage of money in the DCSD's Capital Projects fund to finance facilities improvements that would yield operational savings. The study ultimately proposed eight scenarios for facilities changes. While these scenarios were rejected in 2010, some of the themes—school consolidation and school closure—run through the policy analyses in Section 5.1.

The eight school closure and consolidation proposals in 2010 were:

- Option 1: Renovate Bryant, Carver, Eisenhower, Kennedy, and Lincoln Elementary; close Jefferson and Washington Middle; no closures; no construction; estimated $201 million
- Option 2: Close Fulton Elementary and Jefferson Middle; Renovate Bryant, Carver, Eisenhower, Kennedy, and Lincoln Elementary; construct one new middle school; estimated #197 million
- Option 3: Close Bryant, Fulton, Hoover, Lincoln, and Marshall Elementary; close Jefferson Middle and repurpose to elementary; renovate Carver, Eisenhower, and Kennedy Elementary; construct three new elementary schools and one new middle school; estimated $186 million
- Option 4: Close Bryant, Fulton, Hoover, and Lincoln Elementary; close Jefferson and Washington Middle and repurpose both to elementary; renovate Carver, Eisenhower, and Kennedy Elementary; construct three new elementary and two new middle schools; estimated $186 million

- Option 5: Close Audubon, Bryant, Fulton, Hoover, Lincoln, and Sageville Elementary; close Jefferson and Washington Middle; no renovations; construct three new elementary and two new middle schools; estimated $204 million

- Option 6: Close Audubon, Bryant, Fulton, Hoover, Lincoln, Marshall, and Sageville Elementary; close Jefferson and Washington Middle; no renovations; construct three new elementary and two new middle schools; estimated $203 million

- Option 7: Close Audubon, Bryant, Fulton, Hoover, Lincoln, and Sageville Elementary; close Jefferson and Washington Middle; no renovations; construct three new elementary schools and one new middle school; estimated $200 million

- Option 8: Close Audubon, Bryant, Fulton, Hoover, Lincoln, Marshall, and Sageville Elementary; close Jefferson and Washington Middle; no renovations; construct three new elementary schools and one new middle school; estimated $198 million

At its September 20 work session, the DCSD School Board narrowed their facilities decision to Options 2, 3, and 4 on the recommendation of the DCSD administration; these were to be presented to the Dubuque community on October 30. (9/20 Minutes). These three options were kept on the basis of the DCSD School Board's objectives of maintaining neighborhood schools "by expanding boundaries bout keeping neighborhoods together," equitably distributing diversity, developing three- and four-section elementary schools, and maintaining three middle schools (9/20 Minutes). Option 1 was eliminated because it failed to reduce operational or administrative costs, balance diverse populations, or create the economy of scale the Board believed it could achieve under three- to four-section schools. Options 5 through 8 were eliminated because they consolidated more buildings than was believed to be strictly necessary and Options 7 and 8 would have resulted in a two middle school configuration, rather than the preferred three middle school configuration (9/20 Minutes).

DCSD elementary school principals were asked for their input into the decision; principals' feedback ran against the three proposals. Vicki Sullivan, then the principal of Bryant Elementary, preferred renovating the school rather than closing it as proposed in Options 3 and 4. Sullivan stated that "[t]he renovation of existing space plus new construction of an addition [to the building] would allow the [school] to function as a three section PreK-5th school[.] At the same time this option allows Bryant to maintain its presence as a South-side neighborhood school" (9/20 Minutes). Principal Jean McDonald of Fulton Elementary—slated for closure in all three

finalist Options—expressed a preference for renovating or replacing the existing Fulton building over consolidation. She stated that "[a] neighborhood school is needed in the area."

Principal Donna Loewen of Lincoln Elementary was perhaps the most outspoken critic of consolidation; in her feedback from, she refused to accept consolidation as an option, stating that she "[did] not favor the idea of consolidating elementary schools into a larger school strictly as a cost-saving measure, especially when current middle school buildings are being considered as the site [for the resulting elementary schools]." She explained that Jefferson and Washington middle schools were "not conducive to the needs of elementary students and the programming they require," and recommended instead that the School Board prioritize having smaller neighborhood schools (9/20 Minutes).

City of Dubuque Reaction

The City of Dubuque was sharply critical of DCSD's final proposals. In a report to the City Council, the Planning Services Department found that the proposed closures would have a disproportionate effect on residents living in and around downtown Dubuque. The report, citing DCSD data, asserted that the majority of students receiving free and reduced lunch attend downtown schools; under the three proposals, these students would be displaced from their current schools and forced to enroll elsewhere.

The report also cited the Safe Routes to School program, which encourages students to walk or bike to school, and how the proposed school closings would undermine the Safe Routes effort. Similarly, the report says, consolidation would reduce student involvement in after-school programs and deter community involvement in Dubuque schools.

The report also mentioned concerns over what the disappearance of a school might mean for a neighborhood. Given DCSD cooperation with the City Leisure Services Department in building and maintaining public playgrounds on school property, the closure of downtown schools would have a detrimental impact on what is often "the only park or playground area available to some neighborhoods." Furthermore, the report stated that vacated school buildings are "difficult to adaptively re-use," and that school closings constitute "disinvestment" in neighborhoods and would run counter to the City's efforts to revitalize certain neighborhoods; in this, the report

cited Holy Family Catholic Schools' systematic closure of its downtown schools since 2002 as causing similar neighborhood disinvestment.

The report also speculated that DCSD's anticipated costs for each option were incomplete. The Planning Services Department suggested that DCSD had not fully considered the costs of land acquisition for future construction, and that school-ready sites would be few and far between. The Department also urged DCSD to reconsider the costs of new construction versus the costs of renovating existing schools, and that an independent contractor performs a feasibility study for each school.

The report also cited an apparent lack of community involvement in the decision to close and consolidate schools. The report stated that only one community engagement session was scheduled, and that its location at The Forum (at the DCSD administrative building) did not adequately allow for low- and moderate-income families in downtown Dubuque to attend the session. (In a meeting with the Schools Group on November 2, 2012, the DCSD administration did state that they also conducted a public opinion survey, but that it was poorly crafted and the results were of little value).

Ultimately, DCSD chose not to pursue any of these closure and consolidation options. Any future facilities decision would begin with a new study and brainstorming session, as the 2009 study and proposals have since been abandoned.

Cooperation with Other Organizations

Cooperation between DCSD and other organizations occurs on an ad hoc basis. DCSD collaborates with the City of Dubuque on facilities issues, especially recreational facilities. The City and DCSD jointly operate playgrounds at DCSD elementary schools; the City paid for construction of the playgrounds on school property, with the understanding that the playgrounds would be open to neighborhood kids during non-school hours. The City and DCSD are also cooperating in the construction of a new aquatic center. However, outside of project-specific work and informal communication between leadership, there is no formal cross-collaboration process between DCSD and the City.

2.2: Diversity and Equity

Changes in Demographics by Race, 2000-2010

Dubuque experienced relatively significant shifts in population numbers by race between 2000 and 2010. In particular, the City had nearly 2,600 fewer white residents in 2010 than in 2000, a decrease of 4.7%. The non-white population more than doubled, growing by 115% with 2,548 more residents.

Figure 2.2.1
Population by Race: The City of Dubuque, Dubuque County, and the State of Iowa

	2000	% of Pop (2000)	2010	% of Pop (2010)	% CHANGE 2000-2010	% of Pop Dubuque County 2010	% of Pop State of Iowa 2010
TOTAL POPULATION	57,686	100.0	57,637	100.0	(0.1)	100.0	100.0
White	**55,466**	**96.2**	**52,869**	**91.7**	**(4.7)**	**94.1**	**91.3**
Non-White	**2,220**	**3.8**	**4,768**	**8.3**	**114.8**	**5.9**	**8.7**
Black or African American	700	1.2	2,302	4	228.9	2.7	2.9
American Indian and Alaska Native	112	0.2	155	0.3	38.4	0.2	0.4
Asian	390	0.7	659	1.1	69.0	0.9	1.7
Native Hawaiian and Other Pacific Islander	65	0.1	268	0.5	312.3	0.3	0.1
Some Other Race	400	0.7	366	0.6	(8.5)	0.5	1.8
Two or More Races	553	1.0	1,018	1.8	84.1	1.3	1.8
Hispanic or Latino	911	1.6	1,383	2.4	51.8	1.9	5.0

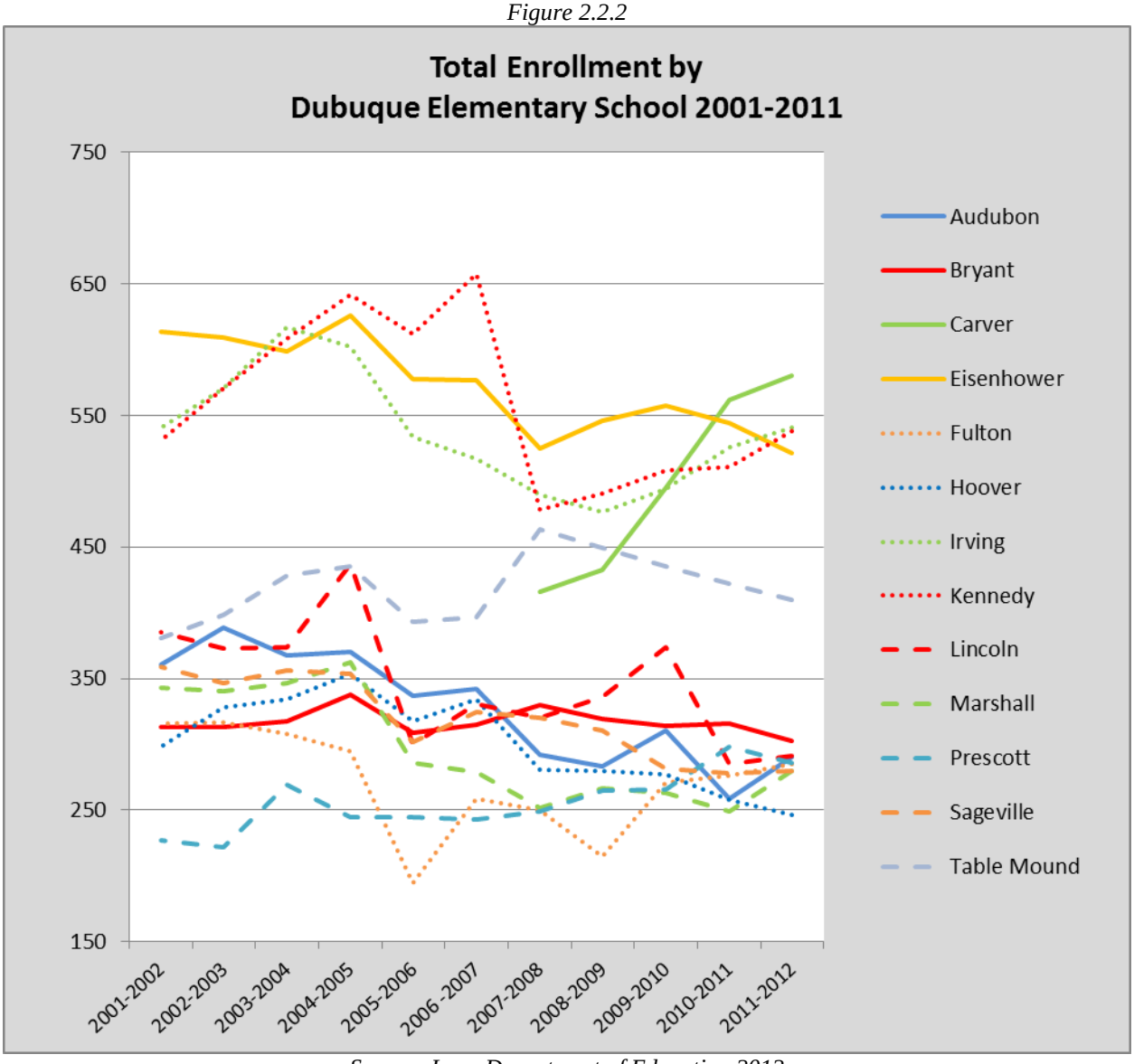
Source: U.S. 2010 Census

The Black and African-American population had the highest increase in total new residents among all non-white populations, growing 230% from 700 residents to 2,302 residents. The Pacific Islander population also grew dramatically, increasing 312% between 2000 and 2010. Many of the Pacific Islander residents are immigrants from The Republic of the Marshall Islands.

The proportions of minority races in Dubuque do not deviate significantly from corresponding rates in Dubuque County and the State of Iowa. Figure 2.2.1, below, indicates the City of Dubuque's demographic attributes in comparison with those of Dubuque County and Iowa as a whole.

The changes in populations by race are evident in enrollment trends among the 13 public elementary schools in the DCSD. Overall, the district had a slight increase in total enrollment, from 4,669 students in 2001 to 4,851 students in 2011. Figure 2.2.2 illustrates enrollment totals for each elementary, showing that many schools have fewer students in 2011 than in 2001 and the Carver Elementary grew rapidly after opening in 2006.

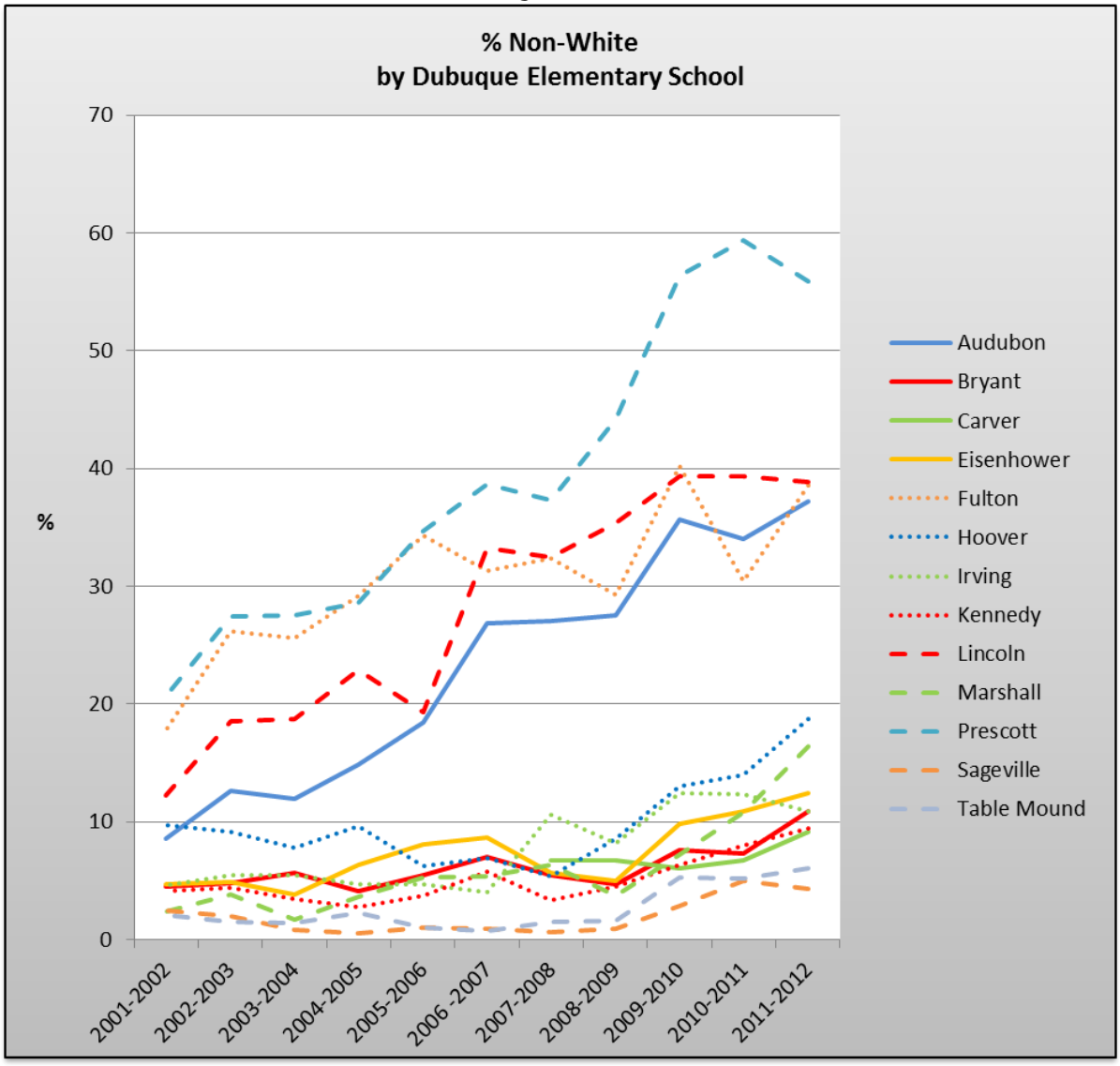
Figure 2.2.2



Source: Iowa Department of Education 2012

Figure 2.2.3, below, illustrates the change in the proportions of non-white students in each DCSD public elementary school from 2001 to 2011. As shown, four downtown Dubuque elementary schools (Audubon, Fulton, Lincoln, and Prescott) have significant increases, each with higher than 37% non-white student enrollment, while the other nine schools have non-white enrollment proportions between 4% and 19%. Prescott Elementary had the highest non-white proportion of student enrollment at 66%.

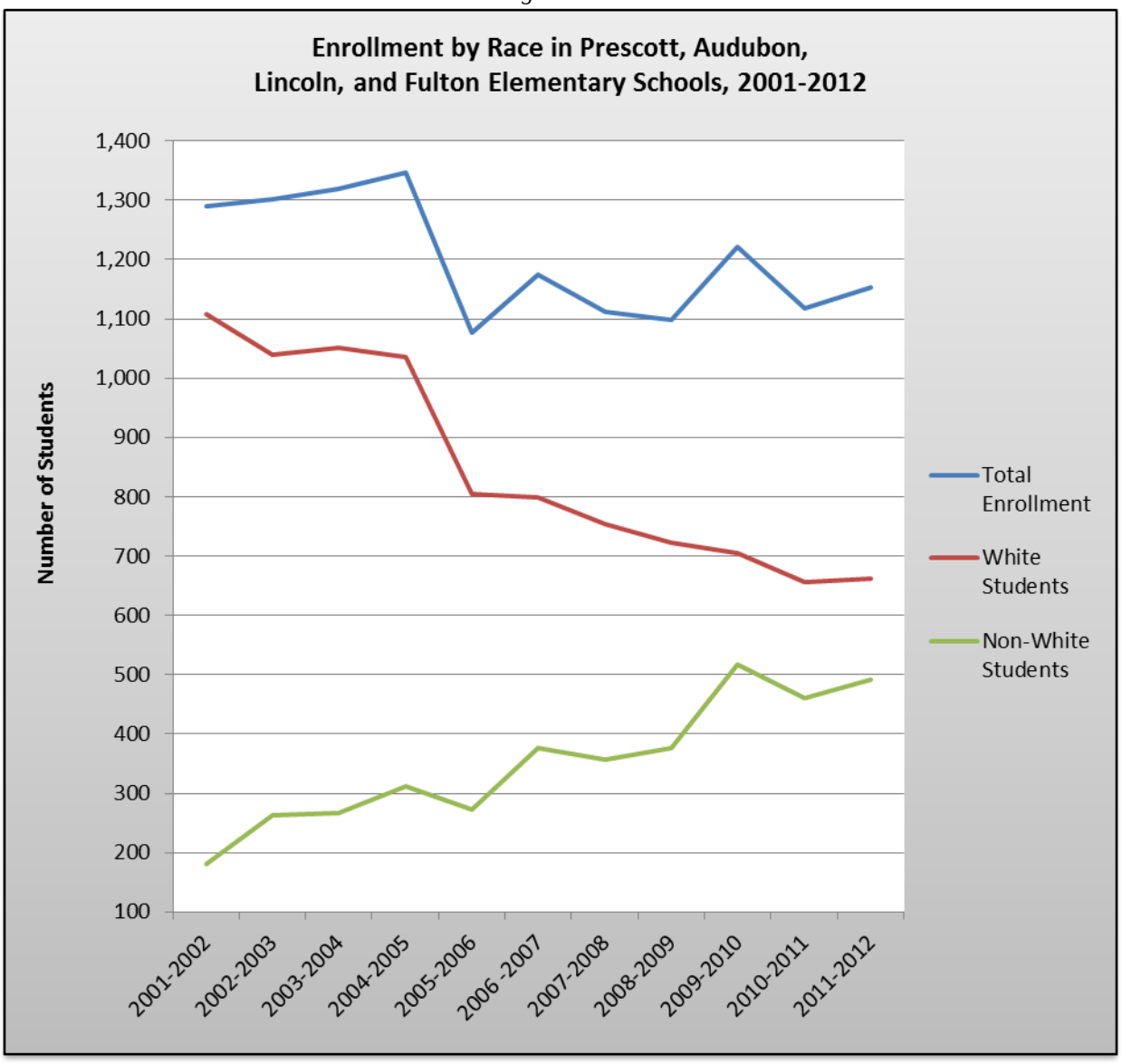
Figure 2.2.3



Source: Iowa Department of Education 2012

A closer look at the combined white and non-white enrollments for the downtown schools reflects an increase in the number of non-white students, as well as a simultaneous decrease in the number of white students. As illustrated in Figure 5.4, below, the number of white students enrolled in Audubon, Fulton, Lincoln, and Prescott Elementary schools decreases over time as the number of minorities increases, which accounts for the significant changes seen in Figure 2.2.4. In all, the four downtown schools had 447 fewer white students in 2011 than in 2001, while minority enrollment was up by 310 students during the same period.

Figure 2.2.4

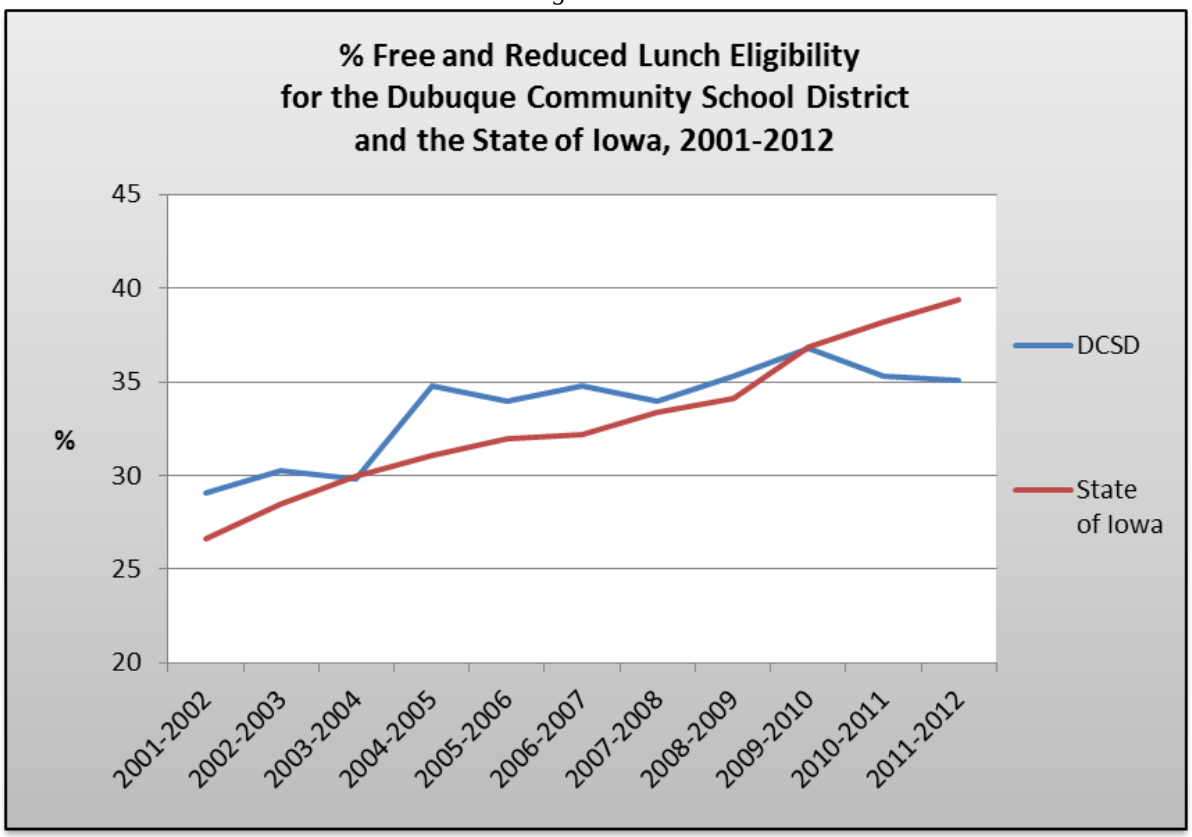


Source: Iowa Department of Education 2012

The Free and Reduced Lunch Program

The federally-funded Free and Reduced Lunch (FRL) program provides nutritionally balanced, low-cost or free lunches to children from households under income thresholds as defined by Federal income poverty guidelines. As illustrated in Figure 2.2.5, the percentage of students eligible for the federal Free and Reduced Lunch program increased for both DCSD and the State of Iowa between 2001 and 2012. In that period, the proportion of FRL-eligible DCSD students peaked during the 2009-10 school year at 37%, and the rate has since decreased slightly in the two most recent school years. The statewide FRL rates have increased steadily over the entire period, with nearly 40% of students FRL-eligible in the 2011-12 school year. This represents an 11% increase of FRL eligibility over the past decade. Generally, the FRL eligibility rates in the DCSD have not deviated significantly from the corresponding state rates.

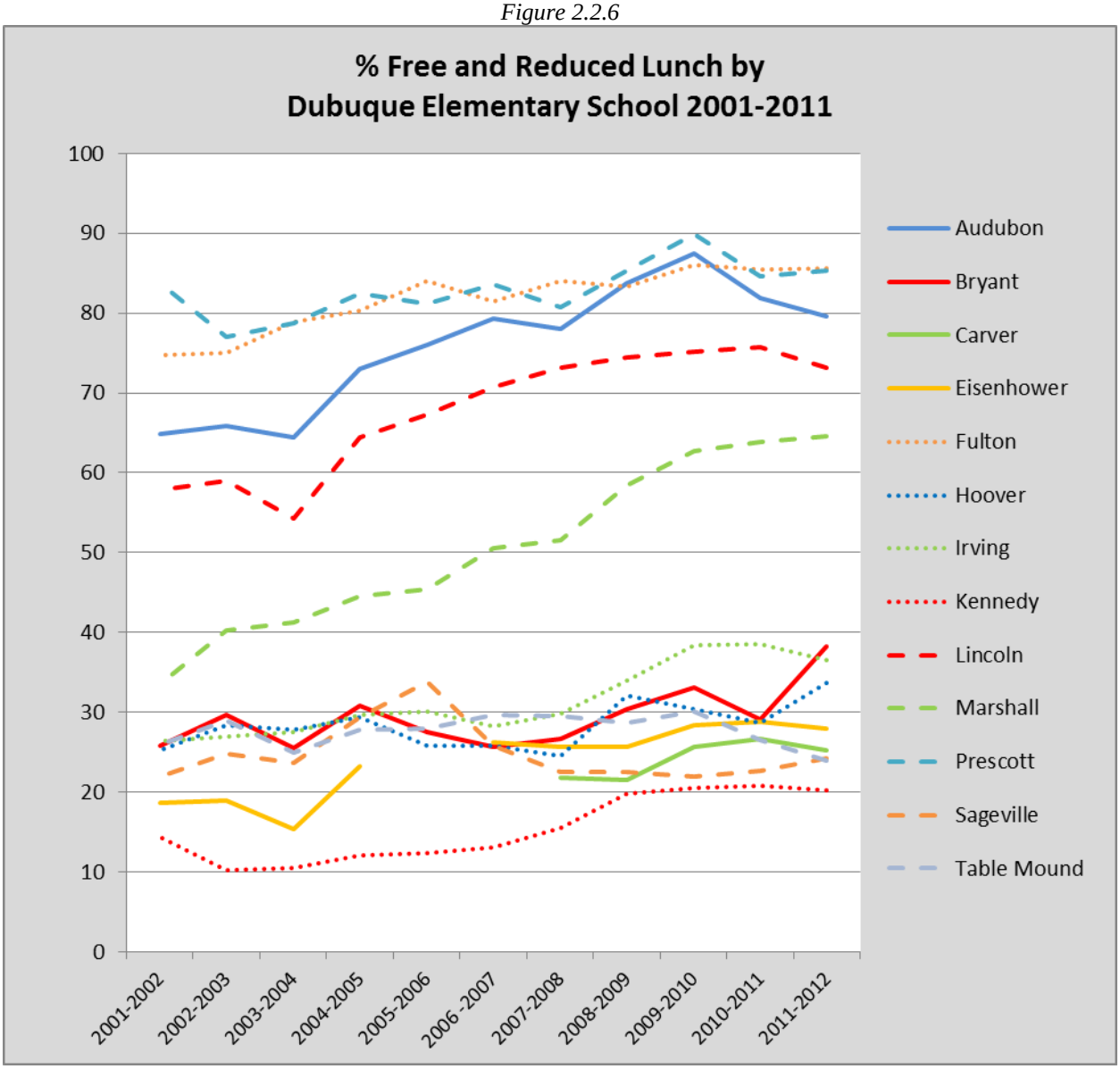
Figure 2.2.5



Source: Iowa Department of Education 2012

Figure 2.2.6 illustrates the percentage of FRL-eligible students in each of the DCSD elementary schools. Eight of the schools have rates between 20% and 40%, while schools in or near downtown Dubuque (Audubon, Fulton, Lincoln, Marshall, and Prescott) have significantly higher rates, between 60% and 90%.

Figure 2.2.6



Source: Iowa Department of Education 2012

Proficiency across Race and Socioeconomic Status

The Iowa Department of Education (IDED) website provides building-level student achievement data since 2006. Available data includes proficiency in math, science and reading for 3rd through 8th grade and 11th grade, which can also be narrowed by gender, race, socioeconomic status (SES), disability, ELL, and migrant status. Proficiency is broken down further into "middle" and "high" proficiency. Non-proficiency is labeled "low". The primary source of the data is not explicitly stated on the website and IDED contacts did not respond to requests for more information.

The Schools Group examines 3rd grade reading proficiency in particular, primarily due to the recent interest in the City of Dubuque and the community-driven Third Grade Reading Initiative. Cursory review of other grades and subjects seem to be consistent with building-level trends.

Dubuque vs. Iowa

Since 2010, 3rd grade reading proficiency in the Dubuque Community School District has been slightly higher than levels of 3rd grade reading proficiency across the state. In 2012, 78% (59% middle, 19% high) of 3rd graders in the DCSD are "proficient", compared to 75% (59% middle, 16% high) in the state.

Proficiency and Race

Although the State of Iowa displays 3rd grade reading proficiency by race each year between 2006 and 2012, the DCSD data is relatively sparse. District-wide 3rd grade reading proficiency by race is available only for 2006.

As shown on Table 2.2.7, the 2006 data shows 3rd grade reading proficiency for non-white students lagging significantly behind white students in the DCSD. That year, 72% of white students were proficient, compared to 57% of Asians, 50% of Hispanics, and only 40% of African Americans. 3rd grade reading proficiency among African Americans in the district was significantly lower than the statewide level of 51%.

Table 2.2.7
3rd Grade Reading Proficiency by Student Characteristic

	Proportion of 3rd Graders at Grade-level Proficiency (%)	Most Recent Reporting (Year)
Total Student Population	78%	2012
White Students	72%	2006
Hispanic Students	50%	2006
Black Students	40%	2006
Low SES Students	65%	2012
Non-low SES Students	87%	2012

Source: Iowa Department of Education 2013

Proficiency and Socioeconomic Status

In terms of 3rd grade reading proficiency, a significant gap also exists between students of low socioeconomic status and students with higher socioeconomic status. Table 2.2.7 shows that, in 2012, 65% of students of low socioeconomic status were proficient in DCSD, while 87% of students with higher socioeconomic status were proficient. The numbers are not remarkably different from state levels.

Research suggests that the "tipping point" at which poverty in a school building begins to negatively impact overall academic achievement may be as low as 50% of the student population in poverty (Kahlenberg, 2001). A report for The United States Department of Education concluded that when half the student body is poor, then all students' achievement will be depressed, and when 75% is poor, then all students' achievement will be "seriously" depressed (Puma, et. al., 1997).

Observed proficiency data for Dubuque elementary schools seems to support the idea that academic achievement suffers when a school passes the 50% tipping point. Table 2.2.8 shows a comparison of 3rd grade reading proficiency by socioeconomic status, relative to free and reduced lunch rates in Dubuque's public elementary schools. The rates reflect the average proportion of 3rd grade students at grade-level proficiency for schools above and below 50% FRL rates, including all years since 2006. As shown, the proportion of low SES students reading

at grade-level proficiency is significantly lower for those attending schools with relatively poor schools (52.4% proficient) than those attending more affluent schools (71.9% proficiency).

Proficiency rates of more affluent students (those not labeled low SES) are also lower in relatively poorer schools (76.1% proficient) than those in more affluent schools (85.0% proficient). The data appears to be consistent with academic research that suggests affluent students perform worse academically in a poor school than they would have in a more affluent school.

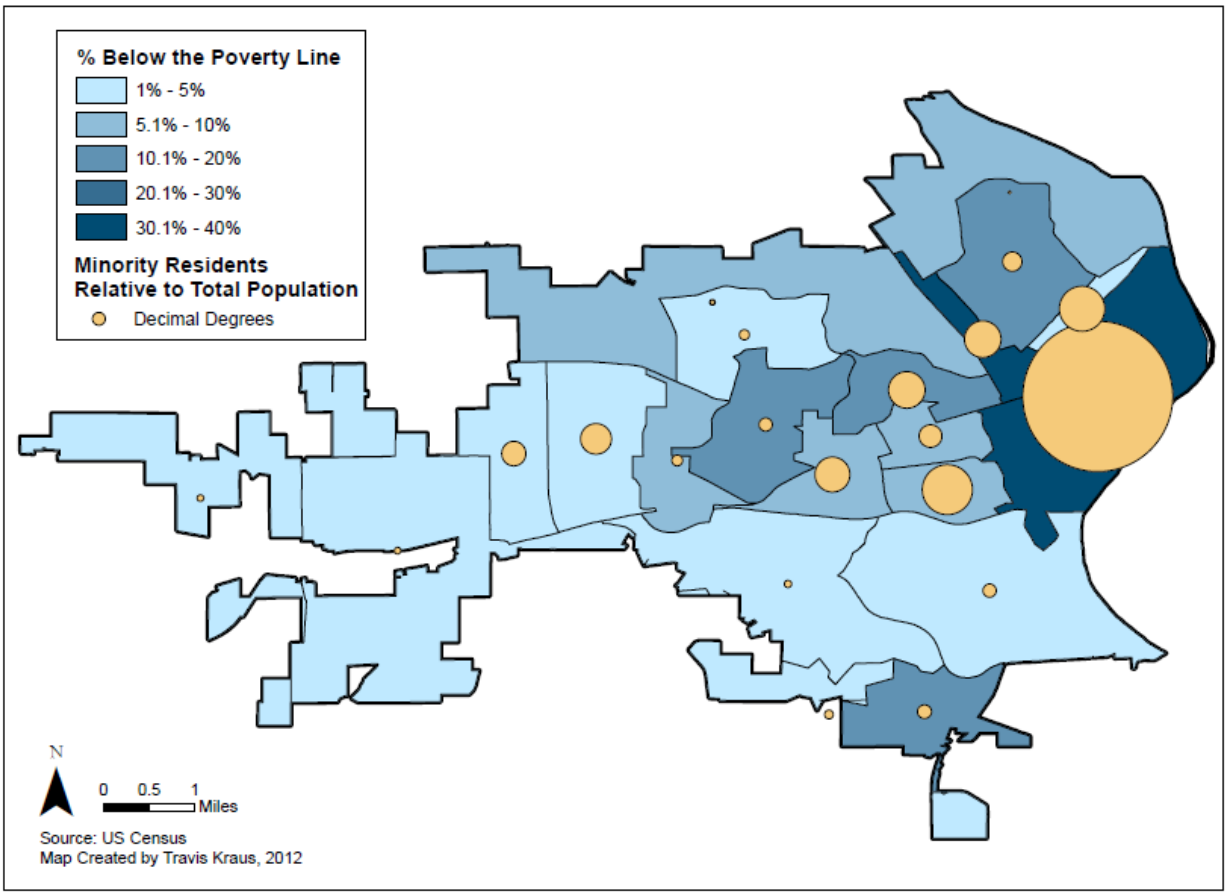
Table 2.2.8
3rd Grade Reading Proficiency by Socioeconomic Status

	In Schools with FRL above 50%	In Schools with FRL below 50%
Low-SES Students at Proficiency	**52.4%**	**71.9%**
Non-Low SES Students at Proficiency	**76.1%**	**85.0%**

Source: Iowa Department of Education 2013

Dubuque public elementary schools with FRL rates above 50% include all five schools (Audubon, Fulton, Lincoln, Marshall, and Prescott). All other public elementary schools in Dubuque have FRL rates below 50%. Figure 2.2.9 provides a spatial representation of the proportions of residents below the poverty line, as well as the distribution of minorities in the community relative to the total population in Dubuque.

Figure 2.2.9
Percent of Resident Below the Poverty Line
And Distribution of Minorities by 2010 Census Tracts



School Comparison

Figure 2.2.10 compares DCSD elementary schools by the proportion of minority students, poverty rates, eligibility for free and reduced lunch, mobility, and 4th grade reading proficiency. As shown, the four schools with the highest poverty (Audubon, Fulton, Lincoln, and Prescott), which are all schools located in downtown Dubuque, also have the low 4th grade reading proficiency. Those four schools also have the highest proportions of minority students, the highest proportion of eligibility for free and reduced lunch, and the highest mobility rate (which reflects the number of students that return to school from one year to the next).

Figure 2.2.10
2009-10 School Year Dubuque Elementary School Comparison[1]

Rank	Highest % Minority[2]	Highest % Poverty[3]	Highest % Free and Reduced Lunch[2]	Highest % Mobility[3]	Lowest 4th Grade Reading Proficiency[3]
1	PRESCOTT 56%	PRESCOTT 90%	PRESCOTT 90%	AUDUBON 25%	LINCOLN 53%
2	FULTON 40%	AUDUBON 88%	AUDUBON 87%	FULTON 25%	PRESCOTT 65%
3	LINCOLN 39%	FULTON 87%	FULTON 86%	LINCOLN 24%	FULTON 68%
4	AUDUBON 36%	LINCOLN 77%	LINCOLN 75%	PRESCOTT 18%	MARSHALL 68%
5	HOOVER 16%	MARSHALL 62%	MARSHALL 63%	IRVING 9%	AUDUBON 73%
6	IRVING 12%	IRVING 38%	IRVING 38%	MARSHALL 9%	HOOVER 77%
7	EISENHOWER 10%	BRYANT 33%	BRYANT 33%	BRYANT 8%	TABLE MOUND 77%
8	BRYANT 8%	HOOVER 30%	HOOVER 30%	EISENHOWER 8%	SAGEVILLE 83%
9	MARSHALL 7%	TABLE MOUND 29%	TABLE MOUND 30%	HOOVER 8%	KENNEDY 85%
10	CARVER 6%	EISENHOWER 27%	EISENHOWER 28%	CARVER 6%	CARVER 86%
11	KENNEDY 6%	CARVER 25%	CARVER 26%	TABLE MOUND 5%	EISENHOWER 88%
12	TABLE MOUND 5%	SAGEVILLE 23%	SAGEVILLE 22%	KENNEDY 2%	IRVING 89%
13	SAGEVILLE 3%	KENNEDY 22%	KENNEDY 20%	SAGEVILLE N/A	BRYANT 89%

[1] *2009-2010 school year is used due to data availability. Current data is not yet available for all variables.*
[2] *Source: Iowa Department of Education*
[3] *Source: DCSD Annual Report of Progress 2009-10*

Chapter 3: Data Analyses

This Chapter addresses the two data-intensive analyses the Schools Group used in this project. The production function attempts to identify key factors that influence student performance, and can be used to predict student performance in light of policy changes, i.e. if school demographics change due to changes in enrollment. The hedonic model, meanwhile, quantifies the impact the presence of a school has on the surrounding neighborhood, and indicates that higher-performing schools boost neighborhood home values. These analyses are combined in an illustrative example of how grade reconfiguration as a policy might affect housing values across the city. These analyses, in conjunction with the discussion of community input and engagement (Chapter 4), inform the subsequent policy discussion in Chapter 5.

3.1: Production Function

Note: A detailed description of production function construction and calculations is included in Appendix A.

Purpose

A production function is a statistical tool used to examine how maximum outputs are achieved at given level of inputs, assuming schools' maximizing behavior. Changes to inputs presumably alter outputs—in this instance, student performance. Some factors that influence student outcomes are within school districts' or cities' control, while other factors are beyond their reach; both types of factors can have significant influence over how well a student will perform.

This analysis applies a simple production function model for student outcomes that examines the influence of both school and neighborhood characteristics on student outcomes, using the formula

$$A = f(S_1 \ldots S_n, N_1 \ldots N_n, F, \mu)$$

where A equals some measurement of student performance or achievement, $S_1 \ldots S_n$ equal variables measuring *school characteristics*, $N_1 \ldots N_n$ equal variables measuring *neighborhood characteristics*, F represents family inputs, and μ represents innate ability of the student. In theory, policymakers can manipulate the production function inputs in such a way as to model how certain policies might affect student achievement.

Data Sources

While there has been significant research into using production functions to measure student performance, most of these models have focused on larger school districts. Rather than assuming a one-size-fits-all approach to such production functions, the Schools Group developed a model tailored specifically to Dubuque.

The Dubuque-centric production function attempts to identify and explain the impact of various inputs on 3rd grade reading proficiency. In developing the model, the group identified 22 potential school input variables and 36 potential neighborhood input variables. These are summarized in Figure 3.1.1, which indicates the variable and its appropriate data source.

Figure 3.1.1
Input Variables for Production Function Model

SCHOOL INPUT VARIABLE	SOURCE	NEIGHBORHOOD INPUT VARIABLE	SOURCE	NEIGHBORHOOD INPUT VARIABLE	SOURCE
% Free and Reduced Lunch	IDED	% Under Age 18	CENSUS/ACS	Open Enrollment Students (%)	DCSD
% Minority	IDED	% Under Age 10	CENSUS/ACS	Public Use of School Bldg (Hrs/Wk)	CITY
Computers Per Student (#)	IDED	Median Age	CENSUS/ACS	Violent Crime Rate	CITY
Avg Days Present By Students (%)	DCSD	% Non-White	CENSUS/ACS	Non-Violent Crime Rate	CITY
Avg Days Absent Per Teacher (%)	DCSD	% Black of African American	CENSUS/ACS	Nuisances Per Capita	CITY
% Special Education	DCSD	Median Household Income ($)	CENSUS/ACS	Neighborhood Association (1/0)	CITY
% ELL	DCSD	% Vacant Households	CENSUS/ACS	Open Space Area (%)	CITY
% Mobility	DCSD	% Renter Occupied	CENSUS/ACS	Public Gathering Spaces	CITY
% Poverty	DCSD	% Multi-Family Units (3+)	CENSUS/ACS	Historic Preservation Buildings (#)	CITY
% Diversity	DCSD	% Mobile Home	CENSUS/ACS	Familiarity With Neighbors	SURVEY
Avg. Class Size	DCSD	% Built Before 1950	CENSUS/ACS	Level of Civic Engagement	SURVEY
Avg. Teacher Experience (yrs)	DCSD	% Built Since 2000	CENSUS/ACS	Attended School Board Meeting	SURVEY
Avg. Teacher Tenure at School (yrs)	DCSD	% HH w/ No Vehicle Available	CENSUS/ACS	Age Diversity	?
Extra-Curricular Programs (#)	DCSD	Median Gross Rent	CENSUS/ACS	Walkability	?
Extracurricular Activities (Hrs/Wk)	DCSD	% Elementary Age Students	CENSUS/ACS		
Average Time on Bus (min)	ECIA	Home Ownership (%)	CENSUS/ACS		
Bus Ridership (%)	ECIA	Avg. Distance to School (miles)	GIS		
Enrollment to Capacity (%)	DCSD	Density (DU/area)	CENSUS/ACS		
Volunteer Hours Per Student (#)	DCSD	% Income Below Poverty Level	CENSUS/ACS		
Fundraising Total Per Student ($)	DCSD	% Diff House 1 Year Previous	CENSUS/ACS		
Attended Pre-school (%)	DCSD	% Diff State 1 Year Previous	CENSUS/ACS		
Learning Disabilities (%)	DCSD	Avg. Home Value ($)	ASSESSOR		

In addition to using data from DCSD, school input variable data was used from the Iowa Department of Education (IDED) and the Eastern Central Intergovernmental Association (ECIA). Neighborhood input data was available through the U.S. Census Bureau and the American Community Survey, the Dubuque County Assessor, DCSD, and the City of Dubuque. In order to gather data on "sense of community" attributes (Familiarity With Neighbors, Level of Civic Engagement, and Attended School Board Meeting), the group developed a survey for distribution to the Dubuque community (see Chapter 4).

Of the identified variables, only some were used due to availability of data. Table 3.1.2 below highlights in red which variables were used.

Figure 3.1.2
Collected Input Variables for Production Function Model

SCHOOL INPUT VARIABLE	SOURCE	NEIGHBORHOOD INPUT VARIABLE	SOURCE	NEIGHBORHOOD INPUT VARIABLE	SOURCE
% Free and Reduced Lunch	IDED	% Under Age 18	CENSUS/ACS	Open Enrollment Students (%)	DCSD
% Minority	IDED	% Under Age 10	CENSUS/ACS	Public Use of School Bldg (Hrs/Wk)	CITY
Computers Per Student (#)	IDED	Median Age	CENSUS/ACS	Violent Crime Rate	CITY
Avg Days Present By Students (%)	DCSD	% Non-White	CENSUS/ACS	Non-Violent Crime Rate	CITY
Avg Days Absent Per Teacher (%)	DCSD	% Black of African American	CENSUS/ACS	Nuisances Per Capita	CITY
% Special Education	DCSD	Median Household Income ($)	CENSUS/ACS	Neighborhood Association (1/0)	CITY
% ELL	DCSD	% Vacant Households	CENSUS/ACS	Open Space Area (%)	CITY
% Mobility	DCSD	% Renter Occupied	CENSUS/ACS	Public Gathering Spaces	CITY
% Poverty	DCSD	% Multi-Family Units (3+)	CENSUS/ACS	Historic Preservation Buildings (#)	CITY
% Diversity	DCSD	% Mobile Home	CENSUS/ACS	Familiarity With Neighbors	SURVEY
Avg. Class Size	DCSD	% Built Before 1950	CENSUS/ACS	Level of Civic Engagement	SURVEY
Avg. Teacher Experience (yrs)	DCSD	% Built Since 2000	CENSUS/ACS	Attended School Board Meeting	SURVEY
Avg. Teacher Tenure at School (yrs)	DCSD	% HH w/ No Vehicle Available	CENSUS/ACS	Age Diversity	?
Extra-Curricular Programs (#)	DCSD	Median Gross Rent	CENSUS/ACS	Walkability	?
Extracurricular Activities (Hrs/Wk)	DCSD	% Elementary Age Students	CENSUS/ACS		
Average Time on Bus (min)	ECIA	Home Ownership (%)	CENSUS/ACS		
Bus Ridership (%)	ECIA	Avg. Distance to School (miles)	GIS		
Enrollment to Capacity (%)	DCSD	Density (DU/area)	CENSUS/ACS		
Volunteer Hours Per Student (#)	DCSD	% Income Below Poverty Level	CENSUS/ACS		
Fundraising Total Per Student ($)	DCSD	% Diff House 1 Year Previous	CENSUS/ACS		
Attended Pre-school (%)	DCSD	% Diff State 1 Year Previous	CENSUS/ACS		
Learning Disabilities (%)	DCSD	Avg. Home Value ($)	ASSESSOR		

Furthermore, variables were not all measured equally, i.e. by building or by timeframe. The following variables required additional processing, which is discussed further in Appendix A:

- FRL eligibility by building
- Proportion of minority students by building
- Median Household Income by school catchment area
- Percent Non-White by school catchment area
- Percent Renter by school catchment area
- Standard Deviation of the Distance of all parcels in a school catchment area

Results and Analysis

Figure 3.1.3 below contains the results of the final production run iteration.

Figure 3.1.3
% of a building eligible for FRL and the average
Teacher Experience as predictors of 3rd Grade Reading Proficiency

	1	***2***	3	
	3rd Read	**3rd Read**	3rd Read	
Intercept	9.8081	**62.3533**	12.4121288	
	-1.0685	**(7.7772)****	1.34858746	
FRL Eligibility		**-0.2883**		
		(5.0000)**		
Teacher Experience	2.2971	**1.6340**	2.67264262	
	(5.0890)**	**(3.85405)****	(6.7013)**	
Mobility %	0.2582		0.30190702	
	(2.0272)*		(2.3801)*	
Income	0.0002			
	-0.0001			
Observations	55	**55**	55	
R-squared	0.5980	**0.6823**	0.5758	

Absolute value of t-statistic in parentheses
* significant at 5% level
** significant at 1% level
Bold = best model/final model

Regression model 2, indicated in bold as the best model, uses FRL eligibility by building and average teacher experience as predictors of 3rd grade reading proficiency by building. The R square value of 0.68 indicates that this model explains 68% of the variance in 3rd grade reading proficiency. This model predicts that, with FRL eligibility and teacher experience both at 0, 3rd grade reading proficiency would be 62.35%. For each one-year increase in average teacher experience, reading proficiency increases by 1.63%; consequentially, more experienced teaching staff lead to greater proficiency scores. For each 1% increase in FRL eligibility, reading proficiency decreases by 0.29%; high FRL eligibility lowers proficiency scores.

The first model included student mobility and median income, but this model could only explain 60% of the variance in proficiency. The third model eliminated median income but re-introduced student mobility, and could only explain 58% of the variance.

Policy Changes

The production function can be used to analyze potential policy changes. One such example is grade reconfiguration, where schools are paired together in such a way that one school will host kindergarten through 2nd grade, while its sister school will host 3rd through 5th grade. A hypothetical reconfiguration could be as follows:

- Fulton (K-2) and Kennedy (3-5)
- Irving (K-2) and Marshall (3-5)
- Audubon (K-2) and Eisenhower (3-5)
- Carver (K-2) and Lincoln (3-5)
- Bryant (K-2) and Hoover (3-5)
- Prescott, Sageville, and Table Mound remain as K-5

This reconfiguration scenario pairs schools with high FRL eligibility with schools with low FRL eligibility. Currently, Dubuque elementary schools' FRL eligibility runs from 15% to 80%, and 3rd grade reading proficiency ranges from 51% to 90%. Under the hypothetical reconfiguration, no elementary school has more than 50% FRL eligibility; consequentially, reading proficiency is much more evenly distributed as well.

In addition to blending the student populations at each elementary school pair (and thus evening out FRL eligibility), the grade reconfiguration analysis also assumes that teacher experience would also be evened out within each school pair. Figure 3.1.4 below depicts each of the five school pairs and their FRL eligibility, teacher experience, and 3rd grader reading proficiency, both before and after reconfiguration implementation.

Figure 3.1.4: School Attributes Before and After Grade Reconfiguration

		FRL Eligibility		Teacher Experience (years)		3rd Grade Proficiency	
		Current	Predicted	Current	Predicted	Current	Predicted
Pair	Fulton	84.04%	37.92%	7.96	15.05	50.82%	76.01%
	Kennedy	17.90%	37.92%	18.17	15.05	80.61%	76.01%
Pair	Marshall	57.43%	42.29%	13.68	15.77	67.84%	75.93%
	Irving	33.81%	42.29%	16.93	15.77	89.93%	75.93%
Pair	Audubon	82.08%	46.41%	14.98	15.91	60.16%	74.97%
	Eisenhower	26.95%	46.41%	16.40	15.91	83.28%	74.97%
Pair	Bryant	29.00%	28.68%	15.55	15.47	85.33%	79.37%
	Hoover	28.29%	28.68%	15.41	15.47	76.19%	79.37%
Pair	Lincoln	73.83%	40.29%	9.13	13.11	56.57%	72.12%
	Carver	24.7%	40.29%	17.65	13.11	85.00%	72.12%

For example, Fulton Elementary currently has 84.04% FRL eligibility and an average teacher experience of 7.96 years, yielding 50.82% 3rd grade reading proficiency. However, if Fulton is paired with Kennedy, Fulton's FRL eligibility declines to 37.92%, teacher experience increases to 15.05 years, and 3rd grade reading proficiency increases to 76.01%.

To better illustrate how grade reconfiguration changes to variation in proficiency scores, compare the following two figures. Figure 3.1.5 indicates the current variation in proficiency scores from the 2006-07 to 2010-11 school year, while Figure 3.1.6 indicates how scores would vary by school if reconfiguration had been implemented during the same period.

Figure 3.1.5
3rd Grade Reading Proficiency by
Elementary School from 2006-07 to 2010-11

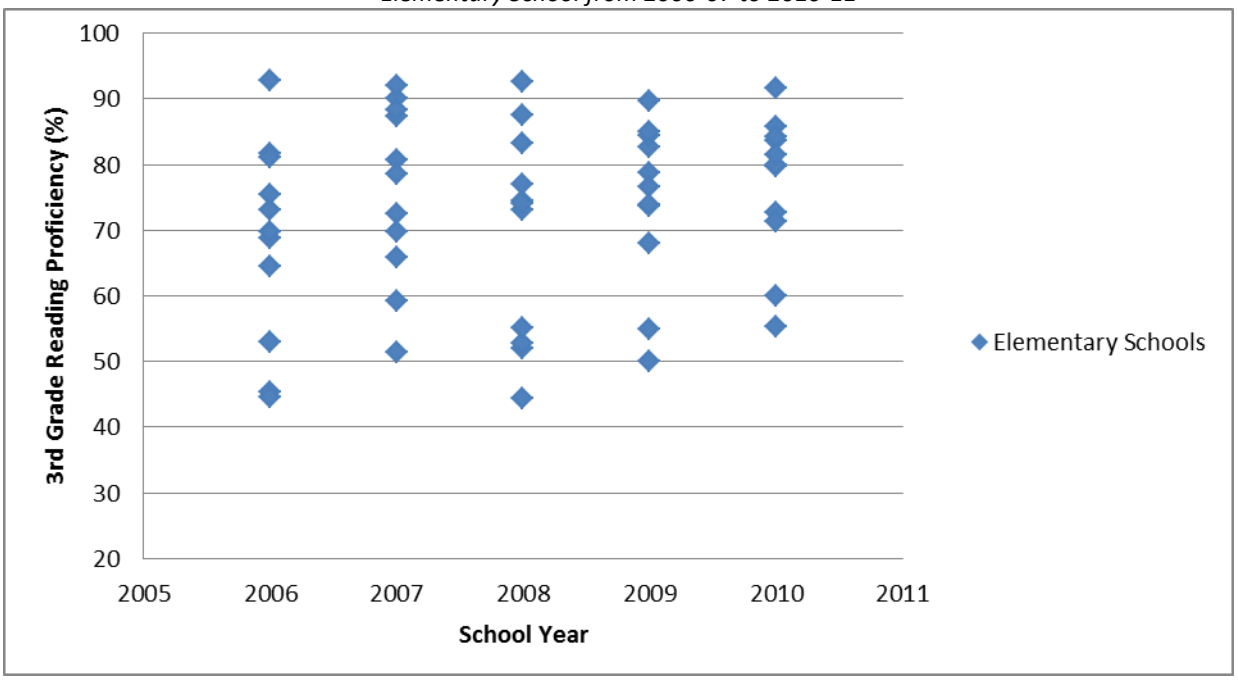
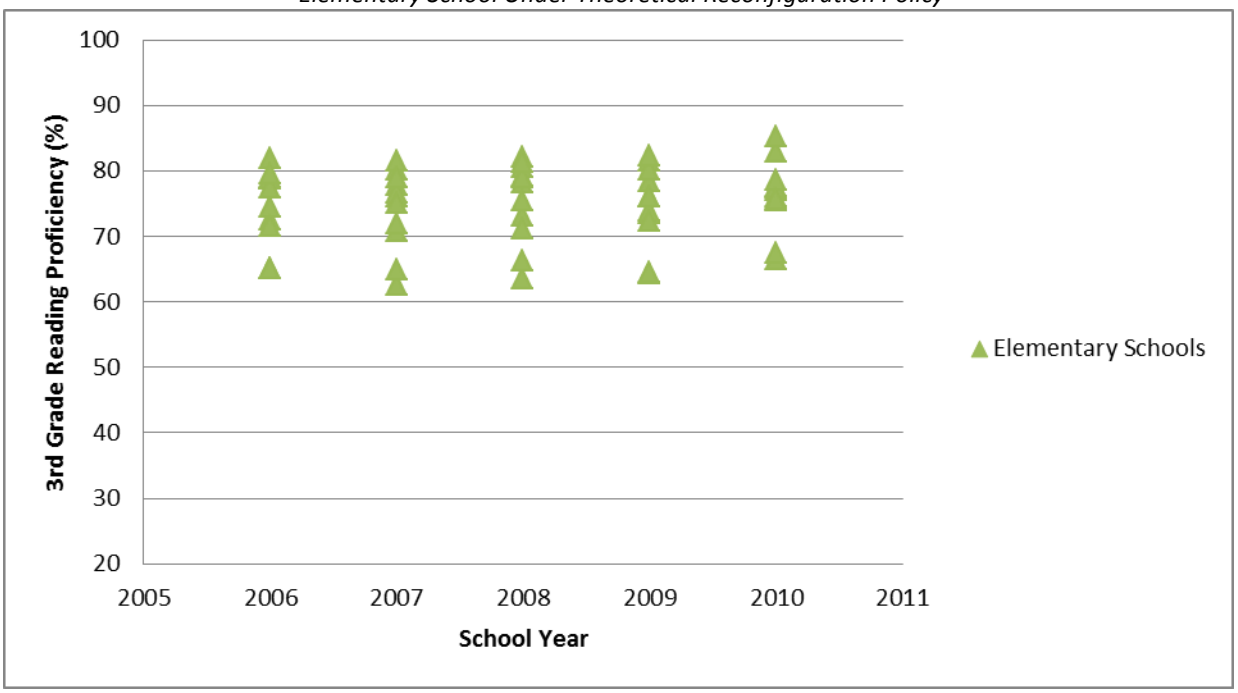


Figure 3.1.6
Predicted 3rd Grade Reading Proficiency by
Elementary School Under Theoretical Reconfiguration Policy



Summary of Key Findings

Teacher experience and FRL eligibility are the two variables that have the most influence over reading proficiency in DCSD elementary schools. While outside factors certainly play a part in each child's education, DCSD does have the ability to influence student performance through policy adjustments.

3.2: Hedonic Model

Purpose

The hedonic model is a multiple-regression model in which the dependent variable is the value of a given home, while the independent variables include physical traits of the house itself as well as nearby amenities. Home value can be estimated through actual sales data or through assessed value. The hedonic model analysis is an attempt to quantify the impact certain attributes and amenities have on housing values—in this instance, the model attempts to quantify the impact school performance has on homes within that school's catchment area. Access to schools and other amenities (such as parks, scenic views, or waterfront access) are bundled with the purchase of the house itself. Hedonic modeling analyzes the tradeoffs people make—consciously or unconsciously—when buying a new home.

Methodology

This particular hedonic model uses Dubuque housing sales over the past 12 years as an estimate of home value. The model uses the following school-specific variables:

- A variable indicating the location of parcel in DCSD or WDCSD
- A variable indicating the distance of parcel to assigned elementary school building (DCSD parcels only)
- A variable indicating distance of parcel to *any* elementary school (DCSD parcels only)
- A variable indicating the assigned catchment area of parcel (DCSD parcels only)
- A control variable for neighborhood fixed effect; specifically, boundary fixed effects (BFE) (Hguyen-Hoang and Yinger, 2011)
- A variable differentiating access to school district transportation options
- A variable indicating average 3rd grade reading proficiency for each parcel's school

The hedonic model also uses the following housing characteristics:

- Home age
- Living area (floor space)
- Condition of the home
- Number of bedrooms

- Lot size
- Garage characteristics

Generally, hedonic models are bound by certain limitations and assumptions, according to Nguyen-Hoang and Yinger (2011):

- Households with similar incomes have similar preferences for public goods (i.e. school quality)
- Households can move at no transaction cost until households of similar incomes all receive the same level of utility (satisfaction), thus achieving a state of equilibrium
- Only households living in a catchment area can benefit from the school services provided there
- There are many catchment areas with fixed boundaries that offer different school characteristics
- All households are homeowners
- The market offers all options that consumers might be interested in

Results and Analysis

The full results tables for both school proficiency and transportation are below.

Figure 3.2.1: Hedonic Model Results for School Proficiency and Willingness to Pay

Price	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Age	-261.4024	24.86068	-10.51	0	-310.1319	-212.6729
LivingArea	52.02983	1.243766	41.83	0	49.59192	54.46773
AboveNormal	16158.25	1516.778	10.65	0	13185.21	19131.29
BelowNormal	-18759.86	1945.214	-9.64	0	-22572.68	-14947.04
Garage	4484.7	1221.622	3.67	0	2090.195	6879.205
Bedrooms	1983.694	696.8044	2.85	0.004	617.8862	3349.502
_IYrsSale_1	4019.028	3785.119	1.06	0.288	-3400.193	11438.25
_IYrsSale_2	-2160.658	3745.821	-0.58	0.564	-9502.851	5181.535
_IYrsSale_3	-1883.317	3756.127	-0.5	0.616	-9245.711	5479.077
_IYrsSale_4	-8274.634	3802.585	-2.18	0.03	-15728.09	-821.1774
_IYrsSale_5	-5434.666	3590.559	-1.51	0.13	-12472.53	1603.198
_IYrsSale_6	-10288.24	3550.154	-2.9	0.004	-17246.9	-3329.571
_IYrsSale_7	-14837.55	3521.472	-4.21	0	-21740	-7935.107
_IYrsSale_8	-16857.55	3559.527	-4.74	0	-23834.59	-9880.516
_IYrsSale_9	-19752.56	3669.552	-5.38	0	-26945.26	-12559.87
_IYrsSale_10	-22349.47	3742.003	-5.97	0	-29684.18	-15014.76
_IYrsSale_11	-24059.88	3780.468	-6.36	0	-31469.99	-16649.78
_IYrsSale_12	-25102.3	3840.4	-6.54	0	-32629.88	-17574.73
ParcelArea	0.0975956	0.004888	19.97	0	0.0880146	0.1071765
a	-22970.93	6488.274	-3.54	0	-35688.62	-10253.25
b	-12416.43	5852.765	-2.12	0.034	-23888.45	-944.4111
c	-43031.87	6495.294	-6.63	0	-55763.31	-30300.43
d	-27328.47	6242.535	-4.38	0	-39564.48	-15092.46
e	-28585.64	5930.761	-4.82	0	-40210.54	-16960.74
f	-21683.26	6015.46	-3.6	0	-33474.18	-9892.343
g	-806.9673	5733.7	-0.14	0.888	-12045.61	10431.67
h	-12380.52	5979.748	-2.07	0.038	-24101.44	-659.6012
i	-7720.574	5870.77	-1.32	0.188	-19227.88	3786.735
j	-2856.144	5755.442	-0.5	0.62	-14137.4	8425.112
k	-24115.22	6014.338	-4.01	0	-35903.94	-12326.51
l	11227.02	5839.615	1.92	0.055	-219.2251	22673.26
m	10318.41	5577.063	1.85	0.064	-613.2038	21250.02
o	14102.67	8620.96	1.64	0.102	-2795.292	31000.64
o	(omitted)					
p	33189.89	6007.482	5.52	0	21414.61	44965.17
q	-18227.36	20593.99	-0.89	0.376	-58593.69	22138.98
r	27667.04	7029.732	3.94	0	13888.05	41446.04
s	-28957.78	7501.572	-3.86	0	-43661.63	-14253.93

t	-2210.179	6893.384	-0.32	0.748	-15721.92	11301.56
u	-31807	9942.512	-3.2	0.001	-51295.34	-12318.66
v	(omitted)					
w	-105505.3	45860.01	-2.3	0.021	-195395.6	-15614.99
Aud	-10730.63	12606.77	-0.85	0.395	-35441.2	13979.93
Bry	25995.55	5819.457	4.47	0	14588.81	37402.28
Car	(omitted)					
Eis	5749.797	5391.469	1.07	0.286	-4818.035	16317.63
Ful	-24135.69	18401.17	-1.31	0.19	-60203.86	11932.48
Hoo	-13503.21	6447.304	-2.09	0.036	-26140.59	-865.8381
Irv	-6006.172	6069.607	-0.99	0.322	-17903.22	5890.88
Ken	-254.6777	5837.466	-0.04	0.965	-11696.71	11187.35
Lin	-19465.76	6251.418	-3.11	0.002	-31719.18	-7212.343
Mar	-23315.18	6110.511	-3.82	0	-35292.4	-11337.95
Pre	-51312.08	19971.34	-2.57	0.01	-90457.94	-12166.22
Sag	(omitted)					
Tab	-18873.56	5523.284	-3.42	0.001	-29699.76	-8047.353
Average	336.7985	82.87714	4.06	0	174.3508	499.2461
_cons	51970.58	8866.02	5.86	0	34592.27	69348.89

```
Source |    SS    df    MS      Number of obs =  17200
                      #NAME?
   Model | 4.7143e+13  52 9.0659e+11     Prob > F   = 0.0000
 Residual | 1.0654e+14 17147 6.2135e+09     R-squared   = 0.3067
-------------+------------------------------     Adj R-squared = 0.3046
   Total | 1.5369e+14 17199 8.9358e+09     Root MSE   =  78826
```

Higher proficiency scores by building are seen as an amenity. Homebuyers are willing to pay, on average, $300 more per home for each percentage point increase in 3rd grade reading proficiency. All else being equal, a homebuyer will be willing to pay an extra $12,600 to live in a catchment area for a school with 88% reading proficiency than for a school with only 46% reading proficiency.

Figure 3.2.2: Hedonic Model Results for Transportation and Willingness to Pay

Price	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Age	-364.4597	23.88889	-15.26	0	-411.284	-317.6353
LivingArea	49.80991	1.232881	40.4	0	47.39335	52.22647
AboveNormal	17226.02	1544.738	11.15	0	14198.19	20253.84
BelowNormal	-19830.44	1978	-10.03	0	-23707.5	-15953.39
Garage	5068.346	1220.008	4.15	0	2677.022	7459.669
Bedrooms	2268.242	700.2531	3.24	0.001	895.684	3640.801
_IYrsSale_1	2693.205	3696.335	0.73	0.466	-4551.941	9938.352
_IYrsSale_2	-5803.3	3670.909	-1.58	0.114	-12998.61	1392.008
_IYrsSale_3	-5825.316	3682.099	-1.58	0.114	-13042.56	1391.925
_IYrsSale_4	-8938.786	3732.21	-2.4	0.017	-16254.25	-1623.322
_IYrsSale_5	-7224.742	3548.137	-2.04	0.042	-14179.41	-270.0779
_IYrsSale_6	-12053.46	3502.643	-3.44	0.001	-18918.95	-5187.97
_IYrsSale_7	-16136.88	3484.834	-4.63	0	-22967.47	-9306.295
_IYrsSale_8	-19023.52	3516.892	-5.41	0	-25916.94	-12130.09
_IYrsSale_9	-23764.06	3605.376	-6.59	0	-30830.92	-16697.2
_IYrsSale_10	-21695.43	3689.109	-5.88	0	-28926.41	-14464.44
_IYrsSale_11	-22834.54	3741.406	-6.1	0	-30168.03	-15501.05
_IYrsSale_12	-24971.4	3787.207	-6.59	0	-32394.67	-17548.14
ParcelArea	0.0957161	0.004995	19.16	0	0.0859255	0.1055067
Carver	$ 41,930.26	4117.611	10.18	0	33859.37	50001.14
Irving	$ 37,853.74	3567.905	10.61	0	30860.33	44847.15
Hoover	$ 39,545.48	4076.607	9.7	0	31554.97	47535.99
Bryant	$ 49,265.31	3914.087	12.59	0	41593.35	56937.27
Audubon	$ 7,434.61	3800.585	1.96	0.05	-14.87221	14884.1
Kennedy	$ 32,431.54	4073.233	7.96	0	24447.64	40415.44
Fulton	$ 6,892.92	3839.758	1.8	0.073	-633.3491	14419.19
Eisenhower	$ 33,582.10	3853.341	8.72	0	26029.2	41134.99
Marshall_	$ 11,116.84	3969.893	2.8	0.005	3335.494	18898.18
Lincoln	$ 15,383.64	3566.009	4.31	0	8393.946	22373.33
Sageville	$ 33,217.09	6302.279	5.27	0	20864.06	45570.11
Table_Mound	$ 22,218.51	4428.74	5.02	0	13537.79	30899.24
school_25_5	2225.19	1576.216	1.41	0.158	-864.3334	5314.714
school_5_1	6530.255	2090.071	3.12	0.002	2433.53	10626.98
school_1_2	-8064.601	2340.563	-3.45	0.001	-12652.31	-3476.89
bus	-1061.92	3735.02	-0.28	0.776	-8382.891	6259.051
_cons	52981.21	5463.659	9.7	0	42271.95	63690.46

```
Source |  SS  df  MS      Number of obs =  19013
#NAME?
   Model | 4.6656e+13  35 1.3330e+12     Prob > F   = 0.0000
  Residual | 1.2710e+14 18977 6.6977e+09     R-squared   = 0.2685
-------------+------------------------------     Adj R-squared = 0.2672
   Total | 1.7376e+14 19012 9.1394e+09     Root MSE   =  81840
```

Homebuyers also have preferences regarding school transportation offerings. The hedonic model estimates that homebuyers are willing to pay more for a home within one mile of its assigned school than for a home between one and two miles from its assigned school, all else being equal. This suggests that proximity is important to homebuyers when they do not qualify for DCSD-funded bussing (DCSD provides bussing to student who live more than two miles from their school). However, homebuyers are willing to pay more for a home that is more than two miles from its assigned school than for a home between one and two miles from its school, all else being equal, suggesting that both ability to easily walk to school and the availability of bussing are positive amenities; the need to walk between one and two miles to school is undesirable.

Conclusions

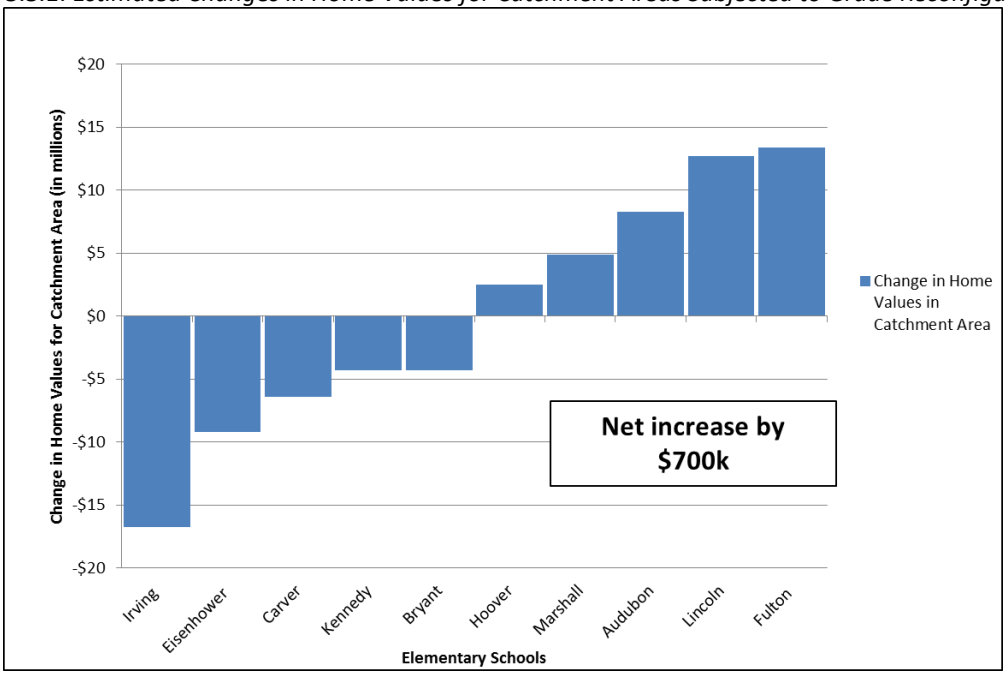
The hedonic model indicates that Dubuque's elementary schools do, in fact, impact their surrounding neighborhoods by influencing housing value. Consequentially, this leads homeowners to "pay" to send their child to a higher-performing public school, while those who cannot afford higher housing costs associated with higher-performing schools are relegated to low-income neighborhoods with lower-performing schools. The ensuing concentrations of FRL-eligible students in certain schools results in lower proficiency scores, which further devalues housing stock in the schools' corresponding neighborhoods. In effect, housing policy and school policy are very tightly bound to one another. This is a drawback to the neighborhood schools model that needs to be recognized and mitigated through both DCSD policies and City policies.

3.3: Implications for Neighborhoods and Home Values

Given the hypothetical grade reconfiguration policy and its impact on student performance in Section 3.1 and the results of the hedonic model in Section 3.2, the group decided to briefly explore how such a grade reconfiguration policy might affect home values. To do this, the predicted post-reconfiguration scores were used as an input into the hedonic model (in lieu of the actual scores). City-wide, the reconfiguration policy would increase homeowners' willingness to pay for Dubuque homes by approximately $700,000, or about $20 per parcel.

Figure 3.3.1 below indicates that, as a result of the policy, some catchment areas would see a net increase in home values, while other catchment areas would see a net decrease in home values. Schools that see an increase in proficiency scores also see an increase in homeowners' willingness to pay, while schools that see a decrease in proficiency scores also see a decrease in willingness to pay. Prescott, Sageville, and Table Mound are not part of this analysis as they are not paired, thus their test scores and housing values are unaffected.

Figure 3.3.1: Estimated Changes in Home Values for Catchment Areas Subjected to Grade Reconfiguration



Chapter 4: Community Input

This Chapter addresses the role community input played into this project, and how DCSD can better engage the community in subsequent policymaking. First, this Chapter discusses the Community Survey developed by the School Group and its particular utility in determining not only what Dubuque residents prefer from their schools but also how they prioritize certain traits when forced to make a trade-off. This Chapter then discusses the Schools Group's experience with conducting group interviews, and how this process is crucial to identifying the needs of particular sub-populations that may be under-represented in random surveying but warrant heightened attention from DCSD administrators and city policymakers.

4.1: Community Survey

Purpose

The community survey was developed in order to gather data on residents' preferences with regard to school characteristics and options, as well as to gather data on resident interaction within neighborhoods and their level of civic engagement. The survey intended to provide additional variables for the production function. In the future, this type of survey can be useful to DCSD and the City to better understand community preferences and to identify politically favorable solutions to current and future areas of concern.

Design

The community survey is a "conjoint stated preference" survey that measures respondents' preferences when presented with tradeoffs of various school attributes. In this survey format, participants are presented with a pair of hypothetical schools, School A and School B. These hypothetical schools vary in their attributes, and participants are asked to select which school they prefer. In the survey, this process is iterated four times, each time with different school configurations.

The survey focused on distance between school and residence, to measure preference for neighborhood-based schools; FRL eligibility, to measure preference for income variation; student-teacher ratio, to measure preference for consolidated schools; and number of extracurricular activities, to measure preference for community-focused schools. The selection of these four attributes is consistent with prior use of conjoint stated preference surveys in education research.

The survey also measures respondents' willingness to pay, to identify whether respondents believed a certain school configuration was worth paying for. Willingness to accept, meanwhile, identifies respondents' willingness to accept money in exchange for losing certain amenities or getting an otherwise "inferior" school. Willingness to pay and willingness to accept are framed to survey respondents as an increase in property taxes or rent.

The group hypothesized that distance, FRL eligibility, and increases in property tax/rent as the factors that respondents would care about most. Accordingly, the survey weighed these three attributes more heavily than student-teacher ratio or extracurricular activities. When developing the various school configurations, attributes are assigned in such a way as to make sure the schools are evenly balanced—there is no obvious "better" school—and forcing respondents to make what should be a thoughtful decision. (A more detailed discussion of this process can be found in Appendix B; the 16 tables used in the survey can be found in Appendix C.)

Survey Format

The group developed both hard copy and electronic versions of the survey. The survey first asked respondents to provide basic information on their affiliation and engagement with DCSD, identifying in which catchment area respondents lived, whether they had any children enrolled in DCSD schools (and, if so, whether their children had ever transferred schools or were actively involved in extracurricular activities), and whether respondents actively volunteered in DCSD schools.

The survey then asked respondents a series of statements regarding their involvement within their neighborhood, such as whether they interacted with their neighbors. Each of these questions identified a particular activity and respondents were asked to state how frequently they performed each activity, i.e. "daily, "1-2 times a week, "1-2 times a month," 1-5 times a year," "never," or "unsure."

The third section of the survey asked whether respondents were homeowners or renters, so as to provide the proper willingness to pay attributes. Respondents were then presented with four pairs of Schools A and B. Respondents selected a preferred school four times, with different options each time.

The final section of the survey asked respondents to offer basic socio-demographic information. This allowed the group to better understand the respondents' demographics relative to the demographics of Dubuque as a whole. The group was also curious to see whether there were any trends within demographic sub-groups, i.e. whether homeowners as a class had distinct preferences.

A sample survey is included in Appendix D.

Administration

There are approximately 30,000 households within DCSD. For the conjoint stated preference survey to be statistically significant, the recommended sample size (per the University of Iowa Institutional Review Board) was approximately 380 participants. Because each respondent would provide four conjoint responses, only 95 completed surveys are necessary to achieve the 380-response threshold.

Potential respondents were selected randomly from a list of parcel addresses acquired from the City of Dubuque. This list was randomized in Microsoft Excel, and the first 600 household addresses were mailed survey participation letters. These letters included a short description of the Schools Group's research and a link to the online survey; business reply cards were included as well for participants who wished to take the survey on paper (at no cost to the participant). A second set of participation letters were sent 10 days after the first batch in order to garner additional responses.

Only 26 respondents completed the survey (24 electronic, 2 paper), for a 4% response rate. Due to the low response rate, the group created another electronic version of the survey to be distributed non-randomly through the Iowa Institute for Sustainable Communities and informally via Dubuque residents' social circles. These non-random initiatives generated 19 responses.

Analysis

The group performed a limited analysis of the random responses despite not meeting the 95-response threshold. The analysis of the responses received indicated that respondents preferred schools to be close, for FRL eligibility to be low, for small student-teacher ratios, and for a high number of extracurricular activities. From this analysis, the group estimated that respondents were willing to accept $11 in compensation for every one-mile increase in travel to school. Respondents were willing to accept $216 for each 1% increase in FRL eligibility at their school. Respondents were willing to accept $3 in compensation for each one-student increase in the

school's student-teacher ratio. Respondents were willing to pay $3 for each additional extracurricular activity.

Future Applicability

The limited response rate makes it very difficult to draw statistical conclusions from the survey. Future iterations of the survey will need to incentivize respondents to complete and return their surveys; this incentive can be a guaranteed reward for each respondent, or the opportunity to win a larger reward, i.e. via raffle.

The conjoint stated preference survey method has the potential to yield valuable information to DCSD and the City. With a sufficiently high response rate, the responses can be analyzed to identify the tradeoffs residents are willing to make with regard to school choice. This method of community input can be extended to other areas of policymaking and planning that require public input.

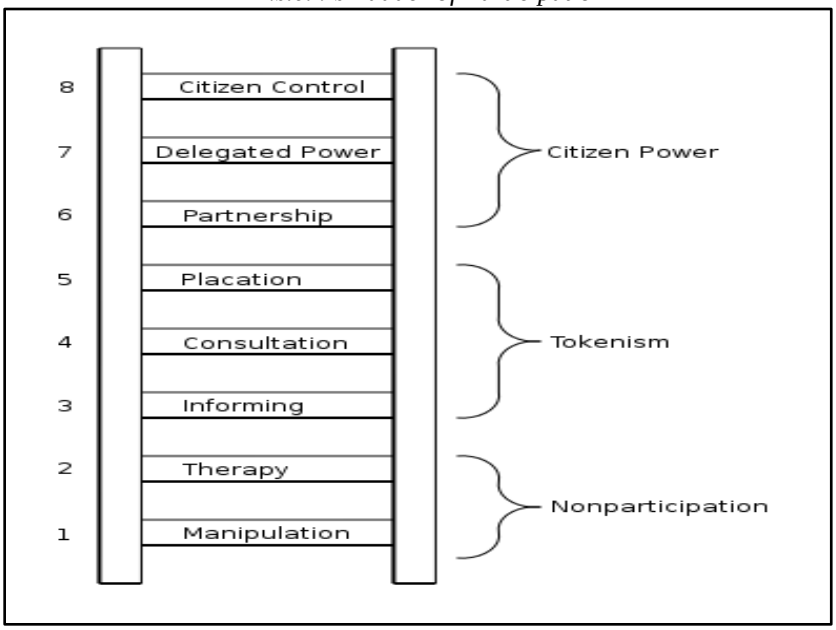
4.2: Focus Groups

In addition to the community survey described in Section 4.1, the Schools Group explored more targeted means of encouraging community input and consensus-building. To help foster in the relationships with outside organizations and community members, DCSD will need to search for ways to allow empowerment for different organizations and citizens. This will be especially true for relating to groups that are underrepresented or feel powerless in impacting school/community decisions. Consensus-building will need to be done with organizations and citizens to help ensure community input is reflected in the decision-making process. Here, consensus-building should look at the community values that are prized by the majority of citizens. It should look to try to include input from all citizens equally especially concentrating on specially targeted audiences. These specially targeted audiences should include underrepresented populations and those struggling with academic achievement throughout Dubuque.

Citizen Participation and Power Structure in DCSD

One way to involve the community is to look at Shelly Arnstein's *A Ladder of Citizen Participation*. Arnstein's Ladder can serve as a benchmark to determine if community members and organizations truly have power in the decision-making process or if their participation is just an empty ritual. Arnstein's purpose is to give citizens "the means by which they can induce significant social reform which enables them to share in the benefits of the affluent society" (Arnstein). *A Ladder of Citizen Participation* describes the different levels of citizen power in the decision-making process. The goal is to ensure that underrepresented citizens or organizations are involved in the decision-making process where perceived "have-nots" have access to correct information along with empowerment in implementing programs and policies. Arnstein presents a ladder with eight rungs of citizen participation highlighting graduated levels of citizen participation ascending up the ladder. Arnstein's Ladder is presented in Figure 4.2.1.

Figure 4.2.1
Arnstein's Ladder of Participation



DCSD's power structure can be seen with their School Board. Dubuque's School Board looks to provide the public with full information and is a good example of a strong community partnership. The School Board lists important information online for public access, and openly invites community feedback. This type of power structure falls under the Partnership rung of Arnstein's Ladder. In addition, community members elect school board members to represent their needs, and have the ability to vote board members out of office for failing to adequately represent them.

An example of poor community input can be seen in the 2009 facilities survey put out by the DCSD evaluating preferences on different variables that make up an ideal school such as walkability and academic programs. The survey was conducted by Alta Vista Research through focus groups, interviews with the School Board and administers and town hall meetings which received 1,500 survey responses. Although the survey garnered plenty of results, the survey was seen as unscientific. Problems with the survey included several biases. Many survey takers were recruited by local clubs, the Dubuque Chamber of Commerce, and others targeting hand-picked respondents. This resulted in the survey not being distributed fairly to different neighborhoods or demographics. Results showed many more residents from Dubuque's West End returned the survey than downtown residents. The survey was deemed inconclusive partly as it didn't represent the community as a whole. Based on Arnstein's Ladder this type of community input

would fall under the Consultation rung. Here, there is no assurance that all levels community member views will be taken into account. Although every community member had access to the survey, it ended up excluding certain demographics and areas from the survey causing unequal representation in survey results. In the future, DCSD will need to find a way to reach out to all community members to take into the account the preferences of the whole community.

The City of Dubuque Comprehensive Plan

The DCSD and the City of Dubuque will want to look at the community input goals in the current 2008 Dubuque Comprehensive Plan. Dubuque's Comprehensive Plan "reflects a consensus of community values in a series of goals, which set the direction for the future of the city and for improving the quality of life in Dubuque" (2008). The Plan looks to serve as a guide for decision-making, public policy and future land use. All the Plan's goals and objectives are incorporated into Dubuque's three pillars of Sustainability: Environmental/Ecological Integrity; Economic Prosperity and Social/Cultural Vibrancy. The Sustainability pillars reflect Dubuque's eleven Sustainable Principles set to guide non-profit, businesses, government, and individual actions.

Education Goals make up part of the Social/Cultural Vibrancy pillar, which highly values community input and partnerships. Education Goals state "education must not be relegated to the schools alone but must become a collaborative experience that joins public and private sector, business and government, parent, teacher, and student in partnership with one another and our educational institutions" (2008). Goal Five of the Educational Goals reflects the desire from the community to provide community input from parents and the community in Dubuque Schools. Goal Five Objectives include the following relating to parent and community involvement:

- Promote parental and other citizen ownership and participation in the educational system
- Encourage involvement of parents in helping students to achieve their educational goals
- Support and educate the public on charter school concept and neighborhood schools
- Support and expand mentoring by encouraging retirees and employees with the support of their employers
- Consider creating a pool of community tutors to meet needs of children not receiving support services

All of these objectives further highlight the desire to have community input in area schools. DCSD should work with the City and other groups to make sure Plan objectives are being fulfilled. These objectives can't be fulfilled unless both DCSD and City are reaching out to their constituents for valuable input. It will be important to get parents and community members input into how to improve all facets of Dubuque's educational system. The Dubuque Comprehensive Plan has laid out the framework and it is up to DCSD and the City to connect with the community going forward to accomplish plan goals of increasing parental and community involvement in Dubuque's schools.

Purpose of Focus Groups

Focus groups are small discussion groups, typically consisting of six to twelve participants and one moderator. Focus groups were used to receive input on the Schools Group's project from constituencies that may otherwise have difficulty in making themselves heard. This type of planning, known as advocacy planning, calls for deliberately seeking out specific groups for their input—in this instance, the Schools Group sought to collect input from groups that may not have had the ability to take the survey discussed in Section 4.1 due to literacy barriers, language barriers, or lack of internet access.

The Schools Group targeted several subpopulations that may have had difficulty with the survey. The Schools Group eventually conducted focus groups with the Circles Initiative, a Hispanic/Latino group, and two members of the Point Neighborhood Association. (The respondents in the Neighborhood Association were not expected to have difficulty with the survey, but this particular focus group served as a prototype for neighborhood association-based discussions in the future.) Only the Circles Initiative event led to "proper" focus groups, though the other two events were productive group interviews.

At each event, the focus groups (or group interviews) were all similarly structured to ensure homogeneity; this allowed for the later comparison of results. Participants were fully informed that they would be discussing community and school relationships; that they would provide responses to questions on neighborhood interaction; and that they would make selections between hypothetical schools and discuss their reasoning. In effect, the focus groups followed

the community survey. Each group used the same two (rather than four) conjoint stated preference tables (as described in Section 4.1). While the discussions in these groups occasionally drifted from the Schools Groups guided questions, strong input was still received from the targeted groups. The schools group itinerary, conjoint tables, and further results can be seen in the Community Involvement and Engagement Appendix.

Focus Group Analysis

Focus group/interview results saw similarities and differences in preferences among participants. Among the biggest similarities was the focus on parents and teachers affecting student outcomes. Problems were seen with parents not being involved with their children or homework and some parents not speaking English. Teacher issues included teachers having a lack of interest or being too overburdened with troubled students and having to act as surrogate parents. Generally, the participants would like to see a smaller teacher-to-student ratio to isolate students with learning disabilities from the rest of the students to encourage more personal attention in learning. Participants frequently mentioned wanting stronger relationships between parents and the teachers/schools. This included better parent-teacher relationships, more volunteer activities, and school social events to help build a better support system. Participants also desired more extra-circular activities and afterschool opportunities for students from schools. Bullying was also seen as a major problem at elementary schools affecting students among participants. Some participants mentioned their children were either being bullied or were the bullies. It was mentioned that one school seemed to have a lack of concern for bullying and local community organizations need to also help address the issue. Lack of nutrition was seen as an important factor in overall student achievement. Many participants liked the idea of schools providing breakfast and weekend meals to their students. It was believed certain students weren't receiving enough nutrition to be able to concentrate in school.

Issues with the City of Dubuque/neighborhoods were frequently mentioned. Overall, Dubuque was described generally as being safe place. However, participants mentioned neighborhoods having safety and drug issues. There was also a perception that the downtown area had been "let go" and the City was pushing impoverished residents to other parts of the city. Participants mentioned strong community relationships with organizations such as St. Marks Community

Center and local Boy and Girl Scouts. However, the need for stronger relationships with neighborhoods and outside community organizations was frequently mentioned. It was suggested many times that community organizations needed to provide more afterschool activities including one-on-one education and multilingual help.

Several differences were seen between the different focus group/interviews. For participants' ideal school choice, differences were seen in preferences in conjoint table attributes. It was hard to see which ideal school participants desired as the top conjoint attribute preferred varied among groups. Groups varied in choosing a low percentage of FRL at the school, close distance to schools, low student-to-teacher ratios and costs which were preferred differently as the most important attribute among participants. However, participants generally agreed that all attributes of the conjoint table were important facets for their ideal school.

Participants surprisingly disagreed on technology in schools for students. The majority of participants would like to see better technology in schools to help guide student performance. However, the Hispanic/Latino group believed the schools were using too much technology in classes. They believed students were provided with too much technology not allowing students to think critically. Also, the Hispanic/Latino group felt too much time was being spent on crafts instead of essentials such as math and reading.

Several answers from our focus group/interviews gave new diverse perspectives on the relationship between schools, neighborhoods, and student achievements. Overall, FRL was not seen as too much of a negative when pertaining to student achievement. This was even after the Schools Group members mentioned the negative impact of higher percentages of students on FRL on student achievement. FRL was not seen as important to focus group/interview participants as they saw it as commonplace in their schools. One Circles Imitative group consensus did however pick their ideal school based on its low percentage of FRL students in the conjoint table. However, the group suggested a higher percentage of FRL at a school may be ideal making the students more comfortable in a more understanding and supportive environment.

Walkability was another issue that produced a surprisingly different perspective. Recently, Dubuque has received a $49,000 Safe Routes to School (SRTS) grant from the Iowa Department

of Transportation to develop a comprehensive pedestrian plan for all 29 schools. The purpose of SRTS is to help encourage walking or biking to school to help solve congestion, obesity, safety and air quality problems. In 1969, half of all students walked to school where today "fewer than 15 percent of all school trips are made by walking or bicycling, one-quarter are made on a school bus, and over half of all children arrive at school in private automobile" (Safe). Several participants mentioned safety issues for taking the bus over walking. Safety issues were seen with kids being bullied on the bus and due to safety in certain neighborhoods. One participant mentioned it was unusual to see parents walking with their children to school. This could be a concern as one of the reasons for SRTS is to help bring communities closer together. However, several participants found distance to school was the most important attribute of the conjoint table.

Several responses from the focus group/interviews can be used to provide new perspectives to the DCSD and the City. A problem was seen with the City of Dubuque denying the request for volunteer crossing guards at Marshall Elementary. This seems to go counter of the DCSD and City of Dubuque focusing on a comprehensive pedestrian plan through the SFTS grant to encourage students to walk to school. Here, volunteers wanted to work as crossing guards to help promote safety in students walking to school but were denied by the City.

The DCSD and the City should also look at making sure different cultures can assimilate easier into the community. Frequently mentioned during the focus group/interviews were concerns that teachers did not understand their students. Participants believed teachers were misinterpreting their student's cultures. Teacher training was suggested to help relate better to students with different races or socio-economic backgrounds. Cultural clashes in certain neighborhoods also was mentioned leading to problems with new minority groups as certain neighborhoods of the Dubuque were not as embracing to different cultures. The Hispanic/Latino group mentioned many of their own citizens were unaware of accessing basic city services, which served as a hindrance to enrolling their children in school.

Next Steps and Conclusion

Moving forward, DCSD will need to continue to gather community input to truly be a "community" school district. With the Dubuque demographic landscape changing, DCSD will need to find new ways to communicate with both old and new community members, and work to address new obstacles and challenges. It will be especially critical for DCSD to target groups that are underrepresented or have a disproportionately low degree of power to make sure that these groups are heard, as they may be the groups in greatest need of policy adjustments.

Our focus group/interviews may have only been a small sample of the population but these participants showed us that they wanted to be more involved with the schools and community. Participants stated how they wanted better relationships with the schools by brainstorming many ideas on how to increase participation. They also stated many strengths, weaknesses, opportunities and threats that may have been unrecognized by DCSD. DCSD will need to further identify different segments of population to get diverse opinions to help generate new ideas reflective of all segments of the community moving forward to truly remain a "community" school district.

Chapter 5: Policy Implications

This Chapter discusses the policy implications of the Schools Group's findings as they apply to DCSD and the City of Dubuque. First, several potential policy options are presented, with a brief description and analysis of each. Then, the challenges of DCSD's current neighborhood schools configuration and open enrollment policy are descripted. Next, the potential impacts on the district's student transportation obligations in light of the policy options are explored. Following that is a discussion on the need for continued and enhanced collaboration between DCSD, the City of Dubuque, and other stakeholders throughout the community; the Third Grade Reading Initiative is used as an example of this collaboration. A discussion on potential community resources that DCSD and the City might want to publicize (if not overtly collaborate with) is also included in this Chapter.

5.1: Policy Options and Analysis

From the data collected and analyzed in Chapter 3, community input in Chapter 4, and other research, the Schools Group has identified several potential policy changes. Each option below is examined in terms of academic achievement, enrollment, balancing FRL eligibility between schools, educational equity and diversity, student transportation, cultural and social cohesion, and property values, among others. Each attribute is rated "good," "not good," "neutral," or "ambiguous," identifying whether the attribute's change would be, in the estimation of the Schools Group, a desirable or undesirable outcome for DCSD.

Current Policy: Neighborhood Schools

- Academic Achievement: Not Good
    - The current trend of concentrating FRL-eligible students in certain schools could result in fewer students meeting proficiency standards; when FRL eligibility in a building exceeds 50%, student performance drops.
- Enrollment: Not Good
    - Downtown schools are losing students via open enrollment, while homebuyers show a preference for high-performing schools on the periphery. Low enrollment in downtown schools could impact their long-term viability as neighborhood schools.
- FRL Eligibility: Not Good
    - Currently, FRL eligibility by building ranges from 19.3% to 84.9% for the 2012-13 academic year.
- Educational Equity and Diversity: Not Good
    - Imbalanced poverty rates suggest inequitable educational experiences for students. Low-income and minority students are disproportionately affected.
- Student Transportation: Neutral
    - Note that increasing departures from Title I SINA schools may occur, and DCSD will incur the cost of transporting these students to other schools.
- Walkability: Good
    - The current neighborhood school model promotes walking and biking as modes of transportation to school. The City needs to make sure neighborhoods stay safe for students who walk to school.
- Cultural and Social Cohesion: Ambiguous
    - Neighborhood cultural and social groups remain together in school, creating a more supportive atmosphere within the neighborhood, but at the cost of decreased interaction with other cultural and social groups from other neighborhoods.
- Residential Property Value: Not Good
    - Decreasing test scores in downtown schools may negatively impact housing as homeowners prefer to live near higher-performing schools.
- Sustainability: Not Good
    - Observed trends suggest Dubuque may face increasingly inequitable educational experiences, particularly with respect to minorities and low-income students; this runs counter to Dubuque's Community Knowledge values of education, empowerment, and engagement.
- Parental Engagement: Neutral

    - Maintaining the status quo implies no changes to current parental involvement.
- Building Utilization: Not Good
    - Some buildings are under-utilized and thus inefficient, while others are at capacity.
- Political Feasibility: Neutral
    - Doing nothing is the "path of least resistance," though some residents may find the status quo unacceptable.
- Model Communities: N/A
- Lead Role: N/A

School Consolidation

School consolidation is the closure of one or more elementary schools and reassigning catchment areas to maximize efficient use of remaining schools; alternatively, current facilities might be closed and new, larger facilities are built.

- Academic Achievement: Ambiguous
    - Some research suggests students perform better in smaller elementary schools, but larger schools may offer advantages in more technology or support resources.
- Enrollment: Good
    - A smaller number of schools would necessitate larger catchment areas, which would be less sensitive to shifting demographics and housing patterns. Class sizes can be stabilized.
- FRL Eligibility: Good
    - The current imbalance in FRL eligibility and the corresponding concerns over educational impact can be mitigated through larger, more diverse schools.
- Educational Equity and Diversity: Ambiguous
    - School consolidation can offer a better balance of minority and low-income students. However, some research suggests that low-income students perform better in smaller schools.
- Student Transportation: Not Good
    - Transportation costs will increase, likely significantly. Families without access to transportation will have difficulty attending school functions.
- Walkability: Ambiguous
    - School siting could increase walkability in new areas of Dubuque, but at the expense of current walkable schools.
- Cultural and Social Cohesion: Good
    - School consolidation keeps distinct cultural groups intact while creating more opportunities for integration into the broader community.
- Residential Property Values: Ambiguous
    - More information about specific consolidation scenarios is needed to understand the impact this policy may have on home values. New schools may be a boon to some neighborhoods, but the shuttering of schools elsewhere may degrade home values.
- Sustainability: Ambiguous

    - Consolidation may produce a net gain in education results, but at the expense of environmental degradation from new construction and the abandonment of old facilities.

- Parental Engagement: Not Good
    - The closure of neighborhood schools may prevent parents who lack reliable transportation from actively participating in their child's school.
- Building Utilization: Ambiguous
    - Consolidation may offer economies of scale with regard to facility operation, but these savings might not offset the costs of construction, closure, and demolition. A detailed cost analysis is required.
- Political Feasibility: Not Good
    - DCSD's proposals in 2010 were met with severe backlash, indicating in part that community members (and some leaders) prefer neighborhood schools to consolidation.
- Model Communities
    - Numerous communities across the country have faced consolidation. Keys to "successful" consolidation include political feasibility, strong leadership, open communication, and cultural significance of the affected schools.
- Lead Role
    - DCSD should conduct a thorough analysis of costs and benefits, and make a concerted effort to gather public input. The City should identify repurposing strategies for closed schools.

Grade Reconfiguration

Discussed as a hypothetical policy in Chapter 3, grade reconfiguration consists of combining schools such that two or more buildings draw from the same catchment area. In this instance, elementary schools would be paired so that one school would host kindergarten through 2nd grade while the other hosted 3rd grade through 5th grade.

- Academic Achievement: Ambiguous
    - While the production function analysis in Section 3.1 suggests improved reading proficiency in some buildings, proficiency scores decrease in others. Adding an extra transition for students (changing schools between 2nd and 3rd grade, much like the transition between elementary and middle school, or middle school and high school) may be detrimental to student achievement.
- Enrollment: Good
    - Class sizes and total enrollment can be better balanced.
- FRL Eligibility: Good
    - Schools can be paired so that FRL eligibility ranges from 34.5% to 48.8%, both reducing the variation between schools and keeping all schools below the 50% tipping point.
- Educational Equity and Diversity: Good
    - Reconfiguration will prevent one school from having significantly higher concentrations of students. Grade reconfiguration balances diversity and satisfies equity concerns.
- Student Transportation: Not Good
    - Transportation costs would increase, likely significantly. Paired schools may be over two miles apart, requiring DCSD to provide bussing.
- Walkability: Not Good
    - The number of students able to walk to school would effectively drop by 50%, as half their elementary years would be spent at a non-neighborhood school.
- Cultural and Social Cohesion: Good
    - Students and their families would move between schools together, maintaining neighborhood cultural and social groups.
- Residential Property Values: Neutral
    - The hedonic model from Section 3.2 indicates that some catchment areas would see housing values increase, while other catchment areas would see values decrease.
- Sustainability: Ambiguous

    - Neighborhood schools remain open, preserving Community Design; this policy also supports Community Knowledge values. However, increased commute distances may undermine Regional Mobility goals and contradicts Smart Energy Use goals.

- Parental Engagement: Ambiguous
    - Parent involvement may decrease for those who lack access to reliable transportation, but may be augmented by middle-income parents.
- Building Utilization: Good
    - This configuration helps achieve desired three- or four-section elementary schools.
- Political Feasibility: Ambiguous
    - Some may prefer this policy over school closures, while others may find the additional travel between schools unacceptable.
- Model Communities
    - Charlotte-Mecklenburg, NC; Denver, CO; Tampa (Hillsborough County), FL; Houston, TX; Minneapolis, MN; Falls Church, VA; Pasadena and Santa Barbara, CA.
- Lead Role
    - DCSD should conduct a thorough analysis of costs and benefits, gather public input, and consult with districts already implementing this type of policy.

Redrawing Boundaries

This policy entails keeping all current schools open, but redrawing catchment boundaries.

- Academic Achievement: Ambiguous
    - The highest FRL eligibility might be brought under the 50% tipping point, but relatively high poverty rates downtown will make this extremely difficult.
- Enrollment: Good
    - This policy could be used to fix short-term enrollment disparities. Shifting demographics and housing patterns may undermine the long-term success of this policy.
- FRL Eligibility: Ambiguous
    - High concentrations of poverty will make balancing FRL eligibility in a modified neighborhood school model difficult.
- Educational Equity and Diversity: Ambiguous
    - High density and high concentrations of poverty downtown may be too much to overcome through geographically-based catchment areas. Downtown schools would likely continue to reflect the predominant demographic and socio-economic characteristics of the surrounding area.
- Student Transportation: Ambiguous
    - Transportation needs and costs will depend on how boundaries are redrawn.
- Walkability: Neutral
    - Elementary school catchment areas will likely include the immediate vicinity of the school, causing no significant loss or gain to walkability.
- Cultural and Social Cohesion: Neutral
    - New geographic boundaries would result in significant changes for cultural and social groups that live close together.
- Residential Property Value: Ambiguous
    - More information about boundary reconfiguration is needed to properly anticipate this policy's impact on housing values.
- Sustainability: Ambiguous
    - Neighborhood schools remain intact, preserving Community Design. Specific policy details are needed to assess the impact on other Sustainability principles.
- Parental Engagement: Ambiguous
    - New attendance boundaries might put some students closer to their schools, while others will be reassigned to a school that is farther away.

- Building Utilization: Good
    - This configuration helps achieve enrollment balances, and may also be able to help ensure three- or four-section schools.
- Political Feasibility: Ambiguous
    - Redistricting may evoke strong feelings and emotions from residents, but DCSD has successfully reconfigured boundaries in the past.
- Model Communities
    - Hillsborough County (FL) public schools used a community values-based approach to redrawing boundaries. Maximizing building use, lowering transportation costs, and promoting diversity were all achieved with community buy-in.
- Lead Role
    - DCSD should conduct a thorough analysis of costs and benefits, and gather public input. New boundaries should anticipate changes in demographics and housing; DCSD should consult with the City on this.

Inclusionary Zoning

Rather than making policy changes for school assignment and configuration, this policy instead addresses the neighborhoods themselves. City policies regarding planning and zoning can be amended to encourage neighborhood diversity, primarily via mandating that developers include affordable housing in future projects. Incentives for home builders, developers, property owners, and prospective homebuyers can also be considered.

- Academic Achievement: Good
    - More diverse neighborhoods throughout the city should alleviate problems with high-poverty schools in the long run.
- Enrollment: Good
    - Inclusionary zoning would eliminate obstacles for low-income families to attend higher-performing schools, as housing would be more affordable.
- FRL Eligibility: Good
    - More diverse neighborhoods throughout the community will likely create better balanced FRL eligibility rates between schools. However, some families that are eligible for FRL may not be eligible for affordable housing consideration.
- Educational Equity and Diversity: Good
    - Inclusionary zoning may promote more diverse neighborhoods and, consequentially, more diverse schools.
- Student Transportation: Good
    - Greater diversity within neighborhoods will obviate the need for DCSD bussing for the sake of equitable enrollment.
- Walkability: Neutral
    - Diversity itself does not affect walkability, though increased density of development may result in more students living within walking distance of their school.
- Cultural and Social Cohesion: Good
    - Diverse neighborhoods increase opportunities for interaction among different cultural and social groups, both within the neighborhood and at school.
- Residential Property Values: Ambiguous
    - Specific inclusionary zoning policies need to be developed before their impact on housing values can be properly determined.
- Sustainability: Good

    - Diverse neighborhoods support Dubuque's values of Regional Mobility, Community Knowledge, and Community Design.

- Parental Engagement: Good
    - Research suggests middle-class parents establish the standard for involvement and augment the involvement of low-income parents.
- Building Utilization: Good
    - Community development practices would help balance enrollment socio-economically across the district.
- Political Feasibility: Not Good
    - NIMBYism and negative responses from developers and homebuilders would pose an obstacle to this policy change. Inclusionary zoning will require string political leadership from local government.
- Model Communities
    - Montgomery County, MD implemented inclusionary zoning; since then, the County has seen the supply of affordable housing increase and reduced segregation in schools.
- Lead Role
    - The City of Dubuque is responsible for city planning and zoning. City planners and other government officials should work with developers and property owners on identifying incentives that would make inclusionary zoning feasible. The City and DCSD could work together to educate the community on this matter.

In Depth: Grade Reconfiguration

As previously mentioned, grade reconfiguration can take several forms. (See Section 4.1 for one such arrangement and its impact on student performance, and Section 4.3 for that arrangement's impact on housing values.) Figures 5.1.1 and 5.1.2 below indicate other arrangements that attempt to balance FRL eligibility.

Figure 5.1.1
Example 1 of Grade Reconfiguration;
Sageville Remains K-5

		GRADES K-2			GRADES 3-5			
Paired Schools	2012-2013 FRL (%)	K-2 Enrollment (#)	K-2 Eligible for FRL (#)	K-2 Eligible for FRLin combined schools (%)	K-2 Enrollment (#)	3-5 Eligible for FRL (#)	3-5 Eligible for FRL in combined schools (%)	Distance between paired schools
Kennedy	19.3	268	52		267	52		
Fulton	83.4	134	112	**40.67**	119	99	**39.06**	3.7 miles
Total		402	163		386	151		
Marshall	66.4	149	99		133	88		
Irving	36.8	241	89	**48.11**	241	89	**47.33**	3.3 miles
Total		390	188		374	177		
Audubon	84.9	122	104		113	96		
Eisenhower	30.0	239	72	**48.55**	270	81	**46.20**	3.8 miles
Total		361	175		383	177		
Tablemound	27.4	202	55		234	64		
Lincoln	76.4	156	119	**48.75**	139	106	**45.66**	3.2 miles
Total		358	175		373	170		
Carver	22.1	273	60		276	61		
Prescott	80.2	126	101	**40.45**	120	96	**39.71**	5.1 miles
Total		399	161		396	157		
Bryant	36.3	127	46		157	57		
Hoover	33.0	152	50	**34.50**	130	43	**34.81**	3.1 miles
Total		279	96		287	100		
Sageville	27.0	127	34	**27.00**	125	34	**27.00**	N/A

In coming to these grade reconfiguration arrangements, the number of FRL-eligible students is calculated by multiplying the number of students in a building by that building's rate of FRL eligibility, which necessitates the assumption that FRL eligibility is uniform across all grades (actual numbers of FRL-eligible students are not available). Once buildings are combined, new FRL eligibility rates are calculated in reverse (dividing the number of FRL-eligible students by total enrollment). In developing the above arrangements, schools were paired by trial and error, using weighted totals, until a desirable outcome was achieved. Because of the odd number of elementary schools, at least one may need to remain a K-5 school; the schools that remain K-5 might be selected on grounds that they are farther away from the others.

Figure 5.1.3 shows the number of schools exceeding various building-level FRL rates from Example 1, before and after grade reconfiguration. Research suggests that the "tipping point" at which poverty negatively impacts academic achievement for all students in a building occurs when about 50% of the students are poor. Before grade reconfiguration, the five downtown elementary schools all have FRL rates above 60%, while the other eight elementary schools all have rates below 40%. After grade reconfiguration, all of the schools are below the 50% "tipping point".

Figure 5.1.3 also shows a major change in the range of FRL rates among the elementary schools. Before grade reconfiguration, the range spans 19.3% in Kennedy Elementary to 84.9% in Audubon Elementary. In other words, 65.6 percentage points differentiate the school with the lowest FRL rates from the school with the highest FRL rates. After grade reconfiguration, the difference drop to 21.8 percentage points, with a range of 27.0% to 48.8%. Excluding Sageville Elementary means that the range shrinks even further, from 34.5% to 48.8%. FRL rates for all other elementary schools would be within 8% of the district average, and Sageville would be much lower.

Figure 5.1.2
Example 2 of Grade Reconfiguration;
Sageville, Table Mound, and Prescott Remain K-5

		GRADES K-2			GRADES 3-5			
Paired Schools	2012-2013 FRL (%)	K-2 Enrollment (#)	K-2 Eligible for FRL (#)	K-2 Eligible for FRLin combined schools (%)	K-2 Enrollment (#)	3-5 Eligible for FRL (#)	3-5 Eligible for FRL in combined schools (%)	Distance between paired schools
Kennedy	19.3	268	52		267	52		
Fulton	83.4	134	112	**40.67**	119	99	**39.06**	3.7 miles
Total		402	163		386	151		
Marshall	66.4	149	99		133	88		
Irving	36.8	241	89	**48.11**	241	89	**47.33**	3.3 miles
Total		390	188		374	177		
Audubon	84.9	122	104		113	96		
Eisenhower	30.0	239	72	**48.55**	270	81	**46.20**	3.8 miles
Total		361	175		383	177		
Carver	22.1	273	60		276	61		
Lincoln	76.4	156	119	**41.85**	139	106	**40.29**	5.1 miles
Total		429	180		415	167		
Bryant	36.3	127	46		157	57		
Hoover	33.0	152	50	**34.50**	130	43	**34.81**	3.1 miles
Total		279	96		287	100		
Sageville	27.0	127	34	**27.00**	125	34	**27.00**	N/A
Table Mound	27.4	202	55	**27.40**	234	64	**27.40**	N/A
Prescott	80.2	126	101	**80.20**	120	96	**80.20**	N/A

Figure 5.1.3
Number of Schools Exceeding Various FRL Rates,
Before and After Grade Reconfiguration from Example 1

	Number of Schools						
	above 60% FRL	above 50% FRL "tipping point"	above district avg. FRL 42.2%	above 40% FRL	above 30% FRL	above 20% FRL	range
Before Grade Reconfiguration	5	5	5	5	9	12	19.3% - 84.9% (65.6 points)
After Grade Reconfiguration	0	0	6	8	12	13	27.0% - 48.8% (21.8 points)

5.2: Challenges of Open Enrollment

Potential Problems of Open Enrollment

Although open enrollment policies seem primarily relevant to school districts and education issues, they may also create unexpected and significant externalities in community development. In particular, open enrollment policies could potentially undermine already struggling schools, as an exodus of students drops total enrollment in the school buildings to unsustainable levels. Consequently, those neighborhood schools which often serve as "anchors" and provide essential services to neighborhood residents, become less financially viable and more at-risk for closure.

Families request open enrollment out of their assigned home schools for a variety of reasons, most often related to better-suited educational environments for their children. The policy is intended to "permit a wide range of education choices for students and to maximize the ability of parents/guardians to use those choices" (DCSD 2012). Proponents of school choice point out that open enrollment policies can provide disadvantaged students the opportunity to enroll in better-performing schools in hopes of a better educational experience.

School choice may appear to break the link between school enrollment and housing patterns that segregate populations by income or race. However, outgroup avoidance theory, commonly referred to as "white flight", suggests that school choice programs can make it "easier for white or otherwise advantaged parents to avoid schools with high concentrations of minorities or other disadvantaged students whom they choose to avoid" (Bifulco et. al., 2009). Socially advantaged families may have more opportunities to relocate or to open enroll into a school outside of their catchment area, based on financial resources and social acceptance, in order to exercise their preferences for school choice; disadvantaged families may lack the financial resources necessary to take advantage of open enrollment opportunities. Therefore, when white families and advantaged families open enroll out of an elementary school, the result could mean a higher proportion of low-income minorities and, consequently, further increased likelihood that they will have disproportionately inequitable educational experiences.

Special open enrollment policies mandated by the State of Iowa apply to Title I schools with Schools in Need of Assistance (SINA) designation. According to guidelines of the State of Iowa, parents must be made aware of the option to open enroll out of a Title I SINA school, and that the costs of transportation are covered by the school district (IDED 2012). The Title I policy provides support for schools with high concentrations of disadvantaged children, such as children in high-poverty schools and limited English proficient children, among others. The purpose of the policy is to "ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging State academic achievement standards". SINA designation reflects a school's failure to make Adequate Yearly Progress (AYP) toward reading and mathematics goals set by the State and designed according to the *No Child Left Behind Act of 2001*.

Open Enrollment Trends in DCSD

As illustrated in Figure 5.2.1, the number of students using open enrollment in Dubuque public elementary schools has grown each year since the 2008-09 academic year, the earliest year of available data. Since then, the number of open enrollment students grew 69% in the 2012-13 academic year to 480 students, or approximately 10% of the total district elementary school enrollment.

Figure 5.2.1

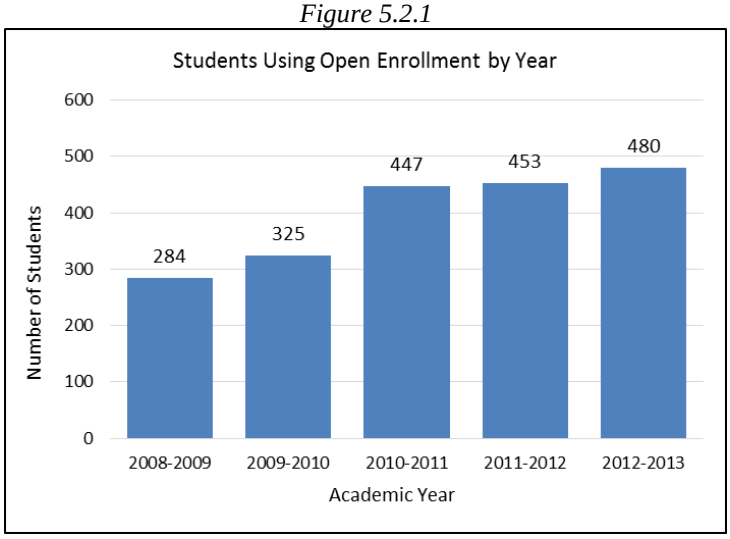


Figure 5.2.2

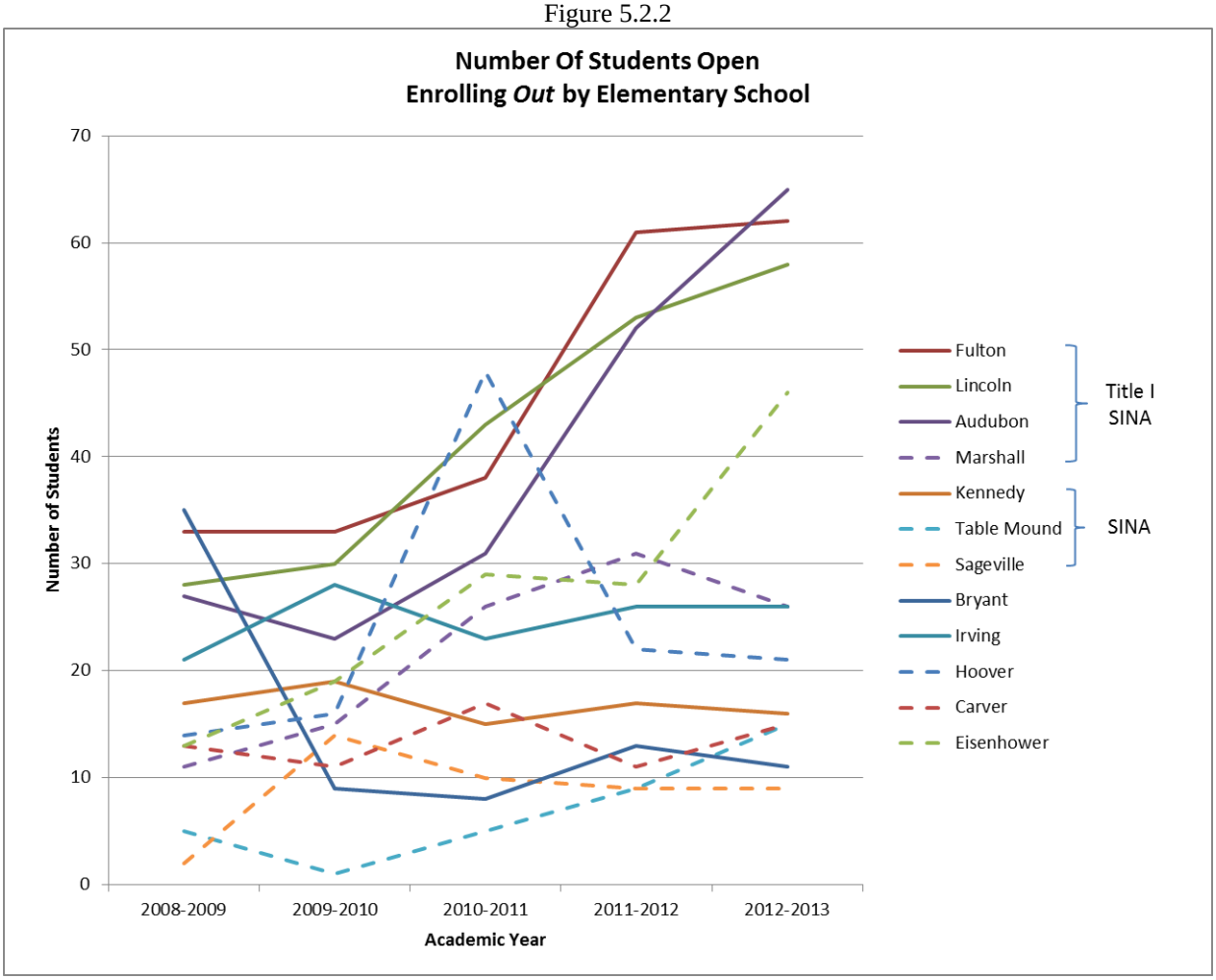


Figure 5.2.2 shows changes in the number of students by elementary school over the five-year period. The number of students leaving their home schools through open enrollment since the 2008-09 academic increased most for Audubon, Eisenhower, Fulton, and Lincoln.[1] The number of open enrolling students increased more quickly following designation as a Title I SINA school, which spurs notification to parents of the option to open enroll. Data prior to the 2008-09 academic year is not available and, therefore open enrollment trends by school building before Title I SINA designations are unclear.

Figure 5.2.3

[1] Prescott Elementary, as a district-sponsored charter school, is not pictured on the graph. Any DCSD student may enroll into Prescott, until the predetermined class size is reached. Upon request, families can request to be on a wait list. Parents within the Prescott catchment area are given a choice to submit an open enrollment request, or have their students assigned to one of the four neighboring downtown schools located within the 2-mile walk zone. In the 2012-13 academic year, 110 students open enrolled out of Prescott.

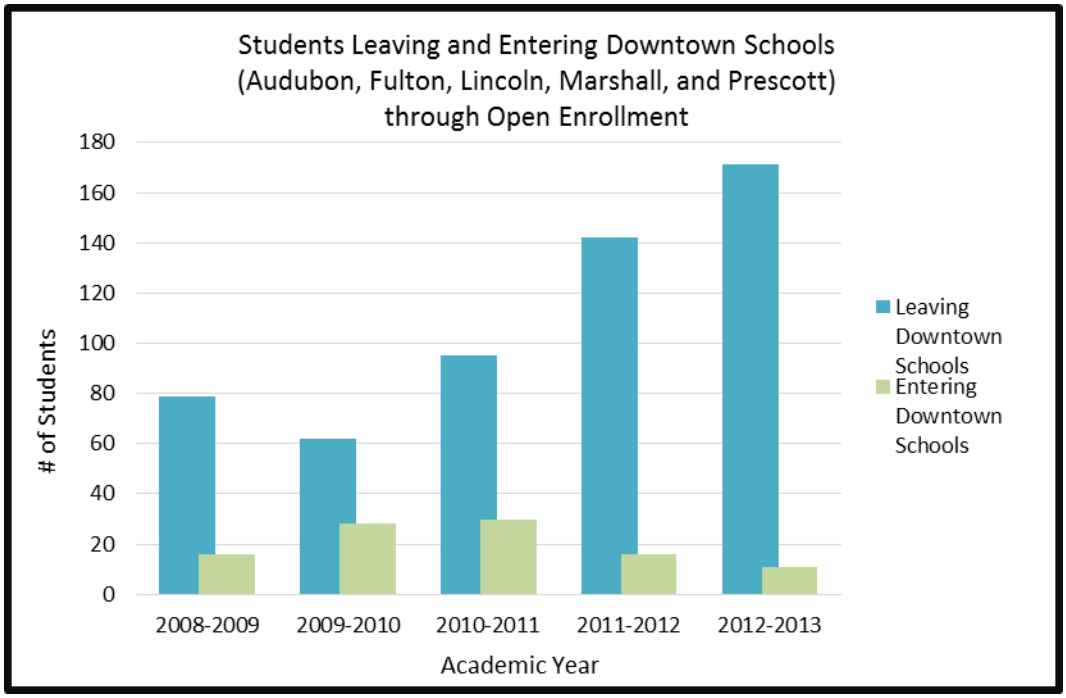
School	Year of Title I SINA designation
Audubon Elementary	2011-12
Fulton Elementary	2010-11
Marshall Elementary	2009-10
Lincoln Elementary	2009-09
Prescott Elementary[1]	2007-08

[1] *The Iowa Department of Education online reports date back only to 2007-08. Most recent year of designation for Prescott is not otherwise known.*

Figure 5.2.3 shows Dubuque public elementary schools with Title I SINA status as well as the most recent year of designation. Currently, all five downtown schools are Title I SINA schools, while no Dubuque public elementary schools outside of the downtown area have the designation.

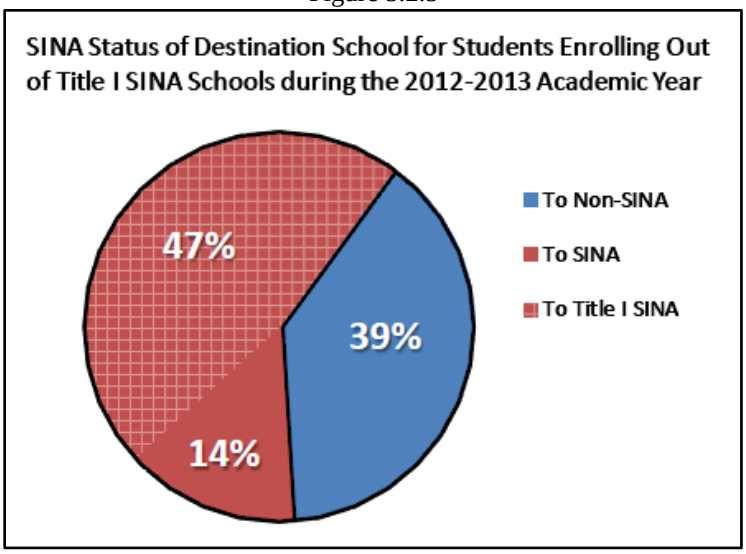
Most importantly, open enrollment policies cause a decline in total enrollment in downtown elementary schools (Audubon, Fulton, Lincoln, Marshall, and Prescott). Figure 5.2.4 shows the number of students leaving and entering the downtown schools through open enrollment. Each year, the number of students open enrolling out of downtown schools has been significantly higher than the number of students open enrolling into the downtown schools. Of the 480 students using open enrollment in the 2012-13 academic year, 321 (about 67%) students were assigned to downtown schools. More than half (171 students) enrolled into a school outside of the downtown area. Only 11 students lived outside of downtown catchment areas and opted to attend a downtown school. Prescott Elementary is a charter school and accepts student through an application process and not open enrollment. According to the school secretary, 24 students from catchment areas outside of downtown enrolled into Prescott during the 2012-13 academic year. The net loss due to students using open enrollment to leave downtown schools in 2012-13 equals nearly 11% of total enrollment in those schools.

Figure 5.2.4



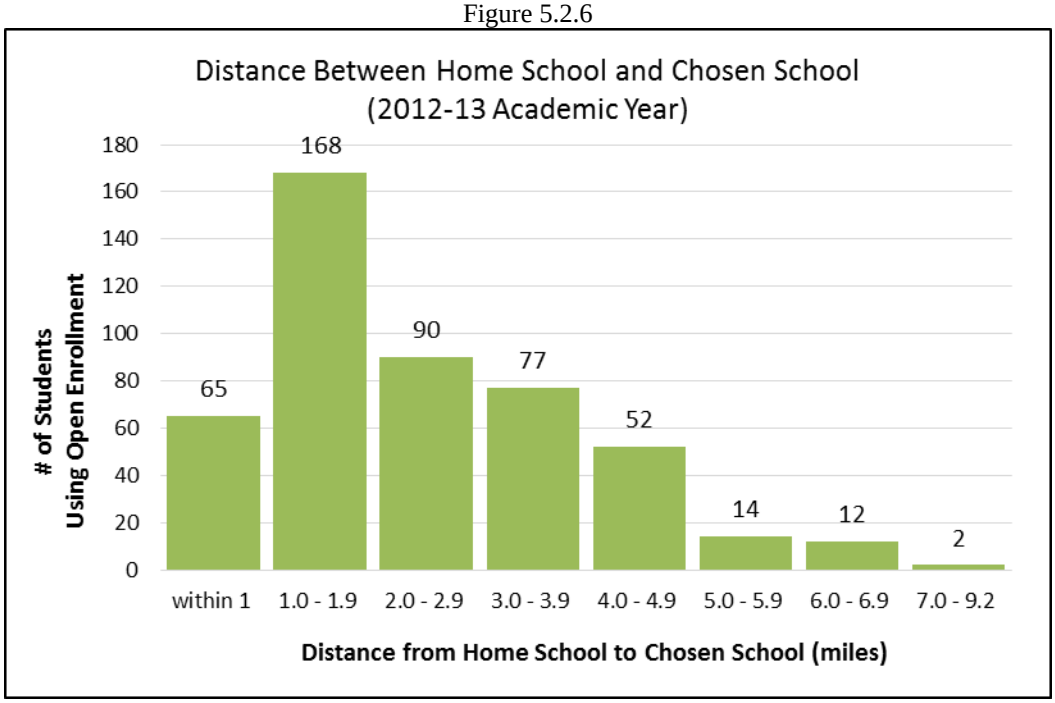
A majority of students enrolling out of a Title I SINA school apparently do not consider SINA status a deterrent when choosing a new school, suggesting that attendance at higher-performing schools may not be the primary motivating factor behind open enrollment in Dubuque. As shown in Figure 5.2.5, only 39% of students leaving Title I SINA schools enrolled into a non-SINA school in the 2012-13 academic year, 14% enrolled into a SINA school (Kennedy, Table Mound, or Sageville), and a surprising 47% enrolled into another Title I SINA school.

Figure 5.2.5



Convenience may be a factor for families when choosing an alternate school. Although state guidelines mandate that the district bear the transportation costs for students enrolling out of Title I SINA schools, few students take advantage of the opportunity. According the district transportation administrator, only 6 of 148 students eligible for district-provided transportation from a Title I SINA school to an alternate school use the service.

Figure 5.2.6



While data showing the home school and chosen school have been provided for each individual record, distance between each individual student's home and their chosen school is not known. As a proxy, Figure 6.6 shows frequencies of distance in miles between the home school and the chosen school for students using open enrollment in the 2012-13 academic year. The frequency histogram illustrates that students using open enrollment tend to select from the closest alternate schools. Of the 480 students using open enrollment, 49% enrolled into a school within 2 miles of their home school. The results are noteworthy considering only 16 of 78 possible school pairings fall within the 2 mile radius (only 4 pairs of schools are within one mile of each other: Audubon and Fulton, Audubon and Marshall, Audubon and Prescott, Hoover and Kennedy). Distances between schools are shown in Figure 5.2.7.

Figure 5.2.7

DISTANCE BETWEEN SCHOOLS (MILES) Source: Google Maps													
	Audubon	Bryant	Carver	Eisenhower	Fulton	Hoover	Irving	Kennedy	Lincoln	Marshall	Prescott	Sageville	Table Mound
Audubon		2.5	5.3	3.8	0.8	3.7	2.7	3.7	1.9	0.7	0.9	5.0	4.6
Bryant	2.5		4.9	4.0	2.8	3.1	1.9	3.6	1.0	3.2	2.0	7.0	2.2
Carver	5.3	4.9		2.6	5.3	2.2	3.0	2.4	4.2	6.0	5.1	6.6	6.5
Eisenhower	3.8	4.0	2.6		3.1	1.7	2.6	1.3	3.3	4.5	4.1	4.8	6.2
Fulton	0.8	2.8	5.3	3.1		3.7	2.8	3.7	2.0	1.3	1.1	4.2	4.8
Hoover	3.7	3.1	2.2	1.7	3.7		1.1	0.7	2.4	4.3	3.2	6.2	4.7
Irving	2.7	1.9	3.0	2.6	2.8	1.1		1.5	1.3	3.3	2.1	7.1	3.9
Kennedy	3.7	3.6	2.4	1.3	3.7	0.7	1.5		2.9	4.4	3.6	5.7	5.2
Lincoln	1.9	1.0	4.2	3.3	2.0	2.4	1.3	2.9		2.5	1.3	6.4	3.2
Marshall	0.7	3.2	6.0	4.5	1.3	4.3	3.3	4.4	2.5		1.5	5.7	5.3
Prescott	0.9	2.0	5.1	4.1	1.1	3.2	2.1	3.6	1.3	1.5		5.3	4.1
Sageville	5.0	7.0	6.6	4.8	4.2	6.2	7.1	5.7	6.4	5.7	5.3		9.2
Table Mound	4.6	2.2	6.5	6.2	4.8	4.7	3.9	5.2	3.2	5.3	4.1	9.2	

Conclusions

School choice certainly helps many families improve educational experiences for their children, yet the policies may have significant unintended consequences detrimental to neighborhood conservation and revitalization. Local, state and federal open enrollment policies have increasingly contributed to the problem of declining enrollment in Dubuque's downtown public elementary schools. Open enrollment policies may also perpetuate and exacerbate the negative consequences caused by concentrations of poverty in downtown neighborhood schools. Additionally, self-reinforcing changes could occur as the under-achieving elementary schools become increasingly less attractive to families in Dubuque and, as a result, downtown

neighborhood schools become less viable. As the City of Dubuque has pointed out, school closures could have significantly negative impacts on vulnerable neighborhoods and populations.

Open enrollment trends exemplify the intricate relationship between education and community development and should compel city administrators and planners to be closely engaged with the school district, particularly because they have expressed an interest in preserving downtown schools to support surrounding neighborhoods. Even though many open enrollment policies emanate from the state and federal governments, both local education and city officials have a unique perspective to contribute to the national discussion concerning the impacts of such policies on a medium-sized community.

Open enrollment also illustrates the dilemma facing many cities and school districts regarding how best to coordinate policy changes in order to minimize adverse effects on the community. This research has simply identified some potentially negative consequences of the open enrollment policy- the best path forward will require a holistic approach and collaboration among community leaders, guided by equity principles and community values.

5.3: Transportation

Purpose

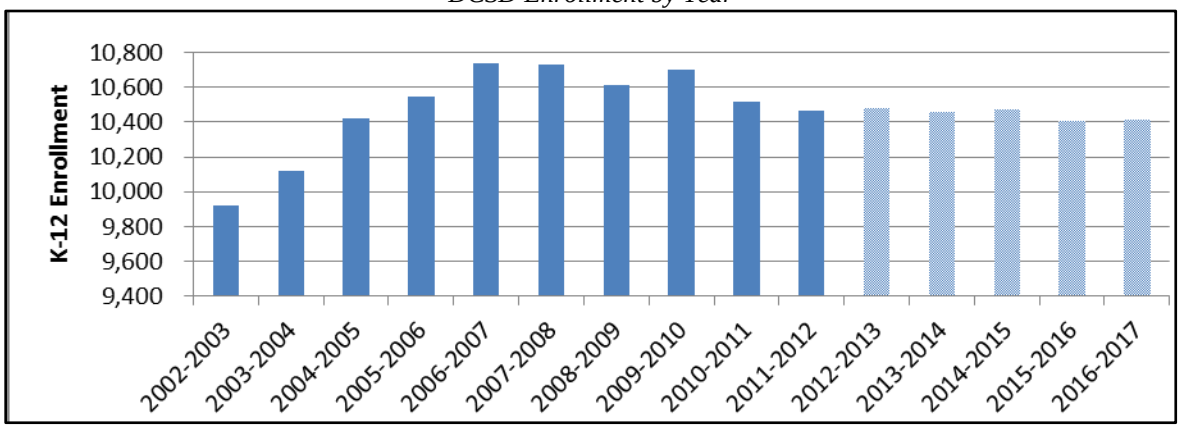
Public school students are bussed to and from school at public expense. During the 2008-09 school year (the most recent year for which data is available), Iowa school districts dedicated an average of 4.9% of their budget to transportation costs. Iowa school districts with enrollment greater than 7,500 students spent considerably less—only an average of 2.38% of their budget on transportation (Iowa Legislative Services Agency Fiscal Services, 2006). DCSD currently buses 1,074 of their 4,640 elementary school students at an average cost of $844.16 per pupil (based on 2011-12 cost per transported); this equates to roughly $1 million in transportation spending for elementary students.

The policy proposals discussed in Section 5.1 impact DCSD transportation costs to varying degrees. While most of the policy proposals are abstract, it is possible to do a rough analysis of how closing a downtown school might impact transportation costs, as well as how grade reconfiguration might impact transportation costs.

Enrollment

In an effort to understand the impact on transportation given possible school configurations, enrollment and current capacity in Dubuque's 13 elementary schools must be examined. The Schools Group has not received requested building capacity data. Therefore, a capacity analysis has not been completed and will be disregarded for transportation analysis purposes

Figure 5.3.1
DCSD Enrollment by Year



Source: Iowa Department of Education

Figure 5.3.1 reflects certified enrollment for the DCSD since the 2002-03 school year. Certified Enrollment, as defined by the Iowa Department of Education, is an annual report on enrolled resident students. The certified enrollment count is taken annually, on the first day of October. Between the 2002-03 and 2006-07 school years, the district experienced a steady increase in enrollment. Enrollment peaked in the district at 10,734 during the 2006-07 school year. The Iowa Department of Education calculated enrollment projections through the 2016-17 school year. The projected enrollment suggests district-wide enrollment will remain relatively steady at roughly 10,400 students.

Figure 5.3.2 below shows elementary student enrollment, by building, for the past decade (peak enrollment is in bold). Overall, student enrollment increased during the 2002-03 to 2004-05 school years. Five schools experienced their peak enrollments in the 2004-05 school year, as indicated in the table below. Correspondingly, this was also the year with the highest enrollment in all buildings (5,030). Then, in the following school year, a new middle school opened and the elementary buildings no longer included 6th grade. Thus, the schools show a combined enrollment decrease of 13%. Only one building, Carver, has had an increase in enrollment each year.

Figure 5.3.2
Yearly Elementary Enrollment by Building

Enrollment by Building	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Carver						416	433	475	537	**554**
Audubon	**389**	368	370	337	342	292	283	311	259	261
Bryant	313	318	**338**	309	315	330	319	314	316	303
Eisenhower	544	576	**596**	565	577	525	546	557	544	521
Fulton	**309**	308	295	195	259	250	215	247	254	256
Hoover	328	334	**354**	318	334	281	280	277	258	246
Irving	571	**617**	602	534	517	490	477	473	500	488
Kennedy	555	608	642	612	**658**	478	491	508	511	538
Lincoln	373	374	**437**	300	331	320	336	374	285	258
Marshall	328	347	**362**	286	279	252	267	263	249	259
Prescott	189	237	245	242	227	243	245	247	**261**	244
Sageville	347	**356**	354	302	325	320	311	282	278	265
Table Mound	398	428	435	393	397	**463**	449	435	422	410
Total	**4,644**	**4,871**	**5,030**	**4,393**	**4,561**	**4,660**	**4,652**	**4,763**	**4,674**	**4,603**

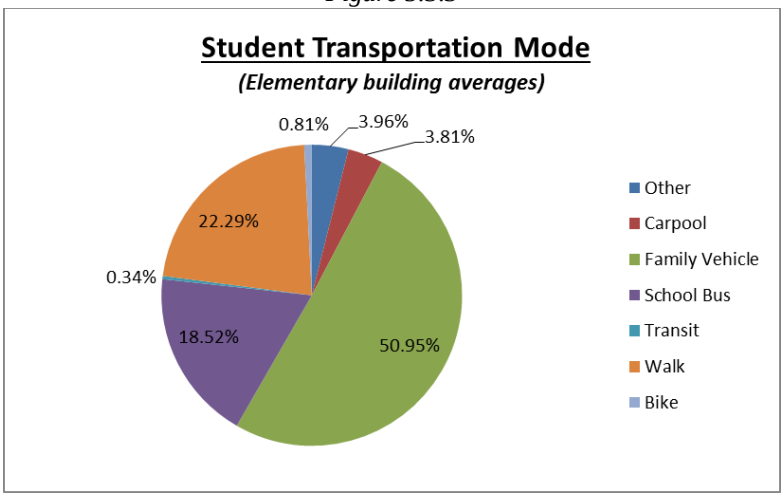
**Carver Elementary first opened in the 2007-08 school year*
** 2005-06 school year begins K-5 in elementary buildings*

Since the 2006-07 school year, the combined building enrollment has remained relatively constant, with a mere 4.5% increase in enrollment since the 2005-06 school year. The reader is cautioned against strict interpretation of the above data due to changes in school configurations. The addition of a charter school (Prescott), the building of a new elementary (Carver) and middle school (Roosevelt), as well as designations of seven elementary schools as SINA schools all impact student movement within the district during the studied decade.

Student Commutes

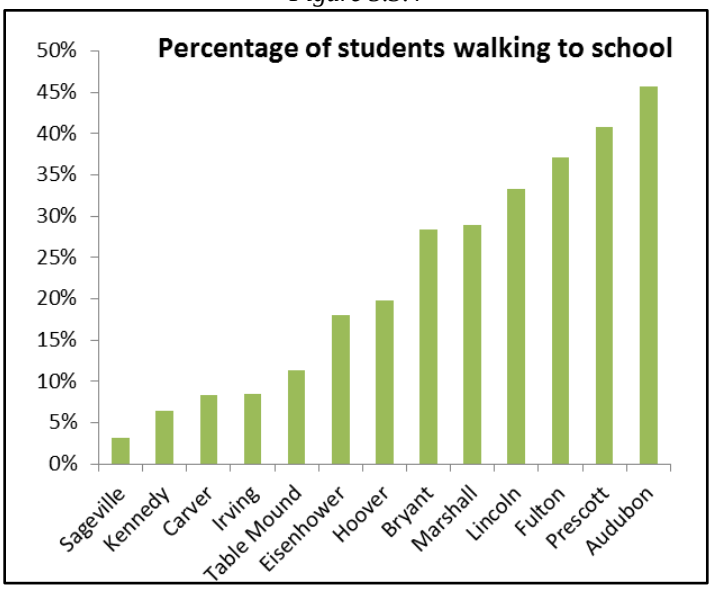
The majority of Dubuque's elementary students, 50.95%, travel to school by family vehicle. The second most common means of getting to school is walking (22.29%). Somewhat surprisingly, the least common method of getting to school is by bike; less than 1% of students get to school this way.

Figure 5.3.3



As illustrated in Figure 5.3.4 below, Audubon, Fulton and Prescott have the highest percentage of students who walk to school. These schools are located downtown, where population density is higher. In contrast, Carver, Kennedy and Sageville, schools on the sprawling outer edges of Dubuque, have the lowest percentage of walkers, averaging only 6%. Moreover, Sageville has the highest percentage of students living more than two miles from school; as a result, 73% of Sageville students are bussed, the most for a DCSD school.

Figure 5.3.4



Data Source: ECIA November 2008

Five of Dubuque's 13 elementary schools do not have regular bus routes (special education bus routes are not included in this analysis). Audubon, Bryant, Fulton, Lincoln and Prescott students all live within the two-mile minimum radius required to necessitate a bus route; Bryant, Fulton, and Lincoln were proposed for closure in 2010. Moreover, as shown in Figure 5.3.5 below, one-third to one-half of students at Audubon, Bryant, Fulton, Lincoln, and Marshall live less than ¼ mile from their school (shown in green). Correspondingly, the majority of these school's students have the shortest travel times to school and have high walker rates (ranging from 33%-46%). These schools are located in, or near, downtown Dubuque and are shown in bold in the column on the right. Schools with the highest percentages of students located over two miles from their school are shown in red.

Figure 5.3.5
Student Commute (by building)

	Distance to school: Over 2 miles	Distance to school: Under 1/4 mile	Travel time to School: Under 5 min.
Audubon	2.20%	**55.43%**	**61.96%**
Bryant	1.49%	**37.31%**	**52.24%**
Carver	19.85%	12.98%	**48.09%**
Eisenhower	21.46%	21.07%	30.27%
Fulton	5.71%	**45.71%**	**48.57%**
Hoover	30.46%	20.53%	40.40%
Irving	25.59%	21.33%	39.34%
Kennedy	**56.15%**	10.16%	31.02%
Lincoln	4.35%	**37.68%**	**53.62%**
Marshall	28.89%	**31.11%**	**46.67%**
Prescott	9.26%	18.52%	33.33%
Sageville	**80.31%**	3.94%	16.54%
Table Mound	**65.41%**	15.04%	27.82%

Approximately 23% of Dubuque's elementary students are eligible for bussing. This equates to 29 morning/afternoon bus routes between the eight elementary schools with general route bussing. Our analysis focuses on *eligible ridership on general routes*, as actual bus attendance data was not provided for this analysis. The following is an overview of bussing within the District as a whole:

Figure 5.3.6
Transportation Statistics

School Year	Enrollment	Net Operating Cost	Average # Students Transported	Average Cost Per Pupil Transported	Average Cost Per Pupil Enrolled	Average Cost Per Route Mile
2011-2012	10,469	$ 2,500,390.09	2,962	$ 844.16	$ 238.84	$ 3.79
2010-2011	10,517	$ 2,380,759.38	2,631	$ 904.96	$ 226.36	$ 3.90
2009-2010	10,578	$ 1,956,662.55	4,008	$ 488.15	$ 184.97	$ 3.24
2008-2009	10,500	$ 1,826,144.38	4,058	$ 450.02	$ 173.92	$ 3.07
2007-2008	10,585	$ 1,628,821.54	3,918	$ 415.70	$ 153.88	$ 2.99
2006-2007	10,714	$ 1,593,727.42	4,197	$ 379.78	$ 148.75	$ 2.90
2005-2006	10,528	$ 1,594,796.86	3,939	$ 404.83	$ 162.08	$ 2.74
2004-2005	10,254	$ 1,706,467.91	4,272	$ 399.44	$ 166.41	$ 2.59
2003-2004	9,916	$ 1,550,512.00	3,972	$ 390.41	$ 156.36	$ 2.50
2002-2003	9,700	$ 1,453,934.00	4,099	$ 354.71	$ 149.88	$ 2.51
2001-2002	9,460	$ 1,381,835.06	3,952	$ 349.65	$ 146.08	$ 2.28

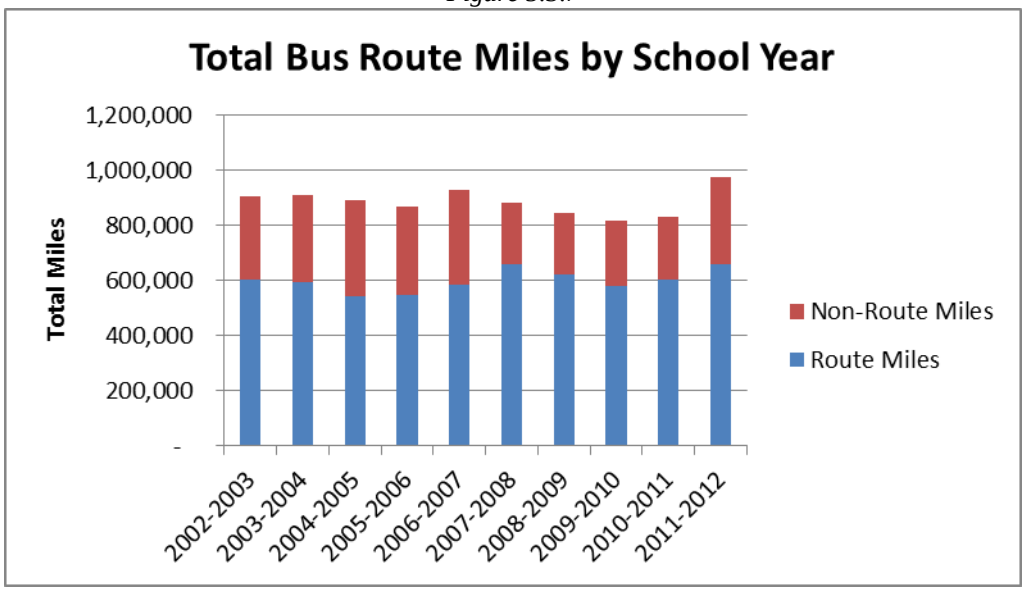
Source: Iowa Department of Education, Transportation Publications and Data

Through the 2009-10 school year, the average number of students transported only considered *eligible* riders. According to the District's Assistant Transportation Director, reporting requirements changed after the 2009-10 school year. The 2010-11 school year shows a dramatic decrease in students transported because the new reporting requirements use *actual* (rather than eligible) ridership. As a result, it appears average cost per pupil transported nearly doubled, jumping from $488.15 in 2009-10 to $904.96 the following year (see Figure 5.3.6 above). However, when considering average cost per pupil enrolled or average cost per mile the increase is around 20%. Average cost per route mile has steadily increased, jumping 66% in the past decade. Transportation cost increases far exceed the district's growth rate, as enrollment has only increased 12% over the same period.

During the 2011-12 school year, DCSD buses traveled a total of 976,218 miles (both route and non-route, and including the elementary, middle school and high schools). This represents a 7.5% increase in route miles from a decade ago, when route miles totaled 907,276. As shown below in Figure 5.3.7, bus miles had generally been decreasing since the 2006-07 school year. However, total miles for the district increased by about 15% between the 2010-11 and the 2011-12 school years, the decade's largest change in miles. About a third of the total bus miles are for non-route trips, such as field trips, athletic events, fine art performances, or other school-related

activities. These non-route miles are not considered in the state's average cost per route mile calculations (far right column in Figure 5.3.6, above).

Figure 5.3.7



Data Source: Iowa Department of Education, Transportation Publications and Data

Figure 5.3.8 below illustrates the average DCSD elementary school bus route length, in miles. Irving, Marshall and Eisenhower have the shortest bus routes amongst the eight schools that have bussing. This stands to reason as they have some of the smallest enrollment areas, shown in the column entitled *Size of Enrollment Boundary*. The five schools with no general bus routes (depicted at the bottom of the table, in white) correspondingly have small enrollment areas, encompassing approximately one square mile each, with the exception of Bryant. Table Mound and Sageville have the largest boundary areas (120.6 square miles and 77.7 square miles respectively), as they do not have the same population density in their areas as DCSD elementary schools. Thus, these two schools have longer route lengths and larger enrollment boundaries, as shown below. As expected, transportation costs are higher for these schools.

Figure 5.3.8

School	Students Traveling to School by Bus (%)	Average Route Length (miles)	Size of Enrollment Boundary (square miles)
Irving	15.6%	4.15	3.1
Marshall	15.6%	5.73	3.0
Eisenhower	7.7%	5.79	5.4
Kennedy	42.8%	9.13	22.8
Carver	13.0%	10.69	14.1
Hoover	15.2%	11.16	7.8
Sageville	73.2%	15.53	77.7
Table Mound	39.9%	20.09	120.6
Audubon			1.0
Bryant			3.8
Fulton			0.7
Lincoln			1.1
Prescott			1.3

Data Source: ECIA and GIS

Cost Impacts

A potential effect of DCSD policy change is that bus service would have be introduced to areas that currently do not receive it. If Audubon, Fulton, Lincoln, or Prescott is closed, more bussing will be required, as these schools currently have no bussing. Additionally, equity issues could arise if the most walkable schools are closed in favor of socioeconomic diversity.

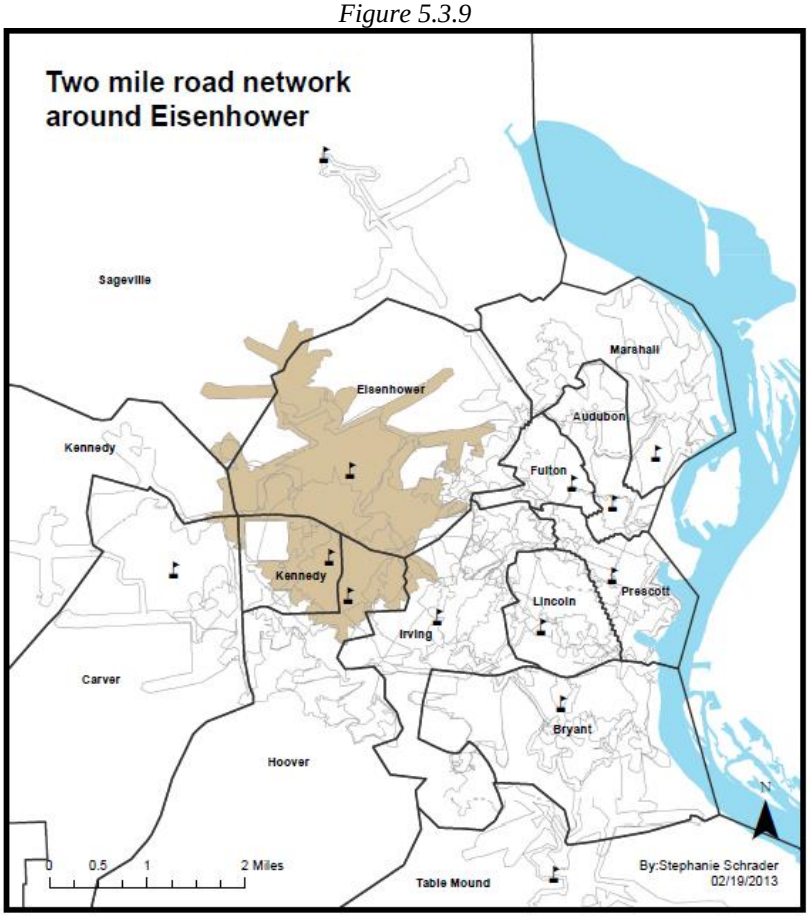
The group looked at the impact on student transportation if alternative measures to address socio-economic enrollment issues are implemented. Our first scenario assumes one of the downtown schools (Audubon, Fulton, Lincoln, or Prescott) will close and that the displaced students will then attend Eisenhower (as previously mentioned, this analysis building capacity and assuming all students are eligible for general route bussing). The downtown schools were selected for the scenario as they do not have general bus routes and they have a high percentage of students who walk to school. The second scenario for this analysis assumes grade reconfiguration as previously discussed in Section 5.1; for this particular analysis, Eisenhower and Fulton are

paired, with Eisenhower housing kindergarten through 3rd grade and Fulton housing 4th and 5th grade.

Hypothetical 1: Downtown School Closure

Using the Arc GIS network analyst tool, one- and two- mile roadway network buffers were created. This spatial analysis tool creates an actual drivable route to the school. This is preferential to simply creating a buffer around the school itself, which is based on straight-line distance, rather than drivable routes. The road network showed that Eisenhower's two-mile road network does not overlap with Audubon, Fulton, Lincoln, or Prescott's boundaries (Figure 5.3.9, below), therefore all students from these schools would be eligible for bussing to Eisenhower if one of these schools were to be closed.

Figure 5.3.9



In the event of a school closure, DCSD would have to transport 257 students (the average2012-13 enrollment of Audubon, Fulton, Lincoln, and Prescott). Given a bus capacity of 65 students, DCSD would need to dedicate up to five buses to transport displaced students to Eisenhower. The estimated yearly cost of transporting these students, assuming an $844.16 per-pupil cost, would be $216,949.12. This will result in a 9% increase over current net operating costs.

Hypothetical 2: Grade Reconfiguration

The school district may consider a grade reconfiguration option, such as outlined in Figure 14.10 below. In this scenario, Eisenhower would house students in grades K-3, while Fulton would serve strictly 4th and 5th grade students. As shown in Figure 5.3.10, building enrollment would remain similar to current levels (509 students currently at Eisenhower, vs. 504 students under the K-3 scenario; Fulton likewise has a minimal change in enrollment from the current 253 to 258 under the 4-5 reconfiguration scenario). This type of scenario could help the district meet its goals of increasing diversity and can be more efficient in terms of balancing classroom size and number of sections per grade.

Figure 5.3.10

Current 2012-2013 Enrollment by Grade							
	K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**	**Bldg Total**
Eisenhower	**88**	**81**	**70**	**92**	**94**	**84**	**509**
Fulton	**45**	**46**	**43**	**39**	**39**	**41**	**253**
Scenario: Grade Reconfiguration (Eisenhower as K-3rd Building and Fulton as 4th/5th Building)							
Eisenhower K-3rd	**133**	**127**	**113**	**131**	**0**	**0**	**504**
Fulton 4th/5th	**0**	**0**	**0**	**0**	**133**	**125**	**258**

Source: Iowa Department of Education, Bureau of Planning, Research, and Evaluation

In the event of this grade reconfiguration scenario, DCSD would be responsible for bussing 351 additional students for a total cost of $296,300.16, assuming a per-pupil cost of $844.16. This is 27% more expensive than the previously-discussed downtown school closure scenario.

Another transportation cost consideration relates to “deadhead” miles, defined as miles driven with no passengers. Deadhead miles occur four times a day: from the bus garage to the first pick up in the morning, after completion of morning runs back to the bus garage, afternoon runs to the

school and from the last drop off back to the bus garage. The group examined deadhead miles for the eight elementary schools with general bus routes. Figure 5.3.11 shows the schools with the largest enrollment boundaries, Sageville and Table Mound, correspondingly have the largest average deadhead miles, of 10.8 and 11.3, respectively.

Figure 5.3.11

School		Average Deadhead Miles
Carver		7.6
Eisenhower		3.2
Hoover		3.1
Irving		2.8
Kennedy		6.3
Marshall		3.0
Sageville		10.8
Table Mound		11.3
One-way Total		**48.1**
Calculations		
Round trip Total (48.1*2)		96.24
Deadhead miles per school yr.		17,130.72
Transportation cost per mile		x $ 2.56
Deadhead miles cost*	$	43,854.64

** For DCSD elementary schools general route busing only*

The current cost of deadhead miles was calculated by taking the sum of average total deadhead miles from the bus garage to the first morning stop. Assuming routes are reversed in the afternoon, the morning total was doubled to arrive at a daily roundtrip deadhead mile total of 96.24. (This analysis does not include deadhead miles between the schools and the bus garage as these miles are fixed, irrespective of changes to routes). Deadhead miles per school year were computed by multiplying daily roundtrip miles (96.24) by the number of annual elementary school attendance days (178). The resulting 17,130.72 miles was multiplied by the district's transportation cost per mile (calculated by dividing the district's 2011-12 net operating cost shown in Figure 14.6 by both route and non-route miles for the same period, Figure 14.7). Thus, current deadhead miles for the elementary schools cost $43,854.64 annually. This number may serve as another cost to consider when making policy changes that affect elementary school enrollment.

Figure 5.3.12

Bus Utilization Rates	
Carver	72.82%
Eisenhower	52.31%
Hover	49.23%
Irving	40.00%
Kennedy	69.74%
Marshall	107.69%
Sageville	41.98%
Table Mound	53.85%
Data Source: DCSD	

Bus capacity utilization rates (Figure 5.3.12, above) measure how the district's transportation operations are using the seat capacity on the elementary school general bus routes. This simple analysis is an important component of maximizing efficiency and cost effectiveness of a school bus route (Officials, 2007). According to school officials, the buses on DCSD's elementary school bus routes have a capacity of 65 students. The table above shows the bus capacity utilization rates for the 2012-13 school year. The calculations are based on eligible riders per route. Actual ridership, although requested, was not provided for this analysis. Hence, since Marshall has 70 riders assigned to its general route, utilization is greater than 100%. Utilization based on eligible ridership averages 54.28% (excluding Marshall). Utilization falls below seat capacity in each case, with the exception of Marshall. These numbers can provide parameters for which the district to help gauge efficiency of the bus routes in the future.

Although reconfiguration options may increase cost of transportation, fiscal efficiencies have the potential to be realized through coordinated efforts between school and the city's public transit service. Examples of such coordinated efforts in Iowa include Des Moines, where the Metro Transit Authority carries over 2,000 students; Cedar Rapids, where Five Seasons Transportation carries students living within the two-mile boundary; Iowa City, where Iowa City Transit has routes for school purposes, similar to Cedar Rapids; Marshalltown, Ft. Dodge, Ottumwa and Mason City all have public transit/school coordinated programs; and Council Bluffs Special Transport Service provides transportation for the district's disabled services (Andre, Kroeger, &

Mascarello, 2003). A 2003 Iowa Department of Transportation study regarding coordinated efforts between public transit and schools found that such coordination can occur when there is a clear benefit to both parties. The same report found that in Iowa, 23 transit agencies coordinated with 45 school districts for a net public savings exceeding $1 million. Keys cited for coordinating efforts include existing need, unused capacity, willingness to work together, the absence of legal or regulatory barriers, and the assurance of student safety.

Conclusion

Transportation is an imperative element of any school district, with student's safety of foremost importance. Factors affecting transportation costs should be carefully examined when considering opening or closing schools, making boundary changes, grade reconfiguration or altering enrollment policies. Further, working with the city, particularly in light of the recent Sustainable Dubuque Smarter Pilot Travel Study program, which aims to reduce costs, save resources, and decrease environmental impact could be a viable and sustainable option for both the City and the School District that maximizes resources and provides increased alternatives to students and families at a lower overall cost.

5.4: Need for Collaboration

Student achievement is not solely affected by in-school factors such as class size, curriculum, student demographics, or teacher experience. There are a myriad of external factors that affect students' ability to learn. These can range from student-specific issues (does the student come from a stable home?) to community-wide issues (do students from a neighborhood face impediments to travel to and from school?).

The Rationale for Collaboration

Economic development and city evolution are factors that are well beyond a school district's control, but can have significant ramifications for how a school district functions. In addition to the direct impact on students' learning and living environments, patterns of economic development and growth will affect the property tax base, which will in turn affect the school's ability to raise revenue. City development patterns also influence population densities and composition, which dictate where a school district locates a new school (or whether it closes an existing school). City efforts at revitalizing certain neighborhoods, meanwhile, are contingent on schools (among other amenities) remaining in the neighborhood; the closure of a neighborhood school, while plausibly a rational choice for a school district, might derail the city's efforts to revitalize a struggling neighborhood.

In addition to the varying out-of-school factors, schools need to consider the various constituencies involved in education policy. Alan Peshkin (1995) identifies five basic educational constituents: professionals, i.e. teachers; civic, i.e. citizens; governmental, i.e. school board members and legislators; custodial, i.e. interest groups and nonprofits; and beneficiaries, i.e. students and community members. The importance in recognizing these different constituencies lies in the fact that each constituency will approach problems differently. Education professionals, for instance, are intimately involved in the day-to-day education process and fight passionately for the needs of their schools; legislators, on the other hand, are often responsible for the wellbeing of their jurisdiction as a whole, and often have to weigh educational interests against other important matters. Because all five constituencies have a stake

in education policy and outcomes, in terms of both reaping benefits and paying costs, all five constituencies should be involved. The variety in viewpoints may create conflict, but will also yield some out-of-the-box ideas; leaving education policy to just one group will create an insulated discussion environment where critical issues may be overlooked or underappreciated. Furthermore, some constituencies (for example, the poor or ethnic minorities) may be too passive or powerless to force their way into education policy discussion, and need to be actively encouraged to participate, lest their needs be overlooked by the more assertive collaborators.

Current Collaboration in Dubuque

Between DCSD and the City

Current collaborative efforts between the City of Dubuque and the Dubuque Community School District generally revolve around infrastructure improvements. The city and the school district have cooperated on playground facilities at elementary schools that serve as neighborhood playgrounds during non-school hours. These arrangements save both the district and the city money, and make district resources available to neighborhood children beyond the school day.

More recently, the city and district have explored a jointly-operated indoor aquatic center to replace the existing aquatic center at Dubuque Hempstead High School. According to a Request for Proposal for Indoor Aquatic Center Study document dated January 4, 2013, the district would own and operate the facility, but rent it to the city for recreation programs. The school district states that it is "partnering" with the city to plan for the facility. The Study would include community engagement and outreach analyses, citing the need for community support; the Request for Proposal specifies that community engagement will be the responsibility of the contractor, with both the city and the district assisting.

Despite these infrastructure projects, there appears to be no established collaborative process on city or district objectives as a whole. The absence of collaboration was revealed in the district's school closure proposals in 2010, where the city's planning department was caught off-guard by the district's intentions. The planning department questioned several of the district's assumptions and rationales for closing up to five elementary schools, and indicated that the district had not

gathered enough public input. The planning department also pointed to the efforts that the city had made in downtown revitalization and encouraging homeownership in certain neighborhoods, and how the proposed closures might undo the progress made. The school closure and consolidation proposals have since been abandoned. The collaborative relationship between city and district has improved since 2010, with meetings between city and district administrators on a monthly basis, but whether these administrative meetings have fostered greater day-to-day cooperation is unclear.

Between Schools and Neighborhoods

Collaboration between schools and their constituent neighborhoods varies. Principals from Audubon, Eisenhower, Fulton, Lincoln, Prescott, and Table Mound were given a brief questionnaire on which organizations each school works with and how frequently they work together (the questionnaire was provided to all thirteen elementary schools). This questionnaire also asked about parental involvement at each school as measured by parent-teacher conference attendance and the principals' general impressions. (Data for volunteer hours, etc. is not currently tracked.)

All six schools reported collaborating with the City of Dubuque (Table Mound Elementary specified that they collaborate with the Leisure Services department). Four of the six schools reported cooperating with local neighborhood associations, five of the six reported working with Boys & Girls Clubs, three of the six reported working with Boy Scouts or Girl Scouts, and four of the six reported working with the St. Mark Community Center. Each school also reported unique partnerships; Fulton Elementary, for example, reported working with the Dubuque Kiwanis Club.

With regard to coordination and frequency, four of the six schools reported that primary responsibility for coordination fell with the school administration, with three of those schools reporting that teachers had also taken initiative in organizing collaborative efforts. Two of the schools reported some district-level involvement. Two schools reported that their parent-teacher organizations also organized some partnerships. Five of the six schools reported that collaborative efforts resulted in projects or activities at least once per week (with St. Mark

providing daily support) with multiple projects planned throughout the year; only Table Mound reported a frequency of "once or twice per semester," with these projects occurring on a case-by-case basis.

When asked about the desire for future collaboration, only Table Mound identified a specific goal in collaborating with the city to install additional sidewalks in its vicinity. The other five schools expressed an interest in additional opportunities for collaboration, but did not offer specifics. Interestingly, four of the six schools asked that additional collaborative efforts be organized by district administration rather than by school administration.

The six responding schools all reported parental participation at parent-teacher conferences in excess of 90%, with Table Mound and Eisenhower reporting 98% and 95% participation, respectively, but these were the only "good" numbers. Parent-teacher organization and site council participation was much lower, however, with schools reporting anywhere from two to eight parents participating on a consistent basis (Eisenhower reported having 18 parents participate consistently). Principals' characterization of parental involvement at their schools varied widely, ranging from "not at all involved" at Audubon to "very involved" at Eisenhower; schools reported that over the past ten years, parental involvement has either decreased or remained the same (no school reported a perceived improvement). Lincoln Elementary has taken a proactive approach to parental involvement, having established parental involvement goals that include teachers extending an invitation to parents "for a classroom event related to student learning three times throughout the year."

Frameworks for Future Collaboration

Long-term sustainable collaboration should focus on preventing societal problems rather than on "damage control." To reduce high school dropouts, schools and communities need to prepare middle school students for high school success—and, therefore, elementary students for middle school success—instead of trying to make up for lost time when underperforming students reach high school (Holtzman).This preventive focus sets the appropriate context for collaboration between Dubuque elementary schools, city agencies, and community organizations.

With this goal in mind, sustainable collaboration requires a stable, though not necessarily formal, hierarchy (Gray 1995). The three phases of collaboration—problem-setting, direction-setting, and implementation—require coordinated effort by the identified stakeholders. Navigation through these phases requires that stakeholders have identifiable responsibilities and that stakeholders have the authority to make critical decisions. Stakeholders need not be subservient to one another (they can all, in fact, be co-equals), but the collaborative process needs to be sufficiently defined such that there is a clear decision-making process and ability to follow through.

There are significant obstacles to collaboration, especially for school-community partnerships. Collaborative efforts need to overcome the inertia caused by institutional distinctiveness, power disparities between stakeholders, societal-level dynamics, political and institutional norms, and technical complexity. These are further exacerbated by the unpredictability (or inadequacy) of funding sources (for all stakeholders), logistics, protection of student confidentiality, and information gathering and management (Gray). Changes in leadership can also be a hindrance to effective collaboration; as a result, collaborative frameworks need to rely on institutional, rather than solely personal, contacts.

Ultimately, schools need to aim for a synergistic relationship with their students' homes and with community resources (Wescott & Konzal 2002). Walls between the school, home, and neighborhood environments need to be taken down, because everyone is (or ought) to be asking the same fundamental question: "What can all of us do together to educate all children well?" There are certainly many specific sub-aims or different priorities (as will be discussed below in the context of rational versus counter-rational collaboration frameworks), but every well-intentioned stakeholder is prioritizing the education of children.

Rational and Counter-Rational Frameworks

A viable long-term framework for collaboration must address the above concerns. Approaches to issues of collaboration can be generally classified as "rational" or "counter-rational." The rational approach to cooperation revolves around either "resource flow" (resource allocation) or "information flow" (decision-making in light of shared information). In addition, inter-

organizational cooperation happens on varying levels. “Institutional linkage” occurs between organizations without having a particular person responsible for the relationship, i.e. data reporting to government. “Representative linkage” occurs between organizations via a specific individual who acts officially on behalf of their constituent organization. “Personal linkage” occurs between organizations when individuals form a cross-organizational relationship in a personal, informal capacity, rather than (or in addition to) a professional, formal capacity. The rational approach seeks, ultimately, to maximize organizations’ gains without sacrificing autonomy to one another; the process typically involves, therefore, “the identification of key stakeholders, joint definition of the problem, and a commitment to reach agreement on a chosen course of action” (Eisenberg, 1995).

The rational framework does have limitations. If the organizations involved do not “speak the same language” or otherwise fail to communicate, collaboration will be exceedingly difficult. If there is an imbalance of power between organizations or the subject of the collaboration requires one organization to yield to another, that organization’s fear of losing its autonomy may dissuade it from fully committing to collaborative effort. Furthermore, focusing on differences in values, perception, and assumptions will eclipse any commonalities between prospective collaborators and jeopardize any cooperative efforts.

The counter-rational approach, on the other hand, emphasizes commitment to coordinated action without requiring a rigid form. This commitment trumps other considerations, including shared purposes, shared goals, shared plans, and even open communication. In other words, organizations can help each other achieve each other’s priorities without subordinating their own goals. This approach deviates significantly from the more-familiar rational approach in several respects.

The key behind the counter-rational approach is that, rather than beginning with input from the decision-making stakeholders, the process begins with stakeholders actively seeking out the end clients and asking for *their* input. In educational matters, for example, stakeholders should strongly consider having the students themselves offer input. This could consist of the end clients being present at meetings with the other stakeholders and decision-makers, or otherwise providing input in as unfiltered a medium as possible, i.e. recorded interviews or statements. This

can lend an unparalleled degree of legitimacy to a process, as potential clients are given the opportunity to participate in and shape initiatives meant to help them.

In addition, existing stakeholders need to make an active effort to recruit help outside of the usual "movers and shakers." By including more marginal individuals and groups, the collaborative process is injected with more novel ideas and fresh perspectives; limiting collaboration to the same small group can stifle the creativity necessary to solve complex problems.

Inter-organizational relationships need to span boundaries at the day-to-day level, rather than just the administrative level. While unity of vision between leaders is important, implementation occurs further down the organization's hierarchy. A district-level collaboration between schools and city government, for example, still needs effective participation from school administrators, counselors, and teachers. These staff need to be "explicitly involved in planning and implementing the details of the collaboration" (Eisenberg).

Subsequent projects in the collaborative effort should be tailored to a *broader* clientele than the actual (targeted) clients. Having more beneficiaries generates a broader political base to support a given project—the more who stand to gain from a project, the greater the support. The subsequent feedback from targeting broader client populations than strictly necessary allows organizations to identify further opportunities for collaboration and improvement.

Perhaps the most counter-intuitive element of the counter-rational process is that collaborators should *avoid* developing some sort of Master Plan. Instead, the focus should be on incremental cooperation, pursuing limited-aim projects that help organizations learn to work with and trust one another. Once a relationship is firmly established (and can withstand staff turnover), organizations should explore ambitious, long-term projects.

Options for DCSD

Framework

Given the responses from the elementary school principals, there does not seem to be an urgent need for increased school-organization collaboration. However, individual schools may want to consider inviting additional organizations into their schools to see whether there are any unexplored opportunities for greater collaboration. These decentralized, school-centric collaborative efforts do make sense, as this allows school administrators and neighborhood leaders to address the needs of their students. Long-term efforts by schools should focus on even greater inclusivity, and schools who do not currently do so should consider reaching out to neighborhood associations as a means to connect with as many neighborhood residents as possible. This may include community-oriented, rather than parent-oriented, open houses or offering the school facility for neighborhood association programming, as appropriate. School-organization or school-community partnerships should strongly consider following the counter-rational model of involving the clients of any project from the very beginning—this should be relatively easy to implement at the neighborhood level.

At the district level, however, more work remains to be done. In keeping with the counter-rational approach, the district needs to continue to actively solicit parent and student input on district decisions and initiatives; the Safe Routes to School initiative began with data-collection through the distribution of 9,000 surveys to Dubuque families. This will necessitate meetings that are accessible to all families within the district; consequentially, these meetings should be held at school locations rather than the district headquarters building. The district also needs to make sure its ties to the city and other organizations are cemented at the operational level, rather than just through administrative meetings—city and district staff should be in touch with one another on a consistent basis, looking for small areas where they might collaborate (or simply coordinate efforts) more effectively.

If the current informal collaboration between the city and district continues and the city-district relationship is further solidified, the district should consider formally incorporating the city and other organizations in a new facilities plan study. The Aquatic Center process has so far served

as an excellent blueprint of what a collaborative facilities plan might entail. In addition to questions of enrollment, capacity, and transportation, a collaborative approach to a facilities plan should include how the district's plans would influence city development, and whether the city can take any action to obviate any school closures or to mitigate the impact of a closure. Exploration of a new facilities plan should include input from as many of the district's partners as possible, as their missions and operations will be altered—perhaps fundamentally—by changes to the elementary school system.

Topics to Explore

Wescott & Konzal (2002) list several questions worth pondering when trying to foster a more collaborative atmosphere within a community. Some of the questions more immediately addressable by the city and district are posed are below:

- What if new school buildings were planned as community centers? What if all school buildings were used 24/7 all year? Could they become what the town square was 100 years ago?
- What if the community library and the school library were one and the same?
- What if every child had an adult mentor? Every family needing assistance had a supporting "friend"? Newcomers from another country had someone committed to helping them adjust to life in a new place?
- What if community members—representatives from service clubs, social-service agencies, schools, and other groups—joined forces and *all* worked on the *same* project for a year?
- What if the school cafeteria were open at night to serve everyone in the community, perhaps before they attended an evening meeting or other event? Would senior citizens feel so isolated? Would parents learn from other parents? Would everyone find new friends?
- What if there were tutors or homework help available to children in the evenings in schools, shopping malls, and libraries?

If, for example, DCSD and the City were to explore how to use schools year-round, the discussions might focus on what City-provided recreational programming can be moved from

other facilities to DCSD facilities, or how non-profit organizations might take advantage of these spaces. While most classrooms would likely be off-limits to after-school activities (to prevent interference with classroom organization, especially for elementary schools), most common spaces could be made available. These opportunities could go beyond athletic offerings that would use school gymnasiums. School- or city-run literacy intervention programs or tutoring could be run out of school libraries; computer labs could be open to the public, with classes designed to help community members acquire new computer skills; public meetings could be held in school cafeterias. The costs of these additional programs could be shared between DCSD, the City, and participating non-profit organizations. These arrangements can also offer a safe space for student-adult mentorship programs.

Other recommendations, such as merging school and public libraries, would require a little more creativity. A physical merger might not be practical, and there would be some valid security concerns in allowing visitors into school buildings while classes are in session, but these libraries might be united under one system, where a student might have the liberty to check out a book from the public library but return it to her school library, or vice versa. Again, rather than offering competing services, DCSD and the City can pool resources to make a greater joint impact.

Conclusion

Because the neighborhood school model does result in disparities between schools in student demographics and student proficiency, the entire Dubuque community needs to cooperate and collaborate in order to maximize the impact that various agencies can have on Dubuque's schoolchildren. Before any grand plans can be made, the different stakeholders must first build a solid relationship with one another while working on limited, measurable objectives. Once these relationships are more firmly established, the school district and its partners can look at long-term projects, and should be creative in how it addresses current and future problems. With the plethora of nonprofit organizations in Dubuque focusing on Dubuque's youth, there are excellent opportunities for collaboration to better meet the educational and social needs of Dubuque's elementary students.

5.5: Collaboration in Action: The Third Grade Reading Initiative

The Third Grade Reading Initiative, managed by the Community Foundation of Greater Dubuque (CFGD), is part of the nationwide Campaign for Grade-Level Reading. The Campaign is a collaborative effort by foundations, nonprofit partners, states and communities across the nation to ensure that more children in low-income families succeed in school and graduate from high school as active citizens, able to move on to college or into a career. The Campaign focuses on grade-level reading proficiency by the end of 3rd grade because the Campaign believes 3rd grade-level reading is the most important predictor of school success and high school graduation (Campaign for Grade-Level Reading). The Campaign works to achieve 3rd grade reading proficiency by:

- closing the readiness gap at the start of school between children of low income families and their middle income counterparts;
- decreasing the level of chronic absence from school by children of low-income families;
- reducing the summer loss of learning attained during the school year which is especially significant in children of low-income families who often do not have access to summer learning activities like their middle-income counterparts

To achieve these outcomes, the Campaign engages parents to be involved in their children's learning; identifies and addresses health factors that affect child-learning; and collaborates with state-level networks to advocate for a seamless system of care, services and support from birth through 3rd grade (Campaign for Grade-Level Reading).

Nationally, the Campaign recognizes communities that demonstrate significant leadership in Attendance, Campaign Leadership, Summer Learning, and Readiness; these are four key areas of the Campaign. Dubuque received a Pacesetter Award for Readiness in July 2012 (Campaign for Grade-Level Reading).

Case Studies

CFGD recommends that exploring case studies would help create additional buy-in for community collaboration on the Campaign in Dubuque. The Schools Group recommends that Dubuque look toward Campaign efforts in Council Bluffs, Iowa; Richmond, Indiana; and Springfield, Massachusetts. Each of these communities is a recognized pacesetter in the Campaign. While information from each of these Campaigns is largely anecdotal (the Schools Group emailed leadership at each Campaign), these Campaigns offer examples of how the Dubuque Campaign can improve.

The Council Bluffs Campaign is a recognized pacesetter in Summer Learning. The city itself is of similar size to Dubuque, albeit with a significant Hispanic population, and serves as an example of how Dubuque might prevent summer learning loss in DCSD students. The Council Bluffs Community School District offers a Summer Exploration Program (SEP) for four weeks during summer vacation; students are transported and fed, at no cost to the student. The program is open to students in elementary and middle school, with age-appropriate focuses. SEP targets lower-achieving students in Council Bluffs, and the district's test scores from 2010 to 2012 have improved.

The Richmond Campaign is a pacesetter in Campaign Leadership. While Richmond is only half the size of Dubuque, it is otherwise demographically similar and serves as a model of Campaign Leadership. The Campaign runs the Third Grade Academy (TGA), a summer program where students select a "school without walls," or a learning site other than a traditional schoolhouse; students are encouraged to select college campuses, museums, and libraries, among other locations. The "schools without walls" concept strives to make summer learning more interesting and engaging for students. TGA tracked participant achievement since its inception in 2007 and noted that participating students experienced a gain in proficiency. The TGA relies on the Wayne County Foundation and the National Civic League to promote the program, and community volunteers, known as "Good Shepherds," work with each child to encourage attendance and active participation in the program.

The Springfield Campaign is a pacesetter in Attendance. While Springfield is not located in the Midwest, it is similarly-sized as Dubuque. The Springfield Campaign currently operates the

Reading Success by 4th Grade (RS4G) attendance initiative, which relies in part on the Walking School Bus (a Safe Routes to School initiative). Because ECIA also employs Safe Routes to School in Dubuque, the Dubuque Campaign can easily mimic RS4G and adapt it to fit Dubuque's circumstances. RS4G is also piloting the Results Based Scorecard (RBS), a data management tool to better track progress toward improving 3rd grade reading proficiency. The RBS can also be exported to CFGD's efforts in Dubuque.

Lessons Learned

The case study communities offer several key lessons that the Dubuque Campaign can use. These lessons rely on DCSD, the City, CFGD, and other community stakeholders to collaborate.

With regard to summer learning, continuous instruction and engagement are crucial. Students are generally more eager to participate when they learn outside typical classrooms. The Campaign needs to provide transportation to and from learning sites and must feed students, to ensure attendance. Regular attendance may need to be incentivized or personally encouraged through home visits.

Effective campaign leadership requires a concerted community-wide effort at outreach and engagement; no one organization can run the Campaign alone. Agencies need to actively collaborate with one another to maximize the utility of services provided, and need to diligently monitor student performance to assess the Campaign's impact. Measures aimed at improving school attendance require a strong volunteer base, but otherwise must be simple, inexpensive, and easily implementable.

Recommendations

Dubuque's Third Grade Reading Initiative should continue efforts to implement all other core focus areas of the Campaign for Grade Level Reading. The TGRI should experiment developing a volunteer model that links community members directly with target students especially, to promote school and summer learning attendance and provide positive role models and mentoring. The experience of Richmond's TGA suggests some relationship between direct or

increased volunteer involvement in an initiative and improved student outcomes. The CFGD can conduct further research into the exact nature of such a relationship. The CFGD should also partner with the DCSD and ECIA on implementing and measuring the impact of the Waking School Bus Initiative in the participating elementary schools.

5.6: Asset Mapping

Purpose

Because DCSD currently follows a neighborhood school model, neighborhood characteristics have a strong influence on schools. In addition, neighborhoods have a direct effect on their children during after-school hours. Given the early successes of the Third Grade Reading Initiative and the presence of other collaborative work in Dubuque, this report offers a list and an asset map of other neighborhood assets that offer services to Dubuque's youth and might make strong candidates for collaboration with DCSD or individual schools.

Methodology

The Schools Group used several methods to compile the list of community assets. Agencies that are generally well-known in the community (or through other research pertinent to this report) were listed first. Next, the group performed internet searches to gain a better understanding of the various organizations that offer youth services. Finally, the group consulted the Project Concern Dubuque Community Resource Guide and the Dubuque Family Resource Guide for more ideas. Most findings came from these two guides.

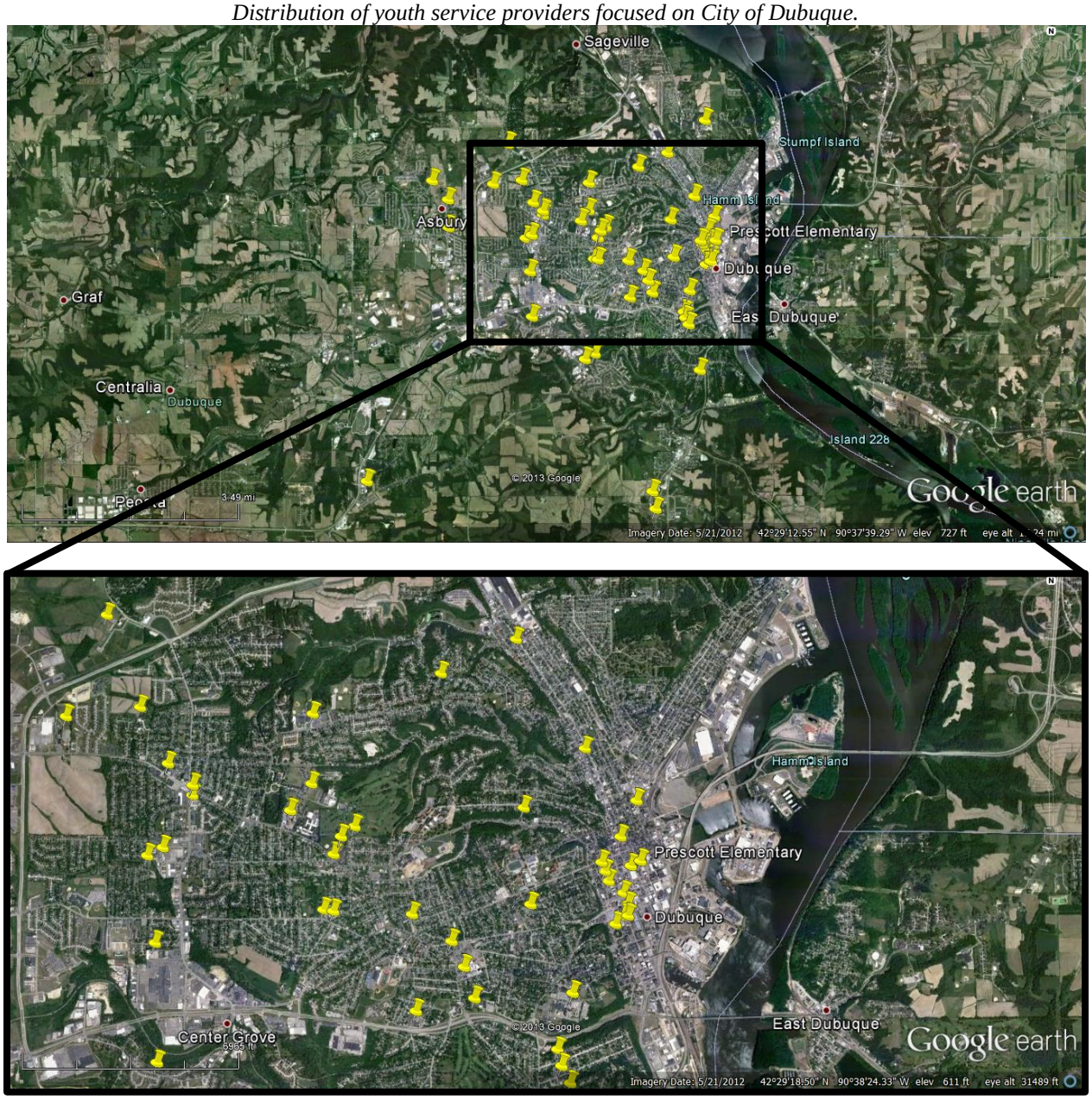
The addresses for each organization were mapped in Google Earth so that the group could assess each organization's accessibility by walking. Most organizations are pedestrian-accessible. The Jule transit route maps were then examined to determine whether each organization was accessible by public transit. Approximately half of the organizations searched were on or near a public bus route.

Results

Upon mapping the selected organizations, it is clear that many of these organizations are clustered downtown. Service providers are also scattered through western Dubuque. However, there are very few service providers in the northeast area of Dubuque near Audubon, Fulton,

Marshall, and Sageville. The distribution of service providers is in the map below (Figure 5.6.1); a list of providers can be found in Appendix E.

Figure 5.6.1
Distribution of youth service providers focused on City of Dubuque.



Recommendations

The City can add to this data collection and provide residents with a comprehensive online resource listing each organization and describing the services each organization provides; this

can be a “one-stop shop” for residents in search of youth services. In addition, both the City and DCSD can use these resources to identify potential allies for collaboration within each neighborhood.

5.7: Neighborhood Schools and Sustainability

Sustainability, within the context of urban and regional planning practice, revolves around economic prosperity, environmental protection, and social equity—the "Three Es." Sustainability is, thus, a three-legged stool, where the failure to meet one of the three elements can render an entire project unsustainable in the long run. A project that spurs economic development and protects existing environmental resources, for example, may shortchange certain demographic groups; a project that protects environmental resources and is socially just may not be economically feasible.

Sustainability can (and should) inform school siting and configuration. Economic prosperity translates to fiscal responsibility—whether a particular school arrangement (neighborhood or consolidated) is fiscally viable in the long run. Environmental protection addresses the number of facilities, the location of facilities (especially new construction in environmentally sensitive areas), and the quality of infrastructure (energy efficiency, for example). Social equity addresses whether students have access to the resources and support that they need to succeed, both in school and in their community; public input is crucial in determining just what students and families need (see Section 5.4).

City of Dubuque Comprehensive Plan and Neighborhood Schools

The City of Dubuque's 2008 Comprehensive Plan outlines goals, each of which is categorized under "physical environment," "economic environment," or "social environment." The Comprehensive Plan cites the three elements of sustainability, calling them "economic, environmental, and social equity needs." On the City of Dubuque's website, these three elements are further divided into eleven Sustainability Principles, addressing resource and energy use, clean air and water, and community well-being and mobility. (While the Dubuque Community School District is not bound by the Comprehensive Plan, the plan can be used to inform district decision-making.)

The Comprehensive Plan explicitly addresses education concerns under "Education Goals." The city believes that education goes beyond the classroom and that it must become a "collaborative experience" involving every sector of the Dubuque community. Neighborhood schools in particular are encompassed in Goal Five, "To increase the involvement of parents and the community in our schools," and (to a lesser extent) Goal Eight, "To continue to enhance quality educational facilities in appropriate locations throughout the community to meet changing demographic and development patterns."

Goal Five seeks to improve parental and community participation in the education process. Among the objectives of this Goal are to encourage parents to support students and their educational goals, to promote a safe school environment, to "educate the public on […] neighborhood schools," and to encourage mentoring and tutoring relationships between students and community members.

Goal Eight focuses on physical infrastructure. Among the pertinent objectives are encouraging educational facilities to adapt to meet the changing education needs of the city (in light of demographic changes), using state-of-the-art educational tools in each school, and making sure that existing schools have the same "resources and advantages" that new schools enjoy. It is not clear from the Comprehensive Plan whether "new schools" are schools established within the city limits or instead refers to keeping pace with new schools across the state.

The City's Stated Interest in Neighborhood Schools

In the City of Dubuque's response to the district's school closure proposals, the city planning department identified transportation safety and cost as a major concern. The planning department indicated that consolidated schools would increase district bussing costs and burden a greater number of parents who would be forced to drive to their child's school in order to fully participate in their child's education. Neighborhood schools, on the other hand, were identified as much more accessible for students and families while saving the district in bussing costs. The planning staff also pointed to the Safe Routes to Schools initiative as a means not only to encourage students to walk to school but to promote neighborhood cohesion and combat childhood obesity.

Planning staff were also concerned about the impact school closures and consolidation would have on Free and Reduced Lunch (FRL) students. The city asserted that the closures would require most FRL students to change schools and that FRL students' parents would likely be precluded from meaningful participation at their child's school due to lack of access to transportation. In the city's eyes, neighborhood schools "foster relationships that can be important in successfully dealing within cultures of poverty" and serve as a powerful focal point for community outreach efforts. The closure proposals would have deprived FRL students and families of what the city believed was a vital resource.

The city further elaborated on the role neighborhood schools play as a focal point within communities. The staff report asserted that schools, as focal points, serve as "consistent positive influence[s] within distressed and transitioning neighborhoods." The in-school and after-school educational programming students receive at these schools "filter back to the parents and other neighborhood residents thus benefitting the entire neighborhood."

With regard to delinquency and safety, the planning staff asserted that recreational programs that target at-risk youth are dependent on neighborhood school infrastructure (in particular gymnasiums and playgrounds), and that "remote" schools would not engender the same sense of communal responsibility as neighborhood schools (citing the Safe Communities Task Force). Neighborhood schools often serve as the primary park or open space, with playgrounds built cooperatively between the school district and the city. The school structure, in turn, serves as the "town hall" for the neighborhood. According to the Safe Communities Task Force, the school and its associated infrastructure are key to stabilizing the community.

In addition to the role schools play, the city was concerned with how the district had formulated the plan. In particular, the city was concerned about whether the plan accurately reflected the costs associated with land acquisition, school construction, and transportation costs. The city was also concerned by the lack of meaningful opportunities for public participation. Only one public input meeting was held, and it was at the district headquarters; FRL families lacking access to transportation options were effectively excluded from the process.

Elementary Principals' Interests in Neighborhood Schools

During the discussion in 2010 to close multiple schools, the school district sought input from its administrators at each school. Several elementary school principals cited transportation logistics as a key factor for favoring a neighborhood school model. Andy Ferguson, then the principal at Audubon, stated in his feedback form to the district that downtown Dubuque "needs a school that is easily accessible and within walking distance for families without transportation." Ferguson explained that schools within walking distance benefitted not only students during the day, but that they also enabled parents to be more active in their child's education. Parents with limited access to vehicular transportation are generally unable to attend school functions if schools are far away, limiting their ability to participate and assist in their child's education.

Some principals also asserted that neighborhood schools often serve as a focal point for communities. Jean McDonald, then the principal at Fulton, stated in her feedback form to the district that the district ought to consider renovating Fulton or replacing the structure rather than consolidation, on grounds that "a neighborhood presence is desirable" both for the district and for the community. She further asserted that "a neighborhood school is needed" in Fulton's area. Brenda Mitchell of Marshall stated that Marshall "is a true neighborhood school." She explained that families attending Marshall had "very strong ties" to both the neighborhood and the school, and that they were "fiercely loyal to this school and the surrounding area."

Principals were also concerned that consolidated elementary schools would dilute student opportunities and achievement. In particular, Donna Loewen of Lincoln stated that mid-size, neighborhood-based schools of 250-500 students would "provid[e] opportunities for students to be well-known to all staff members, to be involved and have leadership opportunities, and to be able to walk to school."

Analysis

While the city is correct in the benefits neighborhood schools confer on communities, the staff findings and recommendation does ignore important school district considerations. It is true that the neighborhood school model encourages greater parental participation and support, with schools within walking distance. It is also true that after-school programs are dependent, in part,

on school infrastructure, and that having this infrastructure accessible independent of automobile transportation encourages greater participation.

Access and walkability, however, cannot be taken for granted. Some residents have asked that the city install more signal-controlled pedestrian crossings near schools so that students have safer access to their schools; alternatively, some community members have offered to volunteer as crossing guards, but have been declined. Residents of the Point Neighborhood expressed concern over the lack of street lighting (which could be especially problematic during shorter-daylight winter days). Schools have also expressed interest in increased pedestrian infrastructure, including the installation or rehabilitation of sidewalks on nearby streets (see discussion in Section 5.4). Schools may be in walking distance for many (if not all) of their students and families, but there may be other physical barriers to walkability that render location moot. The Safe Routes to Schools initiative can address these concerns, and the city can identify student-utilized pedestrian corridors as priority areas for new pedestrian infrastructure.

Data show, however, that the neighborhood school model does have drawbacks. The hedonic analysis in Section 3.2 indicates that property values are depressed when properties are located near underperforming schools (as measured by 3rd Grade reading proficiency scores). This will lead to lower-income families moving to these areas—families that may even qualify for FRL. Subsequently, under the neighborhood school model, FRL students will be concentrated in already-underperforming schools. The school will struggle further in terms of performance, deepening the divide between schools that are performing well and those that are in need of improvement.

This assumes, however, that neither the city nor the school district take any steps to make sure FRL students and non-proficient students (two distinct categories of students with some overlap) get the additional help and support they need. With collaborative efforts that look to shore up the drawbacks of the neighborhood school model while exploiting the model's strengths, both the city and the district can help students to achieve proficiency and, ultimately, to succeed academically. The neighborhood model itself offers substantial capacity for outreach efforts that can meet community needs and allow students to get more individualized attention. Larger schools may have greater proficiency rates (depending on how students are redistributed), but the

non-proficient students will face substantial barriers to getting the individualized attention that they need—school administration attention will be spread over a greater number of students, increased travel times and costs may prevent students from participating in after-school programs (especially the programs specifically designed to improve student proficiency), and community outreach efforts would be without a neighborhood-accessible meeting space.

It is important to note that the district's proposal in 2010 to close multiple schools stemmed from fiscal considerations. Nothing in the district proposal indicated that neighborhood schools were inferior to larger, regional elementary schools, or that neighborhood schools were less capable of providing quality instruction than larger schools. The primary factor in the district's evaluation of possible closure and consolidation options was the opportunity to use available capital funds to reorganize the district in such a way as to save on operating costs, including administrative overhead (i.e. fewer elementary and middle school principals). School districts strive to provide all of their students with a quality education. With finite resources, districts admittedly have to balance the "ideal" educational experience against reality; furthermore, different revenue streams may be earmarked for different purposes, further constricting districts' options for providing quality education. While the Dubuque Community School District's plan may not have been accurate (in the eyes of the city) in terms of costs, it did recognize the reality that capital funds were useless in addressing operating costs. School closures, land acquisition, and construction are all expensive undertakings, but they do represent a reasonable means to address operating cost concerns and need to be taken seriously.

Conclusion

With regard to sustainability, the proposed school closures would conceivably make sense economically. However, the construction of new facilities while closing existing facilities (possibly resulting in the loss of valuable open green space in some neighborhoods) would indicate that mass consolidation is not environmentally sustainable. In addition, the closure of neighborhood schools would deprive low-income families of access to school-based resources (especially for those families with transportation and mobility concerns), indicating that social equity would not be satisfied by consolidation efforts. That said, the existing neighborhood school model offers greater (though still imperfect) social equity and does not require the

development of new land (though energy efficiency becomes a concern with older buildings), but might not be economically viable for the district in the long run. The district, then, is faced with the difficult task of trying to meet the needs of today's students without jeopardizing its ability to finance the education of tomorrow's students.

Chapter 6: Recommendations

In light of the data and analysis contained in this report, the Schools Group makes the following recommendations to both DCSD and the City of Dubuque.

Develop a Sustainable Decision-Making Process

Long-term sustainable collaboration should be proactive rather than reactive. DCSD and CFGD's implementation of the Third Grade Reading Initiative is a strong start, but collaborative efforts should not be constrained to just one project.

Define Goals

DCSD, the City of Dubuque, other neighborhood and city organizations, and the community at large need to come to a consensus on what the future of elementary education in Dubuque should look like. District and city policies overlap on several points, but more can be done. Goals need not be curriculum-based—in fact, out-of-school initiatives should be seriously considered (see Section 5.4).

Collaborate

Admittedly, the various stakeholders in Dubuque will not be able to work together seamlessly right away. However, incremental progress can be made as DCSD and other entities work together on short-term projects with tangible results. In the process, DCSD will be in a position to forge stronger working relationships with its partners. From there, DCSD and the City can begin exploring long-term projects as means to implement larger goals.

Align Policy

A city's housing policy influences school composition and enrollment. If a city has an inclusionary housing policy, and the school district operates neighborhood schools, then the city and district's neighborhood schools become organically more diverse. If a city decides to

encourage residential development in certain parts of the city, then schools in the developing residential areas can be potentially stressed with increases in enrollment.

Just as city development decisions affect schools, schools affect home-buying decisions (as shown from the hedonic analysis in Section 3.2) and neighborhood composition. Since the quality of a school impacts home values, only people who can afford to live in certain school catchment areas can have their children go to those schools. On the contrary, if a school district decides to have enrollment based on a lottery, this decision makes houses no longer tied to school quality, so consumers do not buy homes based on what school catchment area they are in because where their children will go to school is up to chance. These points illustrate that a school district's policy influences neighborhood choice.

Policy alignment can better occur after explicit goal-setting, clear assignment of roles and responsibilities, and establishing similar standards for evaluating and tracking data that allow for comparison across agencies and sectors.

Conduct a Continuous Analysis

In order to make sound policy, policymakers need data-driven analysis to understand the relationship between education and community development. This report presents four important tools for making more informed policy:

Production Function

As discussed in Section 3.1, the production function may enable policymakers to better anticipate the consequences of policies and actions on student achievement. Better anticipation will allow policymakers to make more informed decisions and to explore alternatives.

Hedonic Model

Presented in Section 3.2, the hedonic model can assist policymakers in understanding the impact of future decisions with regard to school construction, renovation, relocation, and closure. The hedonic model will also allow enable policymakers to measure the effect school performance

and transportation options on housing values, ultimately leading to a better understanding of how elementary schools affect neighborhoods. Both DCSD and the City may find this information useful.

Conjoint Stated Preference Survey

This survey, discussed in Section 4.1, allows both DCSD and the City to identify residents' preferences with regard to school trait, and to identify the tradeoffs that residents are willing to accept. Responses can be used to gauge the political feasibility of important policy changes.

Focus Groups

Described in Section 4.2, focus groups will allow DCSD and the City to gather community input from targeted subpopulations. This process will help policymakers understand the impact policy changes will have on specific groups, especially those who may be least adaptive to major policies.

Conclusion

Cities comprised of diverse neighborhoods, with varied housing opportunities, can offer diverse and stable neighborhood school enrollments. The City of Dubuque can play an important role in school enrollment diversity through the implementation of its 2008 Comprehensive Plan. The Plan states, "Education goals must address the educational and informational needs of all members of the community as life-long learning opportunities are made available at many levels of interest and for all ages and abilities. Education must not be relegated to the schools alone, but must become a collaborative experience...." City planning tools such as inclusionary zoning, removal of minimum lot requirements, and mixed income developments can all serve to foster equity within not only schools, but the greater community. Since education benefits society, as well as the student, inclusionary housing policies can mitigate the achievement gap and help break the cycle of poverty.

People prefer to remain in vibrant neighborhoods and move away from declining ones. School policies, typically not tied to community development, can have significant impacts on neighborhoods. Open enrollment, for example, can spur an exodus from vulnerable schools, thereby exacerbating problems of inequity and school and neighborhood viability. Also, school policies that promote diversity, integration and neighborhood investment can help develop well-rounded citizens and a more economically and socially resilient community.

Using this framework to inform the decision-making processes can help foster social cohesion and vibrant, healthy neighborhoods that facilitate the educational process. Creating such outcomes remain consistent with Sustainable Dubuque principles, the educational goals presented in Dubuque County's Youth Master Plan and the DCSD's Strategic Plan for 21st Century Education. By doing so, the Dubuque community can enhance the opportunities for all children to excel and the community of Dubuque will be well-positioned to continue its remarkable leadership as a viable, livable and equitable community.

SOURCES

2.2: Diversity and Equity

"APR State Student Achievement Data." Iowa Department of Education, Web. 16 Nov. 2012. <https://www.edinfo.state.ia.us/data/aprchart.asp>.

"Annual Report of Progress 2009-2010." DCSD, Web. 11 Nov. 2012. <http://www.dubuque.k12.ia.us/annualreport/APRDistrict02009-2010.pdf>.

Bifulco, Robert, Helen F. Ladd, and Stephen L. Ross. "Public school choice and integration evidence from Durham, North Carolina." Social Science Research 38.1 (2009): 71-85.

Coleman, James S. "Equality of educational opportunity." Integrated Education 6.5 (1968): 19-28.

"In-District Open Enrollment." DCSD, Web. 13 Nov. 2012. <http://www.dubuque.k12.ia.us/schoolboard/policies/Chapter6EDProgram/6218In-DistrictOpenEnrollment_2_6_12.pdf>.

"Intercultural Competency Initiative Five Year Report." City of Dubuque, Web. 11 Nov. 2012. <http://www.cityofdubuque.org/DocumentCenter/Home/View/3623>.

Kahlenberg, Richard D. All together now creating middle-class schools through public school choice. Washington, D.C.: Brookings Institution Press, 2001. Print.

Orfield, Gary, and Chungmei Lee. Why segregation matters: Poverty and educational inequality. 2005.

Puma, M. J., Karweit, N., Price, C., Ricciuti, A., Thompson, W., & Vaden-Kiernan, M. (1997). Prospects: Student Outcomes. Final Report.

"Schools and Districts in Need of Assistance (SINA/DINA)." Iowa Department of Education, Web. 13 Nov. 2012. <http://educateiowa.gov/index.php?option=com_content>.

SINA Action Plan. Rep. Dubuque Community School District, Web. 16 Nov. 2012. <www.prescott.dubuque.k12.ia.us/SINAAction Plan 10 -2.doc>.

3.2: Hedonic Model

Banzhaf, Spencer and Walsh, Randall P. Segregation and Tiebout Sorting: Investigating the Link

Between Public Goods and Demographic Composition. Journal of Urban Economics 74, 2013.

Nguyen-Hoang, Phuong and Yinger, John, The Capitalization of School Quality into House

Values: A Review. 01, March 2011. Journal of Housing Economics, Vol. 20, No. 1, 2011.

Taylor, Laura O. The Hedonic Method. Springer Netherlands, 2003. 10 Nov. 2012 http://dx.doi.org/10.1007/978-94-007-0826-6_10

4.1 Community Survey

Bridges et al (2011). Conjoint Analysis in Health-a Checklist: A Report of the ISPOR Good

Research Practices for Conjoint Analysis Taskforce. Value in Health. 14: 403-413

Cameron T.A and Deshazo J.R. (2005). Demand for Health Risk Reductions. Retrieved from http://pages.uoregon.edu/cameron/vita/Manuscript_20051269R2.pdf 03/28/13

Curry, Joseph, et. al., Understanding Conjoint Analysis in 15 Minutes. Sawtooth Software Research Paper Series. Sawtooth Technologies, Inc. 1996

DCSD (2012) Certified Budget Proposal: Fiscal Year 2013. Presented for Approval to the Board of Education April 9, 2012. Retrieved from http://www.dubuque.k12.ia.us/finances/certifiedbudgetproposal2013.pdf 10/11/12

Executive Council of Graduate & Professional Students, The University of Iowa, Web 13

Harper, C. (Producer). (1991, December 20). Welcome to white America. (20/20). New York, NY: American Broadcasting Companies.

Howley C., Johnson J. and Petrie J. (2011). Consolidation of Schools and Districts: What The Research Says and What It Means. Retrieved from http://nepc.colorado.edu/publication/consolidation-schools-districts 09/08/12

McLeod, Saul, et. al., Likert Table, SimplyPsychology, 2008, Web, 14 September 2012. http://www.simplypsychology.org/likert-scale.html

Nazari M and Elahi M (2012). A Study of Consumer Preferences for Higher Education Institutes in Tehran through Conjoint Analysis. Journal of Management Research. 4(1)

Survey Analytics (2012). Choice Based Conjoint Analysis, Survey Analytics Enterprise Research Platform, 2012, Web, 14 September 14, 2012 http://www.surveyanalytics.com/conjoint/choice-based-conjoint.html

Szombathova, Slavka (2005). Optimizing School Choice: Conjoint Analysis of Parent

Preferences (Master's Thesis). UMI Microform 1428207. ProQuest Information and Learning Company. Ann Arbor: MI

Trochim, William H.K., et. al., Likert Scaling, Research Methods Knowledge Base, 2006, Web, 14 September, 2012 http://www.socialresearchmethods.net/kb/scallik.php

4.2: Focus Groups

2008 City of Dubuque Comprehensive Plan. Retrieved April 17, 2013 fromhttp://www.cityofdubuque.org/index.aspx?NID=355

A Ladder of Citizen Participation. Retrieved April 16, 2013 from http://lithgow-schmidt.dk/sherry-arnstein/ladder-of-citizen-participation.html

Arnstein, Sherry R. "A *Ladder* of Citizen *Participation*," Journal of the American Institute of Planners, Vol. 35, No. 4, July 1969,, Vol. 35, No. 4, July 1969

Circles Initiative. The City of Dubuque. Retrieved February 17, 2013, from http://www.cityofdubuque.org/index.aspx?NID=1398

City of Dubuque, P. S. (2008). City of Dubuque Comprehensive Plan. Dubuque, IA.

Community-Oriented Policy. The City of Dubuque. Retrieved March 17, 2013 from http://www.cityofdubuque.org/index.aspx?NID=594

Gibbs, Anita. Focus Groups. Social Research Update. Retrieved April 16, 2013 fromhttp://sru.soc.surrey.ac.uk/SRU19.html

Hart's Ladder of participation. Cornell University. Retrieved April 16, 2013 from http://blogs.cornell.edu/garden/grow-your-program/how-to-plan-and-organize-your-youth-gardening-program/hart%E2%80%99s-ladder-of-participation/

Kahlenberg, Richard D. "Economic School Integration: An Update." 2002. The Century Foundation Issue Brief Series. Retrieved April 16, 2013 from http://tcf.org/publications/2002/9/pb420

Multicultural Family Center Dubuque. Retrieved March 24, 2013 from http://www.mfcdbq.org/about/mission.html

Powell R.A. and Single H.M. (1996) 'Focus groups', *International Journal of Quality in Health Care* 8 (5): 499-504.

Safe Routes to School. Federal Highway Administration. Retrieved April 16, 2013 from http://safety.fhwa.dot.gov/saferoutes/

School Board Policies. Dubuque Community Schools. Retrieved April 15, 2013 from http://www.dubuque.k12.ia.us/schoolboard/policies/index.html

Sokoloff, Harris. “Convening the Community.” American School Board Journal. November 1997.

5.2: Challenges of Open Enrollment

"APR State Student Achievement Data." Iowa Department of Education, Web. 16 Nov. 2012. <https://www.edinfo.state.ia.us/data/aprchart.asp>.

"Annual Report of Progress 2009-2010." DCSD, Web. 11 Nov. 2012. <http://www.dubuque.k12.ia.us/annualreport/APRDistrict02009-2010.pdf>.

Bifulco, Robert, Helen F. Ladd, and Stephen L. Ross. "Public school choice and integration evidence from Durham, North Carolina." Social Science Research 38.1 (2009): 71-85.

"In-District Open Enrollment." DCSD, Web. 13 Nov. 2012. <http://www.dubuque.k12.ia.us/schoolboard/policies/Chapter6EDProgram/6218In-DistrictOpenEnrollment_2_6_12.pdf>.

"Schools and Districts in Need of Assistance (SINA/DINA)." Iowa Department of Education, Web. 13 Nov. 2012. <http://educateiowa.gov/index.php?option=com_content>.

SINA Action Plan. Rep. Dubuque Community School District, Web. 16 Nov. 2012. <www.prescott.dubuque.k12.ia.us/SINAAction Plan 10 -2.doc>.

5.3: Transportation

Dubuque Community School District. (2007, September 17). Retrieved from Online School Board Policy Manual: http://www.dubuque.k12.ia.us/schoolboard/policies/TOCTable06-18-04.htm

Andre, S., & Kroeger, D. &. (2003). Coordination of Transit and School Bussing in Iowa. Iowa State University, Center for Transportation Research and Education. Ames: Iowa Department of Transportation.

Bogart, W. T. (2000). Journal of Urban Economics, 47, 280-305. Retrieved February 11, 2013, from http://www.restore4jschools.org/wp-content/uploads/2012/06/School-4.pdf

Bowerman, R. e. (n.d.). A Multi-Objective Optimization Approach to Urban School Bus Routing: Formulation and Solution Method. Transportation Research, 29(2), 107-123.

Brining, M., & Garnett, N. (2010). CATHOLIC SCHOOLS, URBAN NEIGHBORHOODS, AND EDUCATION REFORM. Notre Dame University, Notre Dame Law Review. Atlanta: Darby Printing Company. Retrieved February 8, 2013, from http://www.lexisnexis.com.proxy.lib.uiowa.edu/hottopics/lnacademic/?verb=sr&csi=7377&sr=AUTHOR(Brinig)%2BAND%2BTITLE(CATHOLIC+SCHOOLS%2C+URBAN+NEIGH

BORHOODS%2C+AND+EDUCATION+REFORM)%2BAND%2BDATE%2BIS%2B2010-03-01

City of Dubuque, P. S. (2008). City of Dubuque Comprehensive Plan. Dubuque, IA.

Council, P. R. (2012). The Impact of School-Based Poverty Concentration on Academic and Student Outcomes. Washington DC.

DeYoung, A. (1995). The Life and Death of a Rural American High School: Farewell Little Kanawha. New York: Garland.

Donnelly, S. A. (2003). A Toolkit for Tomorrow's Schools. Planning.

ECIA. (2008, November). Safe Routes to School Summary. Retrieved from East Iowa Safe Routes to School: http://www.eastiowasaferoutes.org/school_summary/

Education, U. D. (2011). Digest of Education Statistics. Table 184. Retrieved from US Department of Education: http://nces.ed.gov/fastfacts/display.asp?id=67

Erickson, A. T. (2012). Building Inequality: The Spatial Organization of Schooling in Nashville, Tennessee after Brown. Journal of Urban History, 38(2), 247-270. doi:10.1177/0096144211427115

Erickson, A. T. (Fall 2011). The Rhetoric of Choice: Segregation, Desegregation, and Charter Schools. Dissent, 41-46.

Erickson, A., & Schwartz, H. (2011). Why We Should Pay Renewed Attention to School Desegregation. Columbia University, New York City: Institute for Social and Economic Research and Policy.

Hanley, P. F. (2007, June). Transportation Cost Changes with Statewide School District Consolidation. Socio-economic Planning Sciences, 41(2), 163-179.

Iowa Legislative Services Agency Fiscal Services. (2006). Transportation Costs Impact on School Budgets. Des Moines.

Leadership, I. f. (2012, November). Your Leadership Role. Retrieved from Coalition for Community Schools: http://www.communityschools.org/assets/1/AssetManager/collaborative%20leadership.pdf

Moore, S. M. (n.d.). The Neighborhood and Its School in Community Revitalization: Tools for Developers of Mixed-Income Housing Communities. Urban Strategies Inc., St. Louis. Retrieved February 17, 2013, from http://www.urbanstrategiesinc.org/TheNeighborhoodAndItsSchool.pdf

National Vacant Properties Campaign. (August 2005). Vacant Properties: The True Cost to Communities. Washington, DC.

Officials, M. S. (2007). Student Transportation Benchmarking Survey. Michigan Department of Dept. of Education.

O'Sullivan, A. (2009). Urban Economics (7th Ed.). New York: McGraw-Hill.

Popkin, S. J. (2004). The Hope VI Program: What about the Residents? Housing Policy Debate, 15. Retrieved from https://icon.uiowa.edu/d2l/lms/content/viewer/main_frame.d2l?ou=1969351&tId=2543035

Schwartz, H. (2011). Housing Policy is School Policy: Economically Integrative Housing Promotes Academic Success in Montgomery County, MD. Education Digest. Retrieved February 6, 2013, from http://content.ebscohost.com.proxy.lib.uiowa.edu/pdf25_26/pdf/2011/EDD/01Feb11/57450675.pdf?T=P&P=AN&K=57450675&S=R&D=afh&EbscoContent=dGJyMNXb4kSeprQ4xNvgOLCmr0uep7NSsq24S7KWxWXS&ContentCustomer=dGJyMPGpsEiuprZKuePfgeyx44Dt6fIA

Statistics, N. C. (2009). Total Expenditures for Public Elementary and Secondary Education, by function and subfunction:Selected years, 1990-91 through 2008-09. Digest of Education Statistics. Retrieved February 12, 2013, from http://nces.ed.gov/programs/digest/d11/tables/dt11_188.asp

Steward, W. C. (1999). Case 13: Lincoln, NE Public School Systems: The Advance Scouts for Urban Sprawl. In R. K. Olson, Under the Blade: The Conversion of Agricultural Landscapes (p. 370). Westview Press.

Yates, J. (n.d.). Can Anchor Institutions Help Revitalize Declining Neighborhoods by Buying from Local Cooperatives>. Ohio Employee Ownership Center, Kent State University.

5.4: Need for Collaboration

Bartlet, D. W. (1995). The Macroecology of Educational Outcomes.

In L.C. Rigsby, M.C. Reynolds, & M.C. Wang (Eds.), School-Community Connections (pp. 159-192). San Francisco: Josse-Bass Publishers.

Yancey, W.L. & Saporito, S.J. (1995). Ecological Embeddedness of Educational Processes and

Outcomes. In L.C. Rigsby, M.C. Reynolds, & M.C. Wang (Eds.), School-Community Connections (pp. 193-228). San Francisco: Josse-Bass Publishers.

Peshkin, A. (1995). The Complex World of an Embedded Institution: Schools and Their

Constituent Publics. In L.C. Rigsby, M.C. Reynolds, & M.C. Wang (Eds.), School-Community Connections (pp. 229-258). San Francisco: Josse-Bass Publishers.

Holtzman, W. (1995). Commentary: Local Partnerships as the Source of Innovative Policy.

In L.C. Rigsby, M.C. Reynolds, & M.C. Wang (Eds.), School-Community Connections (pp. 59-69). San Francisco: Josse-Bass Publishers.

Gray, B. (1995). Obstacles to Success in Educational Collaborations.

In L.C. Rigsby, M.C. Reynolds, & M.C. Wang (Eds.), School-Community Connections (pp. 71-100). San Francisco: Josse-Bass Publishers.

Eisenberg, E. (1995). A Communication Perspective on Interorganizational Cooperation and Inner-City Education.

In L.C. Rigsby, M.C. Reynolds, & M.C. Wang (Eds.), School-Community Connections (pp. 101-120). San Francisco: Josse-Bass Publishers.

Dodd, A.W. & Konzal, J.L. (2002). How communities build stronger schools. New York: Palgrave Macmillan.

5.5: Collaboration in Action

Campaign for Grade Level Reading. Retrieved from http://gradelevelreading.net/ 10/27/12.

City of Dubuque, P. S. (2008). City of Dubuque Comprehensive Plan. Dubuque, IA.

Donnelly, S. A. (2003). A Toolkit for Tomorrow's Schools. Planning.

Leadership, I. f. (2012, November). Your Leadership Role. Retrieved from Coalition for Community Schools: http://www.communityschools.org/assets/1/AssetManager/collaborative%20leadership.pdf

Margerum, Richard D. (2011). Beyond Consensus: Improving Collaborative Planning and Management. The Massachusetts Institute of Technology Press. Cambridge, MA.

Schools and Districts in Need of Assistance. (2012). Retrieved from Iowa Department of Education: http://educateiowa.gov/

Appendix A: Production Function Calculations

Appropriating Demographic Characteristics

To be able to test the sensitivity of the student outcome production function to the characteristics of different neighborhood delineations, specifically school catchment areas, the census tract and the census block that the school buildings fall into, a half-mile buffer around the schools, a mile buffer around the schools there was a need to create the desired datasets; there were no pre-existing data that perfectly matched the above study areas. Below are more explicit instructions on how the datasets were created for each study area.

First, there will be a brief discussion of the assumptions and limitations of the methods used. Then, there will be a discussion of the sources of acquired the data and the necessary preprocessing steps. Lastly, there will be step-by-step instructions on how the method was applied.

Assumptions and Limitations

It was assumed that population characteristics are evenly distributed over space. While this assumption is necessary, it is not always representative of reality. It should also be noted that census data comes with a degree of uncertainty and this study does not look at how compounded uncertainty affects the confidence of results.

Acquiring and Preprocessing Data

In order to apply the characteristics of the American Community Survey (ACS) to the proposed study areas, there was a need to acquire the spatial extent of the neighborhood delineations, specifically school catchment areas, census block and tract extents, half mile buffers, and mile buffers. Below are more explicit instructions on how the spatial extent of the neighborhood delineations were acquired and any required preprocessing.

School Data

The DCSD has an online map that allows users to look up school boundary information. The DCSD online map is accessible at http://smartr.dubuque.k12.ia.us/website/Dubuque2008-11-06/viewer.htm. Additionally, the data from the online map can be imported into ArcGIS through an ArcIMS Server connection with the following URL: http://smartr.dubuque.k12.ia.us.

Once connected to the ArcIMS Server the boundaries can be displayed in ArcGIS, however the layer does not have a corresponding projection or coordinate system. In order for the layers to be used in analysis they must be converted to a shapefile. To do this one needs to save the layer as a layer file. After it is saved as a layer file it can be exported to a shapefile. Because there is no coordinate system or projection associated with the shapefile one must project the shapefile to a NAD_1983_StatePlane_Iowa_North_FIPS_1401_Feet.

Census Tract, Census Block Data

Census tract data and census block data were acquired from the census's website at http://www.census.gov/geo/maps-data/data/tiger.html. The census tract and block shapefiles need to be projected to NAD_1983_StatePlane_Iowa_North_FIPS_1401_Feet in order to be compatible with the school district boundary data and the zoning data. The geometry of census tracts and blocks needs to be calculated within the new projection. This could be done by adding a field in the attribute table and then calculating geometry. The results are the area of the census tracts and blocks in square feet.

Half Mile Buffer and Mile Buffer

Both half mile and mile buffers were created around each school building by using the buffer tool in ArcGIS.

Process

The American Community Survey reports population characteristics on a variety of scales. The scales of particular interest to this study are the census tract and census block level. Census tracts and blocks do not perfectly align with all of the neighborhood delineations so there was a need to estimate the population characteristics of a neighborhood. This was done by creating a count weight and a mean weight and then applying those weights to the demographic characteristics of a census tract or block. The count weight is specific to demographic characteristics that were represented as a count like total population; the mean weight was created for demographic characteristics that were represented as an average, like median household income. The count weight is the proportion of land within a census tract or block group in the study area to the amount of land within the initial Census Tract or Block. The mean weight is the proportion of land within a census tract or block group in the neighborhood to the amount of land within the neighborhood. Below are the detailed steps of this process.

Steps - Count Weights:

1. Intersect the neighborhood shapefile with census tracts and blocks.
2. Add a new field to the resulting shapefile and then calculate the geometry. This returns the area of all the intersections.
3. Add another new field named Count Weight. Populate this field by dividing the intersection area of the neighborhood by the area of the original census tract or block. This gives the proportion of the area of a census tract or block within a neighborhood to the area of the census tract or block.
4. Once a weight is created, multiply the weight by the characteristics that are represented as a count of its respective census tract or block. Add all weighted characteristics of a neighborhood to get the estimate of the population's characteristics.

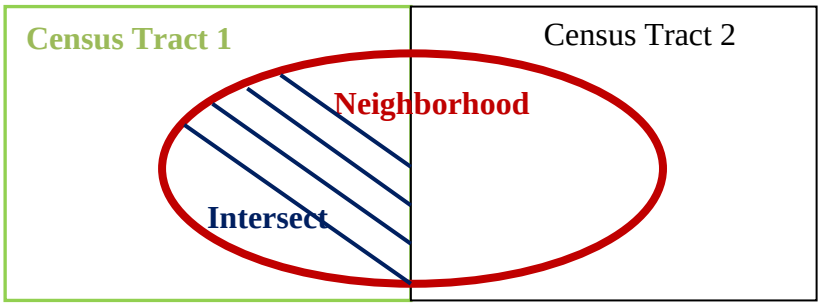
Steps – Mean Weight:

1. Add a new field called AreaS and calculate the geometry for the neighborhood.
2. Add a new field called Mean Weight. Populate this field by dividing the intersection of the neighborhood used above by the new field AreaS which is the area of the neighborhood. This gives the proportion of the area of a census tract or block within a neighborhood to the area of the neighborhood.

Once the mean weights are created, multiply the weight by the characteristics that are represented as an average in its respective census tract or block. Add all weighted characteristics of a study area to get the estimate of the population's characteristics.

Count Weight = **Area of Intersect 1** / **Area of Census Tract 1**

Mean Weight = **Area of Intersect 1** / **Area of Neighborhood**



Interpolating Trends in Demographic Characteristics

In order to create the proposed production function, there was a need to quantify student outcomes which acts as the dependent variable. Test scores for 4th grade reading and math was readily available through the Iowa Department of Education. 4th grade yearly test scores were gathered from the Iowa Department of Education for a seven year period from 2003 to 2010. Because census data is not collected yearly it was necessary to interpolate for the years between the 2000 Census and the 2010 ACS data. Changes in demographic characteristics were assumed to be linear from 2000 to 2010. The yearly rate of change was calculated between the 2000 and 2010 demographic data and was then used to interpolate the yearly demographics from 2000 – 2010. The seven years between 2003 and 2010 were then used in the initial attempts at producing the production function, the results of which will follow.

Statistical Analysis – Preliminary Results

Data used in the preliminary results are from 2003 – 2010 and for the following 11 elementary schools: Audubon, Bryant, Eisenhower, Fulton, Hoover, Irving, Kennedy, Lincoln, Marshall, Sageville, and Table Mound.

Figure A.1
4th Grade Reading Scores Predicted by
% of Free and Reduced Lunch in Building, % Non-White in Catchment Area,
% Minority in Building, % Renter in Catchment Area

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.728009965
R Square	0.529998509
Adjusted R Square	0.503887316
Standard Error	8.044822123
Observations	77

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	5254.61379	1313.653447	20.29775088	3.15018E-11
Residual	72	4659.779735	64.71916298		
Total	76	9914.393525			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	93.15789942	2.69601022	34.55398601	1.44796E-46	87.78350127	98.53229757
FRL	-0.414159202	0.07800891	-5.309126929	1.16958E-06*	-0.569667122	-0.258651283
Minority	0.162970126	0.162661079	1.001899945	0.31974727	-0.161288808	0.48722906
% Non-white	1.462227533	0.480155792	3.045318954	0.003246048*	0.505054456	2.41940061
Renter	-0.326056636	0.102139581	-3.192265259	0.002093468*	-0.52966817	-0.122445103

*indicates that the variable is significant at a 95% confidence level

The above table contains the results from the first regression which attempts to use the percent of students eligible for free and reduced lunch in a school building, the percent of students in a school building that are non-white, the percent of the population within the school catchment area that is non-white, and the percent of residents within a catchment area that are renters to explain 4th grade test score. An R Square of .53 indicates that this model is predicting 53% of the variance in 4th grade test scores. However, the model is flawed in that the percent of the population within a school catchment area that is nonwhite and the percent of residents within a catchment area that are renters are highly correlated (see Correlations table below). Additionally,

percent minority within a school and percent free and reduced lunch within a school have a high correlation which can affect the integrity of the results.

Figure A.2
4th Grade Reading Scores Predicted by
% Free and Reduced Lunch in Building and% Minority in Building

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.680298825
R Square	0.462806491
Adjusted R Square	0.448287748
Standard Error	8.483647105
Observations	77

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	4588.445678	2294.222839	31.87648377	1.03476E-10
Residual	74	5325.947846	71.97226819		
Total	76	9914.393525			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	89.66488536	2.206056592	40.64487089	2.32343E-52	85.26922164	94.06054907
FRL	-0.386084562	0.081689417	-4.726249419	1.06449E-05*	-0.548854279	-0.223314844
Minority	-0.144646569	0.169114707	-0.855316325	0.395136921	-0.192321839	0.481614978

*indicates that the variable is significant at a 95% confidence level

This model completely eliminates any neighborhood and attempts to use the percent of students eligible for free and reduced lunch in a school building, the percent of students in a school building that are non-white, to explain 4th grade test score. An R Square of .463 indicates that this model is predicting 46.3% of the variance in 4th grade test scores. However, the percentage

of students in a school building that are non-white is not significant at the 95% confidence level and could therefore be excluded from the model, as it is below. Additionally, percent minority within a school and percent free and reduced lunch within a school have a high correlation which can affect the integrity of the results (see correlations table below).

Figure A.3
4th Grade Reading Scores Predicted by
% of Free and Reduced Lunch in Building

4th Grade Reading Scores Predicted by
SUMMARY OUTPUT % of Free and Reduced Lunch in Building

Regression Statistics	
Multiple R	0.676384344
R Square	0.457495781
Adjusted R Square	0.450262392
Standard Error	8.468451501
Observations	77

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	4535.793213	4535.793213	63.24777	1.467E-11
Residual	75	5378.600312	71.71467082		
Total	76	9914.393525			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	88.79426409	1.953680531	45.44973586	2.45E-56	84.90233296	92.68619523
FRL	-0.32566329	0.040949272	-7.952846842	1.47E-11*	-0.407238422	-0.244088158

*indicates that the variable is significant at a 95% confidence level

This model uses the percent of students eligible for free and reduced lunch in a school building to explain 4th grade test score. An R Square of .458 indicates that this model is predicting 45.8% of the variance in 4th grade test scores.

Figure A.4

Correlations Table	*4th Grade Reading*	*4th Grade Math*	*Minority*	*% Non-white*	*Renter*	*Income*	*StdDist*	*FRL*
4th Grade Reading	1.000							
4th Grade Math	**0.874**	1.000						
Minority	**-0.548**	**-0.542**	1.000					
% Non-white	-0.199*	-0.289	0.374	1.000				
Renter	-0.251	-0.356	0.318	**0.921**	1.000			
Income	-0.134*	-0.032*	-0.279	0.114*	0.139*	1.000		
StdDist	0.284	0.305	-0.570	-0.447	-0.469	-0.016*	1.000	
FRL	**-0.676**	**-0.656**	**0.865**	0.346	0.274	-0.035*	**-0.555**	1.000

Bold correlation coefficients indicate that the variables highly correlated
*indicates the correlation coefficients are not significant at the 95% confidence level

In addition to the discussion held in the body of the document, it is interesting to note that percent of residents in an elementary school catchment area that is classified as a renter is significantly correlated with the percent of the population in the elementary school catchment area that is a minority with a correlation coefficient of .921 at the 95% confidence level.

Below is the significance of all potential correlations coefficient. Bold indicates that the correlation coefficient above is NOT significant at the 95% confidence interval.

Figure A.5

T Values for Correlation Coefficients with a Critical Value of 1.992 at 95% Confidence	*4th Grade Reading*	*4th Grade Math*	*Minority*	*% Non-white*	*Renter*	*Income*	*StdDist*	*FRL*
4th Grade Reading	1.000							
4th Grade Math	15.592	1.000						
Minority	-5.678	-5.583	1.000					
% Non-white	**-1.761**	-2.617	3.498	1.000				
Renter	-2.249	-3.300	2.902	20.439	1.000			
Income	**-1.175**	**-0.275**	-2.513	**0.996**	**1.220**	1.000		
StdDist	2.567	2.771	-6.015	-4.325	-4.593	**-0.135**	1.000	
FRL	-7.953	-7.517	14.913	3.195	2.472	**-0.307**	-5.782	1.000

Bold Indicates the Correlation Coefficient is NOT significant at the 95% Confidence Level

The table below contains the results of a model included in the body of the report which attempts to use the percent of students in a school building that are non-white, the median household income of an elementary school catchment area to explain 4th grade test score. An R Square of .39 indicates that this model is predicting 39% of the variance in 4th grade test scores. While this R Square value is less than that of other models indicating that this model is predicting the variance of 4th grade test scores less than other models it does not contain any autocorrelation and is one of the best models produced from the preliminary runs.

Figure A.6
4th Grade Reading Scores Predicted by % Minority in Building and Median Income of Catchment Area

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.624594994
R Square	0.390118907
Adjusted R Square	0.373635634
Standard Error	9.039404101
Observations	77

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	3867.792364	1933.896182	23.66756359	1.13259E-08
Residual	74	6046.601161	81.7108265		
Total	76	9914.393525			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	86.40985601	2.088101272	41.38202355	6.49399E-53	82.2492234	90.57048862
Minority	-0.633045316	0.094221339	6.718704322	3.27333E-09*	-0.820785432	-0.4453052
Income	-6.10625E-05	1.85331E-05	3.294788208	0.001513463*	-9.79904E-05	-2.41346E-05

*indicates that the variable is significant at a 95% confidence level

The table below contains the results of a model included in the body of the report which attempts to use the percent of students in a school building that are non-white, the median household income of an elementary school catchment area to explain the percent of students eligible for free and reduced lunch within an elementary school. An R Square of .793 indicates that this model is predicting 79.3% of the variance in percent of students eligible for free and reduced lunch with an elementary school building.

Figure A.7
Free and Reduced Lunch Predicted by % Minority in Building and Median Income of Catchment Area

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.890860553
R Square	0.793632525
Adjusted R Square	0.788055026
Standard Error	10.92100442
Observations	77

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	33941.81751	16970.90876	142.2918194	4.38254E-26
Residual	74	8825.856986	119.2683376		
Total	76	42767.6745			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	13.88827697	2.522750723	5.505211769	5.07177E-07	8.861586501	18.91496744
Minority	1.918818388	0.113834015	16.85628322	4.74807E-27*	1.691999167	2.14563761
Income	9.07564E-05	2.23908E-05	4.053288201	0.000123474*	4.61417E-05	0.000135371

*indicates that the variable is significant at a 95% confidence level

Appendix B: Conjoint Calculations

Estimating Willingness to Pay

The group calculated the exact number from which to estimate willingness-to-pay by:

1. Identifying the median home value from the U.S. Census Bureau
2. Identifying the property tax rate for residents
3. Multiplying the property tax rate by the median home value to find the total amount paid by residents in property taxes
4. Identifying the percentage of property taxes paid to the school district
5. Multiplying the percentage of property taxes paid to the school district by the total amount paid by residents in property taxes to get the amount residents pay of their property taxes to the school district.

The group estimated the value of property taxes for renters by dividing the median home value by twelve (twelve months of a year) and going through the calculations employed for owner-occupied units. Results of the outlined calculations are presented in Figure B.1.

Figure B.1
Amount of City Property Taxes/Rent paid to School District

City	**Owner-Occupied units (2006-2010)**	**Rent (2006-2010)**
Median Value	$121,000 [a]	$10,083.33
City Property Tax Rate	3.43% [b]	3.43%
Amount paid in property taxes	$4,152.77	$346.06
Proportion of property taxes paid to school district	44.88% [c]	44.88%
Amount of property taxes paid to school district	**$1,863.76**	**$155.31**

The group discovered later that the school district's rate applied to property taxes is $15.39769 per every $1000 (DCSD, 2012) or 1.54% and when the group multiplied this rate by the median home values/rent, the amount paid in property taxes by residents came out almost the same ($1,863.12 for home-owners and $155.26 for renters) as when the group had calculated the amount in Figure B.1.

The group completed these calculations based on both city and county median home values/rent, but when the school district tax rate was applied to the county values the amount of property taxes paid to the school district came out considerably different ($902.88 and $75.24 from the group's calculations and $2,106.40 and $175.53 using the school district tax rate for homeowners and renters respectively) as illustrated in Figure B.2.

Figure B.2
Amount of County Property Taxes/Rent paid to School District

County	**Owner-Occupied units (2006-2010)**	**Rent (2006-2010)**
Median Value	$136,800	$11,400
County Property Tax Rate	1.20%	1.20%
Amount paid in property taxes	$1,641.60	$136.80
Proportion of property taxes paid to school district	55%	55%
Amount of property taxes paid to school district	**$902.88**	**$75.24**
School District Property Tax Rate	1.54%	1.54%
Amount of property taxes paid to school district	**$2,106.40**	**$175.53**

a Dubuque Census Quick Facts http://quickfacts.census.gov/qfd/states/19/1922395.html
b City of Dubuque Property Tax Rate http://greaterdubuque.org/relocation_faq.cfm
c Phone call to City Assessor's office

The group can attribute the differences in the amount paid by county residents in property taxes to the school district, to the source of the county property tax rate and the proportion of property taxes paid to the school district by county residents. According to the county assessor's office, the 55% quoted in Figure B.2 is an average figure – the actual proportion varies based on specifically where a person lives.

The group decided to omit the county figures from consideration of willingness to pay attributes because of the significant variations in amount paid in property taxes paid to the school district and because only two schools (Sageville and Table Mound) fall outside the City limits.

Conceptualizing Conjoint Analysis

The group used the following table to conceptualize the characteristics and levels the group used to construct combinations of various school types.

Figure B.3
Preferences for School Type

		School Type				
School Characteristics		School Type A	School Type B	School Type C	School Type D	School Type E
		1	**2**	**3**	**4**	**5**
Distance from your home (miles)	**a**	¼	½	1	2	5
Proportion of students receiving Free and Reduced Lunch (%)	**b**	5	10	20	50	85
Student-to-Teacher ratio	**c**	10:1	15:1	20:1	25:1	30:1
No of extracurricular activities	**d**	11	9	7	5	3
Increase in amount paid in property taxes ($)	**e**	100	150	200	250	300
Increase in amount paid in rent ($)		20	40	50	80	100
I would choose (please select one school type only)						

Figure B.3 conceptualizes the characteristics/attributes (items lettered a through e) of school types and the different levels/degrees of these characteristics (items numbered 1 through 5). The group numbered the levels in order of decreasing desirability from 1 to 5 (i.e. a school ¼ mile from your home is more desirable than a school 1 mile from your home and school with 85% of students receiving free and reduced lunch is less desirable than a school with 10% of students receiving free and reduced lunch etc.).

Coding and Randomizing Combinations of School Characteristics

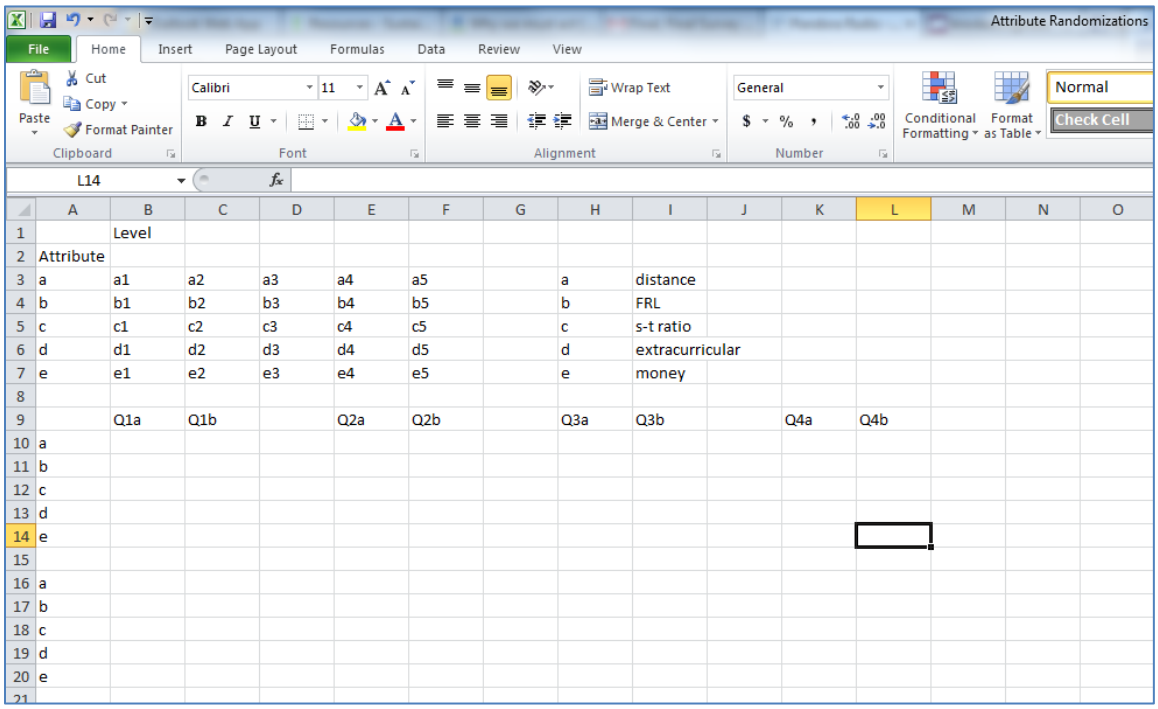
The group coded the numbers in the un-shaded portion of Figure B.3 to create B.4:

Figure B.4
Coded Attribute Levels for School Type

		School Type				
School Characteristics		School Type A	School Type B	School Type C	School Type D	School Type E
		1	**2**	**3**	**4**	**5**
Distance from your home (miles)	**a**	a1	a2	a3	a4	a5
Proportion of students receiving Free and Reduced Lunch (%)	**b**	b1	b2	b3	b4	b5
No of subjects beyond reading, writing, math	**c**	c1	c2	c3	c4	c5
No of extracurricular activities	**d**	d1	d2	d3	d4	d5
Increase in amount paid in property taxes ($)	**e**	e1	e2	e3	e4	e5
Increase in amount paid in rent ($)		e1	e2	e3	e4	e5
I would choose (please select one school type only)						

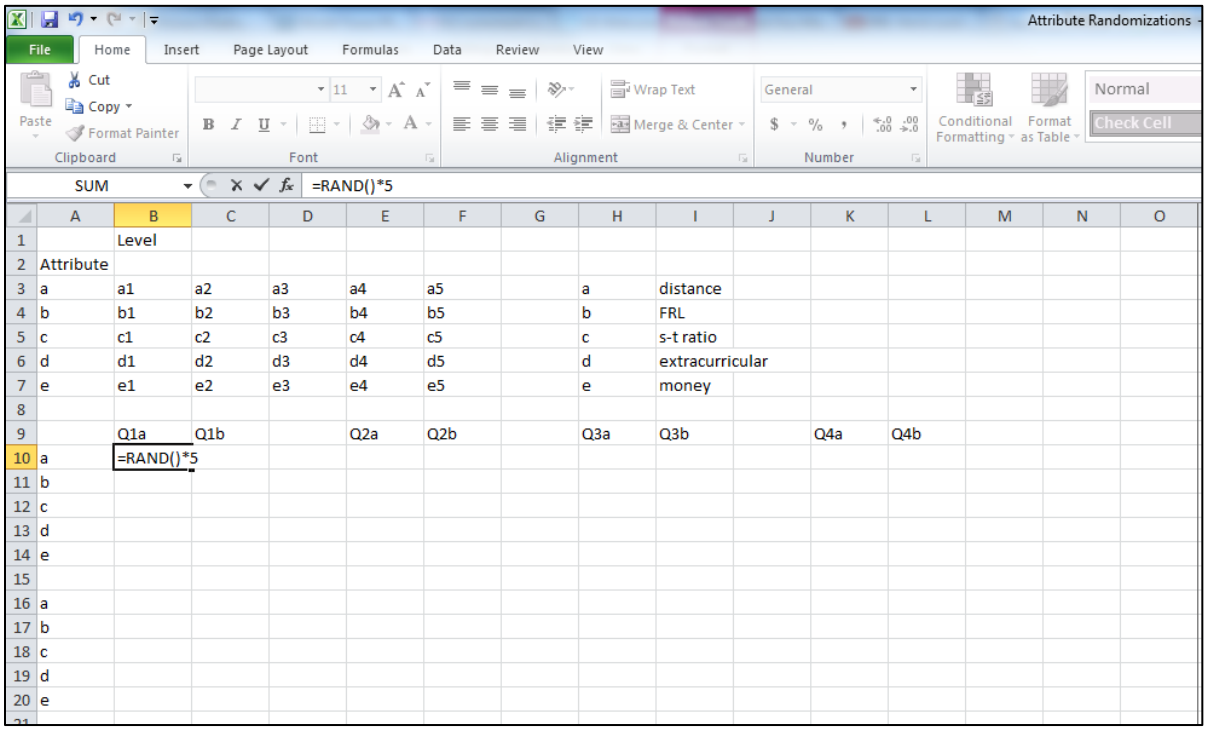
Randomizing Conjoint Attributes Using Excel

1. Set up the excel spreadsheet as follows from the coded attribute table.



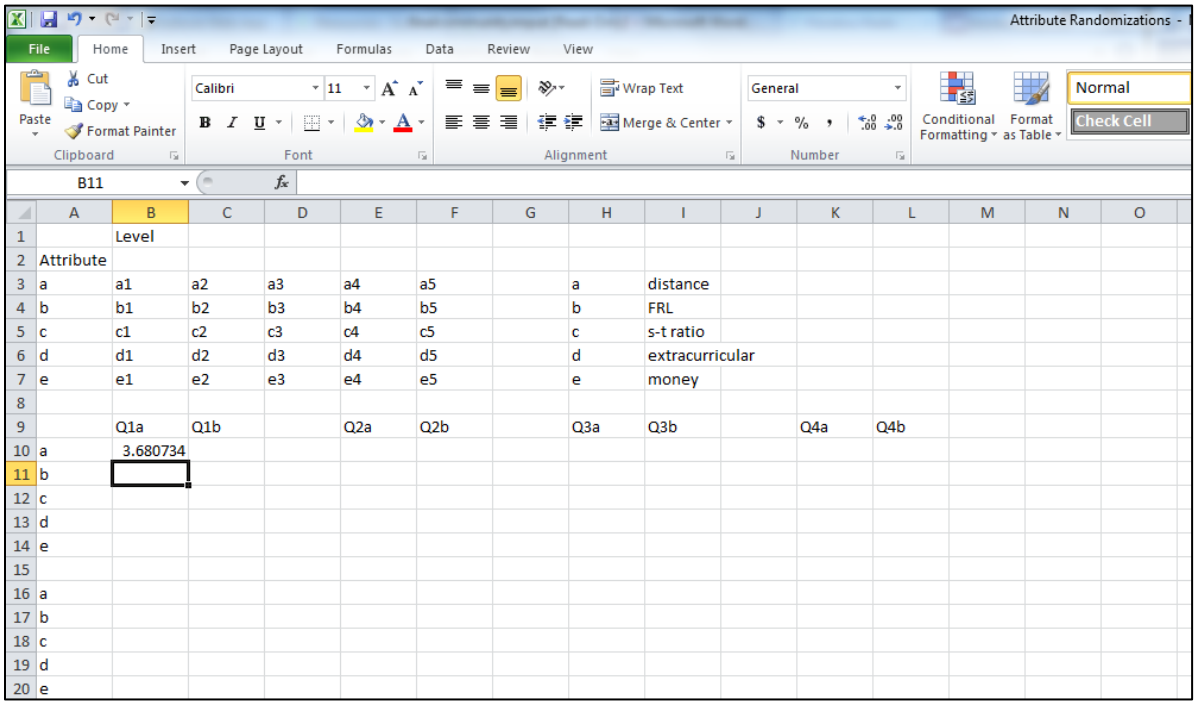
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Level													
2	Attribute														
3	a	a1	a2	a3	a4	a5		a	distance						
4	b	b1	b2	b3	b4	b5		b	FRL						
5	c	c1	c2	c3	c4	c5		c	s-t ratio						
6	d	d1	d2	d3	d4	d5		d	extracurricular						
7	e	e1	e2	e3	e4	e5		e	money						
8															
9		Q1a	Q1b		Q2a	Q2b		Q3a	Q3b		Q4a	Q4b			
10	a														
11	b														
12	c														
13	d														
14	e														
15															
16	a														
17	b														
18	c														
19	d														
20	e														

2. Type in the RAND function multiplied by 5 [=RAND ()*5] into the cell below Q1a



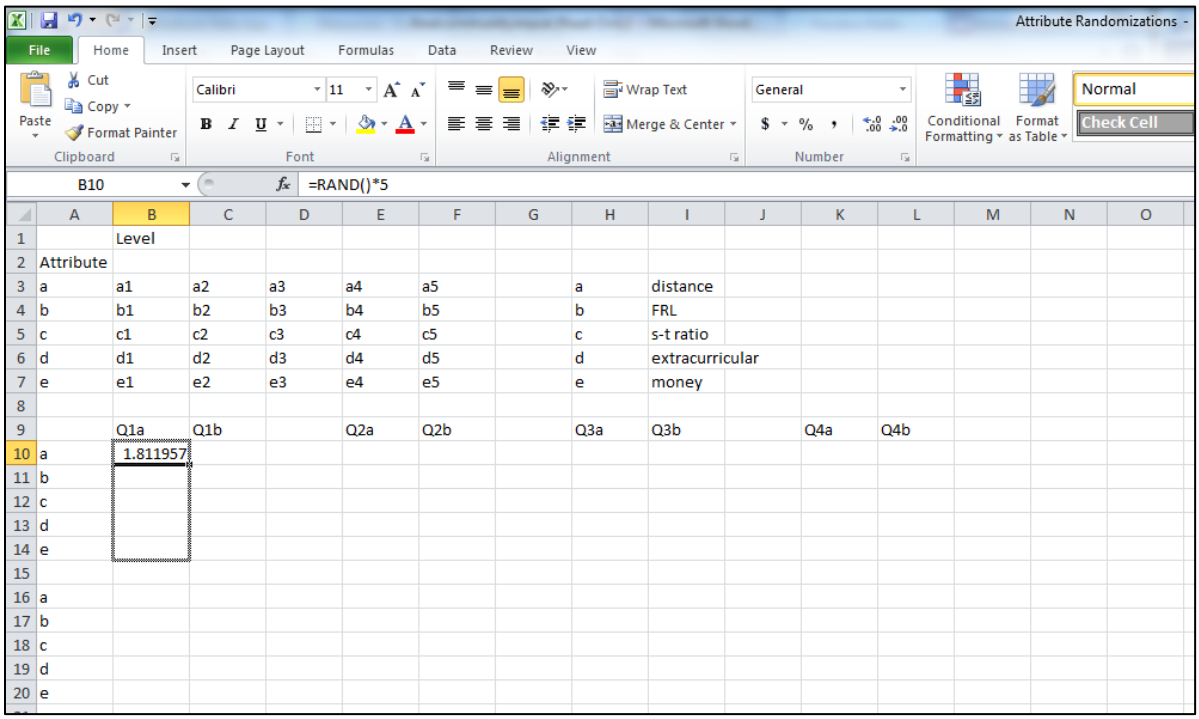
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Level													
2	Attribute														
3	a	a1	a2	a3	a4	a5		a	distance						
4	b	b1	b2	b3	b4	b5		b	FRL						
5	c	c1	c2	c3	c4	c5		c	s-t ratio						
6	d	d1	d2	d3	d4	d5		d	extracurricular						
7	e	e1	e2	e3	e4	e5		e	money						
8															
9		Q1a	Q1b		Q2a	Q2b		Q3a	Q3b		Q4a	Q4b			
10	a	=RAND()*5													
11	b														
12	c														
13	d														
14	e														
15															
16	a														
17	b														
18	c														
19	d														
20	e														

3. This produces a random number between 0 and 5 as shown below



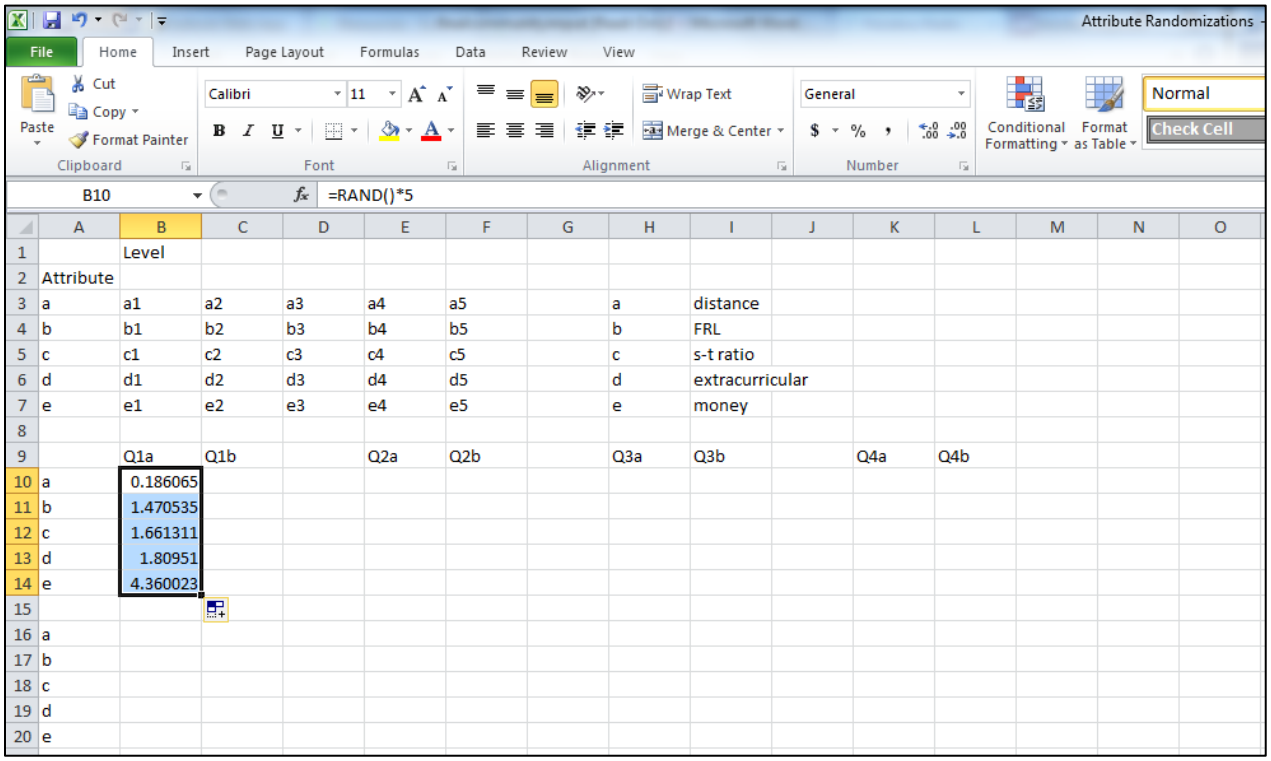
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Level													
2	Attribute														
3	a	a1	a2	a3	a4	a5		a	distance						
4	b	b1	b2	b3	b4	b5		b	FRL						
5	c	c1	c2	c3	c4	c5		c	s-t ratio						
6	d	d1	d2	d3	d4	d5		d	extracurricular						
7	e	e1	e2	e3	e4	e5		e	money						
8															
9		Q1a	Q1b		Q2a	Q2b		Q3a	Q3b		Q4a	Q4b			
10	a	3.680734													
11	b														
12	c														
13	d														
14	e														
15															
16	a														
17	b														
18	c														
19	d														
20	e														

4. Drag down the cell from the figure in B10 to B14 (each time you interact with a randomized cell the number generated will change)



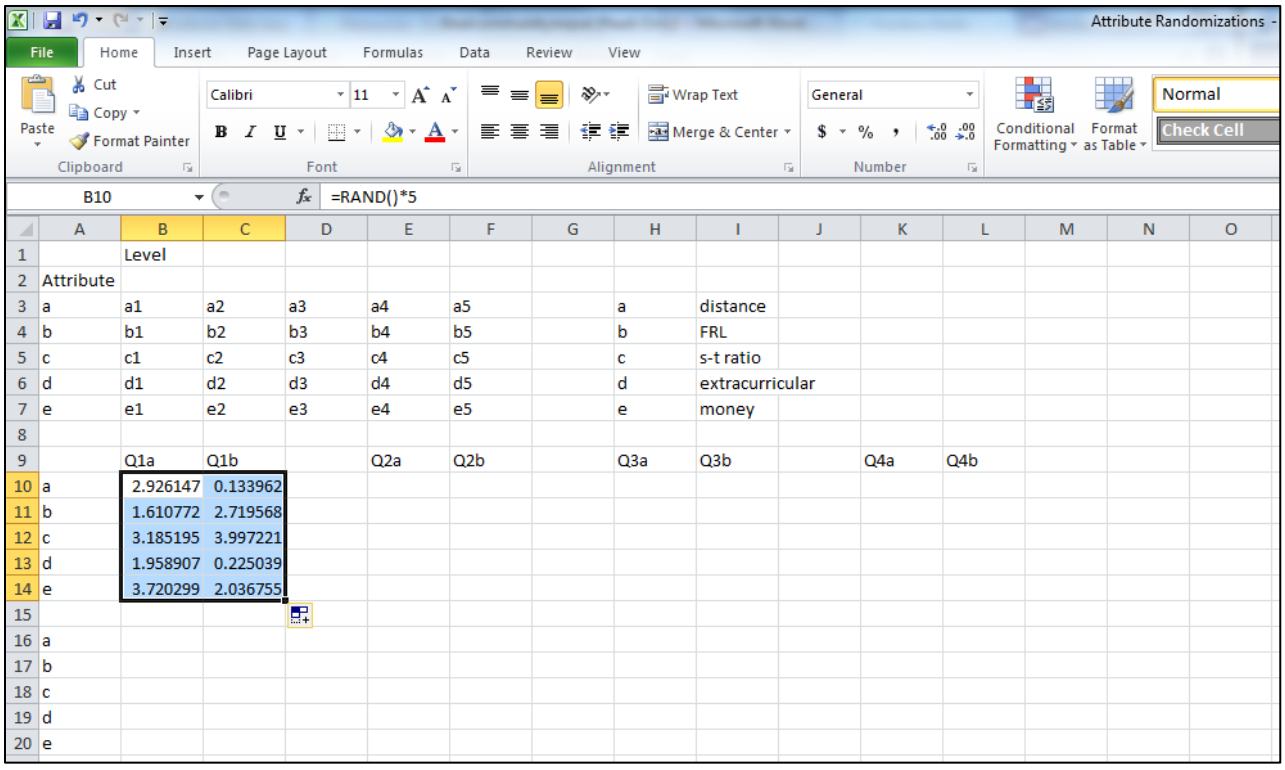
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Level													
2	Attribute														
3	a	a1	a2	a3	a4	a5		a	distance						
4	b	b1	b2	b3	b4	b5		b	FRL						
5	c	c1	c2	c3	c4	c5		c	s-t ratio						
6	d	d1	d2	d3	d4	d5		d	extracurricular						
7	e	e1	e2	e3	e4	e5		e	money						
8															
9		Q1a	Q1b		Q2a	Q2b		Q3a	Q3b		Q4a	Q4b			
10	a	1.811957													
11	b														
12	c														
13	d														
14	e														
15															
16	a														
17	b														
18	c														
19	d														
20	e														

5. This will produce a column for Q1a that looks like this



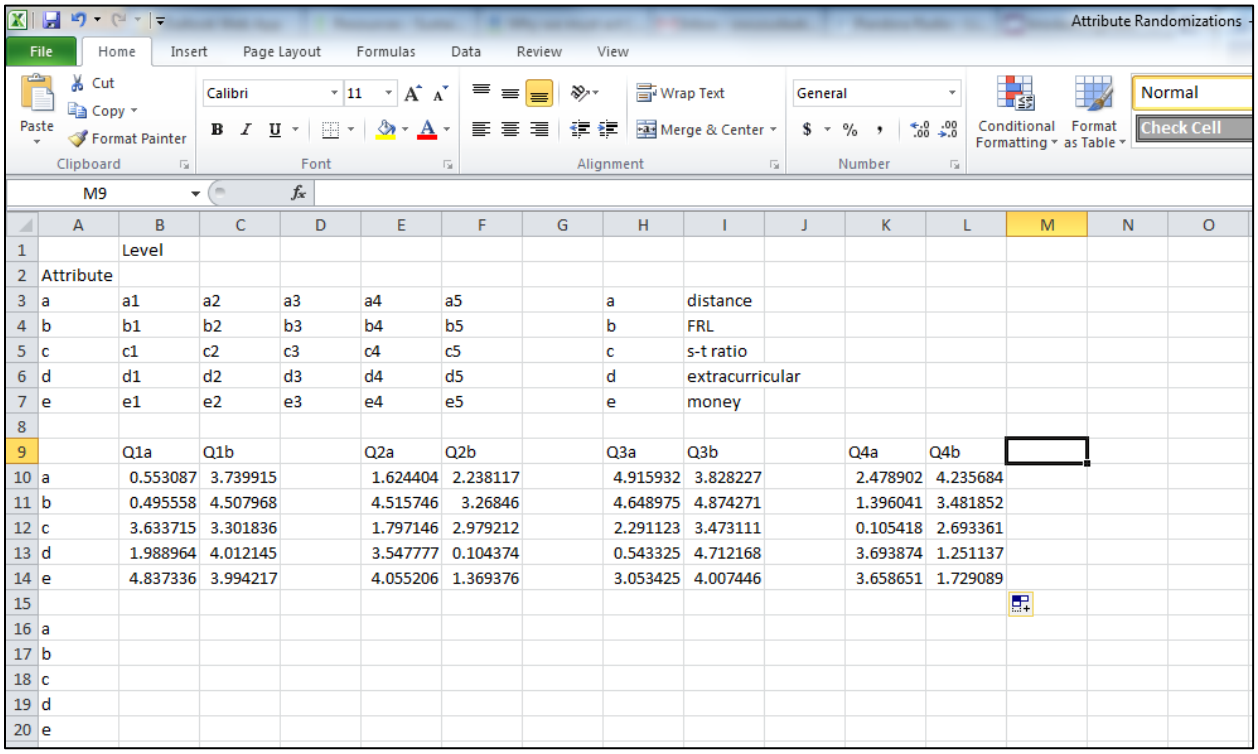
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Level													
2	Attribute														
3	a	a1	a2	a3	a4	a5		a	distance						
4	b	b1	b2	b3	b4	b5		b	FRL						
5	c	c1	c2	c3	c4	c5		c	s-t ratio						
6	d	d1	d2	d3	d4	d5		d	extracurricular						
7	e	e1	e2	e3	e4	e5		e	money						
8															
9		Q1a	Q1b		Q2a	Q2b		Q3a	Q3b		Q4a	Q4b			
10	a	0.186065													
11	b	1.470535													
12	c	1.661311													
13	d	1.80951													
14	e	4.360023													
15															
16	a														
17	b														
18	c														
19	d														
20	e														

6. Next, drag the highlighted column across to Q1b to produce a column as show below



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Level													
2	Attribute														
3	a	a1	a2	a3	a4	a5		a	distance						
4	b	b1	b2	b3	b4	b5		b	FRL						
5	c	c1	c2	c3	c4	c5		c	s-t ratio						
6	d	d1	d2	d3	d4	d5		d	extracurricular						
7	e	e1	e2	e3	e4	e5		e	money						
8															
9		Q1a	Q1b		Q2a	Q2b		Q3a	Q3b		Q4a	Q4b			
10	a	2.926147	0.133962												
11	b	1.610772	2.719568												
12	c	3.185195	3.997221												
13	d	1.958907	0.225039												
14	e	3.720299	2.036755												
15															
16	a														
17	b														
18	c														
19	d														
20	e														

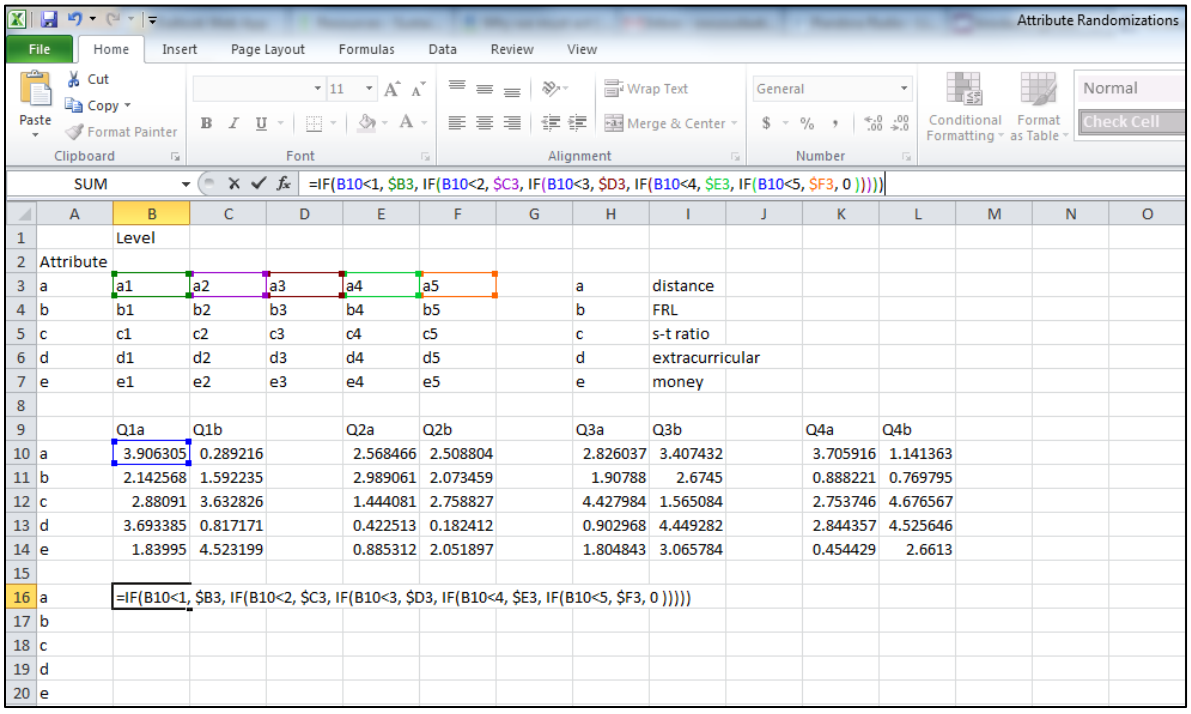
7. Repeat steps 2 to 6 for Q2 to Q4 to generate a set of columns that looks like this



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Level													
2	Attribute														
3	a	a1	a2	a3	a4	a5		a	distance						
4	b	b1	b2	b3	b4	b5		b	FRL						
5	c	c1	c2	c3	c4	c5		c	s-t ratio						
6	d	d1	d2	d3	d4	d5		d	extracurricular						
7	e	e1	e2	e3	e4	e5		e	money						
8															
9		Q1a	Q1b		Q2a	Q2b		Q3a	Q3b		Q4a	Q4b			
10	a	0.553087	3.739915		1.624404	2.238117		4.915932	3.828227		2.478902	4.235684			
11	b	0.495558	4.507968		4.515746	3.26846		4.648975	4.874271		1.396041	3.481852			
12	c	3.633715	3.301836		1.797146	2.979212		2.291123	3.473111		0.105418	2.693361			
13	d	1.988964	4.012145		3.547777	0.104374		0.543325	4.712168		3.693874	1.251137			
14	e	4.837336	3.994217		4.055206	1.369376		3.053425	4.007446		3.658651	1.729089			
15															
16	a														
17	b														
18	c														
19	d														
20	e														

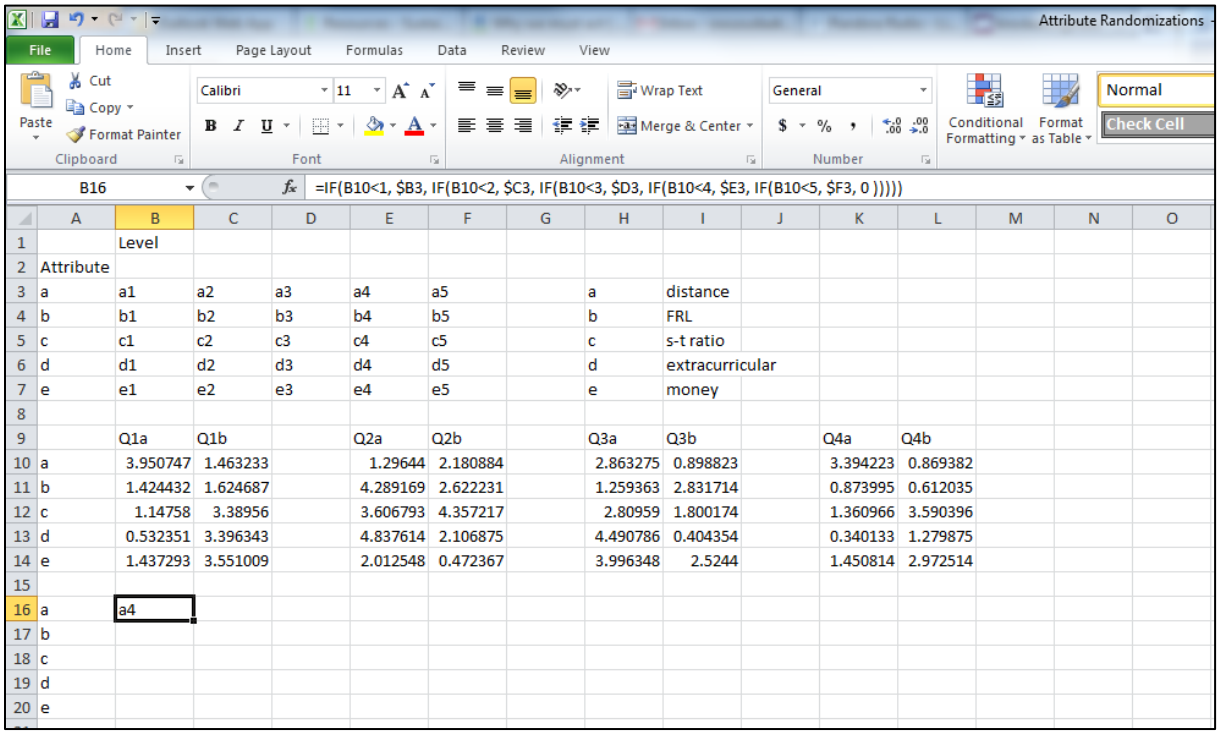
8. Set up the following formula into cell B16:

=IF(B10<1, $B3, IF(B10<2, $C3, IF(B10<3, $D3, IF(B10<4, $E3, IF(B10<5, $F3, 0)))))



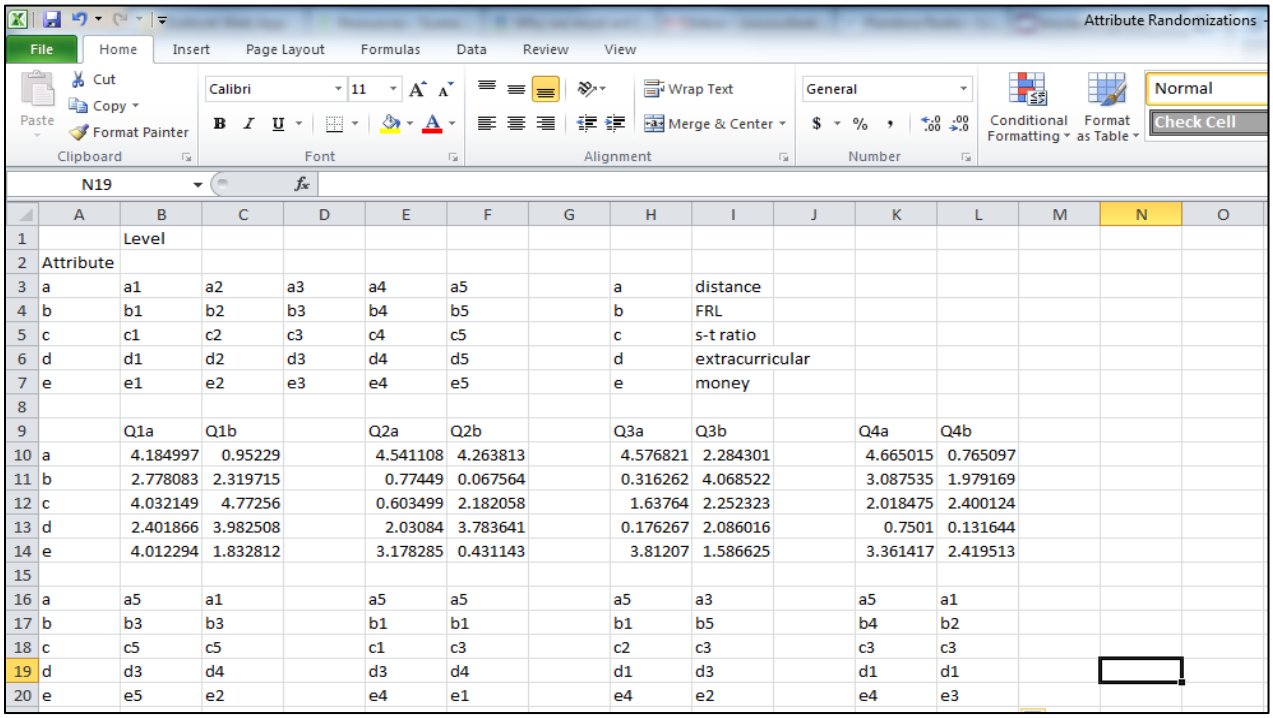
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Level													
2	Attribute														
3	a	a1	a2	a3	a4	a5		a	distance						
4	b	b1	b2	b3	b4	b5		b	FRL						
5	c	c1	c2	c3	c4	c5		c	s-t ratio						
6	d	d1	d2	d3	d4	d5		d	extracurricular						
7	e	e1	e2	e3	e4	e5		e	money						
8															
9		Q1a	Q1b		Q2a	Q2b		Q3a	Q3b		Q4a	Q4b			
10	a	3.906305	0.289216		2.568466	2.508804		2.826037	3.407432		3.705916	1.141363			
11	b	2.142568	1.592235		2.989061	2.073459		1.90788	2.6745		0.888221	0.769795			
12	c	2.88091	3.632826		1.444081	2.758827		4.427984	1.565084		2.753746	4.676567			
13	d	3.693385	0.817171		0.422513	0.182412		0.902968	4.449282		2.844357	4.525646			
14	e	1.83995	4.523199		0.885312	2.051897		1.804843	3.065784		0.454429	2.6613			
15															
16	a	=IF(B10<1, $B3, IF(B10<2, $C3, IF(B10<3, $D3, IF(B10<4, $E3, IF(B10<5, $F3, 0)))))													
17	b														
18	c														
19	d														
20	e														

9. Entering the formula into cell B16 will generate the corresponding coded attribute into the cell



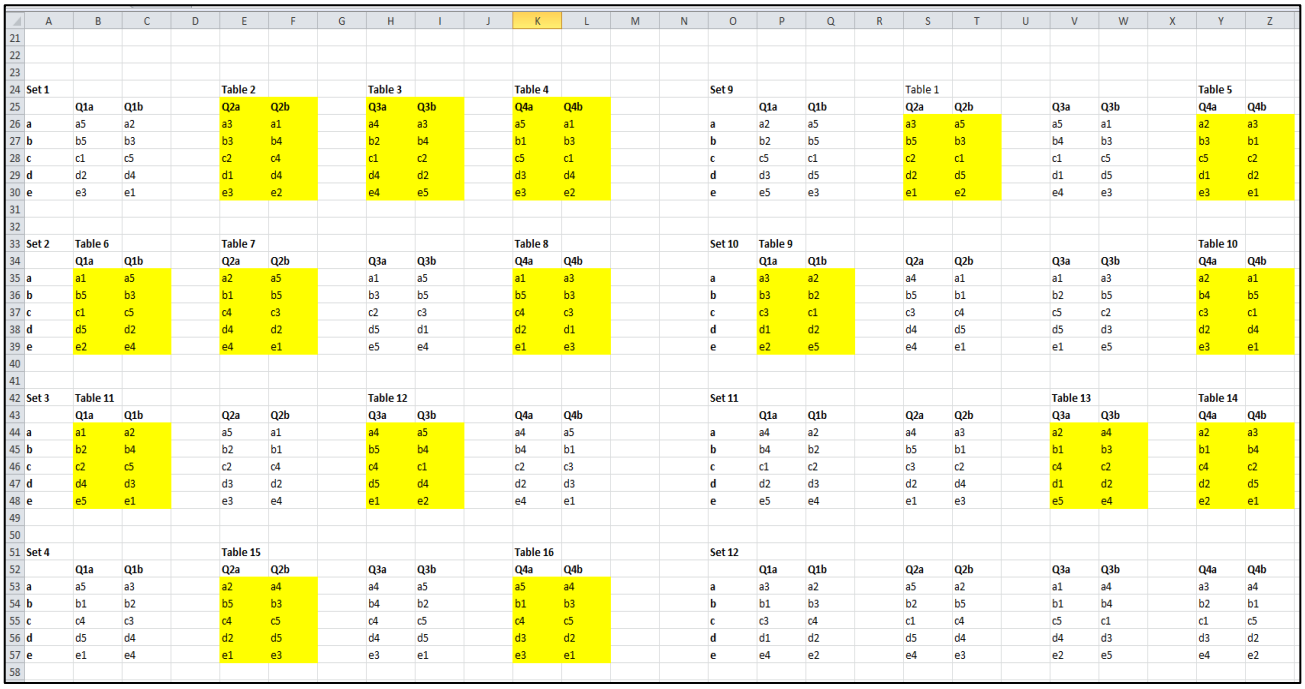
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Level													
2	Attribute														
3	a	a1	a2	a3	a4	a5		a	distance						
4	b	b1	b2	b3	b4	b5		b	FRL						
5	c	c1	c2	c3	c4	c5		c	s-t ratio						
6	d	d1	d2	d3	d4	d5		d	extracurricular						
7	e	e1	e2	e3	e4	e5		e	money						
8															
9		Q1a	Q1b		Q2a	Q2b		Q3a	Q3b		Q4a	Q4b			
10	a	3.950747	1.463233		1.29644	2.180884		2.863275	0.898823		3.394223	0.869382			
11	b	1.424432	1.624687		4.289169	2.622231		1.259363	2.831714		0.873995	0.612035			
12	c	1.14758	3.38956		3.606793	4.357217		2.80959	1.800174		1.360966	3.590396			
13	d	0.532351	3.396343		4.837614	2.106875		4.490786	0.404354		0.340133	1.279875			
14	e	1.437293	3.551009		2.012548	0.472367		3.996348	2.5244		1.450814	2.972514			
15															
16	a	a4													
17	b														
18	c														
19	d														
20	e														

10. Drag the cell down and across question (Q) columns a and b and copy and paste the formula into the other questions to produce rows 16-20.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Level													
2	Attribute														
3	a	a1	a2	a3	a4	a5		a	distance						
4	b	b1	b2	b3	b4	b5		b	FRL						
5	c	c1	c2	c3	c4	c5		c	s-t ratio						
6	d	d1	d2	d3	d4	d5		d	extracurricular						
7	e	e1	e2	e3	e4	e5		e	money						
8															
9		Q1a	Q1b		Q2a	Q2b		Q3a	Q3b		Q4a	Q4b			
10	a	4.184997	0.95229		4.541108	4.263813		4.576821	2.284301		4.665015	0.765097			
11	b	2.778083	2.319715		0.77449	0.067564		0.316262	4.068522		3.087535	1.979169			
12	c	4.032149	4.77256		0.603499	2.182058		1.63764	2.252323		2.018475	2.400124			
13	d	2.401866	3.982508		2.03084	3.783641		0.176267	2.086016		0.7501	0.131644			
14	e	4.012294	1.832812		3.178285	0.431143		3.81207	1.586625		3.361417	2.419513			
15															
16	a	a5	a1		a5	a5		a5	a3		a5	a1			
17	b	b3	b3		b1	b1		b1	b5		b4	b2			
18	c	c5	c5		c1	c3		c2	c3		c3	c3			
19	d	d3	d4		d3	d4		d1	d3		d1	d1			
20	e	e5	e2		e4	e1		e4	e2		e4	e3			

11. Rows 16-20 provide a randomized combination of attributes which should then be analyzed to ensure one option of questions (a or b) is not increasing or decreasing in the same order for all attributes. Examples of good question combinations are highlighted below



21																										
22																										
23																										
24	**Set 1**				**Table 2**			**Table 3**			**Table 4**			**Set 9**				Table 1					**Table 5**		
25		**Q1a**	**Q1b**		**Q2a**	**Q2b**		**Q3a**	**Q3b**		**Q4a**	**Q4b**			**Q1a**	**Q1b**		**Q2a**	**Q2b**		**Q3a**	**Q3b**		**Q4a**	**Q4b**
26	**a**	a5	a2		a3	a1		a4	a3		a5	a1		**a**	a2	a5		a3	a5		a5	a1		a2	a3
27	**b**	b5	b3		b3	b4		b2	b4		b1	b3		**b**	b2	b5		b5	b3		b4	b3		b3	b1
28	**c**	c1	c5		c2	c4		c1	c2		c5	c1		**c**	c5	c1		c2	c1		c1	c5		c5	c2
29	**d**	d2	d4		d1	d4		d4	d2		d3	d4		**d**	d3	d5		d2	d5		d1	d5		d1	d2
30	**e**	e3	e1		e3	e2		e4	e5		e3	e2		**e**	e5	e3		e1	e2		e4	e3		e3	e1
31																										
32																										
33	**Set 2**	**Table 6**			**Table 7**						**Table 8**			**Set 10**	**Table 9**								**Table 10**		
34		**Q1a**	**Q1b**		**Q2a**	**Q2b**		**Q3a**	**Q3b**		**Q4a**	**Q4b**			**Q1a**	**Q1b**		**Q2a**	**Q2b**		**Q3a**	**Q3b**		**Q4a**	**Q4b**
35	**a**	a1	a5		a2	a5		a1	a5		a1	a3		**a**	a3	a2		a4	a1		a1	a3		a2	a1
36	**b**	b5	b3		b1	b5		b3	b5		b5	b3		**b**	b3	b2		b5	b1		b2	b5		b4	b5
37	**c**	c1	c5		c4	c3		c2	c3		c4	c3		**c**	c3	c1		c3	c4		c5	c2		c3	c1
38	**d**	d5	d2		d4	d2		d5	d1		d2	d1		**d**	d1	d2		d4	d5		d5	d3		d2	d4
39	**e**	e2	e4		e4	e1		e5	e4		e1	e3		**e**	e2	e5		e4	e1		e1	e5		e3	e1
40																										
41																										
42	**Set 3**	**Table 11**						**Table 12**						**Set 11**							**Table 13**			**Table 14**		
43		**Q1a**	**Q1b**		**Q2a**	**Q2b**		**Q3a**	**Q3b**		**Q4a**	**Q4b**			**Q1a**	**Q1b**		**Q2a**	**Q2b**		**Q3a**	**Q3b**		**Q4a**	**Q4b**
44	**a**	a1	a2		a5	a1		a4	a5		a4	a5		**a**	a4	a2		a4	a3		a2	a4		a2	a3
45	**b**	b2	b4		b2	b1		b5	b4		b4	b1		**b**	b4	b2		b5	b1		b1	b3		b1	b4
46	**c**	c2	c5		c2	c4		c4	c1		c2	c3		**c**	c1	c2		c3	c2		c4	c2		c4	c2
47	**d**	d4	d3		d3	d2		d5	d4		d2	d3		**d**	d2	d3		d2	d4		d1	d2		d2	d5
48	**e**	e5	e1		e3	e4		e1	e2		e4	e1		**e**	e5	e4		e1	e3		e5	e4		e2	e1
49																										
50																										
51	**Set 4**				**Table 15**						**Table 16**			**Set 12**												
52		**Q1a**	**Q1b**		**Q2a**	**Q2b**		**Q3a**	**Q3b**		**Q4a**	**Q4b**			**Q1a**	**Q1b**		**Q2a**	**Q2b**		**Q3a**	**Q3b**		**Q4a**	**Q4b**
53	**a**	a5	a3		a2	a4		a4	a5		a5	a4		**a**	a3	a2		a5	a2		a1	a4		a3	a4
54	**b**	b1	b2		b5	b3		b4	b2		b1	b3		**b**	b1	b3		b2	b5		b1	b4		b2	b1
55	**c**	c4	c3		c4	c5		c4	c5		c4	c5		**c**	c3	c4		c1	c4		c5	c1		c1	c5
56	**d**	d5	d4		d2	d5		d4	d5		d3	d2		**d**	d1	d2		d5	d4		d4	d3		d3	d2
57	**e**	e1	e4		e1	e3		e3	e1		e3	e1		**e**	e4	e2		e4	e3		e2	e5		e4	e2
58																										

Appendix C: Survey Tables

This Appendix contains the full bank of 16 school selection tables. Each survey respondent is presented with four such tables selected at random.

FINAL SIXTEEN

Table 1

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1 mile	5 miles
Proportion of students receiving Free and Reduced Lunch	85%	20%
Student-to-Teacher ratio	15:1	10:1
Number of extracurricular activities	9	3
Increase in amount paid in rent	$20	$40
Increase in amount paid in property taxes	$100	$150
I would choose (please select only **one** school type)		

Table 2

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1 mile	¼ mile
Proportion of students receiving Free and Reduced Lunch	20%	50%
Student-to-Teacher ratio	15:1	25:1
Number of extracurricular activities	11	5
Increase in amount paid in rent	$60	$40
Increase in amount paid in property taxes	$200	$150
I would choose (please select only **one** school type)		

Table 3

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	2 miles	1 mile
Proportion of students receiving Free and Reduced Lunch	10%	50%
Student-to-Teacher Ratio	10:1	15:1
Number of extracurricular activities	5	9
Increase in amount paid in rent	$80	$100
Increase in amount paid in property taxes	$250	$300
I would choose (please select only **one** school type).		

Table 4

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	5 miles	¼ mile
Proportion of students receiving Free and Reduced Lunch	5%	20%
Student-to-Teacher ratio	30:1	10:1
Number of extracurricular activities	7	5
Increase in amount paid in rent	$60	$40
Increase in amount paid in property taxes	$200	$150
I would choose (please select only **one** school type).		

Table 5

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1/2 mile	1 mile
Proportion of students receiving Free and Reduced Lunch	20%	85%
Student-to-Teacher ratio	30:1	15:1
Number of extracurricular activities	11	9
Increase in amount paid in rent	$60	$20
Increase in amount paid in property taxes	$200	$100
I would choose (please select only **one** school type)		

Table 6

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1/4 mile	5 miles
Proportion of students receiving Free and Reduced Lunch	85%	20%
Student-to-Teacher ratio	10:1	30:1
Number of extracurricular activities	3	9
Increase in amount paid in rent	$40	$80
Increase in amount paid in property taxes	$150	$250
I would choose (please select only **one** school type)		

Table 7

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1/2 mile	5 miles
Proportion of students receiving Free and Reduced Lunch	5%	85%
Student-to-Teacher ratio	25:1	20:1
Number of extracurricular activities	5	9
Increase in amount paid in rent	$80	$20
Increase in amount paid in property taxes	$250	$100
I would choose (please select only **one** school type)		

Table 8

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1/4 mile	1 mile
Proportion of students receiving Free and Reduced Lunch	85%	20%
Student-to-Teacher ratio	25:1	20:1
Number of extracurricular activities	9	11
Increase in amount paid in rent	$20	$60
Increase in amount paid in property taxes	$100	$200
I would choose (please select only **one** school type)		

Table 9

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1 mile	1/2 mile
Proportion of students receiving Free and Reduced Lunch	20%	10%
Student-to-Teacher ratio	20:1	10:1
Number of extracurricular activities	11	9
Increase in amount paid in rent	$40	$100
Increase in amount paid in property taxes	$150	$300
I would choose (please select only **one** school type)		

Table 10

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1/2 mile	1/4 mile
Proportion of students receiving Free and Reduced Lunch	50%	85%
Student-to-Teacher ratio	20:1	10:1
Number of extracurricular activities	9	5
Increase in amount paid in rent	$60	$20
Increase in amount paid in property taxes	$200	$100
I would choose (please select only **one** school type)		

Table 11

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1/4 mile	1/2 mile
Proportion of students receiving Free and Reduced Lunch	10%	50%
Student-to-Teacher ratio	15:1	30:1
Number of extracurricular activities	5	7
Increase in amount paid in rent	$100	$20
Increase in amount paid in property taxes	$300	$100
I would choose (please select only **one** school type)		

Table 12

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	2 miles	5 miles
Proportion of students receiving Free and Reduced Lunch	85%	50%
Student-to-Teacher ratio	25:1	10:1
Number of extracurricular activities	3	5
Increase in amount paid in rent	$20	$40
Increase in amount paid in property taxes	$100	$150
I would choose (please select only **one** school type)		

Table 13

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1/2 mile	2 miles
Proportion of students receiving Free and Reduced Lunch	5%	20%
Student-to-Teacher ratio	25:1	15:1
Number of extracurricular activities	11	9
Increase in amount paid in rent	$100	$80
Increase in amount paid in property taxes	$300	$250
I would choose (please select only **one** school type)		

Table 14

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1/2 mile	1 mile
Proportion of students receiving Free and Reduced Lunch	5%	50%
Student-to-Teacher ratio	25:1	15:1
Number of extracurricular activities	9	3
Increase in amount paid in rent	$40	$20
Increase in amount paid in property taxes	$150	$100
I would choose (please select only **one** school type)		

Table 15

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1/2 mile	2 miles
Proportion of students receiving Free and Reduced Lunch	85%	20%
Student-to-Teacher ratio	25:1	30:1
Number of extracurricular activities	9	3
Increase in amount paid in rent	$20	$60
Increase in amount paid in property taxes	$100	$200
I would choose (please select only **one** school type)		

Table 16

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	5 miles	2 miles
Proportion of students receiving Free and Reduced Lunch	5%	20%
Student-to-Teacher ratio	25:1	30:1
Number of extracurricular activities	7	9
Increase in amount paid in rent	$60	$20
Increase in amount paid in property taxes	$200	$100
I would choose (please select only **one** school type)		

Appendix D: Sample Survey

Following is a sample copy of the survey as it would appear on paper. Participants saw the exact same questions in the electronic version of the survey. Appendix C, which precedes this section, contains the full set of 16 school selection tables.

Graduate Students from the University of Iowa School of Urban and Regional Planning are collaborating with the DCSD on a project to assess how neighborhoods and schools impact elementary student success. As part of this project, you are invited to participate in this survey in which you will:

- **respond to questions about community and school relationships,**
- **provide responses to questions about neighborhood interactions and**
- **choose between hypothetical pairs of school types**

Please take note of the following:

- **You are eligible to participate if you are 18 years or older.**
- **Your participation is completely voluntary and you may answer as many questions as you wish.**
- **By filling out this survey you indicate agreement to participate and confirm that you are 18 years or older.**
- **This survey will take approximately 10-15 minutes to complete.**

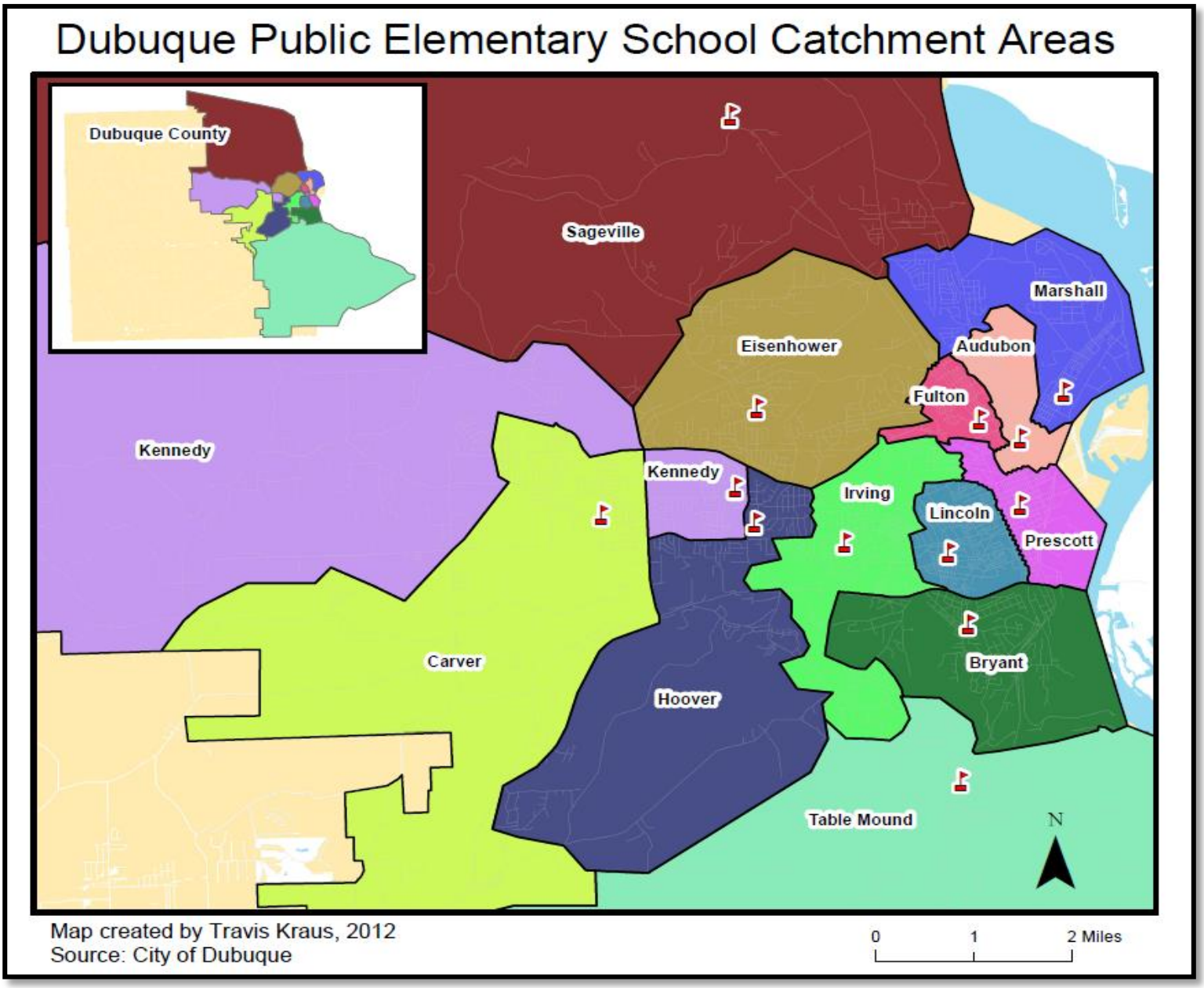
The responses will provide information to help the School District better serve the children and residents of Dubuque. If you have any questions or comments about the survey please contact Dr. Aaron Strong at aaron-strong@uiowa.edu or 319-335-2326.

Geographic Scope

In the space provided, please write the name of the school zone (as shown by the colored areas) in which your residence is located**:**

_____

JUST AN EXAMPLE



School and Civic Engagement

1. Do you have any children in the Dubuque elementary schools? Yes/No *(circle one)*
(***If you circle no, please move on to question 5***)

If Yes, which school(s)?

_____

2. Has your child/Have your children ever switched elementary schools for reasons other than a household move? Yes / No *(circle one)*

If yes, from what school to which school did they switch?

From _____

To _____

3. Do you feel there is an opportunity to be involved in your child's school? Yes / No (circle one)

4. Is your child involved in any extracurricular activities not run by the school? Yes / No *(circle one)*

If yes, what activities are those?
_____

_____
_____

Who/Which organization runs these activities?
_____

_____

5. Are there any programs/extracurricular activities for elementary school children would you like to see in your neighborhood? Yes / No *(circle one)*

If Yes, what programs/activities might these be?
_____

_____

6. Have you volunteered in/for any elementary school(s) in the past 12 months? Yes/No *(circle one)*

If yes, which school(s) did you volunteer in? _____

If you did volunteer, how many hours total in the past 12 months did you volunteer? (*If you volunteered in more than one elementary school, please select the range that best represents your average volunteer hours for each school).*

( ) 5 hours or less
( ) 6-10 hours
( ) 11-15 hours
( ) 16-20 hours
( ) 21 hours or more

Neighborhood Interactions

For each of the following questions please mark the **most appropriate** box with an "**x**".

How often in your neighborhood:	**Daily**	**1-2 Times a Week**	**1-2 Times a Month**	**2-5 Times a Year**	**Never**	**Unsure**
Do you see neighbors and friends talking outside in the yard or on the street?						
Do you see neighbors taking care of each other, such as doing yard work or watching children?						
Do you have a friendly talk with a neighbor						
Could you call on for assistance in doing something around your home or yard or to "borrow a cup of sugar" or some other small favor?						

Preferences for School Type

Do you rent or own your home?
( ) Rent ( ) Own

IF YOU SELECTED "RENT" PLEASE ANSWER THE FOLLOWING QUESTIONS.
IF YOU SELECTED "OWN", PLEASE SKIP AHEAD TO THE QUESTIONS STARTING ON PAGE 9.

Renter

In the next section, you will be shown 4 different tables, each with two school types. Each school type will have 5 characteristics. At the end of each table you will be presented with the option to choose between School A or School B. Please select the school you would most prefer of the two. The 5 school characteristics are as follows:

- *Distance from your home*
- *Proportion of students receiving Free and Reduced Lunch(The Free and Reduced Lunch program is a federally assisted meal program that provides nutritionally balanced, low-cost or free lunches to children of income-eligible households)*
- *Student-to-Teacher ratio (i.e. the number of students each teacher on average is responsible for teaching)*
- *Number of extracurricular activities (e.g. sports, activity clubs, reading clubs, school break and summer school activities, service clubs etc.)*
- *Increase in amount paid in rent (supposing the school you select would require that you pay the stated amount as an increase to your rent)*

Given the following school types and their characteristics, please select your **most preferred** school type.

Table 1

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1 mile	5 miles
Proportion of students receiving Free and Reduced Lunch	85%	20%
Student-to-Teacher ratio	15:1	10:1
Number of extracurricular activities	9	3
Increase in amount paid in rent	$20	$40
I would choose (please select only **one** school type)		

Given the following school types and their characteristics, please select your **most preferred** school type.

Table 2

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1 mile	¼ mile
Proportion of students receiving Free and Reduced Lunch	20%	50%
Student-to-Teacher ratio	15:1	25:1
Number of extracurricular activities	11	5
Increase in amount paid in rent	$60	$40
I would choose (please select only **one** school type)		

Given the following school types and their characteristics, please select your **most preferred** school type.

Table 3

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	2 miles	1 mile
Proportion of students receiving Free and Reduced Lunch	10%	50%
Student-to-Teacher Ratio	10:1	15:1
Number of extracurricular activities	5	9
Increase in amount paid in rent	$80	$100
I would choose (please select only **one** school type).		

Given the following school types and their characteristics, please select your **most preferred** school type.

Table 4

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	5 miles	¼ mile
Proportion of students receiving Free and Reduced Lunch	5%	20%
Student-to-Teacher ratio	30:1	10:1
Number of extracurricular activities	7	5
Increase in amount paid in rent	$60	$40
I would choose (please select only **one** school type).		

PLEASE CONTINUE ON PAGE 14

Home-Owner

You will be shown 4 different tables, each with two school types. Each school type will have 5 characteristics. At the end of each table you will be presented with the option to choose between School A or School B. Please select the school you would most prefer out the two. The 5 school characteristics are as follows:

- *Distance from your home*
- *Proportion of students receiving Free and Reduced Lunch (The Free and Reduced Lunch program is a federally assisted meal program that provides nutritionally balanced, low-cost or free lunches to children of income-eligible households)*
- *Student-to-Teacher ratio (i.e. the number of students each teacher on average is responsible for teaching)*
- *Number of extracurricular activities (e.g. sports, activity clubs, reading clubs, school break and summer school activities, service clubs etc.)*
- *Increase in amount paid in property taxes (supposing the school you select would require that you pay the stated amount as an increase to your property taxes)*

Given the following school types and their characteristics, please select your **most preferred** school type.

Table 1

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1 mile	5 miles
Proportion of students receiving Free and Reduced Lunch	85%	20%
Student-to-Teacher ratio	15:1	10:1
Number of extracurricular activities	9	3
Increase in amount paid in property taxes	$100	$150
I would choose (please select only **one** school type).		

Given the following school types and their characteristics, please select your **most preferred** school type.

Table 2

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	1 mile	¼ mile
Proportion of students receiving Free and Reduced Lunch	20%	50%
Student-to-Teacher ratio	15:1	25:1
Number of extracurricular activities	11	5
Increase in amount paid in property taxes	$200	$150
I would choose (please select only **one** school type).		

Given the following school types and their characteristics, please select your **most preferred** school type.

Table 3

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	2 miles	1 mile
Proportion of students receiving Free and Reduced Lunch	10%	50%
Student-to-Teacher Ratio	10:1	15:1
Number of extracurricular activities	5	9
Increase in amount paid in property taxes	$250	$300
I would choose (please select only **one** school type).		

Given the following school types and their characteristics, please select your **most preferred** school type.

Table 4

	School Type	
School Characteristics	**School Type A**	**School Type B**
Distance from your home	5 miles	¼ mile
Proportion of students receiving Free and Reduced Lunch	5%	20%
Student-to-Teacher ratio	30:1	10:1
Number of extracurricular activities	7	5
Increase in amount paid in property taxes	$200	$150
I would choose (please select only **one** school type).		

Demographics

Please indicate your gender:

( ) Male ( ) Female

Please indicate your race:

( ) White ( ) Black ( ) Hispanic/Latino ( ) Asian ( ) Native American/Alaskan Native

( ) Native Hawaiian/ Other Pacific Islander ( ) Other

If you select 'Other', please describe_____

In what range does your household income fall?

( ) Less than $20,000 ( ) $20,000-$39,999 ( ) $40,000-$74,999 ( ) $75,000 or higher

Appendix E: List of community Resources

Name	Location	Website	Bus Route	Sidewalks
Multicultural Family Center	1157 Central Avenue	http://www.mfcdbq.org/	Yes (Central & 12th)	Yes
Carnegie-Stout Public Library	360 West 11th Street	http://www.dubuque.lib.ia.us/	No	Yes
Dubuque Community YMCA	35 North Booth Street	http://www.dubuquey.org/	Yes (On Demand)	Yes
Dubuque Community Y Teen Center	35 North Booth Street	http://www.dubuquey.org/	Yes (On Demand)	Yes
St. Mark Community Center	1201 Locust Street	http://smccdbq.org/	No	Yes
Westminster Presbyterian Church (After School Tutoring)	2155 University Avenue	http://westminsterdbq.org/	Yes	Yes
Prodigy	715 West Locust	http://partners.dubuque365.com/prodigy/about.html	Yes	Yes
ISU Extension	14858 West Ridge Lane, Suite 2	http://www.extension.iastate.edu/dubuque/	No	No
Hillcrest Family Services	2005 Asbury Road	http://www.hillcrest-fs.org/	Yes	Yes
Hillcrest's Teen Y Club	220 West 7th Street	http://www.hillcrest-fs.org/	Yes	Yes
Big Brothers Big Sisters of Eastern Iowa	The Cove 2728 Asbury Road, Suite 515 - 2005 Asbury Road	http://www.hillcrest-fs.org/programs_services/bigbrothers.cfm	Yes	Yes
Lutheran Services in Iowa	2255 John F. Kennedy Rd.	http://www.lsiowa.org/	Yes	Yes
Community Foundation of Greater Dubuque	700 Locust Street, Suite 195	http://www.dbqfoundation.org/	Yes	Yes
Youth Area Philanthropists	700 Locust Street, Suite 195	http://www.dbqfoundation.org/	Yes	Yes
Boys & Girls Club of Greater Dubuque	1299 Locust Street	http://www.boysgirlsdubuque.com/	No	Yes
Community Circle of Care	799 Main Street, Suite 230	www.countycircleofcare.com	Trolley Route	Yes
Girls Scouts of Eastern Iowa & Western Illinois	2644 Pennsylvania Avenue	www.gseiwi.org	Yes	Yes
Keystone AEA	2310 Chaney Road	www.aea1.k12.ia.us	Yes	Yes

Project Concern (Foster Grandparents)	1789 Elm Street, Suite B	http://project-concern.org/	Yes	Yes
Information & Referral 2-1-1 Services of Project Concern	1789 Elm Street, Suite B	http://project-concern.org/	Yes	Yes
Crossroads Counseling Center	909 Main Street, Suite 505	www.crossroadsdbq.com	Yes	Yes
Horizon Services	3435 Asbury Road	www.horizonsfamily.org	No	Yes
Boy Scouts of America-Northeast Iowa Council	10601 Military Road, P.O. Box 732	www.scoutsiowa.org	No	No
Head Start - Operation: New View Community Action Agency	1473 Central Avenue	www.operationnewview.org	Yes	Yes
Parks & Recreation- City of Dubuque	2200 Bunker Hill Road	www.cityofdubuque.org/leisureservices	No	No
Dubuque County Safe Youth Coalition	14858 West Ridge Lane, Suite 1	https://sites.google.com/site/dcsyc1/home	No	No
American Red Cross	2400 Asbury Road	http://www.redcross.org/ia/dubuque	Yes	Yes
Discover Hollow				
Dubuque Mentoring Partnership	2005 Asbury Road	N/A	Yes	Yes
Holy Family School Office	Wahlert High School, 2005 Kane Street	www.holyfamilydbq.org	Yes	Yes
Junior Achievement of Tri-States Inc.	2728 Asbury Road, #840	www.jaheartland.org	Yes	Yes
Make it A Great Day! Ultimate Potential Coaching	679 Bluff Street	www.makeitagreatdayonline.com	Trolley Route	Yes
Dubuque Area Youth Leadership Council (DAYLC)	P.O. Box 688	N/A	N/A	N/A
Dubuque Chess Club	3585 Copperfield	www.dubuquechess.com	No	Yes
Dubuque Humane Society Kids 'N Critters Camp	175 North Crescent Ridge Road	www.dbqhumane.org	No	No
Helping Services for Northeast Iowa, Inc.	2728 Asbury Road, Suite 510	http://www.helpingservices.org/index.shtml	Yes	Yes
Just for Kix		Contact: mjcoyle@hotmail.com	N/A	N/A

Stampin' Up!	1785 Meadowood Drive	http://beckyfingerson.stampinup.net	No (but very close by)	Yes
Catholic Charities	1229 Mt. Loretta Avenue	www.charitiesdbq.com	No	Yes
Child Care Respite	1789 Elm Street, Suite B	http://project-concern.org/	Yes	Yes
ABC Learning Childhood Center	3100 Cedar Crest Ridge, Suites 3 & 5	N/A	No	No
Dubuque Community Y Preschool and Child Care	35 North Booth Street	www.dubuquey.org	Yes (On Demand)	Yes
Dubuque Montessori School	2605 Pennsylvania Avenue	www.dubuquemontessorischool.org	Yes	Yes
Early Learners Child Development Centers	3495 Windsor Avenue, 610 Duggan Drive	http://earlylearners.us/	Yes, No	Yes, Yes
Finley/Dubuque Community Y Child Care Center	300 North Grandview	www.dubuquey.org	Yes	Yes
Frog Hollow	5005 Asbury Road	www.froghollowkids.com	No	Yes (nearby)
Grand View Child Development Center	3342 John F. Kennedy Road	www.grandviewdubuque.org	No	No
Hills & Dales	3505 Stoneman Road	www.hillsdales.org	Yes	No
Holy Ghost Early Childhood	2981 Central Avenue	http://www.holyfamilydbq.org/	No (but stop 2 blocks away)	Yes
Jones Hand-in-Hand Preschool	1090 Alta Vista Street	N/A	No	Yes
Keywest Early Childhood Center	10244 Keywest Drive	N/A	No	No
Kids of the Kingdom Preschool	2899 Hales Mill Road	http://www.dubuquey.org/childcare/kidskingdom.html	No	Yes (closely surrounding)
Little Rascals Inc. Preschool & Daycare	1125 Rockdale Road	N/A	No	No
Little Treasures	2035 Radford Road	N/A	No	Yes
Mercy Child Development Center	250 Mercy Drive	http://www.mercydubuque.com/child-development-center	Yes	Some

Mini Masterpieces	1205 Cleveland Road	N/A	No	Yes
Noah's Ark Preschool Holy Trinity Lutheran Church	1755 Delhi Street	http://www.htlcdbq.com/	Yes	Yes
Our Redeemer Lutheran Church MO Synod	2145 John F Kennedy Road	http://www.redeemerps.pvt.k12.ia.us/	Yes	Yes
Park and Recreation Preschool City of Dubuque	2200 Bunker Hill Road	www.cityofdubuque.org/leisureservices	No	No
Pooh's Corner Children Center	3507 Keystone Drive	N/A	No	Yes
Prescott Elementary	1151 White Street	http://www.prescott.dubuque.k12.ia.us/	Yes	Yes
Resurrection Children's Center	4300 Asbury Road	N/A	Yes	Yes (some nearby)
Romper Stompers Childcare Center	2307 Central Avenue	N/A	Yes	Yes
St. Columbkille's Children Center	1198 Rush Street	http://www.holyfamilydbq.org/elementary/stcolumbkille	No	Yes
St. Joseph the Worker Early Childhood Center	2105 St. Joseph Street	N/A	No	Yes
Young-Uns Child Care Center	3375 Kennedy Circle	http://www.young-uns.org/	Yes	Yes