The Location of Public Schools: Implications for Communities and Planners, and School District Decision-Making in the Puget Sound Region

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Abstract

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Public schools are some of our communities' most important and costly infrastructures assets. School location affects transportation choices, property values, and student health and achievement, and is implicated in increasing urban sprawl and economic and racial geographic inequality. Yet, school districts operate independent of the municipalities in which they serve, limiting interaction and coordination in planning and siting school facilities. Schools, consequently, are generally overlooked in planning research and practice.

This leads to the question: How are public school siting decisions made? And, how do they overlap with planning goals? To answer this question, semi-structured interviews were conducted with officials from fifteen school districts in the Puget Sound region, providing open-ended narratives for a qualitative analysis exploring this poorly understood topic.

Despite the regional context of state-required coordinated planning for capital facilities, the narratives reveal that land availability and cost, coupled with perceived site acreage and

community facilities needs, are the primary factors influencing school location. School siting is largely a technical process undertaken by consultants and facilities experts. Further, school districts' reliance on voter-approved bond financing inhibits long-term planning and prevents prioritization of broader location criteria. Competing for land in a competitive market, school districts are challenged to sell the higher cost of prime, centrally-locates sites to their voters, pushing schools to less desirable areas.

In light of the constraints faced by school districts, local and regional planning goals are more likely to be achieved when schools are systematically included in land use planning processes. The lesson learned from case examples is that locating schools to best meet community needs depends on stakeholder engagement and cooperative interaction between school districts and municipalities. The data reveals that coordination and interaction between districts, municipalities, and citizens increases when school districts face pressure induced by enrollment growth and limited availability of land. Sub-area Master plans and economic development plans also present special opportunities to forge lasting partnerships.

Ultimately, as costly and critical infrastructure, school sites should be chosen to according to a variety of criteria, using the same processes that guide development of other facilities and services deemed necessary for maintaining and improving the sustainability, economic vitality, and quality of life in our communities.

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And, most of all, I cannot thank my wife, Josina, enough, for her seemingly endless patience, love, and support.

FOREWORD

During Winter and Spring academic quarters of 2014, I participated in a Planning Studio project implementing the first steps of a comprehensive plan update for the City of Port Orchard in Kitsap County, Washington. With a team of university faculty and 8 other graduate students in the Master of Urban Design and Planning program, I worked with the City's planning director, the mayor, citizens, and members of the city council and planning commission to complete:

- A 70 page Initial Conditions report with accompanying maps and graphics, detailing the legal, planning, demographic, infrastructure, economic, and community conditions and context for City planning.
- A draft Public Participation Plan, as required by state law and as informed by research and coursework in principles and best practices in citizen engagement.
- Draft Introduction, Land Use, and Housing elements of the updated Comprehensive Plan, with explanatory text, maps, and graphics, for public presentation and review by City Council and staff.
- Conducted a series of meetings and workshops with citizens and elected and appointed officials for the purpose of gathering citizen input on the City's key issues and future vision, and presenting Initial Conditions Report findings and draft Comprehensive Plan elements.

We learned many things about the community, but the key issues that surfaced during the project are the City's balancing the need to plan for growth under resource and budget constraints, with the public's desire for a vibrant and attractive community. After years of limited population and economic growth and reduced city budgets, the City's critical infrastructures and services are facing maintenance and upgrades needs on the order of tens of millions of dollars.

Meanwhile, the city's downtown and commercial areas have struggled to compete in the face of demographic changes and sprawling development in adjoining areas. Our conversations centered on planning for growth within these constraints by concentrating investment in resources for development in key geographic areas, forming a "Centers" policy that echoes the guiding principles encouraging compact, efficient development spelled out in the Washington State Growth Management Act (GMA).

Population growth is generally accompanied by an increase in school enrollment. As special purpose governments, school districts plan for enrollment growth and facilities under separate and autonomous governance from the municipalities and counties in which they operate. In the case of Port Orchard, the South Kitsap Public School district operates 16 schools serving K-12 students from the City and region. Land use maps reveal that the district owns a large property in a recently annexed area within the Urban Growth boundary, but not in proximity to the city's Centers or its students, (many of whom reside in an unincorporated County area adjacent to the historic city center). Conversations with city staff revealed that the district has plans to develop the site for the region's next new high school, and indirectly indicated that communication between City planning staff and the district was inconsistent and perhaps contentious. Input from citizens revealed concern about school plans failing to meet the needs and desires of a family-focused community.

This detail, while not a focus of our work in conducting the Comprehensive Plan update with the City, gave rise to a number of questions that seemed important for the future of the City and its schools. Why would the school district want to build a school in an area that is not in proximity to its students? Why is City planning staff reluctant to discuss plans for school facilities and leaving the impression that relations with the school district might not be

productive? Wouldn't a new school serve the needs of the students and community better by locating in one of the city's designated centers, adjacent to the struggling downtown, or in the unincorporated County area where many of the area's minority and lower-income residents live? I was lucky to grow up in a New England town where the schools and other facilities were the pride and focal points of the community and were located in the town's historic center. I walked from my family's home to the schools, the town library, the parks and ballfields, and the part-time jobs where I spent my time as a child and youth. Not giving much thought to k-12 schools after achieving adulthood and independence, I could not imagine how this plan for a new high school could possibly fit with the community's vision and its infrastructure needs.

After months of consideration with other thesis topics, conducting background research, and consulting with university faculty, I decided this would make an excellent topic for thesis research. Reinforcing this assessment was the finding that very little research has examined the implications of public school facility siting in both planning and education literature. Several articles decry the need for school districts and municipal and regional planning bodies to work more closely together. Both gaps and opportunities abound for original research that reflects a current and pressing need for planning practice.

Chapter One: INTRODUCTION

1-a. PROBLEM STATEMENT:

While planning and location of school facilities is of tremendous importance for students, parents, taxpayers, and elected and appointed officials in the communities they serve, public school districts are separate autonomous governments that make decisions independent from municipalities and the planning professionals who help guide their development. A review of existing literature reveals that not only do locations of facilities matter, but the connection between school districts and local planners is relatively unexplored and poorly understood in the academic literature, and is weak and often contentious in practice. While anecdotal examples of school facilities planners making decisions that are, or are not, in alignment with community planning goals abound, research examining the connection is scarce. Recognizing this gap, several authors in the planning literature instead expound on the need for exploration and a need to focus on opportunities for cooperation.

This thesis is intended to address this gap by exploring the core question:

How are public school siting decisions made?

Or, *What are the considerations school district officials make when planning and locating new facilities?*

A secondary question, strongly tied to the first, is:

How do school siting decisions include or overlap with community planning goals or policies?

Satisfying these questions involves exploring these sub questions:

What are the implications of public school siting?

What regulations, policies, and guidelines drive school siting decisions?

What are the opportunities for improved coordination? What are the challenges?

1-b: RESEARCH DESIGN:

I **first** set out to answer by review of literature: What are the implications of school facilities location? Explaining the significance of school siting for a community highlights the importance of location decisions by school district officials, and sets the stage for the primary data collection that is the focus of this project.

Second, I outline and summarize the legal and policy frameworks that influence school facilities planning and siting. What laws or policy guidelines are facility planners required to abide by? What degree of coordination with city and regional planning bodies is required or encouraged? This overview informs the collection of primary data by developing the context of requirements, limitations, and guidance school district officials are working with.

Third, primary data was collected for the purpose of answering some of these questions via semi-structured interviews with officials from school districts in the Puget Sound region of Washington State. Establishing the scope of data collection to school districts within the four counties of the Puget Sound Regional Council (King, Kitsap, Pierce, and Snohomish Counties) provided access to a large enough pool of fifty-seven school districts to ensure that I could conduct interviews with a number and variety of districts to satisfy the intent of the project. Consistent with the intention to design the project through a planning lens, the Puget Sound

Regional Council is charged with coordinating regional planning under state law. (See Section 3-b).

Fourth, data was analyzed through a series of steps enumerated and described in detail in Chapter 4. Results are presented with discussion that includes case narratives to illustrate the range of issues and the complexity of school siting and school district decision making. A summary of the findings answering the core research questions concludes this thesis, along with a brief critical reflection, and discussion of implications for planning research and practice.

Why qualitative research?

An inquiry into school siting and school district decision making is well-suited to a qualitative research design. The siloed relationship between school districts and municipalities and the lack of substantive research lays the foundation for an exploratory investigation into the perspectives of school planners. Using open-ended questions, the intent of this thesis is to create a clearer picture of a matter of great importance to planners and communities by permitting a full range of responses from subjects, and to capture narratives to illustrate complexities and considerations of a dynamic and complex process in meaningful way.

Why the Four Counties of the Puget Sound Regional Council?

There are several reasons for the regional scope. First, being where I reside and attend school, a better understanding of the planning policies and frameworks made examining school siting issues seem tangible and personally relevant. Second, home of the largest city in the region, a diverse natural and political geography, and recent periods of both growth and recession, an assumption was made that the school districts serving the four PSRC Counties would comprise a

manageable number for the scope of a thesis project while providing a representative sample of districts - urban and rural, rich and poor, more and less diverse, growing and stable.

Apart from operating facilities and serving students who live in unincorporated county areas, county geography has little bearing on school district boundaries. (several districts overlap county bounds). The regional scope was established through a planning lens, recognizing the coordinated planning between municipalities required by the State and implemented, in part, at the county and regional level. The Growth Management Act requires a level of coordination between municipalities in planning for growth and development that minimizes impacts on sensitive and critical resources and makes efficient use of infrastructure and services. County and local policies, comprehensive plans, and land use decisions must be made in accordance with the policies adopted by the Puget Sound Regional Council.

In light of the intention to examine school siting through a planning lens, a more complete exploration would include the perspectives of the region's planners, especially those who are working in the municipalities served by participating school districts. However, I did not collect interview data from planners for two reasons. First, the scope of work for a nine-credit Masters thesis limits the amount of costly data collection I could commit to undertake. Given the separate governance of municipalities and schools, it seemed more important and useful to focus the time-limited effort on the less understood participant in the partnership. I decided that a larger number of interviews with school officials (twelve to fifteen) would provide a more valuable set of data than a smaller number of interviews with school officials and planners (six or seven of each). Second, as a student in an Urban Planning graduate program, an assumption is made that the planning perspective is well understood by my fellow students, faculty advisors, planning researchers, and the region's professionals.

1-c. INTENTED AUDIENCE

Above all else, this thesis topic satisfies a desire to address a genuine gap in planning scholarship and practice. Additionally, this thesis was originally intended for review by faculty committee members and other planning academics interested in not only the oversight in planning toward public schools but, broadly, in current issues between community infrastructure, governance, and land use planning. As the project progressed, however, it became clear that this project is of great interest to school facilities planners, and is relevant to city and county planning officials, state-level policymakers, and developers of school facilities requirements, guidelines, and criteria, especially in the state of Washington. Thus, this thesis is designed to be logical and clearly readable to persons well-versed in school facilities issues but not necessarily deeply familiar with land use planning laws and concepts.

1-d. STATEMENT OF PURPOSE

The purpose of this thesis is to outline the implications of school siting from a planning perspective and investigate how facility siting decisions are made by school district officials in a region where regular and coordinated planning for land use and infrastructure is required. A review of education and planning literature will establish the importance of this subject for planning researchers and practitioners, and provide a rationale for chosen design and methodology. An overview of the applicable regulatory and policy frameworks influencing the location of public school facilities will follow, providing a context for issues specific to the

chosen geographic scope of the project and to inform data collection. Then, after an explanation of methodology, the results of interviews with school district officials from 15 school districts in the Puget Sound region of Washington State are presented with analysis, discussion, and illustrative case examples. Conclusions drawn from the data analysis link the findings to the literature research and provide some answers to key questions. Finally, a critical analysis of the design and approach of this thesis, a reflection on learning outcomes, and an overview of what's missing and the implications for future research will conclude this thesis.

Chapter Two: LITERATURE REVIEW: THE IMPLICATIONS OF SCHOOL SITING

2-a. SCHOOL SITING LITERATURE AND THESIS DESIGN

The methods applied in this thesis most closely align with a 2010 article in the *Journal of the American Planning Association* entitled "School Siting", by Noreen McDonald. Despite the importance of school facilities as "long-lived and spatially fixed infrastructure investments" that "influence the travel patterns of students and parents in the short run and the spatial development of the community in the long run", the author finds only six papers in the 75-year history of the Journal examining the topic. She addresses this gap through a cursory literature review and interviews with officials from ten school districts in Maryland and Virginia. The author sought specifically to discern the impact of school district acreage guidelines on school siting decisions, and shed light on the neighborhood schools debate from the school district point of view.

Though neither state had binding acreage requirements for school sites, all of the officials interviewed reported relying on the guidelines, or that they had been adopted as official policy by the school board. Subjects gave three reasons for large sites:

1. Sites need to accommodate ample parking and community use facilities such as athletic fields
2. Sites should accommodate future expansion to accommodate enrollment growth
3. Large sites provide flexibility in site layout and construction

The author found that "districts became more flexible in their size requirements when they could no longer find parcels that met their size requirements," such as in built-out areas. She also found that access to existing water and sewer infrastructure was a prerequisite for facilities

construction in many districts. Districts generally try to locate elementary schools in neighborhoods, while high schools are perceived as unwelcome by neighbors because of traffic and noise. Defining "community schools" is a matter of debate between schools and smart growth advocates. And, significantly, she found that parcel size was not evaluated against other considerations, but was the first step in site consideration. This is important because "arranging the process in this way eliminates small sites from consideration early, without considering their potentially unique location advantages." In her discussion, she notes that, while no one school sizing or siting strategy may be appropriately applied everywhere, local and regional planners have a role in assisting school planners to consider community needs and desires alongside facilities requirements, guidelines, and extensive community service goals.[1]

This thesis uses very similar methods, but expands on the work of McDonald and others in several ways:

- It is the first study of its kind that defines its scope and places school facilities planning within the context of a state-mandated framework for coordinated land use and infrastructure planning.
- It delves into the school district perspective on issues pertinent to city and regional planners by interviewing a greater number of officials, and by focusing on four themes of central concern to planners.
- It is one of only a few studies bringing together a comprehensive examination of the many implications of school siting from the city planning perspective. While many

[1] McDonald, N. C. (2010). School Siting: contested visions of the community school. Journal of the American Planning Association, 76(2), 184-198.

articles examine school location from one perspective - such as walkability and student travel mode choice - few bundle the implications research together.

2-b. LITERATURE REVIEW: SCHOOL LOCATION MATTERS

The first important lesson of a school location literature review involves the relative scarcity of peer-reviewed research focusing on siting schools and the intersection of schools and planning. Queries through the University of Washington library and online search engines uncovered fewer than 70 articles and books examining the implications of school location. Review of literature focused on two key questions: Does school siting matter? And if so, how? Other questions guiding the literature search were:

- Do public school facilities play a role in a community's economic development?
- Has the role of "neighborhood schools" in neighborhood and downtown revitalization been explored?
- How are schools implicated in sprawl?
- Has spatial inequality been examined through a public school siting lens?
- Are school facility planners considering safe and attractive walking and bicycling to school facilities?
- What does the education facilities literature have to say about siting and location?

The findings make clear that the location of schools is a matter of significance for communities, planners, and school officials, and should be given considerable care during the facilities planning process I divided my findings into seven topics:

1. Schools and planning: siloed relationship

2. School location and public health
3. School location and travel behavior
4. School location and sprawl
5. School location and inequality
6. School location and community development
7. School location and economy

These topics are, of course, strongly interrelated, with sprawl and inequality issues deeply embedded in all facets of school location inquiry.

2-c. SCHOOLS, PLANNING, AND SPRAWL

Background literature search quickly uncovered a 2006 article published in the *Journal of Planning Education and Research* by Jeffrey Vincent entitled "Public Schools as Public Infrastructure: Roles for Planning Researchers." The article outlines two sets of problems in critical need of attention by planning researchers and professionals.

The first problem is that schools, as a public infrastructure, consist of "great amounts of land and physical building stock within cities," and are some of a community's most expensive capital assets to construct and operate. Vincent observes that demographic shifts away from poor quality schools "are causing an unprecedented rate of racial and economic segregation" and that "city prospects are greatly impacted by these trends, with perceptions of low quality schools quite often leading the list of concerns about urban life." Schools, in short, comprise a public infrastructure with deep and far-reaching implications for neighborhoods, cities, and regions by shaping demographic and development trends.

The second, and related problem, is "the planning field has largely ignored school planning, leaving it solely the responsibility of school districts, when, the location and quality of schools has a multitude of impacts on our urban areas." School facilities are rarely part of the planning curriculum, and facility issues are largely absent from the education program curriculum. "There is a profound disconnect between cities and schools that is evident in local practice, research, professional degree programs, and most levels of policy making. Likewise, there is a troublesome disconnect between the education field and the field of city planning that needs to be overcome." The author describes institutional obstacles stemming from the political autonomy of school districts, the widespread adoption of acreage requirements, funding mechanisms that bias construction of new facilities in rapidly growing areas over investment in existing facilities in built-up areas, and the increasing geographic concentration of poverty.[2]

The takeaway from Vincent's piece is that there is a need and a role for planning research in combating the "siloing" of school planning by examining how to create institutional linkages and outlining the obstacles, incentives, and opportunities for greater coordination. There is a need to examine school location and walkability, impact on nearby land use and development, connections between schools and housing, and the role of schools in fueling growth. Planners must understand public schools as unique elements of infrastructure that have deep equity concerns and are tied to ever-changing federal and state policy. Just as school districts face overcrowded and aging facilities and tightening budgets, municipalities are simultaneously faced with limiting sprawl, promoting efficient infrastructure and transportation investment, and changing demographics. Within this context a focus on schools as infrastructure becomes an important and complex subject for research and coordination.

[2] Vincent, J. M. (2006). Public Schools as Public Infrastructure Roles for Planning Researchers. Journal of Planning Education and Research, 25(4), 433-437.

Vincent is not alone in calling planners' and researchers' attention to school planning issues. One case in Pennsylvania saw a new high school for 2050 students being built on farmland in an undeveloped area in violation of "Chester County's comprehensive plan, which recommends that public institutions such as schools be located in town centers, where they can serve as centers of community life." The author claims that "studies show that students do best in environments in which the school is central to the life and learning of the community," while the migration of schools from settled neighborhoods to more distant locations weakens community ties, contributes to the loss of independence and spontaneity for children, makes attending after-school activities challenging, and leads to parents spending an "average no less than an hour a day just driving their children around." Meanwhile, "construction of new schools in outlying areas can greatly alter a community's future growth patterns. Often such schools establish beachheads for residential sprawl. New school sites selected by local school systems can force a municipality to speed up the construction of new roads, water mains, and sewer lines."[3]

Siloed Decision Making

The siloed relationship between planners and educators began as a means to keep political turmoil and racial segregation outside of the public education system, and evolved into the conception of two independent organizations with limited ability or motivation to collaborate.[4] No state requires school districts to cooperate with local government during the site selection

[3] Beaumont, C. E. (2000). Historic Neighborhood Schools in the Age of Sprawl: Why Johnny Can't Walk to School. Retrieved from http://files.eric.ed.gov/fulltext/ED450557.pdf

[4] Nayak, C. Integrating Sustainable Community Planning and Public Education. Retrieved from http://citiesandschools.berkeley.edu/reports/ChayaNayak_Integrating_Sustainable_Community_Planning.pdf

process, or any other process in school planning. According to G.I. Earthman (2013), "State legislative ordinances guarantee school districts independence in all phases of policy and governance from local government, making collaborative, long-range planning for school construction more difficult between these two local jurisdictions." The lack of coordination makes it harder for school districts, as well as community stakeholders and parents, to take into account the costs and benefits across possible sites (including brownfields) at the outset of the school siting process. The independence of school districts sets school siting apart from local government review processes except for securing zoning approval for a new school site.[5]

Not required to consider community plans, school officials "have regularly ignored or bypassed local master plans, capital improvement plans, and even zoning in the siting and operations of their facilities," and often ignore the cost of busing.[6] Planning researchers find, in many cases, school districts overlooking the tremendous influence of schools in community planning issues, and lacking the technical expertise to evaluate facilities plans. It is also believed that school officials are subject to the influence of developers, who might sit on the school board, and have come to rely heavily on guidelines and funding formulas that favor construction of new facilities on large sites over refurbishment or construction of neighborhood schools on smaller sites in developed areas.[7]

The New Facilities Funding Bias

[5] Earthman, G. I. (2013). Planning educational facilities: What educators need to know. Plymouth, U.K.: Rowman & Littlefield Publishers, Inc.

[6] Ibid.

[7] Beaumont, C. E. (2000). Historic Neighborhood Schools in the Age of Sprawl: Why Johnny Can't Walk to School. Retrieved from http://files.eric.ed.gov/fulltext/ED450557.pdf

Faced with the decision to renovate existing schools or build new (often more distant) facilities, many school districts opt for the latter. Many school districts and state school boards have adopted a 60% rule requiring building new when renovation costs exceed 60% of the cost of new construction. Such rules are based directly on the suggestions of Columbia University education professor Henry Linn, who wrote an article nearly a century ago for *American School and University*, "in which he suggested that if the cost of renovating a school was more than half what it cost to build new, school districts should swallow the extra expense and build new. It's unclear how Linn arrived at this disdain for the old, but until recently, his thinking appeared to hold the force of scripture within school facilities circles."[8] "The problem with such arbitrary percentage rules is that they prevent a full cost analysis by state and local governments and arbitrarily eliminate sound renovation projects. Certain new construction costs – items such as land acquisition, water and sewer line extensions, transportation and road work, for example – may not be factored into the comparison. The rules also discount other values, such as a community's desire to maintain a school as a neighborhood anchor or to have a school to which children can walk."[9]

Based on the observations that trends in facilities planning favored development of large schools on large sites, often removed from neighborhoods and urban areas, Smart Growth advocates claim that large, distant schools may:[10]

- reduce educational outcomes, especially for at-risk youth,

[8] Gurwitt, R. (2004). Edge-Ucation: What compels communities to build schools in the middle of nowhere?(Editorial). *Governing*, (March).

[9] Beaumont, C. E. (2000). Historic Neighborhood Schools in the Age of Sprawl: Why Johnny Can't Walk to School. Retrieved from http://files.eric.ed.gov/fulltext/ED450557.pdf

[10] Passmore, S. (2002). *Education and smart growth: Reversing school sprawl for better schools and communities*. Funders' Network for Smart Growth and Livable Communities.

- diminish student participation in extracurricular activities, parental involvement, and taxpayer support,
- contribute to a decline in children walking and bicycling to school,
- bring growth-inducing infrastructure beyond the immediate edge of urban areas, and
- act as growth magnet, drawing people and resources away from urban neighborhoods.

There is a subsequent need for planning that prioritizes construction of neighborhood schools on infill sites within existing developed areas to:[11]

- contribute to the vitality and life of the neighborhood,
- promote neighborhood identity and community pride,
- serve as gathering places and community facilities,
- be more walkable and play a role in developing independence for children,
- improve student academic performance,
- host student extracurricular activities,
- improve security,
- increase teacher satisfaction, and
- facilitate parental and community involvement.

Is there a School Planning Problem?

The above claims and observations indicate a serious issue worthy of inquiry and action, but are seldom based on physical data. Do school development trends, in fact, reflect these claims? Are sites being measured for changes in size and analyzed for their relationship to demographic and

[11] Ibid.

development patterns? Do we know, from observable data, that school construction in outlying areas is fueling sprawl, inequality, and is undermining community plans?

There do not appear to be any publically available databases containing complete school construction information in national or state Department of Education websites. The National Center for Education Statistics reports that from 1930 to 2001, public school enrollment nearly doubled, from 26 to 48 million, yet the number of public school buildings decreased 60 percent in the same period, from 247,000 to 93,000.[12] Mapping this trend and analyzing the relationship between schools and communities is an area that is ripe for research, as this information would make a more convincing case and perhaps allow planners and school officials to address issues in a more robust and tangible way.

A Pressing Need for School Investment

The subject of school location becomes a matter of urgency in light of a significant need for schools and ongoing school investment. The National Center for Education Statistics conducted its most recent survey of the condition of public school facilities in 2013. Based on survey responses:[13]

- Thirty-one percent of schools had portable (temporary) buildings.
- Fourteen to thirty-two percent of permanent school buildings were rated as being in fair or poor condition.

[12] ICMA Press. IQ Report Local Governments and Schools: A Community-Oriented Approach Volume 40/ Special Edition 2008

[13] U.S. Department of Education. (March 2014). "Condition of America's Public School Facilities: 2012 – 2013". National Center for Education Statistics. http://nces.ed.gov/pubs2014/2014022.pdf

- Fifty-three percent of public schools needed to spend money on repairs, renovations, and modernizations to put the school's onsite buildings in good overall condition. The total amount needed was estimated to be approximately $197 billion, and the average dollar amount for schools needing to spend money was about $4.5 million per school.
- Among public schools with permanent buildings, the environmental factors in permanent buildings were rated as unsatisfactory or very unsatisfactory in five to seventeen percent of schools.
- The average of the reported number of years since the construction of the main instructional building was 44 years.

And, from the School Planning & Management 20th Annual School Construction Report (2015):[14]

- More than $14 billion worth of school construction was put in place in 2014, a five percent increase over the previous year and the fourth year in a row school construction increased.
- A conservative estimate of current construction activity by school districts in the United States is almost $40 billion.
- Nearly $7.4 billion worth of *new school* projects to be completed in 2015, with another estimated $7.4 billion worth of new school projects planned to start.
- Median costs per square foot have more than doubled and costs per student more than tripled since 1995, while median space per student has increased only slightly.

Other statistics reinforcing the significance of school siting to land use planning include:[15]

[14] School Planning and Management. (February 2015). "20th Annual School Construction Report: National Statistics, Building Trends & Detailed Analysis". http://webspm.com/research/2015/02/annual-school-construction-report

- There are 98,706 pk-12 grade public schools in the United States, comprising an estimated 6.6 billion gross square feet of building space.
- School districts manage over 1 million acres of school building site area.
- School districts have an estimated $271 billion of deferred building and grounds maintenance.
- Between 1995-2004, schools in low wealth zip codes had one third the funding for capital projects as schools in high wealth zip codes.

2-d. SCHOOLS AND HEALTH

A number of articles examine the location of school facilities through the lens of public health. A surprising number of schools are being constructed in areas subject to high levels of air pollution, in close proximity to hazardous sites, on brownfields sites without adequate environmental review, and/ or in areas that present unsafe conditions for children to walk or ride bicycles to school. Location of school buildings in unhealthy areas is of special concern because children absorb and metabolize toxins differently than adults and so are especially vulnerable to exposure to hazardous substances.[16]

[15] Building Educational Success Together. (February 2011). "PK-12 Public School Facility Infrastructure Fact Sheet." 21st Century School Fund. http://www.21csf.org/csf-home/Documents/FactSheetPK12PublicSchoolFacilityInfrastructure.pdf

[16] McDonald, N. C., Salvesen, D. A., Combs, T. S., & Renee, K. H. (January 01, 2014). The Impact of Changes in State Minimum Acreage Policies on School Siting Practices. Journal of Planning Education and Research, 34, 2, 169-179.

Researchers have shown a strong correlation between a school's racial, ethnic, and income composition, and proximity to hazardous sites and poorer air quality.[17] Additionally, nearly one third of school buildings are in need of extensive repair or replacement,[18] while about one half of schools report at least one "unsatisfactory environmental condition," such as poor ventilation, heating or lighting problems, or poor physical security. Predictably, these unsatisfactory environmental conditions are most often reported in urban schools, in schools with a high minority student enrollment, and in schools with a high percentage of low-income students.[19]

This is ultimately an environmental justice and equity issue. Students and communities of lower socioeconomic status and/ or of higher percentage minority population are adversely impacted by public health threats at a far greater proportion than their more affluent neighbors. According to the U.S. Environmental Protection Agency (EPA), Environmental Justice is:

> "…the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. It will be achieved when everyone enjoys the same degree of

[17] Sampson, N. (January 01, 2012). Environmental justice at school: understanding research, policy, and practice to improve our children's health. *The Journal of School Health*, 82, 5, 246-52.

[18] U.S. Department of Education. (March 2014). "Condition of America's Public School Facilities: 2012 – 2013". National Center for Education Statistics. http://nces.ed.gov/pubs2014/2014022.pdf

[19] Everett, J. S., Brener, N. D., & McManus, T. (January 01, 2003). Prevalence of school policies, programs, and facilities that promote a healthy physical school environment. American Journal of Public Health, 93, 9, 1570-5.

protection from environmental health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work."[20]

Local school boards facing expanding enrollments, declining budgets, and unfunded mandates, are pressed to save money by purchasing cheaper land for new school sites.[21] As land cost and availability are the significant drivers of the school siting decisions, budgetary pressure to build on brownfields is increased by minimum acreage guidelines. In built-out urban communities, frequently the only plots large enough to meet acreage requirements and inexpensive enough to satisfy limited budgets are abandoned industrial sites that may be polluted or close to other noxious land uses.[22]

Education outcomes

A wide range of student outcomes is attributed to school environment: respiratory illness, behavioral outcomes, mental health, physical activity, and academic performance. Public health scholars have demonstrated that environmentally healthy schools lead to healthier students who perform better in school, and that school facilities have a larger impact on student performance than commonly accepted factors like student attitudes toward learning.[23] Students attending

[20] National Environmental Policy Act (NEPA). Exec. Order No. 12898, 42 U.S.C. § 4321 (1994).

[21] Fischbach, S., Gibbs, L. M., & Gonzalez, S. (January 01, 2005). School location matters: preventing school-siting disasters. Clearinghouse Review, 39, 1-2.

[22] Sutak, S. (January 01, 2008). Green schools, brown fields: school siting legislation provides a weak foundation. Tulane Environmental Law Journal, 21, 2, 427-447.

[23] Cohen, A. (January 01, 2010). Achieving healthy school siting and planning policies: understanding shared concerns of environmental planners, public health professionals, and educators. *New Solutions: a Journal of Environmental and Occupational Health Policy : Ns, 20,* 1, 49-72.

schools with the highest exposures to noise and respiratory hazards, in particular, perform worse academically than their peers in healthier environments.[24]

Asthma, disproportionately affecting children from low-income and minority households, is the most prevalent chronic illness among children in the United States.[25] Chronic exposure to air pollution is linked to underdeveloped lungs, higher incidence of asthma, bronchitis, and lung cancer.[26] School absence rates have been found to increase with increased levels of ozone and air pollution.[27] Even common sources of pollution, such as traffic, pose a health risk to children. "Children who live close to major roadways tend to have more respiratory ailments as a result of exposure to nitrogen dioxide, carbon monoxide, ultra-fine diesel exhaust particles, and other traffic pollutants. Children spend about 8 hours each weekday in school – and this part of their day may bring no relief from exposure. A new study finds that 33% of U.S. public schools are located within 400 meters of a major roadway, and 12% are within 100 meters."[28] Levels of ultrafine particles from vehicle emissions are 25 times higher right next to a busy freeway than just 50 meters away.[29] Thus, "The proximity of homes, daycare centers, schools, parks, and playing fields to busy freeways and roads is an emerging issue that school districts, residents, and local planning officials must consider, especially when siting new schools. In addition, it is

[24] Sampson, N. (January 01, 2012). Environmental justice at school: understanding research, policy, and practice to improve our children's health. *The Journal of School Health*, 82, 5, 246-52.

[25] Ibid.

[26] Frumkin, H. (2006). *Safe and healthy school environments*. Oxford: Oxford University Press.

[27] Ibid.

[28] Potera, C. (November 01, 2008). School Siting Poses Particulate Problem. *Environmental Health Perspectives*, 116, 11.)

[29] Frumkin, H. (2006). *Safe and healthy school environments*. Oxford: Oxford University Press. Ch. 12 "Outdoor Air Pollution" Andrea Hricko

not just air pollution that is an issue; noise from busy roads close to schools can also impact learning."[30] Predictably, students of color are more likely to attend schools near toxic sites.[31]

Generally, "state law generally does not address, or does not effectively address, environmental issues specific to siting a school on or near contaminated land. The federal government was silent with regard to environmental school siting problems until December 2007, when the Environmental Protection Agency (EPA) was directed to develop voluntary model guidelines for the siting of school facilities."[32] (see Section III-b.) In the absence of legal direction, the challenge of healthy school siting is made more complex by the diversity of stakeholders and their lack of communication and shared methodology. Neither city planners nor education professionals are likely to learn about school siting in their professional training. The technical nature of environmental review makes it difficult to understand and address the variety of stakeholders and policy realms a particular siting decision may affect."[33] Too, there are conflicting priorities that lead decision-makers to disregard the environmental part of the site selection process in favor of other considerations, such as cost, location, traffic access, and size.

The health disadvantages and environmental justice issues thus described could partially be addressed at school, early in children's lives, through collaborative efforts of policymakers,

[30] Ibid.

[31] Fischbach, S., Gibbs, L. M., & Gonzalez, S. (January 01, 2005). School location matters: preventing school-siting disasters. Clearinghouse Review, 39, 1-2.

[32] Sutak, S. (January 01, 2008). Green schools, brown fields: school siting legislation provides a weak foundation. Tulane Environmental Law Journal, 21, 2, 427-447.

[33] Cohen, A. (2010). Achieving Healthy School Siting and Planning Policies: Understanding Shared Concerns of Environmental Planners, Public Health Professionals, and Educators. *New Solutions : A Journal of Environmental and Occupational Health Policy : NS*, *20*(1), 49–72. doi:10.2190/NS.20.1.d

school boards, educators, planners, public health professionals, and communities.[34] One way to deal with these trade-offs and to encourage more open deliberations is to hold public comment periods throughout the school siting process and to institute citizen advisory groups to liaise regularly with school districts and regulatory authorities.[35]

2-e. SCHOOLS, COMMUNITY DEVELOPMENT, AND EQUITY

While a discussion of environmental justice is central to the relationship between schools and public health, a number of books and articles examine school facilities specifically through a community development lens, often focusing on the role of the neighborhood school in developing community cohesion and social capital, empowering neighborhood residents, and playing host to a wide range of community services, especially in communities lacking other facilities and resources. "Public schools, along with religious congregations, are perhaps the most prevalent type of institution in urban neighborhoods. They are democratically accessible and relatively stable. As such, they represent a key potential resource."[36] Schools may serve as "the most accessible neighborhood-based urban social institutions to residents who have been historically disenfranchised in society" and "have comprised a tangible link between inner-city

[34] Sampson, N. (January 01, 2012). Environmental justice at school: understanding research, policy, and practice to improve our children's health. The Journal of School Health, 82, 5, 246-52.

[35] Earthman, G. I. (2013). Planning educational facilities: What educators need to know. Plymouth, U.K.: Rowman & Littlefield Publishers, Inc.

[36] Warren, M.R. (2014). Public Schools as Centers for Building Social Capital in Urban Communities. In K.L. Patterson & R.M. Silverman (Eds). *Schools and Urban Revitalization: Rethinking Institutions and Community Development.* New York: Routledge, Taylor & Francis Group.

neighborhoods and societal resources and opportunity structures."[37] These characteristics make schools critical neighborhood-based anchors with the potential to offset the outsized influence of larger anchor institutions in cities. They also give schools the potential to serve as centers for grassroots organizing and leadership development in inner-city neighborhoods.

Schools are often the largest institutions and employers in a neighborhood, making them an invaluable partner in economic development efforts. Community development organizations can harness this economic influence by linking schools with the local business community and labor force, and can create neighborhood service-learning opportunities and after-school programs for youth that benefit both schools and communities.[38] Situational learning theory assumes that learning is a function of activity, context, and culture and takes place through social participation. Schools can help develop a "community of practice" by bringing citizens and communities together to facilitate stronger involvement in and knowledge of planning processes.[39] Education organizing empowers residents and enhances the level of community engagement around issues of curriculum, student outcomes, school policies, and coordination of social and community services through neighborhood schools. Education organizing can help:[40]

- generate sustained partnerships between school officials and neighborhood organizations,

[37] Silverman, R.M. (2014). *Anchoring Community Development to Schools and Neighborhoods: A Renewed Tradition of Putting People First.* In Patterson, K. L., & Silverman, R. M. (Eds). *Schools and urban revitalization: Rethinking institutions and community development*. New York: Routledge.

[38] Chung, Connie (2002). Using Public Schools as Community-Development Tools: Strategies for Community-Based Developers. Joint Center for Housing Studies of Harvard University. http://www.jchs.harvard.edu/research/publications/using-public-schools-community-development-tools-strategies-community-based

[39] McKoy, D., & Vincent, J. (January 01, 2007). Engaging Schools in Urban Revitalization. Journal of Planning Education and Research, 26, 4, 389-403.

[40]Silverman, R.M. (2014). *Anchoring Community Development to Schools and Neighborhoods: A Renewed Tradition of Putting People First.* In Patterson, K. L., & Silverman, R. M. (Eds). *Schools and urban revitalization: Rethinking institutions and community development*. New York: Routledge.

- build social capital in poor communities, and
- cultivate leadership skills at grassroots level via participation in initiatives and projects.

In one case study, formation of a Parent Leadership program at the Logan Square School in Chicago had the following outcomes for families in the minority and low-income district:[41]

- Launching community learning centers, lending libraries, literacy programs, school safety patrols, parent tutoring programs, free college education teacher training, participation in school councils involved in teacher and staff hiring, school budgeting, bilingual education campaigns, and increased levels of funding. And,
- affordable health outreach and affordable housing development.

While schools commonly provide community access to facilities such as sports fields, playgrounds, and assembly rooms, some facilities called "community schools" or "full-service schools" attempt to be community centers, offering services such as health and family services and afterschool programs, especially in urban areas where land for new community facilities is not readily available. Some focus on facility design, building new schools that incorporate facilities to serve broader community needs, such as libraries. Significantly, "to be viable community facilities, schools must be designed and built to tie directly into the needs and desires of the communities that they serve, both programmatically and physically, in their scale and their symbolic potential to give identity and purpose to the surrounding community."[42] Location becomes important not only because of the degree of access for people in proximity. A study of charter school siting by Bifulco (2014) found that the location of a facility in relation to the racial

[41] Warren, M.R. (2014). Public Schools as Centers for Building Social Capital in Urban Communities. In K.L. Patterson & R.M. Silverman (Eds). *Schools and Urban Revitalization: Rethinking Institutions and Community Development.* New York: Routledge, Taylor & Francis Group.

[42] Haar, S., & Robbins, M. (2002). *Schools for cities: urban strategies*. Princeton Architectural Press. Retrieved from http://files.eric.ed.gov/fulltext/ED480548.pdf

makeup of area residents impacts the relative diversity of the student population, independent of fixed attendance boundaries. Unsurprisingly, charter schools located in predominantly white or minority areas increased segregation, while those located in border areas attracted student bodies considerably more diverse than the public schools the students would otherwise have attended[43]

Locational differences between schools go far beyond racial lines. For a number of reasons, but closely related to the mechanisms of school funding, "students from low income families received about half the facility investment compared to their wealthier peers." And "schools in urban areas received much less school construction investment per student compared to rural and suburban areas." This disinvestment in existing schools and neighborhoods "runs counter to smart growth, regional equity, and healthy communities goals of re-investing in existing community infrastructure to make them more desirable places to live, work, and play."[44]

This is a reinforcing trend, as higher investment in suburban schools creates incentives for families to live in the new suburbs instead of core cities and older neighborhoods, while the reduced spending in existing schools results in poor facility conditions and perceptions of lower quality educational opportunities, further driving families from urban centers.[45] Thus, school location and the geographic distribution of school investment have enormous implications for community development through both the function of schools as a community facilities and

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[43] Bifulco, R. (2014). Charter School Location: Evidence and Policy Implications. In G.K. Ingram (Eds.), *Education, Land, and Location.* Cambridge, Ma: Lincoln Institute of Land Policy.

[44] Vincent, J., & Filardo, M. (2008). Linking school construction investments to equity, smart growth, and healthy communities. *Berkeley CA: Center for Cities & Schools at University of California-Berkeley*. Retrieved from http://citiesandschools.berkeley.edu/reports/Vincent_Filardo_2008_Linking_School_Construction_Jun2008.pdf

[45] McKoy, D., & Vincent, J. (January 01, 2007). Engaging Schools in Urban Revitalization.*Journal of Planning Education and Research, 26,* 4, 389-403.

centers of empowerment, but also through its role in community perceptions and cycles of investment or disinvestment contributing to sprawl and inequality. The bottom line is decades "of public school construction and renovation has disproportionately benefited newer, wealthier neighborhoods, contributing to disinvestment in existing community infrastructure. Many of these existing schools are in the kind of neighborhoods that engender smart growth and healthy community principles – relatively higher densities, access to transit options, and pedestrian infrastructure, with among other things, make walking and bicycling to school more likely."[46]

2-f. SCHOOLS AND TRAVEL

One of the most-studied and simplest to understand implications of school siting is of the travel patterns that are a consequence of, especially, the facility's proximity to students. Extensive research has established the role of school siting in promoting active transportation as a means to increase physical activity and ostensibly combat the prevalence of obesity and other health problems among young people. An inverse relationship has been observed between a decline in the number of students walking to school and a simultaneous increase in the prevalence of overweight in children and adolescents. As travel to school is the most common short-distance travel destination for children, active commuting such as walking and bicycling is proposed as a means of increasing children's physical activity.

Studies show a connection between urban design and walkability. A study by Eyler, et al. (2008) assessing policies to promote active transportation to school found that quality of sidewalks, presence of safety devices such as traffic lights and pedestrian crossings, perceptions

[46] Vincent, J., & Filardo, M. (2008).

of personal safety, and presence of bike paths can increase walking or bicycling to school.[47] Another review finds a connection between street connectivity, traffic volume, and the potential to walk to school, finding higher walking rates among students attending schools located in walkable areas with high levels of connectivity *and* design for low traffic volumes.[48] Adding to the social equity issues, another author finds that children with lower socioeconomic status backgrounds are more likely to be injured in child pedestrian accidents, and are more likely to live in neighborhoods lacking pedestrian support infrastructures and having increased exposure to traffic hazards.[49]

Of all factors related to active transportation, distance is by far the most important. Students who live within one mile of school are significantly more likely to walk or ride their bicycle, with one study finding "53% of those living less than a mile away walk home from school, compared to 36% living 1 to 1.5 miles away. Beyond 1.5 miles, fewer than 4% walk to or from school." Biking showed a similar pattern.[50] School officials interviewed in one study anecdotally perceive fewer students walking to newer vs. older school buildings, reflecting the

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[47] Eyler, A. A., Brownson, R. C., Doescher, M. P., Evenson, K. R., Fesperman, C. E., Litt, J. S., Pluto, D., ... Schmid, T. L. (December 01, 2008). Policies Related to Active Transport to and from School: A Multisite Case Study. *Health Education Research*, 23, 6, 963-975.

[48] Giles-Corti, B., Wood, G., Pikora, T., Learnihan, V., Bulsara, M., Van, N. K., Timperio, A., ... Villanueva, K. (January 01, 2011). School site and the potential to walk to school: the impact of street connectivity and traffic exposure in school neighborhoods. *Health & Place*, 17, 2, 545-50.

[49] Ibid.

[50] Schlossberg, M., Greene, J., Phillips, P. P., Johnson, B., & Parker, B. (2006). School trips: effects of urban form and distance on travel mode. *Journal of the American Planning Association*, *72*(3), 337-346. Retrieved from http://pages.uoregon.edu/schlossb/articles/schlossberg_school_trips.pdf

Ewing, R., Schroeer, W., & Greene, W. (2004). School location and student travel analysis of factors affecting mode choice. *Transportation Research Record: Journal of the Transportation Research Board*, *1895*(1), 55-63. Retrieved from http://66-81-238-157.static-ip.telepacific.net/complete-streets/toolkit/files/docs/NRC_School Location

locational tendencies brought about by site expansion.[51] This is important, given the increasing size and attendance areas of many newer, larger facilities. The median distance between home and school for children is observed to be increasing, thus, the potential for active transportation to school must be declining as well.[52] This establishes not only the importance of school location in relation to students and the urban fabric, but implicates school site acreage guidelines and school funding practices in undermining child mobility and health.

Carbon emissions

School siting in the context of climate change appears to be an entirely unexplored topic in the planning and education literature. In light of the connection between greenhouse gas emissions and the warming and destabilizing of the Earth's climate, school siting trends that prevent or limit active transportation must increase the number of students traveling to school by bus or car.

As public awareness and concern for the existence and impacts of climate change approaches the scientific consensus, municipalities and citizens may consider the role of public institutions such as schools in contributing to emissions of greenhouse gases. Siting schools within neighborhoods in a manner that decreases the number of students traveling to school by car or bus may reduce a community's greenhouse gas emissions.

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[51] Sirard, J., & Slater, M. (January 01, 2008). Walking and Bicycling to School: A Review. *American Journal of Lifestyle Medicine,* 2, 5, 372-396

[52] Giles-Corti, B., Wood, G., Pikora, T., Learnihan, V., Bulsara, M., Van, N. K., Timperio, A., ... Villanueva, K. (January 01, 2011). School site and the potential to walk to school: the impact of street connectivity and traffic exposure in school neighborhoods. *Health & Place*, 17, 2, 545-50.

2-g. SCHOOLS AND ECONOMY

One of the subquestions guiding the literature search centers on the role of public school facilities in a community's economy. What are the economic impacts of public school facilities on their surroundings? How do they affect property values? Is there a link between schools and revitalization of neighborhoods or city centers? While there is a strong perception of a correlation between school *quality* (in terms of overall academic performance) and a region's socio-economic and demographic patterns, rather little research has focused on the direct links between school siting and economy.

The most studied connection is the linkage between school investment and property values. A study by Neilson and Zimmerman (2014) examining the effects of school construction in a poor urban school district found that school construction had substantial positive effects on home prices in affected neighborhoods, and led to increases in the population of families with children attending public schools.[53] Elementary and middle school construction raised home values by 10.3%, and the number of school zone residents attending public school by up to 17.3%. This echoes the results of a similar study in California finding a connection between school investment and community-wide property values, finding "that passage of a bond measure causes house prices in a district to rise by about 6%. This effect appears gradually over the two or three years following the election and persists for at least a decade." The authors also

[53] Neilson, C. A., & Zimmerman, S. D. (December 01, 2014). The effect of school construction on test scores, school enrollment, and home prices. Journal of Public Economics, 120, 2, 18-31.

found “little evidence of changes in the income or racial composition of local homebuyers following the passage of a bond”, and negligible effects on achievement test scores.[54]

Tiebout Sorting

Charles Tiebout, in his 1956 article “A Pure Theory of Local Expenditures”, provides a theory of economic competition in which citizens function as consumers of local services and community characteristics by “voting with their feet”, basing their locational preferences on the bundle of services, such as schools, and associated costs – taxes and fees - that best suits their needs. Public education is widely considered the most relevant public service/ infrastructure influencing consumers’ residential choice, and is reflected by this strong correlation between school investment and property values.[55] Confirming Tiebout sorting at work, household education surveys find 47% of parents said that residential location choice was influenced by where children go to school, and parents of 27% of public school students responded that they specifically moved to their current neighborhood to gain access to their desired public school.[56]

Some of the reasons proximity to “neighborhood” schools is valued by families are improved accessibility, reduced commuting times and perceptions of improved safety, and the perception that parental information and influence on school activities is facilitated by the

[54] Cellini, S. R., Ferreira, F., & Rothstein, J. (January 01, 2010). The Value of School Facility Investments: Evidence from a Dynamic Regression Discontinuity Design[*]. Quarterly Journal of Economics, 125, 1, 215-261.

[55] Buckley, J., Schneider, M. (March 2, 2006). School Choice, Parental Information, and Tiebout Sorting: Evidence from Washington, DC. Fischel, W. A., & Oates, W. E. (2006). *The Tiebout Model at fifty: Essays in public economics in honor of Wallace Oates*. Cambridge, Mass: Lincoln Institute of Land Policy

[56] Ibid.

improved access[57]. This explains, in part, the results of a study that examined the impact on house prices of a school district alignment, including some school closures that led to busing of some school children in a suburb characterized by neighborhood schools before the realignment. The 12-year study in Shaker Heights, Ohio found the realignment led to the introduction and expansion of bus services, changed the racial composition of certain schools, and had the effect of making it harder for parents to get involved in school issues and more difficult for students to participate in after-school activities. Quantifying the effects on property values of these changes, the authors found "the loss of a neighborhood school reduces house value, all else being equal. The magnitude of the effect is substantial, with an estimated reduction in the house price of 9.9%." They also found that a "neighborhood schools effect has an equivalent impact on house values of a fully capitalized 47.5% increase in property taxes. This is a substantial number, and one that indicates the importance of the way in which public schools are provided as well as how they are financed."[58]

While not directly related to the focus of this thesis, one study examines historical documents to determine the "primacy of land value" in the founding of our public schools. Specifically, the author finds that scholars "have been unable to detect any mention of education benefits as a reason for the universal promotion of schools" and finds that the more transparent reason was that school endowments helped Congress sell land. School endowments turned out to be the most successful draw for attracting investors and settlers, and so shaped Congressional land ordinances. Thus, "schools were part of the real estate development process from colonial

[57] Colwell, P. F., & Guntermann, K. L. (January 01, 1984). The value of neighborhood schools. *Economics of Education Review*, 3, 3, 177-182.

[58] Bogart, W. T. B. A. C. (January 01, 2000). How much is a neighborhood school worth?. *Journal of Planning Literature*, 15, 1.)

times through the twentieth century. Town founders from colonial Massachusetts to twentieth-century Celebration, Florida, have used the provision of public education to attract buyers and enhance the overall value of their enterprises."[59]

Ultimately, the strong evidence of "Tiebout sorting" found in real estate prices is significant for school districts and communities investing in schools. Selecting locations for investment in facilities directly influences residential choices and can accelerate investment or disinvestment in specific neighborhoods. Inequities in school investment play a direct role in economic and racial disparities and revitalizing distressed areas.[60] When access to high-quality public schools is rationed through a residential-based assignment system, Tiebout sorting leads to communities that are stratified along racial and economic lines. Given the pressing need for large-scale investment in school infrastructure at the national level, and in poor, urban areas in particular, these findings "are important for assessing the costs and benefits of potential infrastructure policies."[61]

2-h. SCHOOL PLANNING TEXTS: SURPRISING OVERSIGHT

These findings from the literature beg the question: how do school planners decide where to locate schools? A review of five manuals published for education facilities planners (Holcomb,

[59] Fischel, W.A. (2014). Not By the Hand of Horace Mann: How the Quest for Land Value Created the American School System. In G.K. Ingram (Eds.), *Education, Land, and Location.* Cambridge, Ma: Lincoln Institute of Land Policy.

[60] Weiss, Jonathan D. (2004). *Public Schools and Economic Development: What the Research Shows.* Knowledge Works Foundation. Cincinnati, Ohio. http://www.mea.org/tef/pdf/public_schools_development.pdf

[61] Neilson, C. A., & Zimmerman, S. D. (December 01, 2014). The effect of school construction on test scores, school enrollment, and home prices. Journal of Public Economics, 120, 2, 18-31.

1995, Ortiz, 1994, MacKenzie, 1989, Kowalski, 1989, Englehardt, 1970) revealed an interesting and alarming oversight: in all cases, little to no text is devoted to the location of facilities or its implications. In general, these manuals outline and describe a process that begins with, and focuses on, a school's educational programming, and proceeds directly to translating educational programs to design of buildings, classrooms, and activity spaces. While a relatively undeveloped topic of concern for planning researchers, school location is completely overlooked by the practitioners who design and build school facilities.

Chapter Three: POLICIES AND GUIDELINES

3-a. CEFPI GUIDE FOR EDUCATIONAL FACILITIES PLANNERS

Whereas the guidebooks crafted for school planners are silent on the subject of school location, school officials have been relying on established site sizing guidelines for decades. The most cited source for facilities planning guidelines is the Council of Educational Facilities Planners International, or CEFPI. Until recently, the Council has been prescribing school site acreage and building design requirements in published manuals that many have criticized for contributing to school sprawl and the decline of neighborhood schools serving smaller numbers of students.

Where most school districts plan and construct new facilities rather infrequently, they are unlikely to have experts on school siting and design on staff. Hiring consultants and architects to do the work, decisions are made based on the published guidelines without questioning their origin, purpose, or suitability for the context. These guidelines have had a significant effect in urban areas, especially, and are implicated in a repeating cycle that increases inequality of opportunity and socio-economic status between geographies, as described in section II.

In light of debates and criticism around schools and their relation to sprawl, preservation of historic neighborhood schools, and the unquestioning abidance to acreage guidelines, the CEFPI has adopted a more flexible approach to acreage guidelines and has collaborated with the US Environmental Protection Agency to produce documents outlining a more flexible and holistic approach to facilities siting. In its most recent comprehensive manual, *Creating Connections: CEFPI Guide for Educational Facility Planning,* the Council has incorporated a more flexible stance by promoting:

- public involvement and coordination with local governments in school planning,
- school siting that facilitates community access and promotes neighborhood identity,
- siting schools in locations that are walkable for students to reduce traffic and facilitate child independence and involvement in extracurricular activities.

While the steps and considerations in school siting will vary between locales, the Manual encourages school planners to consider the school's site as an integral part of the educational process, and to consider using criteria evaluating potential school sites for their full costs of infrastructure provision and transportation, environmental impacts, potential hazards, and achievement of neighborhood and community goals. Thus, The Council of Education Facilities Planners International, long implicated in cultivating school siting practices blamed for promoting sprawl and increasing racial and income segregation, is responding to the concerns of communities and interest groups by promoting a more cooperative approach that considers a wide variety of community needs and outcomes.

3-b. REGULATIONS, POLICIES AND GUIDELINES

The CEFPI wields significant influence in school siting by serving as an informational resource for school planners and the architects and consultants who they hire. Yet, a discussion of the factors influencing the location of school facilities would certainly not be complete without an overview of federal, state, and local policies mandating or guiding school district decisions. An additional search for federal, state, and regional school siting policies and guidelines was completed to determine the requirements, limits, and suggestions faced by school facilities

planners, and to further refine data collection efforts. The following policy frameworks and guidelines require or recommend consideration of certain criteria:

Federal

While the federal government is deeply involved with school performance and funding programs, it has, until very recently, been silent on the matter of school siting and facilities planning. The U.S. Environmental Protection Agency was mandated to develop model guidelines for school siting under provisions in the Energy Independence and Security Act (EISA) of 2007.[62] Carrying out its mandate, the EPA, in consultation with the Departments of Education and Health and Human Services, developed voluntary School Siting Guidelines to encourage communities and school boards to choose school sites more cooperatively and systematically.[63]

Spelling out processes and considerations for school planners and communities, the guidelines encourage facilities planning that:

- evaluates hazards,
- includes rigorous environmental review,
- considers community conditions and needs, and
- includes meaningful public involvement;

and encourage selection of school locations that:

- limit exposure to air pollution and toxins,

[62] U.S. Environmental Protection Agency. (October 2011). School Siting Guidelines. http://www.epa.gov/schools/siting/downloads/School_Siting_Guidelines.pdf

[63] Center for Health, Environment & Justice. Overview: The EPA's School Siting Guidelines. http://chej.org/wp-content/uploads/Overview-The-EPAs-School-Siting-Guidelines.pdf

- minimize environmental impacts,
- encourage physical activity and active transportation, and
- meet a variety of community needs and desirable location criteria.

State

School districts are chartered and authorized by the states to operate as independent governments. The agency responsible for school district oversight in the state of Washington is the Office of the Superintendent of Public Instruction (OSPI). In addition to serving as a clearinghouse for school facilities data, OSPI has published documents outlining the school siting requirements and guidelines for Washington's school districts. Many of the OSPI's recommendations, however, are only of consequence for school districts utilizing state funding for school construction. Districts relying on the School Construction Assistance Program must use the OSPI School Facilities Manual, which includes a chapter on site selection providing an overview of state laws (SEPA review and GMA), and outlining processes for site selection.[64] General siting considerations are provided, such as:

- health and safety,
- zoning and environmental conditions,
- proximity to students and community services, and
- provision of infrastructure such as sewer and water.

[64] Washington Office of the Superintendent of Public Instruction. April 2011. School Facilities Manual: School Construction Assistance Program. http://www.k12.wa.us/SchFacilities/pubdocs/SchoolFacilitiesManual2011.pdf

School projects utilizing state funding and meeting certain critieria are also required to comply with either the high-performance building standards called the Washington Sustainable Schools Protocol (WSSP), or the standards developed by the United States Green Building Council's Leadership in Energy and Environmental Design for Schools (LEED). Modeled after criteria developed by California's Collaborative for High-Performance Schools, a partnership between California school and utility districts to address energy efficiency in school buildings, the WSSP guidelines pertain mostly to building design but do give some consideration to location. Specifically, school projects receive points toward an overall score for minimizing environmental impacts and encouraging "non-polluting transportation alternatives".[65]

Washington State Environmental Policy Act

Modeled after the National Environmental Policy Act (NEPA), the State Environmental Policy Act (SEPA) was enacted in 1971 to ensure consideration and mitigation of environmental impacts of government decisions and projects. SEPA review is required for public projects such as construction or renovation of school buildings. Actions determined to have probable and significant impacts require a detailed Environmental Impact Statement process including thorough and documented public input and identification of environmental impacts and mitigation alternatives.[66]

[65] Washington Office of the Superintendent of Public Instruction. February 2011. High-Performance School Buildings Program: Guidelines for School Districts.
http://www.k12.wa.us/legisgov/2014documents/HighPerformanceSchoolBuildings2014.pdf

[66] Washington State Department of Ecology. (1998, Updated 2003). State Environmental Policy Act Handbook. https://fortress.wa.gov/ecy/publications/publications/98114.pdf

Growth Management Act

The Growth Management Act (GMA), enacted by the Washington legislature in 1990, requires many of the state's cities and counties to plan for growth in accordance with 13 goals reducing sprawl, minimizing environmental impacts, and ensuring public participation in the planning process. The GMA provides a framework for regional coordination, requiring counties to adopt countywide planning policies and establish urban growth areas. Local comprehensive plans are required to address land use, housing, capital facilities, and transportation plans in accordance with county, region, and state policies.[67] School districts are exempt from planning rules under the Growth Management Act, though King County and Puget Sound Regional Council planning policies include recommendations limiting construction of school facilities to urban areas.

Regional

The Puget Sound Regional Council and Vision 2040

The Puget Sound Regional Council, or PSRC, is the Metropolitan Planning Organization performing a variety of planning functions in the region. Formed the same year as passage of the federal Intermodal Surface Transportation Efficiency Act, PSRC is responsible for implementing regional planning required for distribution of federal highway funds. Also charged with coordinating regional planning under the Growth Management Act of 1990, member city and county jurisdictions are required to adopt and implement plans for growth in accordance with

[67] Washington State Legislature. Chapter 36.70A RCW. Growth Management - Planning by Selected Counties and Cities.
http://apps.leg.wa.gov/rcw/default.aspx?cite=36.70A

PSRC long-range plans and population growth projections. Community facilities are a required element of local comprehensive plans. *Vision 2040*, the current PSRC long-range plan for the region, spells out a regional growth strategy prioritizing service and facility investments to support growth in compact urban communities to minimize adverse social, environmental, and economic impacts. As key community facilities owned and operated by special service districts exempt from planning requirements under the Growth Management Act, schools receive special attention in *Vision 2040*, which recommends development of siting recommendations and increasing strategic cooperation between districts and local governments in planning and locating facilities.[68]

Countywide Planning Policies

Elected officials from the respective cities, districts, and county governments work together to develop Countywide Planning Policies to be adopted by County Councils, as required under the Growth Management Act. County planning policies in King, Kitsap, Pierce, and Snohomish Counties reflect the regional vision and policies in the Puget Sound Regional Council's *Vision 2040.* A report from a King County School Siting Task Force is attached to the policy document as an appendix. The task force recommends developing a framework limiting development of school sites outside of the urban growth area to projects that meet certain criteria, and reflects regional planning policies limiting service provision in rural areas and locating "schools,

[68] Puget Sound Regional Council. (2009). *Vision 2040 &*. Seattle, Wash: The Council. http://www.psrc.org/assets/366/7293-V2040.pdf

institutions, and other community facilities" within urban growth areas. Specific countywide planning policies of relevance to locating schools are:[69]

- DP-50 limits new "nonresidential" uses in rural areas to those directly serving the rural area.
- PF-12 prohibits provision of sewer service in rural areas except under specific conditions, including the provisions in the School Siting Task Force Report.
- PF-18 locates schools serving urban populations within the urban growth area in areas accessible by transit and active transportation. And,
- PF-19 locates schools serving rural residents in neighboring cities and towns.

Other frameworks

Several prominent non-governmental organizations have developed school siting guidelines in response to certain issues noted in the literature review. School siting guidelines developed by the Center for Health, Environment & Justice were incorporated into the EPA's guidelines, as discussed above. Two others reflect other issues highlighted in the literature:

- **Safe Routes to School** is a federal program utilizing Federal Highway Administration funding and operating in all 50 states to encourage and improve the safety of walking and bicycling to school. A *Smart School Siting* publication outlining the elements of supporting healthy students and communities recommends locating schools within communities and renovating existing neighborhood facilities.[70]

[69] King County, Washington. (November 2012). 2012 King County Countywide Planning Policies. http://www.kingcounty.gov/property/permits/codes/growth/GMPC/CPPs.aspx

[70] Safe Routes to School National Partnership. (March 2012). Smart School Siting: How School Locations Can Make Students Healthier and Communities Stronger. http://www.saferoutespartnership.org/sites/default/files/pdf/Lib_of_Res/School_Siting_Fact_Sheet.pdf

- The **National Trust for Historic Preservation**, an organization dedicated to preserving cultural and historical landmarks, encourages state policy adoption and has published papers advocating renovation of older neighborhood schools in the face of funding formulas favoring new construction:[71]

Thus, while there may not be many requirements outside of building and zoning codes that guide school siting in general, a web of policies and guidelines are in place to strongly encourage school siting that minimizes environmental impacts and prioritizes consideration of community and neighborhood goals. With strong state-level environmental review requirements and explicit inter-jurisdictional regional and county planning policies favoring location of facilities in developed areas, school siting in the Puget Sound region might be subject to a more robust decision process than would happen otherwise.

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[71] Kuhlman, R. National Trust for Historic Preservation. Helping Johnny Walk to School: Policy Recommendations for Removing Barriers to Community-Centered Schools. http://www.preservationnation.org/information-center/saving-a-place/historic-schools/helping-johnny/helping-johnny-walk-to-school.pdf

Chapter Four: RESEARCH METHODS

4-a. RESEARCH QUESTIONS

Having established the importance of school location for communities and planners and outlined the policy context for school planners in the Puget Sound region through literature review, this paper will proceed with an explanation and analysis of qualitative data gathered for the purpose of discovering how public school districts decide where to locate school facilities. To achieve this goal, I conducted interviews with officials from fifteen public school districts between March and May 2015 to find out how school siting decisions are made in relation to two basic questions:

How are public school siting decisions made?

Or, *What are the considerations school district officials make when planning and locating new facilities?*

The second question, strongly tied to the first, is:

How do school siting decisions include or overlap with community planning goals or policies?

With an interest in gathering data pertinent to themes relevant to planners through a planning lens, I developed four interview questions that link the findings of the literature review – the important implications of school siting – to the task of answering the core research questions. These questions are:

When planning a new school:

1. Did school district officials consult or coordinate with the municipality's planning or community development officials, its comprehensive plan, or capital facilities plan, during the site selection process? What types of interactions occurred, how frequent were they, and what were the outcomes?

2. How was the public involved in the site selection process? How was public input recorded? How did public input affect the locational outcomes?

3. What community impacts or benefits were considered by district officials during the site selection process? (Transportation, environment, parking, walkability, proximity to other facilities, property values, surrounding land uses, etc). Which were considered most important?

4. What criteria or considerations did school district officials use to determine the school's location? Has the district adopted any school siting policies? Did district officials use any county, state, federal, or independent site selection process or criteria, such as:

- Washington Sustainable Schools Protocol (Washington Superintendent of Public Instruction)
- School Facilities Manual (Washington Superintendent of Public Instruction)
- LEED for Schools (U.S. Green Building Council)
- U.S. Environmental Protection Agency School Siting Guidelines
- The Council of Education Facility Planners International *Guide for Educational Facility Planning*

The first question addresses one of the core questions directly by focusing on the degree and level of interaction with municipal and regional **planning** bodies, issues, and outcomes. It also assesses the "siloed" relationship of schools and planning discussed by McDonald, Vincent, and Earthman and presented in the literature review. The second question examines the mechanisms for **public involvement** in school facilities planning, and related issues and

outcomes. An issue of central concern for community planners and often the rationale for decisions affecting the public interest, public involvement in school planning is specifically encouraged by Patterson, Chung, and McCoy in the literature review to elevate schools' role as community institutions.

Question three assesses the degree to which **community impacts and benefits** are considered in school siting and planning, connecting interview data to the discussions of health, property values, transportation, and community development implications from the review of literature. Gathering input about adoption of **policies** and voluntary use of explicit **guidelines or criteria** in school siting and planning, Question four ties data collection to the overview of policies and guidelines and clarifies the extent to which policies constrain or facilitate school siting practices and guidelines influence school location decisions. Combined, responses to these four questions should address the core questions and provide a clearer picture of the drivers of school location decision-making and begin to address some of the gaps between public schools and community planning highlighted in the literature.

4-c. INTERVIEW METHODS

Interviews were conducted both by phone and in-person and lasted between 30 and 70 minutes. A brief introduction to the project and the four questions were sent to each subject via email, both in-text and as attached documents, approximately 2 days prior to the scheduled interview. After introducing myself and explaining the project, interviewees were first asked to provide a brief context regarding facilities in the district. Responses generally included an explanation of the official's role in the district, their level of expertise, and a brief history of facilities planning

and development. Several interviewees possessed land use planning backgrounds and were eager to discuss the histories of their communities and the role of schools in the context of current issues.

A semi-structured interview format was chosen for interview data collection, permitting subjects free rein to discuss the issues most pertinent from their perspective. The goal being to shed light on how school siting decisions are made, the interview questions were designed to prompt the conversation from a planning lens but encourage relevant issues to float to the top. In the interest of eliciting open and honest responses, interview data was recorded via hand-written notes. Recording conversations using phone and computer software for later transcription was originally planned, but perceived discomfort on the part of subjects during early in-person interviews led to the decision to rely on hand-written notes. Notes were taken for the entirety of the interviews and were transcribed into digital format as soon after each interview as possible, generally within two or three hours, in an attempt to provide as much clarity as possible. Details that could be recalled were added and gaps left from the shortcomings of the hand-written notation were addressed by completing the narrative in my own words, in an effort to ensure relevance of notes for later study.

Human Subjects Review

Careful examination of the Human Subjects Review Board worksheets and conversation with staff at the Internal Review Board office led to the conclusion that the line of questioning used in the data collection effort for this thesis does not meet the definition of human subjects research and, thus, did not require a full review by the Board. While interviewing individuals, the questions are clearly focused on the district as subject, not the individual. All questions, as worded, focus on how the school district as an entity makes decisions, involves the public,

adopts policy, and works with planners. To further avoid ethical conflict in presentation of data gathered from personal interviews, I elected to make all references to interviewees in the thesis text anonymous, referencing them in-text by date of interview, and substituting numbers for proper names of the school districts for organization and analysis. District and city names are retained in presentation of case examples in which the potential for controversy is perceived to be very low.

4-d. DATA ANALYSIS METHODS

As a qualitative study, organization and analysis of the interview data occurred in six steps, described in detail below:

1. Transcription: Detailing and Sorting
2. Initial Readings: Identification of Themes
3. Organization: Spreadsheet Creation
4. Coding & Spreadsheet Expansion
5. Analysis 1: Range and Commonality of Responses
6. Analysis 2: Qualitative Relationships
7. Identification of Case Narratives

Transcription of hand-written notes into digital text documents occurred within two to three hours of interviews to ensure recall of as much detail as possible. While subjects were prompted by questions, the semi-structured interview format elicited responses that often wandered between interrelated topics of interest. An inductive coding of interview data was

made during transcription, categorizing the narrative data by interview question topics and background information.

As collection of primary data approached completion, I conducted two or three initial readings of the entire collection of digitized text documents for the purpose of identifying general themes and trends. This involved making a working list of recurring significant variables related to each interview question, to be used for subsequent data organization and analysis.

A spreadsheet was created to organize the data and to simplify analysis. Each district represents a row, and columns are categories of important information organized by basic school district characteristics and question topics. The column subjects and entries morphed with successive examinations of transcribed notes.

Coding of details and filling in the spreadsheet(s) was an inductive and deductive process that occurred through five or six careful readings of the digitized text versions of the interview notes. As important pieces of information emerged from the successive readings, the single spreadsheet evolved into five separate sheets that organize data according to background and topical questions. Column headings within each spreadsheet categorize themes pertinent to the topic area, while entries are plucked directly from the transcribed notes.

The first level of analysis attempts to answer the question of how school siting decisions are made directly by examining each spreadsheet and column of data for generalities. Both the range of responses and a quantitative determination for assessing the relative importance of a variable were included in this process.

Then, using color highlighting to distinguish districts by certain qualities, data was analyzed for important relationships between qualitative characteristics to draw conclusions, identify the challenges and opportunities for coordinated school planning, and determine how

data fits with the lessons learned from the literature review. Color coding and analysis was performed for the following characteristics:

- Urban or built-out vs. rural
- Experiencing enrollment growth
- Affected by the Urban Growth Boundary
- Stated school siting policy adoption
- Stated prioritization of neighborhood schools or proximity to students

Last, highlighted case narratives were categorized for inclusion illustrating discussion.

4-e: ASSUMPTIONS AND BIASES

The methods applied in this thesis project are based on the following assumptions: The first assumption is that I was talking with the "right" person, the most knowledgeable official from each district in the context of this study. Contact with the officials who agreed to participate was often established only after discussing the project purpose with several other individuals, often starting with the school district main office phone number. Direct contact without the endorsement of a front office person generally did not elicit a response. Every effort was made to clarify the purpose of the project. Most subjects interviewed were high-level officials with extensive experience as facilities planners or capital projects directors. In some cases, however, subjects were new in their field or local position, or may not have been the most knowledgeable official for the relevant subject area. Assistant Superintendents, for example, while very knowledgeable about their districts as a whole, may not have provided the most detailed or accurate information regarding facilities questions.

A second assumption made in this study pertains to the semi-structured interview format. An assumption is made in selecting this methodology that facilitating an open-ended subject narrative elicits the most relevant and important responses. Prompted by an introduction, the questions, and their themes, subjects were given free rein to discuss their perspective. However, there is always the possibility a critical issue was overlooked or forgotten, or the subject's personal interests do not align with the school district they represent. For example, a district's facilities may be used for community recreation or events, but if this was not mentioned during our conversation, it was not recorded as an important consideration for facilities planners. Likewise, acreage guidelines may in fact drive the first step in district land acquisition, but, again, if they were not explicitly mentioned, it was not recorded as a priority. Prompts for clarification or detail were used during interviews to keep subjects focused, but these were intentionally limited in an effort to minimize bias, as described below. These types of oversights may have been partly corrected by interviewing a sufficient number of officials to capture a reasonable range of input for the purpose of this study.

By choosing to record data using hand-written notes, a third assumption is made regarding my ability as an interviewer to capture all relevant details without full transcriptions of subject narratives. Possessing limited experience collecting research data through interviews, the loss of relevant details or later misinterpretation of incomplete information is certainly possible. An effort was made to minimize loss and misinterpretation by writing a more complete and descriptive version of the hand-written notes immediately after each interview. The decision to use this method was made early in the data collection process, in response to the tone and perceived discomfort of subjects during early in-person interviews. Open and honest statements

pertaining to targeted themes were deemed more important than risking terse or inaccurate input for the sake of precision.

Biased Data?

I attempted to identify and address the strong potential for the introduction of bias in data collection and analysis. Introducing myself as a student in an Urban Planning program, and explaining my project through the perspective of planning and schools as public infrastructure, raises the possibility of subjects describing what they think I want to hear, rather than speaking objectively about processes in their districts. Interview notes reveal several instances in which subjects, especially in response to questions 1 or 2, initially give enthusiastically positive but very general remarks regarding working with city planners or public involvement. When pressed, however, occasions for interaction or involvement prove to be limited to specific and infrequent processes, such as the formation of advisory committees preceding issuance of bond levies every 6-8 years.

Planning school facilities is a highly political context, as parents, community leaders, and taxpayers all have opinions about operations and costs of schools. As high-level officials working in their districts, subjects may feel compelled to sanitize some of their comments to avoid potential backlash from citizens, superiors, or partners working in schools or planning bodies in the region. Several officials made comments "off the record", not only distinguishing opinion from "fact", but also revealing a level of care filtering their otherwise "open" responses. The decision not to record conversations for transcription was made in an effort to partially correct this potential for bias.

As mentioned above, the questions used for data collection were originally crafted to target school districts where new sites have been purchased or developed. Discussions were modified to permit relevant data collection from districts where this was not entirely the case, but a more complete and representative data sample for the purpose of this project would have included a greater number and percentage of districts where recent school site development has occurred. By including input from districts with stable enrollment growth and histories of property surplus, the data may bias school districts where planning and growth issues have not at all or until recently influenced interaction with the broader community and its many interests.

There is also a possibility for bias in subject representation. Most subjects are white males in advanced middle age, some approaching the ends of their careers. Their backgrounds, experiences and views may not represent school districts in other regions or those managed by a younger or more diverse set of professionals. School districts located in King County, Washington are heavily represented, leaving the possibility that the data may not be relevant in other regions.

Chapter Five: RESULTS AND DISCUSSION

Examining and analyzing the data using the methods described yielded the following results. Case examples are used to illustrate the complex factors influencing school facility planning.

5-a. BACKGROUND DATA

Most interviewees provided contextual information about their districts that became useful for analysis and drawing of conclusions. Of particular importance were the level of enrollment growth faced by the district, whether the district is "built-out"/ urban, or rural, and if the district is affected by the Urban Growth Boundary and recent rule changes limiting school development to designated areas. True to the intended design of the study, a mix of urban, suburban, and rural districts are represented, experiencing a wide range of enrollment growth rates. About half of all districts reported stable to low enrollment growth, including nearly all of the districts outside of King County. Four districts report "high" or "extreme" enrollment growth, all in suburban areas of King County, while four others report growth that is either recent or not extreme. All but five districts report having to consider the Urban Growth Area in school siting and property acquisition. All districts but five also report recent acquisition or development of new school

sites. Of the five districts where site acquisition or development has not occurred, four report stable enrollments, while the fifth is financially constrained by repeated failure to pass bond levies.

5-b. PLANNING

The most widely varied interview data was in discussion of the intersection of school districts with city and county governments and planners. First, the level of coordination reported between school districts and municipalities ranges from "highly interactive" to "limited" and "adversarial." Districts characterized as stable and rural have the lowest levels of interaction: the only two districts where officials indicated little to no interaction serve rural areas containing small municipalities (Districts 12, 15). The highest levels of interaction and cooperation are reported by officials from districts serving urban/ built-out areas, and experiencing enrollment growth. (Districts 1, 2, 6). The urban characterization alone relates to a high degree of reported interaction (four out of six: Districts 1, 2, 6, 13), and is more closely related to district-municipal cooperation than relationship to the Urban Growth Boundary (two out of ten: Districts 2, 4). Surprisingly, responding to the UGB, (which is assumed to induce land constraints), while experiencing enrollment growth, (Districts 2, 3, 4, 7, 9, 15) relates to varying levels of interaction, with, again, the fastest-growing and least rural of these districts indicating higher levels of interaction (Districts 4, 7). With only three officials discussing municipal comprehensive plans (Districts 4, 6, 9), no clear patterns emerge in relation to this variable.

A recurring topic is the role of multi-year capital facilities plans and strategic plans in linking school districts to municipal governance. One of the first lessons learned from the interviews was that school district capital facilities plans (CFPs) are a required prerequisite for

the levy of impact fees on development. (Interviews: April 7, 2015, and April 13, 2015). District CFPs must be adopted by the respective Counties and Cities, and incorporated into comprehensive plans, for districts and municipalities to levy the fees. This represents a mandated and recurring framework for cooperation between districts and municipalities, and is highlighted in the next section as an opportunity for both continued cooperation and for public involvement in school district planning.

Information gathering for the purpose of projecting enrollment and mapping development patterns appear to be some of the more important catalysts for interaction. (Districts 1, 3, 4, 7, 9, 10, 11, 13). While legal mandates such as permitting and landmarks preservation may not influence siting directly, they are a significant driver of interaction between districts and municipalities and represent opportunities to ensure community and planning interests are being addressed. (Districts 1, 2, 4, 5, 6, 8, 9, 13, 14, 15).

Sub-area plans such as Master-planned developments, economic development districts, and joint planning with parks districts, were described by nearly half of interviewees as unique occurrences generating mutually beneficial and often enduring cooperation between districts, municipalities, (and developers). One district's plans for a new school were approved through an expedited permitting process when the municipality (County) perceived that the school could serve as an anchor for attracting investment in support of its plans for economic development. (Interview, April 14, 2015). The open-ended interview format elicited two other relevant case examples:

Snoqualmie Valley School District and Snoqualmie Ridge Master Planned Community

Snoqualmie Ridge is a Master Planned Community of 3000-4000 homes near the city of Snoqualmie and within the Snoqualmie Valley School District. School sites to be donated to the

district were included in the master plan, likely in lieu of some impact fees. While the donated sites were not necessarily the most desirable from a school development perspective (the planned high school site was found inadequate due to the prevalence of wetlands), the consideration of schools during the planning phase of a major development engendered significant cooperation and communication between the school district, developers, and local planners. The partnership between the district and the city that was forged during this process has endured beyond the development project. (Interview, April 16, 2015).

Bellevue School District: a new Elementary School; and the Bel-Red corridor strategy

The Bellevue School District is nationally recognized for its excellent schools, and is in the midst of a "tremendous building program" to serve a growing city. Embracing the value of excellent schools for the community, city and school district officials have worked very closely to identify sites to serve the fast-growing residential core, and are working on a facilities strategy that responds plans for transit oriented development along the Bel-Red corridor, with an eye to acquire future school sites before nearby land values escalate. Increasingly limited land availability, high property values, population growth, and the critical role of excellent school facilities in achieving community goals, have engendered a mutually beneficial relationship with a high degree of cooperation and communication between district and City (Interview, April 8, 2015).

The main lesson drawn from analysis of the data and from direct interview comments is that land constraints coupled with population and enrollment growth foster school siting flexibility and cooperation between districts and city officials: out of challenges come opportunities. "Pressure," in the words of one interviewee, "leads us to be much more practically engaged in the planning process" (Interview, April 28, 2015), and leads to "stronger alliances with

jurisdictions and planning departments to develop a mutual understanding." (Interview, April 28, 2015). Cases illustrate that creation and implementation of subarea Master Plans and Economic Development plans provide exceptional opportunities to forge mutually beneficial planning relationships between school districts and municipalities. Under current planning frameworks, opportunities for coordinated schools and community planning, and for public involvement, also surface during district Capital Facilities Planning and, to a lesser extent, city Comprehensive Plan updates. Zoning and building codes applied to school design and construction ensure a bare minimum of interaction and serve as opportunities for strengthening relationships between districts and municipalities.

5-c. PUBLIC INVOLVEMENT

Discussion of the role of public involvement in school siting and planning gave rise to three general themes: frameworks that serve as catalysts for public involvement, the importance of bond passage for school district funding, and comments supporting a general conclusion that the public does not play a large role in school siting, making this is an area of opportunity for school districts.

Very few clear patterns emerge when analyzing the data sorted from public involvement discussion. School siting is almost entirely a technical affair conducted by facilities planners and hired consultants. (Interviews: April 14, 2015, and April 28, 2015). One interviewee flatly states: "We don't have public involvement in site selection." (Interview, April 14, 2015). Public involvement in the form of community forums and design review processes is common in school planning (Districts 1, 2, 6, 8, 14), but generally plays a role after projects are designed and funded (Interviews: April 8, 2015, April 14, 2015, and April 15, 2015). Nearly half of the

districts include public stakeholder representatives on committees formed during preparation of capital facilities and strategic plans, occurring once every two to ten years. (Districts 2, 3, 9, 10, 11, 12, 14, 15). As explained, committees sometimes include officials, school staff, and representatives of parent and important community stakeholder groups.

One solitary case serves as an example of public inclusion in a school siting process. The ___ School District is currently building an elementary school on a previously undeveloped site to serve the City of ___'s downtown core, the fastest-growing part of the district. Working with the city but challenged to find suitable sites in the rapidly developing area, the district turned to a public participation process to guide the location decision. Talking to neighborhood groups active in promoting downtown quality of life issues, conducting online surveys, and holding discussions at community meetings, stakeholders were presented the opportunity to express their location preferences. Would they prefer a centrally located, walkable school with limited parking and fewer/ smaller amenities such as sports fields, or construction of a more-distant school on district-owned land across the highway, saving significant land costs and allowing for inclusion of a parking and amenities? Based on a fifty-fifty split of opinion, significant concern voiced over property costs, and a lack of suitable centrally located sites on the market, the district made the decision to develop the more distant, already owned, site (Interview, April 8, 2015). While the outcomes from stakeholder involvement are likely never clear, this case represents an important and rare example of a school district involving the public in location decision making.

Reliance on Bond Financing

Requiring a sixty percent supermajority in public voting, bond passage is the most important proxy of community support for school district decisions (Interview, April 8, 2015). Several

districts include representatives from the general public on committees formed to prepare bond packages before going to general vote, with the hope of addressing community concerns about school costs and to bolster support for district needs and plans. Six districts report good support and success in passing recent bond levies. Surprisingly, the most urban districts generally seem to enjoy the highest levels of public support in bond voting (Districts 1, 5, 6, 13). With a statewide school bond passage rate of just over 50%, (Interview with ___, April 8, 2015), it seems that the many positive impacts of school investment are not well communicated by most districts. Several case narratives highlight the complexities arising from dependence on this uncertain and unreliable financing system:

Bond levies to finance plans by District #14 to build a new high school reusing the existing site failed voter approval twice. In need of replacement and attempting another strategy, voters subsequently approved a bond proposal locating the new high school on an undeveloped greenfield site. This, however, led to condemnation of the proposal from environmental groups, costing the district legal fees, construction delays, and public perceptions of district leadership. "Where was the opposition when the first bond issues failed passage?" the official asks, highlighting a pattern stemming in part from the lack of interaction between the school district and the general public (Interview, April 15, 2015).

Bond issuance for a District #4 high school failed three times. The new school was needed not only to relieve enrollment pressure and maintain facility standards, but also to address the fact that the existing high school was located in a known floodway. The failed bond package included plans for an expanded and renovated middle school to serve as the new high school, and construction of a new middle school on a smaller, undeveloped site. Desperate for options, a fourth bond package for simply rebuilding and expanding the existing high school

passed, but perpetuates the problem of the facility being located in the floodplain (Interview, April 16, 2015).

School districts, while providing critical community infrastructure, have needs more closely matched with land and housing developers than with other public utilities (Interview, April 28, 2015). Yet, relying on voter approved bond financing for major projects limits the districts' competitiveness in the market for land, especially for sites in ideal locations served by roads and water and sewer infrastructure. Taxpayer support for schools in prime, centrally located sites, is perceived to be low because of the significantly increased expense of "adequate" sites in prime locations, perceptions of value per dollar, and an overall interest in minimizing tax burden. Municipal government support may also be limited because city tax revenue from private development is perceived to exceed the financial benefit of a centrally-located school, although several cases were mentioned in which a city or county worked with a district to encourage construction of school facilities in specific areas to attract business or development.

To summarize, while citizens, especially parents, may be involved in operation of schools, and/ or may voice facilities concerns during community planning processes, public involvement is extremely limited in school siting and planning. In all discussions of public involvement, it clearly serves both parties positively. Despite this, school siting is largely a technical affair conducted by facilities experts using enrollment growth projections, capital budget data, and assessment of land cost and availability. Voter approval of school bond proposals serves, instead, as a litmus for public support of district decisions. Reliance on this uncertain and unreliable source of financing inhibits long-term planning and consideration of a wide variety of criteria in school siting, but reinforces the need for districts to communicate and partner with voters and municipalities to ensure that shared community goals and benefits are being met.

5-d. BENEFITS AND IMPACTS

Discussion of the community benefits and impacts considered by school districts in facilities planning gave rise to several interrelated themes: demographics and proximity to students, prioritization of neighborhood schools, and community use of facilities. The most important finding is that a significant majority of districts consider community use of facilities in school planning (ten districts). Six districts prioritize "neighborhood" schools and/ or proximity to students in school planning (Districts 1, 2, 7, 8, 9, 15). For economic considerations, five mentioned property values, (Districts 2, 5, 6, 10, 11), while a sixth discussed "taxpayer benefits" (District 14). A variety of other factors were mentioned, including avoidance of environmental impacts and other "nuisances" (Districts 3, 6), walkability (Districts 2, 5, 9), and transportation costs (Districts 2, 3, 5, 7, 9).

Maintaining stable attendance boundaries is a priority for districts, especially in light of changing relationships between student enrollment, population change, and housing development (Districts 8, 14). Interestingly, several officials explained that, in projecting future student enrollment, their districts are lowering the rate of students per capita to reflect demographic shifts (Interviews: April 15, 2015, April 27, 2015, and April 28, 2015). Likewise, two interviewees observed that housing development patterns are not as strong a predictor of student enrollment as they once were, also reflecting demographic and possible economic shifts in the region. (Interviews: April 15, 2015, and April 28, 2015). While only three districts consider walkability, (Districts 2, 5, 9), two of the interviewees describe a "tension" between walkable schools and community behavior (Interviews: April 8, 2015, and April 13, 2015). While school districts implement programs to foster walkable schools and neighborhood areas, even financing off-site infrastructure improvements, interviewees observe a recent and significant increase in the

number of students being driven to school. (Interviews: April 8, 2015, and April 13, 2015). Preservation of historic landmarks is important for two districts (Districts 1, 15).

There are few clear relationships to be found in the community impacts and benefits data. All six districts explicitly prioritizing neighborhood schools are facing enrollment growth pressure, (Districts 1, 2, 7, 8, 9, 15), and it should be noted that only one of them indicates adoption of a neighborhood schools policy (District 8). Proximity to student populations and walkability are highly valued but "there are not many places you can build a school" and districts "cannot choose where to build and what to be close to" (Interview, April 8, 2015). Assessment of transportation and environmental impacts is required by state and local review.

Similar to discussion of findings around public involvement, much of the narrative around community impacts and benefits is focused on building design rather than the location of facilities. Community use, for example, often means site layouts including sports fields and playgrounds or building designs incorporating community function space and safety features incorporating after-school access. While not influencing siting and location directly, this represents an important recognition of schools as community infrastructure and, thus, provides opportunities for strengthening the relationships between schools and the communities they serve. Seattle public schools, for example, host community health programs, and are used as after-school daycare facilities (Interview, April 28, 2015). Another case from the interview narratives is:

Bethel School District: A community services hub

Bethel School District serves a rural part of Pierce County, and the City of Roy (population: 800). "Urban" infrastructure, including parks and community facilities, does not exist in the area. Thus, officials explain, the school district is "the only government the community knows" and

the schools are “community hubs”, filling the role of urban infrastructure and service provider by performing an exceptional combination of roles. The district provides not only access to sports fields, recreation facilities, and evening use of school buildings, but also:

- Helps fund and organize county, state, and local organizations to support community & youth programs
- owns properties being operated by outside groups as youth resource homes and shelters for homeless children
- funds the “Bethel Outreach Bus”, which delivers health, dental, and nutrition programs to the district’s poor. (more than 50% of the district’s students qualify for reduced lunch).

(Interview, April 14, 2015).

To summarize the findings from interviews, school district leaders clearly recognize the importance of schools as community facilities and infrastructure. Some go above and beyond public access to playfields and assembly rooms to provide vital services for their communities. This is a cause for optimism and opportunity, though reflection on the broader issues from the literature review leads to the question: *where is the balance point between acreage needs and location criteria?* Community desires for athletic fields, assembly halls, and other services may facilitate site and building designs requiring greater amounts of land, and may inadvertently add to the challenge of siting schools by a wider variety of location criteria.

5-e. POLICIES AND GUIDELINES

Discussion of the role of policies and guidelines in school planning focused on Washington State guidelines, involvement in the CEFPI, adherence to site acreage guidelines, and consideration of

EPA recommendations. A general assessment of a district's reliance on guidelines was usually provided, ranging from "none" to "extensive." Seven officials are active CEFPI members, and six explicitly state adherence to acreage formulas. Ten districts use the Washington Sustainable Schools Protocol for facilities planning, but five interviewees confirmed that it is primarily a facilities design tool and does not significantly drive school location. Three interviewees mention EPA pollution and toxin guidelines (Districts 2, 9, 12). . No clear patterns are discernable regarding CEFPI membership or comments indicating the role of district leadership in incorporating sustainability or other planning considerations Only one district has an explicit "neighborhood schools" policy (District 8).

Ultimately, prescribed guidance influences facility design to a far greater degree than school location, with only two policies specific to location mentioned in conversation (Districts 8, 15). Four districts rely on consultants to adhere to policies and standard practices in facility planning and design, (Districts 3, 4, 10, 11), while a fifth interviewee simply did not know (District 6).

The two districts with the greatest degree of indicated policy adoption and use of guidelines (Districts 1, 2), are both characterized as urban/ built-out and experiencing enrollment growth. Further, of the four districts with stated policy adoption (Districts 1, 2, 8, 15), three are characterized as urban (Districts 1, 2, 8). Notably, interviewees from districts serving the three of the four largest cities in the study area did not mention acreage guidelines among their decision criteria. The fourth official explicitly stated "acreage recommendations are unworkable" (Interview, April 28, 2015).

In general, it appears that use of policies and guidelines for school siting in the Puget Sound region is very limited. It is instead fully embedded in the design process, especially for

projects required to meet the building standards tied to state funding. However, while site acreage guidelines are no longer prescribed by influential organizations such as the CEFPI and are implicated in problematic school siting decisions, they continue to hold sway in the minds of many officials. Analysis of the interview data reveals that, just as enrollment growth and land availability/ cost pressure induces school districts to engage municipalities and the public in planning processes, it also induces flexibility regarding abidance to site acreage and design guidelines. Districts facing combinations of enrollment growth, land constraints, and cost constraints are much more likely to focus on other priorities in the site selection process and employ greater flexibility and creativity in facility design. Discussion with an official from Seattle Public Schools provided an excellent example:

Seattle: Truly exceptional

As the school district serving the region's oldest and largest city, I knew, long before an interview with an official took place, that Seattle Public Schools would yield a different set of information, and that this project could not possibly be considered complete without it. Facing severe land and cost constraints while enjoying consistent public support, the district is currently facing consistent enrollment growth for the first time since going from 100,000 to 40,000 students between the early 1960s and mid-1970s. The district is very close to projected capacity even after current projects are completed under the current long-range facilities plan. This combination is leading to an exceptional degree of flexibility and creativity in siting and design ideas, and to an extremely close and productive working relationship between the district and the City. A few examples illustrate Seattle Public Schools' exceptionalism:

Landmarks: following a history of closing, selling, and destroying "old and decrepit" school buildings in response to the sharp decline in enrollment, some of architectural or

neighborhood significance, the district has adopted the practice of self-nominating its oldest buildings for landmark status. This allows the district to retain control of the landmarks process and narrative, helping to maintain neighborhood support for district needs and projects.

Site & Design flexibility: Among other proposals, the district is considering plans to build a new High School around, next to, or even *under* Memorial Stadium, located in Seattle Center. There is a covenant on the site restricting use to education-related purposes, and the district has been thus far unsuccessful in bids to purchase other properties in the area. The district also entertained a developer proposal for creating a public-private partnership to construct a school in a mixed-use development near a planned light-rail station. The acreage guidelines driving the siting process in so many other districts are clearly irrelevant in the city of Seattle.

Yet, the district has adopted more in the way of official policies and guidelines than any other in the region. In addition meeting the City's "robust" building code and the WSSP standards, and addressing the Landmarks status of many of its buildings, the district has adopted a "green resolution" including policies linking schools to neighborhood planning and sustainable design.[73] (Interview, April 28, 2015).

Ultimately, very few districts have adopted policies regarding school siting, and established guidelines play a far greater role in facilities design than in school location. Interview data reveals that, while site acreage guidelines commonly drive the site selection process, constraints in the form of enrollment growth, limited availability of land, and rising costs, lead to greater flexibility and creativity in school siting, and possibly facilitate consideration of a wider range of goals and priorities.

[73] Seattle Public Schools. Seattle School District #1 Board Resolution No. 2012/13-12. http://www.seattleschools.org/modules/groups/homepagefiles/cms/1583136/File/Departmental%20Content/school%20board/12-13%20agendas/050113agenda/20130501 _GreenResolution.pdf

5-f. HISTORY

The open-ended narrative data gathered via the semi-structured interview format elicited comments highlighting the importance of historical context for understanding school facilities trends and issues. The school districts predate many of the municipalities in this relatively young state, annexations continue, and coordinated planning between districts and local governments appears to be more difficult in districts serving greater numbers of municipalities. Several districts experienced peaks in enrollment growth decades ago, placing current and recent growth in the context of decades of stagnation following significant crashes in student enrollment. These districts were left in possession of a surplus of facilities and properties, (Districts 1, 10, 11, 13, 14), a juxtaposition to nearby districts where growth has been much more recent and constant.

The stability and facilities surplus experienced in these older, established areas allowed communities, planners, and policymakers to disregard school planning for decades. Meanwhile, aging facilities have been destroyed or replaced, surplus properties sold or given over to other uses, and growth has returned to many of these communities. The confluence of growth and increasing constraints and demands is forcing districts to compete with private developers in the land market and planning game, and state agencies, counties, and municipalities are, in many cases, implicated in overlooking the agencies responsible for delivering one of their most important infrastructure services in the process of developing land use laws and policy frameworks. (Interviews: April 7, 2015, April 14, 2015, and April 28, 2015). Having left the school districts out of the discussions creating the current state and regional land use planning regime, the burden may be on planners and local governments in growing communities to

recognize the limited resources and expertise within the governance of schools, discuss the shared goals of the district and their communities, and work cooperatively to sustainably meet the facilities needs of the community while ensuring judicious use of taxpayer dollars. As already stated, it must be recognized that taxpayers in most communities will not support dramatic increases in school costs arising in part from land use constraints, leaving districts vulnerable to failed bond passage and the reactive facilities planning that ensues.

5-h. GROWTH MANAGEMENT ACT AND THE URBAN GROWTH BOUNDARY

While not the focus of this paper, it can be observed that the Growth Management Act is having some intended effect in relation to school facilities. One aspect unique to this study involved discussion with school officials about the impact of the urban growth boundary, a byproduct of land use planning under the Growth Management Act limiting development to specified areas. Schools are unique among community infrastructures in that the districts that govern and plan for them require relatively large amounts of land for buildings. According to (Interview, April 27, 2015), "the Urban Growth Boundary has really changed the dynamics of school siting." Limiting districts to land within the growth boundary has clearly impacted siting of facilities in a manner favorable to regional growth management goals, but has forced district planners into a tight corner between increasing land costs, limited availability, broad community expectations for school facilities, and voter bond approval. One case example illustrates the complexity faced by a school district when the laws were applied without consideration of existing school facilities:

The South Kitsap School District owns and operates an elementary school on a 10-acre site outside of the urban growth boundary. Sewer infrastructure, managed by a public utility, runs past the property, linking a nearby area annexed by the City to the utility. Yet, the district

cannot connect the school with the infrastructure because of UGA rules. With only 6 usable acres on the site, there is no property available for an upgraded on-site septic system that would meet current specifications. The district is caught in a bind between agencies and regulations, affecting management of a property that was already there and in operation before the rules were adopted. (Interview, April 27, 2015).

Another case example illustrates how enrollment growth, GMA-induced land constraints, and reliance on bond financing combine to put unprecedented pressure on school districts:

District #7 experienced enrollment growth through the recent recession. Recent King County rule revisions prohibit the district from purchasing land outside the urban growth area, and "condemn" the district from developing a site purchased previously for $3.3 million. Responding to enrollment growth and the County development restriction, the district eyed a 10-acre parcel within the growth boundary with an estimated market value of $17.5 million, and a 40-acre parcel recently sold for $44.5 million to a developer for construction of 250+ homes.

While the district's excellent schools attract development and increase property values, land for facilities is very scarce and becoming increasingly expensive. According to (Interview, April 9, 2015), some of the largest homebuilders in the world are developing the area and purchasing properties. The district is consequently "always behind the curve", in part because of the reliance on bond passage to finance their projects. With a statewide passage rate of only 50% for school projects, school financing is not an easy sell. Districts must balance current and future needs with financing packages that will achieve voter support. This often means "ask for what you think will pass" - too little to allow for advance planning and land acquisition, or waiting until the need is so great that strategic plans address inadequacy more than advance planning.

And, while service and infrastructure concurrency is a requirement for permitting growth in comprehensive planning for municipalities, this concurrency was not extended to school facilities. Cities, benefiting from new growth via impact fees and additional tax revenue, were not interested in school concurrency because this would limit the cities' ability to issue permits in accordance with plans for growth. According to (Interview, April 6, 2015), schools were never part of the planning groups who crafted the Growth Management Act and related legislation, and while districts lobbied for concurrency, their concerns have not been addressed and they are now faced with a situation of "just trying to keep up, and that's really hard". As heard in other UGA-affected districts, land constraints, availability, and market forces put the district in a defensive and reactionary position within communities that are facing growth pressure.

District #7 passes bonds on a 6-8 year cycle. Passage of the last bond did not include financing for land acquisition. Yet, since that time the City of ___, required to plan for projected population growth in accordance with the GMA, has planned for development of 8500 residential units by altering densities and growth patterns in the city. This can mean as many as 2,800 new students in the district, requiring 2-4 new schools in capacity. Unfortunately, the school district is in the middle of a bond cycle and lacks resources to buy land in anticipation of this impending need. (Interview, April 9, 2015).

School facility design and flexibility is not the main focus of this paper, but this nevertheless arises as a key issue in school siting and planning. Faced with land and financial constraints, what services and design aspects does a community find essential in its schools? As learned from *Districts #1 and #6* especially, flexibility of building and program design, and significant proactive interaction with citizens and other government agencies, presents districts with facilities options that continue to meet the needs of the community. Given that most school

officials lack expertise in land use planning, (in part because planning and siting new facilities occurs so infrequently), all parties would benefit from the jurisdictions and planners reaching out to the districts early and often in the process.

However, complicating the situation, policies concentrating growth in urban areas are having unintended consequences: urban and centrally-located schools are packed and districts cannot afford additional property in these areas, so school facilities investments are occurring in outlying areas. Instead of facilitating development of centrally-located facilities, school attendance boundaries are being shifted, effectively substituting student travel for strategic siting. In the absence of coordinated and concurrent school and community planning, provision of school infrastructure may not be supporting concentrated, efficient development, and a host of other community goals. This calls to mind the many complex equity issues discussed in the literature section of this paper: the older urban parts of school districts may continue to have older, crowded schools, while outlying and suburban areas, where permitted, are served by newer and more spacious facilities. Further reflecting literature trends, inequality between school districts in terms of community perceptions and support and the relationship to socioeconomic status can be observed in the data.

5-I. RESULTS AND THE LITERATURE

Review of the school siting literature provided some answers to the question: what are the implications of school location? How does it matter? Transportation choices, property values, community development, student health, and learning outcomes are all impacted by school siting decisions. Interviews with school officials reveal that, to varying degrees, these important factors

are considered during school district planning. School officials are very aware of the important roles their institutions play in their communities, but are often constrained by other factors from prioritizing them in the siting process. More importantly, the findings from the interview data connect with previous studies by shedding light on the mechanisms driving the phenomena other authors describe without a lot of supporting data: siloed decision-making, so-called "school sprawl", and spatial economic and racial inequality.

This study addressed the siloed relationship between school districts and planners directly in the questioning, with the unsurprising finding that regulatory frameworks will effectively ensure a minimum of interaction. Preceding authors, looking for opportunities for effective engagement, may find in Washington's ordinances requiring municipal approval and adoption of school district Capital Facilities Plans, zoning and building code permitting, and (new) rules limiting school construction to designated growth areas, evidence that required interaction, to varying and limited degrees, works. For opportunities not induced by legal requirements, case narratives highlight the high potential for sub-area plans such as Master-planned developments and Economic Development districts, to forge mutually beneficial and cooperative relationships between school districts and municipal governments. The finding that limited availability of land leads to a greater degree of coordination could give researchers and practitioners a clue toward finding and promoting other models and examples: it seems we should look to cities for guidance on best practices. Ultimately, the data plainly indicates that early and continuous cooperative planning for schools benefits all stakeholders and ensures that community needs are considered.

While the hard data from research confirming or explaining these relationships is scarce, schools are implicated in promoting unwanted urban sprawl and increasing economic and racial geographic inequality. As with the siloed relationship resulting from autonomy in governance,

this study sheds some light on the mechanisms causing this. In all but the most -supported school districts, the reliance on local voter-approved bond financing ultimately causes considerations that are not required by law to give way to simple land market economics. Often strapped for cash and/ or reluctant or unsuccessful to "sell" the higher cost of land in prime sites to their voters via bond packages, land availability and cost become the main drivers of school siting decisions. Combined with adherence to acreage guidelines and desires to include an array of facilities at school sites, the result is commonly school districts' buying and developing cheaper land in distant or unhealthy locations. In states where schools are primarily locally funded, it should surprise no one when the conditions and policies that create urban sprawl and/ or economic and racial inequality also create a school systems that reinforce those trends.

Planners and communities can be optimistic regarding the role of acreage guidelines, the focus of the most similar study. Thought leaders in the field, such as the CEFPI, have ceased to prescribe them, and this study finds that, as communities respond to growth and/ or land constraints, school districts become more flexible. While previous studies compare school trends by differentiating urban from suburban, rich from poor, and mostly white to mostly non-white, one can now also include flexible and creative from not.

Finally, and perhaps most importantly, by illuminating the combination of financial constraints resulting from reliance on uncertain bond financing, and the infrequency with which school districts build new facilities or purchase property, this study reframes the conversation about siloed relationships by concluding that planners and policy makers are better suited to take responsibility for correcting this deficiency than the school districts. "Neighborhood schools", it seems, simply cannot happen without comprehensive city and neighborhood planning, regardless of school district policy and desire.

Chapter 6: CONCLUSION

6a. CORE QUESTIONS

This thesis was designed to answer two questions that address a poorly understood and relatively unexamined issue of significance to communities and planners: *How are public school siting decisions made*? And, *How do school siting decisions include or overlap with community planning goals or policies?* To answer these questions, I collected primary data through semi-structured interviews with officials from fifteen public school districts in the Puget Sound region of Washington State. Asking four questions based on topic areas of central concern to planners, this resulted in open-ended narratives that shed light on the factors and considerations driving school siting decisions, and the frameworks and opportunities for interaction of school districts with planners.

Analysis of the data leads to the conclusion that the main drivers of school location decisions are land availability and cost, adherence to acreage guidelines, and the related desire for public schools to incorporate community facilities into site design. Of these, it seems the most important factors are availability and cost of land. Districts planning schools in urban, built-out areas with limited availability of land and high property costs demonstrate flexibility in building and site designs that meet their communities' needs and permit other priorities to take precedence over site acreage guidelines.

While land availability and cost are the main drivers of school siting, officials also consider a wide range of other important factors. "Neighborhood schools" and schools that are located in proximity to student populations are desirable, in part to facilitate students' walking

and bicycling to school. While school districts are required to assess environmental and transportation impacts of proposed projects, transportation costs and proximity to environmental and health hazards, not required, are considered by some facilities planners. Adoption of explicit policies and use of guidelines to determine school location is extremely rare. Several cases highlight the role that city master plans for development play in school districts' site planning, which leads to the second core question examining the intersection of city and regional planning with school district decisions.

The siloed relationship between municipal planners and school districts described in the literature exists in the Puget Sound region but is by no means universal. School district capital facilities plans must be approved by County and City governments for collection of impact fees, and school districts must follow standard permitting processes under zoning and building codes. Recent changes to Growth Management rules also require school districts to abide by Growth Area ordinances. What is observed in the interview data is that, while these frameworks facilitate a bare minimum of interaction and cooperation between city/ county governments and school districts, pressure in the form of enrollment growth, limited availability of land, and high land costs lead to greater engagement and recognition of mutual benefit between districts and municipalities. School districts serving built-out urban areas work much more closely with municipalities than those serving suburban and rural areas, especially if facing enrollment growth pressure. Interview data also reveals that Master-planned developments, Economic Development plans, and transportation corridor plans represent substantial opportunities for districts and municipalities to forge constructive and enduring partnerships for mutual benefit.

While not specific to the question of school siting, school officials revealed that other factors significantly influencing school planning are demographic trends and reliance on bond

financing. Maintaining stable attendance boundaries, which is important to students and their families, is increasingly difficult in the context of changing demographic patterns. Meanwhile, school funding has an enormous influence on school planning. While State assistance in capital facilities is, for most districts, limited to the point of insignificance, reliance on infrequent and highly uncertain bond levy passage inhibits advance planning and consideration of broad criteria in school siting. It must be recognized that taxpayers in most communities will not support dramatic increases in school costs. State mandates requiring smaller class sizes, increasing design or construction costs, and limiting land available for development, squeeze school districts planning and constructing facilities in the face of enrollment growth.

Lewis Hopkins, in *Urban Development: the Logic of Making Plans*, explains that communities and institutions invest in long-range plans to help make decisions that "incorporate interdependent elements, are indivisible, are irreversible once acted on, and involve imperfect foresight."[74] Schools are expensive to build, operate, and maintain; are long-lasting public infrastructures; and have significant implications for the communities they serve. How we plan, fund, and locate them are exactly the kinds of decision processes that planning and the tools of its practitioners are suited to address. Of utmost importance is the need to include a full spectrum of community stakeholders, earlier and throughout the process, in deciding what criteria to prioritize in building and locating schools. School planning is simply too important to be left out of the public eye, overlooked by planners, or left purely to accident of market forces. It should instead occur with full transparency and community participation, and be considered within the full spectrum of community goals and interests. This is not to lay blame on elected and appointed

[74] Hopkins, L. D. (2001). *Urban development: The logic of making plans*. Washington, DC: Island Press.

officials who govern our schools but a call to action to more seriously consider the issue and work toward mutual understanding and benefits.

6b. IMPLICATIONS FOR PLANNING RESEARCH AND PRACTICE

The conclusion I draw from this study is that, as promoters of the community interest, it is critical that planners recognize the importance of school location and its role in promoting – or hindering - a host of planning and development goals. Recognizing the infrequency with which most public school districts purchase land or construct new school buildings, and their subsequent lack of expertise with location considerations, city and county planners are well positioned to address these issues by recognizing mutual benefits and communicating with school districts during planning processes. Given the value placed on stakeholder input in planning literature and education, it is astonishing to learn that Washington State's school districts – responsible for governance of some of the region's most costly and important public infrastructure assets – were not included in the conversations that created the legal frameworks requiring planning for economic and residential growth that is concurrent with other infrastructure systems. The "schools were not affirmatively reached out to during the creation of the codes and legislation," (Interview, April 6, 2015), yet, changing standards and regulations add extra costs and pressures on public school districts. Quite simply, it is difficult for school districts to compete in the market for property and they are often outbid for prime sites. Areas that are zoned and planned for growth and provisioned with infrastructure are very attractive to developers, which forces schools to less desirable sites, where they are less likely to support community and planning goals.

Pressure on school districts in the form of enrollment growth and land constraints, likewise, leads to greater cooperation with municipalities and planners. Discussion with officials from built-out urban districts introduces the likelihood that the school site acreage guidelines implicated in exacerbating sprawl and inequities, while currently accepted as inviolable law, will surely become less relevant as these trends continue. As discussed in the literature review, school acreage guidelines are clearly at odds with promotion of compact development patterns and many other community goals. By inducing land constraints, it is possible that land use regulations limiting development to certain areas may ultimately forge stronger links that will improve decision making for everyone.

6c. SUGGESTIONS FOR PRACTITIONERS

Two underlying problems limiting consideration of community goals in school planning and siting have been identified in this thesis. One rests with school districts' reliance on local bond financing. The other is the lack of coordination and interaction between districts, municipalities, and public stakeholders.

Without a complete overhaul in state and local approaches to school funding or governance, the key to improving the situation is incorporating schools more fully in land use planning. It can be argued that it is in the community's best interest to identify or set aside land for schools, promote maintenance and renovation of older neighborhood schools, and involve districts in comprehensive and sub-area plan processes and formation of regulations, policies, and codes. The most important outcome is to ensure these important conversations happen and

involve stakeholders early and often. A few suggestions come to mind for helping make this happen.

Based on the responses by officials from school districts in the Puget Sound region, state-level regulations requiring communication and local approval of facilities plans represent a significant start. However, with ever-evolving environmental and safety rules, classroom size restrictions, and many other mandates, it must be recognized that regulatory frameworks generally increase the demands placed on school districts, raising their costs and further complicating the problems. Thus, further regulation should explore requiring cities and counties to cross the communication divide and strive to fairly distribute the cost burden. Certainly, it appears that establishing requirements for coordination during formation of sub-area plans such as Master-planned developments could be a good starting point for experimentation, if permissible and possible.

Policy language in regional and local plans can also be changed to ensure schools are not left as an afterthought. A review of plans in the Puget Sound region demonstrates that schools may not be explicitly mentioned at all, and where they are, the language, again, is directed at shaping district decisions and not toward developing the partnerships and stakeholder processes the problem truly demands. Policy language that specifically and clearly makes municipalities and their elected and appointed officials responsible for bridging the divide, especially during comprehensive plan, public engagement, and zoning and development processes, will benefit communities in the long term more than drafting rules increasing the burden on school districts.

In Washington and other states with similar growth management frameworks, a very specific intervention would be to require school concurrency in municipal comprehensive

planning and development. Current law requires provision of critical infrastructure such as sewer, water, and roads concurrent with zoning and permitting for development. Like schools, these infrastructures are often managed by special district governments. Yet, school districts are forced into the land market *and* reliant on voter-approved financing, a difficult situation in a growing region with rising property values. Requiring school concurrency would likely put school siting on center stage in planning for development and addressing the districts' delicate situation. Surely, this would facilitate a more thorough stakeholder involvement process.

Cities and regions where required planning and/ or infrastructure concurrency is not required may have to be more creative and rely more heavily on leadership to take on the problem. The conversations I had with school officials revealed that opportunities can be found especially in communities that are urban and built-out or facing other land constraints, communities experiencing enrollment growth, and during formation of sub-area plans for residential or economic development. The important first task, again, is for both school districts and municipalities to recognize the challenges and long-term mutual best interest, and involve stakeholders early and often in the process.

6-d. FUTURE RESEARCH:

While this thesis addresses an important gap in planning study and practice, further research examining the implications of school siting is needed, especially for clarifying schools' roles in promoting sprawl and racial and economic inequality. A few possibilities for advancing our understanding of the topic include:

- An examination of the planners' perspective, especially in relation to input from participating school districts, would help complete a picture of the "siloed" relationships and clarify opportunities for cooperation.
- An analysis of schools through a land use and development lens would lend a contribute enormously to the schools literature. Using GIS, web and phone queries, and bond and capital facilities data to tell an accurate and quantifiable story of school facilities siting and allow for more thorough and objective analysis of schools' role in sprawl, socio-economic disparities, and other important points of interest and debate.
- Individuals interested in infrastructure and service provision would undoubtedly be alarmed by the lack of comprehensive facilities data available for research purposes. While districts independently may very well possess complete and accurate facilities information, facilities planning at the regional or state scale must necessarily be hampered by an absence of this information.
- Applying the same methodology as described in this thesis may result in "better" data and stronger conclusions through expanding the scope of data collection beyond a planning-defined geographic area.
- Exploring case studies for successful models of cooperation between districts and local governments could draw lessons highlighting solutions instead of problems, identify methods and opportunities for successful interaction.

6-b. CRITICAL REFLECTION:

This thesis addresses an important but overlooked subject in planning literature and practice and accomplishes the objectives spelled out in the introduction by providing some answers to core questions, and by:

- following an explicit and replicable design
- basing methodology and data collection on literature research findings
- analyzing primary data thoroughly and drawing relevant conclusions
- illustrating main lessons through specific cases

However, as with any project of significant scope, a critical reflection of the design, methods, and execution of this thesis reveals several lessons:

A more thorough school construction and land acquisition query should have occurred earlier in the data collection process. While expensive to collect, accurate facilities construction information would have ensured targeting of the intended subjects for interview data collection. A consistent interview methodology avoiding the distinction between developer/ not developer school districts could have been applied, and resulting data might have been more relevant and valuable, covering districts truly and concretely grappling with land and siting issues.

A stronger understanding of qualitative research and the collection and use of qualitative data prior to the final steps of the project would likely have led to a more efficient, targeted, and organized use of interview data and may have positively influenced the quality and thoroughness of note-taking during data collection. Practice in interview notation, likewise, would have been helpful in ensuring a higher quality thesis project.

While significant from a planning lens, defining the scope of data collection to Puget Sound counties seems, upon examining collected data, largely irrelevant. While most subject school districts do work with the counties, nearly all subjects described a stronger role by municipalities and the state in guiding school siting and planning. School siting issues clearly transcend regional planning goals and policies.

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APPENDIX: INTERVIEW DATA TABLES

Table 1: School District Background Data

Schools Background Data					
District #	**County**	**Enrollment Growth**	**New sites/ properties?**	**Urban/ Built out?**	**UGA?**
1	King	Yes, but recent	No*	Urban/ built out	No
2	King	Extreme	Yes*	built out	Yes
3	King	Yes	No*	rural	Yes
4	King	High	Yes*	No	Yes
5	King	stable to slightly increasing	No*	built-out	No
6	King	yes	Yes	built-out, urban	No
7	King	High	Yes	mixed	Yes
8	King	stable	No*	mixed	Yes
9	King & Pierce	High	Yes*	mixed	Yes
10	Kitsap	Stable	Yes*	No	Yes
11	Kitsap	Stable	No*	No	Yes
12	Pierce	stable to low	Yes	rural	Yes
13	Pierce	stable	Yes	Urban/ built out	No
14	Snohomish	Low?	Yes*	built out	No
15	Snohomish	yes	Yes	rural	Yes

Table 2: School Districts and Interaction with Planners Data

School Districts and Planning Data				
District #	Interaction/ Coordination	Involved in City Comprehensive Plan?	Development/ Master plans?	Issues
1	High		lots of flexibility	Landmarks
2	High			
3	Capital Facilities Plan			
4	High: capital facilities plan, enrollment projections	Y	___ Master Planned Dev.	
5	as required (SEPA), permitting			
6	Highly interactive: planning and siting for growth and dev. patterns,	Y	TOD corridor, downtown school	
7	growth & enrollment, mutual information, permitting and design		site identification	prop values, competition
8	permitting/ development		city plans = impetus for conversation	
9	annual capital facilities plan, enrollment projections	Y		availability, cost of land, state mandates
10	Yes, cities more than county			
11	Yes, "			
12	Limited, adversarial			
13			Joint planning w/ Parks & City	Landmarks
14	permitting & design		___ & City econ. Development	unstable funding
15	little cooperation,		County Econ Development	

Table 3: Public Involvement in School District Decision Making Data

Schools and Public Involvement Data						
District #	Catalyst:	bond passage?	Bond	Capital Facilities/ Strategic Plan	Design Review	other
1	as required via SEPA and local processes (not siting)	good support			X	scoping and design of facilities
2	Site planning: NO; facilities planning & strategies, YES	no		X		
3	5-yr. strategic plan update; annual community forums			X		annual community forums
4	extensive process @ bond issuance	1 out of 4	X			
5	bond passage, design & site layout	Y	X		X	
6	focus groups & meetings, strategy and planning	72% pass rate		X	X	design teams. SURVEYS!
7	bond committee	6-8 yr cycle	X			
8	design & neighborhood impacts				X	school, or housing development?
9	Facilities master plan (10 years)			X		
10	levy	more supported	X	X		
11	Bond committee	3x NO	X			
12	Not in site selection, but in strategic planning			X		
13	as required by state; design & permitting focus	Yes			X	facilitated by consultants
14	bond financing, design committee after plan		X		X	enviro & other concerns voiced too late
15	facilities master plan committee:			X		"as needed and too late"

Table 4: School District Consideration of Community Benefits and Impacts in Decision Making Data

Schools and Public Involvement Data						
District #	Catalyst:	bond passage?	Bond	Capital Facilities/ Strategic Plan	Design Review	other
1	as required via SEPA and local processes (not siting)	good support			X	scoping and design of facilities
2	Site planning: NO; facilities planning & strategies, YES	no		X		
3	5-yr. strategic plan update; annual community forums			X		annual community forums
4	extensive process @ bond issuance	1 out of 4	X			
5	bond passage, design & site layout	Y	X		X	
6	focus groups & meetings, strategy and planning	72% pass rate		X	X	design teams. SURVEYS!
7	bond committee	6-8 yr cycle	X			
8	design & neighborhood impacts				X	school, or housing development?
9	Facilities master plan (10 years)			X		
10	levy	more supported	X	X		
11	Bond committee	3x NO	X			
12	Not in site selection, but in strategic planning			X		
13	as required by state; design & permitting focus	Yes			X	facilitated by consultants
14	bond financing, design committee after plan		X		X	enviro & other concerns voiced too late
15	facilities master plan committee:			X		"as needed and too late"

Table 5: The Role of Policies and Guidelines in School Planning Data

Policies and Guidelines Data						
District #	General	WSSP	CEFPI	leadership	acreage	EPA	other
1	EXTENSIVE: Landmarks, Green policy	yes		"passionate about sustainability"			Robust city code
2	EXTENSIVE:, SEPTED crime & safety, Tools for schools indoor air quality	prioritize	info		Y, but unworkable	noise & air pollution	active transport
3	Rely on consultants			education first, costs second, green third			fire & safety codes
4	No, rely on consultants						code compliance
5	WSSP & leadership	Y		strong			county recycling
6	Doesn't know				Y		
7	WSSP "fully incorporated"	design	Y		Y		energy efficiency
8	neighborhood schools policy, walkability	Y	Y				consultants
9	ad hoc committee; as required	design		committed: history of choices prioritizing impacts over costs	Y	hazards & toxins	ad hoc committee
10	No - rely on architects & consultants						infrastructure
11	No - rely on architects & consultants						
12	sustainability embedded in leadership	design	Yes	sustainability		energy efficiency	
13	design guidelines; buildings = "3rd teacher"	Yes	Yes				safety
14	leadership, not policy: CEFPI advise	design	yes	"education first, green second"	Y		
15	advance land acquisition policy , but flexible	Y	yes	"we don't build fancy"	Y - but "flexible"		