

An aerial photograph of a wooded area. A road runs horizontally across the middle of the image. To the right of the road, there are some buildings and a parking lot. The majority of the image is covered in dense green trees.

School Siting & Design Study

**Georgia Tech
School of City & Regional Planning
School Siting Studio**

December 2014

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Sponsored by The Georgia Conservancy

I. Table of Contents

1	Executive Summary	1
1.1	Background and Methods	1
1.2	Summary of Recommendations	2
1.3	Study Limitations	4
2	Background on School Siting in Georgia	6
2.1	The Importance of School Siting and Design to Planning and Sustainable Communities	6
2.1.1	History	6
2.1.2	Areas of Impact	7
2.1.3	Looking Ahead	9
2.2	Past Research on Georgia School Siting	9
2.2.1	Descriptive and Targeted Research	9
2.3	Georgia Education System Structure and its Governmental Relationships	14
2.3.1	Overview of the Georgia Education System	14
2.3.2	Public School Districts within the Georgia Education System	14
2.3.3	Public Charter Schools within the Georgia Education System	14
2.3.4	State Schools within the Georgia Education System	15
2.3.5	History of the Georgia Education System as an Independent Entity	15
2.3.6	Constitutionality of the Georgia Education System	16
2.3.7	Structure of Georgia Education System	16
2.3.8	Georgia Education System and its Intergovernmental Relationships	18
2.4	General Processes of School Governance	18
2.4.1	State of Georgia	19
2.4.2	Local School Boards	21
2.4.3	Local Educational Agency	22
2.5	School Financing	23
2.5.1	Origin of Georgia State Funding	23
2.5.2	Salary and Administrative Funding	24
2.5.3	Capital Outlay Funding	25
2.5.4	School Financing and Siting Decision Implications	26
2.5.5	Conclusion	28
2.6	The School Siting Process in Georgia and its Variants	28
2.6.1	Confidential Nature of School Board Meetings	28
2.6.2	General Georgia Board of Education Guidelines	28
2.6.3	Specific Georgia Board of Education Guidelines	29
2.6.4	Approval	31
2.6.5	Local Control and Zoning	32

3	Studio Methodology	33
3.1	Break-Down of School Siting	33
3.2	Method of Research	34
3.2.1	Selection of State, Districts, and Schools	34
4	Research Questions	37
4.1	Accessibility Needs in School Siting Decisions	37
4.2	The Impact of Physical Site Attributes on School Siting Decisions	38
4.3	School Siting Processes	39
4.4	Summary	42
5	Modes of Access	43
5.1	Active Transportation Modes	43
5.1.1	Introduction	43
5.1.2	Background.....	43
5.1.3	Seven Examined Issues that Affect Mode Choice.....	46
5.1.4	Commute Distance: School Attendance Zone	47
5.1.5	Commute Distance: Site Access.....	49
5.1.6	Commute Quality: Bicycle Storage	52
5.1.7	Commute Quality: Sidewalks	54
5.1.8	Commute Quality: Street Width	58
5.1.9	Commute Quality: Traffic	62
5.1.10	Commute Motivation: Programmatic Activities	67
5.1.11	Recommendations	70
5.2	Dynamic Transportation Systems	73
5.2.1	Schools and Traffic.....	73
5.2.2	Transit and Schools	77
5.2.3	Carpooling to school.....	85
5.2.4	Alternative Busing Patterns for Choice School and Afterschool Students	87
5.2.5	Conclusions	89
6	Siting and Location	90
6.1	Smaller Sites + Improved Facility and Campus Design	90
6.1.1	Background.....	90
6.1.2	Current Conditions in Georgia	94
6.1.3	Assessment of Current Conditions	99
6.1.4	Alternative Options and Best Practices	102
6.1.5	Recommendations	108
6.2	Site Location	112
6.2.1	Problem Statement.....	112
6.2.2	Background.....	112
6.2.3	Current Conditions in Georgia	116

6.2.4	Notable Conditions Outside of Georgia	121
6.2.5	School Site Selection Criteria Outside of Georgia	123
6.2.6	Gaps in Georgia’s School Siting Criteria	129
6.2.7	Recommendations	129
6.3	School-Community Relationships, Shared Use, and Co-Location	133
6.3.1	Problem Statement and Background	133
6.3.2	Current Conditions	137
6.3.3	Alternative Options and Best Practices	142
6.3.4	Assessment of Current Conditions	151
6.3.5	Recommendations	152
7	Siting Processes	158
7.1	Public Involvement	158
7.1.1	Problem Statement and Background	158
7.1.2	Current Conditions	162
7.1.3	Best Practices	166
7.1.4	Assessment of Current Conditions	173
7.1.5	Recommendations	175
7.2	Intergovernmental Coordination	179
7.2.1	Problem Statement	179
7.2.2	Current Conditions in Georgia	180
7.2.3	Assessment of Current Conditions	181
7.2.4	Alternative Options and Best Practices	182
7.2.5	Recommendations	184
7.3	Analyses for School Siting	188
7.3.1	Background and Problem Statement	188
7.3.2	Current System for Site Approval	190
7.3.3	Alternative Options & Best Practices	197
7.3.4	Assessment of Current Conditions	207
7.3.5	Recommendations	209
8	Conclusion	213
9	Bibliography	216

II. List of Tables

Table 2.3.1-1: Schools within the Georgia Education System, 2013	14
Table 5.1.2-1: Pedestrian and bicycle infrastructure average cost.....	45
Table 5.1.4-1: School mode choice percentage, as derived from Safe Routes to School Surveys, for select case study schools.....	49
Table 5.1.5-1: Number of directions of access to case study schools.....	50
Table 5.1.6-1: Availability of bike storage at case study schools.....	53
Table 5.1.7-1: Presence of sidewalks adjacent to and near case study schools	55
Table 5.1.8-1: Width of roads adjacent to case study schools	59
Table 5.1.9-1: Traffic congestion on roads adjacent to case study schools	63
Table 5.1.9-2: Infrastructure measures on roads adjacent to case study schools to mitigate traffic volume and speed or road width.....	66
Table 5.1.10-1: Safe Routes to School participation by case study schools.....	68
Table 5.2.2-1: Travel modes to school in Atlanta.....	78
Table 5.2.2-2: Types of coordination agreements	83
Table 6.1.1-1: Council of Educational Facility Planners International recommended school site sizes	92
Table 6.1.2-1: Georgia's minimum acreage requirements for schools	94
Table 6.1.2-2: Average minimum acreages allowed in the U.S. and Georgia.....	95
Table 6.1.2-3: Schools with a site size below Georgia's minimum acreage requirement.....	95
Table 6.1.2-4: Average school site acreages in case study districts based on locale and type	96
Table 6.1.2-5: Facility space requirements for Georgia schools	97
Table 6.1.2-6: Allotment of programmed space in our study schools by school type.....	98
Table 6.1.2-7: Allotment of programmed space in our study schools by school system	98
Table 6.1.2-8: Allotment of programmed space in our study schools by locale	99
Table 6.1.4-1: Maine's maximum acreage requirements	103
Table 6.1.4-2: Comparable site acreages	106
Table 6.2.5-1: School site selection criteria by jurisdiction.....	124
Table 7.1.2-1: Documents required by the state	164
Table 7.3.2-1: Applicability of Zoning Code Requirements and Permit Fees for Case Study School Districts	192

III. List of Figures

Figure 2.2.1-1: Zoning around Creek View Elementary	12
Figure 2.2.1-2: Relationship between schools and development.....	13
Figure 2.3.7-1: Organizational structure of the Georgia education system	17
Figure 2.4.1-1: Organizational Structure of Georgia Education at State-Level	19
Figure 3.1-1: School siting theme break-down.....	33
Figure 3.2.1-1: Study districts.....	35
Figure 4.2-1: Relationships between school size, design, location, and co-location.....	38
Figure 4.3-1. Current conditions of school siting decisions	40
Figure 4.3-2: Potential conditions of school siting decisions	40
Figure 5.1.3-1: Seven examined issues that affect mode choice	46
Figure 5.1.4-1: Attendance zones of Indian Creek Elementary School, Winnona Park Elementary School, and 4/5 Academy with buffers	48
Figure 5.1.5-1: Access to Rutland High School from neighborhood to east	51
Figure 5.1.5-2: Access to Oak Grove Elementary School from east via pedestrian and bike trail	52
Figure 5.1.7-1: Scott Boulevard sidewalk near Westchester Elementary School.....	56
Figure 5.1.7-2: Sidewalk on McDonough Street near Decatur High School.....	56
Figure 5.1.8-1: Westchester Elementary School, adjacent to Scott Boulevard	61
Figure 5.1.8-2: Alexander II Elementary School, adjacent to Oglethorpe Street and College Street.....	62
Figure 5.1.9-1: Monday morning traffic around Decatur High School	64
Figure 5.1.9-2: Walking route from Family Dollar to 4/5 Academy.....	65
Figure 5.1.10-1 Westchester Elementary School Publicized Walking Routes	69
Figure 5.2.1-1: Trip purposes in Atlanta.....	74
Figure 5.2.1-2: Onsite traffic calming measures.....	75
Figure 5.2.1-3: Schools near congested roads in Atlanta.....	76
Figure 5.2.2-1: Travel modes to school in Atlanta	78
Figure 5.2.2-2: Travel modes to school for Indian Creek Elementary	79
Figure 5.2.2-3: Travel modes to school for Alexander II Elementary.....	79
Figure 5.2.2-4: Safe Routes to School travel mode survey, fall 2010	80
Figure 5.2.2-5: Schools near MARTA transit stops	81
Figure 5.2.2-6: Rome city transportation route serving schools.....	82
Figure 5.2.3-1: Safe Routes to School travel mode survey, fall 2010	85

Figure 6.1-1: Decreasing school campus size.....	90
Figure 6.1.4-1: Flint Hill Elementary School	104
Figure 6.1.4-2: Weaver Middle School.....	105
Figure 6.1.4-3: Arabia Mountain High School	105
Figure 6.1.4-4: Flint Hill Elementary School on Oak Grove Elementary School site.....	107
Figure 6.1.4-5: Weaver Middle School on Liberty Middle School site.....	107
Figure 6.1.4-6: Arabia Mountain High School on Dunwoody High School site.....	108
Figure 6.1.5-1: Smart growth transect (DPZ)	110
Figure 6.1.5-2: School siting transect	110
Figure 6.2.2-1: The effects of sprawl development	116
Figure 6.2.3-1: Decatur Neighborhood Schools	116
Figure 6.2.3-2: Location of Alexander II Magnet Elementary School, Bibb County School District.....	117
Figure 6.2.3-3: Clear-cutting at Arabia Mountain High School, DeKalb County School District	118
Figure 6.2.3-4: Pre-construction site of Arabia Mountain High School, DeKalb County School District, 2005	119
Figure 6.2.3-5: Pre-construction site of Cousins Middle School, Bibb County School District, 1993	120
Figure 6.2.3-6: Sprawling development surrounding Weaver Middle School, Bibb County School District.....	121
Figure 6.2.4-1: Wando High School, Charleston County School District.....	122
Figure 6.2.4-2: Ivy Prep Academy at Kirkwood, Atlanta, Georgia.....	123
Figure 6.2.5-1: Jurisdictions with publicly accessible school siting criteria	124
Figure 6.2.5-2: Massachusetts school site selection proximity guidelines	126
Figure 6.2.7-1: Raising utility costs to eliminate greenfield school siting	132
Figure 6.2.7-2: Tiered utility pricing	132
Figure 6.3.1-1: Clarence Perry’s Neighborhood Unit.....	134
Figure 6.3.1-2: Mutual benefits	135
Figure 6.3.2-1: Percentage of districts engaged in various types of shared use	137
Figure 6.3.2-2: School districts in Georgia.....	140
Figure 6.3.3-1: Marion, North Carolina.....	142
Figure 6.3.3-2: Alabama	143
Figure 6.3.3-3: Jackson, Tennessee	143
Figure 6.3.3-4: St. Petersburg, Florida.....	144
Figure 6.3.3-5: Spartanburg, South Carolina	144
Figure 6.3.3-6: Georgia.....	146
Figure 6.3.3-7: International Community School activity	146
Figure 6.3.3-8: The Museum School location	148
Figure 6.3.3-9: Centennial Place Elementary School students	149
Figure 6.3.3-10: Indian Creek Elementary School sign.....	150
Figure 6.3.3-11: Decatur High School garden	151

Figure 7.1.3-1: Functional task process	166
Figure 7.1.3-2: Community Learning Centers	170
Figure 7.1.3-3: Decatur’s 2010 Strategic Plan.....	171
Figure 7.1.3-4: Gaylord High School	172
Figure 7.1.3-5: J.F. Oyster Bilingual Elementary School.....	172
Figure 7.1.3-6: Noble High School.....	173
Figure 7.1.4-1: Continuum of involvement	174
Figure 7.2.1-1: Traditional division of activities: school districts, municipalities, and state DOEs	179
Figure 7.2.4-1: Intergovernmental framework for increased coordination.....	183
Figure 7.3.3-1: EPA’s Meaningful Public Involvement requirement.....	200
Figure 7.3.3-2: Alaska Department of Education and Early Development school siting guidelines process	202
Figure 7.3.3-3: Alaska DOE siting criteria & evaluation – proximity to population to be served	203
Figure 7.3.3-4: Hamilton Springs TOD school siting HIA heat map samples	204
Figure 7.3.3-5: Traffic generated by proposed Spalding site during AM peak hour.....	207

1 [Executive Summary](#)

In partnership with the Georgia Conservancy, the Georgia Tech School of City and Regional Planning conducted the School Siting Studio. The Studio investigated current public school siting practices in Georgia and the impacts of these practices on the surrounding community and environment. School locations influence the overall well-being of a community and affect not only students, parents, and school staff but also virtually anyone who lives, works, plays, or commutes within the area. This Studio evaluated current Georgia practices in light of potential alternatives and best practices. Based on this evaluation, the Studio recommends changes to promote sustainable school siting practices at both the state and local.

1.1 [Background and Methods](#)

The report first summarizes the background on the Georgia public education system and corresponding school siting practices as follows:

1. Importance of School Siting and Design to Planning and Sustainable Communities
2. Past Research on Georgia School Siting
3. Georgia School System Organization
4. General Processes of School Governance
5. School Financing
6. School Siting Process in Georgia

Many factors drive school siting decisions, and the process is complex with several overlapping factors and consequences that are spread across a wide-range of spheres including transportation, the environment, health, economics, and social equity. Eight research topics were developed based on the concerns with the current process and categorized into three main topic areas as follows:

1. **Modes of access**

- a. ***Active modes of transportation.*** Walking and biking to school is associated with positive health. However, data show very few trips to school are by walking or biking. The decision to walk or bike to school depends on the student's distance to school, the quality of infrastructure between the student and the school, and the student's motivation.
- b. ***Alternative transportation systems.*** School buses and private automobiles account for the large majority of school trips in Georgia. This causes vehicle congestion near and at schools. Many schools in Georgia are served by public transportation; however there is little coordination between school districts and transit operators and ridership reflects this.

2. **Siting and location**

- a. ***Site design.*** School site acreage has grown significantly, partly due to state minimum acreage requirements. In Georgia, for example, a 2,000 student high school must have at least a 40-acre campus. In addition, school systems fail to adequately plan for a school site's development over time.
- b. ***Site location.*** Increasing site acreage pressures school systems into building schools on greenfields. Schools in these locations can attract additional developments, which can lead to sprawl.

- c. ***Shared uses.*** School facilities, like gyms, athletic fields, and libraries are useful to the surrounding community and are often duplicative of other community infrastructure. Likewise, community facilities can be useful for the school system. However, few schools and communities enter into shared use agreements with one another.

3. Siting Processes

- a. ***Community involvement.*** Georgia requires very little direct community involvement in the planning, siting, building, and management of schools. This lack of public involvement can isolate school districts from their communities.
- b. ***Government coordination.*** Local governments and school districts operate as independent entities with little incentive to communicate, share data, or work collaboratively toward shared goals. Georgia does not currently have a framework for increasing inter-jurisdictional coordination.
- c. ***Analytical assessments.*** While the Georgia Department of Education (GaDOE) requires approval of proposed school sites through an application procedure, more fully developed analytic techniques will better inform school boards when making siting, design, renovation, and closing decisions. Enhancing the analytic techniques used to select a school site is necessary to ensure school boards are making a decision that considers more than just costs and minimum requirements.

For each of the eight research questions, the Studio team compiled an overview of the background and current conditions, examples of alternatives and best practices based on a review of case studies, an assessment of the existing systems in Georgia in light of these best practices, and recommendations founded on the findings of the assessment. Four Georgia school districts (Decatur, DeKalb County, Macon-Bibb, and Newton County) were used as case studies. They were selected to represent the spectrum of existing urban, suburban, and rural school systems. In addition, the Studio sought out examples of alternatives and best practices applied by state and local decision-makers across the United States.

1.2 Summary of Recommendations

Out of these eight research topics, recommendations were developed to assist the Georgia Department of Education (GaDOE), local school districts, local municipalities, individual schools, community members, and school advocates in determining appropriate next steps for improving school siting decision-making in Georgia. The recommendations aimed at GaDOE include elimination of minimum student enrollment requirements and minimum acreage requirements. Furthermore, it is recommended that GaDOE and local agencies update certain policies so that the school siting process better fits and reflects the community. Several recommendations at all levels address involving the community in the siting decision-making process and consideration of additional factors not currently required in Georgia. Notably at the local level, the school district and municipalities should work together to achieve more sustainable school sites. The specific recommendations are as follows:

1. ***Eliminate minimum enrollment requirements.*** GaDOE regulations regarding capital funding should be amended so that schools with enrollments below current minimums are not excluded from allotment of state capital outlay funds.
2. ***Replace minimum acreage requirements with maximums.*** Minimum acreage requirements can force schools to locate on large lots in fringe areas. This can limit

- walking or biking to school and encourage sprawl. Maximum acreage requirements coupled with a variance procedure are an alternative designed to decrease school size.
3. ***Require active public participation.*** GaDOE should enact policies to encourage school districts to include active public involvement in facility management and school siting decisions.
 4. ***Require a school siting committee.*** GaDOE should require that school districts have a school siting committee composed of school board members, local government officials, and community members to discuss potential school sites. Such a committee would introduce more transparency and accountability into the school siting process and provide a mechanism to engage the public in school planning.
 5. ***Incentivize supplemental studies.*** GaDOE should incentivize school districts to conduct community-based siting assessments, such as health impact assessments (HIAs), walkability assessments, and traffic impact assessments (TIAs).
 6. ***Create policies that account for a variety of locales.*** Current siting policies do not distinguish between schools located in urban, suburban, or rural areas. This distinction should be made in policies that affect acreage requirements, building footprint, and land needed for parking, recreation facilities, circulation, and natural resource conservation.
 7. ***Create policies that discourage sprawl.*** School sprawl can be mitigated by incentivizing school siting in central areas or by adaptive reuse of an existing building. Additionally, policies could specify that schools must be sited close to existing housing rather than in greenfields.
 8. ***Mandate individual school campus master plans.*** School districts should develop and maintain for each school a campus master plan that addresses over-capacity, expansion and phasing opportunities, and possible demographic shifts in the community. Student groups, parents, school administrators, and community members should be involved in the creation, design, and updating of campus master plans.
 9. ***Add education element to municipal comprehensive plans.*** The Department of Community Affairs should require that local comprehensive plans account for future school sites, and GaDOE should require school districts to review applicable comprehensive plans when siting schools.
 10. ***Encourage and support shared use agreements.*** GaDOE and school districts should encourage the shared use of facilities between a school and the wider community. School districts should design school facilities that support shared use and create a governance structure to manage shared use of facilities and address budgeting, scheduling, liability, and insurance issues.
 11. ***Consider needs and assets of the surrounding community to determine effective partnerships and shared uses.*** Workshops and training sessions could be held to inform staff and community members about shared use tools. Community members should contact local school leaders about potential opportunities to form partnerships.
 12. ***Encourage school-community partnerships.*** Intentional siting near businesses can promote after-school student employment programs and a wide variety of volunteer programs. Local businesses should seek out such partnerships with nearby schools, and students should seek out opportunities provided by these partnerships.
 13. ***Conduct traffic studies.*** School districts should conduct traffic studies for all of their schools, looking at causes and times of congestion, to better understand the nature of their problem.

14. ***Appoint a lead investigator and committee to identify school traffic issues and recommend improvements.*** In some communities, school trips account for 10 percent of all short trips and almost 30 percent of morning peak hour traffic. Local school organizations should develop committees that monitor traffic issues and recommend improvements to local school districts.
15. ***Draw attendance zones to maximize active transportation.*** Given the relationship between distance to school and the probability of walking or biking to school, school districts should redraw attendance zones to maximize walkability and bikeability and should address such concerns in school district master plans.
16. ***Create Safe Routes to School Programs where eligible.*** Safe Routes to School (SRTS) can motivate more students to walk or bike to school through non-infrastructure programs and can also promote more efficient modes of vehicle transportation, such as carpooling.
17. ***Maximize pedestrian and bike accessibility.*** School districts should work with local municipalities to construct multi-use trails to increase accessibility to schools and to build and maintain infrastructure that improves the quality of walking and biking commutes, such as sidewalks, speed bumps, and curb extensions.
18. ***Subsidize transit passes for students.*** Transit agencies should promote and offer passes directly to students and not through intermediaries. Such passes could be free for students and subsidized by school districts that would save money on student busing costs.
19. ***Create satellite busing systems.*** School districts should consider replacing traditional door-to-door busing with a satellite busing system for choice schools.
20. ***Promote carpooling programs.*** School staff and parents of students should create carpooling programs to transport students to schools.
21. ***Educate local communities on the implications of school siting decisions.*** Educating the public would encourage forms of active public involvement at the school level. School leaders, faculty, and community members should attend school siting and redistricting meetings to understand the effects of these decisions on the broader community and should read published literature on the effects of school siting decisions on the community.

1.3 Study Limitations

This research has several limitations. Notably, the review of current Georgia school siting practices was limited to the state-level and schools within the four case study districts. Accordingly, this snapshot may not be truly representative of all school siting practices across the state of Georgia (e.g., schools located in coastal areas). Also, schools were intentionally chosen because they met certain characteristics the Studio wanted to investigate; thus, our sample was not random, and the analysis may have been skewed.

The research also did not explicitly consider crime and safety despite these factors being an important issue for schools. In addition, although school closings potentially have devastating effects on surrounding communities, the Studio did not have time to consider the impacts of closings on the surrounding community. Overall, the limited timeframe of the Studio constrained the breadth and depth of some of the research and analyses.

The Studio research on the case study schools was primarily limited to phone interviews; thus, in-person rapport and first-hand visualizations of the study schools are lacking from the research. Interviewees may also have unintentionally given incorrect information. Principals in

particular move around from school to school; therefore, they might not have a good understanding of past events and, thus, sometimes provided misinformation/contradictory information. Also, newer principals were often unable to provide as much context about their schools as we would have liked. Moreover, the number of interviews was limited because some requests for interviews were not answered.

The quantitative data for our case study schools and transportation systems was limited. The Studio analyses often relied more on interviews than on actual hard data (e.g., estimates of numbers of kids walking to school as opposed to actual school traffic data). Similarly, the analyses of the case study school sizes and functionality were conducted based on estimates using aerial images and geographic information systems (GIS) and, as such, may not match the actual school sites. Several of the research questions were investigated by reading complicated statutes, regulations, guidelines, etc. Accordingly, it is possible that the Studio interpretation does not coincide with the meaning of the law or practices of school districts in Georgia.

Lastly, the recommendations resulting from this report might not be appropriate for other states or school systems in other states because, although the Studio took efforts to consider other states and practices generally, the Studio mostly looked at Georgia law and limited its case studies to Georgia.

2 [Background on School Siting in Georgia](#)

2.1 [The Importance of School Siting and Design to Planning and Sustainable Communities](#)

A school's significance stretches far beyond its boundaries and its daily occupants in that it symbolizes the identity, vitality, integration, and tradition of a community (Peshkin 1978, 1982). Likewise, the siting and design of a school also impacts not only schoolchildren and their families, but also virtually anyone who lives, works, plays, or commutes within the surrounding community. In essence, it affects everyone. Moreover, school siting and design is of central importance in planning and maintaining sustainable communities.

2.1.1 [History](#)

The importance of this concept in planning practice is not new. Rather, the views and practices within the field have shifted over time as various findings have demonstrated the evolving ideology of what constitutes good siting and design.

One of the earliest sources of school siting was the 1922 establishment of the National Council on Schoolhouse Construction (NCSC), which is now today called the Council of Educational Facility Planners, International (CEFPI). The NCSC was formed by the heads of planning divisions from various state departments of education, and it created guidelines first for schoolhouses and, later, for school location, which were adopted into law among many states (McDonald 2010).

Minimum acreage guidelines were established as early as 1929 when two professors from Columbia's Teachers College, Strayer and Engelhardt, set recommendations for acreage standards in the *Regional Plan of New York* (McDonald 2010).

Also in this era, planner and sociologist Clarence Perry advocated that the best neighborhood plan was one that located schools in the center of communities. Perry's well-known concept of the "neighborhood unit" was first published in 1929. According to Perry, one of the most significant guiding principles of the neighborhood unit was the idea of placing schools in such a way that any child could walk no more than one-half mile (and ideally only about one-quarter mile) to his or her school without having to cross a major arterial roadway. Perry believed that schools should be the location for community activity, providing opportunities for residents to engage in social, political, and physical activity; and such placement in the neighborhood center would best facilitate that (Lawhon 2009). Moreover, Perry's idea of the neighborhood separated pedestrians and motor vehicles in such a way that formed community life around the local school (Keating and Krumholz 1998).

Perry's advocacy of the neighborhood unit was followed, however, by an eventual disappearance of this very important concept from planning literature and discussion. In the 1950s and 1960s, comprehensive planners largely relinquished the matter of school siting to school districts and no longer gave credence to its significance in the planning field. While some planning advisory documents still referenced some siting standards during this time, the field of planning essentially ignored how the siting and design of schools impacts communities (McDonald 2010). Even during a time of heavy emphasis on measuring public education

effectiveness, issues of school siting and land use around demography and geography are largely ignored in the conversation (Wyckoff et al. 2011).

2.1.2 Areas of Impact

Fortunately, recent literature and practice show a resurgence of school siting in the planning field, particularly in terms of its relationship with community well-being and sustainability.

Because this resurgence is still fairly new, it exhibits some significant gaps, particularly in terms of understanding the actual *magnitude* of impact that school siting and design has on communities. The breadth of research across numerous fields and disciplines, however, clearly demonstrates the comprehensive *extent* of this impact in that its role is evident in a number of planning-related spheres. These principal spheres include transportation, the environment, health, economics, and social equity.

Transportation

A huge portion of traffic congestion can be attributed to the decisions that parents and students make about mode choice to school, and these decisions are in turn largely impacted by the siting and design of schools. When parents feel that roadways surrounding schools are unsafe for their children to use active modes of transportation, they are more likely to choose to drive to school, thereby creating a negative cycle of traffic congestion termed the “traffic threat multiplier effect” (Steiner et al. 2011).

In some communities, school trips now account for 10 percent of all short trips and almost 30 percent of morning peak hour traffic (Dubay 2003). Such traffic affects not only school occupants but also the entire surrounding community in terms of its safety, functionality, sustainability, and well-being (Ad Hoc Coalition for Healthy School Siting 2008).

The siting of schools in close proximity to student residences and/or available public transportation in order to encourage active modes rather than driving can help serve the broader community planning efforts and add to its “vibrancy and vitality” (U.S. EPA 2011b). Similarly, a school’s participation in programs like the United States Department of Transportation’s Safe Routes to School can ensure safety, health, and accessibility for the community at large (SRTS 2014).

Health and Environment

The siting and design of a school also has the potential to impact the health of students and those in the surrounding community, either negatively or positively. In particular, siting and design that encourages and facilitates active transportation can reduce the risks of heart disease and obesity (Kissane 2011, Wyckoff et al. 2011, Ewing et al. 2011, PolicyLink 2013). Another impact of increased walking and biking in place of motorized vehicle dependence is less greenhouse gas emissions and better air quality, thereby contributing to a decreased risk of asthma (Kissane 2011, Miles 2011).

Meeting the basic health needs of students through school siting and planning decisions also contributes to the improvement of local quality of life for the entire community in a number of ways, including health, education, and the economy. Encouraging walking and biking to school through good planning attracts others to these communities that share these objectives (Wyckoff et al. 2011).

Economics

Maximizing the ability for students to walk or bike to school can minimize the school's transportation budget, operating costs, and land costs for extra parking acreage (Ad-Hoc Coalition for Healthy School Siting 2008).

Moreover, school siting policies can save money not only for the school district but also for the surrounding community. For instance, whether or not a school's location imposes high transportation costs can significantly impact a community's financial health and the use of scarce public resources (Steiner et al. 2011).

Siting within existing neighborhoods can reduce the need and therefore expenses for new infrastructure because building a school outside of an existing service area can often be very costly (McDonald 2011). Similarly, partnerships that utilize co-location of facilities and resources between a school and other community entity can save money for the community through the use of a single space to achieve multiple goals (CEFPI 2004).

Schools also have a significant effect on the total payroll and property values of the local community (CEFPI 2004). Besides the effects of education itself on economic development, social opportunity, and higher wages, studies have also found that the quality, size, and shape of physical school structures have an impact on local economic development. Specifically, small, local, and community-centered facilities tend to have a positive effect on the community's economy (Weiss 2004).

Social Equity

A family's resources play a significant role in determining housing location, mode choice, involvement in extracurricular activities, and a number of other decisions (Miles 2011, PolicyLink 2013). For low-income families, such resources can be limiting. Smart school siting and planning has the potential to open up opportunities and provide families in high-poverty, resource-limited neighborhoods with easier access and the ability to take part in more activities (Vincent and McKoy 2013).

Over the past few decades, siting policies have largely encouraged the building of larger, new schools rather than the renovation of existing ones, thereby leaving many already low-income neighborhoods to fall further into disrepair. At the same time, schools in poorer communities are sometimes sited on contaminated land in order to save money, thereby exacerbating the inequities already faced in such communities (CEHJ 2009). School planning and policy can, instead, encourage investment in neighborhoods that are lacking in physical, social, and economic assets (Ad Hoc Coalition for Healthy School Siting 2008).

Another contribution of school planning to the social equity of a community is in the arena of co-location or shared use. Because school property and land can be used by a variety of entities other than schools districts, a school has the potential to be an important amenity and asset to a community. Thus, well-informed planning decisions that strategically align school capital investments in an existing neighborhood to support the goals of the community can contribute towards sustainable regional growth and increased social equity (Vincent et al. 2011).

2.1.3 Looking Ahead

Despite this promising reappearance of school siting and design in planning, both the literature on the role of schools in communities as well as the decision-making processes surrounding school investment are still lacking in significant ways. As a result of the existing autonomy between schools and communities in most places across the country, society at large forgoes valuable opportunities to progress in planning, sustainability, health, and quality of life (Miles et al. 2011).

Thus, there remains a significant need for an expanded evidence base to further demonstrate the significance of the school-community relationship and the important role of planning in it. This study seeks to contribute to this need by exploring specific cases of schools and communities in the state of Georgia.

2.2 Past Research on Georgia School Siting

School siting decisions have long term impacts which affect not only students and parents, but also the larger community. Since the early 2000's this issue has been garnering increasing interest from a growing number of groups. These groups are starting to think more critically about the implications of siting decisions. This increased interest has led to a greater understanding of the full range of areas in which school siting impacts. Efforts have been made to understand how siting can affect student health, student performance, community character, the local environment, local development, and local economy to name a few. This broader analysis has in turn attracted more diverse groups to this issue. Local advocacy groups, national organizations, academic researchers, state organizations, and national governmental agencies have all worked to further analyze this complex issue.

2.2.1 Descriptive and Targeted Research

In recent years, various groups have produced many types of reports to address school siting issues. Many of these reports seek to survey the current state of school siting. The Council of Educational facility Planners (CEFPI) is a non-profit which advocates for school facility design. In 2003, CEFPI produced a report describing the school site acreage requirements/guidelines by state. This report shows that many states employ some formula to determine site acreage. These formulas are typically broken down by elementary, middle and high school levels. It also shows that the baseline acreage requirements are greatest for high schools and smallest for elementary schools (CEFPI 2003).

The National Center for Safe Routes to School (NCSRTS) provides funding and support for schools to encourage active modes of transportation. In 2011, the organization compiled a report comparing student travel patterns from 1969 and 2009. Using national travel survey data, the report found that there was a considerable decrease in the percent of students which walked or biked to school. In 1969, 48 percent of students walked or biked. In 2009, that percentage had dropped to only 13 percent of students. The report also noted that even for students living within one mile of school, the percentage of students which walked or biked to school dropped from 89 percent in 1969 to 35 percent of 2009 (NCSRTS 2011a).

Researchers and professionals alike have interests in the subject of school siting. Academic researchers have been more interested in specific elements of the implications of school siting. Health researchers have been very interested in the effects that site location has on obesity and

student health. Architects and urban designers have investigated the impact that school size and school design can have on student performance. Public policy research has investigated the impact that greater collaboration between schools districts and planning officials can have on ultimate site locations. Transportation research has investigated the relationship between school location and mode choice, the impact of school location on general traffic, and the relationship between mode choice and air pollution around schools.

National Efforts

In addition to other more specific reports, several organizations have produced comprehensive reports analyzing this issue. In 2002, the National Trust for Historic Preservation published the report “Why Johnny Can't Walk to School”. This report looked at the nature of centrally located schools, and analyzed the impact that moving to more distant school locations has on the greater community. The report stresses that centrally located school can act as anchors for the community, while “school sprawl” causes many negative impacts to the community. The point is made that centrally located schools can not only act as landmarks but can also encourage the development of community infrastructure. On the other hand, school sprawl leads to poor student performance and a lack of community character. The article advocates for smaller school sizes and reports several case studies of increased student performance at smaller schools. The report then analyzes the causes of school sprawl. It notes that acreage standards which promote large sites, state funding biased toward new/large schools, the lack of coordination between school and community planning processes, and building codes which promote new construction as the major drivers for school sprawl. Encouragement of renovation over new construction, funding mechanisms which put money back into existing schools, policies which limit the sprawling sizes of schools, the incorporation of community planners in the siting process, and building codes which are more forgiving to older schools as methods to improve the siting process (Beaumont 2002).

The United States Environmental Protection Agency (U.S. EPA) has been one of the leading organizations in researching the impacts school siting. In 2003, the U.S. EPA produced the report *Travel and Environmental Implications of School Siting*. This study analyzed the connections between location, development around schools, transportation to school, and air pollution. This report utilized existing literature, case studies, and national level student travel surveys, travel models, and emissions models to analyze these connections. In general, the report found that there was a correlation between distance to schools and the likelihood of students taking active modes of transportation to school. Different types of development around schools had a significant impact on students’ decisions to walk or bike to school. Additionally, school location had an impact on air pollution. More centrally located schools promoted walking and biking, which was associated with lower levels of air pollution (U.S. EPA 2003).

Building off of this research, the U.S. EPA then produced its “School Siting Guidelines” report in 2011. This report provides school and community officials with a framework for performing an environmental review process for school sites, categorizes environmental concerns, and provides policy recommendations for school siting. The review process compiled a standardized method for determining the impacts of various school location choices. Particularly, this framework provides steps for determining if a school is needed, the environmental performance of a proposed school, the potential for a school site to increase environmental risks, and the implications to transportation, among other considerations. The environmental concerns

section includes descriptions of the impacts which building materials/building conditions, on site and surrounding area air pollution, and ground/water pollution can have on the overall environmental quality of a particular school. The overall recommendations include favoring the removal of minimum acreage requirements and renovation over new construction as well as encouraging public involvement and long-range school facilities plans (U.S. EPA 2011a).

Georgia Efforts

In addition to national reports, there have also been increasing efforts to study this issue in Georgia. In 2009, Sarah Smith, a graduate of the Georgia Tech School of City and Regional Planning, wrote a thesis titled “The Inaccessibility of Elementary Schools in Fulton County Causes, Consequences, and Alternatives”. Studying 53 schools in Fulton County, this thesis attempts to analyze accessibility at these schools, understand the causes of inaccessibility, and provide recommendations for improving accessibility. The thesis analyzes both the built environment around schools and school sites themselves. Graphical analysis is used to illustrate how many schools in the study area are located near commercially zoned areas and/or major roadways as shown in Figure 2.2.1-1. These mapping techniques show how the shape of attendance zones can drastically increase travel distances for students. School sites are analyzed in regards to the relative amount of parking, the length of driveway access points, and orientation of school sites to the surrounding community. This analysis showed that many schools in Fulton County exhibit some form of limited accessibility. The results of this analysis were then used to highlight the impact that infill development near schools, redistricting of attendance zones, and site retrofitting can be used to improve access to schools and reduce the need for new school construction (Smith 2009).

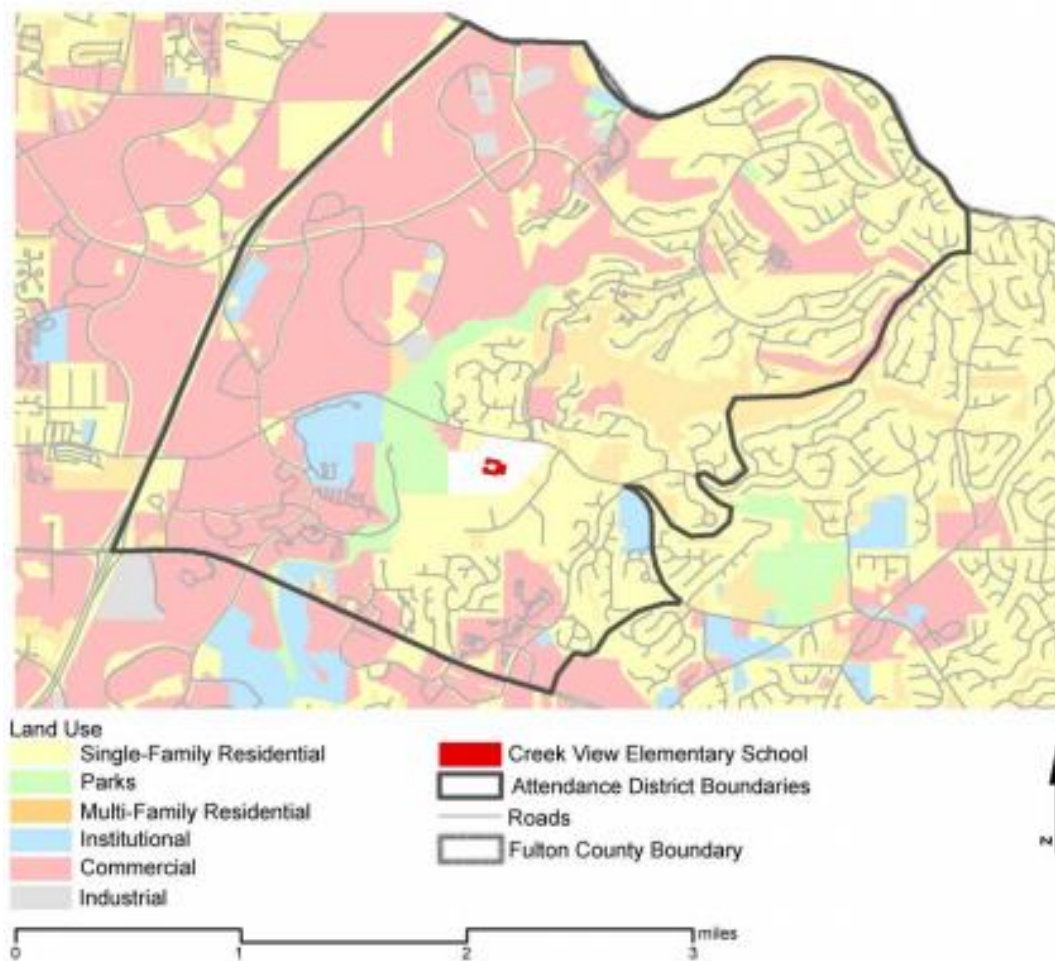


Figure 2.2.1-1: Zoning around Creek View Elementary

(Source: Smith 2009)

Also in 2009, student James Wagner wrote a thesis analyzing the impact of school construction and regional growth in Georgia. This thesis included statistical analysis to compare the growth of development in the areas around schools to the growth rates of their respective counties. It was concluded that there was a significant relationship between construction of a school and development in the school attendance zone. It was also shown that development occurred at a faster pace in school districts than it did for counties as a whole. This quantitative analysis was coupled with interviews with facility planners to gain a better understanding of the context and framework in which siting decisions are made. The results of those interviews showed that some schools put a lot of effort into coordinating with local governments, while other schools put very little effort into this type of coordination. In general, most districts chose particular sites based on demographic growth projections. These interviews helped frame the general process of how school siting can lead to increased development (Figure 2.2.1-2) (Wagner 2009).

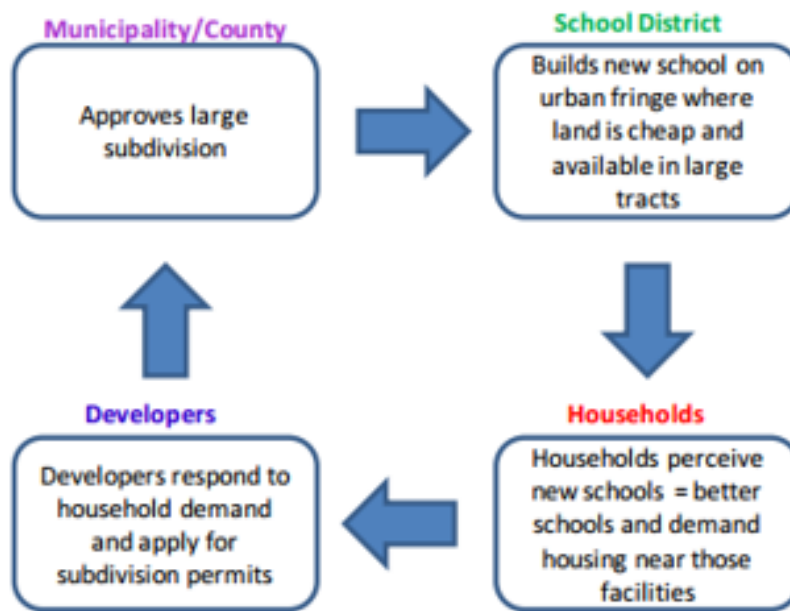


Figure 2.2.1-2: Relationship between schools and development

(Source: Wagner 2009)

The Georgia Conservancy is one of the strongest advocacy groups for school siting in the state. In only a few years, the Georgia Conservancy has helped to bring greater awareness to this issue in Georgia and in other states. The Conservancy works to educate school officials, community planners, and the general public about school siting issues. The Georgia Conservancy has produced a user's guide to interpreting the U.S. EPA's School Siting Guidelines report. The User's Guide builds off the framework of the U.S. EPA's work but provides greater information to Georgia-specific concerns and regulations. It also provides several case studies from different successful siting decisions made in Georgia. This guide is coupled with presentations and other material intended to help guide workshops concerning this issue (Georgia Conservancy 2014). In 2013, the Georgia Conservancy was contacted by the town of Billings, Montana to hold a workshop about school siting. Billings was in the process of selecting a site for a new school. The Conservancy presented their findings regarding school siting and performed exercises to help rank site selection criteria (Georgia Conservancy 2014).

In addition to providing support for siting workshops and discussions, the Georgia Conservancy also provides support for analyzing potential school sites and has worked with several communities in the state. The Conservancy presented analysis to the Harlem, Georgia mayor's office regarding potential school sites (Georgia Conservancy 2014). The town was considering the selection of a new site for a school facility and was interested to see if those sites could support school functions. The Conservancy performed spatial/visual analysis to determine that two existing in-town school parcels could be used in place of a proposed new parcel. It was also found that the proposed new parcel, located farther away, could also accommodate the needs, but site layout and design would be problematic. In the Atlanta area, the Conservancy also provided analysis to the Museum School of Avondale Estates. This school is a newly opened charter school in a residential area, but has several accessibility issues. The Conservancy used

graphical analysis to show that this disconnected street network restricted direct access to the school and drastically increased the time required for students to walk to school. The Conservancy then showed how creating new trails and access points could decrease travel times to school and improve accessibility (Georgia Conservancy 2014).

2.3 Georgia Education System Structure and its Governmental Relationships

2.3.1 Overview of the Georgia Education System

As of 2014, approximately 108,300 teachers were educating 1.6 million students enrolled in 181 school districts and more than 2,200 schools in Georgia (Mewborn 2014). The Georgia education system provides preschool, primary, and secondary education through 159 county school districts, 21 municipal school districts, 15 state chartered special schools, a juvenile justice education center, and a state school (GaDOE 2013). Table 2.3.1-1 reflects the types of schools that are served by these districts, as further defined in the proceeding sections.

Table 2.3.1-1: Schools within the Georgia Education System, 2013

Type of Schools	Total Count
Elementary	1,323
Middle	488
High	450
Charter	315

(Source: GaDOE 2013).

2.3.2 Public School Districts within the Georgia Education System

The vast majority of Georgia public schools are operated by 159 county-ordered districts and also by 21 municipal “independent” districts (GaDOE 2013). The county-based school district structure was established by the 1945 state constitution, which also blocked the formation of new independent school districts while allowing existing ones to maintain their operations (Boex and Martinez-Vasquez 1998). Consolidation has steadily decreased the number of independent school districts over the last four decades, from 35 districts in 1967 to 21 districts in 2014.

Elected school boards govern public school districts, which in turn administer local preschool, primary, and secondary schools. Policies and regulations tend to be uniform across all schools within a district, but may vary significantly among districts. Due to these district requirements, the autonomy of individual schools is limited. While school districts are required to teach the Georgia Department of Education’s (GaDOE) core curriculum standards, they are not required to adopt their recommended textbooks (Georgia Standards 2013). The GaDOE also oversees and supports public magnet schools whose educational programming emphasizes particular academic subjects (GaDOE 2014c).

2.3.3 Public Charter Schools within the Georgia Education System

Georgia charter schools are defined as public schools that are governed by a nonprofit board and operate through a performance-based contract that has been approved by the GaDOE (Mewborn 2014). Charter schools may be exempted from specific portions of the state education

law in return for greater accountability in their programming, class structure, and length of academic year (GaDOE 2014c). In exchange for this flexibility, they are required to meet performance-based objectives specified in its charter. The Charter Schools Act of 1998 outlines the various state-recognized charter designations as follows (GaDOE 1998):

- Conversion Charter School – A charter school that existed as a local school prior to becoming a charter school;
- Start-up Charter School – A charter school that did not exist as a local school prior to becoming a charter school;
- Local Charter School – A conversion charter school or start-up charter school that is operating under a contract between a local board and a charter petitioner with approval from the local board and the state board;
- State Chartered Special School – A charter school whose creation is authorized pursuant to Article VIII, Section V, Paragraph VII of the Constitution and is operating under a contract between the state board and charter petitioner with approval from the state board; and
- Charter School System - A local school system that is operating under a contract between a local board and the state board with approval from the state board.

The number of charter schools and districts in Georgia has grown since a 2012 constitutional amendment increased charter funding and established a state-level approval mechanism for charter petitions (Bluestein 2014). Prior to the amendment, the sole route for establishing a new charter was to gain local board of education (LBE) approval (Lewis 2014). Charter petitioners can now appeal to the GaDOE Charter Advisory Committee (CAC) if their local district has denied their application, although there is an alternate funding structure through this method of approval.

The GaDOE CAC is a nine-member group that vets charter system petitions, makes policy and disbursement recommendations, and assists charter schools with educational programming and governance based on research methods and best practices (GaDOE 2014a). The Lt. Governor, the Speaker of the House, and the Chair of the GaDOE each appoint three members to the CAC.

2.3.4 State Schools within the Georgia Education System

Georgia DoE operates three schools for students between the ages of three and twenty-one with special needs (Mewborn 2014). The Atlanta Area School for the Deaf serves students in metropolitan Atlanta with hearing impairments. The Georgia School for the Deaf provides both day and boarding education for deaf students statewide. The Georgia Academy for the Blind provides residential education for children who have multiple disabilities including blindness.

2.3.5 History of the Georgia Education System as an Independent Entity

In the history of U.S. public education, school districts and school boards were first established and controlled by their local communities. Although Georgia's constitution made state support of public education possible as early as 1777, state implementation of a comprehensive educational system did not occur for over 80 years (Mewborn 2014). During this time towns and cities began to provide free education for their children, which continued through the Civil War until legislation was passed in 1866 mandating free public education. The public

education system operated as racially segregated schools until the U.S. Supreme Court mandated desegregation following the 1954 verdict of *Brown v. Board of Education*. The Georgia legislature disagreed with the federal ruling and passed a series of laws that terminated state and local funding for schools that complied and authorized their closure.

By 1960, widespread resistance was dwindling and communities were permitted to respond to the federal desegregation mandate individually according to their own interests (Mewborn 2014). When many school districts deployed strategies to deny and/or delay desegregation, the courts assumed supervision of many of their administrative responsibilities (Georgia Advisory 2007). This management structure persisted until the 1980's when school districts began to seek independence from judiciary oversight. The federal government responded by incrementally handing back administrative operations to those districts that demonstrated progress toward full desegregation, or "unitary status".

The development of Georgia's education system was established early and continued independence through their implementation of local schooling in the absence of a state education system and the ability for school districts to respond individually to federal desegregation mandates. In this tradition, Georgia's school systems continue to operate autonomously from state and local governments today, which has significantly impacted current school siting practices.

2.3.6 Constitutionality of the Georgia Education System

Article VII of the Georgia Constitution establishes the state education system described in Section I, Paragraph I as free public education prior to college or post-secondary level supported by taxation (Georgia Constitution 1983). Paragraph I of Sections II and III create the GaDOE and the State School Superintendent, respectively, and specify the function of the Board only as, "hav[ing] such powers and duties as provided by law".

Section V, Paragraph I holds that existing school systems should be continued, except in the case of State-sanctioned consolidation, and that no new independent school system can be formed (Georgia Constitution 1983). Paragraphs II and III provide for the election of the LBE and the appointment of the School Superintendent by the LBE. Paragraph VII allows the GaDOE to create special schools that are not private, sectarian, religious, or for profit including, "public school[s] that operate under the terms of a charter between the State Board of Education and a charter petitioner". The same paragraph establishes that LBE's may be required to participate in the approval of special schools under its own terms and conditions. State funds can be allocated to special schools provided that it is not deducted from local school system funding based on students attending a state charter school within the system's catchment area.

2.3.7 Structure of Georgia Education System

As seen in Figure 2.3.7-1, GaDOE encompasses pre-kindergarten to postsecondary education at the local and district levels (Mewborn 2014). The GaDOE is directed by the Georgia Board of Education (GaBOE), which is comprised of 13 board members from as many congressional districts. They are appointed by the Governor to serve seven-year terms (Venezia 2006). The function of the GaBOE is to oversee teacher licensing and training, student assessment, data development, transportation, academic curriculum, fiscal management, and policy development

and implementation. A State Superintendent of Schools is elected every four years to institute GaBOE policies and regulations and to serve as administrative head of the GaDOE.

Together, the State Superintendent of Schools and the GaBOE oversee the LBEs (i.e., local school boards), both of which are responsible for adopting rules and regulations that govern Local Education Agencies (LEAs), or school districts designated as “special-purpose local governments”, within state guidelines (Mewborn 2014). LBEs are comprised of elected citizens that exercise broad policy oversight over LEA operations, budget, staff, and academic programming. This includes appointing an LEA Superintendent. LEAs are responsible for executing the LBE’s oversight and providing administrative and professional support for pre-primary, primary, and secondary schools via the LEA superintendent.

At the school level, principals, teachers, and staff are tasked with delivering the LEA’s curriculum and achieving satisfactory student performance as determined by GaDOE. As of 2003, public schools in Georgia are required to have a policy-level advisory body called a Local School Council that makes recommendations related to student achievement and school improvement (Georgia School Council Institute 2009). They may advise the principal, Local Superintendent of Schools, and/or LBE on curriculum and assessments, school budget priorities including capital improvement projects, extracurricular activities, school-community communication strategies, and methods for increasing parental involvement. The Council must have a minimum of seven members including: four parents elected by the parents (two of whom must be business persons), two certified teachers elected by the teachers, two additional businesspersons selected according to each Council’s by-laws, and the school principal.

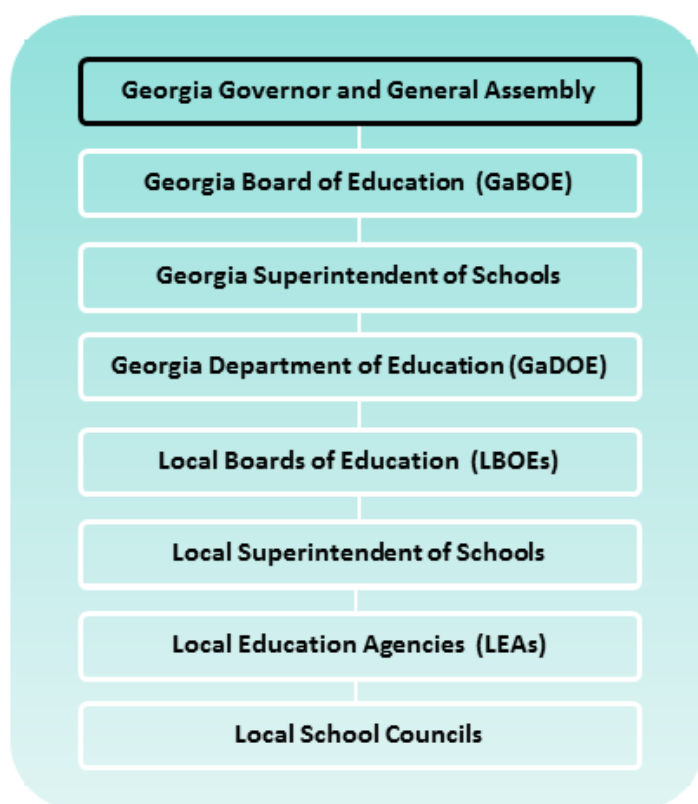


Figure 2.3.7-1: Organizational structure of the Georgia education system

2.3.8 Georgia Education System and its Intergovernmental Relationships

The Georgia Education System operates largely as an independent entity with formalized government oversight occurring only at the state level. Coordination occurs by way of the State School Superintendent reporting directly to the Governor on the Georgia Education System budget as well as policies and regulations proposed or enacted by the GaBOE (Mewborn 2014). In 2002, Governor Roy Barnes passed a bill that created an Educational Coordinating Council (ECC) to “coordinate the activities of state, regional, and local cooperative public education agencies, offices, or councils,” with the purpose of better connecting the state’s K-12 and postsecondary education (Venezia 2006). Over the last two decades, several other states have adopted Georgia’s model of mandated educational cooperation.

The LBE has authority to raise revenue for schools and districts by levying property taxes (Boex 1998). As a result, LEAs generally have sufficient administrative and fiscal autonomy to operate apart from the local governance. Consequently coordination between LBEs, LEAs, and local government in Georgia is not systematic, and varies considerably between jurisdictions.

2.4 General Processes of School Governance

The Georgia Department of Education (GaDOE) is the governing body of all public education in Georgia. However, GaDOE as well as school boards and school administrators all have a role in school decision-making processes within Georgia. Article VIII Sections I through VI of the Georgia Constitution establishes the education system within Georgia, including Public Education, State Board of Education (SBOE), State School Superintendent, Board of Regents (university-level), Local School Systems, and Local Taxation for Education (Office of the Secretary of State 2013, 59).

Public schools in the state of Georgia must follow the State Education Rules in the Official Code of Georgia (O.C.G.A.) that have been adopted by the SBOE and filed with the Secretary of State and are thus effective. Within the O.C.G.A., the rule entitled *School Day and School Year for Students and Employees* defines the organizational structure of public education in Georgia.¹ The rule defines Georgia Department of Education (GaDOE), Local Board of Education (LBOE), and Local Educational Agency (LEA) in Sections (1)(d), (g), and (h), respectively (GaDOE 2014c). Per these definitions, the GaDOE is the state agency in charge of the fiscal and administrative management of certain aspects of kindergarten through 12th-grade (K-12) public education including the implementation of state and federal mandates. The SBOE oversees the GaDOE and defines education policy for public K-12 education agencies in Georgia. The LEA is the local school system that is controlled and managed by the LBOE, which is the agency that adopts policies to govern educational entities within the LEA. The following sections provide more detail on the specific roles for each of these entities.

¹ Rule 160-5-1-.02 found in O.C.G.A. Sections 20-2-151, 20-2-160, 20-2-161.1, 20-2-165, 20-2-168, 20-2-168(c), 20-2-240; effective November 3, 2010.

2.4.1 State of Georgia

The GaDOE oversees and governs the public school system in the state of Georgia under the leadership of the State School Superintendent and the SBOE. The State School Superintendent is an elected official that acts as the executive officer of the State Board of Education. The SBOE is comprised of one member from each of Georgia's 14 congressional districts appointed by the Governor and confirmed by the Georgia Senate (Office of the Secretary of State 2013). Any addition or revision GaDOE proposes to their regulations or guidelines has to be approved via a vote of the SBOE, and thus, the board is the final decision-making body for any new or proposed changes to rules or policies at the state level (Rowland and Allen 2014).

GaDOE ensures state and federal education laws and regulations are followed, monitors the allocation of state and federal money to local school districts, and provides information about Georgia's schools. Within GaDOE, there are two branches, Business Operations and Academic Affairs, with the State School Superintendent overseeing both sides (GaDOE 2014a). Please refer to Section 2.3 for an overview of the Georgia school system and its relationship to other governmental structures. The following figure shows the organization of the divisions within GaDOE, noting the position of the person in charge of each division's operations. Within each of these divisions, additional departments exist with more specific functions.

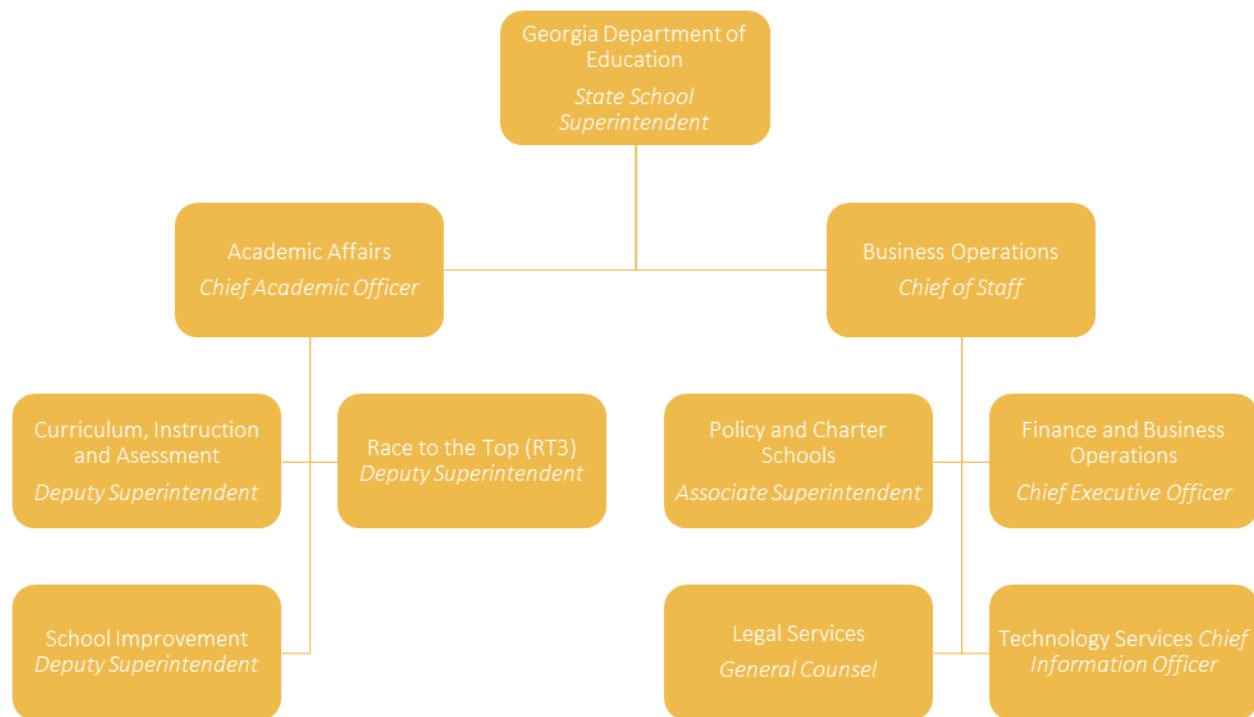


Figure 2.4.1-1: Organizational Structure of Georgia Education at State-Level

GaDOE is responsible for many statewide education decisions related to academics such as curriculum establishment, textbook adoption, and assessment of school performance. Under the Business Operations arm, GaDOE leads statewide programs, such as School Nutrition, and is also responsible for several administrative and logistic tasks, such as reviewing and processing rule waiver requests from local school systems and reviewing architectural drawings for all

school construction projects. The Facilities Services division under the Finance and Business Operations Office specifically is involved in the decision-making processes related to school siting. The education rules in the O.C.G.A. cover many more aspects of schools than simply school siting, but Section 160-5-4-.16(a) explicitly regulates “Facility Site, Construction, and Reimbursement” (GaDOE 2014c).

Whenever any division within GaDOE modifies a rule, guideline, or policy, they must follow the Georgia Administrative Procedures Act codified under O.C.G.A. §50-13-3 (Rowland and Allen 2014). This state law provides the method for administrative determination and regulation, or in other words, the procedure that GaDOE must follow to create a new or amend existing published rules, guidelines, or policies. The requirements of this act include the following key steps:

- Public comment period
 - Draft of the proposed change should be made available to public for 30 days for review/comment.²
 - If 25 or more people, an association with 25 members or more, or another governmental entity requests an oral hearing, it must be granted per O.C.G.A. §50-13-4(a)(2).
 - If anyone comments during the 30-day public comment period or within 30-days after, GaDOE must provide a written response of their principal reasons for/against the comment per O.C.G.A. §50-13-4(a)(2).
- Following the public comment period, the draft goes to a vote by the SBOE Rules Committee for approval (Rowland and Allen 2014).

The Facilities Services division reviews their department’s policies annually, which often leads to proposed changes (Rowland and Allen 2014). In addition, the division receives frequent feedback that influences proposed changes. When the Facilities Services division decides to revise a rule, policy, or guideline, they must follow an “ornate process” to vet their proposal. In short, for the Facilities Services division to change a policy or rule, they must advertise the proposed revision for public comment, respond to any comments received, and then ultimately obtain approval from the SBOE as the final decision-maker via a board vote.

In addition to GaDOE following the public comment requirements of the Administrative Procedures Act for proposed changes initiated by their own department, per O.C.G.A. §50-13-9, anyone can request a promulgation, amendment, or appeal of a rule. If this occurs, GaDOE has 30 days to either allow the petition by starting rule-making proceedings or else deny the petition by declaring its reasoning in writing.

GaDOE published the *Guideline for Educational Facility Site Selection* as an overview of the

² Per the interview with Mike Rowland and Turner Allen on November 7, 2014, draft guidelines should be made available to the public for 60 days for review/comment. This contradicts the written Administrative Procedures Act but may be an internal GaDOE practice.

requirements to comply with the O.C.G.A. regulations for school site selection.³ The regulations require local school systems to submit information on particular forms to GaDOE when proposing a new site in order to obtain GaDOE's approval as required under O.C.G.A. 20-2-260(c)(7) (GaDOE 2012a).⁴ Thus, GaDOE is included in the final decision-making stage of locating an educational facility site and has the authority to approve or deny the site selection.

If an individual division within GaDOE wishes to make a change internally that doesn't affect a policy or regulation, then the division head has the ability to change a procedure within their department without interference (Rowland and Allen 2014). For example, the Facilities Services division could change the internal process that their employees follow to review an educational facility site application they receive.

2.4.2 Local School Boards

The local school system's board of education is established under Article VIII, Section V, Paragraph II of the Georgia Constitution. The LBOE members are elected officials that must live within the physical boundary of the school system and are thus meant to act as the body representing the entire local community. The role of the local school board as summarized in the *Standards for Effective Governance of Georgia School Systems* is as a strategic, policy-making body that is separate from the administrative and managerial roles of the school system's superintendent and staff (GaBOE 2010, 4). Additionally, the school board acts as management oversight of the LEA at a high-level in that it should ensure the management systems, processes, and results are aligned with state and local policies rather than influencing day-to-day decisions made within the schools. For example, the DeKalb County School District Policy ABA: Board Authority states (DeKalb County School District 2010):

...the fundamental role of the Board is to establish policy for the District with the focus on student achievement. Day-to-day management of the District is the responsibility of the Superintendent, not the Board... Except as expressly allowed by law, the Board shall not delegate or attempt to delegate its policy-making functions or any of its other responsibilities.

Policies and processes followed by each school district in Georgia may vary based on their established rules and procedures. Using the DeKalb County School District as an example case, Policy BDC: Policy Adoption outlines the process for changing, rescinding, or establishing a new policy for the district (DeKalb County School District 2013b). Per Policy BDC, either the superintendent or the school board may identify the need for a new, revised, or rescinded policy. Additionally, Policy BDC requires the superintendent to annually review the policy manual of the school board and report any proposed revisions to the board. Once the policy need is identified and researched, a draft of the proposed new or revised policy must be submitted to

³ Effective May 30, 2012.

⁴ Two additional guidance documents are available to assist schools in the site selection process: the *Guideline for Risk Hazard Assessment of Educational Facility Sites* (Guideline for Risk) and the *Guideline For Compliance With The Standards and Criteria of the National Flood Insurance Program* (Guideline for Floods).

every board member. Board members may suggest changes to the draft policy proposal, and if the majority of the school board votes to approve the changes, these must be incorporated into the draft. The policy proposal must then be posted online to allow for written comments to be submitted by “parents, students, staff, and community members”. The comments are all collected and disseminated to the school board prior to the meeting at which point it will vote on the proposed policy. If the majority of the school board members present at the meeting vote to approve the policy, it becomes effective immediately unless the school board specifies otherwise. Note Policy BDC allows the school board to “expedite or otherwise alter” the policy adoption process if it is a matter of “unusual urgency”.

The Georgia Constitution grants authority to county and area boards of education to establish and maintain public schools within their limits, with some provisions (Office of the Secretary of State 2013, 61). This includes the authority to establish school attendance areas within their district. Local school boards are responsible for developing an Educational Facilities Construction Plan once every five years that inventories existing school system facilities and identifies needs for the upcoming five-year period per O.C.G.A. 160-5-4-.01. While the plan must be submitted to GaDOE for approval, the local school board has the ability to propose the priority of projects, sources of funding, and forecasted needs of the local school system.

The DeKalb County School District, Policy AD: School Attendance Areas outlines the process for altering school attendance areas (DeKalb County School District 2013a). The superintendent is responsible for initiating the recommendation to the school board to change school attendance areas, and the school board decides whether to alter the areas. The superintendent is responsible for developing the process to receive input from the community, but the school board has the authority to make the final decision to accept, modify, or reject the recommendation of the superintendent.

2.4.3 Local Educational Agency

The LEA is responsible for the daily operations of the educational facilities within the school district such as buildings and grounds maintenance, school menus, and human resources. The LEA must adhere to local, state, and federal policies when making decisions for the district, and the superintendent of the district serves as the communication channel between the LBOE and LEA. For example, DeKalb County School District Policy BBI explicitly states that the superintendent is the primary line of communication and that official district business should not occur between the LEA and LBOE unless allowed by the superintendent (DeKalb County School District 2014).

Although the LBOE is responsible for approving district policies to which the LEA must adhere, LEA staff members are a valuable resource for information and assistance for developing the draft proposal for a new, revised, or rescinded policy considering the LEA staff is familiar with the daily operations of the district. LEA staff may establish their own procedures and guidelines for the district’s operations as long as they do not contradict local, state, or federal policies. Using the DeKalb County School District as an example, the Planning and SPLOST division within the district does not receive explicit guidance from the school board on which analyses to conduct when looking at school locations but internally the division director approves their own best practices policy for what to consider, such as walkability (Drake and Williams 2014b).

With regards to school locations within the district and especially the Educational Facilities Construction Plan, LEA staff plays a central role in collecting, compiling, and providing information on the status of the district's facilities and students. However as mentioned previously, the LBOE has the final approval at the local level before the plan is sent to GaDOE for approval. Similarly, the LBOE grants the final approval of any proposed school site.

In summary, while the staff within the LEA may influence or propose school district policies to the board, the principle role of the board is to establish policy for the school district, and as such, the LBOE vote is the final deciding point in the process to change district policies.

2.5 School Financing

Public education (K-12) in the state of Georgia is financed through a mix of local, state, and federal streams of revenue. The federal and state governments deliver revenues to local school districts which, in turn, raise local funds to support the federal and state fund allocations. The state of Georgia, which is on par with the rest of the nation, provides approximately 50 percent of total school revenue to public elementary and secondary education, while the federal government contributes approximately seven percent (Rubenstein and Sjoquist 2003). This means local systems contribute about 43 percent of the revenue. Once raised, the funds are then allocated to the various capital and administrative needs of a given district. There is substantial variation across the state in terms of each district's federal, state, and local funding mix. For example, in DeKalb County, 49 percent of revenue comes from local sources, while in Newton County only 34 percent of revenue comes from local sources (DeKalb County Schools 2014a, Newton County Schools 2014). In general, the federal and state share is larger for counties that demonstrate the greatest need.

Over the years, state public education revenue has remained constant. While the state raises revenue primarily from income and sales taxes, local school systems rely predominately on property taxes to fund education. For the past decade, however, local sales taxes (i.e., Education Special Purpose Local Option Sales Tax) have become an important source of revenue, especially in counties with a substantial retail base. This stream of income, however, can only be used for a school district's capital needs (Rubenstein and Sjoquist 2003).

The contents of this section will explore Georgia school financing and its relationship with school siting and renovation. Specifically, the section will describe the origin of state school financing, the rationale for multiple state funding mechanisms, and the impacts state funding has on school siting and renovation. For purposes of the research, federal and local funding streams will not be covered due to their minimal impact on such issues. State revenue streams require the most extensive regulation and have the greatest impact on school siting and renovation, so they are described in detail.

2.5.1 Origin of Georgia State Funding

The Georgia Constitution states, "The provision of an adequate public education for the citizens shall be a primary responsibility of the State of Georgia" (Art. 8, § 1, ¶ 1). Thus, the state government is responsible for providing an adequate public education for its population. In order to implement this responsibility, the state government adopted legislation that established the legal framework under which public schools in Georgia operate.

In the early 1980s, Georgia faced a challenge to the constitutionality of its state education funding formula in the *McDaniel v. Thomas* case (Rubenstein and Sjoquist 2003). Although the state Supreme Court recognized that the system provided little equalization of funding across school systems, it ruled that the state constitution's requirement for "provision of an adequate education" did not require equal spending across systems and, therefore, upheld the system's constitutionality (*McDaniel et al. v. Thomas et al.* 1981). Despite the state's victory in the *McDaniel* case, Joe Frank Harris, then-governor, appointed an Education Review Commission (ERC) to review the formula's funding structure and its reliance on local property tax wealth. In 1985, the General Assembly passed the Quality Basic Education (QBE) Act, which, along with subsequent amendments, forms the current legal framework that guides the operation of public schools in Georgia (Rubenstein and Sjoquist 2003). Currently, the state of Georgia provides funding for local school systems in multiple ways. Funding comes in the form of foundation grants, a guaranteed tax base, and categorical grants, which are then allocated to administrative and capital related purposes. The foundation grant, or the base amount derived from a formula, will be covered in more detail due to its relationship to school siting and renovation.

2.5.2 Salary and Administrative Funding

The QBE Act provides a foundation program, or base level of funding, to help local systems pay a significant portion of teacher and staff salaries. A guaranteed tax base component operating on top of this foundation is used as a state-level equalizer. There are three key components in setting the foundation grant program: measuring the number of students, finding the base funding amount or foundational level, and establishing the required minimum local contribution (Rubenstein and Sjoquist 2003).

To measure the number of students, the QBE Act uses what's known as the weighted full-time equivalent (FTE) student counts instead of the actual student population. The rationale here is that students cannot be subdivided; however, time spent by students in various programs can be subdivided. Therefore, weighted FTE counts do not determine the actual number of students in seats but are measured by the time that students spend in each of the various instructional programs. The class day is broken down into six periods and school systems "earn" funding based on the placement of students during each period in the various instructional programs, ranging from kindergarten to vocational laboratory to alternative education (Rubenstein and Sjoquist 2003). Once the number of attended segments is totaled in each program, that total is divided by six to get an FTE count. For example, if one student attends a full day of school (i.e., six instructional periods for a specific program), then that student is equal to one FTE. If two students within the same program attend school for half of a day each, then the two combine to make one FTE since the amount of instruction provided for the two students is equal to what is provided for one full-time student. The minimum FTE requirements for salary funding are:

- 450 for an elementary school
- 624 for a middle school
- 970 for a high school

To determine the base funding amount allocated to each district, a base cost per FTE pupil in each instructional program is derived. Each year, the Georgia legislature begins the process by establishing a base amount determined to fund one FTE (i.e., six instructional periods or one full-time pupil) for the high school program for one school year (Rubenstein and Sjoquist 2003). For

example, in 2009, the base amount was \$2,698.50 (Rubenstein and Sjoquist 2003). All other instructional programs are funded relative to the base amount, or the cost to fund one FTE in the high school program, by multiplying the amount against a statutorily defined ratio known as a program weight. Each of the 19 instructional programs specified in the QBE legislation carries a weight ranging from 1.0 to 5.8176 (GaDOE Office of Technology Services 2013).

The program weights are based on the specified cost of serving students in each program. Higher weights are designated for programs requiring more money to adequately serve one pupil, or FTE, within that program. The specified per-pupil cost is comprised of several components. Some of the “cost” components include the salary and benefits for the classroom teacher; teacher-student ratio; the cost of textbooks and instructional materials; the cost of utilities; and allocations for specialists, instructional support, and administrative expenses at the school and system level. For instance, the per-pupil cost of a teacher for each instructional program is determined by dividing a beginning teacher’s salary (including benefits), taken from the state teacher salary schedule, by the specified pupil-teacher funding ratio for each program. All other costs are calculated in a similar way. Since the cost of the high school general education program has the lowest estimated cost, it is assigned a weight of 1.0 (Rubenstein and Sjoquist 2003). The weights for the other programs equal the per-pupil cost for that instructional program divided by the per-pupil cost of the high school general education program. Thus, other programs have higher weights since the high school program has the lowest cost per pupil. Because the cost of each program changes from year to year by different amounts, the weights change over time.

The funding eligible through the above method is supplemented by a local system’s “local contribution” (Rubenstein and Sjoquist 2003). The QBE Act requires a local contribution of five mills (five thousandths of a penny) assessed on each school system’s property tax base (Rubenstein and Sjoquist 2003). The law is in place to limit the percentage of a system’s local fair share to no more than 20 percent of the sum of the QBE Formula amounts (Official Code of Georgia Annotated [O.C.G.A.] Section 20-2-164). In theory, if FTE amounts are equivalent across two systems, the system with the higher local contribution due to a higher assessed tax base would receive less funding from the state.

The QBE legislation also has a Guaranteed Tax Base (GTB) program, known as the “equalization program”, in addition to the base QBE funding formula. The equalization program is set to equal the property tax base per pupil for the system at the 75th percentile. Thus, the program equalizes the revenue for each system below the 75th percentile of per-pupil property wealth in the state. However, the local system must levy taxes above the required 5 mills to participate in the program, which is normally the case (O.C.G.A. Section 20-2-165).

2.5.3 Capital Outlay Funding

Georgia also has a capital outlay program that supports part of the cost of construction, renovation, and modification of public elementary and secondary schools. It is funded with Reimbursement Bonds issued by Georgia State Financing and Investment (GaDOE Facilities Services 2009). The capital outlay program is comprised of two main segments: a regular capital outlay program and special programs (used if needed). The special programs include programs for merger funding, exceptional growth systems, and low wealth systems as well as an advanced funding program. The standard capital outlay program will be the only program detailed for the purposes of this research as it is the program relevant to school siting.

In order to receive capital outlay funds, each school system must develop an educational facilities plan and update it at least every five years. The local school board must sign a plan before it is given to the state. The plan must include a list of construction projects that meets the requirements for capital outlay funds. These include facilities that are scheduled for abandonment, future (five-year) facility needs, proposed renovation projects, and proposed consolidation of small, inefficient facilities (Rubenstein and Sjoquist 2003). The plan must order the proposed construction projects in terms of their funding priority. Construction projects that meet the minimum standards are eligible for state funding and, thus, are totaled to arrive at a “capital need” amount. The standards are assessed also using the FTE formula. The minimum FTEs needed to build and renovate schools are as follows (Fields 2011):

- 200 for an elementary school
- 400 for a middle school
- 500 for a high school

Local systems are required to pay part of the eligible project cost. The local participation is affected by the system’s “local wealth factor”. The local wealth factor is the average of the property tax wealth factor and the sales tax wealth factor for a jurisdiction. A local system's property tax wealth factor is its property tax base per FTE divided by the statewide property tax base per FTE. A similar calculation is made of the sales tax wealth factor. If the local wealth factor is equal to one or more, the school system must contribute 20 percent of the eligible cost of a project, but no school system is required to contribute more than 20 percent of the total capital need. If the local wealth factor is less than one, then the required local participation is determined by multiplying 20 percent by the local wealth factor. However, participation from a local jurisdiction cannot be less than eight percent unless the local system meets special criteria (Rubenstein and Sjoquist 2003). To illustrate, if two districts have the same capital need as determined by the state and one has the highest local wealth factor and the other has the lowest wealth factor, the system with the higher factor must contribute 20 percent towards the total need and the system with the lower must only contribute eight percent towards the total capital need.

Furthermore, the annual authorization approved by the Georgia Assembly is allocated to districts based on each school system's facility needs relative to the needs of all school districts. This means that not all projects would be eligible to receive funding the same year a facilities plan is issued. Some projects with low priority relative to the rest of the state will not receive funding that year. These projects are turned into entitlements, or “credits”, which build over time and be applied to future years (Rubenstein and Sjoquist 2003).

The entitlements are then drawn down by the school system in order to fund the non-local proportion of an eligible project’s cost. Each school district prepares an application, and the state legislature decides, through an appropriation of funds, whether to fund the project(s). A school system cannot draw its entitlements to less than zero dollars unless they meet special criteria (Rubenstein and Sjoquist 2003).

2.5.4 School Financing and Siting Decision Implications

Salary Minimums

Mentioned earlier, the state helps local school systems pay a significant amount of teacher and staff salaries. The state provides adequate support to local school systems if the system

meets the minimum FTE requirements outlined above. For schools that meet these minimum size numbers, the state pays at least the beginning salaries of teachers for the 19 programs assessed and the full salaries for instructional aides for kindergarten and early intervention programs (Fields 2011). In addition, schools above the minimum FTE requirements pay beginning salaries for a host of other supportive positions integral in operating a school.

Providing funding based on meeting established minimums has consequences that affect more than the equitable distribution of Georgia's public education dollars. While funding this way does not have a large impact on most teachers' salaries since each teacher is fully funded as long as the classes are full, school-wide positions (e.g., assistant principals, media and technology specialists, guidance counselors, secretaries) are funded by the state at a school-wide level (Fields 2011). The effects, at least from the perspective of a school's support staff, are tremendous.

To illustrate, let's say there were two identical high schools in size, instructional space, and form. The only difference was their FTE count. One met the 970 FTE requirement stipulated by the state, and the other only had a total of 485 FTE. The funding distribution to pay for a beginning assistant principal's salary at each of the schools would be extremely different. If the beginning salary of an assistant principal is \$45,000, the state will provide \$46.39 per FTE to a high school ($\$45,000/970$ FTE). In the scenario outlined above, the school that met the FTE threshold would receive the full salary of \$45,000 from the state. The school that only had an FTE of 485 would receive \$22,500 from the state to go towards the assistant principal's salary. That figure is inadequate to cover the cost of that assistant principal, which means the school system must pay the difference. This is very influential on local school systems; if a school's FTE doesn't meet the minimums, the school district will have to front the cost or not hire a needed staff member. The combination of falling property taxes, which eats away a school's local contribution, and an added cost burden by not meeting required FTE minimums can be disastrous for a local school system. Therefore, school systems do their best to make sure FTE minimums are met for each school.

Capital Outlay Program

Local school systems rely heavily on capital outlay funding provided by the state. According to Fields, the state helps local school systems pay 80 to 92 percent of the renovation and construction costs of educational facilities (Fields 2011). Similar to salary funding, the state will pay for the capital costs of school buildings if the schools meet the capital outlay minimums. Despite the reduction in minimums for capital outlay funding compared to salary funding minimums (56 percent to 125 percent reduction), the consequences of falling below these numbers are serious (Fields 2011). Instead of local school systems paying only 8 to 20 percent of capital costs, systems will have to pay the full cost if under the statutory minimums. Despite the low threshold, school systems are keen on making sure that the FTE requirement for each school is met (Fields 2011). This gives districts more reason to increase the size of schools to make sure they are nowhere near the threshold.

A school system's decision to newly construct or renovate existing schools is influenced by additional regulations stated in the capital outlay program. The program specifies that "additions or expansion of existing buildings" and "retrofitting of existing buildings" are eligible expenditures (GaDOE Facilities Services 2009). This means that funding will be provided for renovation/modernization provided that the rehabilitation work is less than the state's

reimbursement rates for new construction of a replacement facility. The reimbursement rates for new construction are currently set at \$71, \$73, and \$75 per square foot for (GaDOE Facilities Services 2009). While it's permissible to renovate older schools to "like new" conditions, the cost associated with doing so is often a lot more than it is to tear down and rebuild. This phenomenon is reflected more clearly in the following statistic. During the ten years from 1995 through 2004, Georgia spent 59 percent of its total construction budget on new school facilities (Kissane 2011). Clearly, local school systems opt for new construction when confronted with the burden to renovate an existing building.

Another incentive outlined in the Georgia Code to push for larger schools is the consolidation provision stated in O.C.G.A. Section 20-2-291. The code states that in the event a local school system consolidates a school that is smaller than its minimum FTE requirements with another school to form one school at least as large as the minimum FTE requirements, the local school system is not required to finance any portion of the costs for construction or renovation qualified under O.C.G.A. Sec. 20-2-260 necessary to facilitate the consolidation of the schools (O.C.G.A. Sec. 20-2-291). For the consolidation, the local school system shall only be required to finance one-half the costs that the local school system would otherwise be required to finance for any new construction or any renovation of existing facilities needed to enable the consolidation of the schools (O.C.G.A. Sec. 20-2-291). By fulfilling its purpose to decrease the amount of small, inefficient schools, the provision, in turn, is effectively incentivizing schools to become larger.

2.5.5 Conclusion

Georgia's preference to connect school size thresholds with funding tend to produce larger schools. While every school system and community has a unique set of constraints, opportunities, and needs, statutes that provide incentives for larger schools may encourage school siting decisions at odds with best practices (Fields 2011). Smaller, more community-centric schools seem to be at a disadvantage if they want to receive state funding to renovate or build.

2.6 The School Siting Process in Georgia and its Variants

A significant portion of the school siting process is defined by Georgia Department of Education (GaDOE) guidelines, as outlined below. Local ordinances may play a role depending on the extent to which local governments choose to do so.

2.6.1 Confidential Nature of School Board Meetings

Presumably, the local school system begins by studying potential sites. Importantly, the Georgia Open Meetings Law, which generally requires governmental meetings (including those of a school board) to be open to the public, provides certain exemptions. If these exemptions are met the meeting can be closed to the public. The statute explicitly provides for closed meetings if the acquisition of real estate is to be discussed. Any meeting minutes relating to the exempt discussion are also protected from disclosure (Georgia First Amendment Foundation 2008).

2.6.2 General Georgia Board of Education Guidelines

Guideline for Educational Facility Site Selection

Georgia law requires that the GaDOE, “review and approve proposed sites and all architectural and engineering drawings and specifications on construction projects for educational facilities to ensure compliance with state standards and requirements” (O.C.G.A. § 20-2-260(c)(7) 2013). In turn, the GaDOE has issued regulations that site selection must comply with a set of self-published guidelines entitled *Guideline for Educational Facility Site Selection* (160-5-4.16, Educational Facility Site, Construction, and Reimbursement 2012). Last updated on May 30, 2012, the 11-page document sets out much of the school siting process in Georgia. By its terms, it governs the purchase of sites for new buildings and school expansions, among other situations (GaDOE 2012a). It also provides a five-page application for site approval entitled *Educational Facility Site Evaluation and Approval Form* to be completed by the school district.

Facility Services’ Relationship with the School System and Reviewing Timeline

The studio group interviewed Michael D. Rowland, Director of Facility Services at the GaDOE, and Michael Campbell, with the same division. Facility Services is charged with reviewing and approving or disapproving school site applications. Campbell and Rowland are the primary reviewers of school siting applications within the department, with Campbell conducting the initial reviews (Rowland 2014). The two characterized the school siting review process as generally cooperative, with Facility Services often assisting school systems in preparing the necessary documents. Back-and-forth exchanges move the process along although Facility Services will not waive items that are required by the guidelines.

The amount of time needed for review and approval or disapproval depends on the division’s workload at the time. If the school has already “dotted its i’s and “crossed its t’s” by the time it submitted the paperwork, the review typically takes one week (Rowland 2014).

Field Consultants

Before submitting the school siting application, school systems work with one of five area consultants as determined by the location of the school system within Georgia. The field consultants visits the school site and helps prepare the application by addressing any obvious issues, forcing the school system to consider things it may not have otherwise considered (Rowland 2014).

Precedential Value

Facility Services does not believe that prior approvals or disapprovals create any sort of precedent for future applications. That is, a hypothetical approval of one site one year before review of a very similar site does not influence this later review (Rowland 2014).

2.6.3 Specific Georgia Board of Education Guidelines

The GaDOE school siting application requires that school district provide a fair amount of information (to be described later in this section), that the applicant school system take several actions prior to submittal, and that the applicant school system attach several documents. These requirements are designed to ensure that the health and safety of school users are protected, and that some minimum quality is met (Rowland 2014). Complete applications, with all enclosures, can be several inches thick therefore only the most notable components are listed below.

Transportation Evaluation

The school system must send a notification letter to the Georgia Department of Transportation (GDOT) and the local road commission summarizing their proposal for the site and asking that a transportation evaluation be performed. A copy of this letter must also be included in the school system's application. If the site is approved, GDOT or the local road commission (whichever has jurisdiction over the relevant road) will then perform the evaluation according to the GaDOE guidelines (GaDOE 2012a).

However, Rowland explained that GDOT has its own procedures regarding "road cut" permit approval that the school system must also navigate. GDOT requires the school system to submit engineering plans showing driveway plans in compliance with GDOT design regulations (GDOT 2009). There is no requirement that GDOT must allow roadway access if the GaDOE approves the site (Rowland 2014).

GaDOE's guidelines also mandate that several transportation issues must be "checked," "at a minimum" (GaDOE 2012a). However, the guidelines do not provide any consequence for the site failing to score well regarding these items. They include:

- Whether adequate site distance is provided for vehicles on the main highway and for vehicles departing school property;
- Whether adequate spacing is provided between the proposed driveway and nearest intersection;
- Whether the main driveway should be ordered as one-way in and one-way out;
- The posted speed limit on the main highway;
- The need for left and right turn lanes;
- Whether there is adequate campus and entrance ways; and
- Whether adequate pedestrian movement, including handicapped movement, is provided.

GDOT or the local road commission is not obligated to fund any needed transportation infrastructure investments, though the school system can seek funding from the State Aid Office (GaDOE 2012a).

Floodplain Assurance

Additionally, the school system must attach a letter of assurance from the Floodplain Management Coordinator at the Georgia Department of Natural Resources (GDNR). This letter must find that the site provides sufficient acreage outside the 100-year floodplain or the Coastal High Hazard Area. If needed, a plat should be included showing the location of the floodplain or Hazard Area and the positioning of the buildings outside of them. To obtain the letter of assurance, the school system must submit to the GDNR a Floodplain Determination Request, enclosing a map and site plan (GaDOE 2012a).

Environmental Site Assessment

A Phase I-Environmental Site Assessment must be included as well, conducted according to procedures in the American Society for Testing and Materials (ASTM) standard Practice E, and attached to the application (GaDOE 2012a).

Risk Hazard Assessment

A risk hazard analysis must also be completed and submitted with the application. This must be completed by a registered professional engineer and must (1) identify any hazards; (2) evaluate any hazards; (3) provide options for mitigating such hazards; and (4) provide a statement from the professional engineer that, based on his discretion, the site is either suitable or unsuitable for a school. Any mitigation recommended by the professional engineer is required to be implemented in the site development (GaDOE 2012a). Facility Services emphasized that it relies on the engineer's conclusion and trusts the engineer's suggested mitigating steps (Rowland 2014).

The risk hazard analysis must be completed in accordance with another set of guidelines published by the GaDOE entitled, *Guideline for Risk Hazard Assessment of Educational Facility Sites* (GaDOE 2012a). This additional set of guidelines provides an illustrative list of potential hazards, including: electrical transmission lines of 115 KV or more, railroads, airports, bodies of water, landfills and dumps, power plants, military installations, and mines or quarries, among other items identified (GaDOE 2012b). The GaDOE states that it may seek additional information beyond the Environment Site Assessment and the risk/hazard analysis (GaDOE 2012a).

Minimum Size Requirements

If the school board seeks a variance for the state's minimum size requirements (5 acres plus one additional acre for every 100 students for an elementary school; 12 acres plus one additional acre for every 100 students for a middle school; 20 acres plus one additional acre for every 100 students for a high school) it must provide its rationale for doing so in the application (GaDOE 2012a). Facility Services will grant the variance request, "if there is any sense of reasonableness to it". Of the approximately 15-20 percent of total site applications that seek a variance, Facility Services approves the vast majority of them and has not denied one in the last two years (Rowland 2014).

Utilities

The school system must provide information regarding the availability of utilities including electricity, natural gas, telephone, cable, water, and sewer. If the site cannot be served by public sewer, the applying school system must submit documentation showing the feasibility of an on-site system (i.e. a septic system) (GaDOE 2012a).

Land Conditions

The GaDOE guidelines recommend that a professional geotechnical evaluation be done before purchase of the property. Additionally, the school system must provide information regarding area zoning, topography, the rockiness of the soil, vehicular access, and the grade of the potential building (GaDOE 2012a).

2.6.4 Approval

The guidelines provide that Facility Services "should" approve the site before it is purchased and "must" approve the site before construction commences (GaDOE 2012a). There is no penalty for purchasing the site before application, but the school system risks owning land that it may not build on if the site is not later approved by Facility Services (Rowland 2014).

Importantly, a school will not be reimbursed for capital outlay funds if the site is not approved by Facility Services (O.C.G.A. § 20-2-260(d)(6) 2013).

Upon site approval, the GaDOE grants the school system a site code that does not change with issuance. Once the school system purchases the site, the GaDOE then grants a facility code upon the system's submittal of a land title. The facility code refers to the buildings to be built on the site and is required in order to apply for state funding (GaDOE 2012a).

2.6.5 Local Control and Zoning

Facility Services is unaware of any law requiring community participation in the school siting process, other than community control over school board membership (Rowland 2014).

Local zoning may regulate schools to a greater or lesser extent, depending on the decisions a municipality or county makes in drafting its ordinances. Decatur's zoning map, for example, covers all of its schools (City of Decatur 2014). Decatur generally allows elementary, middle, and secondary schools in its residential zones including R-85, R-60, RM-60, RMH, its institutional zone (I), and its mixed-use district (MU). However, before schools are allowed to be built in these zones, the planning commission must host a public hearing and the land use must be approved by the city commission (Decatur Code, Appendix A, Sections 7.1, 7.2, 7.3, 7.4, 7.6, and 7.11). Decatur also sets minimum lot areas, minimum frontage, and setbacks for schools in residential areas. These requirements, however, may be modified if the school submits a comprehensive site development plan (Decatur Code, Appendix A, Section 10.20.1).

Decatur's code addresses other issues as well. The city requires two off-street spaces per classroom, plus one additional space per a lengthy metric based on auditorium size (Decatur Code, Appendix A, Section 8.2). Schools are not exempt from the requirement that a permit be acquired before a driveway accessing a local road can be constructed (Decatur Code, Chapter 86, Section 11). The code actually proscribes a maximum width of 24 feet for the curb cut for schools (Decatur Code, Chapter 86, Section 12).

3 [Studio Methodology](#)

3.1 Break-Down of School Siting

There is a disconnect between schools and communities as well as schools and city planning. In order to investigate the “who, what, when, where, and why,” and how we can fix the issues, school siting in this report is split into three areas: school accessibility; physical site attributes and design; and siting processes. Overall, it is a complex system, and almost everything is interrelated as demonstrated in Figure 3.1-1 below.

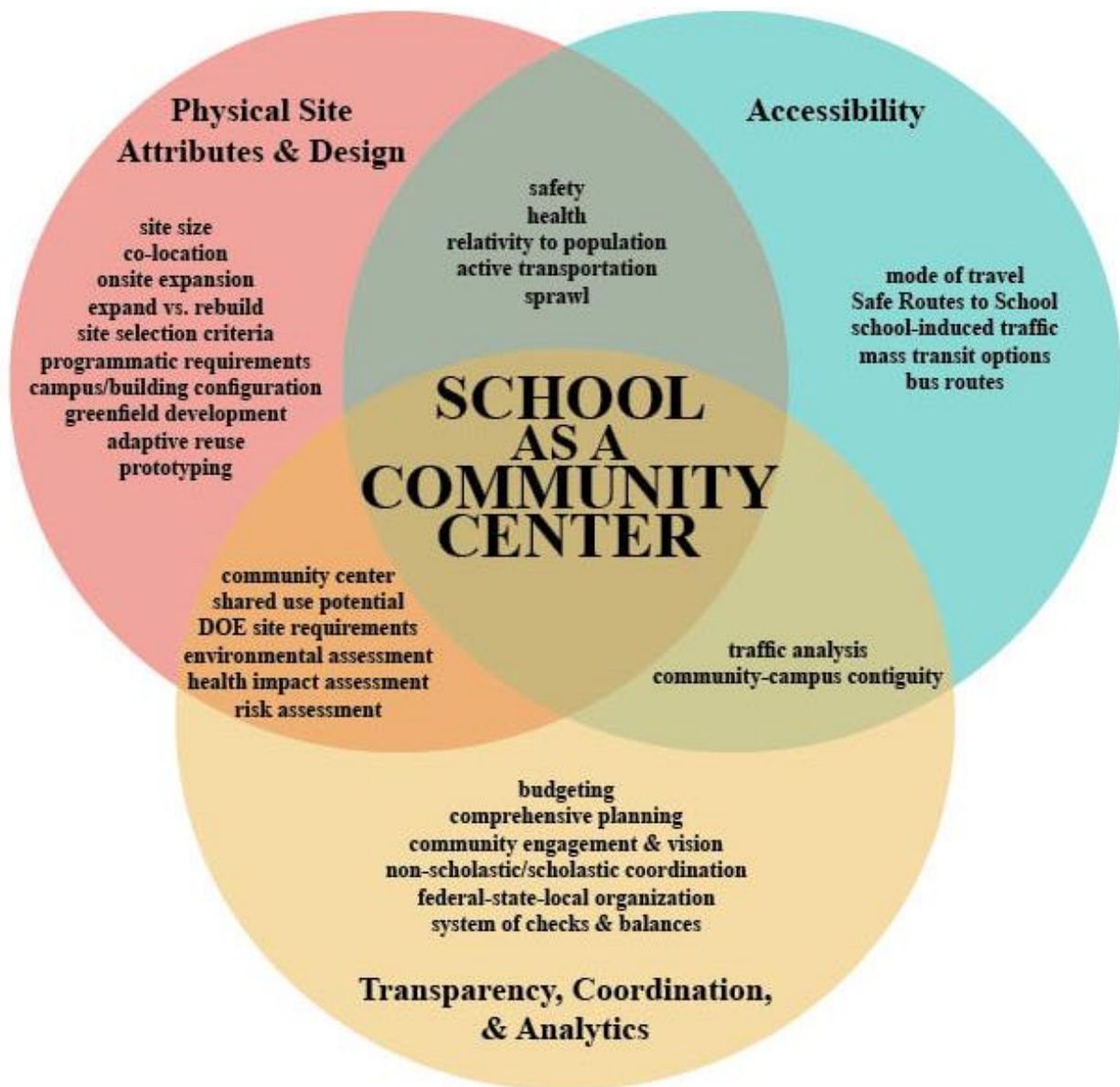


Figure 3.1-1: School siting theme break-down

3.2 Method of Research

For each of the themes and respective sub-themes, both qualitative and quantitative data were utilized to assess the current condition of school siting in Georgia. Some data is available online in the form of tables, Geographic Information Systems (GIS), articles, jurisdictional resources, case studies, and other precedent documents. The remainder of the data was attained via interviews. We selected four jurisdictions and twenty schools within those jurisdictions on which to focus our case study analyses. Interviews were conducted with a rainbow of stakeholders: public sector planners, teachers, school principals, school district directors, local school board members, the Georgia Department of Education (GaDOE), and members of the community.

3.2.1 Selection of State, Districts, and Schools

We chose the state of Georgia as the research is performed in Atlanta, Georgia. School districts from a variety community sizes and locations – urban, suburban, and rural – were chosen to represent the spectrum of school districts in Georgia. Specifically, DeKalb County, a large school system that includes segments of the City of Atlanta; the City of Decatur, a small urban district in close proximity to Atlanta; Newton County, a growing community between Atlanta and Augusta; and Macon-Bibb County, a mix of suburban and rural areas were selected. See Figure 3.2.1-1 below for the locations of the four case study school districts.

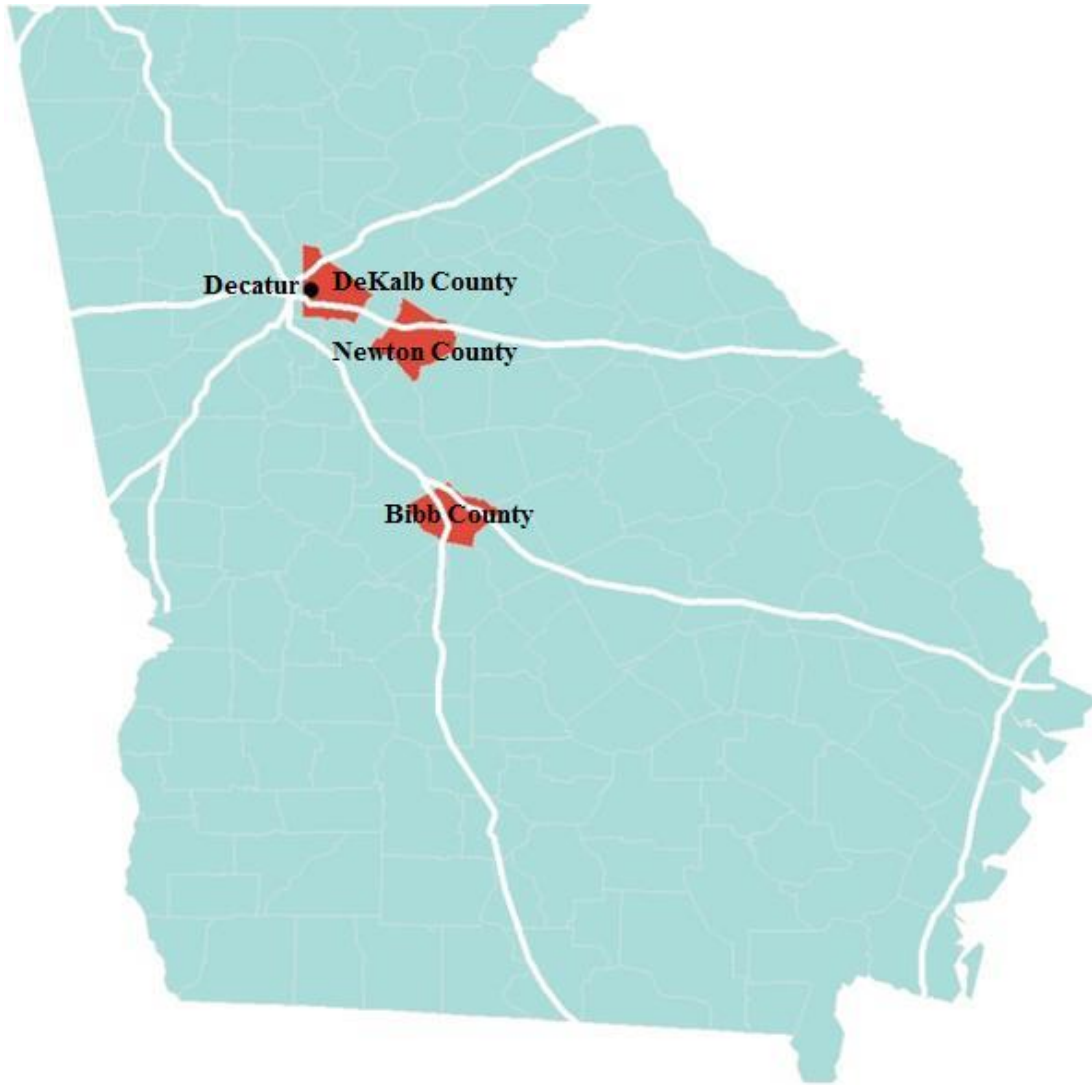


Figure 3.2.1-1: Study districts

The studio sought to select at least four case study schools within each of the four public school districts. We aimed to have representation of charter schools in our list of case study schools as well, so we allowed more than four per district. We developed the following criteria according to our research questions in order to narrow down our total number of schools to twenty:

- Urban/suburban/rural fringe character;
- Safe Routes to School recipients and non-recipients;
- Compact or expansive site acreage;
- Small or large number of students;
- Adjacent land uses and their interaction;
- Street network connectivity;
- Length of time opened; and
- Elementary, middle, or high school, or unique combination of grades.

This resulted in the selection of the following schools:

A. City Schools of Decatur:

1. Decatur High School - 310 N McDonough St, Decatur, GA 30030
2. 4/5 Academy - 101 5th Ave, Decatur, GA 30030
3. Winnona Park Elementary School - 510 Avery St, Decatur, GA 30030
4. Westchester Elementary School - 758 Scott Blvd, Decatur, GA 30030

B. Macon-Bibb County School District:

5. Southwest-Macon High School - 1775 Williamson Rd, Macon, GA 31206
6. Rutland High School - 6250 Skipper Rd, Macon, GA 31216
7. Rutland Middle School - 6260 Skipper Rd, Macon, GA 31216
8. Weaver Middle School - 2570 Heath Rd, Macon, GA 31206
9. Ingram-Pye Elementary School - 855 Anthony Rd, Macon, GA 31204
10. Alexander II Magnet School - 1156 College St, Macon, GA 31201

C. Newton County Schools:

11. Newton High School - 140 Ram Drive, Covington, GA 30014
12. Cousins Middle School - 8187 Carlton Trail NW, Covington, GA 30014
13. Fairview Elementary School - 3325 Fairview Road, Covington GA 30016
14. Flint Hill Elementary School - 1300 Airport Rd, Oxford, GA 30054

D. DeKalb County School District:

15. Arabia Mountain High School - 6610 Browns Mill Rd, Lithonia, GA 30038
16. Oak Grove Elementary School - 1857 Oak Grove Rd NE, Atlanta, GA 30345
17. Gresham Park Elementary School - 3132 Clifton Church Rd SE, Atlanta, GA 30316
18. Indian Creek Elementary School - 724 N Indian Creek Dr, Clarkston, GA 30021
19. The Museum School - 923 Forrest Blvd, Decatur, GA 30030
20. International Community School - 3260 Covington Hwy, Decatur, GA 30032

4 Research Questions

Why is the topic of more sustainable school siting important, and how can Georgia achieve better results in the long run? After the School Siting Studio team's initial research, brainstorming sessions, and meetings with stakeholders and the Georgia Conservancy, we realized that we had to refine our ideas into more succinct elements to research in order to properly address the heart of the problems at stake. Out of these themes mentioned above in our methodology (accessibility; physical site attributes; and siting processes), we established eight fundamental questions in which to inform our research.

4.1 Accessibility Needs in School Siting Decisions

Accessibility is an important factor in the decision to site a school in one area over another. If a proposed site does not have the infrastructure or ability to support increased traffic, it will not be successful. However, automobile and bus traffic shouldn't be the only means of accessibility to schools because these modes increase exposure to air pollution, incur more costs for busing, and create greater traffic around school areas. Carpooling and active modes like walking, biking, and transit should also be considered when analyzing a site's ability to provide adequate accessibility, since they can reduce the amount of pollutants in the air, costs to bus students, and the amount of traffic around schools during peak hours. These ideas gave way to two research questions about increasing active modes and how schools can utilize alternative systems.

How can we increase access to active modes of transportation to improve student health and reduce local traffic?

Statistics show that very few students today use active modes to commute to school. In Georgia, relatively few students live within a walkable distance to their school, increasing the reliance of busing and private automobiles. This reliance on cars and buses has an effect on both a site's ability to handle traffic as well as student health. Increasing the amount of students who are able to walk or bike to school provides health benefits such as cleaner air due to fewer emissions and increased physical activity. Programs like Safe Routes to School (SRTS) have championed such causes and work with local governments, school districts, and individual schools in increasing walkability near schools. SRTS programs have shown promise in that the amount of students who walk to school as a result has increased throughout the years.

How can schools better handle current transportation using alternative transportation systems?

Schools currently need more dynamic transportation systems in order to increase the level of mode choice among students, faculty, and parents. Traditionally, schools heavily rely on school busing and car trips as the primary modes of transportation to and from school. Schools generally are not fully pursuing or coordinating alternative systems of transportation, notably carpooling and mass transit. Siting schools near public transit in municipalities where it is available and fostering more coordination between such transit operators and schools would allow for transit to become a viable option for students. In addition, encouraging carpooling can reduce traffic around schools, save parents time, and foster community connections. Moves to create alternative busing patterns could provide greater transportation for choice and magnet school students.

4.2 The Impact of Physical Site Attributes on School Siting Decisions

Historically, schools have functioned as the heart of the neighborhood or greater community that they served. Unfortunately, this seems to no longer be the case in many communities across Georgia and the rest of the United States. A school site's size, design, location, and proximity to community centers all have an impact on this phenomenon and are important contributors to successful school siting. These factors have a symbiotic relationship with each other as demonstrated in Figure 4.2-1.

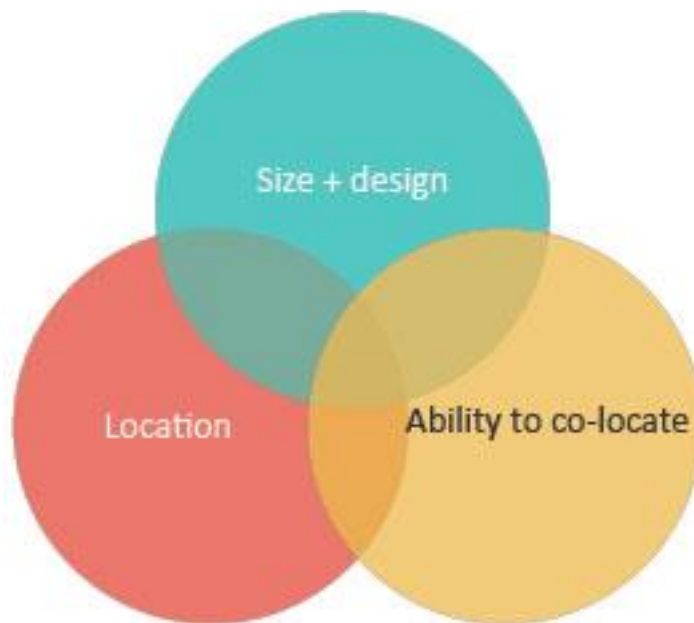


Figure 4.2-1: Relationships between school size, design, location, and co-location

Different policies on the state level and the city/county level influence how the physical site of the school is designed and located. However, these policies sometimes do not address an individual community's needs or the local environment. The three research questions that explore physical site attributes ask questions related to site size and design, the impacts of site location, and the benefits of co-locating school sites near other community centers.

Is it possible to have full functionality on sites smaller than the required minimum acreage?

Interdependent relationships exist between school amenities, their functions, and the size of the parcel(s) that they occupy. Across Georgia, the average school site footprint has grown significantly over time, meaning that schools are being situated on larger sites than before. The primary drivers for these increases are larger school enrollments; the increase in the amount of space that school campuses require to accommodate their programmatic, design, and building trends; and rigid policies that dictate building requirements and minimum acreage requirements. However, the increase in campus sizes over the years could have consequences that affect the environment, population centers, and student well-being. While larger sites may be necessary to accommodate the needs of some schools, there may be more flexible ways in deciding how large school sites ultimately are.

How can we discourage greenfield development and instead promote reuse/infill development?

Two important questions are asked when the need for a new school arises:

Where do we build our new school?

Do we build or rebuild on an existing site, or do we locate on a brand-new site?

The answers to these drive the ultimate decision on where a new school is built. However, not all location decisions are sustainable in regards to the environment and social equity. There are two trends in site location: 1) the clear-cutting of forests and acquisition of greenfields for new school construction and 2) locating schools away from the epicenter of the population in favor of the outskirts of the community. Before these trends became popularized after World War II, schools were well-connected within the neighborhoods they served because of their location in the hearts of those neighborhoods. Policies related to school site acreage (primarily minimum acreage requirements) have prevented schools from being built in more desirable locations. Placing new schools on the edge of already developed communities and constructing on greenfields has presented a string of detrimental problems. The studio research investigates alternatives to these practices, such as encouraging infill development, adaptive reuse/retrofits, and rebuilding already established schools.

What kinds of mutual benefits can schools and communities reap through strong school-community relationships, co-location, and shared use of resources and facilities?

Schools are just one type of community center, aside from parks, gymnasiums, and libraries. Aside from being a place of learning, schools have the capability to house other community resources while contributing to a community's social and economic well-being. However, the physical separation between these other types of community centers and schools has been accompanied by a widening separation in mutual engagement, leading to decreased levels of collaboration between them. These circumstances are particularly unfortunate in light of the wealth of potential benefits that can be made available to both schools and communities through the shared use of resources and co-location. While challenges exist relating to co-location and shared use, the benefits outweigh those challenges. School siting decisions should consider how a new school could valuably serve the greater community, rather than just the students and faculty that inhabit the space on a daily basis, and how the community around it will in turn benefit the school.

4.3 School Siting Processes

The goal of many school systems is to build a school in the location that meets minimum requirements and has the least amount of risk while staying within a budget. This goal, while reasonable in theory, isn't always carried out in a way that benefits local government, community stakeholders, or even the schools themselves. The following questions address how school siting decisions could better involve the general public and local decision makers, and how integrating additional community analytics and assessments into the process could better inform decisions regarding school siting, design, renovation, rebuilds, and closing. Figure 4.3-1

shows the current conditions surrounding these relationships, and Figure 4.3-2 shows what those relationships could aspire to be regarding school siting decisions.

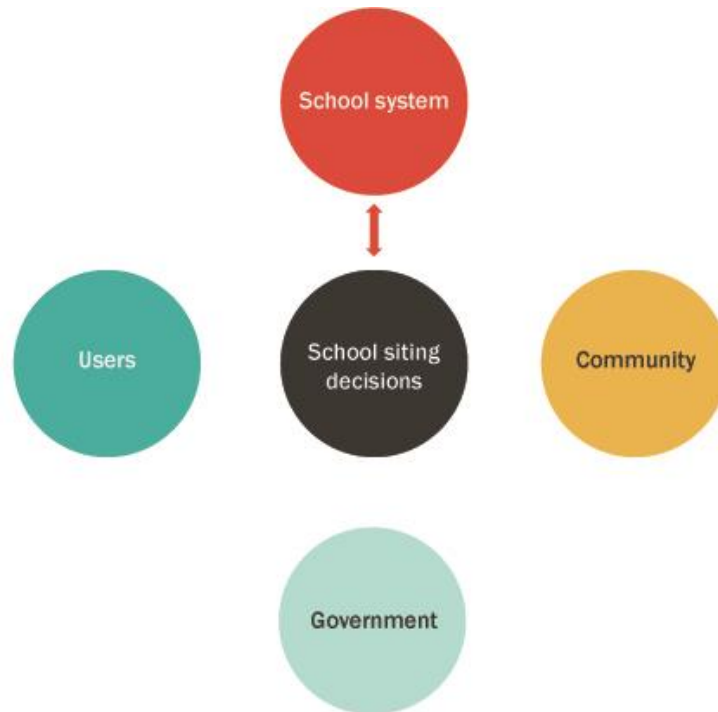


Figure 4.3-1. Current conditions of school siting decisions

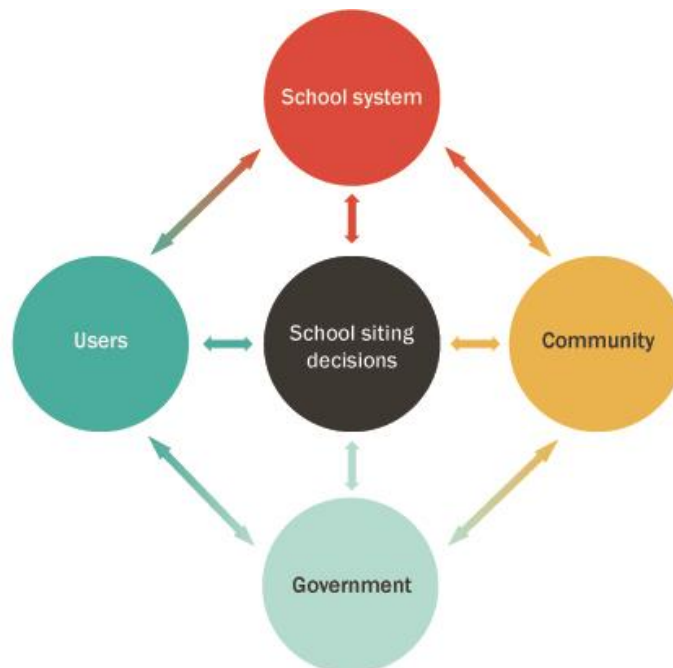


Figure 4.3-2: Potential conditions of school siting decisions

What are some strategies to encourage public involvement in the school siting process in order to improve a community's relationship with their school system?

Despite schools having so much importance in the overall well-being of communities, school systems are not paying enough attention to their stakeholder relationships—the relationships that provide the long-term, sustained support for education in our communities. These stakeholders include the students and faculty who are the school's primary users, the parents of the students, local business owners, elected officials, and taxpayers who live and work near schools. Generally, school systems engage stakeholders in surface level communications and involvement. After decisions are made, they are transmitted through newsletters, websites, and the occasional public meeting. These actions, along with the overuse of technical jargon and the manner with which actions are undertaken will convey to stakeholders that their local school system does not care about their opinions. This particular question focuses on the ways in which school districts can directly involve their stakeholders in decision making, thus establishing trust and improving the overall school-community relationship.

What are the factors that affect potential coordination between the school district and decision-making entities concerned with land use, and how can they be improved for the sake of better school siting?

Local planning departments and school districts in Georgia operate independently with little to no incentive to communicate, share data, or work collaboratively toward shared goals. Cities/counties and their respective school systems do not work as a joint unit. A historical lack of coordination between local governments and the entities associated with the GaDOE has significantly shaped current school siting practices in the state. While this disconnected model of engagement is disadvantageous for the communities that schools and local governments serve, the overlapping goals and activities of each party highlight areas for improved collaboration efforts moving forward. A growing number of states have updated their school siting policies to mandate more involvement between local planning departments and school districts, although the GaDOE is not among them. This research question aims to find areas of common ground between local governments and school systems in our study areas in order to inform what factors are most important for both parties to collaborate on with regards to school siting.

How can current analytic techniques be further developed or expanded to better inform decision-makers when making siting, design, renovation, and closing decisions?

Several analytical assessments are specified by the GaDOE to evaluate a site's suitability for either a brand new school or school renovation. These assessments analyze utilities, road access, site development, geography, and both safety and environmental hazards. However, these assessments are not necessarily as comprehensive or stringent as the processes that many other types of development sites are subjected to, and they do not consider potential impacts of school sites on the surrounding community. This is alarming especially since some are not the responsibility of the state or local school systems to conduct, but rather another entity is liable. Enhancing and expanding upon the current analytic techniques used to select a school site can better ensure that school systems are making informed decisions that consider more than just costs and minimum requirements.

4.4 Summary

As demonstrated through the above research questions and by the initial research we have done regarding school siting practices in the state of Georgia, the issue of more sustainable school siting is a complex one that addresses many issues relating to health, transportation modes, the environment, land use patterns, urban design, economics, the community at large, and local government. Many factors drive school siting decisions, and unforeseeable consequences can occur as a result of making poor decisions. It is difficult to pinpoint one exact cause of poor school siting decisions, and it's even more difficult to isolate only one resulting consequence of these decisions. What makes the problem more complex is the overlapping nature of these factors. The above research questions reflect that overlap in what they seek to answer and in those answers themselves. The following sections aim to determine the level of truth to the above claims regarding school siting and to address each of the research questions in detail.

5 Modes of Access

5.1 Active Transportation Modes

5.1.1 Introduction

This section begins by providing background on several key issues. It discusses the general condition of school travel mode choice (e.g. how many students chose to bike to school versus take the bus). It then discusses the health, education, financial, and congestion effects of the current mode split. It provides a short discussion on the cost of various infrastructure improvements that aim to increase the likelihood of students walking or biking to school. This background concludes by providing a short history and overview of the Safe Routes to School (SRTS) program.

After this background, the section transitions into an examination of seven issues that affect school mode choice, which were deemed relevant by both a literature review and interviews with parents and school administrators. These include:

- The school attendance zone (i.e., the area from which a school draws its student population from);
- Access to the school site's perimeter;
- Bicycle storage at the school;
- Sidewalks adjacent and near the school;
- Road width;
- Vehicle volume and congestion; and
- Programmatic activities at the school designed to encourage more walking and biking to school.

There are, of course, other issues that affect this mode split, such as the connectivity of the surrounding street network or the school's setback, but in the interest of space they were omitted. This section concludes by offering several recommendations.

5.1.2 Background

Mode Choice

Very few students today use active modes to commute to school. In 2007, 2.6 percent of students in the United States biked to school; by 2012, this dropped to 2.2 percent. In contrast, the proportion of students walking to school increased from 2007 to 2012. In 2007, 12.4 percent of students walked in the morning, and 15.8 percent of students walked in the afternoon. In 2012, these numbers grew to 15.7 percent in the morning and 19.7 percent in the afternoon (National Center for Safe Routes to School 2013d).

The Atlanta Regional Commission's 2011 travel survey (the latest such survey) gathered data on school mode choice in the Atlanta region. The survey found that 38 percent of area trips to school were made by school bus, roughly the same (35 percent) were made as a passenger in a personal vehicle, 19 percent were made as a personal vehicle driver, five percent were made via transit, and four percent were made by walking. Only 0.5 percent were made by bicycle (Atlanta Regional Commission 2011b).

Consequences of Mode Choice

This mode choice has several major consequences. It has profound consequences on student health, particularly obesity. “Most but not all studies comparing children who walk to school with children who are driven report that the walkers are more fit or physically active” (Falb 2007). In Atlanta, each additional hour spent in a vehicle is associated with a six percent increase in the likelihood of becoming obese. On the other hand, each kilometer walked is associated with a 4.8 percent reduction in the same likelihood (Frank 2004).

The modal split damages student health in other ways. More vehicle trips to school means more greenhouse gas emissions (Fury 2003; Samet 2007) and other pollutants that can cause reduced lung function, asthma, and other respiratory illnesses, cancer, lung irritation, and premature death. As children, the students themselves are at a higher risk than the general population for developing these health problems (U.S. EPA 2007).

Student learning also suffers from this mode split. Physical fitness has a direct impact on student academics and absenteeism and it improves test scores (Jacobs 2010; Sibley 2003). In a country where less than half of children have the recommended daily levels of physical activity any additional activity gained via commuting should be welcome (U.S. DHHS, CDC 2003).

This mode split has effects beyond the students themselves. As explained in Section 5.2, school busing is an expensive undertaking that has become significantly more expensive in recent history. In the 1980-81 school year, the total cost of transporting students was \$4.4 billion; by the 2006-2007 school year, that number had grown to \$19.9 billion. Over that same time period, per student expenditures increased from \$198 to \$779 (U.S. DOE 2009).

This mode split creates vehicle congestion (Collins 2005). However, perhaps because of more disparate beginning and end times and student drivers in high school, “the vast majority of problems pertaining to school traffic congestion occur in middle and elementary schools” (La Vigne 2014). The Georgia Department of Transportation (GDOT) reviewed Atlanta area traffic in July 2013 and again one month later in August, when school started. GDOT found that from July to August, when school is not in session, interstate traffic lightened while surface street traffic increased due to parents altering commute patterns to stop at their children’s school (Simmons 2014).

Cost of Infrastructure Improvements

The infrastructure investments needed to ensure a high level of pedestrian and bicycle level of service can be costly. Researchers at the University of North Carolina Highway Safety Research Center recently published their findings regarding pedestrian and bicycle infrastructure costs, gathering cost data from real-world projects. Costs include engineering, design, and any materials needed. Table 5.1.2-1 summarizes their findings.

Table 5.1.2-1: Pedestrian and bicycle infrastructure average cost

Infrastructure	Average Cost (Dollars)	Cost Unit
bicycle rack	660	each
bicycle locker	2090	each
bicycle lane	133,170	mile
signed bicycle route	25,070	mile
curb extension	13,000	each
median island	13,520	each
median	7.26	square foot
raised street crossing	8,170	each
speed bump	2,640	each
curb wheelchair ramp	810	each
striped crosswalk	770	each
concrete sidewalk	32	linear foot
brick sidewalk	60	linear foot
multi-use trail, paved	481,140	mile
flashing crossing beacon	10,010	each
HAWK beacon	57,680	each
sharrow	180	each

(Source: Bushell 2013).

Safe Routes to School

In August 2005, Congress established the National Safe Routes to School program under the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA-LU). Congress dedicated \$612 million to the program from 2005 to 2009, distributing money to states based on student enrollment. With several extensions, the program has apportioned over one billion dollars to states (National Center for Safe Routes to School 2014a).

In 2012, Congress passed the latest comprehensive transportation package, Moving Ahead for Progress in the 21st Century (MAP-21), replacing SAFETEA-LU. Under this scheme, SRTS funding was repackaged with several other distinct funding programs into the Transportation Alternatives Program (TAP). Two percent of the total amount of funding authorized under the Highway Trust Fund for federal-aid is allocated to TAP. Funding is allocated to each state based on prior funding, and then divided within each state by that area's share of the state's total population (Federal Highway Administration 2014). Funding can be used for a variety of activities, including construction, planning and design of infrastructure and non-infrastructure activities. Generally, state departments of transportation administer funding. States may continue to fund SRTS programs through SAFETEA-LU, so long as they have funding.

Georgia has only ever funded SRTS infrastructure projects under SAFETEA-LU. It has not funded SRTS infrastructure projects through MAP-21. To date, Georgia has allocated over \$30 million to its SRTS activities (Digioia email 2014). Currently 420 schools participate in the

Georgia SRTS program. The state is divided into five regions, with each having a regional coordinator that directly interacts with schools in the region. These coordinators are employed by the Georgia SRTS Resource Center. Katelyn DiGioia, a GDOT employee, oversees the SRTS program for Georgia (Georgia Safe Routes to School 2014c).

Schools that participate in SRTS are required to take two travel surveys, or travel tallies. These surveys count the number of students that arrive and leave school by particular mode. Schools are also required to carry out various programmatic activities, as described later in this section (Smith interview 2014). High schools cannot participate in SRTS (Georgia Safe Routes to School, 2014a).

5.1.3 Seven Examined Issues that Affect Mode Choice

This section examines seven topics identified by both a literature review and interviews with parents and school administrators as relevant issues affecting mode choice. Figure 5.1.3-1 depicts the organization of these issues.

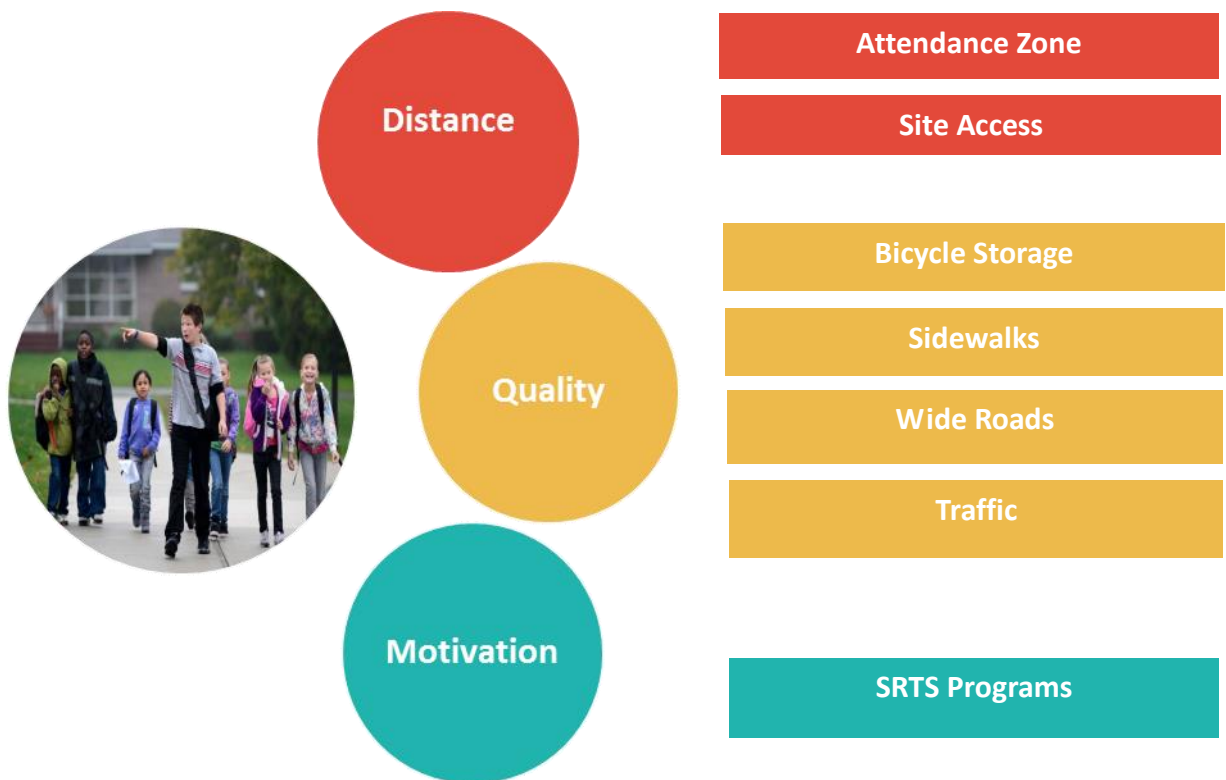


Figure 5.1.3-1: Seven examined issues that affect mode choice

These issues explore why a particular student would be able to walk or bike to school. First, the total travel distance is certainly relevant which is partially determined by a school's attendance zone and site access. Second, the quality of the student's commute is significant and largely determined by infrastructure. For instance, having a place at the school to store a bicycle, having sidewalks for the student to travel on, and not having to navigate across wide and congested roads greatly improves the quality of the school trip. Finally, programs like SRTS can affect whether the student is motivated to walk or bike.

5.1.4 Commute Distance: School Attendance Zone

Background

School enrollments have grown tremendously. In 1930, there were 262,000 schools in the United States and by 2011, the number of schools shrunk to only 95,000 (Kissane 2011). Over this time, the school-age population of the United States had grown, meaning that school enrollments had also increased. In a world of growing enrollments, without significant densities around schools, attendance zones necessarily expand in area. One recent study found that only six percent of Georgia elementary school students, 11 percent of middle school students, and six percent of high school students were within walkable distance to school (Falb 2007).

The link between attendance zone and walking and biking is well established. Schools with lower school enrollments are associated with a higher proportion of students who walk (Falb 2007). Generally, the smaller the school, the more students can walk or bike and be healthier (Kissane 2011). Walking and bicycling mode choice is positively linked with population density (Braza2004). Walking and biking are more likely mode choices for students that live within one mile of school (McMillan 2002).

Several Georgia requirements pressure development of larger schools. Minimum acreage requirements lead to large campuses. Georgia requires five acres plus one additional acre for every 100 students in an elementary school; 12 acres plus one additional acre for every 100 middle school students; and 20 acres plus one additional acre for every 100 high school students. Other requirements lead to high enrollments. Under the state capital outlay program, school systems only receive full funding if they meet Georgia's minimum school enrollment requirement: generally, 200 full time students for elementary schools; 400 for middle schools; and 500 for high schools. Additionally, in Georgia it is difficult to renovate an old school building (i.e. one that is likely to have a smaller lot and be nearer to many of its students) without the school being designated historic (Kissane 2011).

Current Conditions in Georgia

An analysis of every case study school's attendance zone is beyond the scope of this subsection. However, a small sample of case study schools is used to show one simple point. Figure 5.1.4-1 shows the attendance zones of Indian Creek Elementary School, Winnona Park Elementary School, and 4/5 Academy, and buffers of one mile and one half mile. Note that these buffers reflect as-the-crow-flies distances, not street network distances. With respect to Indian Creek, note that the vast majority of the attendance zone is within the half mile buffer. Compare this to Winnona Park, which draws students from a slightly larger district. Finally, compare this to 4/5 Academy, which educates all of Decatur's 4th and 5th graders and necessarily draws on a larger attendance zone of the entire school district. Notably, it is located in a corner of its attendance zone.

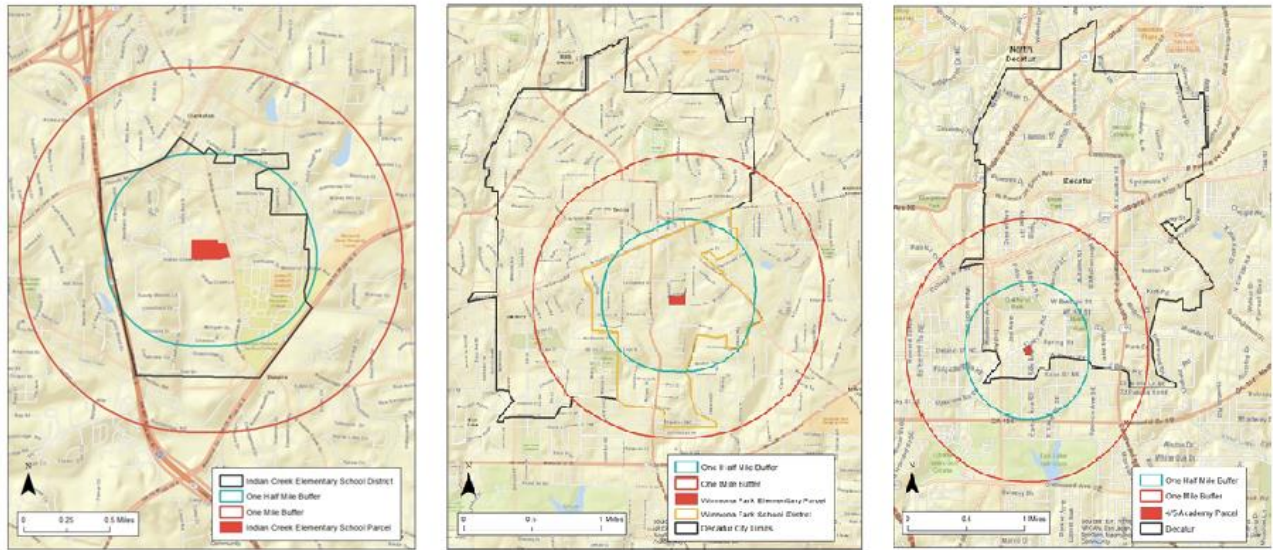


Figure 5.1.4-1: Attendance zones of Indian Creek Elementary School, Winnona Park Elementary School, and 4/5 Academy with buffers

Alternative Options and Best Practices

Attendance zone best practices include:

- To the extent possible without compromising racial, ethnic, and economic diversity, draw attendance zones to maximize walkability and bikeability within each zone;
- Consider actual travel distances as opposed to as-the-crow-flies distances, if possible;
- Be aware of pedestrian and bicycle infrastructure and the effect it has on acceptable travel distances; and
- Be aware of infrastructure barriers, such as an especially busy or wide road, to walkability

(ChangeLab 2012; Hadley interview 2014; Davis interview 2014; Hall interview 2014).

Assessment of Current Conditions

From interviews, it is clear that transportation is an issue considered by school districts when siting schools, but is not one of primary importance (Stokes interview 2014). Unfortunately, it is clear that school location within an attendance zone affects the amount of students that walk and bike. Some of the case study schools gathered mode choice data through SRTS travel surveys, or travel tallies. Table 5.1.4-1 summarizes morning and afternoon mode choice data for these schools. The date of the travel survey is noted next to the school name.

Table 5.1.4-1. School mode choice percentage, as derived from Safe Routes to School Surveys, for select case study schools

System	School	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Decatur	4/5 Academy (Fall 2013)							
	<i>morning</i>	14	10	31	35	10	0.1	0.4
	<i>afternoon</i>	18	8	47	23	2	0.1	1
	Winnona Park Elementary (Fall 2013)							
	<i>morning</i>	30	2	9	55	3	0	2
	<i>afternoon</i>	35	1	20	38	3	0	4
DeKalb	Oak Grove Elementary (Fall 2013)							
	<i>morning</i>	20	0.6	13	63	3	0	0.1
	<i>afternoon</i>	18	0.5	37	40	2	0	2
	Indian Creek (Spring 2011)							
	<i>morning</i>	64	0	15	19	0	0.2	2
	<i>afternoon</i>	65	0	15	17	0	0.3	1
Macon-Bibb	Weaver Middle (Fall 2010)							
	<i>morning</i>	0.9	0	70	24	5	0.2	0
	<i>afternoon</i>	1	0	76	19	4	0.5	0.2
	Alexander II Elementary (Fall 2010)							
	<i>morning</i>	5	0	0.6	85	9	0.3	0
	<i>afternoon</i>	4	0	2	84	9	0.6	0.3

(Sources: National Center for Safe Routes to School 2010a, 2010b, 2011b, 2013a, 2013b, 2013c).

Indian Creek's walk mode share is dramatically higher than any other school's and roughly twice that of Winnona Park. Perhaps one reason for this favorable mode split is Indian Creek's relatively small attendance zone. Indeed, looking at the three maps above and the chart above, there appears to be a connection between walk mode share and school attendance zone size.

It is important to keep in mind that the above buffer distances do not reflect actual travel distances, nor do they take into account infrastructure barriers like wide or congested roads. The 4/5 Academy is located in a relatively quiet residential area and Indian Creek is adjacent to two busy streets. As discussed below, vehicle volume and wide roads affect the amount of students that walk and bike to school.

5.1.5 Commute Distance: Site Access

Background

Limited site access can increase travel distances for school users coming from certain directions, and therefore decrease the likelihood of choosing active modes. Researchers have found that increased distances are negatively linked to active mode choice (Schlossberg 2006, Merom 2006).

Many schools, though fortunately very few of the case study schools under examination here, have constructed fencing or other barriers on their perimeter that restrict vehicle or active mode access to the school to only a few, or one, particular point(s). For example, the Washoe County, Nevada school system recently approved \$4.8 million to build perimeter fencing at 27 elementary schools (McAndrew 2014).

Current Conditions in Georgia

School properties often lack access from multiple directions; that is, there may only be an entrance to the west, or the east, but not the west and the east. Table 5.1.5-1 summarizes site access to the case study schools. Pedestrian-only trails are counted but informal “goat trails,” or walk paths established merely by unintentional destruction of plant life by walkers, are not counted but are noted.

Table 5.1.5-1: Number of directions of access to case study schools

System	School	Number of Directions of Site Accessibility (out of four)
Decatur	Decatur High	3
	4/5 Academy	2
	Winnona Park Elementary	3
	Westchester Elementary	2 (including one direction through pedestrian trail)
DeKalb	Arabia Mountain High	2
	Oak Grove Elementary	2 (including one direction through pedestrian trail)
	Gresham Park Elementary	n/a
	Indian Creek	2
	Museum School of Avondale Estates	2
	International Community School	1
Macon-Bibb	Southwest High	3
	Rutland High	2 (plus 1 more through pedestrian goat trail)
	Rutland Middle	2 (plus 1 more through pedestrian goat trail)
	Weaver Middle	1
	Ingram-Pye Elementary	3
	Alexander II Elementary	4
Newton	Newton High	3 (one direction through opening in perimeter fence)
	Cousins Middle	1
	Fairview Elementary	3 (one direction through pedestrian path)
	Flint Hill Elementary	1

(Source: Google Maps 2014).

Alternative Options and Best Practices

Some of the case study schools have created pedestrian access from directions where there is no vehicle access by establishing shared-use pedestrian and bicycle trails. This practice has certainly been implemented by other schools outside of the study area (National Center for SRTS

2010c). This appears to be the primary option for opening up site access, short of creating new vehicle access points.

Several of the more relevant best practices with respect to shared-use trails are:

- Use paint or other markers to create traffic lanes, if the width allows, based on direction or mode of travel (walk or bike);
- Maintain adjacent trees and shrubs to allow for visibility on curves;
- The trail should be at least 10 feet in width if it allows two-direction travel and both pedestrians and bicyclists; and
- Limit crossings with driveways and roadways, if possible, if not, use signage to protect trail users.

(Mid-Ohio Regional Planning Commission 2006).

Assessment of Current Conditions

The number of directions providing access certainly matters. For example, Rutland High School in Macon-Bibb County does not have vehicular access to the east, despite the fact that the local area's balance of housing lies in that direction. Limited access points increase the travel distance for those approaching from the direction without access, as illustrated in Figure 5.1.5-1. Total travel distance from Rutland High (point A) to the hypothetical student house (point B) is 1.3 miles, much more than it would be if there was a trail providing a more direct path.



Figure 5.1.5-1: Access to Rutland High School from neighborhood to east

The non-vehicle trails that some of the case study school shave created should be emulated by other schools. Figure 5.1.5-2 shows Oak Grove Elementary School's trail access, in orange, and compares it to vehicle access, in blue. Though the mileage savings is minimal, only a few

tenths of a mile, these small distances have a greater marginal effect on walkers and bikers than they do for drivers.

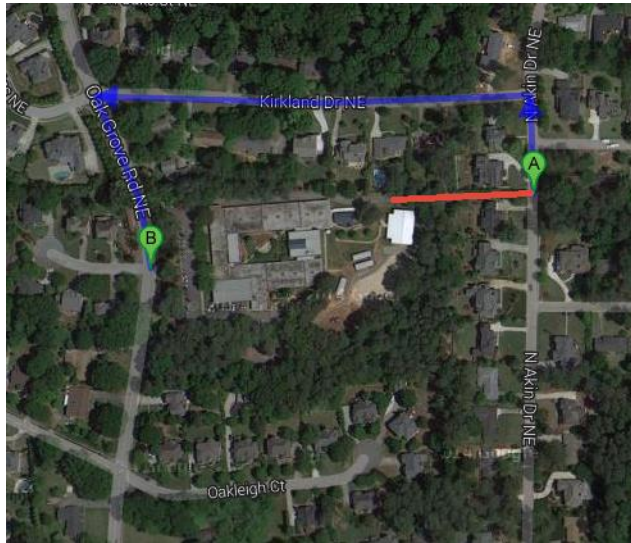


Figure 5.1.5-2: Access to Oak Grove Elementary School from east via pedestrian and bike trail

Rutland High certainly would benefit from a more direct route between A and B and a trail like that used by Oak Grove could provide that link.

One final issue to note is that some of the case study trails are quite short. In the case of Newton High School, there really is no trail at all but rather just an opening in the school's perimeter fencing (Ellenberg interview 2014). Additionally, a full level of service evaluation for each of the trails would be useful to understand what the construction materials and the width of the trails, but this is well beyond the scope of this paper.

5.1.6 Commute Quality: Bicycle Storage

Background

The presence of bicycle storage facilities, such as a traditional bike rack, makes bicycling a more likely mode choice (Abraham 2002). Additionally, for cyclists under 16 years of age securing bicycle storage is more important than for other age groups (Hunt 2007).

Current Conditions in Georgia

Table 5.1.6-1 indicates whether or not each case study school has proper bike storage, such as a bike rack.

Table 5.1.6-1: Availability of bike storage at case study schools

System	School	Proper Bike Storage
Decatur	Decatur High	yes
	4/5 Academy	yes
	Winnona Park Elementary	yes
	Westchester Elementary	yes
DeKalb	Arabia Mountain High	no
	Oak Grove Elementary	yes
	Gresham Park Elementary	n/a
	Indian Creek	no
	Museum School of Avondale Estates	yes
	International Community School	no
Macon-Bibb	Southwest High	no
	Rutland High	no
	Rutland Middle	yes
	Weaver Middle	no
	Ingram-Pye Elementary	no
	Alexander II Elementary	no
Newton	Newton High	no
	Cousins Middle	no
	Fairview Elementary	yes
	Flint Hill Elementary	no

Alternative Options and Best Practices

Bike rack best practices include:

- The bike rack should provide some support for the bike frame itself; otherwise the bike may fall over;
- The bike rack should be built from a material that resists cutting;
- Multiple bike racks should be separated by at least four feet;
- The bike rack area should be covered to protect bikes from poor weather;
- The bike rack should be placed near the building entrance, no more than a 30 second walk away;
- The bike rack should be as close or closer than the nearest parking space;
- If the building is served by multiple entrances, then additional racks should be deployed near them; and
- Creative designs should be used, especially with young cyclists.

(Association of Pedestrian and Bicycle Professionals 2014).

SRTS funding has been used in Georgia for bike storage in the form of racks. These schools could serve as useful examples to future schools looking to install bike racks:

- Fifty bicycle racks, ten at each site, were installed at the following Decatur schools: Renfro Middle School, Clairemont Elementary School, Glennwood Academy, Oakhurst Elementary School, and Winnona Park Elementary School. The total budgeted cost was \$82,500 or \$1,650 per rack. Inverted U-racks and wave racks were installed (GDOT 2013).
- One bike rack was installed at each of the following Newton County schools: Fairview Elementary School, Clements Middle School, Veterans Memorial Middle School, West Newton Elementary School, and Live Oak Elementary School (GDOT 2012a).

Assessment of Current Conditions

The exact placement and type of case study bike rack is beyond the scope of this paper, but the presence of a simple bike rack makes a difference. More students biked to 4/5 Academy after installation of the bike racks than did before (Payne interview 2014). The racks are important because bicycle theft was a deterrent before installation (Davis interview 2014).

At some schools, bike racks may make less sense. At a site like Winnona Park Elementary School, bicycle theft is less of a concern and so the effect of bike rack installation may not be as significant (Hadley interview 2014). Additionally, young children may not bike to school simply because parents do not trust their bicycling ability. A bicycle rack at the school is unlikely to change this (Hall interview 2014). At Southwest High School in Macon-Bibb County there is only one student that rides a bicycle to school even though the school has a bicycle rack, suggesting that the mere presence of a bike rack is insufficient to ensure bicycling (Kilcrease interview 2014).

Looking at Table 5.1.6-1 a pattern emerges with bike racks being common in the more urban schools and less so in more suburban or rural schools. However, the cost of installing a bike rack is so minimal that even schools that seemingly would not benefit from installation of one should still consider it.

5.1.7 Commute Quality: Sidewalks

Background

Students are more likely to walk on main roads if such roads have sidewalks (Ewing 2011). Travel diary information taken from the 13-county metro Atlanta region indicated that students were more likely to walk to school as the percentage of sidewalks in a particular area increased (Lawrence Frank and Company 2008). The SRTS program provides numerous examples of schools that have installed sidewalks and seen more walkers. Almost a mile of sidewalk infrastructure was built in Fairhope, Alabama along a single stretch of road (a main north-south road adjacent to the schools), connecting to a middle school and a high school. After construction of the sidewalk and implementation of programmatic activities to encourage walking, the walking mode share increased (National Center for SRTS 2010c).

Current Conditions in Georgia

Many of the case study schools are situated in areas without sidewalks, either in whole or in part. Table 5.1.7-1 summarizes local sidewalk presence. Adjacent sidewalks are those immediately bordering the school's parcel. The quarter-mile buffer is drawn as-the-crow-flies

from the school building. “Partial” describes a condition where some sidewalks exist but the sidewalk network is incomplete. “Partial” therefore captures a wide range of conditions and admittedly can be imprecise.

Table 5.1.7-1: Presence of sidewalks adjacent to and near case study schools

System	School	Adjacent	.25 Mile Buffer
Decatur	Decatur High	complete	complete
	4/5 Academy	complete	extensive
	Winnona Park Elementary	complete	partial
	Westchester Elementary	complete	partial
DeKalb	Arabia Mountain High	partial	none*
	Oak Grove Elementary	none	partial
	Gresham Park Elementary	n/a	n/a
	Indian Creek	complete	complete
	Museum School of Avondale Estates	complete	partial
	International Community School	partial	partial
Macon-Bibb	Southwest High	complete	partial
	Rutland High	complete	partial*
	Rutland Middle	complete	partial*
	Weaver Middle	partial	partial
	Ingram-Pye Elementary	partial	partial
	Alexander II Elementary	complete	complete
Newton	Newton High	none	none*
	Cousins Middle	none	partial
	Fairview Elementary	partial	partial
	Flint Hill Elementary	none	none

*.25 mile buffer does not leave school parcel or only in a small portion.

There is more value to sidewalks than their mere presence but a level of service evaluation is time-consuming, data-intensive, and beyond the scope of this paper. Figure 5.1.7-1 shows sidewalk conditions on Scott Boulevard near Westchester Elementary School where the sidewalk itself is relatively smooth, but is narrow and very close to a busy four-lane road.



Figure 5.1.7-1: Scott Boulevard sidewalk near Westchester Elementary School

Figure 5.1.7-2 shows another sidewalk near Decatur High School. This sidewalk is wider, protects sidewalk users by trees and parking, and is a smoother walking surface. Decatur, conditions near Westchester Elementary School notwithstanding, generally provides a good model for Georgia schools to emulate regarding sidewalk frequency and quality.



Figure 5.1.7-2: Sidewalk on McDonough Street near Decatur High School

Alternative Options and Best Practices

SRTS in Georgia has funded several projects significantly devoted to improving sidewalk infrastructure that could be useful for other schools.

- In Macon-Bibb, GDOT installed and repaired sidewalks within a 2-mile radius of Barden Elementary School, Riley Elementary School, King-Danforth Elementary School, and Appling Middle School. A handrail was installed alongside one sidewalk on Greenbriar Road that crossed a culvert (GDOT 2010);
- In DeKalb, GDOT installed sidewalks near Briarlake Elementary School and Evansdale Elementary School (GDOT 2013); and
- In Newton County, GDOT installed sidewalks near Fairview Elementary School, Clements Middle School, West Newton Elementary School, Veterans Memorial Middle School, and Live Oak Elementary School (GDOT 2012a).

Sidewalks are a fairly simple piece of infrastructure to implement and there does not appear to be any practice outside of the four case study districts radically different than anything being done within them.

SRTS also suggests several best practices:

- Sidewalks should be level;
- Sidewalks should be separated from vehicle traffic by some buffer;
- Construction of sidewalks should prioritize those routes that see the most pedestrian and bicycle traffic;
- Sidewalks should be at least five feet in width where there is a buffer, and wider where there is none; and
- Street lighting should be installed where there is none.

(National Center for Safe Routes to School 2014b).

Assessment of Current Conditions

Interviewees recognized the importance of quality sidewalks. Laura Hall, SRTS coordinator with Oak Grove Elementary School, believes that more sidewalks near the school would certainly increase the amount of students who walk (Hall interview 2014). Rochelle Lofstrand, principal of Westchester Elementary School, believes that more students would walk to her school if the sidewalks on Scott Boulevard were of a higher quality (Lofstrand interview 2014).

Somewhat predictably, the Decatur case study schools scored the highest in the sidewalk analysis and the Newton County schools the lowest. Macon-Bibb and DeKalb County were in the middle. Interestingly, these scores generally fit on an urban to suburban to rural spectrum. Although an analysis of existing sidewalks quality is beyond the scope of this paper, based on cursory analysis and several site visits it appears that Decatur would have the highest quality sidewalk infrastructure overall.

5.1.8 Commute Quality: Street Width

Background

Wide streets discourage students from walking to school and are dangerous for walkers and bicyclists (Lin 2009). Road diets, or the effective narrowing of wide streets, make roads safer for those not in vehicles. One study found that after controlling for traffic volume roads that had undergone a “diet” had a 25.2 percent reduction in crash frequency per mile as compared to roads that had not (Pawlovich 2006).

Current Conditions in Georgia

As summarized in Table 5.1.8-1, many of the case study schools are situated on a parcel directly adjacent to a road or street with more than two lanes. A “wide road” is defined as one that has more than two lanes, not counting parking and shoulder areas but counting turning lanes. A range rather than a single number in the number of lanes field reflects the presence of turning lanes.

Table 5.1.8-1: Width of roads adjacent to case study schools

System	School	No. of Adjacent Roads	No. of Adjacent Wide Roads	Name of Wide Road	No. of Lanes
Decatur	Decatur High	4	3	W. Howard Avenue	3
				N. McDonough Street	4
				Commerce Drive	2 to 3
	4/5 Academy	3	0		
	Winnona Park Elementary	3	0		
	Westchester Elementary	1	1	Scott Boulevard	4 to 5
DeKalb	Arabia Mountain High	2	1	Browns Mill Road	2 to 5
	Oak Grove Elementary	1	1	Oak Grove Road	2 to 3
	Gresham Park Elementary	n/a			
	Indian Creek	2	1	N. Indian Creek Drive	4
	Museum School of Avondale Estates	1	0		
	International Community School	2 (but three sides of school parcel front a street)	0		
Macon-Bibb	Southwest High	4 (but only three sides of school parcel front a street)	1	Williamson Road	3 to 4
	Rutland High	1	1	Skipper Road	3 to 4
	Rutland Middle	1	1	Skipper Road	3 to 4
	Weaver Middle	1	1	Heath Road	3 to 4
	Ingram-Pye Elementary	3	1	Anthony Road	4
	Alexander II Elementary	3	2	Oglethorpe Street	2 to 3
				College Street	4
Newton	Newton High	2	2	Ram Drive	4
				Brown Bridge Road	3
	Cousins Middle	1	1	Carlton Trail	3
	Fairview Elementary	2	2	Jack Neely Road	2 to 4
				Fairview Road	2 to 3
	Flint Hill Elementary	2	1	Airport Road	2 to 3

Alternative Options and Best Practices

The most obvious way to avoid wide roads is to not site a school adjacent to them. Barring that solution, schools can take other measures to mitigate their effect. One method is to install

infrastructure that does not take away lanes but makes crossing the street safer. For example, Main Street Middle School in Montpelier, Vermont installed bulb-outs near two intersections for \$110,000. These effectively made the road, at the bulb-outs, narrower (National Center for SRTS 2010c).

SRTS describes various infrastructure improvements that can be made to address wide crossing distances as follows:

- *Pedestrian and bicycle bridges and underpasses* should be used when dealing with a highway or major road that cannot be crossed on its surface. They are expensive, costing \$2 million or more. They may not be used by pedestrians and bicyclists to the extent planned if they do not offer a relatively direct route.
- *Curb extensions* (like the bulb-out described above) narrow the street in certain locations and allow pedestrians and vehicles to identify each other better than if the two were obscured by parked vehicles. Reducing cross time also allows for a shorter red light on the crossed street, aiding traffic flow. Curb extensions are inappropriate where the street is already narrow, parking is not permitted, or where the extension would interfere with a bicycle lane or the ability of large vehicles to turn.
- *Crossing islands* are a raised island placed in the middle of a street. It allows pedestrians to cross a street one side at a time and to focus their attention when crossing on one direction of travel. They limit vehicle left-hand turns.
- *Waiting areas* are simple paint or infrastructure treatments on sidewalks advising pedestrians to wait a safe distance from the road while waiting to cross. To be effective, a larger sidewalk may be needed.
- *Road diets* remove vehicle traffic lanes from a street by replacing them with bike lanes, turning lanes, or vehicle parking. They can result in slower motor vehicle speeds. Often they can be created merely by re-striping the road.

(SRTS Guide 2014b).

SRTS in Georgia has funded several projects in the case study school districts significantly devoted to mitigating the effects of wide roads:

- In Macon-Bibb, GDOT installed several crosswalks with high-visibility signage near Barden Elementary School, Riley Elementary School, King-Danforth Elementary School, and Appling Middle School. A pedestrian refuge island was installed in the place of a center turn lane, along with rectangular rapid flashing beacons, on Shurling Drive (GDOT 2010).
- In DeKalb, GDOT upgraded crosswalks and signals near Briarlake Elementary School and Fairington Elementary School, and installed two raised crosswalks and two rectangular rapid flash beacons at Oak Grove Elementary School (GDOT 2013).
- In Newton County, GDOT installed rectangular rapid flashing beacons near Fairview Elementary School and Clements Middle School, and installed raised concrete refuge islands and rectangular rapid flashing beacons near West Newton Elementary School (GDOT 2012a).

Assessment of Current Conditions

Of the 19 schools researched (not counting Gresham Park Elementary, which is under construction, along with possibly its neighboring road network), 15 were located adjacent to at least one “wide” road though many of the wide roads were so-considered because of turn lanes. However, to a pedestrian or bicyclist, a turn lane must be crossed in the same way as a non-turn lane. The four schools without any adjacent wide roads were all located in areas that can primarily be considered residential and neighborhood-focused.

Perhaps more problematically, eight of the schools were *only* located on wide roads. Westchester Elementary School fronts Scott Boulevard, which ranges from four- to-five-lanes directly in front of the school. The road is a main artery into and out of the City of Atlanta in the direction of Stone Mountain and there are no crosswalks in front of the school. Principal Lofstrand explained that Scott Boulevard is a significant deterrent for walkers and bikers (Lofstrand 2014). Parents are concerned about crossing the street despite the presence of crossing guards at a few locations.



Figure 5.1.8-1: Westchester Elementary School, adjacent to Scott Boulevard

Other schools are bordered by multiple “wide” streets. Figure 5.1.8-2 below shows Alexander II Magnet Elementary School, which fronts four-lane College Street, is also bordered to the north by the two-to-three lane Oglethorpe Street. College Place, the dead-end street to the south, turns into a pedestrian overpass.

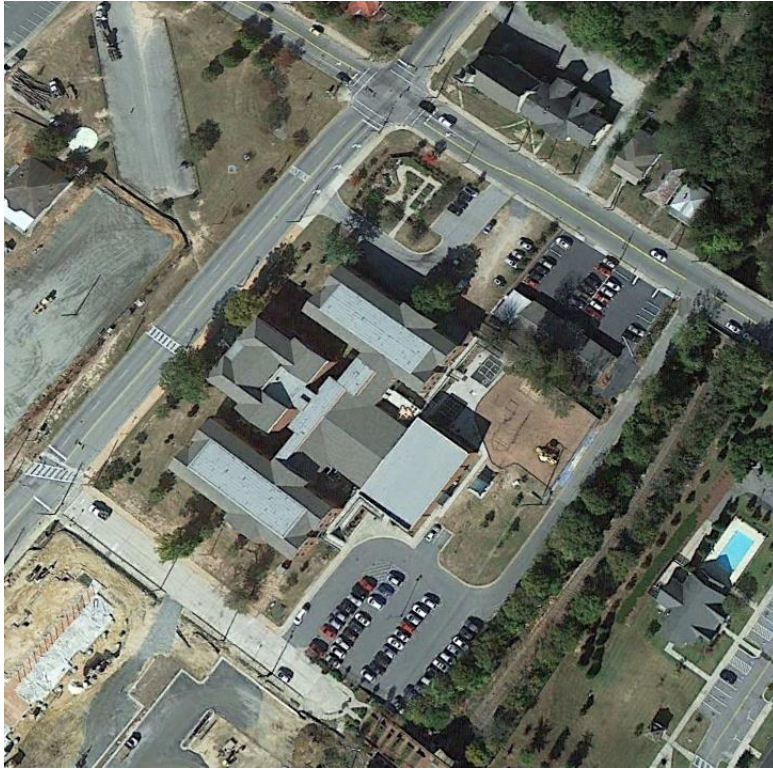


Figure 5.1.8-2: Alexander II Elementary School, adjacent to Oglethorpe Street and College Street

Roads near the school, but not adjacent, are also wide. Decatur High School, for example, is entirely surrounded by the downtown Decatur street network that features many four- and six-lane roads although this area also has an extensive sidewalk system as outlined above.

Some of the streets adjacent or near the case study schools show evidence of some of the mitigation measures recommended by SRTS, particularly those near Decatur High School. These measures are described in Table 5.1.9-1 in the next section.

5.1.9 Commute Quality: Traffic

Background

As described previously, school vehicles can certainly cause heavy traffic around school sites. As a separate matter vehicle traffic, or high volumes of vehicles that create congestion, serve as a deterrent to active mode use (Landis 2007). To this extent, congestion begets more congestion.

Current Conditions in Georgia

Many of the case study schools are located adjacent to roads that, independent of their width, are barriers to active mode usage because of heavy vehicle traffic, especially in morning and afternoon rush hours. Table 5.1.9-1 presents Google traffic flow data (as available) for roads adjacent to the case study schools. Traffic comes from Monday morning, with specific times of

traffic approximate to morning school start times. Vehicle congestion data is unavailable for many of the relevant roads, and therefore many of the school case studies.

Table 5.1.9-1: Traffic congestion on roads adjacent to case study schools

System	School	Time Used	Road	Traffic Condition
Decatur	Decatur High	8:15	Trinity Place	medium, heavy
			Commerce Drive	medium, heavy
			McDonough Street	medium, heavy
			Howard Avenue	medium, heavy
	4/5 Academy	7:30	Oakview Road	heavy
	Winnona Park Elementary			
	Westchester Elementary	7:45	Scott Boulevard	medium
DeKalb	Arabia Mountain High	7:45	Klondike Road	light, medium
			Browns Mill Road	light, medium
	Oak Grove Elementary	7:30	Oak Grove Road	medium
	Gresham Park Elementary			
	Indian Creek	7:30	Indian Creek Drive	medium
	Museum School of Avondale Estates			
	International Community School			
Macon-Bibb	Southwest High			
	Rutland High			
	Rutland Middle			
	Weaver Middle	8:00	Heath Road	light, medium
	Ingram-Pye Elementary			
	Alexander II Elementary			
Newton	Newton High	7:30	Crowell Road	light, medium
	Cousins Middle			
	Fairview Elementary			
	Flint Hill Elementary	7:30	Industrial Park Boulevard	light

Nearby, non-adjacent roads are also affected. Figure 5.1.9-1 shows morning traffic around Decatur High School where green, orange, and red represent light, medium, and heavy traffic, respectively.

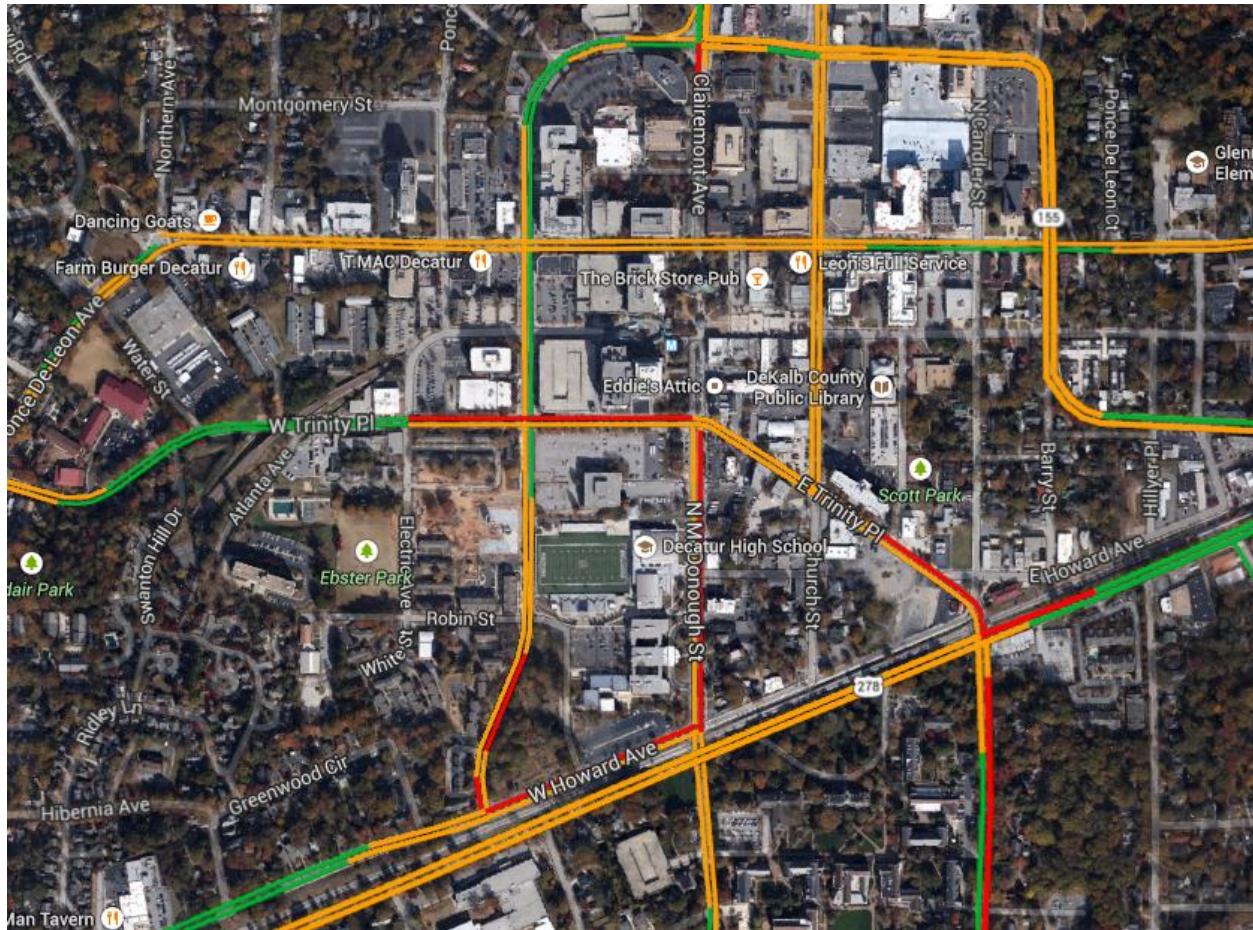


Figure 5.1.9-1: Monday morning traffic around Decatur High School

Alternative Options and Best Practices

SRTS participants often emphasize traffic slowing measures and road diets in an effort to deal with large volumes (National Center for SRTS 2010c). SRTS recommends several additional measures, other than simply lowering the speed limit, to slow traffic:

- *Speed bumps* are 2.5- to 4-inch tall bumps that cause vehicles to slow down. However, they are typically disliked by motorists and emergency services providers. They are also infeasible on major streets, instead typically being installed on residential streets.
- *Raised pedestrian crosswalks* are similar to speed bumps, except a pedestrian can cross the street on top of the speed bump. While raised, the pedestrian becomes more visible to motorists. Like speed bumps, they cannot be implemented on major roads and are disliked by emergency service providers.

(Safe Routes to School Guide, 2014a).

SRTS in Georgia has funded several projects significantly devoted to improving sidewalk infrastructure in the case study school districts:

- In Macon-Bibb, GDOT installed eight solar-powered radar speed signs near Barden Elementary School, Riley Elementary School, King-Danforth Elementary School, and Appling Middle School (GDOT 2010).
- In DeKalb, GDOT installed radar speed signs on Lavista Road east and west of Briarlake Road, and on Foster Ridge Road between Brookcliff Way and Brookdale Drive, and on Oak Grove Road near Oak Grove Elementary (GDOT 2013).

An additional measure implemented by some case study schools is a satellite pick-up and drop-off location. For example, at 4/5 Academy in Decatur, many parents use a nearby Family Dollar parking lot to pick-up and drop-off their children (Davis interview 2014; Payne interview 2014). Approximately 100 students a day then walk the remaining distance to school, self-organizing into walking groups like “a single living organism”. This results in fewer vehicles traveling entirely to the school, which alleviates total traffic volume. Amanda Davis, SRTS coordinator with the school, negotiated with the shopping center’s landlord to allow parents to use the parking lot. Figure 5.1.9-2 shows the location of the lot relative to the school with only 0.4 miles separating Family Dollar (A) from the school (B).

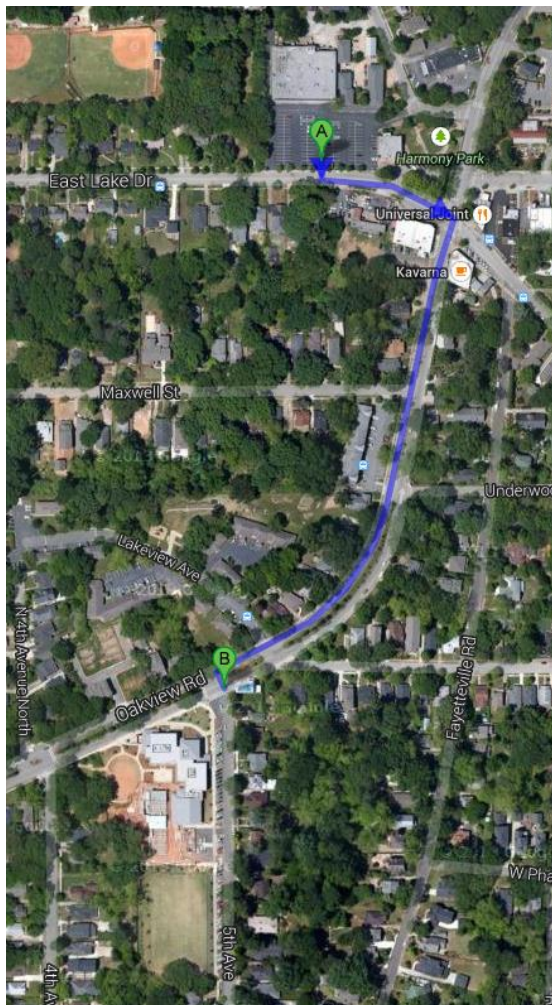


Figure 5.1.9-2: Walking route from Family Dollar to 4/5 Academy

Assessment of Current Conditions

Many parents do not let children walk or bike to school alone, or even with a parent, because of the high traffic volumes (Davis 2014). Other parents, like some at Oak Grove Elementary School, only park on one side of the street to avoid crossing or taking a left-hand turn on a busy street (Hall 2014).

As shown above, many of the schools are located in areas with high traffic volumes. Adjacent streets were reviewed to determine any infrastructure mitigation measures implemented by schools. While some of these measures are more relevant for road width than road speed, extremely minor measures like a painted crosswalk or simple signage are not noted. Non-infrastructure measures like crossing guards are also not noted.

Table 5.1.9-2: Infrastructure measures on roads adjacent to case study schools to mitigate traffic volume and speed or road width

System	School	Mitigation Measure
Decatur	Decatur High	one pedestrian right-of-way sign in crosswalk on McDonough Street; on-street parking spots on McDonough Street, on-street parking spots on Commerce Drive
	4/5 Academy	one "school" painted on Fifth Avenue; on-street parking on Fifth Avenue; landscaped median on Oakview Road
	Winnona Park Elementary	two raised pedestrian crosswalks combined with bulb-out on Avery Street
	Westchester Elementary	none
DeKalb	Arabia Mountain High	none
	Oak Grove Elementary	on-street parking spots on Oak Grove Road; rectangular rapid flash beacon on Oak Grove Road and one on Fair Oaks Road; two speed radar signs on Oak Grove Road
	Gresham Park Elementary	n/a
	Indian Creek School	none
	Museum School of Avondale Estates	one set of speed bumps on Forest Boulevard
	International Community School	on-street parking spots on Wood Trail Lane
Macon-Bibb	Southwest High	none
	Rutland High	none
	Rutland Middle	none
	Weaver Middle	none
	Ingram-Pye Elementary	none
	Alexander II Elementary	none
Newton	Newton High	none
	Cousins Middle	none
	Fairview Elementary	rectangular rapid flash beacons on Fairview Road
	Flint Hill Elementary	rectangular rapid flash beacons on Fairview Road

At least three of the case study schools, 4/5 Academy, Winnona Park Elementary School, and Oak Grove Elementary School, have de facto off-site pick-up and drop-off locations. As shown

by the above table, case study schools in Decatur and DeKalb County have implemented the most significant measures.

It is also important to note that busy streets that are near but not adjacent to a school can deter walkers and bikers. With respect to 4/5 Academy, multiple roads (Memorial Drive, Clairemont Road, Sycamore Drive, and Church Street) were so identified (Davis interview 2014). Another parent identified Candler Street and Columbia Drive which are near, but not adjacent to, Winnona Park Elementary as real deterrents because of their rush hour traffic. Additionally, traffic in the school parking lot itself, or immediately outside the parking lot, can serve as a deterrent (Davis interview 2014).

5.1.10 Commute Motivation: Programmatic Activities

Background

The SRTS program recommends a variety of programs that all serve to encourage active mode use. The programs undertaken by a school give that school a certain level of participation. These levels include, in increasing order of participation:

- *School partner level* requires schools to provide basic school information and appoint a school champion, i.e., the person at the school that generally leads SRTS participation. This person can be a teacher, a principal, a parent, or someone else.
- *Bronze level* schools must meet school partner level requirements, collect student travel tallies, give a SRTS presentation, and do one additional activity (see below).
- *Silver level* schools must meet bronze requirements, must conduct some sort of pedestrian or bike safety activity, and do three additional activities (see below).
- *Gold level* schools must meet silver requirements, create an “institutional” presence for SRTS (e.g., a permanent position in the PTA), and do five additional activities (see below).

Additional activities include things like international walk to school day, a bike rodeo, and crossing guard appreciation day. The list of acceptable activities is generous, and schools can create their own unique activity (Georgia SRTS 2014b).

SRTS programs have been found to increase walking and biking mode share (Staunton 2014). One study in Eugene, Oregon found that schools that implemented SRTS non-infrastructure programs saw a five percentage point increase in biking mode share and a two percentage point increase in walking mode share. Combining these non-infrastructure activities with infrastructure changes resulted in walking and biking increases of between five and 20 percentage points (McDonald 2013).

Current Conditions in Georgia

There are currently 416 schools in Georgia that participate in SRTS to some extent (Georgia SRTS 2014a). Table 5.1.10-1 describes participation by case study schools:

Table 5.1.10-1: Safe Routes to School participation by case study schools

System	School	SRTS Partner?
Decatur	Decatur High	n/a
	4/5 Academy	yes
	Winnona Park Elementary	yes
	Westchester Elementary	no
DeKalb	Arabia Mountain High	n/a
	Oak Grove Elementary	yes
	Gresham Park Elementary	n/a
	Indian Creek School	yes
	Museum School of Avondale Estates	yes
	International Community School	no
Macon-Bibb	Southwest High	n/a
	Rutland High	n/a
	Rutland Middle	yes
	Weaver Middle	no
	Ingram-Pye Elementary	no
	Alexander II Elementary	yes
Newton	Newton High	n/a
	Cousins Middle	no
	Fairview Elementary	yes
	Flint Hill Elementary	no

(Source: Georgia Safe Routes to School 2014a).

From interviews, activities at some of the participating schools have included:

- Monthly walk and roll days where all students are encouraged to walk or bike to school. There is typically some incentive to participate, like a small prize. One grade can be pitted against another grade with the grade with higher participation winning a prize, like a pizza party. At 4/5 Academy in Decatur, 231 students participated in a recent walk and roll day.
- Walking school buses where students are encouraged to meet in a particular gathering place and walk to school, or to gather each other at various places (like each student's home) into an ever-growing group along the way. Westchester Elementary School has several walking routes that function on some level as walking school buses. The red points represent meeting points, yellow marks the school, and green points show trail access points.

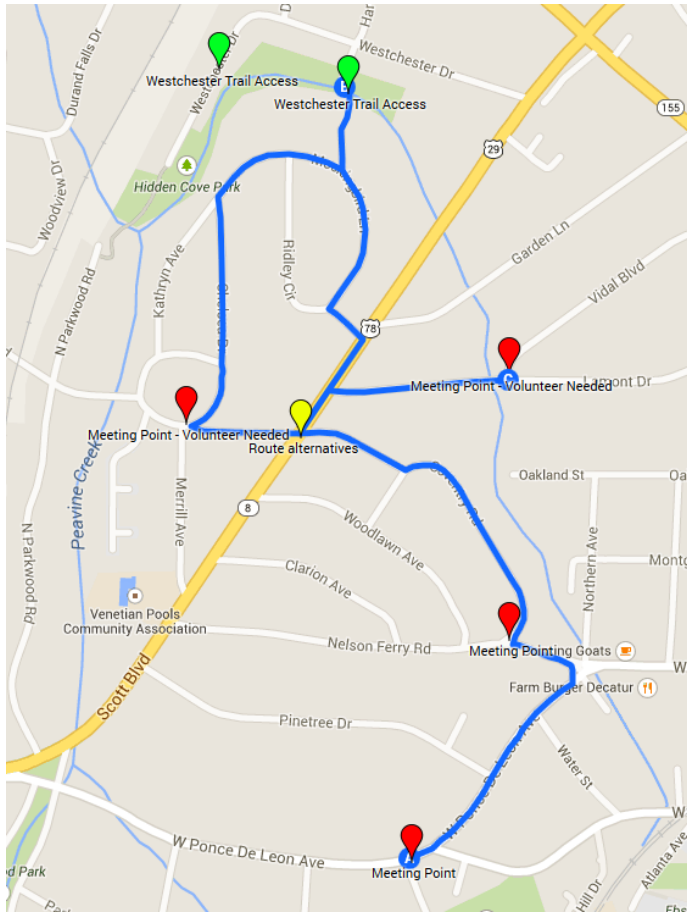


Figure 5.1.10-1 Westchester Elementary School Publicized Walking Routes

- Walk-tober, held in October or another month (with an appropriately different name), where students are challenged to walk or bike to school as many days as possible, with those walking or biking the most winning some prize. Students can count their days in a fun way like by putting a marble in a jar for every time they walk or bike to school. At Winnona Park Elementary, over 200 students participated in Walk-tober in October.
- A Golden Shoe Award, a prize awarded to the class with the highest percentage of students walking or biking for the particular week. The competition lasts eight to ten weeks, with the award held by the leading class for the particular week. At the end of the competition, the class that led the most wins a prize.
- A remote drop-off or pick-up, as described above, where parents pick up and drop off students at a site some distance from the school, and students walk the remaining distance together with or without parents.

(Davis interview 2014; Payne interview 2014; Hadley interview 2014; Hall interview 2014).

Alternative Options and Best Practices

Several best practices are provided for SRTS activities, in general. These include:

- First, gain the principal's approval;
- Consider the PTA, school staff, law enforcement, and local business and community leaders as potential supporters;
- Strive to include all students and do not make students feel bad if they cannot participate; and
- Promote any activity to parents and local media.

(SRTS Georgia 2014).

Assessment of Current Conditions

SRTS is a relatively easy program to participate in. The program's sheer popularity means there is a wealth of information for future participants to draw upon, both from written sources and school champions. In Georgia each region's coordinator is tasked with assisting participating schools, so there is state support for participants.

Interviewees identified a few flaws in the program, however:

- First, school champions are frequently parents. As the particular parent's child graduates the school, that parent is likely to stop being the school champion. This results in a certain instability, where the program can cease to exist, at worst, or just deviate from established practices if a new school champion takes over (Hall interview 2014).
- Travel tallies are routinely not taken, even though they are supposed to be taken twice a year, or they are lost (Hollis interview 2014). These tallies provide the basis for evaluating the effectiveness of SRTS activities, and without them, school champions may never find the particular programs that most benefit the school.
- One principal was concerned, correctly or incorrectly, that sponsoring certain SRTS activities may expose the school to legal liability (Hadley interview 2014).
- Because of their child's age, parents may insist on participating with their children in activities. If the parent has children that attend different schools, start or end times may not be staggered sufficiently to allow that parent to participate with both children (Hadley interview 2014).
- Walking or biking programs may be fundamentally limited by parental concerns over their child's safety. Some parents may be primarily concerned with traffic hazards while others may be concerned with predatory adults. With respect to both of these issues, SRTS programs can only do so much (Cobb interview 2014).

5.1.11 Recommendations

Based on the foregoing, we make the following five recommendations.

Modify or eliminate Georgia’s minimum enrollment requirements.

Current minimum enrollment standards generally require larger schools with correspondingly larger attendance zones. This is particularly true when the surrounding residential area lacks high density residential development. The larger the attendance zone, the farther students must commute to school. Students are less likely to walk or bike to school as their total commute distance increases. Researchers have found that increased distances are negatively linked to active mode choice (Schlossberg 2006; Merom 2006).

To implement this recommendation, GaDOE regulations and any related statutes regarding state capital outlay funding must be amended so that schools with enrollments below current minimums are not excluded from calculations involving allotment of state capital outlay funds.

Draw attendance zones to maximize active modes of transportation.

School districts should draw attendance zones to maximize the potential for active modes of transportation to schools. Active modes of transportation depend on the school’s location within its attendance zones and on transportation infrastructure. The school district should value an attendance zone that maximizes student walkability and bikeability. The school should be close to the center of the attendance zone to allow students from all directions to walk or bike. Barriers to walking and biking, like busy, wide roads should be considered.

Students are less likely to walk or bike to school as their total commute distance increases (Schlossberg 2006; Merom 2006). Furthermore, as discussed below, students are less likely to walk or bike to school if the quality of the commute is low due to unfriendly infrastructure, like a wide road that must be crossed (Abraham 2002; Hunt 2007; Ewing 2011; National Center for SRTS 2010c; Lin 2009; Landis 2007).

To implement this recommendation, school districts should require walkability and bikeability when choosing a school site and it should be included in the school district’s master planning process. School systems should also consider redistricting solely for the purpose of improving active transportation. Alternatively, they could wait until the need to redistrict arises and uphold walkability and bikeability as an important factor.

Construct multi-use pedestrian and bicycle infrastructure to improve accessibility.

Schools lacking direct on-road access from a particular direction should construct a multi-use trail or sidewalk to allow pedestrian and bicycle access from that direction. Limited site access can increase travel distances for school users coming from certain directions, and therefore decrease the likelihood of choosing active modes. Researchers have found that increased distances are negatively linked to active mode choice (Schlossberg 2006; Merom 2006).

To implement this recommendation, future school construction should plan for such trails. Existing schools should, to the extent possible, add such trails to the current transportation infrastructure. MAP-21, the current federal transportation funding scheme, provides appropriate federal transportation funding for multi-use trails through the Transportation Alternatives Program (TAP). The Congestion Mitigation and Air Quality Improvement Program (CMAQ) and the Highway Safety Improvement Program (HSIP) are other potential federal transportation funding sources. Agencies such as the Centers for Disease Control and Prevention and the U.S. Environmental Protection Agency (EPA) award grants for health initiatives that may fund such

infrastructure. Other financing options include local capital improvement bond, private foundations, and corporate sponsors.

Construct infrastructure that improves quality of walking and biking experience.

Schools and local jurisdictions should construct infrastructure that improves the quality of students' walking and biking experience. Such infrastructure includes: bike racks, high-quality sidewalks, pedestrian and bicycle bridges and underpasses, curb extensions, crossing islands, waiting areas, speed bumps, raised pedestrian crosswalks, and improved signage. Infrastructure such as that enumerated creates a safer, more enjoyable commute experience that encourages students to use active modes (Abraham 2002; Hunt 2007; Ewing 2011; National Center for SRTS 2010c; Lin 2009; Landis 2007).

To implement this recommendation, school systems must examine the current infrastructure around its schools and identify flaws that reduce commute quality for walkers and bikers, such as the lack of sidewalks on a major walking route. Schools should work with local jurisdictions to construct infrastructure to address these problems. MAP-21, the current federal transportation funding scheme, provides appropriate federal transportation funding for multi-use trails through the Transportation Alternatives Program (TAP). The Congestion Mitigation and Air Quality Improvement Program (CMAQ) and the Highway Safety Improvement Program (HSIP) are other potential federal transportation funding sources. Agencies such as the Centers for Disease Control and the U.S. EPA award grants for health initiatives that may fund such infrastructure. Other options include local capital improvement bond, private foundations, and corporate sponsors.

Create a SRTS program at all eligible schools to promote walking and biking.

Create a SRTS program at all eligible schools and promote walking and biking to school. If a school is ineligible to participate in SRTS, then the school should form an unofficial SRTS program. Compare programmatic activity and travel tally modal information to help determine the effectiveness of SRTS programs at the school. Schools should institutionalize the position of SRTS coordinator to avoid or mitigate the effects of coordinator turnover.

SRTS programs have been found to increase walking and biking mode share (Staunton 2014). One study of over a dozen schools found an increase in bicycle mode share of five percentage points and an increase in walking mode share of two percentage points, resulting merely from simple activities to encourage walking and biking to school (McDonald 2013).

SRTS programs can be implemented rather easily. Interested parents, teachers, or administrators should first contact the Georgia SRTS school outreach coordinator that oversees non-infrastructure activities in the school's region of the state. This coordinator will assist the interested parties in creating a SRTS program at the school. They will recommend and help organize activities such as walk and roll days that motivate students to walk or bike to school. If a school is ineligible for participation, consult SRTS literature and other nearby schools with official SRTS programs for assistance in beginning a program.

5.2 Dynamic Transportation Systems

The following sections evaluate several types of school transportation systems. Specifically considered are the following systems:

- Schools and traffic
- Transit and schools
- Carpooling to school
- Alternative bussing patterns for Choice schools

For each system, an overview of the background and current conditions is presented, followed by a summary of alternatives and best practices based on a review of case studies, an assessment of the current systems in Georgia in light of these best practices, and recommendations.

5.2.1 Schools and Traffic

Background

There is a very important link between traffic and schools. In one respect, schools create a great deal of traffic. As student populations grow, school districts need to find solutions to transport these students to school. Many students travel to school by family car or by bus. These auto and bus trips place extra strain on already congested roadways. Reducing the number of cars and buses on the roads can help manage this increase in traffic.

Additionally, many schools are located near highly congested roads. Proximity to highly congested roads can cause various problems for schools. Being located near highly traveled roads increases children's exposure to air pollution. These highly congested roads act as barriers to active modes of transportation. For students taking active modes, high traffic roads also represent a safety concern. Locating schools away from traffic can encourage active modes of transportation and limit exposure to air pollution.

Current Conditions

Trips to school account for a considerable number of the total trips observed in the Atlanta area. The Atlanta Regional Commission studies travel patterns in the 20 county Atlanta region. In 2011, the Atlanta Regional Commission performed the Regional Travel Survey. Households which received this survey were asked to log their travel patterns over the course of a day. The results of this survey found that, in total, school related trips accounted for almost seven percent of the total number of trips in Atlanta (ARC 2011a). This is compounded by the fact that the vast majority of these trips occur during the morning and afternoon peak periods.

Activity Purposes in Atlanta

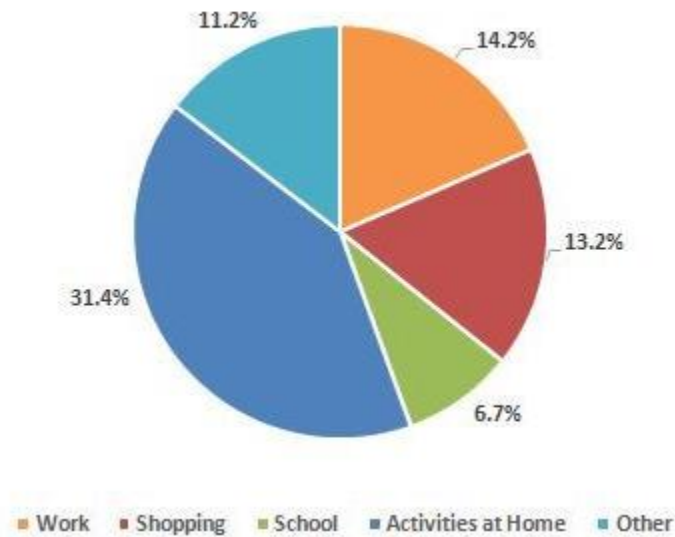


Figure 5.2.1-1: Trip purposes in Atlanta

(Source: ARC 2011)

This additional morning traffic only adds to the congestion problems which cities face. In 2013, the Georgia Department of Transportation (GDOT) compiled a report comparing morning rush hour traffic volumes at the end of July and mid-August. The report found that traffic was considerable higher on non-interstate roads during the mid-August period. One of the ten study areas was in Jonesboro at Jonesboro Road/Ga. 54, south of Forest Parkway. There are seven schools located within a 1.5 mile radius of this area. The report showed that traffic volumes were up an astounding 14.9 percent during the school year (AJC 2013).

These additional car and bus trips have a large impact on congestion in/around schools. This is especially true for elementary and middle schools. Because of smaller minimum site requirements, it is easier to locate these schools in in-town neighborhood areas. These areas might not have the requisite street infrastructure to accommodate this extra traffic. Many parents at these schools decide to pick up their children in the afternoon. However, given the limited space at many of these schools, this causes parents to create car queue lines which back out into local streets. There are methods in which schools can better manage pick-up traffic. The Institute for Transportation Research and Education at the North Carolina State University has described a system to reduce the adverse impacts of traffic queuing at schools. In this method, administrators pass out numbers or name cards to parents waiting in queue lines. As the parents arrive at the loading area, a secondary administrator informs the children waiting at the loading area which parent has arrived. This method has been proven to reduce queue waiting times and therefore reduce traffic problems caused by afternoon dismissal (NCSU 2014).

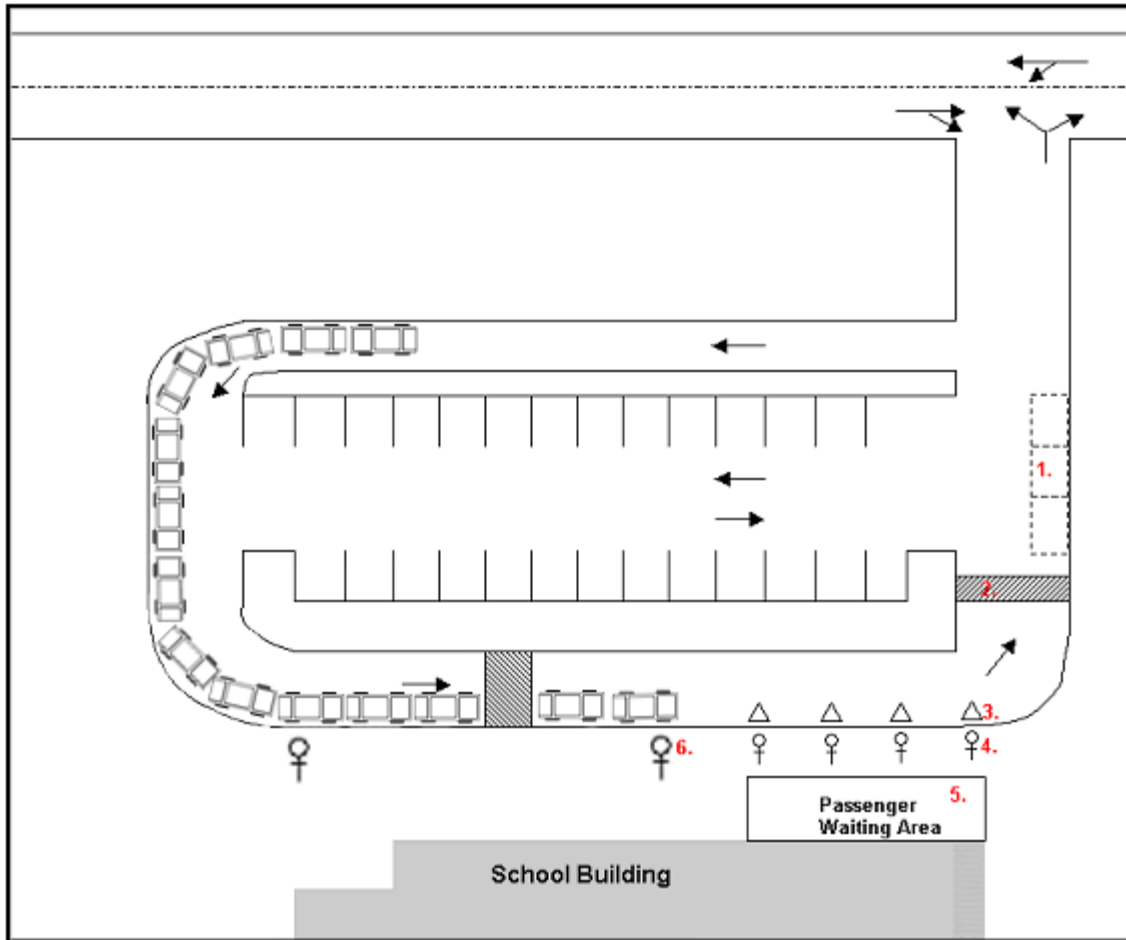


Figure 5.2.1-2: Onsite traffic calming measures

(Source: NCSU 2014)

Additionally, there are many schools in Georgia that are located near heavily congested areas. The map below shows that 57 schools in the Atlanta metro area are located within 500 feet from the top ten percent of most congested streets. There are 104 schools in Atlanta that are located within one quarter mile from the top ten most congested streets. Schools that are located near these congested streets may not be as appealing for active transportation and may have worse air quality when compared with schools that are located on less busy streets.

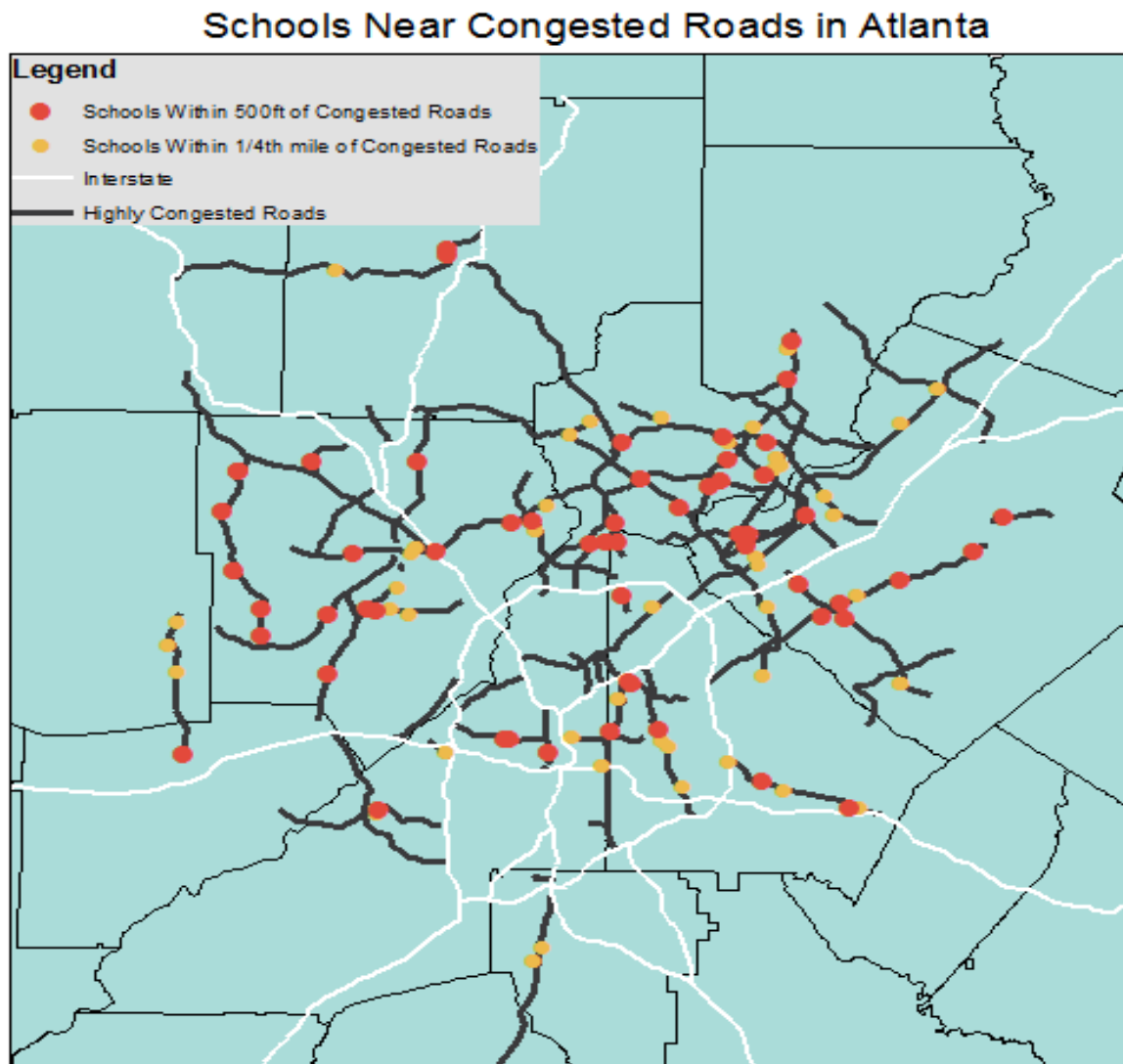


Figure 5.2.1-3: Schools near congested roads in Atlanta

(Sources: ARC and Georgia DOE)

Recommendations

Identify School Traffic Issues and Recommend Improvements

School traffic issues should be identified and improvements to address those issues should be recommended at the individual school level.

Individual schools have unique traffic problems that stem from many potential causes. Lack of bike and pedestrian infrastructure may lead to additional family vehicle trips to school. Lack of adequate traffic infrastructure and lack of management of queue lines can lead to traffic

spillover into the surrounding area. By taking a traffic inventory, schools can better understand the causes of traffic at their school and find more targeted solutions. By engaging various groups about these potential solutions, schools can find solutions that are both effective and well-received by the community.

Schools can appoint a lead investigator to create a committee to study traffic at the school. The committee should include people with various levels of knowledge and experience with traffic at schools. These individuals can include school staff who observe traffic on a daily basis, parents who regularly drive students to/from school, and local planners who understand the impact that the traffic has on the local area. This committee should first spend several months studying traffic patterns and causes at the school. After this problem is carefully described, the committee can better suggest and test traffic reducing measures.

5.2.2 Transit and Schools

Background and Problem Statement

There are considerable benefits for students taking transit to/from school. Moving children from family vehicles to public transportation would help to reduce the number of cars queuing near schools during morning and afternoon times. Coordinating with public transportation can save school districts money and provide greater mobility for students. There are also health benefits to commuting to school by transit. There is a link between traveling to school by transit and reaching recommended levels of physical activity. A 2009 research paper by Lachapelle and Frank used SMARTRAQ travel survey data collected in Atlanta from 2001-2002 to see if there was an association of transit ridership and the probability of meeting daily recommended activity. The authors found an association between the probability of walking and usage of employee-sponsored public transportation passes. This relationship held for both reported non-walkers and moderate walkers. The analysis controlled for income, age, ethnicity, and built environment measures. While this report was compiled for adults commuting to work, it is applicable for students going to school by transit. This proves that there is some correlation between taking transit, access to transit passes, and likelihood of meeting exercise requirements (Lachapelle and Frank 2009).

Current Situation

Public transit is an often overlooked mode of transportation for students traveling to and from school in Georgia. The Atlanta Regional Commission's 2011 Regional Travel Survey further analyzed the different ways students travel to school. The report computed the percentage of school trips by active modes, automobiles, school buses, and public transportation. The results showed that transit use was low compared to other modes. Even in the metro Atlanta region, only five (5) percent of trips to school depended on public transportation. That 5 percent is comprised of 3.2 percent of total school trips that use local buses and 1.8 percent of trips that use Metropolitan Atlanta Rapid Transit Authority (MARTA) rail (ARC 2011a).

Table 5.2.2-1: Travel modes to school in Atlanta

School Trip Mode	Percentage
Active Modes (Walk/Bike)	4.3%
Automobile	53.5%
Public Transportation (Bus and Rail)	5.2%
School Bus	36.7%
Other	.3%

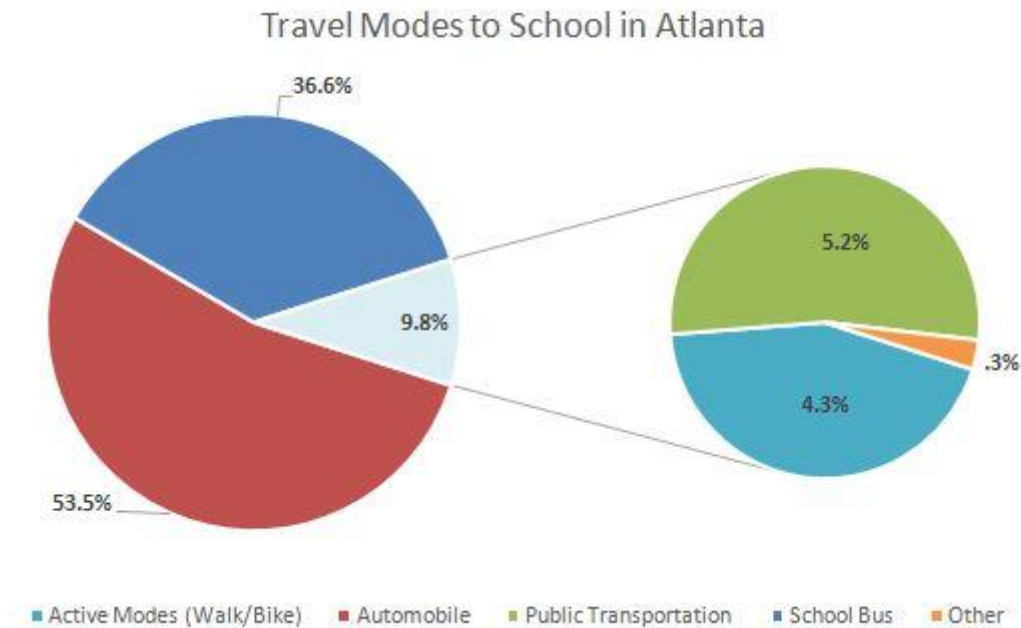


Figure 5.2.2-1: Travel modes to school in Atlanta

(Source: ARC 2011a)

In addition to aggregated surveys, Safe Routes to School also performs travel tallies performed by teachers at individual schools. In October 2010, a travel tally was performed at the Alexander II Magnet School in Bibb County. This school is centrally located in Macon and partners with Safe Routes to School to promote walking to school. This tally showed that while no transit trips occurred during the study time in the morning period, about 17 trips in the afternoon period each day occurred by transit. Given that approximately 550 trips occur in the afternoon each day at this school, transit trips only account for approximately 0.3 percent of total trips during this time period (SRTS-Alexander II 2010). Similar results were found at other schools served by public transportation. Indian Creek Elementary School performed a travel tally in February 2011. Indian Creek Elementary is located in DeKalb County and is served by the MARTA routes 122 and 125. Of the 2,215 morning trips observed over a three-day period, 0.2 percent of morning trips occurred by transit, and 0.4 percent of afternoon trips occurred by

transit (SRTS-Indian Creek 2011). Walking rates are much higher due to both the location of the school and the efforts of Safe Routes to School programs.

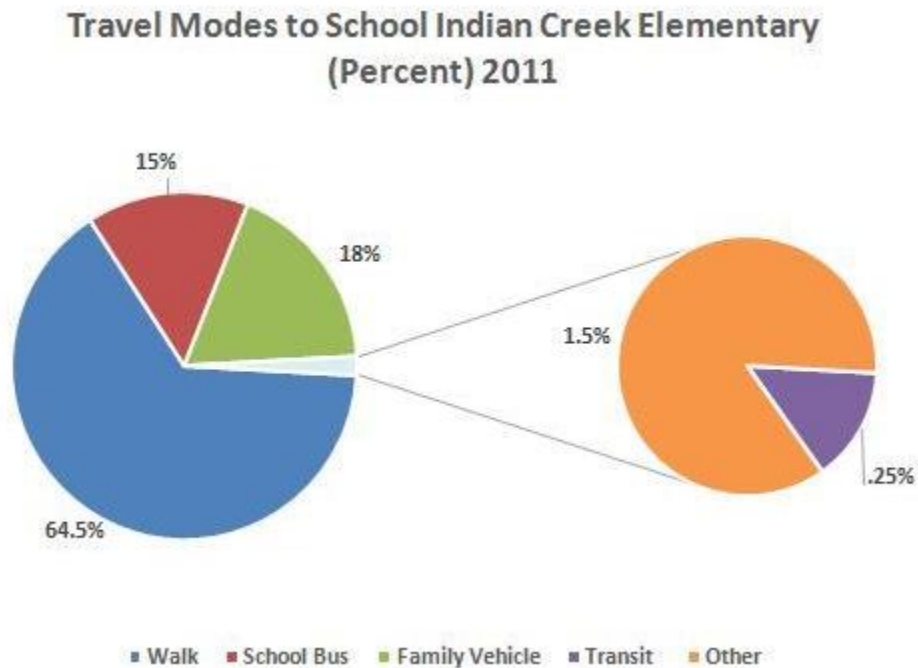


Figure 5.2.2-2: Travel modes to school for Indian Creek Elementary

(Source: SRTS-Indian Creek 2011)

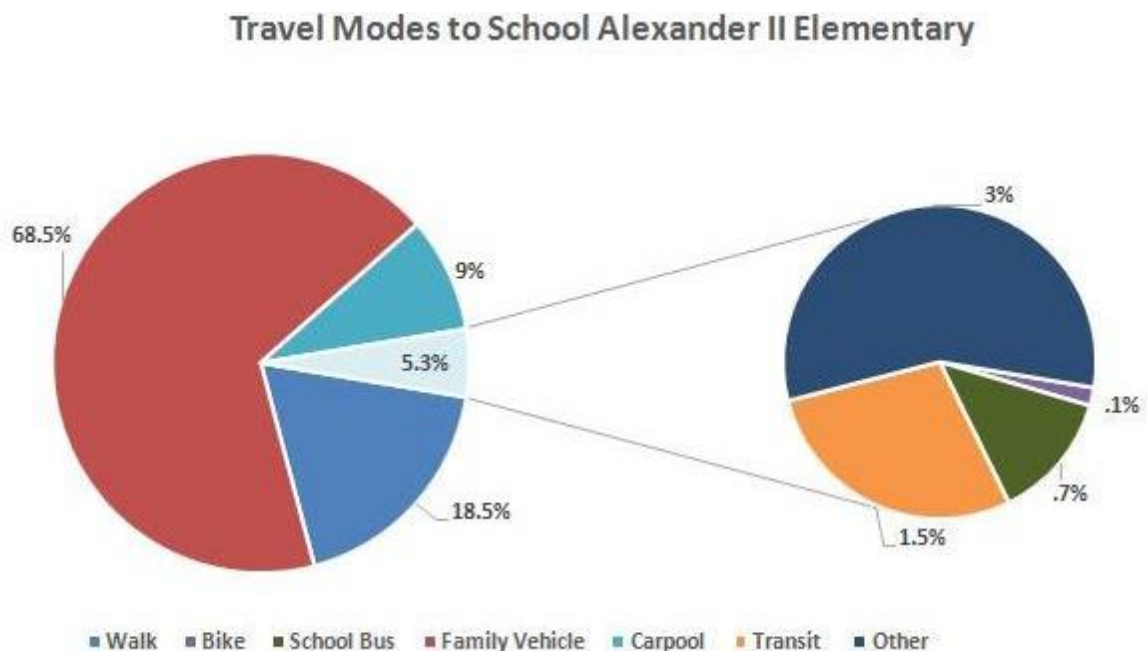


Figure 5.2.2-3: Travel modes to school for Alexander II Elementary

(Source: SRTS-Alexander II 2010)

The organization Safe Routes to School distributes travel surveys to schools that have partnered with the organization. These surveys are completed by the parents of elementary and middle school students. The surveys contain questions regarding the student's distance from school and mode of travel to school. In the fall of 2010, Safe Routes to School performed surveys at 36 schools in Georgia. The results of these surveys found that only 0.3 percent of students took public transit to school in the morning and 0.6 percent took transit home from school in the afternoon (SRTS 2011a).

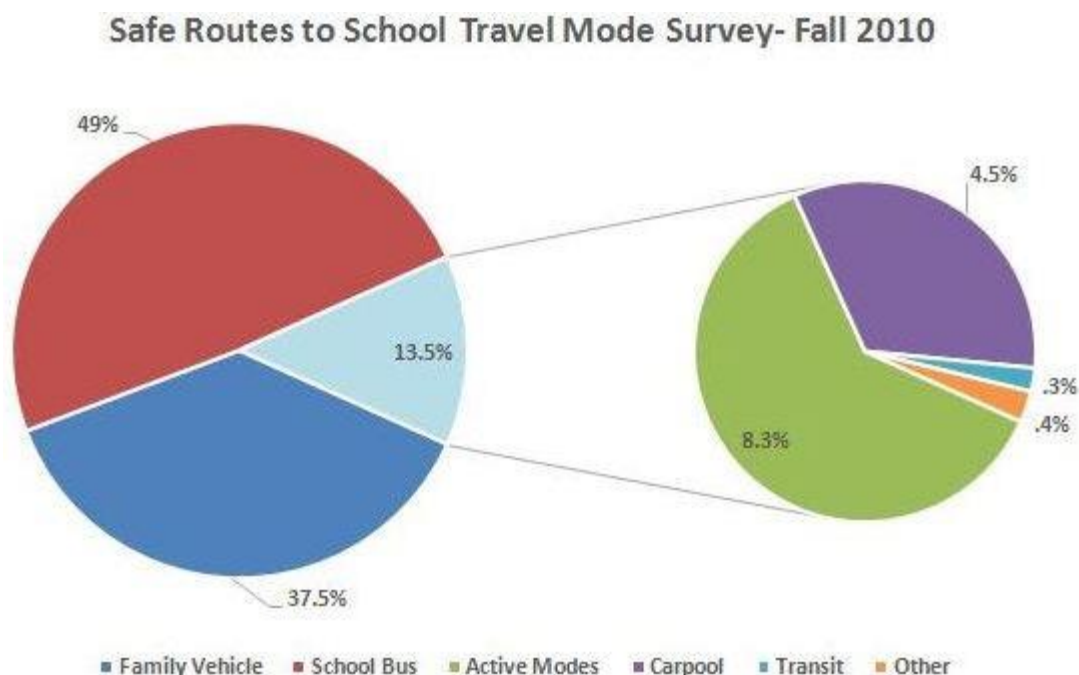


Figure 5.2.2-4: Safe Routes to School travel mode survey, fall 2010

(Source: SRTS 2010)

While ridership for public transportation to school is low in Georgia, there are definite opportunities available of which students can take advantage. In total, 102 of the 159 counties in Georgia operate public transportation. A considerable number of schools in urban locations are near bus and metro stops.

DeKalb County Schools are particularly well served by transit. The DeKalb County Schools website lists all of the schools in the district that are served by MARTA buses. This list contains the names of the schools and the number of the MARTA route that serves the school. In total, there are 59 schools in the district that are served by MARTA bus routes. Of those 59 schools, 11 are served by multiple routes.

In general, MARTA serves both Fulton and DeKalb Counties. MARTA serves both rail and buses in these counties. These two counties contain several school systems including; Atlanta Public Schools, DeKalb County Schools, Decatur City Schools, and Fulton County School District. As of 2009, there were 350 schools located in these districts. Of these schools, 102 were located within 500 feet of a MARTA bus stop or rail station. In total, there are 183 schools located within one-quarter mile from a MARTA bus stop or rail station.

Schools Near MARTA Transit Stops

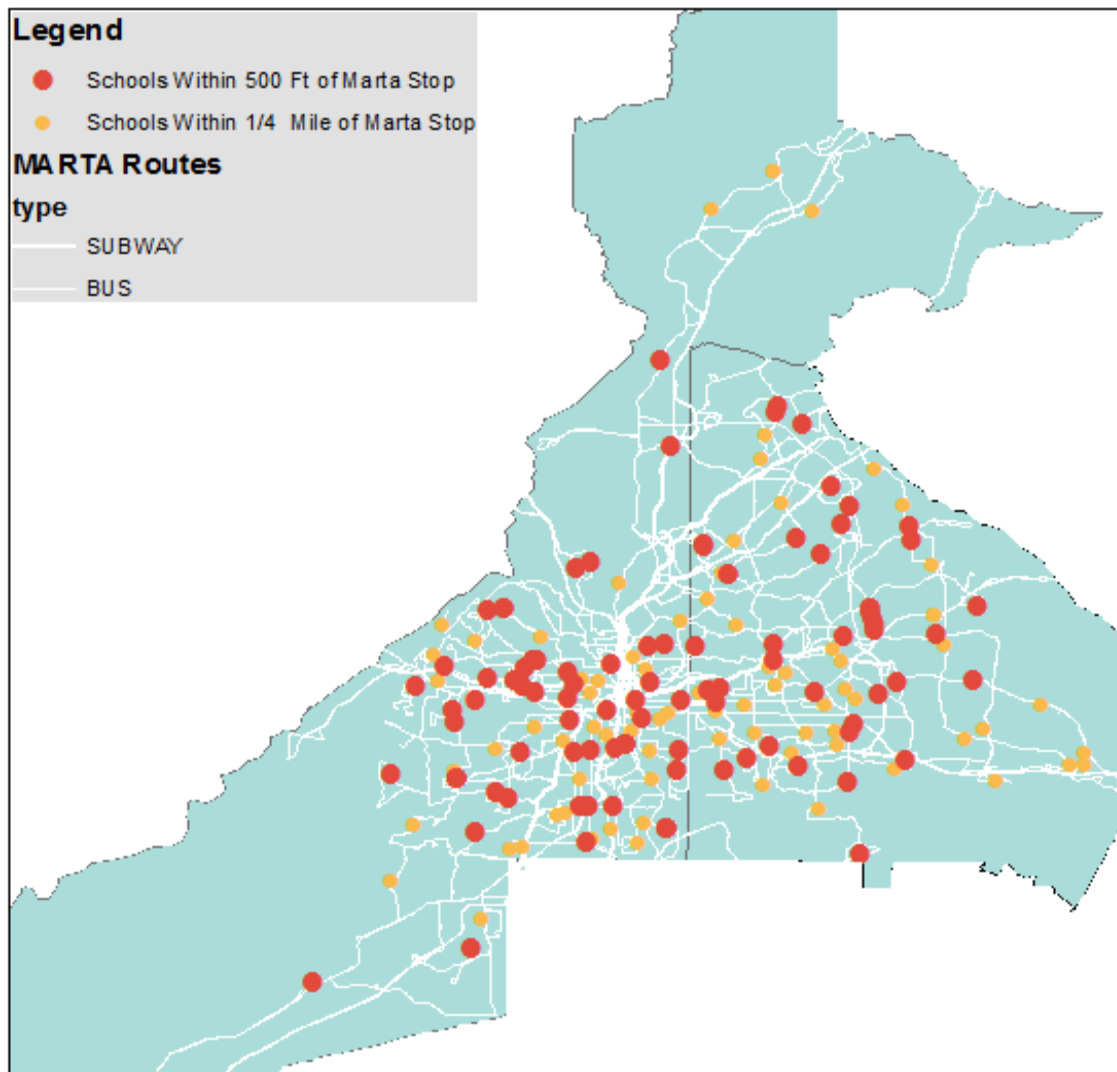


Figure 5.2.2-5: Schools near MARTA transit stops

(Sources: ARC, MARTA, Georgia DOE)

Some public transportation operators in Georgia do offer incentives for students to take transit to and from school. MARTA does offer student discounted passes. The passes are special “Breeze Passes” that come preloaded with ten trips. Trips can be made from Mondays to Fridays, and each trip allows students to make up to four transfers within a three hour window. These passes are significantly cheaper than regular service fares. Each ten-trip pass costs \$14.40, while ten trips at full fare costs \$25.00. Students cannot buy these discounted passes directly through MARTA. Individual schools must enroll in this program. Once a school is enrolled in the program, students can purchase passes directly from the school.

MARTA has also occasionally made changes to bus service to better accommodate students traveling to and from school. In December 2013, MARTA added an additional trip on the route

172, which leaves McClarin High School after dismissal while in route to College Park Station. In 2009, the Elizabeth Andrews High School was opened in the DeKalb County Schools District. MARTA followed this news by adding service to the route 172 to better accommodate students traveling to this school (MARTA 2013)

Case Studies

Rome-Floyd County schools moved their busing requirements to Rome Transit. The majority of students traveling to school take Rome Transit buses in addition to regular service routes. Rome Transit also provides various “tripper” routes, which only operate in AM and PM peak periods. The AM routes start before school does, make various stops around the city and end at one of the area schools. Many of the schools are served by several “tripper” routes. Students are charged sixty cents per ride on this service. While this service does operate in a similar way to traditional school busing, the special “tripper” services are also open to the public. The morning trips operate by stopping at several points within the community and ending service at one of the local schools (Rome Transit).

CITY OF ROME TRANSIT DEPARTMENT TRIPPER SCHEDULE ROUTE # 11 AM			
TIME OUT OF GARAGE: 6:55 AM			
T-11A/AM		T-11B/AM	
DESTINATION	ARRIVAL	DESTINATION	ARRIVAL
(Woodfin Estates) Cumberland Drive	7:07 AM	East Main Street @ Blanche Avenue	7:40 AM
Coventry Drive	7:09 AM	South Broad Street @ Myrtle Street	7:42 AM
Twickenham Road / Twin Court / (Twickenham Estates)	7:10 AM	Myrtle Street @ Pennington Avenue	7:43 AM
Chulio Road @ Highway 411	7:12 AM	Pennington Avenue @ Cherokee Street	7:44 AM
Honeysuckle Lane @ Mockingbird Circle	7:14 AM	Pennington Avenue @ Grover Street	7:45 AM
(Chulio Hills) Callier Springs Road	7:15 AM	Pennington Avenue @ South Broad Street	7:46 AM
Honeysuckle Ridge @ Mockingbird Circle	7:18 AM	Branham Avenue @ Porter Street	7:47 AM
Blueberry Lane @ Mockingbird Circle	7:19 AM	Branham Avenue @ Grover Street	7:48 AM
Highway 411 @ Chateau Drive	7:25 AM	Branham Avenue @ Cherokee Street	7:49 AM
Saddlebrook Downs	7:30 AM	East 3rd Avenue @ 3rd Street	7:54 AM
<u>EAST CENTRAL ELEMENTARY SCHOOL</u>	7:35 AM	<u>ROME HIGH & MIDDLE SCHOOLS</u>	8:15 AM
		<u>END OF SERVICE</u>	

Figure 5.2.2-6: Rome city transportation route serving schools

(Source: Rome City Transit)

In 2012, Safe Routes to School New Jersey compiled a report addressing various ways that transit operators and school districts can coordinate. This report used case studies from across the nation to guide the implementation of coordination opportunities for New Jersey school districts. The case studies that were used represent a wide range of degrees of coordination.

The report found that there are many different degrees to which school districts and public transportation operators can coordinate. The most common way is for transit operators to offer discount passes to students to supplement bus service. This type of coordination is found in New York City and other areas. More advanced coordination may involve a district limiting bus service and moving students from yellow busing to public transportation with transportation passes.

In some cases, public transportation operators can provide select services, like para-transit, for school districts. Providing para-transit services in rural counties can be very costly. The Northeast Iowa Action Transit service has an agreement with the local school districts to address this issue. The transit operator provides all para-transit services for the local districts. Students requiring para-transit service ride with both students and members of the general public. This agreement has prevented the need for area school districts to purchase para-transit vehicles and to hire additional drivers (Meehan 2012).

Others can involve empty school buses being used for public transportation. Additionally, there are benefits to school districts that coordinate. The Branchburg and Reading school districts in New Jersey share transportation logistic resources, spare buses, and personnel. This agreement saves each district around \$70,000 per year and eliminated the need for 19 routes (Meehan 2012).

Table 5.2.2-2: Types of coordination agreements

Coordination Type	Service Coordination					Management & Administrative Coordination	Physical Stock Coordination
	Complete Combination of Services	Select Students Ride Public Transit		Share Para-transit Vehicles for Special needs students & riders	Empty School Buses used to fill peak-hour demand for Public Transit	Share Dispatching Services/Logistics, Driver Training/Labor Agreements, Maintenance and Storage Contracts	Share Vehicles, Fuel, Tires & Parts
Mixture of Students and Non-Students?	Yes	Yes	Yes	Possibly	No	No	No
Examples	None to date	NYC, NY, Portland, OR and Des Moines, IA	Cedar Rapids and Iowa City, IA	NEICAT in Iowa	CyRide in Ames, IA	Branchburg & Readington School Districts in NJ	Utility Buses in California

(Source: Meehan 2012)

In recent years, Boston has become a leader in programs which promote students to take public transportation to and from school. In the Boston Public School system, high school and 8th grade students do not regularly take yellow bus service. Instead, these students are issued Metro Boston Transportation Authority (MBTA) transportation cards. Currently, over 15,000 students take public transportation to/from school each day. These passes are free to students. Passes are designed for unlimited use of bus, metro, and commuter rail services. Previously, passes were only available for use during weekdays. For the 2014-2015 school year, however, MBTA elected to allow students to use the passes seven days per week. Given the program's success, the MBTA is planning on further expanding the program to include a greater number of students. To accommodate schools that are not directly served by public transportation, Boston Public Schools will provide over 60 yellow bus shuttles from key MBTA stations to nearby schools. These shuttles operate on a looping basis to provide multiple opportunities for students to reach their schools. This system has proven to be more cost-effective and also provides expanded transportation options for students participating in before/after school activities. Yellow

busing is still provided for students with trips projected to take over an hour and/or requiring three or more transfers (MBTA 2014).

Analysis

Safety is one of the largest benefits of a school system keeping control of its student transportation. Many parents have concerns with allowing their students to take public transportation to school. This is especially true for parents of elementary and younger middle school students. There is debate about whether this is an actual or perceived concern.

Given the increasing acreage of high school sites in Georgia, this means that more and more high schools are placed in fringe/less developed areas. This may prevent high schools from being near high frequency public transportation routes. This often leads to cases where schools are not served by transit at all. Ultimately, large site requirements can reduce the number of transportation options for students.

While MARTA does provide discounted passes for students, it is often unlikely that students and parents would be willing to pay \$14.40 for the weekly transit pass when the school district provides door-to-door busing for free. There is not much incentive for students to take transit if it is considerably more expensive than traditional school busing.

Inconsistent coordination contributes to low transit student ridership. MARTA does provide the discount pass program, however decision is up to individual schools to join this pass program. Additionally, MARTA does not appear to actively promote this program. Attempts were made to contact MARTA about the effectiveness of the discounted student pass program. Yet MARTA reported that the organization had no data regarding the sales of student passes.

High levels of coordination may be difficult due to underlying differences between school districts and transit operators. Labor agreements at transit operators and at school districts may be difficult to change. Transportation operators and school districts serve different purposes. This may lead to conflict when allocating scarce transportation resources and funds to serve both school and community transportation needs.

Recommendations

Sell Student Passes Directly to Students

MARTA should sell student discount program passes directly to students.

Currently, MARTA offers a discounted transit pass to K-12 students. However, the program is structured such that schools must participate and students can buy passes only through their schools. Schools generally have not actively participated in or promoted transit pass options. Since students cannot buy the passes directly from MARTA, students who would otherwise ride transit are prevented from buying passes.

MARTA needs to restructure and more actively promote the Student discount pass program. This would involve taking on responsibility of selling passes, collecting data on pass sales, and promoting this program to schools.

Provide Students with Free Transit Passes

Students living further than one mile from school receive busing for free. While considerably cheaper than the cost of regular fare service, student discount pass programs are still expensive relative to free bus service. This discourages transit riding, even when such ridership would be in the interests of both the school busing program and the student.

MARTA needs to internally redefine the goal of the student pass program in order to provide a viable transportation option for students. This would lead to MARTA taking a more active role in promoting transit as an option for students traveling to school. Funding for these passes can be shared among schools that are served by transit.

5.2.3 Carpooling to school

Background

In addition to walking, biking, or taking transit to school, carpooling is another important viable transportation option. This option still involves students taking inactive modes, but can result in a reduction of car trips for students living beyond a comfortable walkable/bikeable distance to school.

Current situation

While family vehicle trips account for a growing number of school trips in Georgia, carpooling still represents only a small fraction of school trips. In 2010, the Safe Routes to School travel survey of 36 schools noted that five percent of morning trips occurred by carpool and four percent of afternoon trips occurred by carpool.

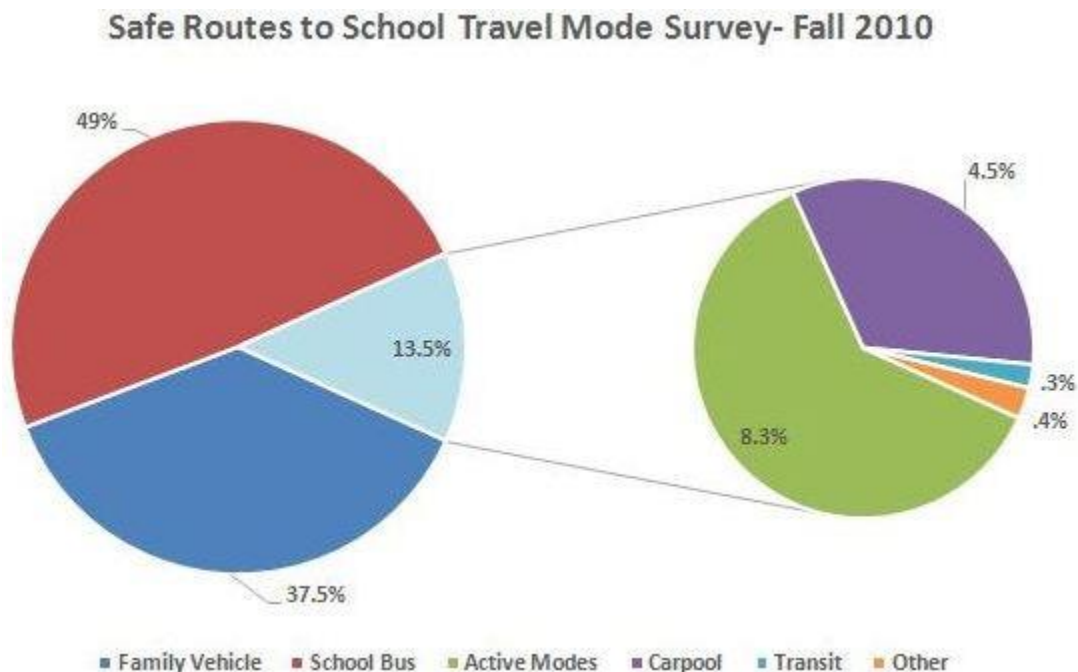


Figure 5.2.3-1: Safe Routes to School travel mode survey, fall 2010

(Source: Safe Routes 2010)

Case Studies

Marin County in the California bay area has become a model for organizing carpools to school. The county's Safe Routes to School program organizes carpooling resources and works to encourage carpooling within the community. The local Safe Routes Program published a report detailing best practices for organizing successful carpooling programs. Marin County's approach is heavily focused on creating "Neighborhood SchoolPool Networks". These networks are broken down by geographic neighborhoods. One parent acts as the "captain" of the network. This parent is primarily responsible for organizing parents and resources in a given neighborhood. The captains are recommended to create committees of other interested parents, to map neighborhoods, to identify neighbors, and to organize events. Captains are encouraged to find carpooling solutions that work best for each neighborhood. These solutions can include traditional matching lists or more technologically-based solutions (SRTS Marin County 2012).

In recent years, technology has played a more important role in organizing carpools. The San Francisco area's Metro Transportation Commission has created a special carpool matching service for students. The 511 SchoolPool Matching service matches parents based on their travel itineraries. Parents register for the service and enter their information and their child's travel itinerary. This service allows parents to not only organize carpools but also walking and biking pools as well.

In addition to online services, a growing number of smartphone applications have been developed to manage carpools. Applications, such as Carpool-School Edition, help to give parents much more freedom in organizing carpools. These applications allow parents to find and coordinate carpools with multiple parents. They also allow users to create shareable carpool calendars that show carpool times and purposes (SRTS Guide 2012).

There are many computer-based solutions for setting up carpool-to-school programs. However, creating and implementing a specific carpooling service can be expensive. Because successful carpooling programs can lead to fewer cars on the road, carpooling programs are eligible for special funding from the U.S. Environmental Protection Agency (EPA). The EPA awards Congestion Mitigation and Air Quality (CMAQ) funds to projects that reduce auto-based emissions. In particular, CMAQ funds can be used to purchase carpool matching software and for outreach. CMAQ projects are completely funded by the federal government (FTA 2008).

Analysis

The current practices in Georgia place the incentive for arranging carpools directly on parents. This system relies on the current family connections in the community. This can be extremely useful at schools with strong community bonds. If the parents in the community already know each other, then spending both money and time to create a carpooling system would bring little benefit.

There are general concerns about school-promoted carpool systems. School-promoted systems that match unfamiliar students may cause parents to be hesitant about having an unfamiliar parent transporting their child. School-promoted systems need to deal with the issue of liability for students. Similar concerns apply to online carpooling software. Parents may feel uncomfortable posting information about their child's travel patterns on the internet. Additionally, parents may feel uncomfortable trusting their child's transportation to someone they met online.

Encouraging carpooling is a goal of Safe Routes to School in Georgia. Currently, the organization offers broad guidelines for encouraging organizing carpools to schools. Carpooling is encouraged because of its ability to reduce school-area traffic and pollution. However, few places offer comprehensive guidelines or relevant software.

Recommendations

Active Promotion of Carpooling Programs

More actively promote carpooling programs through Safe Routes to School.

In addition to promoting active modes of transportation, Safe Routes to School in Georgia currently promotes carpooling as a means of reducing traffic and improving air quality around schools. However, while the organization has made great strides in increasing active modes of transportation to school, carpooling rates are still low in Georgia. Many schools in Georgia have not established programs to promote carpooling. Additionally, many schools are not aware of the full range of benefits of carpooling. Given the organization's commitment to support and outreach to schools, Safe Routes to School would be an ideal organization to promote carpooling to school.

Safe Routes to School programs in Georgia can adopt the framework set by the Marin County Safe Routes to School organization in California. This model is based on a neighborhood system. Neighborhood zones are first created at each school. Each neighborhood picks a "captain" who creates a matching system and coordinates efforts. Additionally, Safe Routes to School should produce reports about the benefits of carpooling and promote software/smartphone applications that facilitate carpooling.

5.2.4 Alternative Busing Patterns for Choice School and Afterschool Students

Background

The vast majority of students in Georgia attend the school located in their attendance zone. However, a growing number of students are now attending schools outside of their attendance zones. In 2009, the Georgia Department of Education (GaDOE) declared that parents of elementary and secondary schools students were now allowed to transfer their children into schools with excess space within their school district. Under this new rule, transportation for students attending schools outside of their zones is to be assumed by the student's parent/guardian. The increased popularity of magnet and theme schools has also required school districts to implement alternative busing programs for students.

Schools are also providing a much larger number of before- and afterschool programs to students. These programs include both academic enrichment programs and extracurricular sports. These programs cause a considerable change in the students' afternoon travel patterns. While students not participating in afterschool activities can take the school bus home in the afternoon, this option is often not always available for students taking part in afterschool activities. This often requires that the parents pick up their students after school. This can present a major problem. Families without time or without cars may not be able to pick up their children from

afterschool activities. This in turn prevents a large number of students from participating in these events.

Increasingly school districts are trying to find ways to provide additional busing to accommodate choice programs and afterschool activities. While additional door to door busing service is ideal, it is often too expensive for many districts to afford. This has forced school districts to create innovative transportation solutions.

Case Study

In the Atlanta area, the DeKalb County Schools district has found a way to balance its additional transportation demand and its budget. The district has several choice school programs, including magnet and theme schools. The district wishes to provide transportation services to the students of these schools. For several years, the district provided direct traditional transportation to these students. However, this proved very costly. In 2009, the district started moving towards providing satellite transportation services for choice school programs. Under this satellite system, students report to designated “satellite” pick- up and drop-off locations. Students travel from their home to a satellite bus stop and then are transported by school bus from the pickup point to the school. The pickup points are based on choice program enrollment and change from year to year.

This program has proven to be very cost-effective compared to door-to-door transportation for choice program pupils. This system allows students from various attendance zones in the district to attend a particular choice program. In total, close to 5,700 students per year use the satellite system in DeKalb. This program has also resulted in a reduction in transportation requirements of 77 buses and drivers. Additionally, it has saved the school district \$5.9 million dollars per year in transportation costs. This roughly yields cost savings of \$1,035 per pupil/per year in the choice program. These cost savings figures are highly dependent on the layout of the particular school district. Many factors can determine the cost savings of satellite busing systems. The size of the district, the number of bus routes, the length of bus routes, the number of students enrolled in choice programs, and the distribution of choice program students all affect the amount of money that a satellite system can save (Guillory 2014).

Recommendations

Identify Need and Cost Savings from Satellite Bus Systems for Afterschool Activities and Magnet Programs

School districts should identify the need for and potential cost savings of implementing satellite busing systems for afterschool activities and magnet programs.

Providing transportation for choice school programs requires transporting students longer distances to school. These longer routes are also more costly. While many school districts would prefer to provide door to door transportation for choice school programs, it can be prohibitively expensive. Satellite busing systems can provide much more cost-effective transportation for students compared to door-to-door busing.

School districts should analyze their current transportation systems with an eye for increasing flexibility and reducing costs. This would include identifying the number of choice program students, bus routes, buses, and secondary busing routes; transportation costs; etc. At the same time, the district needs to describe its transportation goals and assess the desirability of providing additional transportation for choice program students and for afterschool activities. Districts wishing to provide additional transportation can then decide whether or not satellite busing would effectively meet their transportation needs.

5.2.5 Conclusions

Despite the fact that schools in Georgia rely heavily on family vehicles and school buses, there are many other viable modes of transportation available. The benefits of active modes are well documented, but many students live too far from school to walk or bike to school. However, these students living far away can carpool or ride transit to school. Combined, these modes represent less than five percent of total trips to school. By implementing practices from leading case studies, these modes can become more viable transportation options in Georgia.

Additionally, as more and more students enroll in choice programs and afterschool activities, school districts need to develop more dynamic busing systems. One of the most effective systems for transporting choice program students is the satellite bus system. This system has the potential to reduce transportation costs for a school system. The success of this program could also be applied to afterschool activities to provide additional transportation options for students who may want to participate in these activities but lack proper transportation.

By producing a more diverse transportation system, Georgia can reduce congestion at school sites, decrease air pollution around schools, and provide greater transportation options for students traveling to and from school.

6 Siting and Location

6.1 Smaller Sites + Improved Facility and Campus Design

Interdependent relationships exist between school amenities, their function, and the size of the parcel(s) that they occupy. Across Georgia, the average school site acreage has grown significantly over time. Schools are being situated on larger sites than before, which affects where schools are located in relation to the community that they serve. Larger school sites have the ability to affect the location of schools, the environment, and the phenomenon of “school sprawl”. This has been driven primarily by larger school enrollments, land availability, growing programmatic and spatial needs, and policies dictating minimum acreage for schools sites. Minimizing the size, and in some cases the number, of these sites can be instrumental in saving land, resources, and capital for other uses. This begs the question of how can we decrease the size of school campuses without compromising their amenities and functionality?

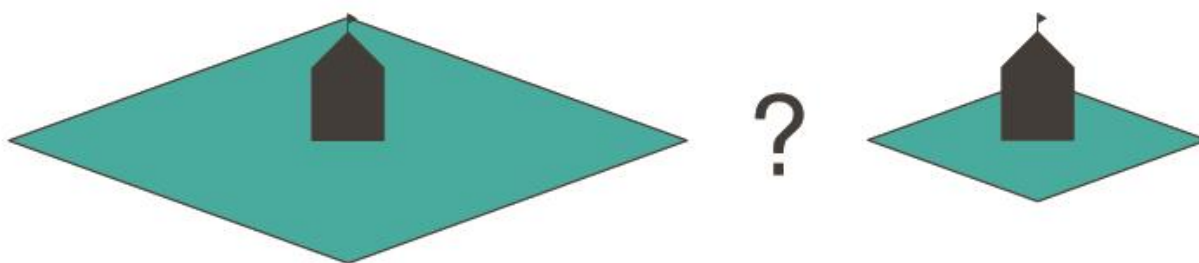


Figure 6.1-1: Decreasing school campus size

In this section, the site attributes of school site acreage and campus design are explored via a brief literature review of related practices throughout history, identifying and assessing current conditions, and identifying alternative options and best practices with site acreage and designing the school's facilities and campus. After these assessments, recommendations for the state department of education, city/county school systems, and individual schools will be identified.

6.1.1 Background

Across the United States, school facilities have decreased in number, but the amount of students that are being served by public schools is on the rise. As a result, schools have had to increase design enrollments across elementary, middle, and high schools. While some communities have been able to retain smaller, neighborhood schools, others are facing school enrollments that may reach over 3,000 students in a single high school. This is alarming for several reasons that include the growing demands for larger school facilities that are designed to alleviate these enrollment increases and the need to accommodate growing and changing programmatic requirements. “The design enrollment not only determines the number of class rooms in the building; it also drives the size of the school catchment area. Bigger enrollments require bigger catchment areas and greater student travel distances” (Merriam 2012, 1). Schools are requiring larger facilities to accommodate their enrollment and program needs, but it is accompanied by the notion that these facilities will also require a larger site in order to retain full functionality. Larger school sites are problematic for a variety of reasons, most notably environmental. They consume land that is valuable for other uses (i.e., greenfields) and

implicitly encourage low-density sprawl. They also have an effect on school location decisions. Size and location are related because “it is more difficult to place a larger school within a developed area. To build a larger school requires larger parcels of land, and so new schools must be placed at the edge of development, which by definition is not within the community” (Fields 2011, 4).

Size

The issue of site size has been prevalent in the United States for as long as formalized school planning and construction has existed. Architects have been considering size as a factor in school planning since the 1950s. Planners have been thinking about school campus size for at least fifty years, as demonstrated by a 1963 report released by the American Planning Association (Schrader 1963). In 1954, William W. Caudill published *Toward Better School Design*, which talks about the planning process as it relates to schools, an early piece of literature that stresses the impact of site size on design. Since these publications, the tracts of land that we locate our schools have increased in size over time, especially at the high school level. In the 1920s, an adequate size was considered to be around 20 acres. After World War II, the average high school campus was around 40 acres. These accepted acreages have grown, and it’s no longer unusual to see a high school that is around 60 or 80 acres in area (Brubaker 1998, 165). Why has this happened? Both literature and experience dictate that the public has continued to demand more space for schools. More students and teachers drive to school, increasing the demand for adequate parking. Schools want a designated loading/parking place for school buses. Communities began to express interest in having more athletic facilities for both the school’s use as well as their own use. We have effectively doubled the amount of physical education programmatic space needed in order to meet Title IX requirements.⁵ However, not every community has land that is both available and can support these functions, all while being located in a central area that is easily accessed (Brubaker 1998).

To ensure that schools were planned and built on an appropriate amount of land, the National Council on Schoolhouse Construction⁶ recommended during the 1950s that site size should be determined upon a base acreage and allocating extra acreage based on design enrollment (Caudill 1954). In the 1970s, the Council of Educational Facility Planners International (CEFPI) published guiding principles for school systems to utilize in order to create such policies while encouraging them to build on large sites as shown in Table 6.1.1-1.

⁵ Title IX dictates that there must be equal facilities for both male and female students.

⁶ Now known as the Council of Educational Facility Planners, International (McDonald et al. 2010).

Table 6.1.1-1: Council of Educational Facility Planners International recommended school site sizes

School Type	Base Acreage	Additional Acreage
Elementary School Sites	10 acres	1 acre per 100 students
Middle School Sites	20 acres	1 acre per 100 students
High School Sites	30 acres	1 acre per 100 students

(Source: CEFPI 2003)

Under the model rules, an elementary school for 500 students would require *at least* 15 acres and a high school for 2,000 would require *at least* 50 acres. Given the backlash that these requirements have received in recent years, some states have abolished minimum acreage requirements in favor of a modified standard, or no size-based standard. A 2002 report about smart growth and school sprawl stated that states like Florida and Georgia's acreage requirements are smaller than the national average, and Illinois and Maine has developed maximum acreage requirements (Passmore 2002, 4; McDonald et al. 2010, 190). While Maine has been able to stop some school sprawl with its modified requirements, the report warned that modifying the minimum site size requirement will not always be sufficient in reversing the trend toward larger, more distant school sites. For example, until South Carolina abolished their minimum acreage requirements altogether, the state used a modified version of the CEFPI standards, yet schools constructed since the standards' adoption in 1971 in the state's coastal counties were 47 percent larger than the minimum requirement (Passmore 2002, 4). In 2004, CEFPI changed their guidelines to reflect that states should exhibit flexibility in their minimum acreage requirements, if they have them at all (McDonald et al. 2010).

Regarding school site size, Caudill states in his 1954 book about school design that size impacts location and that size should be carefully considered. According to Caudill, three factors are to be considered: the educational program, the age and classification of the students, and the amount of students to be served by a school (design enrollment). The first of these three factors is the most complex, as much land is needed to properly carry out effective educational programs. Caudill found that the then National Council of Schoolhouse Construction's site acreage recommendations at that time to be a useful guide, but recommended that school facility planners follow a more logical procedure as follows (Caudill 1954, 126):

- “1. Determine what kind of an outdoor educational program is desired.*
- 2. Lay out the space requirements for each activity.*
- 3. Estimate the ground space required for buildings, drive, and parking areas.*
- 4. Total these requirements and consider the total as an absolute minimum to be modified further by the shape, contours, and natural characteristics of each proposed site”.*

Caudill warns against sites that are too small as they can inhibit the designers' ability to create an efficient campus, but he states too that large site sizes should be chosen if and only if the land is to be utilized in the future (Caudill 1954).

Facility/Campus Design

There is literature available that discusses school and campus design at length. Caudill's book, *Toward Better School Design* may be one of the earliest examples of such literature. Regarding the factors that shape campus design, site size (as aforementioned) and dimensions are the most influential in determining a campus's spatial arrangements. Caudill also briefly mentions the challenges of siting rural schools versus urban schools, stating that there are seldom campus plans that will work for both urban and rural areas; in other words, context is very important in the creation of effective facility/campus designs. Throughout the book, he makes some recommendations of building layouts and campus compositions that can be used in different educational levels and site types/sizes (Caudill 1954). Such recommendations are outdated because of the new programmatic demands in the last sixty years since the book's publication, but Caudill's ideas are still very applicable to how designers could go about designing school facilities and campuses.

In their book, *Education Facilities for the Twenty-First Century: Research Analysis and Design Patterns*, Moore and Lackney identify five critical issues/patterns that influence the design of a campus plan:

1. Safe location away or buffered from noxious, dangerous, and high traffic areas
2. Schools that serve as a community center/necklace of community activities
3. Building core/community forum; common areas (library, galleries, multi-purpose rooms) should be located in the core of the campus
4. Contextual compatibility with local vernacular typology
5. Compact building form

Two variations of campus plans are also identified: decentralized community activity-centered campuses and compact/stacked campuses. The first is more suitable for schools located in rural areas, and the second is ideal for more urban areas that do not have the space for a more spread out campus plan (Moore and Lackney 1994).

In past years, schools have been constructed without proper planning or phasing for such expansions. Schools are built to address their present needs and the projected needs up to a short time in the future. There is always the possibility that the program of the school will need to be adapted without having to adapt the building extensively. This is why master planning becomes important. C. William Brubaker's book *Planning and Designing Schools* discusses many aspects of school and campus design, most importantly, the planning of schools. A master plan, according to Brubaker, should show how and where a site and building could be expanded and the location of other future structures and services. This plan should guide the development of the campus as it grows and changes, and it should serve as a basis for future design and planning decisions for architects, planners, and school administrators. Not only should a plan address physical design, it should address the forces that will shape such future plans such as projections of enrollments and demographic shifts, policy goals, and future programmatic space requirements. Such plans are commonplace for colleges and universities but not for K-12 schools. Brubaker asserts that this should change, as a comprehensive master plan is key for the

school’s longevity. The book also talks about what is needed specifically for an elementary, middle, and high school plan and the principles that should be kept in mind as we design campuses for those schools (Brubaker 1998).

6.1.2 Current Conditions in Georgia

Size

Georgia schools rank among the top ten for average size (Fields 2011, 3). In Georgia, site size is heavily influenced by minimum acreage requirement. 28 states out of the 50 United States have minimum acreage requirements in effect (CEFPI 2000). Georgia’s minimum acreage requirements are as follows:

Table 6.1.2-1: Georgia's minimum acreage requirements for schools

School Type	Base Acreage	Additional Acreage
Elementary School Sites	5 acres	1 acre per 100 students
Middle School Sites	12 acres	1 acre per 100 students
High School Sites	20 acres	1 acre per 100 students

The formula is simple and shares similarities with how other states determine site acreages of new schools, although Georgia uses a slightly smaller version of CEFPI’s recommended standards. However, the *Georgia Guideline for Educational Facility Site Selection* recommends prioritizing larger sites: “Although minimum useable acreages are established, large acreages are highly desirable” (GaDOE 2012, 2; McDonald 2014).

For the purpose of this report, we wanted to find out how the site acreage of schools in Georgia compared to other schools with minimum acreage requirements and without them. Because there is no database that lists every school site acreage in the United States, nor is there time during the studio semester to gather such an enormous amount of data ourselves, a rudimentary study was put together to see how the state and the nation compared in terms of minimum acreage requirements. Based on data pulled from the National Center for Educational Statistics (NCES), an average minimum site acreage permitted by the 28 states that have minimum acreage requirements was determined by (U.S. Department of Education):

1. Identifying how many students go to elementary, middle, and high schools in each state.
2. Determining how many of each level of school are in the state to determine the average number of students per type of school in each state.
3. Those numbers were then applied to each state’s minimum acreage requirements formula to determine “average” minimum site acreage.
4. Finally, each state's number was averaged to determine an approximate nationwide average.

The results as they compare to Georgia are as follows:

Table 6.1.2-2: Average minimum acreages allowed in the U.S. and Georgia

School Type	National Average Minimum Acreages <i>(based on average student population)</i>	Georgia's Average Minimum Acreages <i>(based on average student population)</i>
Elementary School Sites	11.58 acres	11.38 acres
Middle School Sites	21.55 acres	20.97 acres
High School Sites	32.84 acres	31.87 acres

These approximations show that Georgia is on par with the nation. We were able to find data concerning the sites of the schools in our four study areas (City of Decatur, DeKalb County, Bibb County, and Newton County) and compared their actual site acreages to each other and with the state and nation.

The information pulled from our study areas are comprised of 1 comprehensive school, 1 preschool, 119 elementary schools, 32 middle schools, and 32 high schools, none of which are charter schools.⁷ 85 of the total 185 schools (~46 percent) have site acreages below the state's average minimum acreage requirements. This may be because of the timing of construction of these schools and if they were planned before the implementation of the minimum acreage requirements. The table below shows the breakdowns of those schools:

Table 6.1.2-3: Schools with a site size below Georgia's minimum acreage requirement

	Elementary Schools	Middle Schools	High Schools	Percentage of schools in district below average minimum acreage requirement
City of Decatur	6	1	1	100.0%
DeKalb County	41	13	11	34.8%
Bibb County	8	0	2	25.6%
Newton County	1	0	1	9.1%

Based on the numbers above, there is variance between each school system in regards to the level in which they practice policies related to minimum acreage. The City Schools of Decatur

⁷ Charter schools were left out of this part of the study because they utilize a more creative process of site selection.

has the highest percentage of schools that have site acreages below our estimated state average (100 percent), and Newton County Schools has the lowest percentage (9.1 percent).

The schools in the four case study districts are unique in that there is a blend of schools in urban, suburban, and rural locales. According to data from the NCES, there are 24 urban schools, 132 suburban schools, and 29 rural schools in our study districts (U.S. Department of Education). The NCES classified all of the City Schools of Decatur as “suburban” schools, but after a visit to the schools in that particular district, we decided to re-classify them as “urban” schools, bringing the total number of urban schools up to 32 schools and the total number of suburban schools down to 124. We believed that there could be a connection between a school’s locale and the size of the parcel the school occupies. Table 6.1.2-4 below illustrates the average acreages of schools based on locale and type:

Table 6.1.2-4: Average school site acreages in case study districts based on locale and type

	Elementary Schools	Middle Schools	High Schools
Urban Locale	11.5	20.7	30.4
Suburban Locale	12.6	31.3	34.6
Rural Locale	28.2	39.2	88.0

As expected, rural school sites in our study area are, on average, larger than urban and suburban sited schools. There isn’t a large difference between urban and suburban school site sizes, especially at the elementary and high school levels.

While the Georgia Department of Education (GaDOE) mandates compliance to the state-set minimum acreage requirements, there is a process that each district can go through in the event that a selected site does not meet this standard. A variance is granted if the school district is successfully able to demonstrate that the size of the proposed site will not impact the school's ability to function as needed through their submission of the plat with the building plan, proposed circulation, and ancillary uses and a narrative. GaDOE estimates that 15-20 percent of schools apply for a variance, most of which are charter schools or tear-down/rebuilds that occur on an existing campus; very few schools building on a brand-new site seek a variance (Campbell and Rowland 2014).

Facility/Campus Design

While the actual facility and site design is procured to local architects and engineers, there are standards set by the state department of education that determine how the facility or facilities must be designed and programmed. In Georgia, the square footage of new facilities is determined by number of instructional units (IUs) that the school will house (GaDOE 2012c). IUs are defined as classrooms, or any place within the school’s facilities, where educational activities are to take place. The number of IUs for a school is determined by the number of full-time equivalent students (FTEs) that it expects to serve. For example, an elementary school that expects to serve 800 K-5 students must have 51 IUs, while an elementary school serving 500 of

the same students will require 33 IUs. There is also a formula that must be used to determine an overall minimum building square footage, or space construction budget all required spaces must be designed to meet those minimum size requirements from the space construction budget. If a school's program does not include music, art, or physical education, then the numbers are adjusted accordingly to reflect that.

Table 6.1.2-5: Facility space requirements for Georgia schools

New Educational Facility Formula:	Square Footage Requirements
Elementary School Facilities	1,800 x I.U. = Space Requirement
Middle School Facilities	2,250 x I.U. = Space Requirement
High School Facilities	2,850 x I.U. = Space Requirement

(Source: GaDOE 2012c, 2)

Georgia also outlines how large classrooms must be (determined by the grade level that the classroom will house), the square footage of support areas within the facility, and how large other programmatic elements like art studios and science labs must be. Other square footages are determined by the number of FTEs that a space expects to serve. Media center, cafeteria, and kitchen square footages are determined using formulas that account FTEs. Together, these elements determine the size of the physical school building (GaDOE 2012).

An additional study was conducted to look at campus design in our study schools. We looked at how much land was devoted to different uses within each campus. The uses studied were building footprint (ground floor), parking, recreation/athletics, and space not specifically used for any of the three aforementioned programmatic uses. To complete this, each study school's parcel was analyzed using satellite imagery and areas were drawn and estimated using ArcGIS 10.2. While we would have liked to expand this part of the study to look at every school in our four study districts, to look at all 185 schools would have been time-consuming for the studio semester. However, we can assume that the averages collected from the sample are fairly representative of the whole. The table below shows how the averages of elementary, middle, and high schools compare against the average of all the schools:

Table 6.1.2-6: Allotment of programmed space in our study schools by school type

School Type	Building Footprint	Parking	Recreation/ Athletics	Un-programmed Space
Elementary	17.7%	7.8%	25.7%	48.9%
Middle	5.6%	4.5%	22.5%	67.4%
High	7.3%	10.1%	28.0%	54.6%
All Levels	12.8%	7.9%	25.8%	53.5%

The next tables compare each study district against the others, and each locale (urban, suburban, and rural).

Table 6.1.2-7: Allotment of programmed space in our study schools by school system

School District	Building Footprint	Parking	Recreation/ Athletics	Un-programmed Space
City of Decatur	14.9%	7.0%	32.2%	45.9%
DeKalb County	11.9%	5.5%	20.6%	62.0%
Bibb County	11.9%	8.4%	28.4%	51.3%
Newton County	13.0%	11.0%	22.6%	53.5%

Table 6.1.2-8: Allotment of programmed space in our study schools by locale

Locale	Building Footprint	Parking	Recreation/ Athletics	Un-programmed Space
Urban	17.4%	8.7%	33.0%	40.8%
Suburban	12.2%	6.3%	21.2%	60.3%
Rural	8.7%	8.6%	23.3%	59.5%

This provided an interesting study as to how much land is used for programs compared to un-programmed space. This will inform our recommendations regarding campus design.

6.1.3 Assessment of Current Conditions

Size

Georgia is a unique state in that it is diverse in locales. Areas of the state range from the very urbanized to the extremely rural. As a result, there is a large variation of needs between schools located in the two extremes. The state's minimum acreage requirements are aimed to address those variations; however in the more urban/suburban areas like the metropolitan Atlanta region, compliance with such policies can prove problematic, especially for schools that expect to enroll large amounts of students. A high school that is designed to enroll 2,000 students must, at the minimum, have a site acreage of forty (40) acres. This may not sound large to most people, but high school campuses can become much larger than that. Because of this, GaDOE has had to exhibit flexibility via granting variances to schools that require them (Campbell and Rowland 2014). It can be inferred that schools in states with minimum acreage requirements often occupy larger tracts of land than those that do not. This is because state minimum acreage requirements often have little flexibility in regards to site size and, as a result, we consume more land than is necessary for the school to have full functionality.

The effects of eliminating state-set minimum acreage requirements for schools have been explored by McDonald et al. (2014). The study found mixed results of both negative and positive impacts. Most importantly, they found that while states changed their school acreage policies because of concerns about sprawl and the rising costs of education facilities, but those changes were not enacted simultaneously with changes in district-level school planning processes, minimizing any change that would otherwise occur. The study compared states that eliminated their requirements (Minnesota, New Mexico, Rhode Island, and South Carolina) against those who have maintained their policies (California, Georgia, and New Hampshire). The most telling result comes from South Carolina, who abolished their minimum acreage requirements in 2003. McDonald et al. examined the state department of education's list of parcel approvals from 1997 to 2011, which totaled 166 traditional public school sites for their study, after eliminating sites that had incomplete information. The size of 75 parcels approved before the policy change was compared to 91 schools that were approved after the policy change. They found that there was little change in the size of the parcels that were selected for school construction, indicating either

there has been no change on the district level, or the elimination of these requirements slowed the increase of building on larger sites. In the other states studied, it was also found that districts were slower to recognize changes in state policy, delaying any impact that eliminating such requirements will have on site size.

The four study areas, as noted by our study, vary in many aspects in how they handle issues of site acreage. The City Schools of Decatur is the most urbanized overall of the four school systems. Some schools, like the 4/5 Academy at Fifth Avenue are situated on sites that have been in existence since before the last century (Roaden 2014). Neighborhoods have grown around them, making the siting of a new school on a brand-new site more difficult. DeKalb County Schools, a more suburban district, prioritizes the construction of new schools on sites that they already own before buying new real estate on greenfields. Because high school sites typically utilize the most land because of the large amounts of athletic programs, the county does not build a new football stadium on every high school's site, but instead has all twenty-one high schools share five stadiums. This reduces the amount of land that is needed for the construction of future high schools. Currently, DeKalb County Schools is in the process of consolidating some of their elementary schools, which entails the demolition and on-site reconstruction of seven schools. One of our study schools, Gresham Park Elementary School, is one of those seven new schools. This particular school has already been closed and will combine student populations with Meadowview Elementary School in order to meet the school system's new objective of elementary school enrollments of 900 students. The combined populations will be around 700 when the new Gresham Park Elementary School opens. The new campus will be located on the Clifton Elementary School campus. Both Meadowview Elementary School and Clifton Elementary School will close when the new school opens. The selection of the site for the new school was chosen for reasons other than size. While the Clifton Elementary School site is in fact larger than the old Gresham Park Elementary School site, the site had better dimensions to support the building design, a prototype design (Drake and Williams 2014a). Bibb County Schools has not built on a new site since the construction of Weaver Middle School in the early 2000s. Most new schools that are currently being pursued there are replacement schools that will be rebuilt on either their current site, or another site that the board of education already owns. However, during the site selection process of Weaver Middle School, a site that was located near Westside High School was prioritized. Site acreage ended up becoming a deciding factor because the land chosen was less expensive and easier to work with, and the parcel was larger and more sub-dividable than a smaller site that had been considered, and there would be enough land left for the construction of another school if needed. Out of the four study areas, Bibb County is unique because all three locales (urban, suburban, and rural) are represented. The challenges of siting a school in a rural area in Bibb County are decidedly different than the siting of a school in a more urbanized area (Stokes 2014). Newton County is the most rural of the four study areas. Their process of school site selection is unclear to us, but based on the site chosen for their most recently constructed school, the new Newton High School, it is inferred that larger sites are prioritized because of the vast availability of undeveloped land that exists. The new Newton High School was rebuilt on a new, 125 acre site rather than renovating their old building because recent damages to the school had made renovation less cost-effective, and the current site was already experiencing build-out. The large site was chosen because it cost less per acre and could be sectioned off for another new school (which is not yet being actively planned), it could house a large amount of athletic programs, and to store county buses on site (Ellenberg 2014).

Facility/Campus Design

Both the state's minimum acreage requirements and facility design requirements are important in this overarching issue of school site size because, ultimately, they drive the overall school's building and campus design. Combined with local building and zoning codes, they can be restricting. Based on our study of how much land is allocated to program, the amount of land used is dependent on the locale of the site. Urban schools typically have less acreage to work with, meaning that fitting the entire program onto a site is more challenging than on a site located in more suburban or rural areas. As a result, there is less “remaining” land that could be utilized for expanding programming as needed. This is further demonstrated in our comparison of each of the school systems. The City Schools of Decatur are more urbanized overall than DeKalb, Bibb, and Newton County Schools, and on average, the study schools from that area have less space remaining. However, less remaining space does not indicate a “better” campus design, and having more leftover space does not mean that a campus is more compactly designed or is consuming too much land. Having extra space is necessary for purposes relating to circulation and stormwater retention/detention. If a school system anticipates growth and/or the eventual expansion of individual schools, then having extra land devoted for phased expansions is crucial. This will impact both facility and campus design, as well as any related master planning documents.

Pertaining to facility design, there are two classes of design that takes place: custom design and prototype design. This is a prevalent topic as the DeKalb County Board of Education has elected to rebuild seven new schools. The new schools will each accommodate 900 students and will have nearly identical layouts and designs.⁸ There are merits and disadvantages to both types of design. Using a prototype design is best for situations where several schools will have to be built by a school system during the same period. This could be because of growth or situations like DeKalb County Schools where several facilities need to be rebuilt at once. Some of these benefits include a streamlined design process, a consolidated procurement/bidding process (one versus multiple, separate bids), and cost-effectiveness. Most designs are customizable, allowing for minor changes as needed. It is also more equitable because otherwise, some communities may feel cheated if they are getting a less favorable or less expensive facility design than other communities (Drake and Williams 2014a). However, some disadvantages include limited customizability because of the need to remain consistent and loss of community character. In Bibb County, custom designed schools are favored over prototype designs. One reason is because historically, Bibb County Schools has not experienced the same level of growth that other school systems are currently having. As a result, schools are not being built at a rate of more than one at a time. Like DeKalb County Schools, Bibb County Schools is currently focusing their efforts on consolidating schools, as well as maintaining, repairing, and renovating those schools, to reach a goal of 700-seat elementary schools in order to qualify for and receive state funding for both athletic and arts programs. Another advantage to a custom-designed school cited by the Bibb County Schools director of construction, Brenda Stokes, is because of the belief that all local schools should be “worthy of Macon”. The schools should serve as

⁸ Only one school (Smoke Rise Elementary School) will have a modified design, as it will be accommodating 600 students, not 900.

community icons, and having a beautiful school at the center of the community can be a wonderful source of community pride (Stokes 2014, 1; Stokes 2014, 2).

The design of a new school campus and the design of the actual facility should consider many factors in order to achieve a design that is user-friendly, able to accommodate changes in program, and sustainable from economic, environmental, and equitable perspectives. One example of a campus design that didn't consider some of these factors is Newton High School. Newton High School was opened in the fall of 2013 on a new location (Newton High School 2014). The new site is around 125 acres. What's alarming is the amount of dedicated student parking. Newton High School is a Title I school where 95 percent of the students are bused to school. The other five percent are split between students who rely on parental transportation and students who are able to drive to school. Presently, there are approximately 780 parking spaces designated for students, but roughly a quarter are utilized regularly. This illustrates disconnects in communication between the school system, the users, and the designers in understanding the socioeconomic status of the general student population and relating it to the design. Future expansion is something else that was not considered when designing the campus. The school's design enrollment is 2,500. For the current academic year (2014-2015), the school's enrollment is at 2,187. John Ellenberg, the current principal at Newton High School, estimates that it will be about two more years before the school reaches full capacity. The campus has the room to expand, with 63 percent of the land not being used for programs, however, expansion opportunities for the school are limited because of both the configuration of the campus and the construction of the building. The building was constructed using pre-form walls, which are cheap, efficient, and sturdy, but this choice in materials and construction does not allow for expansion (Ellenberg 2014). Given Newton County's rate of growth, perhaps an alternative option should have been considered.

6.1.4 Alternative Options and Best Practices

Size

There are locations within our study areas and beyond that have exhibited best practices in regards to site size. Within our study areas, City Schools of Decatur, DeKalb County Schools, and the Bibb County School District prioritize using sites that the board of education already owns for new school construction or renovations over buying a new parcel (Stokes 2014). Although GaDOE strongly recommends following their minimum acreage requirement, they understand that not every project will be able to meet this requirement. Variances are needed 15-20 percent of the time, but the process is simple (Rowland and Campbell 2014).

The abolition of minimum acreage requirements has given state departments of education more freedom to approve sites based on other qualities and locate in areas that would not have supported the acreage requirements (Springer 2007), but has not been shown to produce significantly smaller sites (McDonald et al. 2014). However, some states like Maine have turned their minimum acreage requirements into maximum acreage requirements. According to the Maine Department of Education, selected sites that are above the maximum acreage are not eligible for funding for purchase and subsequent construction (Maine Department of Education 2006).

Table 6.1.4-1: Maine's maximum acreage requirements

School Type	Base Acreage	Additional Acreage
Elementary School Sites	20 acres	1 acre per 100 students
Middle School Sites	25 acres	1 acre per 100 students
High School Sites	30 acres	1 acre per 100 students

(Source: Maine Department of Education 2006, 18)

After inputting the numbers from our previous study into this formula, the average maximum size that the state of Georgia would allow is 26.38 acres for elementary schools, 33.97 for middle schools, and 41.87 for high schools. Applied to our study areas, 37 out of 185 (20 percent) schools in our study area would not have been allowed under these requirements.

To reduce the amount of land consumed by new construction, Maryland implemented policies that favor renovation over new construction. By using 80 percent of its school construction funding to renovate existing schools, the state reduced the need for new construction in outlying areas. The lack of new construction can save the districts money in real estate acquisition and free up those lands for more efficient uses. Maine has also enacted similar policies. Prior to the new policy's enactment in 1999, Maine's school capital investment primarily funded new construction and expansion but not renovation. The new legislation now favors renovation over new construction, and has encouraged in-town locations for schools. Between 2001 and 2007, Maine spent \$197 million on renovation, expansion, or rebuilding schools on existing sites and \$73 million for new construction (Springer 2007, 4). These policies are best practices that Georgia could utilize to further minimize the amount of land used for new school construction.

Facility/Campus Design

When the City Schools of Decatur was planning the new 4/5 Academy at Fifth Avenue, the small site that was chosen would not support the typical elementary school typology that is popular across the country. As a result, the school is three stories tall, and there was enough room for an expansion of the school a few years later, with even more room to spare should the school reach capacity (Roaden 2014). The seven new DeKalb County prototype elementary schools are 2.5 levels because the schools that they are effectively replacing are on smaller sites that also do not support the typical single-level elementary school (Drake and Williams 2014a). If a site is unable to support a proposed building design, instead of looking for a larger site to build on, they should look into stacking programmatic elements vertically instead of placing them horizontally. A compact building design can free up land on the campus to devote to other schools. This particular best practice is aimed primarily for schools in urban/suburban areas, but schools in rural areas could still utilize it.

Other best practices have to do with land allocation for programming. As previously discussed, the main program groups are building, parking, and athletics. A school may buy a large parcel for a new school, but the school may not utilize the entire site. Some school campus plans take ecology into consideration, and instead of clear cutting an entire section of a forest,

designers may opt to not touch a large section of the site for conservation purposes. The prioritization of conservation then influences how much land is ultimately used, which influences the campus design (Brubaker 1998). One of our study schools appears to have done that; Arabia Mountain High School in DeKalb County is situated on a greenfield surrounded by forest, and there is a lot of forestry within the campus boundaries that appears to be preserved. Cousins Middle School in Newton County is situated near a greenfield site owned by the local board of education. It is unclear if this land is to be utilized for a future new school or if the nearby school will expand into that site.

We believe that some of our case study schools may occupy parcels that are too large for their needs. We chose the schools situated on larger sites, controlling for school district and locale, and then reconfigured them on a smaller, comparable site to show how each particular school could have been situated on a smaller site. The three schools chosen were Flint Hill Elementary School (Newton County Schools), Weaver Middle School (Bibb County Schools), and Arabia Mountain High School (DeKalb County School District). All three schools have some of the highest site acreages and have some of the highest rates of un-programmed space within their campuses.



Figure 6.1.4-1: Flint Hill Elementary School



Figure 6.1.4-2: Weaver Middle School



Figure 6.1.4-3: Arabia Mountain High School

We developed a method to determine the acreage of comparable sites.

1. Calculate the combined square footage of programmed space.

2. Multiply the total square footage by 1.2 and divide by 43,560 to get the smallest acreage on which the school could feasibly operate.⁹
3. Find a parcel elsewhere in our case study districts that matches that number within 5 acres.¹⁰

The results are as follows:

Table 6.1.4-2: Comparable site acreages

School	Site Acreage	Total Programmed Space (sq ft)	Circulation (Total Programmed Space x 0.2)	Total Programmed Space + Circulation (sq ft)	Necessary Acreage
Flint Hill Elementary School	80.0	264,858.0	52,971.6	317,829.6	7.3
Weaver Middle School	46.9	713,506.2	142,701.3	856,207.5	19.7
Arabia Mountain High School	74.4	1,009,022.3	201,804.4	1,210,826.7	27.8

The sites elsewhere in our case study districts that match the acreage needs within 5 acres that were chosen are Oak Grove Elementary School (Atlanta, GA; DeKalb County School District), Liberty Middle School (Covington, GA; Newton County Schools), and Dunwoody High School (Dunwoody, GA; DeKalb County Schools), respectively. Oak Grove Elementary School has a site acreage of 8.6 acres, Liberty Middle School has a site acreage of 24 acres, and Dunwoody High School has a site acreage of 29 acres. After deciding on these particular sites, we configured each program element onto the site. In every case, some creativity was employed to make the site work because of the differing site dimensions. For Flint Hill Elementary School and Arabia Mountain High School, the recreation areas were broken up. For Weaver Middle School, the parking lot area was condensed to one large lot that is the same square footage of the current paved area. One of Arabia Mountain High School's parking lots was broken into pieces and reconfigured to make it work on the Dunwoody High School site.

⁹ 1.2, which equates to an addition of 20%, is a rough number used by architects to calculate additional space needed for circulation purposes.

¹⁰ This was to ensure that we had flexibility in choosing a comparable site with the appropriate dimensions.



Figure 6.1.4-4: Flint Hill Elementary School on Oak Grove Elementary School site



Figure 6.1.4-5: Weaver Middle School on Liberty Middle School site



Figure 6.1.4-6: Arabia Mountain High School on Dunwoody High School site

Although these new configurations aren't ideal and not true to reality, they do demonstrate that many of the schools in our case study school systems currently sited on larger parcels could be situated on smaller sites and meet their programmatic needs.

6.1.5 Recommendations

Our recommendations regarding site size and design are aimed to address a major gap that is present in research and practice as well as the best practices that have been identified. We have identified that although policy encourages large sites, there is no guidance of how to develop the land accordingly.

Change Minimum Acreage Requirements to Maximum Acreage Requirements

GaDOE should eliminate minimum acreage requirements and replace them with maximum acreage requirements.

One core problem of school siting is that school campuses use more land than is necessary for the school campus to function as needed, with the corresponding problem that the demand for large lots of land push school locations to undeveloped areas of school districts. This report has demonstrated that smaller campuses can provide for the functions of schools. However, the

Georgia Department of Education implicitly promotes large-lot school development through its minimum acreage requirements and general guidance. While GaDOE’s variance process does allow for flexibility concerning school size if justified, virtually no school to be sited on a new site applies for a variance. The state recognizes that every jurisdiction that elects to build a school has varying needs, and the variance process is a step in the right direction. However, almost all schools built on a new site do so without a variance. Large lot schools have become standard operating procedure for siting schools amongst both state and local school officials. As can be seen in states like South Carolina that have abolished such requirements, removal of the minimum requirement by itself may not prove sufficient to reduce campus size. On the other hand, states such as Maine that have set maximum school sizes (with variances allowed) have proven more successful at promoting smaller school campuses.

Replacing these requirements with a maximum acreage requirement that caps the amount of land that can be acquired for a new school will be a step in the right direction in curbing larger-than-needed sites and any associated consequences. The Maine Department of Education’s maximum acreage requirements could serve as a model. GaDOE should impose a maximum school size, with the maximum size calculated equivalent to the current minimum. A variance process should still exist, but instead it should require schools to justify how a larger site will improve upon their individual school’s function instead of the current requirement to show how a smaller site will not impede school function. The requirements of the variance process would then encourage schools to consider smaller sites and open up consideration of more densely designed campuses.

Develop Siting Policies That Address Urban, Suburban, and Rural Differences

GaDOE should develop school siting policies that address differences in siting requirements associated with the range of locales found within Georgia.

While Georgia’s school districts range from densely urbanized to sparsely populated rural communities, the unique challenges and opportunities these different locales present are not reflected in the state’s siting requirements. Schools located in cities and some suburban locations have different challenges and opportunities than those of schools located in other suburban or rural areas. One large problem of city and some suburban schools is that the land needed to meet the state’s minimum acreage requirements is not always available in the area that the school should be located. On the other hand, this problem is not always present in rural areas, but rural schools may have issues that are uncommon in city schools, such as issues with funding and access to services.

Policies should be tailored to meet the unique needs stemming from differences in development density. Local school districts can be broken into five categories: rural, rural fringe, suburban, urban fringe, and urban. This would operate similarly to how the smart growth transect works. The rural, suburban, and urban locales would function as major benchmarks, with the in-between fringe locales having flexibility to adopt whichever policies best suit their particular needs.

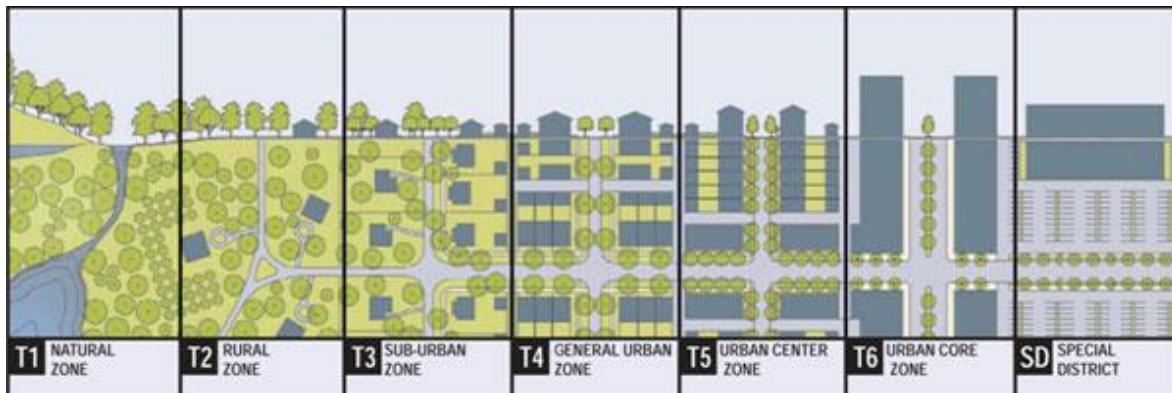


Figure 6.1.5-1: Smart growth transect (DPZ)



Figure 6.1.5-2: School siting transect

Policies that would be adjusted under this model are maximum acreage requirements; building footprint; and land needed for parking, recreation and athletic facilities, circulation, and natural resource conservation. Maximum acreage requirements would only be applicable for construction on brand new sites, and natural resource conservation will only be applicable on ecologically sensitive sites. This will impact not only the size of the site that will be chosen but also the design of the campus.

Such policies would address issues of flexibility in site selection as it relates to size and campus design in each locale. This would be implemented through changes in siting requirements within the GaDOE. The specifics of the policy should be created through the involvement of appropriate members of GaDOE, school systems, and planners from a variety of places within Georgia.

Require Campus Master Plan for Each School

Require that schools develop and maintain a campus master plan that addresses over-capacity, expansion/phasing opportunities, and possible demographic shifts.

This would be implemented as a state policy through GaDOE, with districts to decide which plan elements will be required from each school.

Universities and colleges use campus master plans to identify anticipated needs five, ten, and/or twenty years into the future. These plans include where to build new facilities, where improvements will be needed, when they will be implemented, and how the campus and individual facilities will react to every possible scenario. GaDOE already mandates that school systems develop a facilities master plan that addresses on a district-wide scale how each facility is to be utilized in the near and distant future in regards to population growth and decline and programmatic changes.

Individual schools should work with the school system under which it operates under to develop unique campus master plans that describe plans and policies that may address issues of over-capacity, facility expansion and/or improvements, future programmatic changes, demographic shifts in the attendance area, and how these plans and policies will be carried out during the school's life. The creation of this plan should be part of the planning/pre-construction process of the new school. Having this plan prior to a new school's construction will have a profound effect on the eventual design of the school. This process would involve student groups, parents, and school administrators as primary stakeholders. Not only should such plans be created, but they must also be maintained. Plan updates should address the changes that occurred since the plan's creation or most recent update, and how to build upon successes and failures. A best practice would be to time each plan update with their particular school system's facility plan update in order to maximize cohesiveness among plans. The incentive of creating campus master plans to the district would be a smoother facilities master planning update process, and each school would make more informed decisions moving forward with any and all major projects.

6.2 Site Location

6.2.1 Problem Statement

A wide variety of factors go into the decision of where a school is ultimately located. Two nationwide trends that have emerged regarding site location are clear-cutting forests or other greenfields in order to build new school grounds and locating schools on the fringe of communities as opposed to a population center. In order to develop both a quality education system and quality communities, it is important to determine what kind of effects a school's location has on its functionality and on its surrounding neighborhoods.

"The manner in which a school building is designed, managed, and maintained sends a message to its occupants and the community beyond, speaking volumes about the value placed on activities transpiring within its walls" (National Center for the Twenty-first Century Schoolhouse 2011).

6.2.2 Background

It is difficult to determine if new school construction promotes residential and commercial development, or if residential and commercial development promotes new school construction. Each of the city planners and school district employees interviewed on this topic stated that schools attempt to locate based on development, but that development has followed the location of new schools as well. This reciprocal relationship reinforces the pattern of schools being located on greenfields projected to have nearby future development, which acts as a catalyst for further development. Arguably, locating a school where there is preexisting development could help shape the community into having more compact and efficient development.

"Schools used to be the heart of a neighborhood or community... schools were placed within, not separated from, their neighborhoods... Now it has become hard to tell [a school] from a Walmart or Target" (Benfield 2008).

Causes of the Current Conditions

The question of whether new school construction drives sprawl or whether sprawl drives the construction of fringe schools is related to the secretive nature in which new school sites are selected. New school locations are often kept confidential until construction begins after which developers can take advantage of this resource by building new neighborhoods near the site. According to the DeKalb County planning staff, school districts wish to keep their final site decision a secret until the land has been purchased to avoid the landowner speculatively raising its price. Cost is heavily considered when purchasing new land for a school site, which leads the district to maintain the practice of secrecy.

The question of whether growing developments drive new schools to be located in sprawling areas has not been satisfactorily answered by past research. However conversations with Georgia school districts suggest that districts aim to build new schools where there is demand due to a growing population. The presence of population-driven criteria in today's school siting practices will be investigated later in this section.

A lack of coordination in new school construction and local community planning means that school-related traffic congestion and deforestation of school campuses continue to be an issue. DeKalb County planners report that the school district will review their comprehensive plan to look at density and growth projections, but admitted that the decision often “boils down to dollars” in the end (Douse et al. 2014). They also pointed out that real estate near activity centers is significantly more expensive than on the outskirts of their district, which would decrease the likelihood of being able to purchase more centrally located land.

School location also affects the transportation opportunities available to students. Brenda Stokes, Director of Construction for the Bibb County School District, shared that some families do not have access to a car and instead rely on public transit or other active transportation modes to travel to and from school. Walking or biking to school is not an option if the school site is located far from neighborhoods or if the route is too unsafe due to lack of infrastructure. Public schools are mandated to provide transportation to and from school but bussing schedules generally do not accommodate afternoon extracurricular activities. As a result children of families without cars, who are unable to safely walk or bike to and from school, are unable to participate in after-school enrichment activities.

Current Policies on School Locating

One funding policy that affects school location is national and state minimum acreage requirements (MAR) that influence school parcel size as discussed in Section 6.1. “School districts across the country have adopted nationally-recommended minimum acreage standards that not only are much larger than necessary but also force administrators to seek very large parcels that, by definition, are beyond the edge of existing communities” (Benfield 2008). In Georgia elementary schools must have a minimum of five (5) acres plus one (1) acre per 100 students, middle schools must have a minimum of 12 acres plus one (1) acre per 100 students, and high schools must have a minimum of 20 acres plus one (1) acre per 100 students (GaDOE 2012a). New schools are constructed on the urban fringe and on greenfields because multiple acre parcels are not prevalent in developed areas.

Cost is heavily weight in school siting decisions in our study districts. Some school board policies mandate that the least expensive site is selected. A director of construction for one school district in Georgia stated that they are required to move forward with the cheapest project (Stokes 2014).

Greenfield Development

The term greenfield is defined as, “previously undeveloped land, restored land, agricultural properties, and parks” (State of California 2007). Greenfields are attractive to school districts because they are readily available land, a benefit as they aim to move forward quickly once the decision to build a new school has been made (PolicyLink 2014). Development of these lands often interrupts ecosystems by displacing native animals that must adapt to an alternate ecosystem or else die out. School districts have a responsibility to spare this pristine land in favor

of construction on parcels already surrounded by development. To avoid greenfield development districts can opt to redevelop current buildings, focus on infill development, or develop brownfields.

“Growth at the cities' edges has come at the expense of central cities. Older buildings in core areas have been abandoned [and] existing utilities are underutilized” (Municipal Research and Services Center 1997).

Infill Development

Although infill development has typically been geared toward residential land uses, scholastic infill development can provide a much-needed remedy for overcrowded and/or inaccessible schools. “Urban infill can create a school that is centrally located and available to the surrounding community” (State of California 2007). The benefits of infill development are numerous and include saving forest and agricultural lands, bettering access between people and jobs, alleviating environmental problems associated with longer commutes, strengthening real estate markets and property values, renewing older neighborhood housing stocks, making better use of existing infrastructure, lowering costs of public services including transit, sidewalks, utilities, and safety, adding to socioeconomic diversity, and “supporting unique cultural, arts, educational and civic functions, such as museums, opera, sports, and universities” (Georgia Department of Community Affairs 2014c).

Another advantage of using infill development for new school sites is that districts can offset the higher cost of centrally located land by reusing materials from the previous building on the parcel. This strategy reduces the cost of importing entirely new materials to the site while the unused materials deteriorate, decreasing the aesthetic appeal of a community. Labor costs for renovation projects are minimized with material reuse since parts of the construction are already in place. The previously developed land has also already been leveled, further reducing labor costs. Since infill sites likely already have a parking solution, transportation-related costs are often minimal compared to Greenfield sites that require much more pavement. Updating existing structures and leaving the greenfields untouched allows both sites to be more visually appealing

Barriers to Infill Development

There are several challenges that prevent infill development from being more prevalent. The first is ease; it is much simpler to design a new school on a parcel of open land than to have to work around existing building frames, curb cuts, etc. Second, infill development can be particularly complicated for large land uses such as schools. Often new schools wishing to be part of an infill project must aggregate parcels to form a campus. It is increasingly difficult to locate large enough parcels that would make an infill development site possible as city centers become denser (Stokes 2014). Third infill parcels can become prohibitively expensive due to the aforementioned higher real estate costs of centrally located parcels. A fourth barrier is the fact that the utility infrastructure of existing buildings are likely outdated and updating to more environmentally conscious, technologically-advanced systems increases the building cost (Georgia Department of Community Affairs 2014c).

The practice of adaptive reuse is a specific mode of infill development that entails converting an existing structure into adapting requires great creativity. Admittedly, devoting a

project to adaptive reuse does limit the options for school location. There are fortunately instances where schools are needed in areas that do have vacant buildings. Typically infill development must abide by regulatory barriers such as zoning and other land development standards although school facilities are largely exempt from these. The major exception is parking requirements, which are further explored in the site design discussion in Section 3.1.

Incentives for Infill Development

Infill development serves as a reinvestment to the urban core and protectant of the urban fringe by making redevelopment of urban core parcels more attractive and affordable to developers by addressing common barriers to infill development-inadequate infrastructure, lengthy permit processes, obsolete zoning provisions, and difficult parcel assembly” (PolicyLink 2014). Density bonuses have been utilized to decrease the mandated number of parking spaces provided by the developer and to allow for increased density. Cleveland, Ohio has a land assembly program that makes it easier for larger land uses to locate inward, where parcels are often too small for schools (Cuyahoga County Land Reutilization Corp. 2013). This process involves the assemblage of small parcels into one larger block under common ownership. Cuyahoga County’s Land Bank Authority receives delinquent properties and either makes them available for developers looking for larger parcels of land or turns them into community spaces such as urban farms.

Infill development is an important component of maintaining a sustainable environment. As represented in Figure 6.2.2-1, sprawl development has severe multiplying effects. Once a single home is established in a rural greenfield, more housing stock follows as the demand increases. Once neighborhoods are formed, public infrastructure and utility extensions are required to support the new population. After utilities and municipal services are in place, commercial development is constructed to provide goods to the new residents. This new business results in more traffic traveling further distances in order to access the newly developed area. Both vehicle emissions and destructing greenfields are harmful to the environmental ecosystem, displacing animals, which creates an imbalance in the biome.



Figure 6.2.2-1: The effects of sprawl development

6.2.3 Current Conditions in Georgia

The state of Georgia demonstrates an array of school location types. There exists schools situated within a city block structure, but more commonly we found the opposite: schools located on greenfields.

Centrally Located Schools

City Schools of Decatur

While some families move to a city with little consideration of the school district, others move to a specific neighborhood based on a school's positive reputation. One of the four study school districts, the City Schools of Decatur, is a jurisdiction that often attracts families due to their well-regarded schools. "The desirability of Decatur schools...has translated to plenty of anxious buyers," reported one interviewee, who also shared that, "each neighborhood offers its own village area with local businesses, a rich supply of historic homes, and a collection of parks" (Green 2014). The desirability of the centrally-located schools has resulted in families buying inner residential parcels instead of those on the fringe of the city.



Figure 6.2.3-1: Decatur Neighborhood Schools

Nearly all of the schools in Decatur are located within neighborhoods; for example, Winnona Park Elementary School is located in Winnona Park as seen in Figure 6.2.3-1. As previously mentioned, each of Decatur's neighborhoods is structured as a smaller, walkable village. The

historical nature of the homes suggest that the area has been developed for a long time. Decatur is not newly developed and is not located on a fringe, but it has historically functioned as a center itself. School design has changed significantly in the last 50 years as the neighborhood school became obsolete due to larger attendance zones per school that lead to the construction of larger schools (Berke et al. 2006). The change in attendance zoning can be attributed to racial integration, decentralization of residences, fiscal efficiencies in larger school sites, and a decrease in household size which resulted in lower residential densities.

The school sites in our other three case study districts are more typical of school location patterns in Georgia. In DeKalb County, Newton County, and Bibb County school locations indicate a pattern of being selected in conjunction with development, often in a highly rural area. One trend is that schools located on a fringe encouraged further residential development based on demand. The other trend is that centrally-located schools were desirable to families which drove development nearby. The latter phenomenon can be considered as the opposite of sprawl and can thus be viewed as a sustainable practice in school siting.

Alexander II Elementary School, Bibb County School District

Examples of centrally-located schools are also found in DeKalb County, Newton County, and Bibb County. Alexander II Magnet Elementary School, a magnet school in Bibb County, enrolls its students from across the entire school district and, therefore, should be located centrally relative to the entire county. Figure 6.2.3-2 shows Alexander II in red surrounded by dense development.

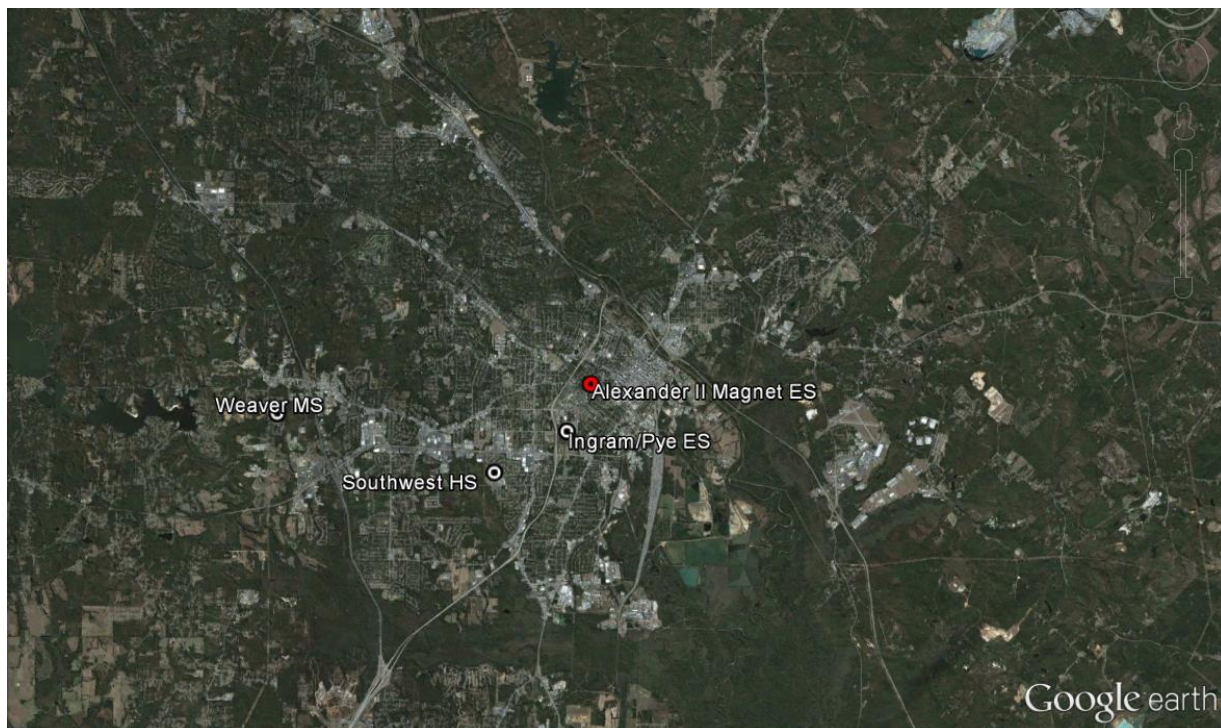


Figure 6.2.3-2: Location of Alexander II Magnet Elementary School, Bibb County School District

The position of Alex II “at the center of the community” serves as a model of sustainable school siting (Stokes 2014). Constructed in 1901, it is part of the Macon Historic District

although it has been well-integrated with the downtown community of Macon (Alexander 2009). Community support has helped the school preserve its historic value rather than suffering closure, renovation, or relocation. According to Bibb County Principal Planner Don Tussing, the school has spurred infill development and has been instrumental in revitalizing and repopulating the intown neighborhood (Tussing 2014).

Greenfield Schools

Arabia Mountain High School, DeKalb County School District

One of the case study schools in DeKalb County, Arabia Mountain High School, provides a classic example of greenfield siting. As seen in Figure 6.2.3-3, the tree line closely follows the curves of the buildings, athletic fields, and roads, which is indicative of a practice called clear-cutting. Figure 6.2.3-4 displays Arabia Mountain's parcel before construction began in 2005, at which time it was a greenfield densely populated with trees. Both DeKalb County planners and DeKalb County school district employees reported that this area has an abundance of granite due to its location near Stone Mountain (Douse et al. 2014) (Drake and Williams 2014a). Constructing a school atop a granite site would have drastically increased construction costs, which limited potential locations for the new school.

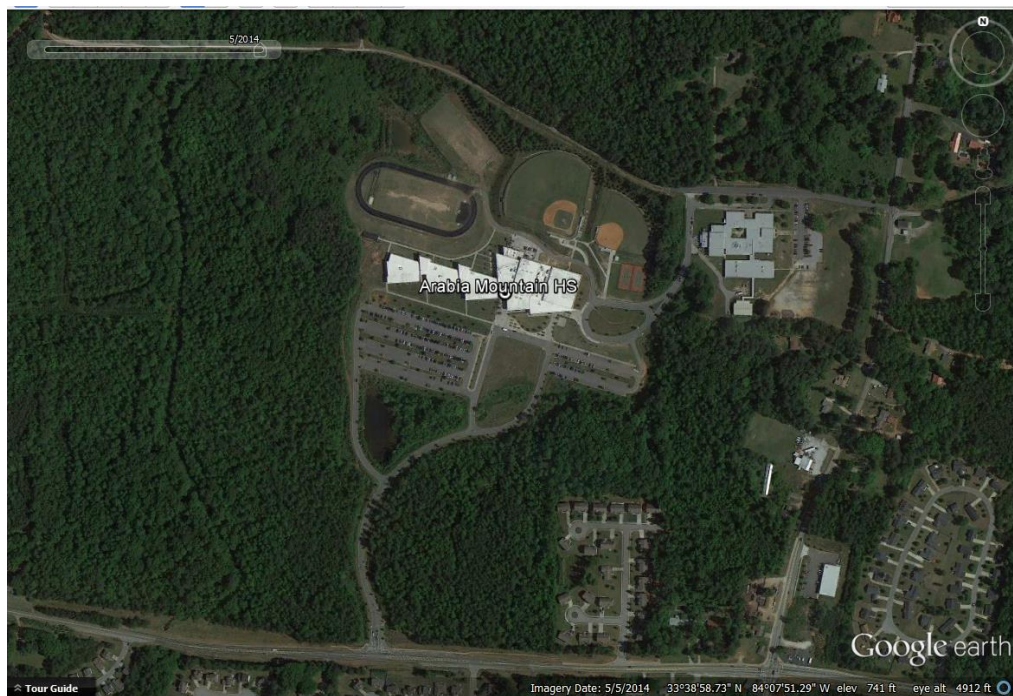


Figure 6.2.3-3: Clear-cutting at Arabia Mountain High School, DeKalb County School District

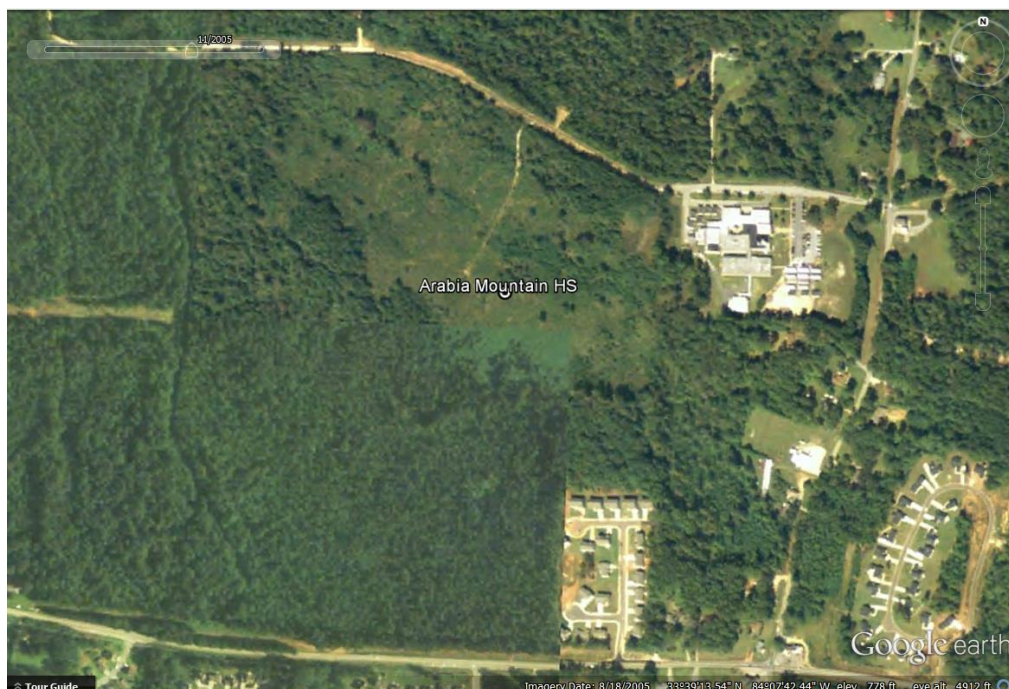


Figure 6.2.3-4: Pre-construction site of Arabia Mountain High School, DeKalb County School District, 2005

Greater DeKalb County

According to the DeKalb County planning department the area surrounding Arabia Mountain High School was planned as a strictly residential village, which has encouraged sprawl in the years since the school was built (Douse et al. 2014). They have established small pods of commercial development with multi-family housing and single-family residential development in the remaining areas. Given DeKalb County's dense conglomeration of communities, the planners fear future overcrowding. Due to the increasing residential population the school district plans to redraw their attendance zones, which will be controversial among residents who moved to specific zones based on the school.

Another unique aspect of DeKalb County is that all five high schools share one stadium rather than having their own (Drake and Williams 2014a). This decreases the amount of acreage school sites need, therefore increasing the number of new parcel options. Dan Drake, a DeKalb County School District planner, reported that they target new schools for locations where student density is high crime rates are low, and where there are no existing schools. While these are common siting criteria that will be discussed in more detail in Section 6.3, avoiding sites with higher crime rates may not always be warranted. Schools that are constructed in high crime areas have the potential to discourage crime by being an asset and meeting place for the community as seen at another case study school in Bibb County, Ingram-Pye Elementary. Brenda Stokes, Facilities Director of Bibb County School District, describes the school as the, "only good thing they have". It was built in a historically crime-ridden neighborhood in 2010 and featured a large glass façade that many feared would be a target for vandalism. Instead residents respected the new investment in their community and the school has grown into a valued, "safe community meeting space" (Stokes 2014).

In DeKalb County it is not uncommon for the school district to move forward with a new site if other benefits outweigh public opposition regarding increased traffic congestion (Drake and Williams 2014). One criterion that the school planners highlight is the new site's proximity to new businesses. For instance, the planned redevelopment of the defunct General Motors plant in nearby Doraville is expected to house many new employees which will spur the need for another school (Trubey 2014) (Drake and Williams 2014a). Although locating schools based on local employment centers comes with the risk that they will move elsewhere, DeKalb school planners feel comfortable using job projections to locate new schools when they are correlated with the primary school student population.

Newton County

Greenfield development can also apply to suburban areas as illustrated by Cousins Middle School in Newton County. As seen in Figure 6.2.3-5, Cousins is located on the edge of the downtown area surrounded by development that would not typically be considered sprawl. The aerial perspective shows other potential school sites that may have resulted in less environmental damage than the clear-cutting required for the selected site..



Figure 6.2.3-5: Pre-construction site of Cousins Middle School, Bibb County School District, 1993

Contributing to the issue is the fact that Newton County School District building plans restrict multi-story schools which would allow for a more compact school site (Douse et al. 2014). As a result schools require a larger parcel size than they otherwise would, eliminating many infill parcels and forcing greenfield development.

Due to the rural nature of Newton County, the school district strives to site schools near the most heavily traveled routes including Interstate-20 (Ellenburg 2014). This allows them to use existing transportation corridors for maximum efficiency. Newton County School District also

makes an effort to capitalize on its surrounding environment instead of viewing natural elements as potential barriers. For instance, Newton High School uses student interaction with the nearby Yellow River as part of their science curriculum (Ellenburg 2014).

Weaver Middle School, Bibb County School District

The newly sited Weaver Middle School is located in a rural section of Bibb County. While an alternative location was more centrally located, the cost of construction was lower at this rural site due to the level topography (Stokes 2014). The school site also potentially afforded the Bibb County School District with extra space adjacent to the site for future expansion. However, the land surrounding the school is now being developed into single-family residential housing as indicated in the blue outlined areas of Figure 6.2.3-6. Thus the desire for vacant land in the immediate area has led to a school surrounded by low-density housing, with the corresponding problems associated with sprawl.



Figure 6.2.3-6: Sprawling development surrounding Weaver Middle School, Bibb County School District

6.2.4 Notable Conditions Outside of Georgia

Not all schools outside Georgia are sited perfectly, but states similar to Georgia, whether by location or population, bear schools that exhibit good siting practice.

Greenfield Schools

Wando High School, Charleston County School District, South Carolina

The location of schools on greenfield sites and away from the population center has severe impacts on the environment, transportation, and future land uses. Figure 6.2.4-1 shows the gray attendance zone for the starred Wando High School in the Charleston County School District. It is visibly located on the fringe of development based on the roads in the map. As a result, the

traffic along the four-lane Highway 17, on which the school is located, becomes congested around start and dismissal times, which is disruptive to the surrounding community.

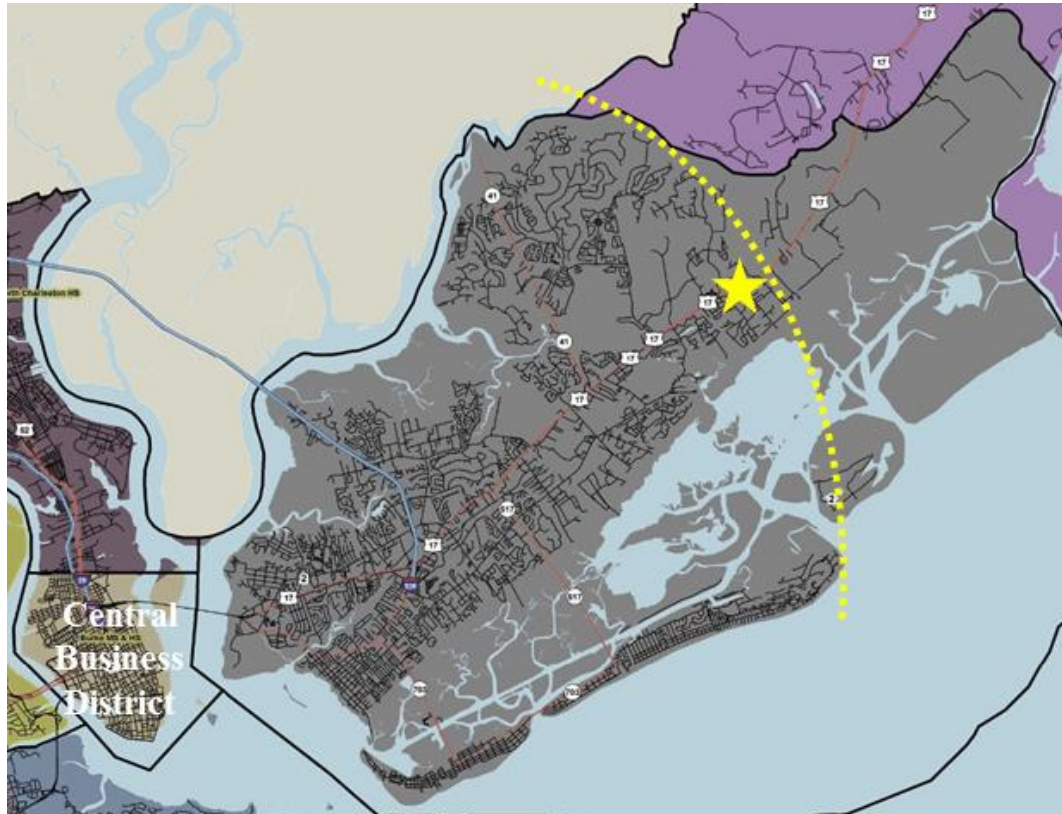


Figure 6.2.4-1: Wando High School, Charleston County School District

The environment around Wando has been negatively impacted due to the clear-cutting in the area and also because of the inconvenience and congestion of the site. As discussed previously, the long driving distances and traffic idling results in harmful carbon emissions that lower air quality. More details can be found on this in Section 5.2.

Charlevoix High School, Charlevoix Public School District, Michigan

The highly controversial construction of Charlevoix High School in the Upper Peninsula of Michigan began in 2000. Many residents were displeased with the new site, commenting, "From the air, the new \$17.4 million Charlevoix High School looks like an appliance warehouse surrounded on one side by miles of rolling farms and woodlots and on the other by an immense parking lot" (McClelland and Schneider 2004). Adding to the controversy was the knowledge that the municipal water system had been expanded solely for this project. "In Charlevoix, the decision to erect a new building so far from town, arrived at by only a handful of school leaders and just barely approved by voters, is still denounced for encouraging sprawling development that could soon threaten small downtown stores". Charlevoix serves as an example of sprawl that actually diminished the downtown area by prompting families to relocate to the urban fringe so their children could attend the new school. Similarly, businesses followed the family and traffic to the outskirts of town to be accessible by the growing residential population.

Adaptive Reuse Schools

Determining the success of an infill school requires in depth traffic and environmental analyses, demographic studies, and an evaluation of the development of its surroundings. Instead the differences between infill and greenfield development will be discussed as a proxy. Although research shows that it is more common for former schools to convert into a new use, there are several examples of non-educational buildings being transformed for scholastic use.

Underutilized Strip Malls, Atlanta, Georgia

Ivy Prep Academy at Kirkwood is a Georgia charter school located just east of downtown Atlanta in DeKalb County, although it is not part of the DeKalb County School District. Ivy Prep, pictured in Figure 6.2.4-2, successfully transformed a strip mall into an elementary school with amenities such as playgrounds and sports fields. The school utilized “an innovative bond-financing deal that raised \$14 million” to purchase an underutilized strip mall, becoming, “the first charter school to buy a building that has a built-in cash stream of existing commercial tenants” (Ivy Preparatory Academy 2014). Ivy Prep is located in the eastern portion of the building and it leases the western end to a gym, adding an aspect of shared use to the school. The site already accommodated adequate parking and the classrooms fit into the building’s original wall structure. The premises used to be affected by high crime and drug rates but the school has not had any issue with this since opening (Ivy Preparatory Academy 2014). While the situation is unique because it is a charter school, Georgia public school districts could employ this model with less stringency in their school siting policies.



Figure 6.2.4-2: Ivy Prep Academy at Kirkwood, Atlanta, Georgia

6.2.5 School Site Selection Criteria Outside of Georgia

It is helpful to understand what school site selection criteria states are using outside of Georgia for context. A simple internet search revealed published criteria for eleven states and one metropolitan city including California, Alaska, Washington, Colorado, Massachusetts,

Pennsylvania, Ohio, Illinois, West Virginia, Virginia, South Carolina, and Albuquerque, New Mexico (see Figure 6.2.5-1). All other states' siting criteria were not readily accessible online or could only be found in the form of recommendations from a third party. These locations represent a variety of sizes, political orientation, socioeconomic status, and regions of the country.

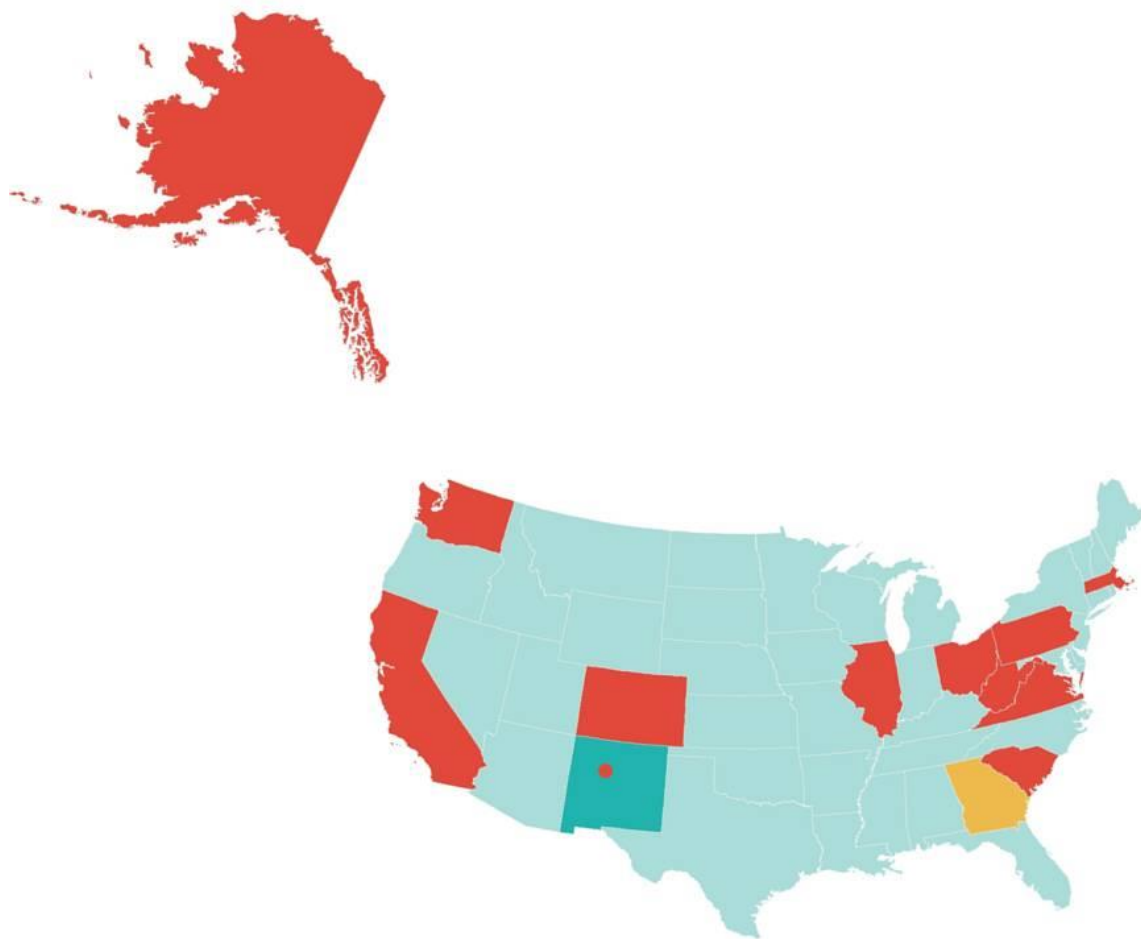


Figure 6.2.5-1: Jurisdictions with publicly accessible school siting criteria

California's list was used as a base to compare planning criteria because it was the most concise and inclusive. This was also the only list that prioritized its criteria. Table 6.2.5-1 below displays California's twelve school site selection criteria and compared to the other eleven jurisdictions. Absence of a criterion is displayed as a black box. Georgia is appended in order to highlight potential gaps in the state's current school siting practices.

Table 6.2.5-1: School site selection criteria by jurisdiction

California	AK	WA	CO	MA	PA	OH	IL	WV	VA	SC	A,NM	GA
1. Safety	X	X	X	X	X	X	X	X	X	X	X	X

2. Location §	X	X		X	X	X	X	X		X	X	X
3. Environment	X	X	X	X	X	X	X	X	X	X	X	X
4. Soils	X	***	X	X	X	X		X	X	X	X	****
5. Topography	X	X	X	X	X	X	X	X	X		X	X
6. Size and Shape	*	X	*	*	X	*		*	*		**	*
7. Accessibility	X	X	X	X	X	X	X	X	X	X	X	X
8. Public Services	X	X	*****	X		X	X	X				X
9. Utilities	X	X	X		X	X		X	X	X	X	X
10. Cost	X			X	X	X	X	X	X	X	X	X
11. Availability	X	X	X	X		X	X		X		X	
12. Public Acceptance			X				X	X				
*only size, not shape												
**only mentions usable acreage												
***talks about underground conditions, but does not mention soil												
****advises against rock, but does not mention soil												
*****only discussed in their LEED section												
§ Location includes an evaluation of the surrounding neighborhood, future demographic and development predictions, consistency with the local jurisdiction's comprehensive plan or future land use, and proximity to the population center or the student population center.												

Jurisdictional Comparison of Siting Criteria

Commonalities

There are three criteria that are common to all 13 jurisdictions. Unsurprisingly, every jurisdiction discusses safety in some capacity due to schools' responsibility to provide a non-harmful environment for minors. For instance, Massachusetts incorporates safety by providing two separate entrances to the school grounds; one for the students and staff and another for parents and other visitors (Massachusetts Collaborative 2009). South Carolina specifies that all school bus and car loading zones must be counterclockwise in order to promote safety as children arrive and depart from school (South Carolina State Department of Education 2013).

The second consistent criterion is the provision of foliage on the school site, sometimes in the context of noise limitation. Colorado has incorporated LEED school recommendations as school siting requirements (Colorado Department of Education 2011). Virginia discusses the school environment as a teaching tool while Alaska seeks to use the school's surrounding site as an outdoor learning lab (Virginia Department of Education 2013; State of Alaska Department of Education 2011). Although Alaska has a unique environment this concept could be utilized anywhere in the world since children can learn from any biome. Perhaps the most unique criterion regarding foliage was the provision of a school garden in Massachusetts (Massachusetts Collaborative 2009). The documentation explained, "School gardening engages students by providing a dynamic environment to observe, discover, experiment, nurture and learn. School gardens are living laboratories where interdisciplinary lessons are drawn from real life experiences, encouraging students to become active participants in the learning process" (National Gardening Association 2014). Ultimately siting a school in an environmentally unique location can provide opportunities for academic engagement with nature.

The third common criterion for school siting relates to accessibility. The siting guidelines address all forms of accessibility including vehicles, pedestrians, bicycles, public transportation, and school buses. A specific theme that emerges is the site's ability to allow spatial separation of transportation modes, which is discussed further in Section 5.2.

Other interesting accessibility provisions included Alaska prioritizing year-round accessibility for their school building sites despite only being utilized ten months per year (State of Alaska Department of Education 2011). As illustrated in Figure 6.2.5-2, Massachusetts prioritizes school site selection according to very specific distances to transit and other amenities (Massachusetts Collaborative 2009):

- sites within one-half mile of a rail station;
- sites within one-fourth mile of a bus stop;
- bike paths extended two miles from the site;
- pedestrian or other human-powered transportation connections to neighborhoods within one-fourth mile of the site; and
- sites within one-half mile of eight basic services.



Figure 6.2.5-2: Massachusetts school site selection proximity guidelines

The state of Massachusetts defines a basic service as a supermarket, commercial office building, convenience grocery, day care, cleaners, fitness center, hair care, hardware store, laundry, library, medical/dental services, senior care facility, public park, pharmacy, post office,

bank, community center, community park, theater, or museum. This prioritization allows students to more easily utilize the facilities and decreases vehicular miles traveled by facilitating multiple stops in conjunction with parents transporting their child to and from school. These qualities are also a good indication of a population-centered, infill development school site.

Topography is prioritized in all but one of the 13 jurisdictions surveyed. South Carolina does not discuss topography despite their range of sub-sea level and mountainous terrain, although wetland issues and land fill are greatly detailed. West Virginia is the only jurisdiction to specify the desired type of topography, stating that the, “contour of a site should be slightly convex to allow placement of the building at the high point. This situation rarely occurs naturally and some earthwork to develop this land form will be necessary on almost every site” (West Virginia Department of Education n.d.). These sites would be desirable for both stormwater management and increased lines of sight to for safety purposes.

One topic that is covered by every jurisdiction except for California is the ability of the site to support athletic fields. Virginia even has policies that base athletic field size on school enrollment (Virginia Department of Education 2013). Some jurisdictions note that this is important for student health, as a gathering space for student camaraderie, or as a community resource.

Inconsistencies

Most jurisdictions do not appear to consult with the local planning authorities in order to find the best site, yet some jurisdictions are required to consult with every applicable community plan. The best example of this is Albuquerque, New Mexico, which considers its Long Range Major Street Plan, existing city and county area and sector plans, the potential population at full build out, and any plans for future development in their school site selection process (Albuquerque Public Schools 2014).

Illinois desires school sites that encourage the location of mixed-income residential development nearby, which essentially mandates that the site is surrounded by residential zoning (Public Health Law and Policy 2011). This strategy ensures that more students will live in close proximity to the school which results in lower vehicular miles traveled and may present the opportunity to bike or walk to school. The disadvantage of surrounding a school site with residential zoning is that it limits the opportunity for shared use between the school and other amenities such as libraries, gyms, theaters, and museums. In this vein, Colorado distinguishes joint use facilities as a way for the school to become a more integrated part of the community (Colorado Department of Education 2011). Shared use is mentioned in about half of the jurisdictions’ siting criteria and is sometimes tied to accessibility as seen with Massachusetts. The topic of co-location is further explored in Section 6.3.

Not all of the site selection criteria have a clear goal. For instance, Washington’s document poses the question of whether development will enhance the site, which suggests that they hope to drive commercial and residential development around their schools (School Facilities and Organization 2011). Alternatively, this criterion may reflect the consideration of whether existing development around this site is appropriate for a school. This view is much more sustainable and encourages infill development as opposed to the former, which promotes greenfield development.

Greenfield development has become highly scrutinized in school siting. As a result many jurisdictions chose not to address this issue within their siting criteria and only one adopted a firm stance. Massachusetts explicitly states that their schools, “do not build on greenfields” (Massachusetts Collaborative 2009). This eliminates a network of problems and disconnects between school districts and local planners, but also requires them to be more creative with potential sites.

One advantage of greenfield development is that it makes any future plans for school growth much easier. Among the 13 jurisdictions, less than half mentioned future expansion which is an important piece of siting since student population and demographics are constantly fluctuating. A school located on a development-locked parcel does not have the option to expand unless the facility guidelines permit multiple story structures. This may force the school to approach the adjacent parcels about buying the property or else require the district to build on a new, larger site. A school developed on a greenfield is likely to be surrounded by undeveloped forest or grassland, allowing for much greater flexibility in evolving building plans. Jurisdictions alleviate greenfield development by prioritizing school sites that follow certain zoning. While schools are not mandated to adhere to local zoning, less than half of the jurisdictions do consider the site’s surrounding zoning. This is a strength for Georgia, as most jurisdictions only cite specific undesired land uses such as liquor stores or wastewater treatment plants.

Consideration of diversity in school siting policies was rare among the surveyed jurisdictions. Illinois accomplishes this by drawing the attendance zone lines in order to maximize diversity and walkability, all other criteria aside (Public Health Law and Policy 2011). This translates to choosing a site in the center of the attendance zone in order to capture the highest number of students in a walkable distance in an equitable, unbiased fashion. One challenge with locating a school in a diverse area is that it may straddle the border of two demographically-different communities historically separated by natural environmental barriers, interstates, or other highly-traveled roads. The disclaimer brought forth by Illinois is that they do their best to balance the issues.

Only five of the jurisdictions mention public participation in the school siting process, including Georgia. California lists public acceptance of the site as a criterion although it is prioritized last (Yeager 2014). Illinois states that it pushes to “ensure community buy-in” while West Virginia considers “citizen attitude and aspirations in general” (Public Health Law and Policy 2011; West Virginia Department of Education n.d.). This topic is further explored in the Section 7.1.

Notably West Virginia is the only jurisdiction to mention the implications of schools and employment opportunities (West Virginia Department of Education n.d.). This term is not defined and mentioned briefly as part of a list so it is open to interpretation. West Virginia may believe that schools provide a source of jobs for surrounding residents or they are suggesting that businesses locate near the school site in order to employ students. A part-time job in close proximity to school would be attractive to a student for a number of reasons. This convenient arrangement would save money by requiring fewer vehicular miles traveled, it may present the opportunity to walk or bike, and it would be located in a familiar neighborhood with possible contact with friends and family,

Colorado was the only jurisdiction that provided separate school siting requirements for different location types (Colorado Department of Education, 2011). This state, featuring rural

lands and several dense cities, recognizes that while the location of schools in urban areas is important, the location of rural schools is sometimes necessary based on other criteria. The criteria of an urban site should specifically promote more efficient and compact development to avoid sprawl.

6.2.6 Gaps in Georgia's School Siting Criteria

Table 6.2.5-1 displays the gaps in Georgia's school siting criteria compared to California's prioritized list and the other ten jurisdictions. Georgia comes close to replicating the comprehensive California model with the exception of site availability and public acceptance. The non-inclusion of site availability may be because Georgia views this as an obvious requirement in their process, or it could have been strategically omitted. Regardless, the public acceptance piece should be incorporated since community engagement is vital to schools. Schools that lack neighborhood support are missing out on a valuable resource and could be the target of negative attention in the form of vandalism or theft.

Georgia's school siting policies also do not list any proximity requirements between schools and residences or services. Doing so would discourage the siting of schools in greenfields where the only benefits of the adjacent land are access to a natural environment and room for expansion. Adding a mandatory radius from school sites to transit stops would also promote siting schools next to existing transit, which typically excludes rural greenfields.

While comprehensive maps highlighting new development sites do exist for Atlanta, the city lacks a map of open infill parcels. The Atlanta Regional Commission (ARC) recommends gathering coverages and data from aerial photos and tax assessors' maps, identifying property values and zoning, researching the parcel's legal history, and inventorying and mapping the parcels with potential for infill (Atlanta Regional Commission 2013). No entity in Georgia has yet implemented this practice. Relatedly, Georgia does not currently incentivize infill development through school siting or other types of development. The DeKalb Regional Land Bank Authority exists to "promote quality housing, encourage new industry, and generate additional jobs" but does not mention an opportunity to aggregate land for schools (DeKalb Regional Land Bank Authority n.d.).

In interviews, Georgia school districts consistently used cost as a reason that infill parcels were not selected over greenfield school sites. If incentives existed to promote infill development, school site decision-makers would not be discouraged by the higher cost of infill parcels. Additionally, if a policy existed that linked higher costs of development to distance from the population center, school districts aiming to minimize siting costs would be motivated to move inward.

6.2.7 Recommendations

In terms of programs that seek to ameliorate these existing problems, there are several practices that we suggest the various school stakeholders execute. The proposed policies for the Board of Education will restrict site selectors from choosing greenfield sites or provide motivation for selecting smarter sites. Local governments can do things to discourage greenfield development in Georgia as well. Note the last two recommendations are about growth management in general and not strongly linked to school siting concerns; however, they are included they could affect school siting in Georgia over time if implemented.

Allow for Reuse

The National and State Boards of Education should establish different sets of requirements for rural, suburban, and urban schools, lessen policy stringency to allow for creative adaptive reuse school projects, and provide infill development incentives and higher adaptive reuse incentives.

Newton County does not allow school buildings to be two stories or more; such a policy necessitates a larger site, so smaller, more in-town parcels are ruled out in the site selection process. As previously discussed, Colorado utilizes different requirements for urban and rural schools (see Section 6.2.5, under “Inconsistencies”). Charter schools have successfully adapted churches, commercial buildings, businesses, etc. into working school environments. Siting requirements such as minimum acreage and athletic field provision make adaptive reuse for public schools difficult, because the preexisting buildings do not qualify under current requirements. Providing financial support to offset the additional costs of infill development and adaptive reuse would encourage its execution.

To implement such policies, the state or individual school systems should provide separate guidelines for urban, suburban, and rural schools. The variables would include standards such as minimum and maximum acreage, attendance zone radius, enrollment/number of instructional units, and the various supplemental amenities required onsite (such as athletic fields). Georgia should adapt school building policies in such a way that would allow for atypical school buildings. This would give new schools the opportunity to locate on previously developed parcels, making greenfield development unnecessary. To move past allowing for redevelopment and actually promote it, a national entity should allot funds for scholastic adaptive reuse projects to be applied for by the state school systems.

Encourage Neighborhood Schools through Schools-Housing Balance Mandate

Mandate a schools-housing balance and an “Urban School Boundary”.

Policies such as jobs-housing balance and urban growth boundaries are well known to planners, but schools are not included in these policies because of the widespread disconnect between public planning and school systems. A schools-housing balance would mandate that schools have “x” number of housing units within a specified radius from the site. This promotes the siting of neighborhood schools and limits greenfield school sites which spur residential sprawl. An Urban School Boundary would limit new schools to designated zones close to existing residential development.

The local government would perform an in-depth residential study of the area before implementing these practices. To enforce a schools-housing balance, the school site selection committee would propose a site and the public jurisdiction would calculate the number of housing units within the radius stated in the policy. Requirements would vary for urban, suburban, and rural areas, with tighter radii or higher residential counts for the urban areas and

wider radii and lower residential counts for the rural areas. To create an Urban School Boundary, local planners would use the residential study to draw a line around the population center(s) and reject any school site proposition outside of the perimeter, although this will be tough to pass as schools are not currently bound by any zoning or land use regulations.

Prioritize Proximity

Revise school siting criteria to incorporate concerns about the impact of greenfield development of schools.

As previously discussed, Massachusetts requires schools to be sited within a quarter of a mile of specific services, parks, businesses, bus stops, rail stations, etc. and sites where it is possible to provide sufficient bicycling and walking paths within a certain number of miles of the school (see Section 6.2.5, under “Commonalities”). Schools could also establish mutually-beneficial relationships with businesses such as an after-school student employment program to provide students with jobs, and businesses with local employees. Middle and elementary school students could volunteer for programs such as animal humane societies, hospitals, or Habitat for Humanity.

The GaBOE could model a proximity system after Massachusetts’ by assigning varying radii to urban, suburban, and rural locations. This distance-oriented site selection criteria would be mandatory for all new schools and would encourage stronger community connections by intentionally selecting areas that had the potential for businesses partnerships.

Ensure Quality Public Services within Existing Development Areas

Stakeholders should ensure quality public services for schools within the city, raise the cost of these services at the urban fringe, and implement transportation impact fees to discourage schools from locating on greenfields.

Stakeholders should, “encourage a holistic approach to rebuilding and filling the gaps in neighborhoods. Facilitating the provision of public and private services, including frequent transit, parks, well-stocked grocery stores, and safe routes to school can do much to support successful infill development” (Municipal Research and Services Center 1997). This strategy also reduces the motivation for school districts and developers to invest in new infrastructure outside of the city center. “Many local jurisdictions traditionally have averaged the costs of services across all users rather than charging the full cost of serving more distant development. Doing so has made outlying development relatively less expensive for the developer, while straining local government budgets.” By mandating higher service fees for those located further from the city center, schools will save money by locating near the city center as opposed to siting on rural greenfields. Additionally, developers will minimize their own costs by saving on utility fees and investing in more centrally located development. With fewer families living in the urban outskirts, fringe schools will no longer be needed as illustrated in Figure 6.2.7-1 below. The implementation of a transportation impact fee would further increase the amount that a greenfield school must spend.



Figure 6.2.7-1: Raising utility costs to eliminate greenfield school siting

The local government should ensure quality urban public services to keep families, and consequently schools, near the population centers. Public entities and/or utility industries should raise the cost of utilities by assigning tiered pricing according to distance buffers around the central business district as demonstrated in Figure 6.2.7-2. Local government should implement transportation impact fees in addition to utility fees for maximum effect.



Figure 6.2.7-2: Tiered utility pricing

Promote Easy Infill

Make infill development easier by promoting available parcels.

It is much easier for a school site selection committee to select an untouched greenfield site since it is usually available. It is more difficult to identify potential development sites when pre-existing buildings are present and it is not known whether an entity is currently using the site or not. There should be a central repository for conveying which infill parcels are available for redevelopment. This could consist of a clickable online map where the public can view vacant parcels. Upon clicking on an available parcel, the user would see images of the site as well as a list of best future uses allowed under the current zoning regulations and potential uses that would require rezoning. This resource will help developers target construction on infill parcels, challenging the assumption that they must construct on a new site in order to fulfill client needs.

A non-profit, private, or local government jurisdiction could be tasked with creating an infill parcel database for public use. Land bank authorities typically collect foreclosed and delinquent infill parcels and aggregate them into larger parcels open for others to develop. If these two public entities are able to coordinate, school districts could potentially have first right of refusal on rare, large, centrally located parcels.

6.3 School-Community Relationships, Shared Use, and Co-Location

Schools and communities can reap significant mutual benefits through strong school-community relationships and shared use of resources and facilities.

6.3.1 Problem Statement and Background

Over the past several decades, both physical separation between community centers and schools has been accompanied by a widening separation in mutual engagement, ushering in increased distrust and decreased collaboration between these two now-disparate entities. These circumstances are particularly unfortunate in light of the wealth of potential benefits that can be made available to both schools and communities through the shared use of resources and co-location.

Local schools are not only educational institutions but rather “rich collections of specific resources which can be used for strengthening the social and economic fabric of the entire community” (Chrzanowski 2010). Similarly, communities can be robust sources of active, strong, and dynamic people and assets. As such, schools and communities can reap significant mutual benefits by seeking out strong relationships, co-location, and shared use of resources and facilities.

A shared-use agreement (also known as a joint-use agreement [JUA]) is “a formal agreement between two separate government entities—often a school district and a city or county—setting forth the terms and conditions for the shared use of public property” (ChangeLab Solutions 2009). Occasionally, schools and communities will agree to a joint use of facilities without a formal or written document, but the most successful partnerships often rely on well-written agreements that clearly elucidate the terms and rights of each entity.

Although community-school partnerships are by no means a new concept, this issue has seen a recent resurgence in both research and practice as the rift between schools and communities has grown and exacerbated a number of economic, physical, and social challenges in each (Howard et al. 2013). Research has shown, and implementation is demonstrating, that such challenges might be overcome through strengthened partnerships between the two.

Significance of Conditions

An in-depth exploration of this issue is particularly important because of the significant benefits that can result from taking full advantage of a school-community partnership. Moreover, schools and communities encompass virtually everybody; therefore, this issue is relevant to the entire local or regional population. Everyone can have a part to play in this issue, and everyone can benefit.

In 1929, Clarence Perry advocated that the best neighborhood plan was one in which schools were located in the center of communities. His reasoning for such placement was to promote schools as the location for community activity, providing opportunities for residents to engage in social, political, and physical activity (Lawhon 2009).

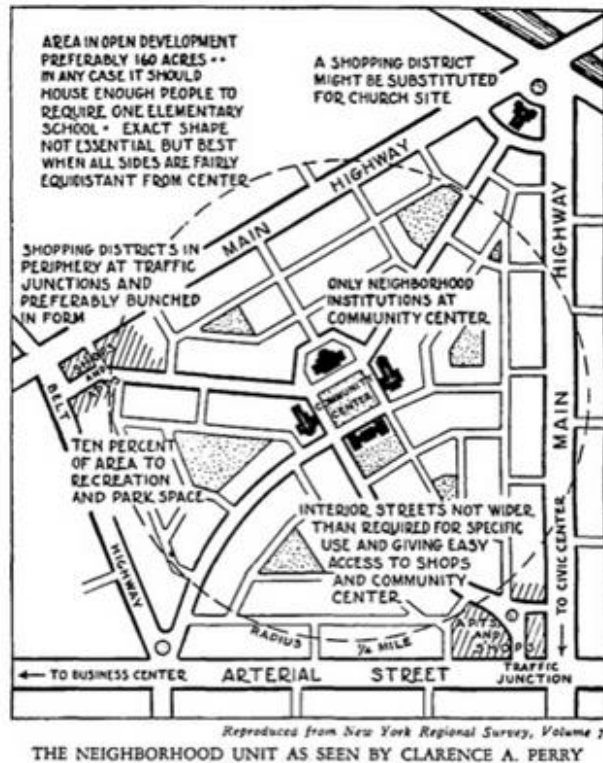


Figure 6.3.1-1: Clarence Perry's Neighborhood Unit

However, as the trend towards urban sprawl evolved following World War II, schools were increasingly sited on urban fringes. This divergence from Perry's concept of the neighborhood unit created a rift not only between the physical location of school and community buildings but also between school and community activities.

The 1990s emergence of New Urbanism introduced a renewed awareness of the fundamental components of Perry's neighborhood unit and a welcome trend back towards schools as central to communities (Botchwey et al. 2014). Unfortunately, however, the current state of the built environment, with its sprawling suburbs and infrastructure based on the scale of the automobile, continues to present a number of spatial and infrastructural challenges to recent efforts to renew community-school connectedness. Similarly, the design of schools themselves can also present obstacles to efficient sharing of resources and co-location practices.

Benefits of Shared Use and Co-Location and Reasons for Implementation

Although these historical challenges and the potential barriers to strong school-community relationships may seem abundant, the benefits of school-community partnerships are even greater, and the reasons for implementing the concept abound.

The following lists present a mere snapshot of these advantages.

The mutual benefits of school-community partnerships make them more sustainable and economically viable.

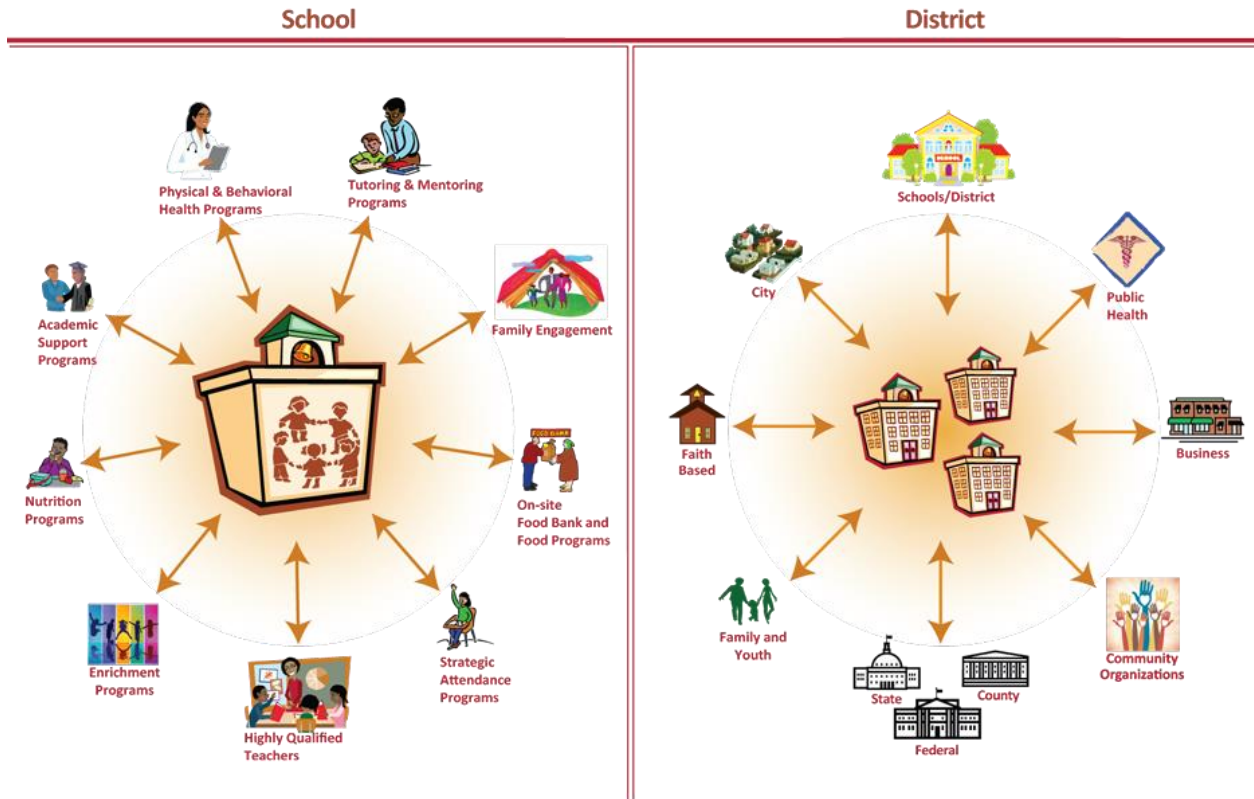


Figure 6.3.1-2: Mutual benefits

(Source: CSCI 2012)

A strong community partnership with a school has the potential to benefit schools by:

- Helping them maintain high levels of local visibility;
- Establishing institutional legitimacy;
- Improving student perceptions and academic performance;
- Strengthening recruitment outreach activities; and
- Facilitating cost-sharing.

(Chrzanowski 2010, TRPA 2013, CIS 2014)

Similarly, such partnerships enable schools to offer communities:

- A central location for information-sharing, meetings, community events, etc.;
- A volunteer-base of students in community-based organizations and businesses;
- A greater sense of community ownership and engagement; and
- Promotion of partnerships across community agencies.

(Chrzanowski 2010; TRPA 2013)

Shared use and co-location also align with the goals of various federal and state entities.

Nationwide/Federal. The U.S. Department of Education released a 2003 revised report entitled *Schools as Centers of Community: A Citizen’s Guide for Planning and Design*. In it, the U.S. Department of Education promotes joint use partnerships as a crucial strategy in creating schools that are flexible and adaptable; enhance teaching and learning; serve as community centers; involve all community stakeholders in the planning and design process; provide safety, health, and security; and effectively use available resources (Bingler et al. 2003)

Building Educational Success Together (BEST) is a national collaborative that presents shared use agreements as a model strategy that supports high performance in schools (BEST 2005). The National Park Service, the U.S. Department of Education, the U.S. Department of Agriculture Rural Development, the Centers for Disease Control and Prevention (CDC), and the U.S. Department of Housing and Urban Development all offer grants that may be available to help finance either elements of a joint use program or programs that include an element of joint use (Kappagoda et al. 2012). As one of its recommendations for encouraging physical activity, the 2010 White House Task Force on Childhood Obesity recommends that schools increase access to parks and playgrounds via joint use agreements (CDC 2013).

Moreover, shared use and co-location facilitate government efforts to encourage fiscal efficiency between schools and public or private partners as well as national efforts on the part of smart growth advocates to foster “complete communities” that provide a mix of services and activities at single locations (Filardo et al. 2010).

State. Numerous states across the nation encourage joint use for school districts in their statewide construction, education, planning, and public instruction documents. Although Georgia state law permits but does not expressly encourage joint use, the goals of various statewide agencies either directly or indirectly align with the goals of joint use policy.

For instance, according to Georgia’s 2014-2016 Statewide Comprehensive Outdoor Recreation Plan (SCORP), the state will seek to both “leverage initiatives, programs, funds, and partnerships to advance outdoor recreation projects that directly support active, healthy lifestyles” and “work to improve access to high-quality outdoor recreation opportunities by providing for safe and well-maintained facilities close to where people live and work” (Deal et al. 2014). Partnerships between schools and outdoor recreation facilities can assist in the SCORP goal to address the emerging outdoor recreation needs of Georgia’s citizens of all ages.

Also, the Georgia School Boards Association (GSBA) has created a document entitled *A Vision for Public Education in Georgia*, which outlines a number of local school district recommendations. Under Section 5, *Teaching and Learning Resources*, the GSBA has recommended that school districts “develop partnerships with businesses, industries, public agencies and the community to promote shared use of services and facilities” (GSBA 2014, 2).

Shared use and co-location are linked with increased physical activity and health promotion.

The relationship between physical activity and shared use are well-documented in the literature, and the aforementioned White House Task Force is just one entity endorsing shared use and other school-community partnerships for the purposes of promoting health benefits.

Research by the Robert Wood Johnson Foundation, the CDC, and various peer-reviewed health literature has found that the adoption of joint use agreements opens up opportunities for children and adults alike to use school facilities for recreation and physical activity, thereby reducing obesity and other related diseases and health disparities (Kanters et al. 2014, Young et al. 2014, Chriqui et al. 2012). Shared use and co-location can be especially critical strategies in overcoming health disparities. This is particularly crucial in the case of Georgia, considering that certain unhealthy lifestyle characteristics, such as lack of physical activity and poor nutrition, are especially prevalent among populations in the southern United States (Troost et al. 2012).

This can be seen in practice in the example of the 2013 DeKalb County Community Health Improvement Plan. One of the goals of this plan is to utilize a variety of interventions in schools, faith-based organizations, and worksites that increase awareness and opportunities for physical activity and nutrition. One of the action steps listed under this goal is to “increase awareness of joint use agreements with community partners and schools” (DeKalb County Board of Health 2013).

6.3.2 Current Conditions

According to the findings of the CDC School Health Policies and Practices Study (SHPPS), 61.6 percent of the sample districts across the U.S. had adopted a formal joint use agreement as of 2012, over half of which were established with a local youth organization or a local parks and recreation department (CDC et al. 2013). On the outset, this figure seems rather high. However, it needs to be interpreted in light of the fact that just because over half of the 1,048 school districts in the sample had adopted at least one formal joint use agreement, this does not mean that over half of schools in the nation (or even in the sample studied) have adopted a formal joint use agreement. One school district could include up to one hundred, or even more, schools and having just one of those schools engaged in joint use would qualify that district as having adopted a formal joint use agreement. There are 132,183 schools public schools in the U.S., compared with 13,588 public school districts (NCES 2011). Thus, this figure is not completely representative, and more research needs to be conducted to fully gauge the prevalence of shared use in schools across the nation.

Nonetheless, this figure certainly demonstrates that shared use is practiced in at least some capacity in a wide sampling of districts across the country and that a variety of examples of the practice exist. Figure 6.3.2-1 below represents the percentage of districts engaged in various types of shared-use agreements.

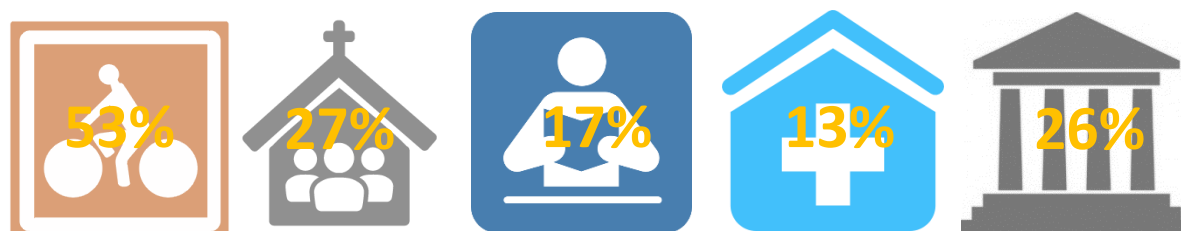


Figure 6.3.2-1: Percentage of districts

Local youth organization/
Parks and Rec. Dept.

Local faith-based
organization

Local library
system

Local healthcare
facility

Other public/
private entity

engaged in various types of shared use

Nationwide, formal joint use agreements typically apply to recreation or physical activity, whether indoor or outdoor, and programs for school-aged children either before or after school hours. Agreements applied to adult education programs and preschool or childcare programs were much less frequent among school districts with agreements (CDC et al. 2013).

Beyond these numbers, the literature on shared use and co-location has yet to offer a complete inventory of schools and school districts that have engaged in these practices. Georgia also has yet to provide an inventory of cases of shared use or co-location. In general, however, existing evidence of the implementation of shared use reveals that engagement with this concept among schools and districts is very limited. Based on a review of the cases represented in this study, the majority of schools pioneering this concept are charter schools.

Unlike other public schools, charter schools in Georgia are forced to spend operating revenue on facilities, and just over 45 percent of charter school students in Georgia go to school in facilities that are about 20 percent smaller than the standard size for Georgia schools (GCSA et al. 2011). As a result, charter schools in the state are often limited in their offerings of specialized instructional spaces and facilities, such as libraries, music rooms, and gymnasiums. In fact, 47 percent of Georgia charter schools do not have their own athletic fields, and almost 17 percent do not have a gymnasium (GCSA et al. 2011).

In spite of these facility deficiencies, the Georgia Department of Education's (GaDOE) Annual Report on Georgia's Charter Schools demonstrates that, as of the 2009-2010 school year, charter schools in Georgia had performed just as well or better than other public schools in Georgia for the past four years (GCSA et al. 2011). Regardless, charter schools in Georgia tend to face challenges in gaining access to unused district facilities and have had to be especially creative and resourceful in securing adequate space.

General Barriers

A number of public policies, plans, and programs pose significant challenges to the implementation of such practices. As a result, shared use and co-location practices in Georgia are present primarily amongst charter schools and have not yet become an active norm proliferated throughout public school systems. Vandalism, liability, cost, lack of knowledge about implementation, perceptions of unequal benefits, and overuse of facilities are some of the oft-cited challenges faced by schools and communities in successfully implementing shared use and co-location (Howard et al. 2013). These challenges and others like it are described below, particularly in terms of their specific context in the state of Georgia.

State Policy in Georgia that Permits but Does Not Expressly Encourage Shared Use

Georgia is one of 38 states across the U.S. that permits community individuals or organizations to use some or all of school property (Trust for America's Health et al. 2014). According to 2010 Official Code of Georgia (O.C.G.A.), "Any school board may join with any municipality, county, or any other school board in conducting and maintaining a recreation system" (O.C.G.A. 36-64-4 [2010]). This means that Georgia school districts may grant community use but are not required to do so. Representatives from the GaDOE have expressed that shared use agreements and school-community partnerships are "intensely local issues" and therefore feel that it is not the Department's place to expressly encourage either (Rowland 2014).

As such, Georgia's policies on the external use of existing school buildings and grounds are limited, and encouragement of this concept from state legislation is lacking. Facilities-related decisions and responsibilities have been largely left to the responsibility of local districts (Filardo et al. 2014).

Perceptions about Liability and Insurance

Often, false perceptions of legal and systematic constraints play a role in hindering school administrators from seeking out opportunities for joint partnerships with the community. Many fail to realize that, in fact, three sets of special legal rules operate to protect public schools from liability risk during after-hour or non-student recreational use. These include sovereign or governmental immunity, state recreational user status, and traditional common law treatment of "invitees" and "licensees" who use land owned or occupied by others.

The state of Georgia has taken a few steps in this regard that are worthy of note. In Georgia, the Recreational Property Act (RPA), enacted in 1965, adds another layer of immunity for schools in that it limits the duty of care owed to land entrants. The RPA applies to both public and private lands and is intended to encourage public and private landowners to allow the general public to use their land without charge. The RPA applies to schools in an after-school situation provided that the use is open to the public and qualifies as a "recreational purpose" according to the statute's definition (Mathews et al. 2009).

Georgia also recently passed legislation intended to help schools with the liability challenges they face. In July 2013, an amendment entitled "Recreational joint-use agreements" was added to the O.C.G.A. under the general provisions for torts (Chapter 1 of Title 51) in order to limit liability for the governing authority of a school upon its establishment of a recreational joint-use agreement with another entity, either private or public. The key components of this code read as follows:

"(b) A recreational joint-use agreement shall:

- (1) Set forth the terms and conditions of the use of a facility;
 - (2) Include a hold harmless provision in favor of the governing authority;
 - (3) Be revocable at any time by the governing authority of the school;
 - (4) Require the private entity to maintain and provide proof of a minimum of \$1 million in liability insurance coverage applicable to the use of the facilities and effective for the duration of such agreement; and
 - (5) Provide a citation that such agreement shall be governed by this Code section.
- (c) The governing authority of a school that enters into a recreational joint-use agreement which complies with subsection (b) of this Code section shall not be deemed to have waived its sovereign immunity as to damages to persons or property arising out of or resulting from such recreational joint-use agreement.
- (d) Code Section 51-12-33 shall not apply to claims for civil damages arising from the use of a school's facilities pursuant to a recreational joint-use agreement" (O.C.G.A. § 51-1-53 [2014]).

In spite of these legal rules, many public school officials and their advisers worry about liability risks surrounding shared use, fearing that community users of public school facilities might file lawsuits in the event that personal injury or property damage should take place (Baker et al. 2008). The primary challenge in this case, then, is providing schools and districts with an

accurate and comprehensive understanding of legislation and how it applies to liability and insurance issues related to share use.

Disparate Educational and Municipal Planning

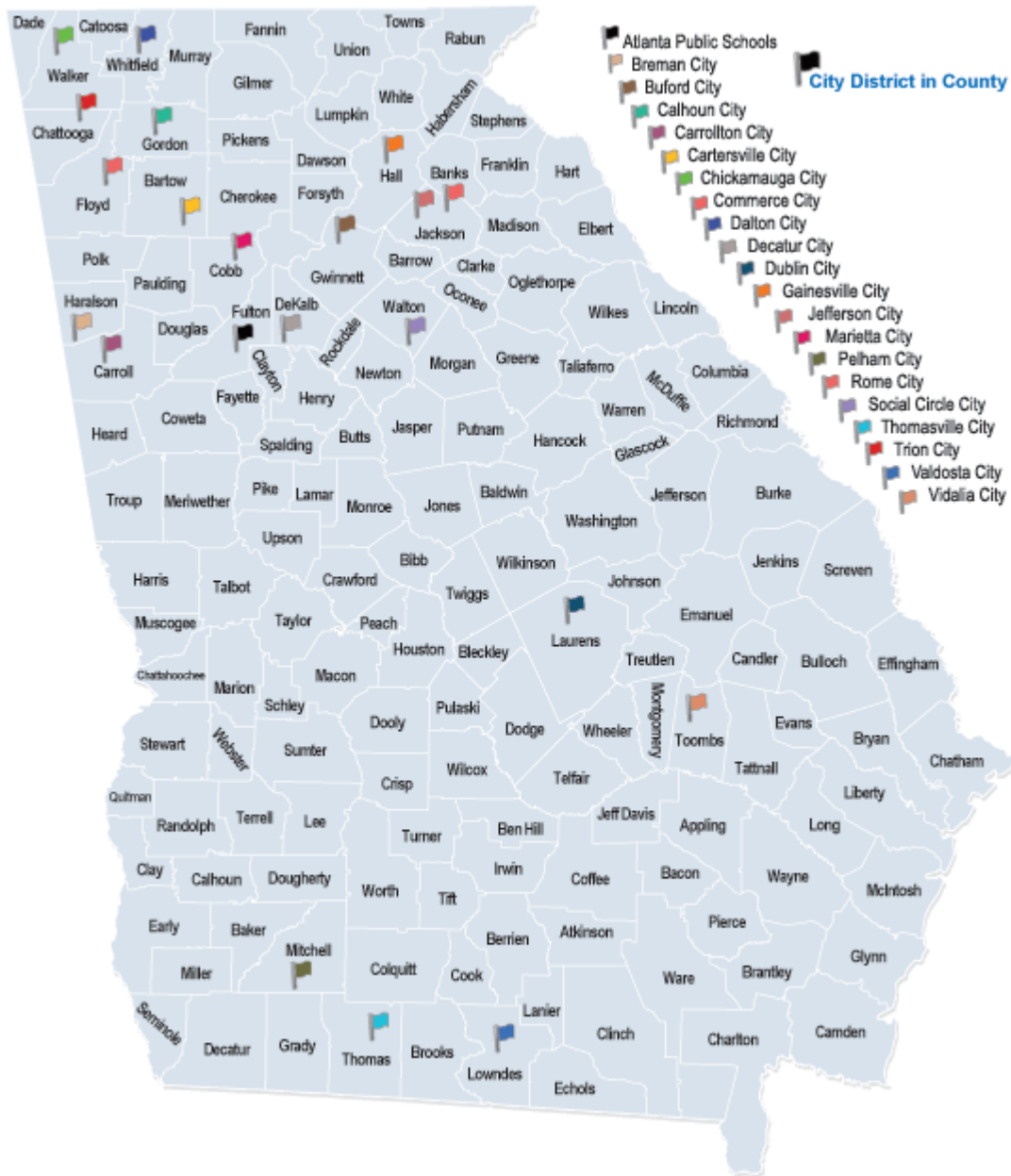


Figure 6.3.2-2: School districts in Georgia

(Source: GADOE 2014)

Educational and municipal planning are rarely integrated, so school districts often react to external offers rather than actively and intentionally pursuing them with community entities (Vincent and Filardo 2014). Georgia has 181 school districts, each of which is independent governmental entities, generally governed by a board of trustees that has the power to create and

operate schools for a specific area. Although many local comprehensive plans for cities and counties in Georgia recognize to some extent the close relationship between development and school planning and impacts, the planning in and around these schools is often very separate from the planning of local government entities such as counties and municipalities (GaDOE 2014b, Winig et al. 2013, Watkins et al. 2006, Jones et al. 2005).

The large number of people involved in the planning, funding, and building of schools also creates difficulties in arriving at a “harmonious co-location agreement” (Romeo 2004). The many stakeholders can include school board members, administrators, architects, developers, neighborhood associations, state legislators, parks and recreation department commissioners, chambers of commerce, planning commissioners, and city council representatives, among others. Varying ideas and visions will undoubtedly clash when decision-making needs to take place across such a wide pool of individuals and groups.

Insufficient Staffing

Another critical issue in the implementation of shared use is that schools often have insufficient staffing to take on the responsibility of overseeing the scheduling, planning, communication, and other logistics involved in coordinating shared use. This means that school administrators are often hesitant to take on greater maintenance responsibilities, specifically regarding funding for renovation, repair, and custodial staff. Perceptions of increased crime and vandalism pose additional potential threats, which lead many school administrators to decline shared use agreements (Spengler et al. 2011, Filardo and Vincent 2014).

Staff structural challenges also hamper the formation of joint use agreements in many school districts. Many schools lack both the institutional capacity and adequate staffing to manage and coordinate joint use. Administrators often feel that they need fully developed policies and procedures in order to ensure transparency and accountability in partnering with community entities, yet a policy framework is often lacking (Vincent 2014).

Political Barriers

Besides logistical challenges, schools can often face political barriers to sharing space and resources with certain community entities. Partnerships with churches and faith-based organizations can be particularly difficult for public and charter schools seeking to adhere to the concept of the separation of church and state. Churches and schools have successfully entered into such partnerships, but the politics behind them can be admittedly tricky (Dodd 2010; ChangeLab Solutions 2014).

Funding and Design Barriers

Besides insufficiencies in staffing for maintenance, repair, custodial, and security purposes, many school districts are also lacking in funding to meet these needs. For many school districts, hesitation behind entering into joint use agreements stems from a feeling that doing so might compromise the ability to offer a quality learning environment.

School architecture and infrastructure is also often designed solely to be used by a single school rather than to help meet the needs of outside entities, either during or outside of school hours (Filardo and Vincent 2014). As explained in previous chapters about school siting and design in Georgia school districts, many schools are particularly unaccommodating of community use, particularly in terms of accessibility and distance from community centers.

Conclusion

The challenges presented here are certainly real and significant, however they needn't prevent the formation of school-community partnerships and all that these entail. Best practices from across the nation and a few examples from the state of Georgia attest to this.

6.3.3 Alternative Options and Best Practices

National Cases

Examples across the nation of school and community partnerships demonstrate the complexity of the issue in terms of the benefits, challenges, and some of the best practices that exist regarding school-community relationships. Schools and communities outside of the Southeast, particularly in California and other states on the west coast, have been noteworthy in spearheading shared use practices. This report, however, will focus specifically on some lessons learned from joint use in the five states bordering Georgia. While these cases present stories and strategies that are unique to the states and communities in which they have been implemented, schools and communities in Georgia can glean a lot from them in the way of general application and lessons learned.

North Carolina

North Carolina provides some unique cases in that communities in this state have navigated the complexities of partnerships with faith-based organizations and implemented shared use policies that are hosted on non-school property. A number of congregations across the state have established Facility Use Policies or Agreements that allow schools and other non-church members in the community to use church rooms, playgrounds, gymnasiums, and fields.

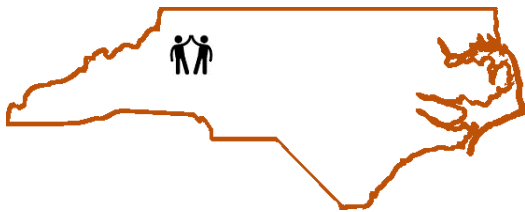


Figure 6.3.3-1: Marion, North Carolina

Marion, NC is a rural community with few recreational resources. Grace Baptist Church recognized this need in the community and reached out to a network of organizations to create Creek Wise Park, a five-acre park that provides multiple facilities and programs. An Open Use Policy between Grace Baptist and the local high school established an informal partnership for use of the park by both entities. As such, the local high school's agriculture and cooking departments use the Creek Wise Park's community garden, which includes a greenhouse, raised beds, an orchard, an outdoor classroom, and a kitchen. Moreover, students from the vocational department at the high school designed the park logo and devised and led a marketing campaign to promote the park (ChangeLab Solutions 2014).

The case of Marion, and many others like it in North Carolina, demonstrate how schools can benefit from partnerships with other organizations and facilitate creative use of outside facilities to the benefit of both the students and the community.

Alabama

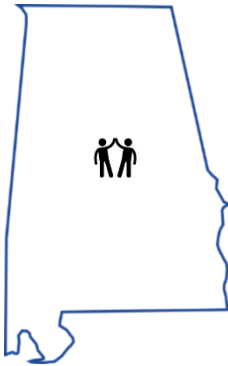


Figure 6.3.3-2: Alabama

Neither North Carolina nor Alabama mandate community use of public schools, but law in both states explicitly supports it. In the 1990s, Alabama Code included Chapter 63, also known as the “Community Schools Act”, which declares that it is the policy of the state to “assure maximum use of public school facilities by the citizens of each community in the state” (ALA CODE 16-63-2). To this end, the state mandates that participating districts establish a community schools advisory council and employ at least one community-schools coordinator, who is tasked with the responsibility of promoting and directing maximum community use of school facilities (Vincent and Filardo 2014).

Tennessee

A communitywide program in Jackson, Tennessee, called Jumpstart Jackson, is focused on strategies that promote fitness, health, wellness, and the reduction of obesity among Tennessee residents of all ages. The Jackson-Madison County school district was a founding member of Jumpstart Jackson, and the superintendent partners with the mayor as part of the overall school-community wellness policy. The school district uses joint-use agreements as one of its primary strategies for increasing opportunities for physical activity. Through partnerships between the city, school, and Parks and Recreation Department, joint use in Jackson gives priority access to the school for the city government’s parks and community centers and also gives the city government priority access to school facilities.



Figure 6.3.3-3: Jackson, Tennessee

The state of Tennessee also provides a unique shared use tool. The Tennessee Recreation and Parks Association created a Recreational Joint Facility Use Finder, which is an interactive map identifying different categories of shared use agreements in schools across the state. The map points out all agreements between two entities for the shared use of indoor and outdoor recreational facilities and differentiates between policies that are open use, written use, verbal, or school policy (TRPA 2013).

Florida

In 2004, the mayor of St. Petersburg in Pinellas County, Florida began an initiative called Play N' Close to Home that would locate a public playground within one-half mile for each St. Petersburg resident. Program staff identified a number of areas across the city lacking access to playgrounds and also found that elementary schools were located in each of these gap areas.



Figure 6.3.3-4: St. Petersburg, Florida

In order to solve this glaring issue, the mayor and city staff set out to establish joint use agreements as a critical component of the Play N' Close to Home initiative. As such, Mount Vernon Elementary School was chosen that year as the site for the city's first joint-use playground. Under the terms of the agreement, the city dedicated \$80,000 for the school's equipment, fencing, and gates and is responsible for continued maintenance of the site. In exchange, the school must allow public use of the land during all non-school daylight hours (City of St. Petersburg 2013).

Now, Pinellas County has over seventy joint use agreements for indoor and outdoor recreational facilities, and four agreements for after-school access (Ogilvie 2013).

South Carolina

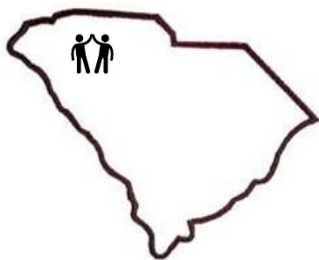


Figure 6.3.3-5: Spartanburg, South Carolina

The Parks and Recreation Department, County School Districts 6 and 7, and various community organizations in Spartanburg, South Carolina collaborated in 2013 to establish a shared use policy that ensures that a variety of playgrounds, soccer fields, basketball courts, walking trails, baseball fields, tennis courts, and football fields in ten schools across the city remain open for community use after school hours. Formalization of the shared use agreement

took about two years to finalize. The community has benefited greatly by providing active spaces for a growing Latino population with a decreasing amount of spaces for recreation. The Director of Community Services for Spartanburg has stated that the shared resources and collaborative efforts between the city and school districts has increased physical activity opportunities for children as a significant element of the community's collective vision (Eat Smart Move More 2013, City of Spartanburg 2013).

Replication of Community Schools

Community schools also provide an excellent illustration of a mutually beneficial relationship between schools and communities. A community school is “both a place and a set of partnerships between the school and other community resources... Using public schools as hubs, community schools knit together inventive, enduring relationships among educators, families, volunteers, and community partners” (Blank et al. 2003, 2). The community schools movement has developed over a century involving various political, social, and legislative efforts. In the early 1990s, John Dewey inspired advocates to encourage a movement that presented public schools as “social centers”. The concept gained momentum and public visibility in the 1930s, following a formal movement by the Charles Stewart Mott Foundation in Michigan. Then, in the 1970s, community schools received federal support through Congress’ passage of the Community Schools Act (PL 93-381) and the Community Schools and Comprehensive Community Education Act. More recently, the 2002 passage of the No Child Left Behind Act brought about indirect legislative support to many of the foundational elements of community schools (Blank et al. 2003).

Evaluations of four national, seven statewide, and nine local initiatives have demonstrated a number of significant benefits of community schools. Broadly stated, these benefits include student gains in academic achievement and nonacademic development; increased family stability and engagement; greater school effectiveness and stronger parent-teacher relationships; and improved community vitality reflected through increased security, better use of resources, and heightened community pride (Blank et al. 2003).

While such full-fledged efforts may be unrealistic in some areas, community schools illustrate the many benefits made available through strategic partnerships. The comprehensive approach of the community schools initiative provides an excellent framework and set of goals after which schools and communities across the state can and should strive.

Resources and Tools

Currently, a number of different resources and organizations exist to promote and facilitate the shared use of resources between schools and communities. These include the following:

- ChangeLab Solutions
- Jointuse.org
- LEED for Schools
- Robert Wood Johnson Foundation’s Active Living Research
- Center for Cities and Schools- UC Berkeley
- Safe Routes to School National Partnership

The resources and tools provided by these groups and organizations serve to show that the concept of school-community partnerships and shared use is re-gaining popularity in recent years and that a great deal of effort has been devoted to addressing some of the barriers.

Case Studies in Georgia

As mentioned previously, the concept of joint use agreements is still lacking in many schools throughout Georgia. However, a few notable cases in this study's focus areas emerge, particularly amongst charter schools. The first three cases present just a few examples of how charter schools in Georgia have innovatively applied the concept of shared use in order to overcome the challenges set before them. Additionally, the two cases from traditional public schools demonstrate how shared use is still advantageous for non-charter public schools. Overall, these cases provide a compilation of significant lessons for the adaptation of shared use and school-community relationships in other public schools across the state.



Figure 6.3.3-6: Georgia

International Community School

The International Community School (ICS) in Clarkston engages in partnerships with the community through both formal and informal shared use agreements. The school was established in 2002. Without its own permanent space, the school met for the first ten years in Avondale Pattillo United Methodist Church. When the school expanded a few years later, it entered into a second shared use agreement with another church in Stone Mountain. In 2012, ICS secured its own premises at the former Medlock Elementary School site (Whitelegg 2014).



Figure 6.3.3-7: International Community School activity

(Source: Parker-Pope 2009)

ICS operates its Kilometer Kids running program through the Atlanta Track Club and runs its soccer program through the Decatur/DeKalb YMCA. In this latter partnership, the YMCA serves as the sub-contractor and manages insurance responsibilities and utilizes the ICS soccer field for its own league practices. In turn, ICS sets the fees, and the students play in the YMCA's leagues. Similarly, the YMCA also ran a basketball program at ICS through a formal arrangement that entailed financial reimbursement from the school (Whitelegg 2014).

Shared use has presented some logistical challenges for ICS, particularly because of the unique demographics of the school and community populations. At least one half of the students receive the free lunch program, and the school mandates integration of the Clarkston refugee population within the student body. The low income and refugee makeup of many ICS families presents a number of communication challenges and transportation issues for after school programs that are exacerbated by the compartmentalized structure of the YMCA organization and inherent communication difficulties between entities. In spite of these challenges, however, the school's teachers and administration claim that the benefits have been immeasurable (Miranda 2014).

Partnership with the YMCA has facilitated a very strong school-community affiliation, encouraging further coordination through summer camps. In fact, as a result of these programs, two ICS students have gone on to represent the U.S. in soccer at the national level. Furthermore, the partnership has helped raise the school profile; helped the kids in their academic performance; and increased the number of concerned adults and assisted in the triangulation of their involvement in the students' lives. It also has a greater community impact and opens the students open to a wider world, particularly when they have the opportunity to participate in games outside of the city of Clarkston.

The bureaucracy of these programs is too onerous for the school's current capacity, so the bureaucratic and programmatic assistance from the YMCA, especially considering its largely shared vision with ICS, has greatly benefited the school. As Coach Drew Whitelegg of ICS stated, "We wouldn't be able to do it without the Y" (Whitelegg 2014).

Because past and present co-location and shared use have proven so beneficial for the school, ICS is in the process of discussing further community partnerships. The students currently have access to both Medlock Park and a nearby nature preserve. ICS has begun preliminary conversations to establish partnerships with these green spaces. ICS is also hoping to open its facilities over the weekends for community gatherings and to launch continuing education programs in the evenings for adults to acquire skills in such areas as jewelry-making, computers, and painting. The major barriers it currently faces in the implementation of such programs are, again, transportation issues and the idea of introducing the somewhat foreign concept of school use for other purposes to ICS's largely refugee population. Formalization of the programs, specifically in terms of putting into place insurance and liability, is another challenge that school administrators will have to overcome (Whitelegg 2014, Miranda 2014).

Museum School

Between August 2010 and June 2012, the Museum School of Avondale Estates partnered with First Baptist Church. In the fall of 2010, the school housed some modular buildings with several classrooms in the parking lots of the church. During the second year of the partnership, the church extended use of its facilities so that the school could establish three more classrooms, a media center, and an office space on the property. The church also leased its playground to the

school and the use of the family life center as the school cafeteria. After the two-year partnership, the Museum School acquired ownership of its own space with the capacity to meet all of its facility needs and is no longer utilizing church property (Kelbaugh 2014).

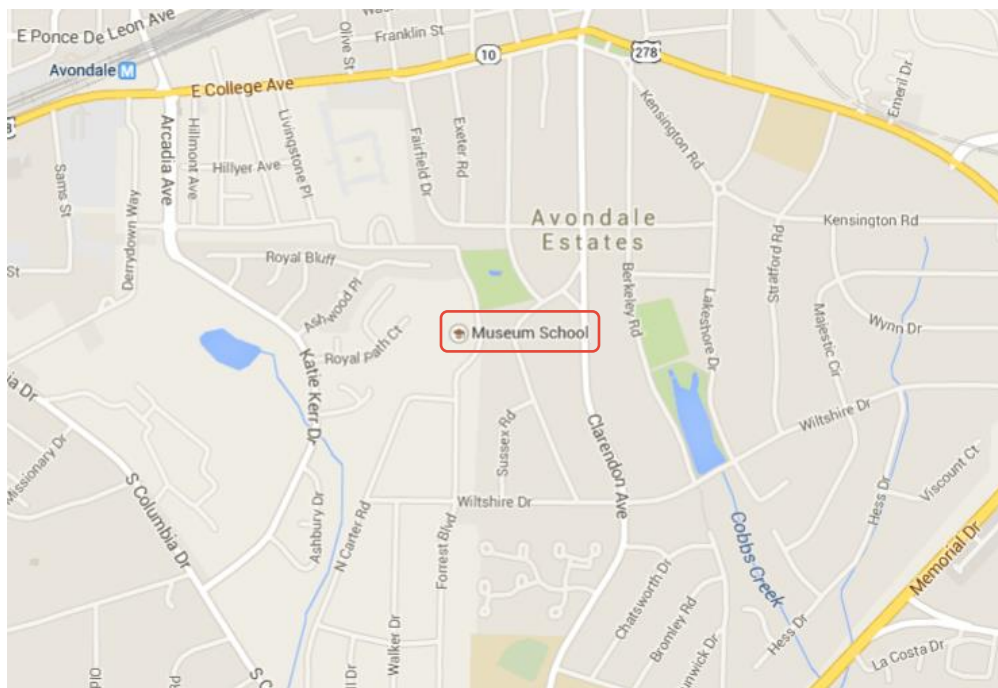


Figure 6.3.3-8: The Museum School location

According to Principal Kelbaugh, the partnership with First Baptist Church explored uncharted territory for the administration and posed a number of challenges. The partnership was less than ideal, as it entailed daily operations issues regarding responsibility for maintenance and repairs and complicated coordination of after-school events. Museum School administration viewed the partnership as a necessity when it lacked the capacity to provide adequate facilities. The agreement between the two entities also proved beneficial for the church in terms of providing extra revenue and allowing the congregation to show outreach to the community. Ultimately, however, Principal Kelbaugh views the school's current ownership of its own space as a significant improvement (Kelbaugh 2014).

Centennial Place Elementary School

Centennial Place Elementary School is a conversion charter school, meaning that it was a traditional public elementary school that was converted into a charter school. This decision was based on the administration's desire for more flexibility and localized decision-making as well as increased accountability from the community in determining the needs and functions of the school (Pruitt 2014).



Figure 6.3.3-9: Centennial Place Elementary School students

(Source: Holland and Knight 2014)

The school is conveniently located right next to the Arthur M. Blank Foundation YMCA. When the YMCA was first built in 1998, it was a small membership YMCA that had an arrangement with the school to provide limited student access to the gym as well as some after-school services. At this point, the YMCA was under capacity and not fully serviced. For instance, it did not have a full gym nor did it have a pool (Pruitt 2014).

In 2008, knowing that good pre-schools are important for the city, the YMCA decided that it could deliver a great product to supplement the school and began efforts to fully service the facility for shared use with the school. Thus, the YMCA was expanded to provide a full-service center that served as the location for physical education classes as well as afterschool sports and activities. Moreover, the YMCA also teaches healthy lifestyles, tracks health measures such as Body Mass Index, and provides a healthy breakfast for students. The YMCA is an intentionally affordable facility for people across varying levels of income (Pinckney 2014).

Essentially, the terms of the formal lease agreement on the property and the Memorandum of Understanding between the two entities follows that the school's students can use the YMCA facility during school hours, and families and the community can use it at all other times. The shared use agreement between Centennial Place Elementary School and the YMCA helps efficiency of cost, gives each organization expanded services, provides a resource for parents and students alike, and offers kids a safe space and healthy environment outside of school hours. The basic philosophy behind the YMCA and its shared use agreement with the school to provide a constant safe and healthy place for students is: "When the school is closed, the Y is open" (Pruitt 2014).

Indian Creek Elementary School

Indian Creek Elementary School provides an excellent example of a public elementary school engaged in shared use. The school established a shared-use agreement with the local YMCA, outlining the shared use of the school soccer field. According to the contract, the YMCA is entitled to use of the field for evening and weekend games, and the school has full use of the field during school hours. Any other community groups or organizations that desire to use the

field can simply coordinate after-school and weekend events through the YMCA and do not need to check with the school administration (Nykamp 2014).

On the whole, this partnership has been nothing but beneficial. A grant intended to promote healthy living enabled shared use of the soccer field, and it has been incredibly beneficial to both the school and the community in providing a large, open green space for recreation and physical activity. Given that Indian Creek is also surrounded by apartments on all sides, the field and the community use of the space acts as a central gathering place for everyone in the community.



Figure 6.3.3-10: Indian Creek Elementary School sign

Adam Nykamp, Community Engagement Liaison and PTA President, can only recount one instance in which the shared use resulted in a scheduling conflict. This occurred when the school had to re-schedule its spring festival due to rain, and the new date for the festival was miscommunicated to YMCA staff who had coincidentally scheduled soccer games at the same time. The school and YMCA easily resolved the issue by dedicating half of the field to the festival and the other half to the games (Nykamp 2014).

Liability and insurance are not, in fact, issues in this partnership. Both the YMCA and the school have their own terms of liability and insurance, and the clear and distinct scheduling of each entity's use of the field allows for the easy application of each. According to Nykamp, "anything that allows school grounds to be used by outside organizations and individuals is great for both the school and the community" (Nykamp 2014).

Decatur High School

The City Schools of Decatur system presents an example of an entire school district that has been designed, both intentionally and unintentionally, to facilitate shared use. According to the City of Decatur Planning Department, the implementation of shared use has been particularly successful in the City Schools of Decatur because of the strategic plan's language about leveraging shared use to provide for high-quality services (Thompson 2014). Goal 11 of the Decatur 2010 Strategic Plan is to "assure the efficient use and coordination of all community facilities by strengthening community partnerships" (City of Decatur 2010, 58). Task 11A under this goal is to "create facility committees as needed to work with community institutions to identify opportunities for shared use of public facilities", and Task 11C seeks to facilitate this through convening "an annual forum for non-profit, public, religious, and institutional

organizations to share ideas, resources, and strategies to meet the strategic goals of the community” (City of Decatur 2010, 59).



Figure 6.3.3-11: Decatur High School garden

Beyond the city’s strategic plan, various circumstances have contributed to the successful implementation of shared use in Decatur. Namely, the institutional zoning district for schools means that the city commission has to give approval for any plans, thereby increasing the opportunity to account for community needs in implementation of school plans. Also, the Public Works Department and the City Schools of Decatur services are housed in the same building. The physical proximity of these two entities helps to facilitate intentionality of shared use and provides a structural arrangement that promotes cooperation (Thompson 2014).

Decatur High School is a particularly good example in terms of its shared use of a community garden. Through the Decatur Farm to School Initiative (DFS2), the community garden that is located on the high school’s property and owned by the school district is available for the community at large to take part in gardening and enhance the Farm to School program. Through a Gardener’s Agreement, individual users can rent plots for one year and commit to at least 16 hours of service to the garden, whether it is through actual garden maintenance or garden events, online work, or mailing. The shared use of the Decatur High School community garden is, in the words of the administrators of the Farm to School Initiative, a “win-win” that involves the whole community in creating a sustainable school food system that provides fresh and local food in Decatur schools while simultaneously supporting the local economy (Decatur Farm to School Initiative 2014).

6.3.4 Assessment of Current Conditions

A discussion of the aforementioned exemplars in school-community partnerships and shared use demonstrates that these concepts are not entirely missing in Georgia schools. In general, however, evidence of the implementation of shared use is very limited.

On the whole, a number of school administrators in Georgia do not see shared use or co-location as beneficial to their schools and are therefore reluctant to invest the time and energy into engaging in the necessary partnerships (Cobb 2014). In other instances, this idea is simply not considered.

In general, academic research in the planning field on the approaches and strategies for joint use are only in the preliminary stages. Research up until now has made significant progress in identifying the hurdles, but such research has often failed to focus on the deeper nuances and contexts in which each barrier is embedded (Vincent 2014). As presented in this report, some of these hurdles in Georgia are related to state and local policy, perceptions of liability and insurance risks, disparate planning structures, funding and design barriers, and staff limitations. While Georgia schools and school districts can learn a great deal from the national and state cases presented here, recommendations that focus on these specific challenges and the context of the state in general are necessary in overcoming the current gaps.

6.3.5 Recommendations

Considering the gaps in the general current conditions in Georgia compared with some best practices across the nation and a few exemplars within the state itself, the following recommendations seek to eliminate the gaps in the system by suggesting specific actions that can be taken from various levels of governance and leadership. These include the state, school districts, jurisdictions, and schools.

State Level

The recommendations for state-level promotion of community-school partnerships, shared use, and co-location involve policy enactment, dissemination, and education.

Enact State Policy to Assist Local Districts with Establishing Shared Use

The State of Georgia can facilitate community use of public school grounds and facilities by enacting policy that assists local school districts in establishing shared use.

While Georgia has recently passed legislation to permit joint use, the state could more actively support this use. Such support would encourage mutual benefits between school districts, public and private entities, and local communities (Filardo et al. 2014). As aforementioned, representatives of the GaDOE have stated that co-location and shared use are “intensely local issues” that are unique to particular communities and, as such, need not be expressly encouraged or discouraged by GaDOE (Rowland 2014). However, as argued above, co-location, which promotes more efficient use of resources and more extensive integration of schools into communities, is also a state responsibility. The State Department of Education can and should encourage shared use and co-location *as an intensely local issue*, thereby recognizing the uniqueness of different schools and their communities and seeking to motivate them to use innovative partnerships to meet their unique needs.

GaDOE can also expand its role by providing guidance about joint use to school districts. As of 2012, just less than half of U.S. states developed, revised, or assisted in developing model policies, policy guidance, or other materials about joint use agreements, and just over half of the states provided technical assistance on the topic (CDC et al. 2013). Providing guidance will require that the state become more informed about this concept and determine methods for effective dissemination to school districts and locales.

Eliminate False Perceptions about Liability and Risks

Georgia can help to eliminate false perceptions about liability and insurance risks involved in shared use agreements by increasing awareness about policy and legislation.

Georgia’s 2013 “Recreational joint-use agreements” provision (O.C.G.A. § 51-1-53 [2014]) to limit liability for schools engaged in shared use can only be fully effective if school districts, administrators, and community members know and understand this, and similar, legislation. State authorities, and particularly those in the GaDOE can play an important role in actively informing local decision-makers and stakeholders about such legislation by creating guidelines and resources that clearly outline the provisions.

School District Level

In general, school districts can provide individual schools with a wealth of necessary guidance and support for joint use through comprehensive district-level policies, procedures, and resources that help to maximize community use of facilities across the municipality and district (Vincent et al. 2014). As such, specific recommendations for school districts include the following.

Adopt a Formal Vision Statement

A formal vision statement from the school district regarding school facilities as public assets could be very useful in supporting the needs and goals outlined both by the community and by the school district’s strategic plan (Vincent et al. 2010).

As previously referenced, the comprehensive approach of the community-schools initiative provides an excellent framework for schools and communities to replicate in their approach to creating and effectively implementing partnerships and shared use strategies. School districts in Georgia can adopt their vision statements after the models provided by the Coalition for Community Schools. An excerpt of the Coalition’s vision statement provides an exemplary model for community schools after which school districts can strive:

“Schools become centers of the community and are open to everyone... Using public schools as hubs, community schools knit together inventive, enduring relationships among educators, families, volunteers and community partners. Schools value the resources and involvement of community partners, and communities understand that strong schools are at the heart of strong neighborhoods” (Blank et al. 2003).

Establish Governance Structures

Governance structures can play a key role in facilitating relationships and coordination between governmental, public, private, and community entities.

The exemplary model of shared use in various North Carolina school districts, as presented earlier, has been facilitated by governance structures that assist in developing policy statements and administering coordination among various local entities.

For instance, in 1995, the Mecklenburg County, North Carolina Board of Commissioners, the Charlotte City Council, the Charlotte-Mecklenburg Board of Education, the local community college board, and the county library board adopted a resolution to promote joint use of public facilities. Moreover, this resolution also established the Joint Use Task Force, whose purpose is to utilize public capital investment for the purposes of arranging joint-use facility agreements that support cost saving and long-range facility planning (Filardo et al. 2014). This collaborative Task Force identifies potential shared use opportunities in order to maximize benefit to the public while also minimizing cost. School boards in Georgia can emulate this model by strategically reviewing all potential local stakeholders with whom to pursue partnership and by reaching out to the Joint Use Task Force in Mecklenburg County in order to glean recommendations for best practices in carrying this out.

Communicate Joint Use Policies

School districts in Georgia can help communicate joint use policies through a policy handbook, website, or tools for principals.

Such tools provide a foundation of guiding principles for schools by defining policies and procedures for community use. They can also help to delineate the application process, including registration, web-based application, clear guidelines for principal approval/denial, guidelines regarding the number of days required to submit permit prior to use, and event evaluation (Vincent et al. 2010).

School districts can also outline a general system of accounting for access, use, and costs of community use of schools after which schools can model the specific terms and operations of their partnerships and agreements (Filardo et al. 2014).

Expand Tools and Provide Resources that Assist with Joint Use Logistics

Expand staffing and implementation tools and provide resources that assist in the determination of joint use logistics.

While budget constraints may limit the ability to expend further resources to increase staffing and implementation tools, school districts can prioritize school-community partnerships and shared use by encouraging a team of staff or volunteers to commit some of their time and resources to shared use promotion and management. Georgia's school districts could also help individual schools to more easily implement shared-use and co-location by providing resources that outline a general budget and revenue for healthy, safe, and well-maintained school facilities. Such resources can also describe the general logistics of scheduling use as well as liability, user responsibility, and insurance issues.

In the previously mentioned case study on Alabama, the "Community-Schools Act" has helped to ensure delegation of these responsibilities to an advisory council and community-schools coordinator. The implementation of these significant roles would help schools in Georgia

overcome some of the barriers that stem from insufficient staffing to manage and coordinate shared use.

Design Facilities that Support Joint Use

The design of school facilities plays a significant role in the effectiveness and ease of joint use and co-location implementation. For many schools, design modifications need to be made in order to accommodate greater use or to provide accessibility.

In the case of Mt. Vernon Elementary School in Pinellas County, Florida, the city dedicated a significant amount of money to provide the school with the equipment and fencing necessary to accommodate community use of the playground. As in this case, “retro-fitting” the school for this purpose was quite costly and required the support of an outside entity. However, design modifications for joint use do not always need to be extensive or costly and need not always necessitate outside management or support. Other, simpler design modifications might include simple installation of storage units or creating controlled access points that designate separate bathrooms for non-school users (Filardo et al. 2014).

In order to simplify this process, school districts in Georgia should consider potential joint use opportunities as they plan for future schools and, thus, design and construct buildings and facilities accordingly.

Jurisdictional Level

Integrate Planning Processes and Management Roles

Planners and local leaders can help plan and administer joint use through integrated planning processes and management roles.

Joint use can be integrated into the planning processes of municipalities and/or counties, and local districts and staff can play an administrative role in overseeing joint use and school-community partnerships through such tasks as managing community input, terms, legal agreements, and scheduling (Filardo et al. 2014).

As described previously, the City of Decatur Planning Department’s strategic plan provides an excellent example of a planning department that strives to promote and facilitate strong and efficient coordination between different entities for the shared use of public facilities. Other jurisdictions across the state can replicate this model by convening annual forums for different community organizations, creating facility committees, and identifying specific opportunities for shared use.

School Level

Consider Needs and Assets of Surrounding Community

Schools can consider the needs and assets of the surrounding community in order to determine how partnerships and shared use can be most effective.

The ultimate purpose of school-community partnerships and shared use of facilities and resources is to maximize the potential mutual benefits for all entities and individuals involved. As described throughout this report, many elements of this concept are highly contextual and localized. Thus, schools and communities must consider the specific, local needs and assets in terms of their resources and facilities in order to determine the exact type, process, and terms of a partnership in order to most effectively benefit everyone and ensure sustainability in the community.

For instance, schools in Spartanburg, South Carolina helped to meet the growing need in the community of decreasing amounts of recreational spaces, particularly among the Latino population. In this particular case, a taskforce created by a nonprofit agency called Partners for Active Living (PAL) arranged a meeting to inform representatives from the Parks and Recreation Department and the district superintendents about the health problems and disparities in Spartanburg and how shared use could be leveraged as a strategy to overcome them. After additional meetings that included school and community stakeholders, PAL helped the superintendents to launch and write the shared use agreement for community use of their recreational spaces. The agreement was signed in 2012 and implemented almost a year later. Schools helped to kick off the shared use of the playgrounds by hosting a community day at the newly opened playgrounds (Community Commons 2014).

The school-community collaboration in Spartanburg was ushered in by the work of PAL in considering the needs and assets in the city. PAL's work was certainly helpful and innovative in this instance. However, instead of relying on an outside agency, schools themselves can play the role of identifying the needs in and around their community and advocating for strategies to meet those needs.

Provide Workshops and Training Sessions for School Staff and Community Members

Schools can provide workshops and training sessions to educate and inform school staff and community members about a variety of implementation and management tools related to procedural and logistical issues involved in structuring shared use.

A number of helpful online and interactive resources exist to guide the necessary procedures and logistics involved in structuring and implementing shared use. Some of the important tools to consider include a checklist (ChangeLab Solutions 2009a), a process flowchart (Vincent et al. 2010), and a budget calculation and allocation of fees (Center for Cities and Schools 2010). School administrators should determine the appropriate participants for each type of workshop and then advertise accordingly. For school administrators who are not confident in their knowledge base of shared use, new and archived webinars can also be accessed online and used as primary informants for workshops and training sessions (Safe Routes Partnership 2014).

In the above-mentioned example of shared use in Spartanburg, the PAL taskforce cited a number of online resources from ChangeLab Solutions in order to identify and examine contextually-appropriate implementation and management tools. The executive director of PAL said of these online resources: “They have so much information. They have a bunch of sample agreements already outlined, so that was really helpful for us, to use that information” (Community Commons 2014). Schools must then ensure that such information is disseminated appropriately to inform all necessary stakeholders.

Conclusion

The interdependency of each of these levels of decision-makers means that everyone has an important role to play. As such, effective implementation of the recommendations described above requires that individuals and groups from each and every level understand the importance of their role in carrying out this concept. If the state, school districts, jurisdictions, and schools in Georgia can all see the value of strong school-community partnerships and work to strengthen them by following the above recommendations, schools and communities across the state will reap significant and noticeable mutual benefits.

7 Siting Processes

7.1 Public Involvement

Active public involvement in the school siting process will improve a community's relationship with their school system and maintain positive support for education.

7.1.1 Problem Statement and Background

School systems throughout the country, and specifically, throughout the state of Georgia are designing and building new schools that are more “effective”. School personnel use many monikers to describe these schools—smart schools, community schools, and green schools are only a few of the descriptions representing the new buildings. Inside these schools, staff members are tirelessly improving how they work, teach, and learn. They are differentiating curriculum; designing student-centered teaching strategies; and creating schools where all individuals can learn. The goal is to create an ideal environment for learning practices by reorganizing the district management, pushing architects and facilities personnel to think “outside the box”, and adding new technologies to increase efficiency. What staff is not doing, however, is focusing on the ways in which they can involve their stakeholders—the employees, the neighbors, the business owners, the elected officials, and the taxpayers within the community.

With schools playing such an integral role in the well-being of communities, school districts are not giving adequate attention to their community stakeholder relationships, which are the relationships that provide the long-term, sustained support for education. The attention given to community stakeholders usually amounts to local districts engaging stakeholders through passive forms of communication and involvement. Once decisions are made, the typical idea is to transmit the decisions through newsletters, websites, and occasional public meetings. The expressed avenues of communication are passive, resulting in a stream of communication largely controlled by the local school district.

The limited public involvement in school decisions negatively affects the relationship between a community and its school system, especially as it pertains to school facility management.¹¹ The result of this practice can hinder informed, responsible decision-making. For one, community members can hotly contest the placement, closing, and re-use of schools if their opinions are not proactively included. Atlanta Public Schools, for example, decided to build North Atlanta High School on a remote 56-acre parcel of land (Mayeux 2011). A concerned citizen mentioned he would prefer a “more centrally located site that was accessible by foot and bike” (Mayeux 2011). His concern is not atypical. Far too often, one hears of frustrated parents, students, and community members expressing discontent about decisions finalized by a school district with little involvement from the public. The School Readiness Survey of the National Household conducted by the U.S. Department of Education in 2007 supports this claim.

¹¹ School facility management is an umbrella term that encompasses school siting, closing, and renovating decisions.

According to the most recent survey, parent dissatisfaction increased by 2 percentage points since 2003 (Parent and Family Involvement in Education Survey of the NHES 2008).

Rather than rollover, concerned citizens gather support from their peers to voice their dissatisfaction. While not a direct indication of citizen advocacy, there has been a positive trend in parent involvement in general school meetings since 1996. As of 2007, 88 percent of parents who send their children to assigned public schools attended a general school meeting as opposed to 73 percent in 2006 (Parent and Family Involvement in Education Survey of the NHES 2008). While parent involvement in school activities is generally viewed as positive, the statistic coupled with increased dissatisfaction implies that a sizeable portion of parents is involved to voice their discontent. This results in a downward spiral leading to what constituency can cause the greatest raucous, often creating more losers than winners. Feelings of trust and goodwill are replaced with suspicion or apathy.

The concern by the broader public surrounding the issues mentioned above reflects a fundamental truth in the relationship between a community and its school—schools greatly influence a community’s well-being. For one, residents flock to neighborhoods that contain good schools for their children to attend. According to Coldwell Banker Real Estate, 79 percent of Millennial parents (between the ages of 18 and 34) and 70 percent of Generation X parents (between the ages of 35 and 49) make major purchasing decisions around their children (Hoak 2014). Additionally, homebuyers are willing to pay an additional \$50 per square foot on average for homes near good schools (Redfin 2013). The implications of these statistics are clear that schools matter to the communities in which they are located.

Schools also inspire a sense of ownership and pride felt by their surrounding communities. For example, the facilities staff of Ingram/Pye, a school located in an estranged neighborhood of Macon, Bibb County, considered it fitting to design a school worthy of what they call the “Macon Way”. What resulted was a school that engendered ownership and collective responsibility from the surrounding community (Stokes 2014). Conversely, schools in poor condition—with graffiti, yellowed windows, peeling paint, falling fences, and unkempt grounds—signal a neighborhood in decline (Beaumont 2003). This often leads to poor community well-being and social cohesion (Witten et al. 2011). With schools affecting communities in such an enormous way, there is little wonder why community members are fiercely concerned with the outcome of decisions related to school facility management.

Surprisingly, few states require school districts to involve the broader community—not just school officials, parents, students and educators, but also civic and business leaders, and taxpayers—in planning for school facilities (Hoskens 2004). According to Kissane (2011), only seven states (14 percent), even maintain databases on the condition of their public schools, which means the general public is largely uninformed. Given the implications of school facility management, it is an issue that more states do not require, or at the very least, encourage public involvement in school facility planning.

The issue to include public involvement in school facility decision-making is only half the battle; how the community is involved is worth consideration, too. As the level of public involvement in school decision-making increases, the complexity of the decision-making increases, which makes community involvement a lot more challenging. In most school systems, there is a strict hierarchy of authority and control that isolates the local school and the community it serves from facility management at the district level (21st Century Fund 2004).

Specialized roles are formed at this level—including facilities planners, architects, and construction contractors—to plan, design, build, and manage schools. The professional roles provide efficiency to the complex process. Professionals believe involving parents, teachers and staff as well as the larger community delays the process and increase its cost (21st Century Fund 2004). Therefore, in many local districts, staff keeps the extent of public involvement at the passive public forum stage. Local jurisdictions hold meetings after the work of assessing, planning, and developing a school project is decided or well underway.

To truly serve the entire community and promote positive relationship building, school districts should not only involve school users but also the residents who would not receive direct services from the school system. The entire community should be engaged in every consideration of planning a school, from determining programs to choosing a site. John Dewey (1916) provides an apt insight surrounding this idea of citizen participation. He relates that we not only need education in democracy, but also democracy in education. By engaging students, parents, educators and the broader community, not only will our communities achieve a positive public morale but also our communities will contribute to our nation's aims of a democratic society in both process and product (U.S. Department of Education 1999).

The following sections describe the general significance of the lack of public involvement in school facility management, which includes siting decisions, overviewed above. Later sections will detail the current conditions related to public involvement in the state of Georgia, best practices related to public involvement throughout the country (including sources which aren't specific to school facility management), and an analysis of the conditions in Georgia in light of the best practices described. The assessment will share future recommendations that Georgia should consider to encourage broader public involvement; a conclusion will follow.

Significance

There are many reasons to increase public involvement in school facility management. Communities are inextricably linked to school matters. In order for communities to determine what is best for their well-being, schools must be an important part of the conversation. School facility management should not be the responsibility of a school system alone—the impacts to a community are too great. Instead, the process should reflect the diversity of perspective that a community houses. Not including them could erode the trust and goodwill between a community and its school district. The following are explanations as to why public involvement in school facility planning is an important issue.

Schools as Microcosms of Society

The collective capacity of people to create possibilities and resolve problems is at the very heart of our democratic system (U.S. Department of Education 1999). Not only do people have the right to participate in making the decisions that will affect them, their participation will improve the quality of the decision-making process. According to a school-level shared decision-making (SDM) study conducted by John Lange (1993), better decisions were made through an SDM model than would have been made under centralized school management. In planning for environments that aspire to our society's highest ideals, the principles of democracy should be honored. Schools should be planned by a diverse, representative group of people who use them and are affected by them. These include people who reflect differences in age, culture, ethnicity, gender, socioeconomic class, aspirations, and abilities. Including these differences into the

planning process would expand the range of viewpoints and ideas that are considered and enrich the process overall. Bingler et al. states, the amassed “synergy of shared decision-making, problem solving, and goal setting can build a strong foundation for collective responsibility and enduring support for schools” (50). School systems can be a model on a small scale of how our society itself might become (U.S. Department of Education 1999).

Responsibility Towards Taxpayers

In planning for school construction and renovation, school systems must rely on their respective community to implement most projects. Approximately 75 percent of all school districts need direct voter support before they can spend on new schools or major renovations (Filardo and Bryant 2002). All school systems receive mandatory tax funding, but many communities must also pass public bonds to fund operating budgets. Still, others use bonds to support their system’s capital improvement program. Individual schools maintain their operating budgets with in-kind gifts, fundraisers, and business partnerships. These funding resources are largely dependent on the goodwill of citizens within a community. Public involvement at the onset would serve to solidify positive relationships that would help keep a school system’s operations sustainable.

Local Knowledge and Expertise

Nowadays, school districts do more with less. Georgia cut state funding allocated to local districts by \$7 billion dollars during the ten-year period between 2003 and 2013 (Georgia School Boards Association 2013). Furthermore, the trend to specialize public service for greater efficiency runs the risk of professionals not fully understanding the impact of various public decisions in aggregate. The broader community can strengthen district resources and the decision-making process by adding local knowledge and expertise at little to no cost (Filardo and Bryant 2002). Community members are the nexus for health, recreation, education, transportation, housing, and community development, which enables them to evaluate community needs rather quickly. Local school teachers, principal, staff, students, and parents can assist a district professional in understanding the educational needs of a school, while the interpretation of community needs would be gleaned from the broader community.

School System Job Security

One consequence of a sour relationship between a school system and the surrounding community is that, more often than not, someone must be held accountable. According to the American Association of School Administrators, the average tenure of a superintendent in 2007 is less than six years, three years for urban superintendents. Superintendents are not the only individuals whose job security is at-risk. It is an issue for principals too. Parents care about what is happening in their child’s school, and if something seems afoul, it doesn’t turn out well for a principal’s job security. Engaging parents and the broader community proactively makes a substantial contribution to the credibility and sustainability of these positions, and furthermore, deleterious media attention towards important school decisions could potentially subside. No one is caught off guard and unaware since the community is already involved in the planning process, and more importantly, everyone has a stake in decision-making, which leads to increased accountability by all.

7.1.2 Current Conditions

Public involvement in school facility management is a complex process involving various stakeholders at different levels of government. In Georgia, the General Assembly has the power to enact policies related to public involvement in facility management. Much of the regulation and enforcement, however, is at the level of the Georgia Department of Education (GaDOE) and the State Board of Education (State Board). The state agencies provide helpful guidelines and review plans implemented at the local district level. Schools and the broader community are on the receiving end of the policy and implementation done at higher levels. The following provides a brief account of Georgia's school siting procedures and how the state includes the public at the level of the state, local district, and school.

State Statutes and Regulations

The main goal of stakeholders at the state level is to ensure schools are maintained and developed at an adequate level with proper attention given to potential hazards (Rowland 2014). To achieve this aim, Georgia maintains a set of regulations and guidelines concerning school siting, facility planning, and capital improvements that local districts must uphold in order to get approval from the GaDOE and the State Board of Education (State Board). Several checkpoints are established by the State Board and GaDOE to review potential school projects for adequacy leading to final approval. Per the *Guideline for Submission of Documents for Review of Planning, Bidding, and Construction of Educational Facilities*, rules of the State Board require that documents related to facility planning and management must be submitted to the Facilities Services Unit of the State Department of Education for review. The GaDOE Facilities Services unit must approve final plans and specifications before a project is advertised (GaDOE 2014c).

The Facilities Services unit of the GaDOE is tasked with the day-to-day review and assistance given to local school districts. Outlined in Section 20-2-260 of the Official Code of Georgia (O.C.G.A.), the Facilities Services Unit must review the following for each local school district:

- Annual inventory updates of local district's real property
- Local educational facilities plans for capital outlay funds
- Annual updates of the needs of local educational facilities
- Five year comprehensive educational facilities surveys
- Capital outlay funding requests
- Site plans for specific school projects

Each submittal is largely comprised of technical documents that speak to various aspects of facility planning and management. For instance, site plans submitted for specific school projects include feasibility documents relating to size, design, systems, instructional programs, and potential hazards that school planners, architects, engineers, and contractors are uniquely trained to create. Involvement from the GaDOE's Facilities Services Unit, State Board, local school district planning and/or construction departments, and various professional consultants work in concert to get the various submittals approved.

Currently, the state requires very little of local districts to include the public in facility planning, siting, building, and management. The little that is mentioned is specifically referenced in the GaDOE Guideline for Educational Facility Site Selection and Section 20-2-260 of the

O.C.G.A. In the guideline, it states that the location of a site should be “acceptable to the school patronage community from the standpoint of general environmental surroundings and vehicular accessibility” (GaDOE 2012a, 5). Nothing is mentioned regarding how school systems should engage the community to verify acceptability. Section 20-2-260 specifies that the public must be informed in matters of school closings and reassignment. Specifically it states, “the board of education must schedule and hold two public hearings and provide an opportunity for full discussion of the local board of education’s proposal to close schools” (§ 20-2-260-k-1-1). While the broader community is informed of proposed plans, greater participation by the broader community isn’t specified. It is important to note that the Georgia Code previously mentioned a process by which a community can petition the closing of a particular school. However, policymakers appealed it due to the process’s non-binding nature (Rowland 2014).

District-level

Generally, local school districts are charged with implementing various regulations and guidelines proposed by the state. Specific to Georgia, local districts are given broad flexibility to ensure state regulations are met. Despite their flexibility, a general framework is usually followed by school districts across the state to ensure state regulations and guidelines are met. The framework local school districts follow is characterized by the following:

- Assessment
- Planning
- Financing
- Implementation

Various stakeholders work together to make sure requirements are met within the framework. The stakeholders generally include the local board of education, district planning and/or construction staff, architects, engineers, and other technically trained professionals (Drake and Williams 2014c). Each step in the framework consists of tasks to be completed and submittals to be delivered to the state. Many submittals required by the state (i.e. annual inventory updates, five year comprehensive educational facilities surveys, capital outlay funding requests, and annual need updates) are aggregated at the district level. Planning and/or construction and design departments work in conjunction with the local school board and GaDOE representatives to compile the necessary information needed for these submittals (Drake and Williams 2014c).¹² At the school project level, site plan documents are submitted individually. In addition to the stakeholders mentioned above, outside consultants and other state departments are leveraged to ensure requirements are met at this level. To illustrate, the general documents required by the state for local districts to submit are described in Table 7.1.2-1 below. It also includes the stakeholders involved in the process. The table clearly shows that public involvement is a nominal factor in the greater framework of what is to be submitted by a local school district in Georgia.

¹² Names of the facility management departments change depending on the local school district.

Table 7.1.2-1: Documents required by the state

Submittal	Frequency	District/Site	Reference in Georgia Code	Summary of Required Information	Stakeholders Involved
Real property inventory	Annual	District	O.C.G.A. 20-2-260 (d) (1)	Total parcels controlled; total schools; school specific information (i.e. size, design, etc.); building occupancy tenure; type of use; property tax assessment; and district financial information	GaDOE; local board; district staff; real estate advisor
Local facilities plan	Every five years/annual	District	O.C.G.A. 20-2-260 (d) (2)	Inventory data; historical and projected FTE data; system organizational patterns; instructional programs for each school; facility needs and costs; school closings; construction priority; financing	GaDOE; local board; district staff; survey team
Educational facilities survey	Every five years	District	O.C.G.A. 20-2-260 (d) (4)	Population growth analysis; development patterns; assessment of existing instructional space; assessment of existing educational facilities; facility obsolescence; improvement recommendations	GaDOE; local board; district staff; survey team
Capital outlay requests	Annual	District	O.C.G.A. 20-2-260 (d) (5)	Local facilities plan; adjusted cost estimates; space needs; FTE adjustments; entitlements and special considerations	GaDOE; local board; district staff; survey team
Proposed site plans	Annual	Site	O.C.G.A. 20-2-260 (d) (6)	Project plans and specifications; site plan; floor plans; elevations and sections; HVAC; construction delivery method; various certifications	GaDOE; local board; district staff; survey team

(Source: GaDOE)

Specifically related to school siting, the broader public is typically included at the tail end of the required siting process. The local facilities plan (LFP)—the submittal including decisions related to siting—does not explicitly require the broader public to be involved. Per Georgia statute 160-5-4-.01, every five years local boards must develop and submit to the State Board for approval a facilities plan that identifies system needs for the next five years. The LFP created are extremely important for local districts. Without the plan, systems are excluded from a sizeable portion of necessary state funding. The following is a list of considerations the GaDOE recommends local boards include in their respective facility plans:

- Inventory data for all existing and funded school facilities
- Student full time equivalent (FTE) historical data
- Student FTE projections for the next five-year period
- Present and projected system organizational patterns
- Minimum and maximum limits on the FTE student size for all elementary, middle, and high schools
- Instructional service and support programs for each school in the system.
- Facility needs, including estimated cost, for:
 - Renovations
 - Modifications
 - Additions
 - New schools

- School facilities to be closed, phased out, and/or abandoned
- A system-wide list of construction projects, in priority order
- Proposed financing for effectuating the plan including state, local, federal, and other fund sources

“New schools” and “school facilities to be closed, phased out, and/or abandoned” are matters the LFP considers, which are specific to the siting process. Survey teams enacted by the state are tasked with reporting their findings to the local boards of education. This team recommends whether or not the plan is subject to approval (O.C.G.A. 20-2-260. 2000). Currently, the discretion to decide what entity is charged with preparing an LFP is left to each local board in Georgia. For example in the Macon-Bibb County School District, the Capital Program Department is responsible for creating the LFP. Currently, survey teams do not include the broader community in the day-to-day decisions of developing a local facilities plan. Once major decisions are made, however, local boards host public meetings to notify the community of these decisions. The meetings hosted are mostly educational (Drake and Williams 2014c).

One can make the argument that local school boards approving the LFP meet the threshold of public involvement. Fundamentally, they are considered an extension of the broader public and represent their wishes similar to city councils at the local government level. Yet, local boards are largely held unaccountable for the decisions they make. City councils, on the other hand, must hold public hearings for a range of decisions affecting the public.

Despite the nominal inclusion of the public in the required local facilities plan, some districts have enacted an Education Special Purpose Local Option Sales Tax (E-SPLOST) to supplement their capital outlay funding. The E-SPLOST funds various capital projects related to renovating, closing, and siting schools in a particular school among others. Due to its nature, the public involvement process for this measure is considerably more rigorous than what the LFP requires. The public must vote before the tax is approved, which means there is an added incentive to motivate a district to include the public. DeKalb County, for instance, includes the public in their E-SPLOST initiative in several ways. For one, a 12-member citizen’s oversight committee enabled by the local school board reviews all E-SPLOST funded capital improvement expenditures of the district (DeKalb County Schools 2014). The committee reports to the general public on how E-SPLOST funds are spent. Additionally, the district uses five public input methods to engage and listen to the broader communities that include site visits, interviews, focus groups, public charrettes, and surveys (DeKalb County Schools 2014). The purpose of each is to provide a variety of perspectives with varying levels of engagement from the broader community. Both large and small groups are used to engage in authentic discussion concerning the direction of the schools.

School-level

In Georgia, schools and their constituents (i.e. teachers, students, principals, etc.) are generally included after major decisions concerning facility management are made. Public forums are held to inform the broader community of what will inevitably happen. Once decisions are made at the district and state level, it is hard to contest. Local boards of education have the final say in any facility management decision. From a general governance perspective, the broad power of the local board to make a final decision despite contention is based on a logical rationale. Local boards are elected by the broader community and represent a certain

constituency. Once elected, the board members serve diverse, sometimes conflicting interests. It's up to the elected officials to decide what is best for all. The check to this broad power is the vote. If, however, there is enough contention, the officials elected will not serve future terms in office (Rowland 2014).

Despite the argument proposed above, principals and other school constituents find it frustrating to be excluded from important decisions that affect them. For example, a principal in Newton County found it odd that the school staff wasn't included in the building's design. He felt the district overestimated the amount of parking needed for his school's population, which consisted of a large amount of students coming from low-income households (Ellenberg 2014). Despite this fact, schools and their constituents in Georgia still have flexibility to voice their opinions. Most of the outspoken feedback from the broader community stems from decisions to close local schools. The decision to close schools can be highly contentious. The district might have a logical reason for closings, but the strong emotional ties that schools express for a school can be a major deterrent to district final decisions. A Bibb County principal described a process where the local community backed a decision to keep a school at the center of the community. The principal and district staff wanted to move the site of the building to an area with more space; however, enough community support kept the school in its current location (Kilcrease 2014). On the other hand, siting decisions do not carry the same amount of emotional weight a closed school might conjure. Therefore, public input is often not as passionate.

7.1.3 Best Practices

The case studies described in the section below highlight the various opportunities that the public can inform decision-making. While not all examples of public involvement highlighted are related to school facility management, each example can translate to the context of facility management. Enacted at all three levels of organization (state, local district, and school) and implemented through a variety of functional tasks, it is clear there is not a prototype when determining the best approach to use. Each state, local district, and school has its own set of challenges and opportunities. For this reason, each case study is unique as it fits the context of each respective community.

Despite their uniqueness, the components of each case study can be grouped into three overarching categories: functional tasks, levels of organization, and type of involvement. The broad categories are helpful to assess the similarities and differences of each public involvement approach.

Functional tasks are defined as the steps in the facility management decision-making process. The functional tasks generally take the form of a needs assessment, envisioning process, planning, development, and implementation (Filardo and Bryant 2002). Each step in the process is characterized by the following:



Figure 7.1.3-1: Functional task process

Assessment: An assessment is the process of getting a thorough and accurate picture of what exists to document the needs of a school and its neighborhood (Filardo and Bryant 2002). Every aspect of a school's operation is analyzed from its instructional program to its physical site. The assessment process also analyzes the financial and operational capacity of the local district in order to address needs.

Envisioning: The envisioning step articulates the educational and community purposes a school will serve and the values that guide its planning, development, and implementation (Filardo and Bryant 2002). Many local districts hold public forums at this step to solicit ideas that can inform the planning process.

Planning: The general components of a planning process are site identification, educational specifications, schematic design, and a feasibility study. School districts leverage technical expertise at this stage of a facility management process.

Financing: A local district must put in place or designate the financial, management, and oversight capabilities of the district to ensure the actual design and construction of the school occurs as planned. They make sure to carry out the specifications of the plan according to law (Filardo and Bryant 2002). The money may or may not be available to fund particular projects. Taxpayers and other jurisdictions are usually leveraged to support the financing and development of the facility plans.

Implementation: The purpose of this step is to maintain the intent of the educational specifications and schematic design while still keeping projects on time and on budget.

Levels of organization refer to the jurisdictional hierarchy in which the decision to include the public is conceived. It is important to note that a decision to include the public can be initiated at one jurisdictional level but be implemented at another level. For example, North Carolina's Community School Act initiated the formation of community school advisory councils through its state legislature. However, the work of the advisory councils takes place at the district and school level.

Type of involvement is characterized as the point, form, and intensity of community interaction. Public involvement can take a variety of forms at different jurisdictional levels. For example, the City of Akron has a Citizen Advisory Committee at the district level, which actively reviews and monitors the capital projects in their Community Learning Center (CLC) program, a citywide shared-use initiative. In contrast, a committee of community members actively planned the design and instructional programs of Gaylord High School. In both instances, committees are formed to complete a functional task; however, each committee is formed for different jurisdictional levels. The following is a list of involvement types:

- Large public forum
- District-level citizen committee
- District-level small discussion group
- School-level citizen committee

Generally, public involvement occurs in the forms mentioned above. Each form ranges in intensity depending on the level of input and type of engagement. For example, many public involvement processes take the form of large, passive public forums whose intent is to educate the broader community about decisions already made. Other types of involvement can take the

form of a small, active committee whose purpose is to monitor district activity. It is important to note that one type of involvement can be used in conjunction with another type in a given district.

The following best practices examples are divided into three sections according to the level of initiation. The state statute section describes the regulations in place to include the public in an active engagement process. Next, the district examples provide insight into how districts manage entities such as citizen oversight committees. Finally, the school examples speak to the informal methods in which schools include the public to make important decisions concerning school facility management.

State Statutes

North Carolina

North Carolina's "Community Schools Act" is enacted at the state level to "encourage greater community involvement in the public school" (North Carolina General Statutes, Article 13 § 115C-204). One of the policies enacted by the state is to provide increased involvement by citizens in their local schools through community schools advisory councils.

The community schools advisory council acts as a committee of citizens to advise community school coordinators, administrators, and local boards of education in the involvement of citizens in the educational process and in the use of public school facilities. The makeup of the community schools is encouraged to include the following:

- Parents of students in the particular school system (at least one-half)
- At least one high school student

Community schools coordinators are mentioned in the Community Schools Act to support the local board of education and the advisory council. Their role is to foster cooperation between the local board of education and other community agencies; encourage community volunteerism in the broader schools; and to perform any other additional duties that the local board of education sees fit.

Mississippi

Enabled in Mississippi's 2006 Regular Session, Senate Bill No. 2605 Section 1 stipulates local districts to create a School Siting Committee to "recommend to the school board sites for building new school and/or expanding existing schools" (1). The committees proposed by the bill include at least one individual from the following stakeholder groups:

- Parents
- Teachers
- School health officials
- Community members
- Local public health professionals
- Environmental advocacy groups
- Students

The committee must be involved throughout the site selection process until final approval. The local school superintendent serves as the chairman of the committee and organizes the committee for regular business.

Kentucky

The State of Kentucky as part of their process to develop a four-year District Facilities Plan mandates local boards to create an advisory committee made up of community members. The committee is made up of a “maximum of twenty members and a minimum of ten members” for each local district (Kentucky Board of Education 2008, 22). The “local planning committee” (LPC) should include:

- Parents
- Teachers
- Building administrators
- Facilities directors
- Central office staff
- Local board members
- Local governmental entities
- Planning officials
- School superintendent

The committee is responsible for a variety of planning tasks. The tasks include studying information concerning the district’s buildings, financial information, demographics, and additional information necessary to develop a plan addressing district needs. After architects and engineers prepare an initial need assessment, the local board solicits a qualified facilitator to keep “the LPC focused throughout the planning process and provide order, direction, and ideas necessary to resolve any stalemates during LPC meetings (Kentucky Board of Education 2008, 22)”. Furthermore, the Division of Facilities Management of the Kentucky Department of Education (KDE) provides additional technical assistance if requested by the LPC. However, KDE is not “actively” involved in the development of the District Facility Plan (DFP). Throughout the planning process, the public participates in forums scheduled to include as many citizens as possible. Advertisements for public forums are broadcasted through local media and written in local newspapers. Per the Facilities Planning Manual, a minimum of three public forums must be conducted by the LPC to discuss information during the development of the proposed DFP.

District Examples

City of Akron

A few years ago, a nationwide report on the condition of school facilities put Ohio in last place. To improve its position, Ohio created the Rebuild Ohio plan to rebuild or renovate Ohio’s 612 school districts (Imagine Akron Schools 2014). More than \$10 billion was set aside for the project. The money was Ohio’s allocation of a \$206 billion national settlement between the tobacco industry and 46 other states (Imagine Akron Schools 2014).

The Ohio School Facilities Commission (OSFC) is the group established by the state to oversee the state’s multi-billion-dollar school construction program. The state regulated the

OSFC to pay 59 percent of the costs to rebuild; Akron was responsible for 41 percent (Imagine Akron Schools 2014). In 2003, Akron was faced with having to finance projects that it couldn't afford.

It was necessary for the City of Akron to find creative ways to fulfill their financial responsibility. In May 2003, the residents of Akron overwhelmingly approved Issue 10, a 0.25 percent income tax increase to fulfill Akron's 41 percent share of the funding (City of Akron 2014). School and city officials knew it was imperative to find an innovative way to raise the matching funds without burdening Akron residents with increased property taxes, which was not received well by the county housing Akron.



Figure 7.1.3-2: Community Learning Centers

Voters approved the sales tax, in part, because of the mechanisms to monitor the process. Akron established a number of checks and balances to ensure the CLC project remained sustainable. Committees were formed around stakeholder themes to give direct voice to a particular group. The oversight committees include a Disadvantaged Business Enterprise and Workforce Development Advisory Committee, a 10-member Joint Board of Review comprised of Akron Public School and the local government. The Citizens Monitoring Committee is a 10-member committee appointed by the city and the Board of Education. The committee monitors the projects and reports to the community regarding the expenditure of funds collected from the local tax or received from the state (Imagine Akron Schools 2014).

City of Decatur

While not limited to schools or education, the City of Decatur's round table discussions are exemplary as a model of participation in strategic planning. The public involvement consisted of three round table sessions. Each session was comprised of 11 separate meetings held at different times and places around the city. The total attendees of the first session resulted in a turnout of 741 citizens, the vast majority of which (78 percent) returned for the second and third sessions (City of Decatur 2010).

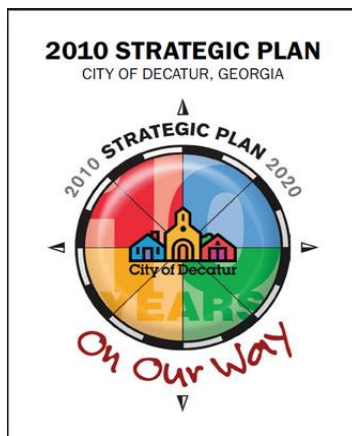


Figure 7.1.3-3: Decatur’s 2010 Strategic Plan

The round tables consisted of face-to-face meetings involving citizens who agreed to attend three sessions. Different topics were discussed at each session. Session one dealt broadly with what citizens appreciated about Decatur, what they saw as problems, and what they’d like Decatur to be in the future. Session two dealt with six specific issue areas, from transportation and the environment to housing and healthy living. Session three dealt with connections and community roles (City of Decatur 2010).

For each session, the meetings were held at different times and places around Decatur. In each meeting, participants were seated in small groups, to ensure that all would have a chance to speak. Each small group had a trained facilitator and a recorder, who captured citizen comments (City of Decatur 2010).

During the round tables and Strategic Plan Update process, a website at www.decaturnext.com provided information and space for discussion. Calendars, information on the next public meetings, presentation slides, and interviews with stakeholders were included on the website. The website allowed those not at the public meeting to learn what happened and share their thoughts. The city recorded more than 19,700 visits to the website during the process (City of Decatur 2010).

Conflicting themes from the round table resulted in a series of Community Academies. Each academy featured an expert speaker who addressed a theme. Attendees then participated in a discussion exercise based on the knowledge shared, with the goal of discussion trade-offs, moving toward consensus, and generating more focused comments to help create and refine the 2010 Strategic Plan (City of Decatur 2010).

The thousands of ideas and comments received from the outreach effort were distilled by a consultant team into 89 Tasks, which were included in the 2010 Strategic Plan. The tasks were distilled even further to inform the Goals outlined in the plan.

School Examples

Gaylord High School

Built in 1996 with the community in mind, Gaylord High School serves 1,200 students in grades 9 through 12 and houses senior activities, daycare, performing arts programs, community

healthcare clinics, and higher education classes for the city (Bingler et al. 2003). Before the improvements, however, the City of Gaylord lacked an auditorium for cultural functions. While planning the new school, a special auditorium committee composed of educators and community members identified both school and community needs, studied both school and community needs, studied theater design, and considered the shared use arrangements. In the eyes of the community, Gaylord's public engagement has increased school and community interaction, civic-mindedness, funding, and general education support.



Figure 7.1.3-4: Gaylord High School

J.F. Oyster Bilingual Elementary School

Built in 1926, the Washington D.C. school lacked appropriate space for instruction in science, physical education, special education, art, and music. It also did not comply with ADA standards. At the time, the city had no master or capital plan that could promise the needed building improvements. Therefore, the district placed the Oyster School on a list of proposed school closings (Bingler et al. 2003). Parents were concerned and organized in order to do something about the initial decision. The result was a group of parents and school personnel documenting facility problems and repairs needed. The city denied the request issued by the parents. Ultimately, the parent group asked if the city would support a plan for replacing the school at no cost to taxpayers, which resulted in a partnership among LCOR Incorporated, a national real estate development firm; the District of Columbia Public Schools; and the District of Columbia government (Bingler et al. 2003).



Figure 7.1.3-5: J.F. Oyster Bilingual Elementary School

Noble High School

Opened in 2001, Noble High School serves students from the disconnected towns of North Berwick, Berwick, and Lebanon in Maine. The school district in this rural area extends so far that only one other Maine district buses children more miles to school (Bingler et al. 2003). Design and construction of the high school was seen as an opportunity to unite the sprawling community. During the planning phase, input was gleaned from everyone in the constituent communities. Most of the input was gained for the purposes of the school's design. The school district held three public forums, showed numerous presentations, distributed surveys and questionnaires to elicit comments, and formed a planning committee. Students were invited to contribute ideas as well (Bingler et al. 2003).



Figure 7.1.3-6: Noble High School

7.1.4 Assessment of Current Conditions

Together the categories characterized above act as a framework to contextualize the various examples of public involvement highlighted in the section. The following illustration attempts to place each practice in a continuum of involvement. The horizontal axis of Figure 7.1.4-1 shows the level of organization. As the arrow moves further to the right, the jurisdictional hierarchy increases. The vertical axis shows the type of involvement. The size of the group involved determines the placement on the axis. The color of each circle indicates the intensity of involvement. Yellow examples are largely passive forms of involvement. Red circles indicate active forms of public involvement.

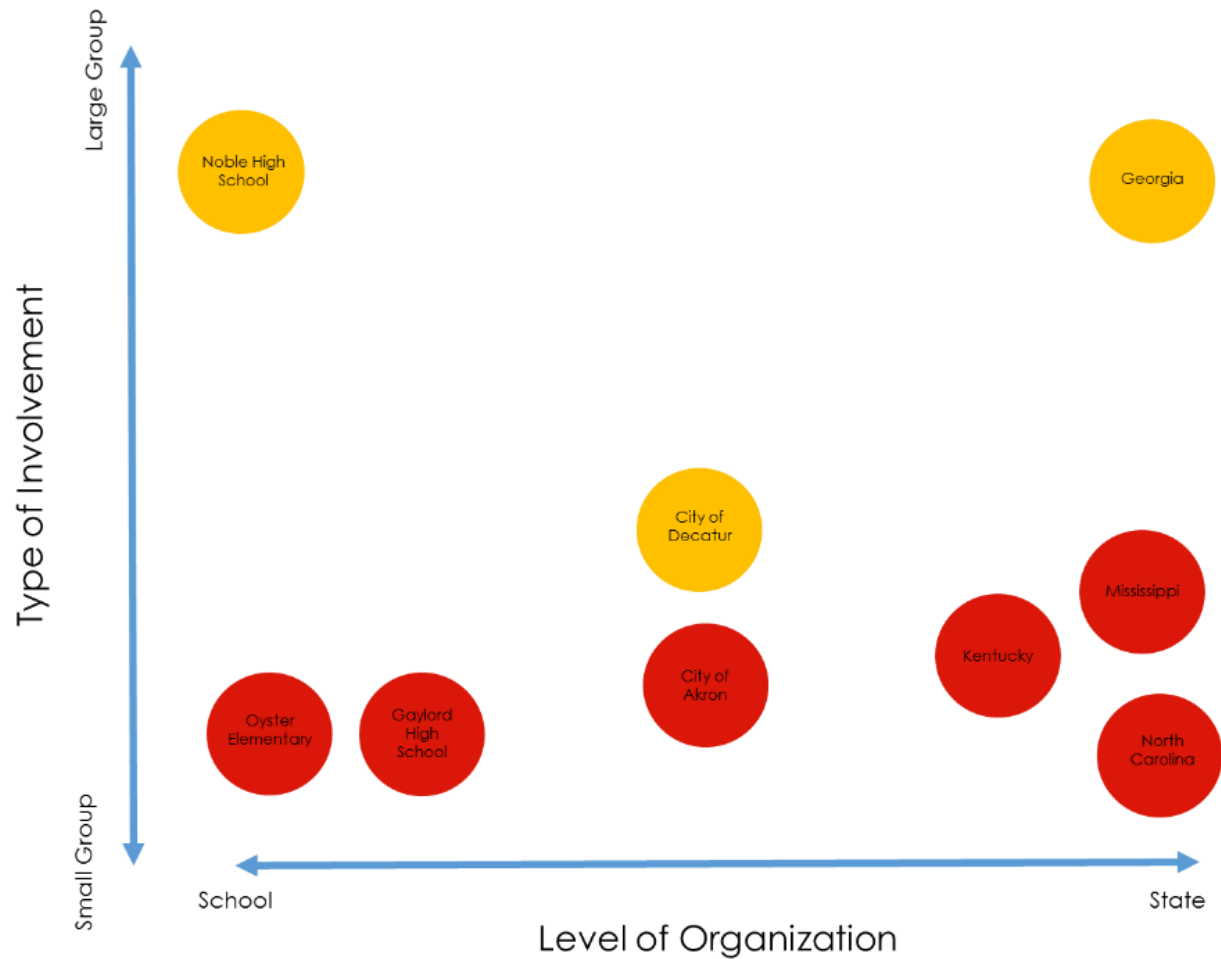


Figure 7.1.4-1: Continuum of involvement

The figure above helps to illustrate the dynamics of community involvement in differing contexts. Small groups tend to favor more active forms of public involvement while large groups favor more passive forms. Another important finding considers the level of organization of active forms. From the sample, it appears the level of initiation for public involvement is not a factor. A reason for this phenomenon could be that traditionally schools and local districts tend to possess high levels of autonomy. Regardless of the reason, it is a promising sign for local districts and schools wanting to increase public involvement without state regulations mandating it. The uniformity of the figure is disrupted by the City of Decatur. While their public involvement process is largely passive, small groups were formed to receive feedback for the updated Strategic Plan.

Relative to the sample, Georgia appears to be in a league of its own. Figure 7.1.4-1 reflects the state's lack of regulation to include the public in an active facility management decision-making process. However, what Georgia lacks it more than makes up for in flexibility. Currently, there is nothing to restrict local districts to engage in a process similar to the City of Decatur. While Georgia certainly doesn't encourage active public involvement, the state doesn't explicitly

discourage the practice; a promising sign for communities that might want to take matters in their own hands.

Gaps

The best practices highlighted in the previous section including the accompanying figure clearly show the potential public involvement options surrounding facility management, namely, school siting. While the figure aids our understanding of the points in which effective forms of public involvement can happen, it does not accurately describe the causes surrounding these forms. A better indicator influencing the effectiveness of public involvement is how authentic the involvement is perceived. Authenticity of involvement is perhaps the most important ingredient in engagement. Often the community perceives that it can only listen to decisions already made by administrators, board members, and district staff. The old-style public hearing process (i.e., one or two public presentations of already developed plans) can lead to frustration and apathy on the part of citizens who want to be involved (Bingler et al. 2003). However, if a community is engaged authentically, the outcome can result in a more extensive and creative set of ideas, more trust in public officials and government, a broader base of support and funding, and a stronger sense of community for everyone involved (Bingler et al. 2003).

In light of the argument for authenticity through active involvement, Georgia falls short of this goal. The research highlights the specific ways Georgia (state, local, and school) is missing the mark. On the state level, the main gap missing in Georgia's context compared to best practices is the lack of implementable regulation. The state examples outlined in the best practices section stipulated that local districts must include the public in school facility management decisions. Furthermore, the states explicitly outline how this aim is to be achieved. The formation of a citizen advisory/siting committee and its function were enumerated, which gave "teeth" to the often general aim of public involvement. Regulation at this level could provide the necessary incentive to motivate local districts to include measures of active involvement. At the district level, cases of active public involvement were only found surrounding tax referendums and school closings. The public involvement process for the tax referendum in DeKalb County proved to be a promising counterfactual. However, public involvement for this process cannot be classified as a sufficient alternative. Some districts, especially those in rural areas, do not have the necessary tax base to participate in tax referendums. Georgia is lacking a universal framework for active public involvement that includes all types of districts. Besides school closings, local schools in Georgia lack an understanding of the particulars involved in the school siting process. Communities can be empowered to change the dynamic of the current process if aware of the issue.

7.1.5 Recommendations

GaDOE Policy to Encourage Public Involvement

The Georgia Department of Education should enact policy to encourage local districts to include forms of active public involvement in facility management decisions, in particular, school siting decisions.

Enacting state policy to encourage active public involvement in school siting decisions can motivate all local districts to prioritize the issue. The benefits of engaging the public are several. Discussed in the previous sections, authentic involvement of the public can increase accountability, meeting the public's desire to ensure taxpayer dollars are used effectively, efficiently, and equitably (21st Century Fund 2004). However, as it stands, active involvement occurs on a case-by-case basis in local school districts and schools throughout the state. One can argue that the flexibility given to local school districts to include the public can lead to more contextualized, authentic forms of public engagement. But the E-SPLOST example in DeKalb County Public Schools clearly shows that local districts are hesitant to include a more extensive public engagement process unless properly incentivized. Furthermore, the option to enact an E-SPLOST referendum isn't possible in every school district. This means local communities without an E-SPLOST program are still largely uninvolved. Ultimately, because of their autonomous nature, local districts would not consider active public involvement strategies unless encouraged by the state.

Fortunately, the state already possesses the framework necessary to include active forms of public involvement. Most of the decisions to site a school occur in a local district's local facilities plan. The plan asks local districts to consider many aspects of managing a school facility including where to place new schools. District personnel, state staff, and outside consultants form survey teams consider these siting decisions. Per O.C.G.A. 20-2-260(c) (2), the code does not include local residents, employees of the local board, the servicing regional educational services agency, and other individuals deemed unacceptable by the local board.

One reason for the community exclusion concerns the private nature of siting schools; many individuals claim it is necessary to remove the public from this activity to improve efficiency. Despite this hurdle, public involvement can still occur, albeit on a smaller scale. Citizen advisory committees can potentially serve as the mechanism to actively include the public. Outlined in the best practices section, the committee serves as an effective strategy to monitor and disclose facility management decisions, namely, school siting activity. Committee members are usually volunteers who may or may not have professional experience related to school facility management (21st Century Fund 2014). With proper forethought, the committee closes existing gaps in how Georgia includes the public. For one, citizens representative of the broader community will have the chance to influence decisions previously kept in private. With the enhanced committee, it can draw from a variety of backgrounds providing a depth of analysis not achieved formally. Additionally, the team can act as a liaison for broader community engagement. District staff constantly point towards a lack of resources that prevent active community outreach and participation. The committee can act as an extension of the district, helping to engage the broader community.

Rather than enable an all-new advisory board, the state can explicitly require local districts to include local community members within their survey teams when developing a local facilities plan. To achieve this, the state must amend the passage stated in O.C.G.A. 20-2-260(c) (2) excluding local residents from survey teams. Since amending the code might prove burdensome, GaDOE can encourage the formation of citizen advisory committees by drafting guidelines for the committee's functions by the state.

Community Education by School Advocates

School advocacy groups should educate local communities on the implications of facility management decisions to encourage forms of active public involvement at the school level.

Public involvement is an integral step to ensure an open, responsible public process that will not just result in a new or improved school building, but will result in a better school and community. Understanding the roles, responsibilities, and capacity of the various public entities with authority over school facility management is important to effective public involvement (Filardo and Bryant 2002). However, this is not true in many jurisdictions. Important implications resulting from many facility management considerations are largely unnoticed by communities. Some claim that local districts prefer it this way to discourage interference. The public can enhance the facility management process rather than hinder if properly educated, especially as it relates to the technical aspects of such decisions. For example, community members are the best resource to interpret these implications at little or no cost; yet, districts undervalue or overlook their expertise (Filardo and Bryant 2002). School advocacy groups (i.e. a Parent Teacher Association (PTA), Georgia Conservancy, etc.) can play a role in demystifying the aspects of the facility management process to promote greater involvement.

School advocacy groups are an effective source to inform the public of important education issues. Historically, the groups focus on improving student achievement. However, it is safe to say that these groups can include facility-related issues on their agenda. Specifically, school advocacy groups can help inform the public through the following:

- Educating the broader public about the complex facility management process;
- Creating public support for schools that meet high standards;
- Securing the cooperation of all governmental entities having authority over schools to embrace a full partnership with community and school district representatives in the facility management process; and
- Assisting local communities in the technical aspect of facility management if a community wants to engage in a community-led plan.

Advocacy groups in the state of Georgia can take action in two specific instances to promote increased involvement in facility-related issues. One way is to work with school district staff in designing a district-level process in order to promote active public involvement. The group can lead the way in presenting the issue and defining and facilitating the process. This takes the pressure off of local school districts to implement the change; many claim they are increasingly becoming more resource constrained. An additional way is to promote and facilitate the formation of citizen advisory committees at the district or school level depending on the flexibility of each jurisdiction. There is literature concerning citizen advisory committees that delivers concrete steps in forming a citizen-led advisory committee. For instance, the 21st Century School Fund, developed a “how-to” guide for designing citizen advisory committees (21st Century School Fund 2003). This is an important resource to inform advocacy groups of what to consider when helping school districts and individual schools establish a committee of their own.

School advocacy groups can serve as an effective third party in making sure local districts respect the input by local community members. By putting this issue on the radar of the advocacy, they can in turn put it on the radar of the broader community. The findings of this report are steps in making the necessary change happen.

Conclusion

The recommendations described hold stakeholders from every level accountable to ensure the public is actively engaged in making facility-related decisions, namely, siting decisions. The hope is that, if each level does their part, Georgia can become more inclusive of its constituents. The recommendations not only provide the school system with valuable information, but they also signal to the broader community that government values their input—a huge step in promoting positive community well-being and trust.

7.2 Intergovernmental Coordination

7.2.1 Problem Statement

Many municipalities aim to create compact, walkable communities, yet new schools are often sited outside of the city center, skewing future growth and development patterns. When local, long-range government objectives are not aligned with the school district's growth, the resulting school siting decisions create unintended direct and indirect impacts. Direct impacts such as transportation congestion and reduced opportunities for physical activity may be apparent as soon as the school assumes operation. Secondary effects like accelerated sprawl and economic inefficiency are less obvious consequences bearing out over many years (Morris 2005).

A historical lack of coordination between local government, the state departments of education (DOE), and school districts has significantly shaped current school siting practices in Georgia. Specifically, the local government and school districts operate as independent entities with little incentive to communicate, share data, or work collaboratively toward shared goals. While this disconnected model is disadvantageous for the communities that these parties serve, their overlapping goals and activities highlight areas for improved collaboration moving forward.

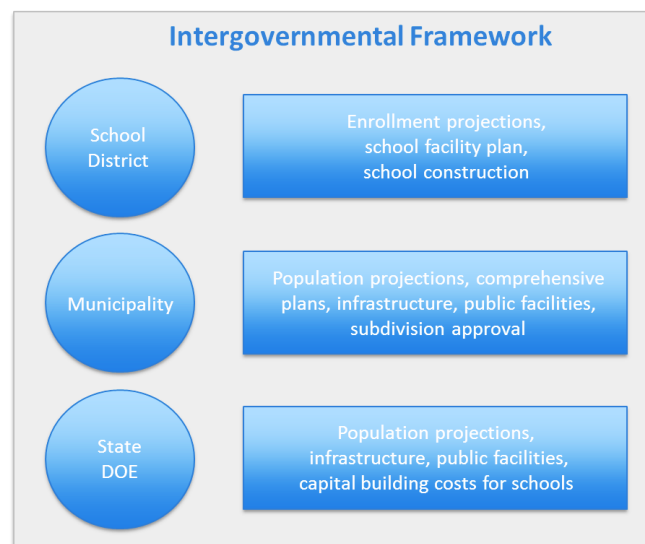


Figure 7.2.1-1: Traditional division of activities: school districts, municipalities, and state DOEs

(Source: Salvesen 2010)

In order to assess coordination opportunities between governments and schools, there must be a clear understanding of what “coordination” is and why parties would want to enter into coordination agreements (Meehan and Sanchez 2012). Coordination occurs when two or more agencies work together to improve output by combining existing resources and/or to fill in resource gaps (Kroeger, Andrle, and Hallock 2005). Since coordination is a process, agencies should establish goals that can be achieved through coordination and decide what method of coordination works best with the available time and resources (Meehan and Sanchez 2012). Each

agency participating in the coordination must share the responsibility of identifying and subsequently reaching their shared objectives (Kroegeer et al. 2005). In the case of school siting, local governments and school districts have much to gain by coordinating their activities. As major drivers of growth, school districts are natural partners in identifying areas for future development, preserving open green space, forecasting infrastructure needs, and determining transportation patterns within a community (Norton 2007).

Planning and Development

School districts benefit from increased collaboration with local planning departments by saving capital investment funds when siting schools near existing or planned infrastructure such as water, sewer, and stormwater drainage systems as well as community facilities such as parks and libraries (Norton 2007). Combined these short- and long-term cost savings for the school district may help offset the purchase of more expensive land in a central or well-established location, as opposed to investing in a less expensive site on the outskirts of the community.

Increased intergovernmental coordination can also prove valuable when school districts are deciding whether to relocate a school to a new site or to expand and/or renovate the existing building. Comprehensive plans may encourage alignment of facility improvements, although it is common for school districts to review the plan only after a decision has been made since it is not a mandated step of the siting process (Sharp 2008). The majority of school districts opt to relocate the school, which generally triggers a pattern of disinvestment in the surrounding neighborhoods.

For local planning departments, it is unlikely that a comprehensive plan will be able to achieve its intended aims and objectives without reinforcement from key community stakeholders such as schools (Norton 2007). Yet many local comprehensive plans document existing schools as social and economic centers but fail to consider how future school development may impact their long-range community planning. Facilitating a higher level of participation from school districts helps inform the planning process by sharing student population projections, identifying viable parcels for new school development, and understanding where community interventions may be needed in the event of a temporary or permanent school closing.

7.2.2 Current Conditions in Georgia

In Georgia, the call for increased inter-jurisdictional school siting coordination has been raised primarily by stakeholders outside of the education industry, including The Georgia Conservancy and the Atlanta Regional Commission (ARC). The most tangible outcome to date has been the ARC's inclusion of language around increased local government and school district coordination in their long-term regional plan. Standard "Min 2.E." of their Plan 2040 implementation guide states, "The siting and operations of schools have a tremendous impact on the community including traffic and pedestrian safety. Schools can be an invaluable partner and integral part of their community. This standard is meant to encourage school systems to communicate and plan with the local governments in which they are located. The goal is to have an MOU [Memorandum of Understanding] outlining how information can be shared and planning can be done collaboratively" (Atlanta Regional Commission 2012, 38).

While the ARC does not have legal authority to enforce adoption of a coordination program or MOU, one of its roles is to provide assistance to local governments applying for the Georgia Department of Community Affairs (GaDCA) “Qualified Local Government” designation (Atlanta Regional Commission 2012). The Min 2.E. standard acts as an incentive rather than a requirement, and fulfillment can be used to achieve the GaDCA status. Per the standard, MOUs must have sign-off from the mayor/chairman of the local jurisdiction, the city/county administrator, the school board chairman, and the school system superintendent to ensure collaboration at the political and managerial levels. Additionally, MOUs are required to address the following at a minimum:

- Joint meetings between school board personnel and the county and cities within that school system
- Possible collocation or shared use facilities
- School siting procedures
- Opportunities for the jurisdiction to review and comment on school system facilities plans prior to public hearings and adoption from the board
- Opportunities for the jurisdiction to review and comment on school site design three months before construction begins

Since the standard’s adoption in 2012, it is unclear how many local governments have used the incentive or if it has been successful in forging school siting communication with school districts. Statewide coordination will almost certainly require a mandate from the Georgia Department of Education (GaDOE). Therefore, it is necessary to understand why the jurisdictional divide persists and to review strategies for increased coordination as implemented by other states.

7.2.3 Assessment of Current Conditions

A significant reason for the lack of coordination in current school siting policies in Georgia is the historic separation of schools and local governments that were never required or incentivized to collaborate (Norton 2007). Separate state laws empower each entity with autonomous decision-making power in order to forward their respective agendas. Furthermore, schools and local government have their own constituencies, leadership, processes of approval, and sets of issues that they must address. Although they may (or may not) share similar goals with their community, there is a tendency for both parties to take measures to preserve their power, which is reinforced by their bureaucratic organization. In general, this siloed approach creates a lack of awareness around each party’s goals and makes them unaccountable for the negative impacts that their decisions may have on each other.

In many states, including Georgia, schools are exempt from zoning laws that the local planning commission sets and enforces (Torma 2007). This is a significant source of friction as the school districts often secure a school site in an area that is not zoned for the amount of residential growth that the school will bring. New development also requires that the county invest in infrastructure that they otherwise would not have built.

In addition to a lack of tradition and zoning exemptions, there are many other challenges with fostering collaboration between school districts and local governments (Salvesen 2010). These include:

- Desire for autonomy
- Desire for power
- Conflicting goals or vision
- Lack of time
- Lack of trust
- Lack of incentives
- Lack of mechanism to collaborate
- Lack of leadership
- Poor organizational communication
- Prohibitive cost

7.2.4 Alternative Options and Best Practices

A growing number of states have updated their school siting policies to mandate more involvement between local government and school districts, although the GaDOE is not among them. Comparing these policies is challenging due to their differing definitions of inter-jurisdictional coordination. As a representative sample, Maryland defines this as, “The act of establishing a regular means of communication among officials of two or more political jurisdictions for the purpose of addressing and resolving issues of mutual interest related to the operations, and the future physical, economic and social development of the jurisdictions” (Maryland Planning Commissioners Association n.d., 2--9.).

Several states have included language about the importance of intergovernmental coordination within their planning documentation. For example, Maryland’s policy specifically defines the comprehensive planning process as, “The cornerstone of inter-jurisdictional coordination through the mutual development of policies, goals, and strategies. The formalization of inter-jurisdictional coordination can be effected through agreements, committees, and other means” (Maryland Planning Commissioners Association n.d., 2--9).

Florida’s 2005 legislation mandating the adoption of a school concurrency program was the first of its kind and has since influenced other states to update their school siting and inter-jurisdictional coordination policies (Morris 2004). Florida’s language created a comprehensive focus on school planning by requiring local governments and school boards to create extensive MOUs called “Interlocal Agreements” to ensure that their vision, goals, and activities were aligned. The mandate was made optional in 2011 due to the changing political tide, but already possible avenues for improving coordination between local planning commissions and public schools in siting decisions had emerged (Florida Department of Economic Opportunity 2011).

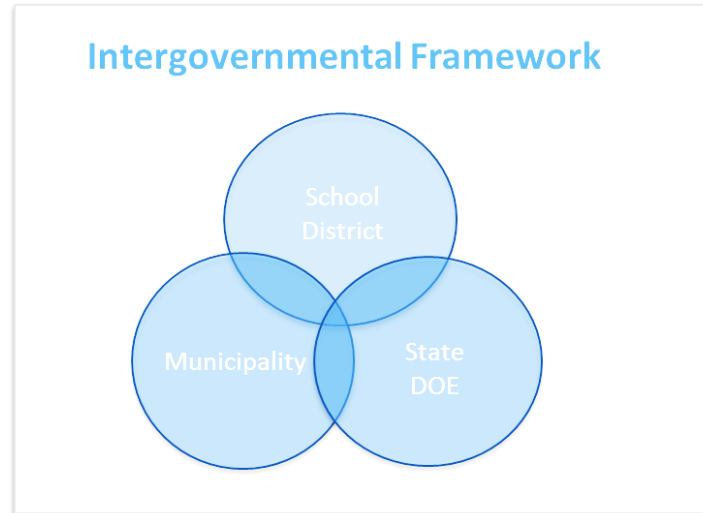


Figure 7.2.4-1: Intergovernmental framework for increased coordination

(Source: Salvesen 2010).

The first strategy is giving local planning and zoning committees the authority to oversee school board decisions on where to site new schools and possibly on whether to renovate an existing building or rebuild and the site design (Norton 2007). This option requires schools and local government to be engaged at a higher level than is currently practiced in Georgia in order to redefine their traditional independent relationship. Given the severity of the reform needed, this approach is generally too controversial to be considered feasible for most states.

The second approach is mandating the appointment of a representative from each entity to the other board, so that planning officials are able to influence school siting decisions and the long-term interests of the school board members are represented in the municipality's comprehensive planning (Salvesen 2010). In Virginia, an active collaboration between the school board and the local planning commission led the former to require transportation issues such as mode split to be considered as part of the facility design process (Sharp 2008). It resulted in a specific objective to encourage active transportation with a provision to measure their progress. Furthermore, representatives from both the local planning and the transportation commissions participate in the school district's capital improvements board. These policy changes have resulted in increased dialogue, information sharing, and coordination of resources in the district's siting process.

The final strategy is requiring more consideration of school location and community impacts throughout the school board's decision-making process without transferring power to the local government (Norton 2007). For example, the state's site design review could be expanded to include a mandatory traffic analysis or other projections of future growth based on the site selection. The need to build review capacity at the state level and most schools' belief that community growth and development is out of their scope are potential challenges to this approach.

As demonstrated in the approaches outlined above, inter-jurisdictional coordination is on a continuum. There are many different configurations of collaboration possible, depending on the

needs of the community and the level of commitment demonstrated by the county, local government, and school district. Below are the four basic levels of inter-jurisdictional interdependence, in order of increasing collaboration (Salvesen 2010). Achieving any level of coordination is likely to have a positive effect on the community, with larger benefits occurring at higher levels of coordination.

1. Organize a stakeholder meeting to identify common goals and interests. Both parties commit to sharing pertinent information that may entail student enrollment projections, housing development proposals, and/or future school plans.
2. Stakeholders meet periodically to share input on matters of mutual interest such as rezoning, subdivision approval, or potential school sites. Mandatory referrals for joint use agreements may be implemented.
3. Working relationships are formalized through intergovernmental agreements that allow capital infrastructure to be coordinated with the needs of new school sites. Land use planning and school facility planning are fully integrated.
4. School concurrency is achieved and recognized through housing development approvals being linked to school capacity. A representative may be appointed to each other's board and joint use agreements become institutionalized. School siting guidelines are developed including mandatory impact assessments.

7.2.5 Recommendations

An analysis of current conditions in Georgia revealed several overarching gaps that contribute to a lack of coordination between schools and local governments. First, the autonomy with which school districts operate does not encourage coordination with local government stakeholders throughout the school siting process. Second, there is no official mechanism for sharing information among entities in order to facilitate collaboration. Third, school districts and local governments need to work together on setting distinct yet interactive goals that fulfill their organizational responsibilities while also meeting the needs of their community. Fourth, more accountability is necessary within each party to ensure that coordination activities are initiated and implemented. Lastly, many school districts and local governments do not have resources to facilitate more coordination due to the allocation of funding and staff to other functions.

The following recommendations attempt to address these issues through a range of modifications to the state's school siting process. The least amount of coordination is found between school districts and their local planning departments; therefore many of the recommendations are aimed at facilitating this relationship.

Eliminate Zoning and Building Code Exemptions for Public School Facilities

Georgia law should be amended so that public school facilities are required to meet local land use zoning and building codes.

Public school districts in Georgia have historically been exempt from siting new schools in accordance with their municipality's zoning ordinances and building codes. In light of the challenges facing local communities such as sprawl and blight, this provision is no longer

practical. This report has established that school siting decisions are one of the primary drivers of residential and commercial development. School boards must recognize their civic responsibility to adhere to planning ordinances in place to ensure a community's long-term sustainability.

The Georgia state constitution classifies school districts as governmental in nature despite their official status as an independent non-governmental entity. This designation affords them an exemption from planning regulations that may interfere with their ability to carry out governmental functions. Implementation of this recommendation would require the state legislation to reclassify public school facilities as non-governmental in nature in order to remove the exemption privilege. Alternatively, the state could create a separate designation for public school facilities that preserves their governmental in nature classification but not their exemption status. Either change would allow local planning departments to begin requiring full compliance of policies and regulations for future school sites at their discretion.

Incentivize Memorandum of Understandings between School Districts and Local Government

Georgia should provide incentives that encourage local school districts and local governments to enter into Memorandum of Understandings (MOU) that promote higher levels of coordination.

One barrier to achieving more coordination is that local governments and school districts often lack a formal mechanism for working together. Encouraging both parties to enter into an MOU can result in a range of coordinated activities. This continuum includes sharing data such as housing development proposals, pending infrastructure projects, and student enrollment projections to identifying overlapping activities that can result in cost efficiencies for both parties. This valuable information is readily available but often not shared between community stakeholders due to confidentiality concerns, proprietary rights, or simply lack of initiative.

Implementation of this recommendation depends on incentivizing both parties through state funding channels to promote MOU participation without mandating it, as the latter has proven unsuccessful in other states (Morris 2004). Local governments receive housing, economic development, transportation, and infrastructure funds from the state while public school districts receive capital improvement funds. The Georgia state legislature could make a portion of this funding dependent on MOU participation, or alternatively could offer additional monies to local governments and school districts that are able to demonstrate coordination on certain activities or projects as a result of an MOU. The specific terms of the MOU would remain flexible to accommodate varying levels of desired coordination, although eventually state-funding amounts could become tied to depth of coordination.

Appoint Representatives to Each Others' Boards

GaDOE should require each school board to appoint a representative to serve on its local planning commission. Additionally, each municipality should be required to appoint a planning representative to serve on its local school board.

Building coordination between local governments and school boards requires setting interactive yet distinct long-term goals. Although each entity serves a different function within the community many of their activities are naturally complimentary with regard to school siting and managing growth. Appointing a representative to serve on each other's boards would increase awareness of those activities, facilitate an ongoing exchange of ideas, and encourage shared goal setting.

This recommendation may best be implemented in tandem with the previous recommendation to incentivize MOUs between school districts and local governments, as it would provide a mechanism for requiring the appointments. Alternatively, GaDOE would need to update their policies to create a mandate for school board representatives and the Georgia DCA would need to update their policies to establish a planning commission appointment in each municipality. Regardless of the implementation mechanism, each entity would need to determine criteria for selecting a representative along with length of term. The representative would be tasked with participating in the other party's general board meetings to provide an alternate perspective, find alignment, and communicate this information to his/her own party. The term length would need to allow time for acclimating to unfamiliar organizational language and operations as well as for relationship building.

Establish a Committee to Advise in the Siting of New Schools

GaDOE should require that a school siting committee comprised of school board members, local government officials, and community members be convened to discuss the impacts of potential school sites.

Establishing a school siting committee that represents a diverse set of interests would introduce more transparency and accountability into the school siting process. Currently, school boards make site selections behind closed doors without oversight from the local government or input from the community. This measure would prompt school boards to consider the far-reaching impacts of their siting decisions without legally decreasing the autonomy. It would also provide a mechanism through which to engage city officials and the public in discussing their immediate and long-term plans and vision for the community.

GaDOE would best implement this recommendation by updating their policies to mandate the formation of a school siting committee for every school site selection. The policy should also detail the timeline for formation, the interests that need to have representation, the minimum number of members, the membership selection process, the length and terms of membership, and the criteria by which the committee will evaluate potential school sites. Although the committee's work would not be legally binding, the school board of representatives would be

required to provide a public report outlining how they will address or mitigate outstanding concerns around the final selected site.

Require School Boards to Review the Local Comprehensive Plan

GaDOE should require school boards to meaningfully review their municipality's local comprehensive plan as part of their school siting guidelines.

Georgia's current school siting guidelines do not require or even recommend that school boards become familiar with their community's local comprehensive plan. Therefore, it is unsurprising that most school boards either do not review the plan at all or only do so superficially throughout the siting process. The comprehensive plan can be a valuable source of information for school boards by highlighting how potential school sites may overlap with other areas of municipal interest such as future housing development, infrastructure expansion, or designated open space. If the comprehensive plan does not satisfactorily address existing or future school development, the school board may decide that more dialogue and coordination is needed with the planning commission.

GaDOE should update their Guideline for Educational Facility Site Selection to require the school board to conduct a close review of the local comprehensive plan before identifying potential sites. The guidelines should also stipulate revisiting the plan once potential school sites have been identified as part of the official selection process. To enforce this mandate the school board should be required to submit documentation to the GaDOE that outlines potential opportunities for coordination and potential conflicts with the plan based on their possible site locations. School boards could also document if the comprehensive plan does not sufficiently address school sites and subsequently outline steps for increasing coordination with the planning commission.

Require the Identification of Future School Sites in Local Comprehensive Plans

GaDCA should require local governments to identify opportunities for future school sites in their community's comprehensive plan.

Many school districts do not review their municipality's comprehensive plan due to the lack of consideration given to existing and future school sites. Generally plans in Georgia fail to highlight the role of schools in promoting growth and development despite the acknowledgement of this relationship in the broader planning community. Incorporating possible school siting scenarios into the comprehensive plan would catalyze greater coordination between local government and school districts by providing a starting place for the school board's selection process. Also, this planning exercise would better reflect the immense impact that schools have on shaping their communities.

GaDCA requires municipalities statewide to adopt a local comprehensive plan that is updated periodically. The Minimum Standards and Procedures for Local Comprehensive Planning

document outlines the following elements as required (Georgia Department of Community Affairs 2014, 3-4):

- Community goals
- Community needs and opportunities
- Community work program

The document also outlines these components as optional, unless required based on the specific characteristics of the community:

- Economic development
- Land use
- Transportation
- Housing
- Capital improvements

These state guidelines should be updated to reflect identification of future school sites as a required consideration under the “community needs and opportunities” element. The GaDCA should also establish a mandatory “public school facilities” component for local comprehensive plans that outlines the current condition of each school and discusses their impact on the municipality’s growth and development to date and moving forward. Compiling these data would help local planning departments establish rapport with school districts and would promote the overarching goal of increased intergovernmental coordination.

7.3 Analyses for School Siting

More fully developed analytic techniques will better inform school boards when making siting, design, renovation, and closing decisions. Enhancing the analytic techniques used to select a school site is necessary to ensure school boards are making an informed decision that considers more than just costs and minimum requirements.

7.3.1 Background and Problem Statement

Public schools in the state of Georgia must follow the State Education Rules in the Official Code of Georgia (O.C.G.A.) that have been adopted by the State Board of Education (SBOE) and filed with the Secretary of State. In addition to the State Education Rules, each school district (also known as Local Education Agency [LEA]) must adhere to the policies and regulations of its school district’s local board of education (also known as Local Board of Education [LBOE]) as discussed in Section 2.4 as well as any municipal regulations that apply to school districts.

Analyses Required by GaDOE

The rules in the O.C.G.A. cover many more aspects related to schools than simply facility siting, but Section 160-5-4-.16(a) explicitly regulates “Facility Site, Construction, and Reimbursement” (GaDOE 2014a). Specifically, the State Education Rules require evaluation of the following major criteria to obtain approval from the Georgia Department of Education (GaDOE) of a proposed facility location (GaDOE 2012a):

- Utilities

- Road Access
- Site Development
- Geographical and Related Factors
- Environmental Factors
- Safety Hazards

Several assessments are required by GaDOE to evaluate these major criteria for site selection. These evaluations explicitly address the environment, risks and hazards, traffic, and development readiness related to utility access and geographic conditions. (Please refer to Section 2.6.3 for a summary of the assessments required by Georgia Department of Transportation [GDOT] for school site selection approval.) However, these assessments are not necessarily as comprehensive or stringent as the processes that many other types of development sites are subjected to, some are not the responsibility of the school to conduct but rather another entity is liable, and they exclude community from the analyses. Overall, the analyses and supplemental information required by the Site Evaluation and Approval Forms are fairly high-level and treat certain factors as proxies for larger impacts. For example, not building in a floodplain or within certain distance from a stream does not necessarily mean the development of the proposed site will not adversely impact the watershed.

Furthermore, GaDOE does not necessarily require school districts to act on the findings of the assessments in order for GaDOE to issue approval of a proposed site. For example, GaDOE's *Guideline for Educational Facility Site Selection* only requires a school district to submit a notification letter to GDOT and the local road commission stating the proposed plans; GDOT or the local road commission (depending on the proposed site's location) then does not perform a traffic evaluation until after the site is approved (GaDOE 2012a, 4). Moreover, the outcome of the evaluation does not obligate GDOT to, "spend state motor fuel tax to fund any of the needed improvements". Thus, while GaDOE's site approval process has some influence on school districts to select an appropriate school location, it falls short in holding school districts accountable for minimizing the impacts of their siting decision.

Similarly, the Guideline requires that electricity, gas, water, sewage, telephone services, and high speed internet are accessible to a proposed site, but GaDOE does not prohibit school districts from installing private systems, thus enabling a district to locate a school site anywhere as long as the utilities can be provided in some manner. While this may not be in the best interest of the larger community's vision, on the other hand the GaDOE siting approval process does provide school districts with flexibility in siting a facility.

Analyses Required by Local School Districts & Municipalities in Georgia

The majority of local municipalities in Georgia exempt school districts from zoning regulations, and thus, school locations are not limited to land parcels that necessarily complement the surrounding land use(s).¹³ Additionally, because school sites are often not

¹³ Decatur, Georgia is an exception and regulates school locations under the "institutional zoning district" classification in the city's zoning codes (Maximuk, Thompson, and Brewer 2014).

subject to zoning code requirements, a school district is allowed to locate a facility in an area that may not be consistent with the municipality's master planning vision or goals. Therefore, with schools predominantly exempt from zoning regulations and not required to engage in a community input process, school siting decisions are often made behind closed doors (Stokes 2014). This lack of transparency in the siting decision-making process leaves out many potential stakeholders from important discussions and ultimately removes any of the school district's accountability for the impacts of its siting decisions on the surrounding community.

Problem Statement Summary

The current school siting system for public kindergarten through 12th-grade (K-12) schools in Georgia generally lacks transparency as well as accountability of local school districts and boards of education. Additionally, the analyses are fairly high-level and treat certain factors as proxies for larger impacts.¹⁴ As such, siting decisions have the potential to adversely impact the communities that the school district is meant to serve. The proceeding sections consider the following questions to further investigate these issues in light of the current conditions in Georgia and best practices across the U.S.:

- If schools did an additional analysis, would it make a significant difference in where a school is located?
- What benefits/incentives exist for schools to conduct additional analyses, particularly ones focused on community impacts?
- What can municipalities do to force school districts to choose sites in line with the locality's vision and goals?

7.3.2 Current System for Site Approval

Currently in Georgia, school districts generally have to go through at least two processes to locate a school. First, the district must submit forms to GaDOE to obtain approval of the site, and second, the district must follow the applicable zoning and building codes within the jurisdiction of the school's proposed location. The following sections detail these processes as well as consider any additional actions taken by the case study school districts to locate a school facility.

Georgia Department of Education Requirements

As noted in Section 7.3.1, public schools in the state of Georgia must follow the State Education Rules in the O.C.G.A., and Section 160-5-4-.16(a) explicitly regulates "Facility Site, Construction, and Reimbursement". Several assessments are specified by GaDOE to evaluate the major criteria for site selection. These assessments are not necessarily as comprehensive or stringent as they could be, they mainly exclude the community, and not all of the assessments require action to remedy the results of the analyses.

¹⁴ For example, not building in a floodplain or within certain distance from a stream does not necessarily mean the development of the proposed site won't adversely impact the watershed.

GaDOE published the *Guideline for Educational Facility Site Selection* as an overview of the requirements to comply with the O.C.G.A. regulations for school site selection.¹⁵ In addition, this Guideline includes the required forms for schools to submit to GaDOE when proposing a new site to obtain GaDOE's approval as required under O.C.G.A. 20-2-260(c)(7) (GaDOE 2012a). Two additional guidance documents are available to assist schools in the site selection process: the *Guideline for Risk Hazard Assessment of Educational Facility Sites (Guideline for Risk)*¹⁶ and the *Guideline for Compliance with the Standards and Criteria of the National Flood Insurance Program (Guideline for Floods)*¹⁷. The *Guideline for Risk* provides additional detailed procedures for conducting the analyses necessary to complete the forms in the *Guideline for Educational Facility Site Selection* particularly related to the environmental and hazardous factors. It explicitly states, "Since few school boards in the state are composed of technically trained personnel, this guideline has been prepared to assist in the evaluation of the sites, particularly relative to the hazard evaluations" (GaDOE 2012b). The Facilities Service Unit's Director has the final approval of the forms submitted to GaDOE. In addition, the approval form requires the signature of a representative from the local sewer department and the local building codes department (GaDOE 2012a, 11).

The GaDOE site approval process began in the mid-1990s and was compiled with the prevailing intention to create a list of items that address the health and safety of school staff, students, and visitors as well as to ensure sites have adequate and appropriate space to meet their needs (Rowland and Allen 2014). The Facilities Services division is constantly considering if a best practice, such as Leadership in Energy and Environmental Design (LEED), should become a requirement. However, several of these best practices are hard for school districts to justify upfront costs with the return on investment. The department tries to engage with districts and attend meetings to educate each other about what exists as options, but with GaDOE's limited staff, their primary purpose is to monitor and administer capital outlay entitlement program as well as review and approve proposed school site applications. Overall, the Facilities Services division is focused on ensuring compliance and does not have the staff capacity or tools to monitor schools after the site is approved, which would be necessary for involvement with a program such as LEED.

The impact of a proposed school site on the surrounding community members is seen as a local issue by the Facilities Services division (Rowland and Allen 2014). In general, the LBOE is trusted to consider community impacts, and GaDOE is willing to provide opinions if solicited. In addition, GaDOE does not have the staff or tools to evaluate community impacts. However, GaDOE does recognize that there are multiple ways that a school location can significantly impact a community. The main challenge with sunshine laws of transparency is that the LBOE needs some privacy during land acquisition negotiations in order for the district to not be charged more than market value for a proposed site. Thus, a trade-off exists between the board's element of secrecy and public participation in the school siting process. To address this trade-off issue, Mike Rowland of the Facilities Services division within GaDOE advocated for appointing a

¹⁵ Effective May 30, 2012

¹⁶ Effective May 30, 2012

¹⁷ Effective July 25, 2010

small number of community members (e.g., six to twelve) to form a committee for each school district that could recommend potential new sites to the school board and provide input on the board's ideas. At the same time, he is adamantly against legislating this process because GaDOE does not want to imply that the LBOE is incompetent. Instead, if a community committee were to be required, they would need to include a monitoring element to ensure participation is in alignment with the statutes. Better yet, community participation strategies could be outlined as a best practice. The five-year facilities plan required of every school system in Georgia (as discussed in Section 2.4) is the assessment element required by GaDOE that includes community input in the process to evaluate impacts of changes to school district facilities.

Georgia law used to require school districts to hold a public hearing prior to closing a school facility (Drake and Williams 2014b). However, if the public opposed the closing, the school board of education could still close the school if it deemed the closing was in the best interest of all students in the district (Rowland and Allen 2014). Since there was no remedy under the law, the public hearing requirement was removed during a 2012 amendment. As described in Section 2.4, school board members are elected in Georgia to represent their constituency, and as such, they are charged with making school decisions in the best interest of the school community.

Local Requirements

The majority of municipalities in Georgia do not have any requirements for public school districts to comply with in order to site a school facility. Any local regulations that do come into play are usually through inspections of the built facilities, but these inspections have no weight on where a school is actually located. Note, however, that private schools are subjected to regulations in several jurisdictions that do influence the process of selecting a site (e.g., Newton County requires minimum acreages for private schools based on student enrollment [Newton County Department of Development Services 1999]). Table 7.3.2-1 summarizes the applicability of zoning requirements and permit fees to the four case study school districts. The local requirements vary within Georgia, and thus, the four case study districts are chosen to represent the spectrum of school district typologies.

Table 7.3.2-1: Applicability of Zoning Code Requirements and Permit Fees for Case Study School Districts

Location	Subject to Zoning Requirements?	Subject to Permit Fees?
City of Decatur, GA	Yes	No
DeKalb County, GA	No	No
Macon-Bibb County, GA	No	No
Newton County, GA	No	No

In summary, local municipalities in Georgia exempt school districts from paying permit application fees, but more notably, the majority also exempt school districts from zoning requirements and conforming to surrounding land uses.

City of Decatur

The City of Decatur Zoning Ordinance regulates public and private school locations through the Institutional District requirements as a “conditional principal and accessory use” as defined in Article VII, Section 7.6 of the zoning ordinances and elaborated on in Section 10.10 (City of Decatur 2013). Thus, per the ordinance, school districts have to follow the zoning requirements and submit a rezoning request to the city before locating a facility. In addition, the school district has to comply with land disturbance and building codes as would any other applicant for development, but the fees are waived for the building permit for schools (Maximuk, Thompson, and Brewer 2014). An institutional site plan is also required as part of the institutional district requirements, and any changes to the plan have to be submitted to the City Commission for approval. This institutional zoning forces a school system to have a more forward-thinking approach to planning (Maximuk, Thompson, and Brewer 2014).

The City of Decatur has not had a new school locate on a greenfield location for several years. However, the institutional district requirements are in place to help ensure that a school is located responsibly. Per Decatur Planning Director, Amanda Thompson, the city would theoretically prevent a school from locating in an undesirable location by denying the zoning amendment for the proposed property (Maximuk, Thompson, and Brewer 2014). The City of Decatur has experienced rapid growth in recent years, and the city and school district are working together on an annexation master plan that is in the best interest of both entities (Maximuk, Thompson, and Brewer 2014). At the time, there are not additional requirements the city would like to impose on the school district as they implied they already have adequate authority over the school board’s siting decisions.

DeKalb County

DeKalb County regulations exempt the DeKalb County School District from rezoning and fee payments. Schools are required to submit applications for a building permit, land development permit (required for any major digging or grading on-site), sewer tap application, water meter application, and a Fats, Oils, and Grease (FOG) evaluation (DeKalb County Department of Planning & Sustainability 2013). Because the school district does not have to abide by zoning laws, it is able to acquire properties wherever and adjust the capacity of existing schools by adding temporary trailers (Douse et al. 2014). DeKalb County tries to issue permits for facility plans as fast as possible and generally meets with the school district’s construction and engineering personnel to facilitate the permitting process. The pressure is on the school district to set up the trailers over the summer between academic years and then for the county to perform inspections of the facilities before the start of the school year in mid-August.

Macon-Bibb County

The Macon-Bibb County Planning and Zoning Commission was officially created in 1952 based on a 1947 Georgia special constitutional amendment that enabled the City of Macon and Bibb County to form the joint commission (Macon-Bibb County Planning and Zoning Commission 2008). The planning commissioners have final say in planning and zoning decisions for the city and county; in other words, the commission has the authority to adopt zoning regulations, maps, and planning standards as well as administer and enforce the codes. Public schools are exempt from the zoning regulations and do not have to submit or pay anything to the planning department before locating a school facility (Tussing 2014). In the early 1990s, the commission attempted to pull together a policy committee

including the Bibb County Schools Board of Education to draft the comprehensive plan, but this proposed policy committee idea lost traction and did not occur.

Although schools are exempt from zoning regulations, schools usually still follow where population growth is taking place (Tussing 2014). Notably, the school district utilizes employment and population data and projections to estimate school enrollment provided by the Planning and Zoning Commission. Therefore, the school district is accounting for the same population that the local government is planning for. Similarly, the Macon-Bibb County Planning and Zoning Commission has shared data from their transportation modeling with the school board upon request. If the school district chooses to site a facility where all necessary utilities do not currently exist, the district is responsible for paying to install the facilities. Accordingly, school districts do not locate outside of existing services areas and generally locate along minor arterial streets and near collector streets.

In general, the Macon-Bibb Planning and Zoning Commission has been reluctant to intervene with the Bibb County Schools Board of Education because they are unpaid volunteers for the district (Tussing 2014). The school board usually coordinates with the infrastructure factions within the Macon-Bibb County government, including the county engineering department, transportation department, and water authority (sewer planning) before they made their decisions; however, this is not required of the school district. Per discussions with Don Tussing, there are not any requirements from which schools are currently exempt that the planning and zoning commission would like to make applicable to schools.

Newton County

Newton County's Code of Ordinances incorporates the 1999 Zoning Code by reference (County 2001). The zoning code includes few requirements that apply to public K-12 schools (Newton County Department of Development Services 1999).^{18,19} Section 515-020 includes minimum off-street parking requirements for schools and does not explicitly exempt public K-12 schools. Specifically, the greater of one parking space per four seats in an assembly hall or outdoor stadium or two spaces per class in an elementary school or five spaces per classroom in a high school should be located in an off-street parking area at a minimum.

School Districts

The Georgia Constitution grants authority to county and area boards of education to establish and maintain public schools within their limits with some provisions (Office of the Secretary of State 2013, 61). Notable to school siting, local school boards of education are responsible for developing an Educational Facilities Construction Plan once every five-years that inventories existing school system facilities and identifies needs for the upcoming five-year period per O.C.G.A. 160-5-4-.01. All of our case study districts comply with this

¹⁸ Section 510-050 explicitly exempts Newton County Board of Education schools from standards that apply to amphitheaters, stadiums, and concert halls.

¹⁹ Section 510-570 regulates K-12 private schools, including minimum lot size specifications, the location of athletic fields, and buffers from residential zones.

requirement. The plan must be submitted to GaDOE for approval, but the local school board has the ability to propose the priority of projects, sources of funding, and forecasted needs of the local school system. The school district staff generally plays a central role in collecting, compiling, and providing information on the status of the district's facilities and students. However, the local school board has the final approval at the local level before the plan is sent to GaDOE for approval. Similarly, the LBOE grants the final approval of any proposed school site before submitting an Educational Facility Site Selection application to GaDOE, but the school district personnel often assist the board with the decision-making process. The following sections detail the assessments that the case study school districts in Georgia undertake in school facility location decisions.

City Schools of Decatur

The City Schools of Decatur district has not sited a school in a new location for many years, although the district has renovated and/or reopened schools on existing school facility sites. However, the district is experiencing increasing growth and demand for additional capacity in the schools, and as such, the district is trying to locate suitable vacant parcels in Decatur (Jones 2014).²⁰ For the recent projects on existing sites, the school district received a large amount of community input, although the input went beyond simply location considerations and into the district's system (e.g., input on reconfiguring the school district to have fourth and fifth grade students all in one location). In addition, Lewis Jones noted that walkable schools are a huge concern in Decatur, and as such, a committee of parents and school leadership came up with recommendations to obtain five objectives (walkability being one) for the school board to consider when redrawing the school attendance zones.

Per school board member Lewis Jones, it is unclear exactly what sort of assessments the board would require of City Schools of Decatur facilities personnel in order to evaluate a potential school site or if there is already a policy in place because the district has not located on a new site in many years (Jones 2014). However, he did note that the board would likely look beyond the requirements of GaDOE to decide on a new school location.

DeKalb County School District

The DeKalb County School District Board of Education is involved in any decisions related to opening or closing a school, and the superintendent acts as the conduit between district staff and the school board. The planning department conducts the evaluation of proposed new school sites and submits the application forms to GaDOE. Included in this process are the floodplain letter from the Georgia Department of Natural Resources (GDNR), GDOT letter, risk hazard assessment, Phase I environmental assessment, etc. as previously mentioned in Section 2.6. Per Dan Drake, while GaDOE has included provisions in their approval of school sites to carry out certain tasks related to the risk assessment, it is very rare that GaDOE determines a proposed site is unfeasible (Drake and Williams 2014).

²⁰ Lewis Jones referenced that there is quite a lot of vacant residential land but only a small amount of commercial land. However, the City of Decatur would like to retain this commercial land for business that would build the city's tax base.

The DeKalb County School District is currently space constrained in areas where new school facility needs are anticipated in that greenfield properties mostly do not exist (Drake and Williams 2014). Generally, the DeKalb County School District looks to rebuild school facilities on existing sites or locate a new facility as close to an existing site as possible or on district-owned land. If the district needs to acquire new property for a school site, the facilities planning department tries to avoid building on greenfield sites unless necessary. However, staff recognized that the land and development costs of potential properties would play a role in the siting decision.

Planners with the DeKalb County School District evaluate additional factors on top of GaDOE's requirements, although the school board mandates none of these (Drake and Williams 2014). For example, when Dan Drake joined the district in 2009, he brought the concept of conducting a walkability assessment as part of school siting and closing decisions. The division assesses walkability of the surrounding area and how many students are within one mile of school facilities. This evaluation is not mandated by the school board but rather is an internal best practice that the facilities planning division is trying to incorporate into their procedures for school siting. DeKalb County School District staff recognize the interconnectedness of all schools at all levels as well as the impact of moving attendance zones and school locations and attempt to be mindful in planning school sites. Another practice emerging within the DeKalb County School District is to conduct population projections essentially on a continuous basis. A lack of resources is the main reason the planning staff does not conduct more additional analyses.

Bibb County School District

When the Bibb County School District locates a new school facility, district staff generally evaluates the proposed site(s) according to GaDOE's Site Evaluation and Approval Forms (Stokes 2014). As part of this required GaDOE process, the district also works with GDOT to inform the department of the district's plans. Although a new school facility location has not been selected in several years in the Bibb County School District, the factors district staff would consider in evaluating sites include potential environmental hazards on and around the site, the cost and size of available land, and the need for property for the school district. As a current practice, the Bibb County School District is trying to either utilize facilities already owned by the district as a temporary school space or replace aging school buildings on existing district property.

Brenda Stokes opined that in Macon-Bibb County, the local school is typically thought of as the center of the community along with the church. However, discussions about proposed sites for purchase in the future will likely not include the public but rather happen behind closed doors during an executive session of the school board (Stokes 2014). Although she was not with the school district at the time, Stokes is fairly certain that this is what occurred when the school board was deciding between two potential sites for Weaver Middle School. Once the board has selected the site for a new school, then the district will engage nearby community members to inform them of the facility and see if there are any community space needs (e.g., running track), which is not required by GaDOE. However, this engagement occurs after a site has already been decided.

7.3.3 Alternative Options & Best Practices

The following sections examine the required siting review processes for other types of facilities as well as school siting guidelines from locations outside of Georgia, voluntary programs, and best practices.

Review Process for Non-School Development Sites in Georgia

Developments of Regional Impact

The Georgia Department of Community Affairs (DCA) oversees the “Developments of Regional Impact” (DRI) regulations included in the O.C.G.A. Chapter 110-12-3 (Georgia Department of Community Affairs 2014a). The DRI rules apply to all local governments and regional commissions in Georgia with the intent of improving communication between the local, regional, and state levels about new growth in order to maximize the benefits and minimize adverse impacts of a new development. Furthermore, the rules facilitate coordination with relevant transportation departments to ensure adequate transportation access and services to DRIs exist.

The DRI rules apply to any development project requesting some local government action that meets or exceeds specified thresholds per Section 110-12-3-.05(1)(a). K-12 schools are not included as a type of development subject to DRIs per this section. Note however that based on many of the square feet thresholds provided in the Thresholds Table for development types also located within communities (e.g., for office, commercial, mixed use, and post-secondary schools), many public school facilities in Georgia would exceed the DRI thresholds by meeting GaDOE’s minimum acreage requirements.

The local government is responsible for following the DRI rules when a proposed development applicant requests some local government action such as, “rezoning, annexation, zoning variance, building or land disturbance permit, hookup to water or sewer system, master or site plan approval, acceptance of a public street, signing off on a subdivision plat, comprehensive plan amendment, or entering into a contract” (Georgia Department of Community Affairs 2014a, 5). As most school districts in Georgia are exempt from rezoning, even if a school was included in the DRI thresholds, the process would not actually influence whether or not a school district can site a facility in their proposed location because the local government has no authority to deny a proposed site based on the local zoning code. However, school districts do have to apply for building and land permits as necessary, so if K-12 schools were to be added as development type in the DRI rules Thresholds Table, a proposed facility could potentially fall into the DRI category depending on size. A major benefit of the DRI review process that could also positively influence the school site selection process is the required communication with a wide variety of stakeholders to better inform the local government before making a rezoning decision.

Local Georgia Requirements for Non-School Facilities

Municipalities in Georgia have a variety of requirements for developers to abide by when applying to construct, modify, or remove a development on a site. Private and public developments that are comparable in land space needs to schools are especially subjected to a host of approval processes and regulations when locating a new facility. The following sections highlight some of the requirements in the case study areas. Note that facilities such as hospitals and industrial facilities are not included as comparable facility-types because they are generally

are very different from schools (e.g., often have large combustion equipment and higher noise levels than schools).

City of Decatur

The City of Decatur is an exception to the typical local requirements found within Georgia in that public schools are regulated within the Institutional District rules. The Institutional District in Decatur's zoning ordinances also includes many other facility types such as churches, gardens of varying sizes, public buildings, hospitals, infirmaries, sanitariums, and colleges as well as other uses that require a public hearing (e.g., communication towers, antennas, and personal-care homes). As discussed above, the City of Decatur already has the ability to deny any rezoning request submitted by the City Schools of Decatur under the Institutional District Zoning rules. Accordingly, the school district is effectively treated similarly to a private developer proposing a new facility on a new site.

DeKalb County, Macon-Bibb County, and Newton County

DeKalb County, Macon-Bibb County, and Newton County all have similar processes for developers to follow to site a new building, especially if the proposed use does not comply with existing zoning requirements. DeKalb County Planning and Zoning requires developments to either comply with the existing zoning ordinance or submit an application to rezone the land, which may or may not be approved. The first step in the process for developers is to have a pre-application meeting with Planning Division staff as well as hold a community meeting before submitting an application (DeKalb County Department of Planning & Sustainability 2011b). The community meeting has to be publicized to all surrounding community groups and neighborhood associations within one-half mile of the site as well as any property owners within 500 feet. Furthermore, the applicant is required to hold the meeting on a weeknight at 7 pm. This meeting time requirement was likely included to ensure that applicants cannot avoid concerned stakeholders by holding a meeting at an inconvenient time.

Applicants must follow a prescriptive process to submit an application and any amendments per DeKalb County's regulations. The application will be considered according to the standards and factors outlined in DeKalb County's Code of Ordinances, Chapter 27, Article V, Division 1, Section 27-832. After submittal, applicants must attend a community council meeting to present the proposal, including the proposed site plan as well as any other supporting illustrations, to the council and answer any questions (DeKalb County Department of Planning & Sustainability 2011a). There are five community councils in DeKalb County comprised of citizens appointed by the DeKalb County Board of Commissioners and meant to advise the Planning Commission and Board of Commissioners on rezoning, special land use permit, and land use amendment requests. A Planning Division staff member will also review the application and inspect the proposed site to provide recommendations for the Commission and Board. Following these review processes, an additional public notice is sent to the site's neighbors, signage is posted, and public hearings are held upon request. The DeKalb County Board of Commissioners renders the final, legally-binding decision of "Approval, Approval with Conditions, Denial, Deferral, Withdrawal, or Withdrawal without Prejudice" (DeKalb County Department of Planning & Sustainability 2011a, 3).

DeKalb County's Code of Ordinances, Chapter 27, Article V, Division 1, Section 27-833 allows zoning conditions to be 1) requested by an applicant; 2) recommended by the planning

department and/or planning commission; and/or 3) mandated by the Board of Commissioners as part of the final decision to amend the existing zoning as long as these conditions do not reduce the requirements of the district(s) involved (DeKalb County Department of Planning & Sustainability 2011a, 4). As such, the Board of Commissioners is able to impose conditions that “ameliorate the effect(s) of the proposed developmental change for the protection or benefit of neighboring persons or properties consistent with the purpose and intent of the district(s) involved, and the goals and objectives of the comprehensive plan and state law” (DeKalb County Georgia n.d.). Any zoning condition has to have a supported relationship with the impact(s) of the developmental change and should not be an exaction within the meaning of a Georgia Development Impact Fee Act.²¹

The Macon-Bibb County Planning and Zoning Commission also has a prescriptive process to change the zoning classification of a property, which is a legislative action that requires review and approval of the Commission at a public hearing (Macon-Bibb County Planning and Zoning Commission 2007). The minimum requirements also require a pre-application conference, public notice signage on the property, and attendance at public hearings. Newton County is also similar to DeKalb County and Macon-Bibb County in that developments either must comply with the existing zoning ordinance or submit an application to rezone the land (Newton County 2013). Pre-application review is required before an application is submitted, but unlike DeKalb County, the applicant does not have to hold a community meeting before submittal. Also similar to DeKalb County, the applicant must post public notice signage on the property and attend public meetings. Specifically in Newton County, the applicant must attend the Board of Commissioners meeting and Planning Commission Meeting that are held in the evenings on the third and fourth Tuesday of the month, respectively (Newton County 2013).

Environmental Protection Agency School Siting Guidelines

The U.S. Environmental Protection Agency (EPA) published their voluntary *School Siting Guidelines* in October 2011, as required by the Energy Independence and Security Act (EISA) that was enacted by Congress in December 2007 (U.S. EPA 2011b, 1). The guidelines are based on the following four principles:

1. Safe and healthy school environments are integral components of the education process (U.S. EPA 2011b, 5).
2. The environmental review process should be rigorous, thorough and well-documented, and include substantive and ongoing meaningful public involvement (U.S. EPA 2011b, 6).
3. Schools should be located in environments that contribute to the livability, sustainability and public health of neighborhoods and communities (U.S. EPA 2011b, 7).

²¹ Impact fees impose a charge on a new development for a portion of the additional capital facilities needed to serve it (Georgia Department of Community Affairs 2014b).

4. The school siting process should consider the environmental health and safety of the entire community, including disadvantaged and underserved populations (U.S. EPA 2011b, 9).

These guidelines include an in depth overview of environmental siting criteria and hazards review processes. More notably, a key difference of the EPA guidelines with GaDOE is the consideration of “meaningful public involvement” starting before and continuing throughout the entire siting process.

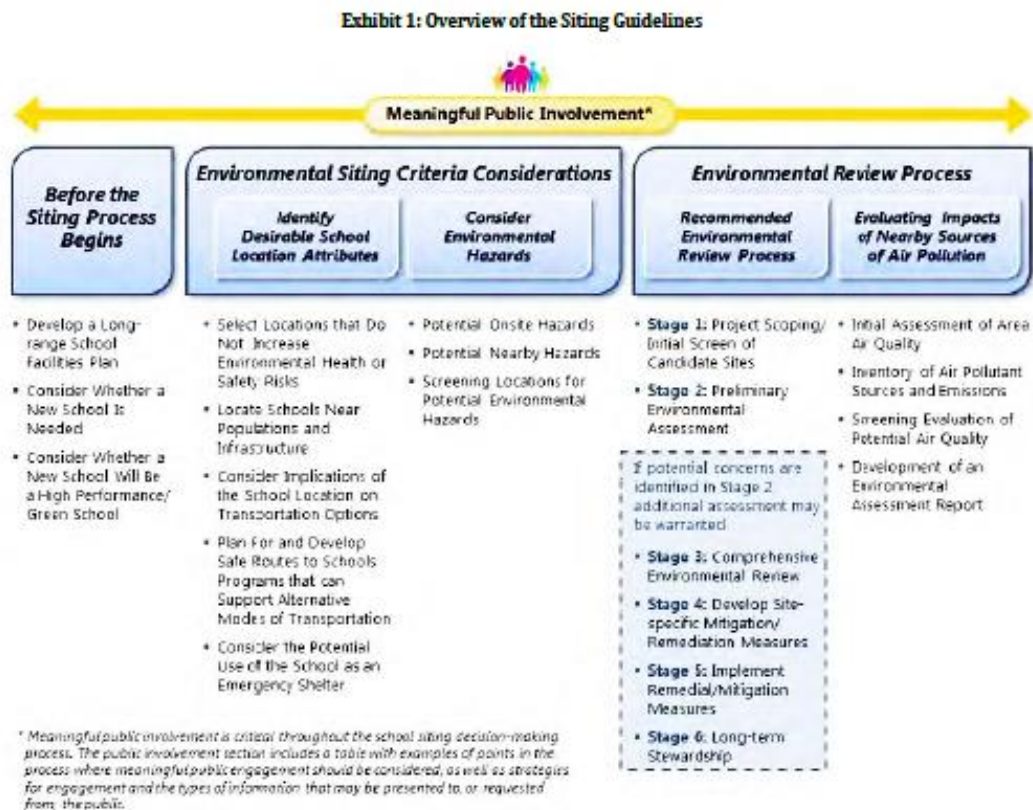


Figure 7.3.3-1: EPA’s Meaningful Public Involvement requirement

(Source: U.S. Environmental Protection Agency 2011, Exhibit 1)

U.S. EPA recognizes that local education agencies often develop long-range school facilities plans and that the agencies should be engaging with municipal officials and the community in developing these plans. Furthermore, when selecting a new school site, EPA recommends a school siting committee is formed comprised of all potential stakeholders to identify and evaluate potential locations. The school district together with the committee should develop and prioritize factors to consider when assessing potential sites; the guidelines provide a list of questions to consider to develop the criteria (U.S. EPA 2011b, 16). Chapter 3 of the EPA guidelines focus entirely on how to establish a meaningful public involvement process for school siting. Section 3.7 of the guidelines identifies specific opportunities for “meaningful” input from the public.

California Department of Education School Site Selection and Approval Guide

The School Facilities Planning Division for the California Department of Education (CDOE) published the *School Site Selection and Approval Guide* to help school districts with siting decisions, including selection criteria and the procedures school districts must follow to gain approval from the CDOE (School Facilities Planning Division 2014). CDOE stipulates that school districts evaluate at least three sites, and if not, the district must explain why in the initial site evaluation documentation. While not all elements in the guideline are necessarily applicable to each district, they are meant to act as a guide; adherence to the document is meant to assist school districts with obtaining approval from the CDOE on site selection. However, the main evaluation criteria in the guide (discussed below) are consistent with the *California Education Code*, *California Code of Regulations, Title 5*, *California Public Resources Code*, and the CDOE policies and guidelines.

The *School Site Selection and Approval Guide* begins with a discussion of setting up the school site selection process. The first main question is whether school district staff or community members will select the site. While it is at the discretion of each school district, the guide recommends that a selection team recommend a site or sites to the local board of education (School Facilities Planning Division 2014). This recommendation, different from published DOE literature, suggests that the site selection committee include community members (both with and without children in the district), school staff (teachers and administrators), public officials, and the design professional(s) selected by the school district to design the project. The guide explicitly notes that a selection team is likely to “produce a better school site” even though it may be a large group (School Facilities Planning Division 2014). In addition, the guide suggests that the site selection committee prioritize the selection criteria to be able to rank locations since often all factors cannot be clearly met, and to receive information and support on the selection process by seeking public comment.

The School Facilities Planning Division in CDOE requires an initial school site evaluation form (SFPD 4.0) that asks for basic information for each potential site, such as current land use or zoning surrounding site, historical use of the site, identification of potential issues, and ranking of the site compared to others. The School Facilities Planning Division for the CDOE developed screening and ranking procedures that are included in the *School Site Selection and Approval Guide* with explanations and work sheets. The procedures are based on the following:

- Safety
- Location
- Environment
- Soils
- Topography
- Size and shape
- Accessibility
- Public services
- Utilities
- Cost
- Availability
- Public appearance

Within the main criteria, CDOE developed secondary criteria to assist the selection team better understand and define the factors to consider. The three work sheets outline the criteria and cover the following: 1) a comprehensive examination of sites to determine strengths and weaknesses (Site Selection Criteria); 2) a ranking of each site (Site Selection Evaluation); and 3) a comparison of sites by the rating factors and total scoring (Comparative Evaluation of Candidate Sites) (School Facilities Planning Division 2014). Furthermore, school districts are not limited to the criteria mandated by CDOE.

Alaska Department of Education & Early Development: Site Selection Criteria and Evaluation Handbook

Alaska Department of Education (ADOE) developed a handbook overviewing the school site selection process in the state (Kito and Thomas 2011). In Alaska, state regulations require review and approval of projects by the ADOE to ensure it is, “in the best interest of the state” (Kito and Thomas 2011, 2). Thus, the procedures identified in the handbook are meant to guide Alaska school districts in evaluating suitability of potential school sites. The basic process is to identify site selection elements, assign weighting factors, apply ranking criteria, and tabulate and analyze the results.



Figure 7.3.3-2: Alaska Department of Education and Early Development school siting guidelines process

The handbook begins by identifying the basic site selection elements that fall under three general categories: social and land use factors; construction cost factors; and operations and maintenance cost factors. The handbook also provides guidance on developing weighting factors based on the ideologies specific to each district/community and applying these to the various elements. The weighting factors should be established through a forum(s) that develops consensus among all community members affected by the school project.

The handbook provides specific instructions on how to assign a score for each criteria element based on how a proposed site aligns with the state’s standard. For example for

“proximity to population to be served”, the handbook establishes the standard criteria, and then lists scores based on the various percentages of the student population that is within the standard as shown in Figure 7.3.3-3 (Kito and Thomas 2011, 6). Note, the handbook does allow for a school district to include additional criteria that are important to the district but requires a consultation with the ADOE to gain their approval.

Criteria: Ideally, all students served by the school would be in convenient, safe walking distance to the site. In communities with roads, convenient vehicle/bus travel is also important. Evaluate this criterion using the anticipated population distribution when the school is at capacity (i.e. 5 year post-occupancy). Use the following standard, evaluating for both elements and using the lowest score: <input type="checkbox"/> 50% of students served are within reasonable walking distance (i.e. ¼ mile or less) and, <input type="checkbox"/> 90% of students served are within a 15 minute vehicle/bus ride	
Evaluation:	Scores:
Proximity of student population is 40% or more below standard	0
Proximity of student population is within 20% of standard	1
Proximity of student population is within 10% of standard	2
Proximity of student population is equal to standard	3
Proximity of student population is 10% or more above standard	4

Figure 7.3.3-3: Alaska DOE siting criteria & evaluation – proximity to population to be served

The siting process concludes with an evaluation step. The handbook includes a Site Evaluation Matrix to populate with weighting factors and scores in order to calculate an overall score within each of the three general categories of criteria and overall. In addition to simply the matrix, ADOE asks for an evaluation report with an introduction and executive summary; maps and graphics; and narratives describing the evaluation matrix at a minimum in order to support the site selection (Kito and Thomas 2011, 24).

Hamilton Springs Transit-Oriented Development: School Siting Health Impact Assessment

The Nashville Area Metropolitan Planning Organization (MPO) published the Hamilton Springs Transit-Oriented Development School Siting Health Impact Assessment (HIA) in 2013 that evaluates how locating a school within this transit-oriented development (TOD) in Lebanon, Tennessee could potentially impact student health (Sequeira and Meehan 2013). The HIA identified several positive health benefits from locating a school within the TOD project. Additionally, four recommendations were identified specific to the Hamilton Springs TOD school site and next steps for improving the school siting process were suggested.

While the proposed site for the school was identified prior to beginning the HIA project and the site was not selected as a result of the HIA, evaluation tools from the HIA as well as several valuable findings and next steps can still be carried through to the site selection process for other schools. One evaluation tool used by the HIA team was to use heat mapping. In other words, the team collected different types of data and compiled them into a map format that then enabled the team to view multiple criteria in a single map and analyze the relationships (Sequeira and Meehan 2013, 19). Figure 7.3.3-4 shows two heat maps used in the HIA analysis.

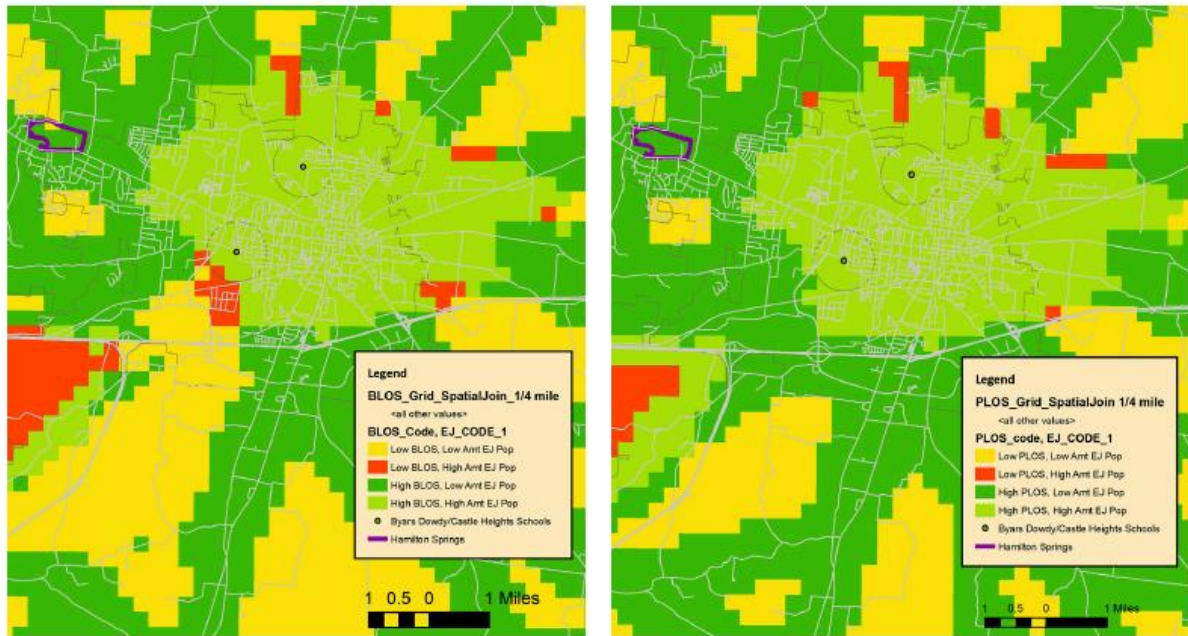


Figure 6. Bicycle Level of Service (BLOS), right, and Pedestrian Level of Service (PLOS), left.
Source: Nashville Area MPO

Figure 7.3.3-4: Hamilton Springs TOD school siting HIA heat map samples

The HIA report recognized that many school districts select new school sites based mainly on land purchase costs (Sequeira and Meehan 2013, 4). Furthermore, through the HIA research and stakeholder meetings, the need for a tool to help decision-makers better identify and understand the range of cost considerations related to school siting was identified. Accordingly, a key next step stemming from the HIA is to develop a school-site cost calculator and compile guidance school siting policies to assist local school districts with siting decisions.

Leadership in Energy and Environmental Design for Schools

The Leadership in Energy and Environmental Design (LEED) voluntary certification system is essentially a rating system for the design, construction, operation, and maintenance of “green” buildings, homes, and neighborhoods. LEED for Schools was established in 2009 and is the rating system specifically applicable to K-12 schools (U.S. Green Building Council 2013). There are several main sections with subcriteria in the LEED for Schools checklist for a school to gain points to become LEED certified, which include Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources, Indoor Environmental Quality, and Innovation & Design Process.

Within the Sustainable Sites category, two minimum requirements exist with the intents as follows:

1. Reduce pollution from construction activities by controlling soil erosion, waterway sedimentation, and airborne dust generation (U.S. Green Building Council 2013, 1).

2. Ensure that the site is assessed for environmental contamination and if contaminated, that the environmental contamination has been remediated to protect children's health (U.S. Green Building Council 2013, 2).

The second requires a Phase I Environmental Site Assessment, which is also required by GaDOE. In addition, remediation is required for contaminated sites, and if a site is located within 1,000 feet of either an historical or past landfill, it is prohibited. There is also a separate credit for selecting a brownfield site to remediate and redevelop for a school facility.

On top of the Site Selection prerequisites, LEED for Schools includes many other criteria that a school site may comply with to obtain points towards LEED certification. Notable to selecting a school location is to avoid development of an inappropriate site such as on prime farmland, habitat of a threatened species, previously undeveloped land within a certain distance of different water bodies, and low-lying areas (U.S. Green Building Council 2013, 3). Also, a credit is offered for developing a school in an urban area with existing infrastructure via either locating in a densely developed area or in a location that has connectivity with residences, basic services, and pedestrian access (U.S. Green Building Council 2013, 4).

There are four different credit categories in LEED for Schools related to alternative transportation. Of these, Credit 4.1, *Public Transportation Access*, and Credit 4.4, *Parking Capacity*, are more likely to be achieved if the initial site selection is appropriate (U.S. Green Building Council 2013).²² If a school wishes to achieve the parking capacity credit, then the district does not need to choose such a large parcel of land because it will not need to accommodate large parking lot or structure. More relevant when selecting a school site however is providing access to public transportation. LEED for schools includes proximity to a 1) rail station, bus rapid transit station, or ferry terminal; 2) bus stop; 3) pedestrian access; and 4) rideshare all as options (U.S. Green Building Council 2013, 7).

Several of the other Site Selection credits within LEED for School are more relevant to the process of designing and developing the site after it has been selected. However, keeping these factors in mind while selecting a school site is important to be able to achieve the credits. These design-oriented site selection credits include criteria such as maximize open space, do not disturb natural hydrology or design for stormwater quantity and quality control, minimize the heat island effect through the design of roof and non-roof surfaces, minimize light pollution, and integrate with the community through the joint use of facilities. Finally, LEED for Schools includes a credit for the development of a site master plan in collaboration with the school board to ensure that the issues identified are carried throughout the development process. Overall, in conjunction with state and local board of education requirements, LEED for Schools provides more thoughtful criteria to consider in the school site selection process.

Traffic Impact Assessment

A traffic impact assessment or traffic impact analysis (TIA) assesses the adequacy of existing and planned transportation infrastructure to accommodate a proposed project as well as the

²² The other two credits are related to the design of the school site after it has been selected.

project's impacts on traffic and potential mitigation measures (Massachusetts Department of Transportation 2014). When well-prepared, the school district along with its partner agencies and the general public have access to reliable information that can assist with making effective decisions on where to locate a school and measures to mitigate traffic impacts.

The Champaign Unit 4 School District completed two TIAs in 2014 for two different sites under consideration for a new high school facility in the City of Champaign, Illinois, anticipated to open in 2017 (Champaign County Regional Planning Commission 2014a, b). Each TIA included the following sections:

1. Introduction with background information
2. Existing conditions analysis
3. Traffic crash analysis
4. Proposed school traffic (trip generation and trip distribution)
5. Project impacts
6. Recommendations

The existing conditions analyses looked at current traffic operation on the existing roadways and intersections. The Spalding site analysis also included an additional section purely focused on pedestrian and bicycle facilities (e.g., sidewalks) around the proposed site and the history of bicycle and pedestrian crashes, whereas the Olympian and Market Street site only noted the nonexistence of pedestrian push buttons at certain intersections and pedestrian and bicycle crashes (Champaign County Regional Planning Commission 2014a, b). The individual TIAs do not state that one site is better than the other for the proposed high school, but instead, these documents conclude with recommendations to address the TIA findings for each site (e.g., extension of an existing street to facilitate access to the proposed school site). Information on the potential traffic impacts for the proposed sites together with the recommendations will be useful for the school district to consider when evaluating and comparing the two potential high school locations.

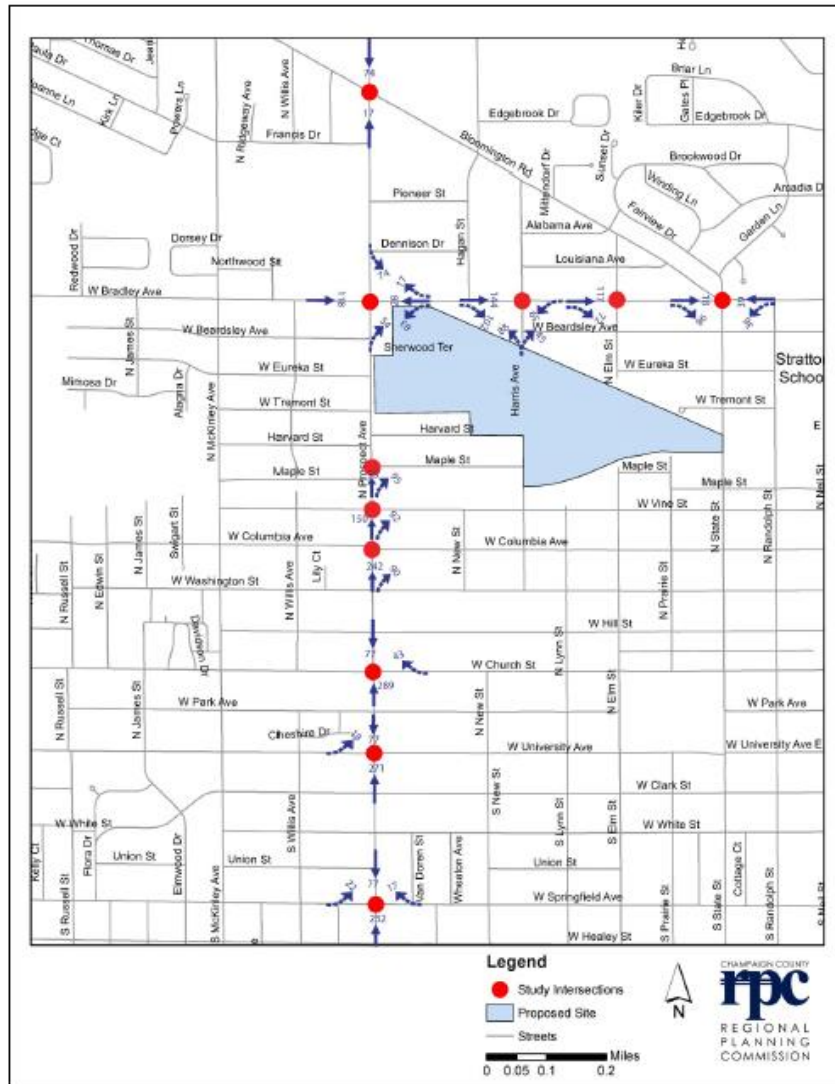


Figure 7.3.3-5: Traffic generated by proposed Spalding site during AM peak hour

(Source: Champaign County Regional Planning Commission 2014a, 21)

7.3.4 Assessment of Current Conditions

The current process of analytical assessments required for school siting in Georgia has both strengths and weaknesses. With budgets being a common concern for school districts, and thus district-level facilities staff often pressed for resources (including time and money, as mentioned by DeKalb County School District) to complete their daily tasks, expanding the assessments required for schools to site a new facility is likely to be viewed as a burden to the district (Drake et al. 2014). Likewise, if a school district is not going beyond GaDOE's requirements to select sites, it is generally because of constrained resources.

While the current system is meant to afford local school districts and boards of education flexibility in site selection as well as the ability to seek a competitive land price, this is often at

the expense of transparency. For example, the process to select a site for the new Atlanta Public Schools high school was kept very silent so as not to affect property values among other factors. Unfortunately, the chosen site is not an ideal location for most students, staff, and community members, but the cost of the site was probably much lower than the alternative site that was considered (Rawlings, Barton, and Stokes 2014). As discussed previously, non-school developments in Georgia have to apply for rezoning if the proposed development does not conform to the existing zoning, and zoning conditions can be placed on these developments by the local municipality. However, schools districts not subjected to zoning requirements are not held accountable for how a proposed site fits with the surrounding land use nor do districts have to reveal the criteria used to pick a school location. Notable to school siting, rezoning applications are reviewed with the following standards and factors in mind (DeKalb County Department of Planning & Sustainability 2011a):

- Whether the zoning proposal is in conformity with the policy and intent of the Comprehensive Plan (Sec. 27-832.A).
- Whether there are other existing or changing conditions affecting the use and development of the property which give supporting grounds for either approval or disapproval of the zoning proposal (Sec. 27-832.E).
- Whether the zoning proposal will result in a use which will or could cause excessive or burdensome use of existing streets, transportation facilities, utilities or schools (Sec. 27-832.G).

The rezoning application review process requires the applicant to follow procedures that engage the surrounding community members for input. A major strength of this system is that it adds transparency to the public on the decision-making process. In addition, the ability of the local government to add conditions along with an approval of a rezoning request makes it possible for a school district to be held accountable for mitigating the adverse impacts of its siting decisions. Similarly, transparency and accountability could be added into the school siting process through the formation of a site committee comprised of a range of stakeholders (e.g., as in EPA's guidelines and CDOE's guidelines) and/or through the inclusion of a public comment period to develop site criteria to evaluate for proposed facilities (e.g., as in Alaska). These practices shift school siting decision-making power from being only a school board decision made behind closed doors to a community-informed process.

Additional analyses in the school siting process could potentially make a significant difference in where a school is located. In the case of Champaign Unit #4 School District in Illinois, the TIAs completed in 2014 equip decision-makers with information that may aid in selecting a new high school site that fits better into its transportation surroundings. Currently in Georgia, there are no state-level incentives for schools to conduct additional analyses, particularly one focused on community impacts. However, internally some districts perform certain assessments to help them decide which site functions better for their student and staff population (e.g., walkability assessments by the DeKalb County School District). Yet schools without the time, financial resources, or staff knowledge are unlikely to undertake additional analyses without some form of assistance or an incentive by the local municipality or GaDOE.

7.3.5 Recommendations

The current school siting process provides a solid basis for identifying threats to the school and its natural environment but also exhibits several gaps. From a process perspective, these gaps include the lack of accountability, transparency, and resources (financial, technical, staff expertise, etc.). From a content perspective, school assessments of traffic and health impacts are inadequate. The following recommendations attempt to address these gaps in the current school siting process.

Require Site Selection Committee

GaDOE should require each LBOE to establish a site selection committee comprised of district personnel, community officials, and community members to advise the local board on potential sites.

The current GaDOE school siting process does not require the LBOE to obtain any community input before submitting a proposed school site for approval. This lack of transparency in the process often leads to decisions made behind closed doors in school board-only meetings, with the real estate price often the only significant criteria factored into the decision. This may result in lower public acceptance of the proposed school site and a school location that is not compatible with surrounding uses.

To implement this requirement, GaDOE should establish criteria for forming a selection committee, including minimum number of members, terms of membership, and the process for engaging the committee in siting discussions and decisions. In addition, GaDOE should suggest the backgrounds of community members to include on the school siting committee (e.g., a local parent, local business owner, etc.). Ideally the committee should also involve school district personnel and an official from the local municipality, preferably someone from the planning and zoning department. GaDOE should consult other states and the U.S. EPA's School Siting Guidelines for best practices and input on what has been effective elsewhere.

Evaluate and Compare Multiple Sites

GaDOE should require each school district to evaluate more than one potential site and document the factors that carry weight in their assessment of each site.

The current siting process only requires the LBOE to submit one potential school site to GaDOE for approval. In addition, the application for site approval does not include any evaluation criteria to support the decision of a proposed site. Instead, the application requires school boards to identify issues with an already selected proposed site and related potential mitigation methods. While the current school siting process provides local school boards with flexibility when selecting a new site, it does not hold the boards accountable for their decisions nor provide transparency concerning the decision process. Accountability in a siting decision should require comparison between more than one site and documentation of the factors that governed site selection. This lack of accountability and transparency allows school sites to be selected based on price or on-site characteristics prior to considering off-site impacts of the decision.

GaDOE should first examine the existing or proposed evaluation requirements in other states and proposed by other guidelines, such as by the Alaska Department of Education and Early

Development. Then, GaDOE should reconfigure their *Guideline for Educational Facility Site Selection* to reformat the required elements into factors to be evaluated with associated scoring criteria guidelines. In other words, rather than applicants strictly providing the required forms and associated information for a school siting application in Georgia, applicants would be evaluating each factor and assigning a score, and then be able to assess the compilation of all of the siting elements holistically. In addition, GaDOE's revised *Guideline* should establish community engagement procedures to help develop the criteria and scoring factors to evaluate each site. Finally, GaDOE should require a comparison of multiple site evaluations to be included with a school district's proposed site selection to hold the school board accountable for how one site was selected over another.

Create Guidelines for Calculating Multiple Costs

GaDOE should develop guidelines or a calculator for evaluating the multiple costs that are involved with siting a new school.

The real estate decision often occurs before any other analyses are performed for a proposed school site in Georgia, but the cost of land is not the only financial variable in the total costs of a school site. However, many school boards and districts lack the expertise or resources to fully consider the range of costs associated with their school siting decision. Accordingly, the school board risks proposing a site to GaDOE without being fully informed of the potential total costs of the site.

GaDOE should survey several school districts within the state of Georgia to compile a comprehensive list of costs incurred from siting a new school, such as installing the necessary utilities infrastructure to the site, mitigating traffic impacts, and resource pooling from joint-use agreements. In addition, GaDOE should look to departments of education in other states and at existing guidance documents for input on costs to consider that relate to school sites. At a minimum, publishing this list even if it's without information on how to calculate the costs will educate school boards on additional costs to consider before selecting a school site.

Complete Traffic Evaluations Prior to GaDOE Site Approval

GaDOE should require local school boards to obtain a completed traffic study from GDOT, the local transportation department, or school district transportation specialists before submitting an application for site approval.

Currently, GaDOE's *Guideline for Educational Facility Site Selection* requires a school district to submit a notification letter to the GDOT and the local road commission stating the proposed plans, and to address the questions related to traffic in the Site Evaluation and Approval Form for submittal to GaDOE (GaDOE 2012a). These ask the applicant to rank traffic conditions around the site from congested to light and vehicular access to the site from "excellent potential" to "development difficult" (GaDOE 2012a, 10). However, GDOT or the local road commission (depending on the proposed site's location) then does not perform a traffic evaluation until after the site is approved (GaDOE 2012a, 4). As such, school boards are proposing sites without any information on the existing traffic situation and potential transportation impacts from a school.

To implement this requirement, GaDOE should update its guidelines and regulations to require the school system to coordinate the completion of the road evaluation rather than just a notification letter. Keeping the current minimum requirements, the following aspects of a proposed school site's road accessibility should be included in the evaluation per the *Guideline for Educational Facility Site Selection* (GaDOE 2012a, 4):

- Adequate sight distance for vehicle speeds on the main highway and for vehicles departing the proposed facility.
- Adequate spacing between points of access and the nearest signalized intersection
- Depending on the main highway traffic volumes, consideration should be given for driveways that are one way in and one way out. This is especially true for proposed high school facilities where new student drivers will represent a higher percentage of the traffic.
- Posted speed limit on the main highway
- The need for left and right turn lanes must be evaluated
- Adequate campus and entrance way
- Adequate pedestrian movement for access into the proposed site, including handicap access

If upon consulting other departments of education and guidelines GaDOE finds additional requirements appropriate and not overly burdensome to school districts, GaDOE could expand these minimum requirements as appropriate.

Incentivize School Districts to Address Findings from Site Evaluations

GaDOE should provide an incentive for school districts and/or local municipalities to address the findings from completed analyses prior to opening a school on a new site.

At present, school districts are not necessarily required to act on the outcomes of the assessments done to propose a new school site. For example, GDOT and the local road commission are not obligated to fund any of the necessary traffic improvements discovered as part of the school site traffic evaluation. This lack of follow through fails to hold school boards and districts accountable for the impacts of their decision about where to locate a new school, and thus, school boards have no incentive to seriously consider potential off-site impacts before selecting a site.

GaDOE should first determine an appropriate funding mechanism or other financial relief for the school district to implement proposed changes. The challenge is to balance what is required of the school district versus the local road authority and/or GDOT. If it is the school board's decision to locate the site, then they should be the one to have to fund any necessary changes to address their impacts, as is currently required of most developments of regional impact. Otherwise, the school places unnecessary burden on the municipality or GDOT. However, due to insufficient resources at the local school district level, GaDOE should work with federal and state funds for education and transportation to provide feasible options for school districts.

Incentivize School Districts to Conduct Additional Assessments

GaDOE should incentivize local school districts to conduct assessments of a proposed school site in addition to GaDOE's required evaluations for site approval.

Many local school districts only conduct the evaluations prescribed by GaDOE to obtain approval of a proposed school site, and an often-cited reason is the lack of financial, technical, and staff resources to do more than the minimum requirements for approval. However, additional assessments enable local boards and districts to make a more fully informed decision prior to deciding on a school site. As discussed in Section 5.1 and above, DeKalb County School District planners evaluate the walkability of school sites, which is not required by GaDOE nor does the school board mandate the assessment (Drake and Williams 2014). The division assesses walkability of the surrounding area and how many students are within one mile of school facilities as an internal best practice for the facilities planning division.

Specific assessments that should be encouraged across Georgia include walkability assessments, traffic impact assessments, and health impact assessments (HIA). HIAs incorporate community participation and push school districts to consider their impacts on the broader community. Walkability assessments are often an element of HIAs, but they provide useful information on how a location relates to the student and staff population even if completed independent of a full HIA.²³ Traffic impact assessments can be valuable to see how a proposed location may impact transportation systems and help advise the school board and district on which site to propose as well as what site designs may help mitigate adverse traffic impacts once a school location is selected. GaDOE should work with local municipalities to determine appropriate incentives for encouraging school districts to use more assessments. This would enable local school boards and districts to make a better informed decision on which school site to propose.

²³ GaDOE and school districts should consult published research and guidelines that provide information on appropriate walking distances for different age groups and locations.

8 Conclusion

The purpose of this report was to understand the current school siting process in Georgia and to explore how siting decisions influence school districts and their respective communities for years to come. Our research concludes that siting and design of schools is of central importance in planning and maintaining sustainable communities, and that its impact is evident in wide-ranging community spheres including transportation, the environment, health, economics, and social equity. Literature indicates that the myriad direct and indirect implications that stem from poor school placement can be addressed by intervening in three areas: modes of access around schools, siting and location practices, and siting processes.

Modes of access include **active transportation**, mainly walking or biking, improve student health but depend on factors such as distance to school, quality of infrastructure, and individual motivation. **Alternative transportation systems** can also be considered to reduce school bus and private vehicle congestion by facilitating more public transit use and saving costs related to parking and bussing at the school site.

Siting and location elements include the actual **site design**, which is largely shaped by state policies around size minimums and linked to capital funding. At the same time, campus size requirements and a desire for inexpensive land can lead to undesirable greenfield **siting locations** which promote undesirable sprawl development. **Shared use** of facilities, such as athletic fields and libraries, is uncommon practice but can benefit both schools the community by providing needed resources in a more cost-and land-efficient manner.

School siting processes often do not require direct **community involvement**, which isolates schools from residents and protects districts from understanding how the school may negatively impact a large population. Although **intergovernmental coordination** is lacking between autonomous school districts and local governments, it is mutually beneficial and promotes communication, data sharing, and collaborative goal setting. Districts could also expand their existing transportation and environmental **siting analytics** by including health assessments to make decision-makers more informed and accountable.

Unfortunately state and district policies are not always conducive to good decisions regarding facility planning, siting, building, and management. Georgia localities can strengthen the relationship between public schools and their communities by reforming school siting policy and practices as presented in this document. Recommendations aim to address the eight overarching objectives that have emerged from the school siting literature and were presented above.

- **Require an education component for comprehensive plans**
The Georgia Department of Community Affairs should require that local comprehensive plans account for future school sites. GaDOE should require school systems to review applicable comprehensive plans when school siting.

- **Require active participation**
GaDOE should enact policies to encourage school districts to include active public involvement in facility management and school siting decisions.
- **Require school siting committees**
The state should require that school districts have a school siting committee composed of school board members, local government officials, and community members to discuss potential school sites.
- **Incentivize supplemental studies**
The Department of Education should incentivize school districts to conduct community-based siting assessments, such as health impact assessments (HIAs) and traffic impact assessments (TIAs).
- **Replace minimum acreage requirements with maximums**
Minimum acreage requirements often force schools to locate on large lots in fringe areas. This can limit walking or biking to school. Maximum acreage requirements coupled with a variance procedure are an alternative designed to decrease school size.
- **Create policies that account for a variety of locales**
Current siting policies do not distinguish between school sites located in urban, suburban, or rural land areas. This distinction should be made in policies that affect acreage requirements, building footprint, and land needed for parking, recreation facilities, circulation, and natural resource conservation
- **Encourage and support shared use agreements**
School districts should encourage the shared use of facilities between a school and the wider community. School districts should design school facilities that support shared use and create a governance structure to manage shared use of facilities and address budgeting, scheduling, liability, and insurance issues.
- **Create Safe Routes to School Programs where eligible**
Safe Routes to School, through non-infrastructure programs, can motivate more students to walk or bike to school, and can also promote more efficient modes of vehicle transportation, such as carpooling.
- **Subsidize transit passes for students**
Transit agencies should promote and offer passes directly to students and not through intermediaries. Such passes could be free to students and subsidized by school districts, which could ultimately save on their student busing costs
- **Create policies that discourage sprawl**
School sprawl can be mitigated by incentivizing school siting in in-town areas or by adaptive reuse of an existing building. Additionally, policies could specify that schools be sited close to existing housing rather than in greenfields.

- **Mandate individual school master plans**
School districts should develop and maintain for each school a campus master plan that addresses over-capacity, expansion and phasing opportunities, and possible demographic shifts in the community.
- **Attendance zones should maximize active transportation**
Given the relationship between distance to school and the probability of walking or biking to school, school districts should redraw attendance zones to maximize walkability and bikeability and should address such concerns in school district master plans.
- **Maximize pedestrian and bike accessibility**
School districts should work with local municipalities to construct multi-use trails to increase accessibility to schools and build infrastructure that improves the quality of walking and biking commutes, such as sidewalks, speed bumps, and curb extensions.
- **Conduct traffic studies**
To better understand issues with traffic, school districts should conduct traffic studies for all of their schools, looking at causes and times of congestion.
- **Create satellite busing systems**
School districts should consider replacing traditional door-to-door busing with a satellite busing system for choice school busing.

The proposed recommendations range in ease of implementation, resource requirements, and level of stakeholder involvement in order to provide a highly customizable solution for each municipality and school district. With reform it is possible for future school siting practices to sufficiently support community planning, sustainability, health, and quality of life for their communities. Establishing these best practices can enhance Georgian school siting and thereby capitalize on the positive impacts and ameliorate the negative impacts of schools on communities.

9 Bibliography

- Abraham, John E., Susan McMillan, Alan T. Brownlee, and John D. Hunt. 2002. "Investigation of Cycling Sensitivities" (paper presented at January meeting of Transportation Review Board, Washington D.C., January).
- Ad-Hoc Coalition for Healthy School Siting. 2008. "How California's school siting policies can support a world-class educational system". *Center for Cities and Schools*. Accessed October 2, 2014. http://citiesandschools.berkeley.edu/reports/School_Siting_Policy_Brief_013108.pdf
- Albuquerque Public Schools. 2014. "Site Selection Process". *New School Site Selection, Process and Criteria*. Accessed November 27, 2014. <http://www.aps.edu/about-us/policies-and-procedural-directives/procedural-directives/f.-facilities-development/new-school-site-selection-process-and-criteria>.
- Alexander II Magnet School. 2009. "History of Alexander II Magnet School". Accessed November 27, 2014. <http://www.bibb.k12.ga.us/Page/2186>.
- http://www.co.DeKalb.ga.us/greenfocus/pdf/infill_development.pdf.
- Association of Pedestrian and Bicycle Professionals. 2014. Bicycle Parking Guidelines. 2014.
- Atlanta Journal Constitution. 2013". Charting it: Is back-to-school traffic worse?" Accessed November 20, 2014. http://www.myajc.com/news/back_to_school/
- Atlanta Regional Commission. 2011a. Household Travel Survey. Accessed November 20, 2014. <http://www.atlantaregional.com/transportation/travel-demand-model/household-travel-survey>
- Atlanta Regional Commission. 2011b. Regional Travel Survey, Final Report.
- Atlanta Regional Commission. 2012. Local Government Implementation Plan. *Plan 2040*. Accessed October 4, 2014. http://documents.atlantaregional.com/plan2040/docs/lu_plan2040_local_government_implementation_0711.pdf
- Atlanta Regional Commission. 2013. "Infill Development". *ARC Smart Growth Toolkit*. Accessed December 3, 2014.
- Baker, Tom. 2008. "Liability risks for after-hours use of public school property to reduce obesity: a fifty-state survey". *NPLAN: National Policy and Legal Analysis Network to Prevent Childhood Obesity*.

Beaumont, Constance and Elizabeth Pianca. 2002, October. Why Johnny Can't Walk to School. Prepared for the National Trust for Historic Preservation. Accessed September 19, 2014. <http://http://atfiles.org/files/pdf/whyjohnnywalkschool.pdf>

Beaumont, Constance E. 2003. State Policies and School Facilities: How States can Support or Undermine Neighborhood Schools and Community Preservation. edited by National Trust for Historic Preservation.

Benfield, Kaid. 18 September 2008. "A photo essay on school sprawl". *National Resources Defense Council Staff Blog*.

BEST (Building Educational Success Together). 2005. "Recommended policies for public school Facilities". Washington, DC: BEST.

Bill, Senate Bill No. 2605. 2005. Mississippi House of Representatives.

Bingler, Steven, Linda Quinn, and Kevin Sullivan. 2003. Schools as centers of community: A citizen's guide for planning and design. edited by National Clearinghouse for Educational Facilities.

Bingler, Steven; Quinn, Linda; and Sullivan, Kevin. 2003. "Schools as centers of community: a citizen's guide for planning and design". Washington, DC: National Clearinghouse for Educational Facilities.

Blank, Martin; Melaville, Atelia; and Shah, Bela. 2003. "Making the difference: research and practice in community schools". *Coalition for Community Schools*. Accessed September 29, 2014. <http://www.communityschools.org/assets/1/Page/CCSFullReport.pdf>

Boex, L.F. Jameson and Jorge Martinez-Vasquez. 1998. Structure of school districts in Georgia: economies of scale and determinants of consolidation. *Georgia State University School of Policy Studies*. Accessed October 22, 2014. http://www.google.com/url?sa=t&drct=j&q=&andesc=s&source=web&cd=7&ved=0CEcQFjAG&url=http%3A%2F%2Fwww.ibrarian.net%2Fnavon%2Fpaper%2FSTRUCTURE_OF_SCHOOL_DISTRICTS_IN_GEORGIA_ECONOMIE.pdf%3Fpaperid%3D11660423&ei=2DJLVNiCN8rNggT1uoLYBwandusg=AFQjCNHoKAdaKhKb0UN_Co8aFbdOUL-l8gandsig2=qeTkyNYdTcZsySEjH-6faQdivide/GA/GA_case_study.pdf

Boston Public Schools. 2014. "Taking the T to School" Accessed November 20, 2014. <http://www.bostonpublicschools.org/mbta>

Botchwey, Nisha; Trowbridge, Matthew; and Fisher, Thomas. 2014. "Green health: urban planning and the development of healthy and sustainable neighborhoods and schools". *Journal of Planning Education and Research*, 34(2):112. doi: 10.1177/0739456X14531830.

- Braza, Mark, Wendy Shoemaker, and Anne Seeley. 2004. "Neighborhood Design and Rates of Walking and Biking to Elementary School in 34 California Communities". *American Journal of Health Promotion* 19 (2). doi: 10.4278/0890-1171-19.2.128.
- Brubaker, C. William. 1998. *Planning and Designing Schools*. McGraw-Hill: New York.
- Bushell, Max A., Bryan W. Poole, Charles V. Zegeer, Daniel A. Rodriguez. 2013. "Costs for Pedestrian and Bicyclist Infrastructure Improvements". University of North Carolina Highway Safety Research Center.
- Caudill, William Wayne. 1954. *Toward Better School Design, An Architectural Record Book*. F. W. Dodge Corp.: New York.
- CDC (Centers for Disease Control and Prevention) and U.S.Dept. of Health and Human Services. 2013. "Results from the School Health Policies and Practices Study 2012". Accessed November 1, 2014. http://www.cdc.gov/healthyyouth/shpps/2012/pdf/shpps-results_2012.pdf
- CEFPI (Council of Educational Facility Planners International). 2003. "School Site Size — How Many Acres are Necessary?" IssueTrak: A CEFPI Brief on Educational Facility Issues. Accessed October 26, 2014. <http://media.cefpi.org/issuetraks/issuetrak0903.pdf>
- CEFPI (Council of Educational Facility Planners International). 2004. "Schools for successful communities: an element of smart growth. U.S.Environmental Protection Agency". Accessed October 10, 2014. <http://www.epa.gov/smartgrowth/schools.htm>
- CEHJ (Center for Health, Environment and Justice). 2009. "Safe school siting toolkit". *Center for Health, Environment and Justice*. Accessed October 10, 2014. <http://chej.org/assistance/publications/rep-016-safe-school-siting-toolkit/>
- Center for Cities and Schools. 2010. "School facilities joint use cost calculator". *21st Century School Fund*. Accessed October 2, 2014. <http://citiesandschools.berkeley.edu/joint-use.html>
- Champaign County Regional Planning Commission. 2014a. Traffic Impact Analysis: for the Champaign Unit #4 School District Proposed High School (Spalding Park Site) in the City of Champaign. In *Champaign Urbana Urbanized Area Transportation Study*.
- Champaign County Regional Planning Commission. 2014b. Traffic Impact Analysis: for the Champaign Unit #4 School District Proposed High School in the City of Champaign. In *Champaign Urbana Urbanized Area Transportation Study*.
- ChangeLab Solutions. 2009a. "Checklist for developing a joint use agreement". *ChangeLab Solutions*. Accessed October 10, 2014. http://changelabsolutions.org/sites/default/files/CLS_JointUse_checklist_FINAL_20120517_1.pdf

- ChangeLab Solutions. 2009b. "Joint use fact sheet". ChangeLab Solutions. Accessed October 20, 2014.
http://changelabsolutions.org/sites/default/files/JointUse_FactSht_FINAL_20130425.pdf
- ChangeLab Solutions. 2012. Smart School Siting: How School Locations Can Make Students Healthier and Communities Stronger.
- ChangeLab Solutions. 2014. "Congregation to community: shared use by North Carolina faith-based organizations". ChangeLab Solutions. Accessed October 20, 2014.
http://changelabsolutions.org/sites/default/files/Congregation-to-Community_FINAL_20140930.pdf
- Chrzanowski, Dacia, Susan Rans, and Raymond Thompson. 2010. "Building mutually-beneficial relationships between schools and communities: the role of a connector". *The Asset-Based Community Development Institute: School of Education and Social Policy, Northwestern University*. Accessed September 29, 2014.
<http://www.abcdinstitute.org/publications/downloadable/>
- Chriqui, Jamie; Schermbeck, Rebecca; Slater, S. Schneider, L. Barker, D. and Chaloupka, Frank. "Joint use agreements: creating opportunities for physical activity—a BTG Research Brief". Chicago, IL: Bridging the Gap Program, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago. Accessed November 23, 2014:
http://www.bridgingthegapresearch.org/_asset/g19776/btg_joint_use_agreements-2-10-12.pdf
- Charleston County School District. 2014. "Charleston Map Viewer". Accessed November 27, 2014. <http://www.ccsdschools.com/>.
- CIS (Communities in Schools). 2014. "Communities in schools". Accessed September 29, 2014.
<http://www.communitiesinschools.org/about/>.
- City of Akron. 2014. "Community Learning Centers". Accessed November 17, 2014.
<http://www.imagineakronschools.com/>
- City of Decatur. 2010. 2010 Strategic Plan: City of Decatur. City of Decatur, Georgia. Accessed November 2, 2014.
<http://www.decaturga.com/Modules/ShowDocument.aspx?documentid=2570>
- City of Decatur. 2013. Decatur, Georgia - Code of Ordinances. In *Appendix A - Zoning: Section 10.10 - Residential and Institutional Districts*.
https://http://www.municode.com/library/ga/decaturn/codes/code_of_ordinances?nodeId=PTIICOOR_APXAZO_ARTXSUREMO_S10.10REINDI: Municode.
- City of Decatur, Georgia. 2014a. "Zoning Map with Historic Overlay". Accessed November 1, 2014. <http://www.decaturga.com/Modules/ShowDocument.aspx?documentid=486>.

- City of Spartanburg. 2013. School playgrounds. *City of Spartanburg, South Carolina*. Accessed November 2, 2014. <http://www.cityofspartanburg.org/parks-and-recreation/joint-use-playgrounds>
- City of St. Petersburg. 2013. "Schools and policy". *The Official Site of the City of St. Petersburg, Florida*. Accessed November 11, 2014. <http://www.stpete.org/mentors/andmore.asp#Anchor-49575>
- Cobb, Naomi. 2014. Interview by Kirsten Cook. Phone. October 29, 2014.
- Cobb, Naomi. Interview by Steve Monnier. Phone. October 10, 2014.
- Collins, Damian C. and Robin A. Kearns. 2005. "Geographies of Inequality: Child Pedestrian Injury and Walking School Buses in Auckland, New Zealand". *Social Science and Medicine* 60, (1). doi: [10.1016/j.socscimed.2004.04.015](https://doi.org/10.1016/j.socscimed.2004.04.015).
- Colorado Department of Education Division of Public School Capital Construction Assistance. 3 November 2011. "Public School Facility Construction Guidelines". Accessed November 27, 2014. <http://ssd2.org/wp-content/uploads/2013/06/Public-School-Facility-Construction-Guidelines-Fixed.pdf>.
- Community Commons. 2014. "Unlocking the Gates: Playgrounds Open to Families in Spartanburg, S.C". Community Commons. Accessed November 20, 2014. http://www.communitycommons.org/sa_success_story/unlocking-the-gates-playgrounds-open-to-families-in-spartanburg-s-c/
- CSCI (Center for Strategic Community Innovation). 2012. "What are community schools?" SCI Community Schools Initiative. Accessed December 11, 2014. <http://cscinnovation.org/community-schools-project/what-are-community-schools/>
- Deal, Nathan (Governor) and Williams, Mark (Commissioner). 2014. "SCORP 2014-2016". Accessed November 10, 2014. <http://gastateparks.org/parks/scorp/2014-2016/img/SCORP-1416.pdf>
- Decatur Farm to School Initiative. 2014. "It's a win-win". Decatur Farm to School Initiative. Accessed November 25, 2014. <http://www.decaturfarmtoschool.org/>
- Cuyahoga County Land Reutilization Corp.(2013. "Strategic Land Assembly". Accessed November 27, 2014. <http://www.cuyahogalandbank.org/assembly.php>.
- Daily Real Estate News. 2013. "Study: \$50 More per Square Foot for Homes near Good Schools". Accessed November 17, 2014. <http://realtormag.realtor.org/dailynews/2013/09/26/study-50-more-square-foot-for-homes-near-good-schools>

Davis, Amanda. Interview by Steve Monnier. Phone. October 24, 2014.

Decatur Code, 2013 Edition.

DeKalb County Schools. 2010. DeKalb County School District Policy A: School District Organization. In *Policy ABA: Board Authority*.

DeKalb County Schools. 2013a. DeKalb County School District Policy A: School District Organization. In *Policy AD: School Attendance Areas*.

DeKalb County Schools. 2013b. DeKalb County School District Policy B: School Board Operations. In *Policy BDC: Policy Adoption*.

DeKalb County Schools. 2014a. Approved Budget For DeKalb County Board of Education through July 1, 2014 Through June 30, 2015. edited by DeKalb County Public Schools

DeKalb County Schools. 2014b. DeKalb County School District Policy B: School Board Operations. In *Policy BBI: Board-Staff Relations*.

DeKalb County Department of Planning & Sustainability. 2011a. Rezoning Application Checklist. edited by DeKalb County Georgia.

DeKalb County Department of Planning & Sustainability. 2011b. Rezoning, Land Use Amendment, Special Land Use Permit, and Major Modification Processes. edited by DeKalb County Georgia.

DeKalb County Department of Planning & Sustainability. 2013. Permit Guide: New Commercial Building. edited by DeKalb County Georgia.

DeKalb County Georgia. n.d. Code of DeKalb County. In *Official Zoning Map, Text, And Comprehensive Land Use Map Amendments*. <http://DeKalbcounty-ga.eregulations.us/code/cid10637/27-833/>.

DeKalb Regional Land Bank Authority. n.d.. "About DRLBA". Accessed December 3, 2014. <http://www.DeKalbregionallba.org/about-drlba/>.

Dewey, John. "Democracy and Education". 1916.

Digioia, Katelyn. Interview by Steve Monnier. Email. October 23, 2014.

Dodd, Aileen. 2010. "Charter schools find homes on church campuses". The Atlanta Journal-Constitution. Accessed October 2, 2014. <http://www.ajc.com/news/news/local/charter-schools-find-homes-on-church-campuses/nQpGR/>

Douse, Sidney, et al. Interview by Brianna Rindge. Phone. October 15, 2014.

- Douse, Sidney, Andrew Baker, Marian Eisenberg, and Cedric Hudson (DeKalb County Planning Department). Interview by Katie Perumbeti and Brianna Rindge. Phone. October 15, 2014.
- Drake, Dan and Hans Williams. 2014a. Interview by Allison Buston and Brianna Rindge. Phone. October 20, 2014.
- Drake, Dan, and Hans Williams (DeKalb County, Georgia School District Planning Staff). 2014b. Interview by Katie Perumbeti. Phone. October 31, 2014
- Drake, Dan and Hans Williams. 2014c. Interview by Khaliff Davis. Phone. November 3, 2014.
- Dubay, Ann. 2003. "See Dick and Jane sit in traffic". *The Press Democrat*, September 7.
- Eat Smart Move More. 2013. "Unlocking the gates: playgrounds open to families in Spartanburg, S.C". Eat Smart, Move More Community News. Accessed November 20, 2014. <http://eatsmartmovemore.org/blog/2014/02/unlocking-the-gates-playgrounds-open-to-families-in-spartanburg-s-c/>
- Ellenberg, John. Interview by Allison Buston, Steve Monnier, and Brianna Rindge. Phone. October 31, 2014.
- Ewing, Reid, Ming Zhang, and Michael J. Greenwald. 2011. "School trips: Analysis of factors affecting mode choice in three metropolitan areas". In *School Siting and Healthy Communities*, edited by Rebecca Miles, Adesoji Adelaja, and Mark Wyckoff, 125-146. East Lansing: Michigan State University Press, 2011. Print.
- Falb, Mathew D. 2007. "Estimating the Proportion of Children who can Walk to School". *American Journal of Preventative Medicine* 33 (4). doi: 10.1016/j.amepre.2007.05.005.
- Federal Highway Administration. 2014. "Transportation Alternatives Program (TAP)". Accessed November 18, 2014. <http://www.fhwa.dot.gov/map21/factsheets/tap.cfm>.
- Federal Transportation Administration. 2008 Final Program Guide Accessed November 5, 2014. <http://www.fta.dot.gov/documents/cmaq08gd.pdf>
- Fields, Scott B. 2011. "Georgia Statutes That Affect School Siting Decisions: How QBE Influences School Size". Prepared for Mothers and Others For Clean Air.
- Filardo, Mary and Patrician A. Bryant. 2002. *For Generations to Come: A Leadership Guide to Renewing Public School Buildings*. edited by 21st Century Fund
- Filardo, Mary, Jeffrey Vincent, Mami Allen, and Jason Franklin. 2010. "Joint use of public schools: a framework for a new social contract". Center for Cities and Schools. Washington, DC: 21st Century School Fund.

- Filardo, Mary and Jeffrey Vincent. 2014. "A policy framework for joint use: enabling and supporting community use of K-12 public school facilities". 21CSF and CCandS. Accessed October 10, 2014. http://citiesandschools.berkeley.edu/reports/policy-framework-for-joint-use%202014_proofed2.pdf
- Florida Department of Economic Opportunity. 2011. School Coordination and Planning. Accessed October 7, 2014. <http://www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/infrastructure-planning/school-coordination-and-planning>
- Frank, Lawrence D. and Martin A. Andresen, and Thomas L. Schmid. 2004. "Obesity Relationships with Community Design, Physical Activity, and Time Spent in Cars". *American Journal of Preventative Medicine* 27 (2). doi: 10.1016/j.amepre.2004.04.011.
- Georgia Advisory Committee to the United States Commission on Civil Rights. 2007. Desegregation of public schools in Georgia. Accessed on October 21, 2014. <http://www.usccr.gov/pubs/GADESG-FULL.pdf>
- Georgia Code, 2013 Edition.
- Georgia Conservancy. 2014. The School Siting Quandary. Accessed October 16, 2014. http://www.atlantaregional.com/File%20Library/About%20Us/committee%20agendas/E%20LUC/lu_eluc_presentation_schoolsiting_2014_01_09.pdf.
- Georgia Constitution. 1983. Accessed on November 11, 2014. http://ballotpedia.org/Article_VIII,_Georgia_Constitution
- Georgia Department of Community Affairs. 2014a. Developments of Regional Impact. In *110-12-3*, edited by Official Code of Georgia Annotated.
- Georgia Department of Community Affairs. 2014b. "Impact Fees." Accessed November 18, 2014. <http://www.dca.state.ga.us/development/planningqualitygrowth/programs/impactfees.asp>.
- Georgia Department of Community Affairs. 2014c. "Infill Development Program". Accessed November 27, 2014. http://www.dca.state.ga.us/intra_nonpub/Toolkit/Guides/InfilDevProg.pdf.
- GaDOE (Georgia Department of Education). 1998. Article 31 Charter Schools Act of 1998. Accessed on November 11, 2014. <http://archives.gadoe.org/DMGetDocument.aspx/TITLE%2020%20Charter%20Schools%20Act%20of%201998%20as%20Amended%20July%201%202009.pdf?p=6CC6799F8C1371F6EAA2AF24ACB0BEBC5871519FA348829658DA33163C3678F8andType=D>

Georgia Department of Education. 2010. Guideline For Compliance With The Standards and Criteria of the National Flood Insurance Program: 160-5-4-.16 (a) 1: Educational Facility Site, Construction, and Reimbursement. edited by Facility Services Unit.

GaDOE (Georgia Department of Education). 2012a. *Guideline for Educational Facility Site Selection: 160-5-4-.16 (a) 6: Facility Site, Construction, and Reimbursement*. Edited by Facility Services Unit.

GaDOE (Georgia Department of Education). 2012b. *Guideline for Risk Hazard Assessment of Educational Facility Sites: 160-5-4-.16 (a) 5: Facility Site, Construction, and Reimbursement*. edited by Facility Services Unit.

GaDOE (Georgia Department of Education). 2012c. “Guideline for Square Footage Requirements for Educational Facilities: 160-5-4-.16 (a) 4”. Atlanta: Georgia Department of Education.

GaDOE (Georgia Department of Education). 2012d. Regulation 160-5-4-.16 Educational Facility Site, Construction, and Reimbursement.

GaDOE (Georgia Department of Education). 2013. Quick facts about Georgia education. Accessed October 20, 2014. <https://www.gadoe.org/External-Affairs-and-Policy/communications/Documents/Quick%20Facts%20About%20Georgia%20Public%20K-12%20Education%202013.pdf>

GaDOE (Georgia Department of Education). 2014a. GaDOE Organization Structure. Accessed October 19, 2014. <http://www.gadoe.org/Pages/Org-Chart.aspx>

GaDOE (Georgia Department of Education). 2014b. “Schools and districts”. Georgia Dept. of Education. Accessed October 10, 2014. <http://www.gadoe.org/External-Affairs-and-Policy/AskDOE/Pages/Schools-and-Districts.aspx>

GaDOE (Georgia Department of Education). 2014c. State Education Rules. Accessed October 1, 2014. <http://www.gadoe.org/External-Affairs-and-Policy/State-Board-of-Education/Pages/PEABoardRules.aspx>

GaDOE (Georgia Department of Education) Facilities Services. 2009. The Changing Landscape of Capital Outlay Facilities Planning In Georgia. edited by Georgia Department of Education

GaDOE (Georgia Department of Education) Office of Technology Services. 2013. FY2014 FTE Data Collection Program Codes and Weights. edited by Georgia Department of Education

GCSA (Georgia Charter Schools Association), Colorado League of Charter Schools, and National Alliance for Public Charter Schools. 2011. “Shortchanged charters: how funding disparities hurt Georgia’s charter schools”. *Georgia Charter Schools Association*. Accessed November 15, 2014. <http://www.gacharters.org/press-releases/charter-schools-in-georgia-hindered-by-inadequate-facilities-with-high-costs/>

- Georgia Department of Transportation. 2010. Project Concept Report, City of Macon Elementary Schools and Appling Middle School SRTS.
- Georgia Department of Transportation. 2012a. Approved Concept Report re: 5 Newton County Schools.
- Georgia Department of Transportation. 2012b. Regulations for Driveway and Encroachment Control.
- Georgia Department of Transportation. 2013. Approved Concept Report re: 5 Decatur Schools. Georgia Department of Transportation.
- Georgia Safe Routes to School. 2014a. "Current Partners". Accessed November 18, 2014. <http://www.saferoutesga.org/content/current-partners-1>
- Georgia Safe Routes to School. 2014b. "Partnership Levels". Accessed November 18, 2014. <http://www.saferoutesga.org/content/partnership-levels>
- Georgia Safe Routes to School. 2014c. "Safe Routes to School". Accessed November 18, 2014. <http://www.saferoutesga.org/>
- Georgia First Amendment Foundation. 2008. Georgia's Sunshine Laws.
- Georgia School Board Association. 2013. Finance Kit. *Georgia School Boards Association*.
- Georgia School Council Institute. 2009. School councils: organization and procedures. Accessed on November 12, 2014. [http://www.gsci.org/councils/2009%20Section %205%20-%20School%20Councils.pdf](http://www.gsci.org/councils/2009%20Section%205%20-%20School%20Councils.pdf)
- Georgia Standards. 2013. Curriculum frequently asked questions. Accessed on October 22, 2014. <https://www.georgiastandards.org/standards/GPS%20Support%20Docs/Curriculum%20Frequently%20Asked%20Questions.pdf>
- Georgia State Board of Education. 2010. Standards for Effective Governance of Georgia School Systems (pp. 15).
- Google Maps. 2014. Accessed November 16, 2014. <https://maps.google.com>
- Green, Josh. 3 October 2014. "Experts Bring Decatur-Area Price Boom into Focus". *Curbed*. Accessed November 27, 2014. <http://atlanta.curbed.com/archives/2014/10/03/experts-bring-decaturarea-price-boom-into-focus.php>
- GSBA (Georgia School Boards Association). 2014. "Georgia vision project local school district recommendations". *A Vision for Public Education in Georgia*. Accessed October 25, 2014.

http://www.gsba.com/Portals/0/AdvocacyandComm/VP_Revised_Recommendations_Final.pdf

Guillory, David. Interview by Brian Mitchell. Phone. October 15, 2014.

Hadley, Jessie Duroe. Interview by Steve Monnier. Phone. October 24, 2014.

Hall, Laura. Interview by Steve Monnier. Phone. October 27, 2014.

Herrold, Kathleen, and Kevin O'Donnell. 2008. "Parent and Family Involvement in Education, 2006-07 School Year, From the National Household Education Surveys Program of 2007. First Look. NCES 2008-050". edited by National Center for Education Statistics.

Hoax, Amy. 2014. "Your Kids Decide When You Buy a Home". Accessed November 17, 2014. <http://www.marketwatch.com/story/your-kids-decide-when-you-buy-a-home-2014-05-20>

Holland and Knight Charitable Foundation, Inc. 2014. Centennial Place Elementary. *Opening Doors for Children*. Accessed November 12, 2014: <http://openingdoors.hklaw.com/programs/atlprograms/centennial/index.asp>

Hollis, Nichole. Interview by Steve Monnier. Phone. October 9, 2014.

Hoskens, Judith, Barbara Lawrence, Kelvin Lee, Jack Lyons, and Megan Susman. 2004. Schools for Successful Communities: An Element of Smart Growth. edited by Council of Educational Facility Planners International.

Howard, Keith, Jason Bocarro, and Micahel Kanters. 2013. "Strategies for creating successful joint use agreements: a case study". *Journal of Parks and Recreation Administration*, 31(1):98-107.

Hunt, John D., and J.E. Abraham. 2007. "Influences on Bicycle Use". *Transportation* 34 (4). doi: 10.1007/s11116-006-9109-1.

Ivy Preparatory Academy. 2014. "Ivy Prep Academy Becomes Landowner and Landlord To Commercial Businesses In Innovative Bond Financing Deal". Accessed November 27, 2014. <http://ipa.ivyprepacademy.org/ivy-prep-academy-becomes-landowner-and-landlord-to-commercial-businesses-in-innovative-bond-financing-deal/>.

Jacobs, Drew. 2010. School Siting in Middle Tennessee. Nashville Area Metropolitan Planning Organization.

Jones, Lewis (City Schools of Decatur Board of Education Member). Interview by Katie Perumbeti. Phone. October 29, 2014.

Jones, Vernon. et al. 2005. "DeKalb county comprehensive plan 2005-2025 executive summary". *DeKalb County Department of Planning and Development Strategic Planning*

- Division*. Accessed November 23, 2014.
<http://www.co.DeKalb.ga.us/planning/pdf/longRange/eSummary.pdf>
- Kanters, Michael, Jason Bocarro, Mary Filardo, Michael Edwards, Thomas McKenzie, and Myron Floyd. "Shared use of school facilities with community organizations and afterschool physical activity program participation: a cost-benefit assessment". *Journal of School Health* 84(5):302-309. doi: 10.1111/josh.12148.
- Kappagoda, Manel and Robert Ogilvie. 2012. "Playing smart: maximizing the potential of school and community property through joint use agreements". *Changelab Solutions*. Accessed October 9, 2014.
http://changelabsolutions.org/sites/phlpnet.org/files/Playing_Smart-National_Joint_Use_Toolkit_FINAL_20120309.pdf
- Keating, Dennis and Norman Krumholz. 1998. "State of the art in planning education". Cleveland State University. Accessed October 2, 2014.
<http://www.planning.org/casey/academia.htm>.
- Kelbaugh, Katherine. Interview by Kirsten Cook. Phone. October 20, 2014.
- Kentucky Board of Education. 2008. The Kentucky School Facilities Planning Manual. 702 KAR 4: 180
- Kilcrease, Tanzy. Interview by Steve Monnier. Phone. October 27, 2014.
- Kissane, John. 2011. "Georgia school siting white paper". *Georgia Bikes!* edited by The National Trust for Historic Preservation. Accessed October 20, 2014.
<https://georgiabikes.org/index.php/resources/39-education/86-whitepapers>.
- Kito, Sam and Scott Thomas. 2011. Site Selection Criteria and Evaluation Handbook. edited by Alaska Department of Education and Early Development: Alaska Department of Education and Early Development.
- Kroeger, Dennis, Steve Andriele, and Peter Hallock. 2005. Coordination of Transit and School Busing in Iowa. *Transportation Research Record: Journal of the Transportation Research Board*, 1927: 3-10.
- La Vigne, Nancy. 2014. "The Problem of Traffic Congestion Around Schools". Center for Problem-Oriented Policing. Accessed October 8, 2014.
http://www.popcenter.org/problems/school_traffic/
- Lake County, Florida. 2006. Intergovernmental coordination – PSFE Goals, Objectives, and Policies. Accessed October 2, 2014.

https://www.lakecountyfl.gov/pdfs/School_Concurrency/documents/intergovernmental_coordination_100306.pdf

Landis, Bruce W., Venkat R. Vattikuti, and Russell M. Ottenberg. 2007. "Modeling the Roadside Walking Environment: Pedestrian Level of Service". Transportation Research Record: Journal of the Transportation *Research Board*, 1773.

Lange, John T. 1993. Site-Based, Shared Decision Making: A Resource for Restructuring. *NASSP Bulletin*. 76, 49. 98-107. EJ 457 259.

Lawhon, Larry. 2009. "The neighborhood unit: physical design or physical determinism?" *Journal of Planning History*. Accessed October 2, 2014.
<http://jph.sagepub.com/content/8/2/111>

Lawrence Frank and Company. 2008. Youth Travel to School: Community Design Relationships with Mode Choice, Vehicle Emissions, and Healthy Body Weight. U.S. Environmental Protection Agency.

Lewis, Andrew. Interview by Lindsay Anderson. Phone. November 18, 2014.

Lofstrand, Rochelle. Interview by Steve Monnier. Phone. October 28, 2014.

Macon-Bibb County Planning and Zoning Commission. 2007. Application to Rezone Property. edited by Macon-Bibb County Planning and Zoning Commission.

Macon-Bibb County Planning and Zoning Commission. 2008. "Macon-Bibb County Planning & Zoning Commission: About Us." Accessed November 16, 2014.
http://www.maconbibbpz.org/articleDetail.php?About_Us-4.

Maine State Department of Education, Chapter 61, Sec. 7 (2), Rules for Major Capital School Construction Projects, revised 11, July 2006.

Maryland Planning Commissioners Association. n.d. Planning Commission, Planning Board, and Board of Appeals Education Course, Module Two: The Comprehensive Plan. Accessed October 7, 2014. http://planning.maryland.gov/PDF/YourPart/PlanningCommissionerTraining/Planning101_TheComprehensivePlan.pdf

Massachusetts Collaborative for High Performance Schools. 2009. "Criteria for New Construction Major Modernizations". *Massachusetts School Building Authority*. Accessed November 27, 2014.
http://www.massschoolbuildings.org/sites/default/files/edit-contentfile/Guidelines_Forms/Guidelines_Policies/MA-CHPS_Green_School_Guidelines_2009.pdf.

Massachusetts Department of Transportation. 2014. Transportation Impact Assessment (TIA) Guidelines. edited by Massachusetts Department of Transportation.

- Mathews, Eryn, John McGlamery, and Tom Baker. 2009. "Liability risks for after-hours use of public school property to reduce obesity: Georgia". *NPLAN: National policy and legal analysis network to prevent childhood obesity*. Accessed October 9, 2014.
http://changelabsolutions.org/sites/phlpnet.org/files/nplan/GA_Final_SP_030609.pdf
- Maximuk, John, Amanda Thompson, and Regina Brewer (City of Decatur, Georgia Staff). Interview by Katie Perumbeti. Phone. November 3, 2014.
- McAndrew, Siobhan. January 16, 2014. "Washoe County School District Defends Fencing Project". *Reno Gazette-Journal*.
- McClelland, Mac and Keith Schneider. 2004. "Hard Lessons of Michigan's School Construction Boom". *Michigan Land Use Institute*. Accessed November 27, 2014.
<http://www.mlui.org/userfiles/filemanager/1761/>.
- McDaniel v. Thomas, 285 S.E.2d 156, 248 Ga. 632. 1981.
- McDonald, Noreen. 2010. "School Siting: Contested Visions of the Community School". *Journal of the American Planning Association*, 76(2). doi: 10.1080/01944360903595991
- McDonald, Noreen. 2011. "School siting in suburban areas: a case study of Maryland and Northern Virginia". In Miles, R. Adelaja, A. Wyckoff, M. 2011. *School siting and healthy communities: why where we invest in school facilities matters*. Michigan State University Press: USA. Print.
- McDonald, Noreen C., Yizhao Yang, Steve M. Abbott, and Allison N. Bullock. 2013. "Impact of the Safe Routes to School Program on Walking and Biking: Eugene, Oregon Study". *Transport Policy* 29. doi: 10.1016/j.tranpol.2013.06.007.
- McDonald, Noreen C., David A. Salvesen, H. Renee Kuhlman, and Tabitha S. Combs. 2014. "The Impact of Changes in State Minimum Acreage Policies on School Siting Practices". *Journal of Planning Education and Research* 34 (2):169-179.
- McMillan, Tracy E. 2002. "The Relative Influence of Urban Form on a Child's Trip to School". Paper presented at the Association of Collegiate Schools of Planning Annual Conference, Baltimore, MD.
- Meehan, Sean and Trish Sanchez. 2012. *Coordinating School and Public Transportation: Assessing the Opportunities in New Jersey*. Alan M. Voorhees Transportation Center, Rutgers, The State University of New Jersey. Accessed November 17, 2014.
http://www.saferoutesnj.org/wp-content/uploads/2013/11/Final-Coordination-School-and-Public-Transit_VTC.pdf

- Merom, Dafna, Catrine Tudor-Locke, Adrian Bauman, and Chris Rissel. 2006. "Active Commuting to School among NSW Primary School Children: Implications for Public Health". *Health and Place* 12 (4). doi: 10.1016/j.healthplace.2005.09.003.
- Merriam, Dee. 2012. "Community School Indicators".
- Metropolitan Atlanta Rapid Transit Authority. 2013. "MARTA SERVICE CHANGES Effective December 14th". Accessed November 20, 2014. <http://www.itsmarta.com/december-14th-markup.aspx>
- Mewborn, Denise S. 2014. Public Education: PreK-12. *New Georgia Encyclopedia*. Accessed October 23, 2014. <http://www.georgiaencyclopedia.org/articles/education/public-education-prek-12>
- Mid-Ohio Regional Planning Commission. 2006. Shared-use Paths: Best Practices for Bikes and Pilot Treatments.
- Miles, Rebecca; Adelaja, Adesoji; and Wyckoff, Michael. 2011. "School siting and healthy communities: why where we invest in school facilities matters". Michigan State University Press: USA. Print.
- Miranda, Edgar. Interview by Kirsten Cook. Phone. October 24, 2014.
- Moore, Gary T. 1994. Education Facilities for the Twenty-First Century: Research Analysis and Design Patterns, Publications in Architecture and Urban Planning. Center for Architecture and Urban Planning Research University of Wisconsin-Milwaukee: Milwaukee.
- Morris, Marya. 2004. Rethinking Community Planning and School Siting to Address the Obesity Epidemic. Prepared for the NIEHS Conference on Obesity and The Built Environment: Improving Public Health Through Community Design, Washington, DC, May 24-26, 2004. Accessed October 7, 2014. https://www.niehs.nih.gov/about/visiting/events/pastmtg/assets/docs_n_z/supplementary_informationoverviewmorris_508.pdf
- Municipal Research and Services Center. 1997. "Infill Development Strategies for Shaping Livable Neighborhoods". Accessed November 27, 2014. <http://www.mrsc.org/Publications/textfill.aspx>.
- National Center for Safe Routes to School. 2010a. Weaver Middle School, Student Travel Tally Report, November 2010.
- National Center for Safe Routes to School. 2010b. Alexander II Magnet School, Student Travel Tally Report.

- National Center for Safe Routes to School. 2010c. Safe Routes to School Case Studies from Around the Country.
- National Center for Safe Routes to School. 2011a. How Children Get To School: School Travel Patterns From 1969 TO 2009. Accessed October 5, 2014.
http://www.saferoutesinfo.org/sites/default/files/resources/NHTS_school_travel_report_2011_0.pdf
- National Center for Safe Routes to School. 2011. How Children Get To School: School Travel Patterns From 1969 TO 2009. Accessed October 5, 2014.
http://www.saferoutesinfo.org/sites/default/files/resources/NHTS_school_travel_report_2011_0.pdf
- National Center for Safe Routes to School. 2011b. Indian Creek Elementary School, Student Travel Tally Report.
- National Center for Safe Routes to School. 2013a. 4/5 Academy, Student Travel Tally Report, September, 2013.
- National Center for Safe Routes to School. 2013b. Winonna Park Elementary School, Student Travel Tally Report, September, 2013.
- National Center for Safe Routes to School. 2013c. Oak Grove Elementary School, Student Travel Tally Report.
- National Center for Safe Routes to School. 2013d. Trends in Walking and Bicycling to School from 2007 to 2012.
- National Center for Safe Routes to School. 2014a. “History of SRTS”. Accessed November 16, 2014a. <http://www.saferoutesinfo.org/about-us/mission-and-history>
- National Center for Safe Routes to School. 2014b. “Sidewalks”. Accessed November 17, 2014. <http://guide.saferoutesinfo.org/engineering/sidewalks.cfm>.
- National Center for the Twenty-first Century Schoolhouse. 2011. “The Impact of the School Environment on Learning and Teaching”. *San Diego State University*. Accessed November 27, 2014. <http://coe.sdsu.edu/edl/schoolhouse/planning/impact.php>.
- National Gardening Association. 2014. *Kids Gardening*. Accessed November 27, 2014. <http://www.kidsgardening.org/node/120>.
- NCES (National Center for Education Statistics). 2011. “Number of public school districts and public and private elementary and secondary schools”. *Digest of education statistics*. Accessed October 25, 2014. http://nces.ed.gov/programs/digest/d12/tables/dt12_098.asp

- Newton County. 2001. Code of Ordinances: Newton County, Georgia. In *Land Development Regulations: Northeast Georgia Regional Development Center*.
- Newton County. 2013. Application Package for Rezoning, Amendment to Future Land Use Map, and Overlay Tier Change. edited by Department of Development Services.
- Newton County Department of Development Services. 1999. Zoning Ordinance: Newton County, Georgia.
- Newton County Public Schools. 2014. Tentative Budget. edited by Newton County Public Schools.
- Newton High School. 2014. "The History of Newton High School". Accessed October 30, 2014. <http://www.newtoncountyschools.org/newton/about-us/history-of-nhs.aspx>.
- North Carolina State University. 2014. Carpool Traffic Decision Tree Analysis: Pupil Transportation Program | Institute for Transportation Research and Education - ITRE. (2014, January 1). Accessed December 2, 2014. <http://www.itre.ncsu.edu/pupil/STG/carpool/carpool-bestpractice.html>
- Norton, K. Richard, Nina David, and Peter Winch. 2007. Part 2: Planning for School Facilities. *Smart Growth Tactics*. Accessed October 10, 2014. http://www.planningmi.org/downloads/issue_33_planning_for_schools_part_ii.pdf
- Nykamp, Adam. Interview by Kirsten Cook. Phone. November 11, 2014.
- Office of the Secretary of State. 2013. *Constitution of the State of Georgia*. Georgia.
- Ogilvie, Robert. 2013. "Guest voice: joint use agreements". *Community Commons*. Accessed November 17, 2014. <http://www.communitycommons.org/2013/02/opening-the-door-to-local-libraries-schoolyards-gardens-and-more/>
- Ohio School Facilities Commission. 2006. "School Site". Accessed November 27, 2014. <http://osfc.ohio.gov/LinkClick.aspx?fileticket=uq1A8m9OQko%3D&tabid=242&mid=904>.
- Parker-Pope, Tara. 2009. "School recess improves behavior". *The New York Times*. Accessed November 12, 2014: http://well.blogs.nytimes.com/2009/01/28/school-recess-improves-behavior/?_r=0
- Passmore, Sam. 2002. "Education and Smart Growth: Reversing School Sprawl for Better Schools and Communities".
- Pawlovich Michael D., Wen Li, Alicia Carriquiry, and Tom Welch. 2006. "Iowa's Experience with Road Diet Measures". *Transportation Research Record: Journal of the Transportation Research Board*, 1954. doi: 10.3141/1953-19.

- Payne, Becky. Interview by Steve Monnier. Phone. October 27, 2014.
- Peshkin, Alan. 1978. "The imperfect union". Chicago: University of Chicago Press.
- Peshkin, Alan. 1982. "Growing up American: schooling and the survival of community". Chicago: University of Chicago Press.
- Pinckney, Eric. 2014. Interview by Kirsten Cook. Phone. November 10, 2014.
- PolicyLink. 2013. "Maximizing walkability, diversity, and educational equity in U.S. schools". *PolicyLink*. Accessed October 9, 2014. <http://www.policylink.org/find-resources/library/maxamizing-walkability-diversity-and-educational-equity-in-us-schools>
- PolicyLink. 2014. "Infill Incentives". *Equitable Development Toolkit*. Accessed November 27, 2014. <http://policylink.info/EDTK/Infill/>.
- Porterfield, Kitty, and Meg Carnes. 2014. Why School Communication Matters: Strategies from PR Professionals (2nd edition). Blue Ridge Summit, PA: Rowman and Littlefield Publishers.
- Pruitt, RC. Interview by Kirsten Cook. Phone. November 19, 2014.
- Public Health Law and Policy. 9 December 2011. "Policy Package: Model School Siting Policies for Illinois School Districts. *ChangeLab Solutions*. Accessed November 27, 2014. http://changelabsolutions.org/sites/phlpnet.org/files/Illinois_School_Siting_Policies_Final_2011.12.09.pdf.
- Rawlings, Jane, Irene Barton, and Brenda Stokes. 2014. Meeting with Citizens Involved with Georgia Schools. edited by Georgia Tech School Siting Studio.
- Roaden, Bruce. Interview by Allison Bustin. Phone. October 30, 2014.
- Rome Transit Department. n.d. Accessed October 10, 2014. <http://www.romefloyd.com/EnrichingLife/Tra>
- Romeo, Jim. 2004. The ABCs of mixed-use schools. *American Planning Association*.
- Rowland, Mike. Interview by Khaliff Davis. Phone. November 7, 2014
- Rowland, Mike. Interview by Kirsten Cook. Phone. November 11, 2014.
- Rowland, Mike, and Turner Allen. (GaDOE Facility Director Interview). Interview by Lindsay Anderson. Phone. November 7, 2014.

Rowland, Michael D, Michael Campbell, and Carlton Allen. Interview by Steve Monnier. Phone. November 7, 2014.

Rowland, Mike, and Mike Campbell. Interview by Allison Bustin. Phone. November 7, 2014.

Springer, Darren. 2007. "Integrating Schools into Healthy Community Design". Edited by National Governors Association Center for Best Practices.

Rubenstein, Ross, and David Sjoquist. 2003. Financing Georgia's Schools: A Primer. edited by Georgia State University.

Safe Routes Partnership. 2014. "National Partnership Webinars". *Safe Routes to School National Partnership*. Accessed October 28, 2014.
<http://saferoutespartnership.org/resourcecenter/National-Partnership-Webinars#archived>

Safe Routes to School. 2011. Safe Routes to School Travel Survey Report Fall 2011 Accessed October 21, 2014. <http://www.saferoutesdata.org/reports.cfm>

Safe Routes to School (SRTS) Georgia. 2014. "Current Partners". Accessed November 17, 2014.
<http://www.saferoutesga.org/content/current-partners-1>

Safe Routes to School (SRTS). 2014. "Improving Health, Safety, and Transportation". *National Center for Safe Routes to School*. Accessed December 10, 2014.
www.saferoutesinfo.org/program-tools/presentation-srts-improving-health-safety-and-transportation

Safe Routes to School (SRTS) Guide. 2014a. "Slowing Down Traffic". Accessed November 17, 2014. http://guide.saferoutesinfo.org/engineering/slowing_down_traffic.cfm

Safe Routes to School (SRTS) Guide. 2014b. "Tools to Reduce Crossing Distances for Pedestrians". Accessed November 17, 2014.
http://guide.saferoutesinfo.org/engineering/tools_to_reduce_crossing_distances_for_pedestrians.cfm

Safe Routes to School- Alexander II Magnet School. 2014 Student Travel Tally Report: One School in One-Alexander II Magnet School

Safe Routes to School- Indian Creek Elementary School. 2014 Student Travel Tally Report: One School in One-Indian Creek Elementary School

Safe Routes to School Marin County. 2012. "SchoolPool Guide". Accessed November 12, 2014.
http://www.saferoutestoschools.org/GUIDES/SP_Guidebook_2012.pdf

Salvesen, David. 2010. Facilitating intergovernmental collaboration in school facility planning. Presentation at the Nashville Area School Siting Symposium, Nashville, TN, January 19,

2010. Accessed October 2, 2014. <http://www.slideshare.net/nashvillempo/dr-david-salvesen-nashville-area-school-siting-symposium>
- Samet, Jonathan M. 2007. "Traffic, Air Pollution, and Health". *Inhalation Toxicology* 19 (12). doi: 10.1080/08958370701533541.
- Schlossberg, Marc, Jessica Greene, Page P. Phillips, Bethany Johnson, and Bob Parker. 2006. "School Trips: Effects of Urban Form and Distance on Travel Mode". *Journal of the American Planning Association* 72 (3). doi: 10.1080/01944360608976755.
- School Facilities and Organization. 2011. "School Facilities Manual". *State of Washington Office of Public Instruction*. Accessed November 27, 2014. <http://www.k12.wa.us/SchFacilities/pubdocs/SchoolFacilitiesManual2011.pdf>.
- School Facilities Planning Division. 2014. *School Site Selection and Approval Guide*. edited by California Department of Education.
- Schrader, James G. 1963. "School Site Selection". *American Society of Planning Officials*. Accessed November 27, 2014. <https://www.planning.org/pas/at60/report175.htm>.
- Sean Meehan and Trish Sanchez. 2012. *Coordinating School and Public Transportation Assessing the Opportunities in New Jersey*. Accessed November 10, 2014. http://www.saferoutesnj.org/wp-content/uploads/2013/11/Final-Coordination-School-and-Public-Transit_VTC.pdf
- Sequeira, Sonia, and Leslie Meehan. 2013. *Hamilton Springs Transit-Oriented Development: School Siting Health Impact Assessment*. edited by Nashville Area Metropolitan Planning Organization.
- Sharp, Meghan. 2008. *Local Governments and Schools: A Community-Based Approach*. *ICMA IQ Report*, 40. Accessed October 4, 2014. http://icma.org/en/icma/knowledge_network/documents/kn/Document/5753/Local_Governments_and_Schools_A_CommunityOriented_Approach
- Sibley, Benjamin A. and Jennifer L. Etnier. 2003. "The Relationship between Physical Activity and Cognition in Children: A Meta-Analysis". *Pediatric Exercise Science* 15 (3).
- Simmons, Andria. August 10, 2014. "Back-to-School Traffic, for Better or Worse". *Atlanta Journal-Constitution*.
- Smith, Sarah. 2009. *The Inaccessibility of Elementary Schools in Fulton County; Causes, Consequences, and Alternatives* (Master's thesis, Georgia Institute of Technology). Accessed Fall 2014. <http://https://smartech.gatech.edu/handle/1853/31751?show=full>
- Smith, Taki. Interview by Steve Monnier. Phone. October 17, 2014.

- South Carolina State Department of Education. 1 January 2013. "Best Practices for Site Selection and Planning". Accessed November 27, 2014.
<http://ed.sc.gov/agency/os/School-Facilities/documents/BestPracticeSiteSelectionAndPlanning.pdf>.
- Spengler, John; Connaughton, Daniel; and Carroll, Michael. 2011. "Addressing challenges to the shared use of school recreational facilities". *Journal of Physical Education, Recreation and Dance*, 82(9): 28. doi: 10.1080/07303084.2011
- State of Alaska Department of Education. 2011. "Site Selection Criteria and Evaluation Handbook". *Alaska Department of Education and Early Development*. Accessed November 27, 2014. <http://www.eed.state.ak.us/facilities/publications/siteselection.pdf>.
- State of California. 2007. "Siting: Greenfield Development". *The Division of the State Architect's Sustainable Schools Resource*. Accessed November 27, 2014.
<http://www.sustainableschools.dgs.ca.gov/SustainableSchools/sustainabledesign/siting/greenfielddevelopment.html>.
- Statute, Chapter 115C Article 13. 1977. "Community Schools Act".
- Statute, O.C.G.A. 20-2-260 Georgia. 2000. "160-5-4-.01 Educational Facilities Construction Plan".
- Staunton, Catherine E., Deb Hubsmith, and Wendi Kallins. 2003. "Promoting Safe Walking and Biking to School: The Marin County Success Story". *American Journal of Public Health* 93 (9). doi: 10.2105/AJPH.93.9.1431.
- Steiner, Ruth; Bejleri, Ilir; Fischman, Allison; Provost, R; and Arafat, Abdulanser; Guttenplan, Martin; and Crider, Linda. 2011. "Policy impacts on mode choice in school transportation: an analysis of four Florida school districts". In Miles, R. Adelaja, A. Wyckoff, M. 2011. *School siting and healthy communities: why where we invest in school facilities matters*. Michigan State University Press: USA. Print.
- Stokes, Brenda (Macon-Bibb County, GA School District Staff). Interview by Allison Bustin, Katie Perumbeti, and Brianna Rindge. Phone. October 27, 2014.
- Stokes, Brenda. Interview by Khaliff Davis. Phone. November 21, 2014.
- Thompson, Amanda. Interview by Kirsten Cook. Phone. November 3, 2014.
- Torma, Timothy. 2007. School Buildings and Community Building. *The Commissioner*. Accessed October 7, 2014.
<https://www.planning.org/ncpm/education/pdf/commissionerarticle.pdf>

- Troost, Jonathan; Rafferty, Ann; Luo, Zhehui; and Reeves, Mathew. "Temporal and regional trends in the prevalence of healthy lifestyle characteristics: United States, 1994-2007". *American Journal of Public Health* 102(7):1392-1398.
- TRPA (Tennessee Recreation and Parks Dept.) 2013. Tennessee recreational joint facility use agreements. Accessed November 10, 2014. <http://www.trpa.net/?page=57>
- Trubey, J. Scott. 24 September 2014. "Doraville GM Plant Sold". *The Atlanta Journal-Constitution*. Accessed December 3, 2014. <http://www.ajc.com/news/business/doraville-gm-plant-sold/nhTXb/>.
- Trust for America's Health and Robert Wood Johnson Foundation. 2014. "State school-based physical activity and health-screening laws". *The State of Obesity: Better Policies for a Healthier America*. Accessed October 25, 2014. <http://stateofobesity.org/state-physical-activity-laws/>
- Tussing, Don (Macon-Bibb County Planning & Zoning Commission). Interview by Katie Perumbeti and Brianna Rindge. Phone. October 31, 2014.
- Ugo Lachapelle and Lawernce Frank. 2009. "Transit and Health: Mode of Transport, Employer-Sponsored Public Transit Pass Programs, and Physical Activity". *Journal of Public Health Policy* 30. Doi: 10.1057/jphp.2008.52
- U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics.
- U.S. Department of Education. 1999. *Schools as Centers of Community: A Citizen's Guide For Planning and Design*. edited by U.S. Department of Education.
- U.S Department of Health and Human Services, Centers for Disease Control and Prevention. 2003. "Physical Activity Levels among Children Aged 9-13 Years – United States, 2002". *Morbidity and Mortality Weekly Report* 52 (33).
- U.S. EPA (United States Environmental Protection Agency), Office of Air Quality Planning and Standards. 2007. *The Plain English Guide to the Clean Air Act*.
- U.S. EPA (United States Environmental Protection Agency). 2011a. *Old School, New School, This Place, That Place: An Introduction to Utilizing the EPA School Siting Guide*. Accessed October 6, 2014. http://www.epa.gov/schools/siting/downloads/School_Siting_Guidelines.pdf
- U.S. EPA (United States Environmental Protection Agency). 2011b. "School siting guidelines". *United States Environmental Protection Agency*. Accessed Fall 2014. <http://www.epa.gov/schools/guidelinestools/siting/>

- U.S. EPA (United States Environmental Protection Agency). 2003. *Travel and Environmental Implications of School Siting*. Accessed October 4, 2014.
http://www.epa.gov/smartgrowth/pdf/school_travel.pdf
- U.S. Green Building Council. 2013. LEED 2009 for Schools New Construction and Major Renovations Rating System. edited by U.S. Green Building Council.
- Venezia, Andrea, Patrick M. Callan, Michael W. Kirst, and Michael D. Usdan. 2006. The Governance Divide: the case study for Georgia. *The National Center for Public Policy and Higher Education*. Accessed October 22, 2014.
http://www.highereducation.org/reports/governance_divide/GA/GA_case_study.pdf
- Vincent, Jeffrey; Filardo, Mary. Klein, Jordan; and McKoy, Deborah. 2010. “San Francisco’s public school facilities as public assets: a shared understanding and policy recommendations for the community use of schools”. *The Center for Cities and Schools*. Accessed October 3, 2014.
http://citiesandschools.berkeley.edu/reports/SFUSD_Facilities_Community_Assets.pdf
- Vincent, Jeffrey. McKoy, Deborah. 2013. “Sustainable communities need opportunity-rich schools: a smart growth imperative”. *Smart Growth Network: National Conversation on the Future of Our Communities*. Accessed October 12, 2014.
<http://www.smartgrowth.org/nationalconversation/compendium/>
- Vincent, Jeffrey. 2014. “Joint use of public schools: a framework for promoting healthy communities”. *Journal of Planning Education and Research*, 34:153. doi: 10.1177/0739456X13513615
- Virginia Department of Education Office of Support Services. September 2013. “Guidelines for School Facilities in Virginia’s Public Schools”. Accessed November 27, 2014.
http://www.doe.virginia.gov/support/facility_construction/school_construction/regs_guidelines/guidelines.pdf.
- Wagner, James. 2009. *Impact of the Location of New Schools on Transportation Infrastructure and Finance* (Master’s thesis, Georgia Institute of Technology). Accessed Fall 2014.
http://www.nctspm.gatech.edu/sites/default/files/u55/wagner_james_b_200905_mast.pdf
- Watkins, Theresa; Woolf, Joni; Patton, James; Miley, Lonnie; and King, Damon. 2006. 2030 “Comprehensive plan: community assessment”. *Macon-Bibb County Planning and Zoning Commission*. Accessed November 2, 2014.
http://www.maconbibbpz.org/artman0/uploads/1/CP2030_1.pdf
- Weiss, Jonathan. 2004. “Public schools and economic development: what the research shows”. *KnowledgeWorks Foundation*. Cincinnati, OH: USA.

- West Virginia Department of Education. n.d. "Handbook on Planning School Facilities". Accessed November 27, 2014. <https://wvde.state.wv.us/policies/p6200.pdf>.
- Whitelegg, Drew. 2014. Interview by Kirsten Cook. Phone. October 22, 2014.
- Winig, Ben; Ackerman, Amy; and Gladstone, Ellie. 2013. "This land is our land: a primer on public land ownership and opportunities for recreational access". Changelab Solutions. Accessed October 10, 2014. <http://changelabsolutions.org/publications/public-land-primer>.
- Witten, Karen, Tim McCreanor, Robin Kearns, and Laxmi Ramasubramanian. "The impacts of a school closure on neighbourhood social cohesion: narratives from Invercargill, New Zealand". *Health and Place* 7, no. 4 (2001): 307-317.
- Wyckoff, Michael, Adesoji Adelaja, and Melissa Gibson. 2011. "The implications of school location change for healthy communities in a slow-growth state: a case study in Michigan". In Miles, R. Adelaja, A. Wyckoff, M. 2011. *School siting and healthy communities: why where we invest in school facilities matters*. Michigan State University Press: USA. Print.
- Yeager, Fred. 2014. "School Site Selection and Approval Guide". *California Department of Education: School Facilities Planning Division*. Accessed November 27, 2014. <http://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp#screening>.
- Young, Deborah, John Spengler, Natasha Frost, Kelly Evenson, Jeffrey Vincent, and Laurie Whitsel. 2013. "Promoting physical activity through the shared use of school recreational spaces: a policy statement from the American Heart Association". *American Journal of Public Health* 104(9):1583-1588. doi: 10.2105/AJPH.2013.301461

