Collaborative School Planning and Active Schools: A Case Study of Lee County, Florida

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Abstract To contribute to the understanding of the links between urban planning and school siting and, ultimately, the impact of both on physical activity, we conducted a case study of Lee County, Florida. Our study examined the extent of state-mandated collaboration between the Lee County School Board and Lee County government (e.g., the Lee County Department of Planning, the Office of Smart Growth, and the Department of Parks and Recreation). Specifically, we investigated planning processes under mandated coordination between the school board and the county and the impact of such coordination on the integration of land-use planning and school facility planning. By describing the process of mandated collaborative school planning in Florida, we illustrate the promise and pitfalls of such top-down legislation and offer insights to other state and local governments looking for ways to improve local planning and to increase physical activity among children.

Introduction

Health and Physical Activity

The percentage of school-age children who are overweight is increasing in the United States, and the problem is greatest among African American and Mexican-American youth (Ogden et al. 2006). At the same time, levels of moderate physical activity have decreased among children and adolescents (Keppel, Pearcy, and Klein 2004). There is evidence that this decline has contributed to the overweight and obesity problem (Steinbeck 2001; Ewing, Schroeer, and Greene 2003).

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Healthy People 2010, the U.S. Department of Health and Human Services national health-promotion and disease-prevention initiative, calls for children and youth to engage in at least thirty minutes of moderate physical activity per day at least five times per week (Keppel, Pearcy, and Klein 2004). Increased physical activity improves aerobic endurance and muscular strength and may help decrease inactivity and chronic disease later in life (Sallis, McKenzie, and Alcaraz 1993; Malina 1996; Hallal et al. 2006).

Because children and adolescents spend much of their time in school (Davison and Lawson 2006), most research on increasing opportunities for physical activity has focused on physical-education classes (ibid.; Krizek, Birnbaum, and Levinson 2004) or recess. However, these opportunities alone do not provide sufficient occasion for increased physical activity. The Youth Risk Behavior Surveillance System found that, in 2005, between 53 and 95 percent of youth did not attend daily physical-education classes (Brener et al. 2007). The number of high-school students who attended daily physical-education classes was substantially lower in 2003 than in 1991 (Lowry et al. 2004). A study of third-, fourth-, and fifth-grade students' physical activity found that recess lasted an average of only fifteen minutes (Beighle et al. 2006). An increase in school physical-education participation alone is not sufficient to combat overweight and obesity among children (Council on Sports Medicine and Fitness and Council on Student Health 2006).

Additionally, participation in physical activity outside of school remains low. Beighle et al. (2006) found that girls spent only 20 percent and boys spent only 25 percent of their free time engaged in physical activity.

School Travel

Given the low participation rates in any type of school-based physical activity, walking or bicycling to school could be important for increasing physical activity levels among children and adolescents (Rosenberg et al. 2006; Saksvig et al. 2007; Sirard et al. 2005). Unfortunately, the percentage of children walking or biking to school has been declining since the 1970s. Nationwide, fewer than 15 percent of students between the ages of five and fifteen walk to school (McDonald 2007; Tudor-Locke, Ainsworth, and Popkin 2001), compared to nearly 50 percent of students in 1969 (Federal Highway Administration 1972: table 1). According to Martin and Carlson (2005), the main reason that so few children walk to school is that schools are too far from their homes, with 61.5 percent of surveyed

parents indicating that the greatest barrier to children's walking or biking to school was distance alone. A simulation study suggested that limiting commuting distance to one-half mile could result in an increase in biking and walking combined, from a baseline of 7.9 percent to 21.4 percent (Ewing, Forinash, and Schroeer 2005), and a survey of middle-school children found that the percentage who walked to school dropped from 52 percent, when the distance was less than one mile, to only 4 percent, when the commute was greater than 1.5 miles (Schlossberg et al. 2006). Distance had the same effect on bicycling to school.

In addition to distance, environmental factors also influence whether schoolchildren walk or bike to school. These factors include perceived neighborhood aesthetics and characteristics, such as the presence of traffic lights, pedestrian crossing improvements, and walking or bicycle paths (Boarnet et al. 2005; Kerr et al. 2006; Merchant et al. 2007; Timperio et al. 2006). Research has been mixed concerning the impact of sidewalk availability on walking to school: two recent studies found a positive association between the presence and condition of sidewalks and children's physical activity (Ewing, Forinash, and Schroeer 2005; Boarnet et al. 2005), while at least one study found no association (Mota et al. 2005). Similarly, a comparison of physical activity in rich and poor children found no correlation between levels of activity and the presence of sidewalks (Merchant et al. 2007). The impact of street connectivity on walking or biking to school remains unclear (Davison and Lawson 2006). Several studies found that greater street connectivity was associated with higher rates of walking or biking to school (Braza, Shoemaker, and Seeley 2004; McDonald 2005), but another recent study suggested that higher connectivity was associated with lower rates of walking and cycling to school among children ten to twelve years of age (Timperio et al. 2006). For children five to six years of age and for adolescents, no association was found (ibid.; Mota et al. 2005).

School Siting and Planning

Schools are often located in areas that discourage children from walking or biking to school. New schools typically are located in outlying areas in which land is less expensive than in town (Ewing, Forinash, and Schroeer 2005; Morris 2004). School siting requirements for athletic facilities, parking, and classroom space often conflict with the goal of integrating schools into the fabric of the town (Vincent 2006).

Public policies are partly to blame for this trend (Ewing, Forinash, and Schroeer 2005). Minimum acreage requirements for schools can limit the

search for new school sites to the periphery of communities, where larger sites are more readily available. These requirements may range from a minimum of ten acres for an elementary school to up to thirty acres for a high school, plus an acre for every one hundred students. In addition, funding formulas often favor new school construction over renovation of existing schools, which tend to be closer and better integrated into the neighborhoods they serve. Renovation of neighborhood schools is further discouraged by the application of building codes designed for new construction (ibid.).

Institutional fragmentation makes it difficult to integrate school facility planning with land-use planning (Gurwitt 2004). School boards, municipalities, and county commissions often operate independently, with their own sets of rules, elected members, missions, and ways of conducting business. Although the three entities are autonomous, decisions by one often affect the others. School boards are responsible for developing enrollment projections, generating facility plans, and building new schools. Municipalities and counties adopt land-use plans and policies and make decisions about development and the provision of infrastructure. The impact on students' physical activity is generally overlooked. In responding to the need for additional capacity, the school board may opt to build a new school on the urban fringe, where land is cheapest. The school's location could influence future land use, traffic, and how children get to school. This is why collaboration is so important: by working together, the key stakeholders who control decisions about local land use and school planning can help ensure that their decisions facilitate children's physical activity.

Even when collaboration is accepted as a goal, working across institutional boundaries may be difficult (Linden 2002). May et al. (1996) examined coercive and cooperative state mandates and found that, while a coercive mandate leads to procedural compliance with state requirements, it does not necessarily lead to lasting commitment. A recent study (Vincent 2006) suggested that, in contrast, a more cooperative approach might enhance normative commitment, although more research would be needed to identify incentives for collaboration.

To contribute to the understanding of the links between urban planning and school siting and, ultimately, to the impact of both on physical activity, we conducted a case study of Lee County, Florida. Our study examined the extent of state-mandated collaboration between the Lee County School Board and Lee County government (e.g., the Lee County Department of Planning, the Office of Smart Growth, and the Department of Parks and Recreation). Specifically, we investigated planning processes

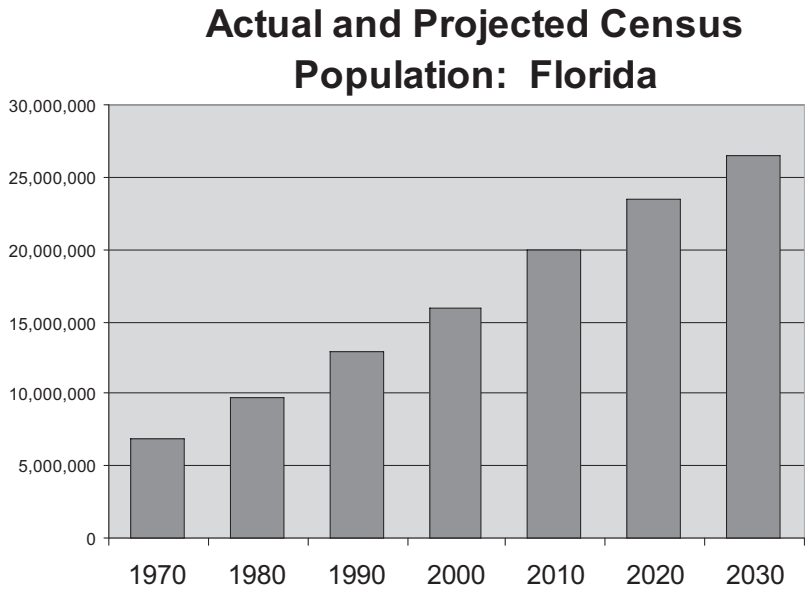

Figure 1 Population Growth in Florida. *Source*: Office of Economic and Demographic Research, Florida Legislature (2006)

under mandated coordination between the school board and the county and the impact of such coordination on the integration of land-use planning and school facility planning. By describing the process of mandated collaborative school planning in Florida, we illustrate the promise and pitfalls of such top-down legislation and offer insights to other state and local governments looking for ways to improve local planning and to increase physical activity among children.

Background and Politics: Mandated Collaborative School Planning in Florida

Between the early 1970s and 2000, Florida's population increased from 6.78 million to nearly 16 million (figure 1). Correspondingly, school enrollment jumped from about 1.4 million to just under 2.5 million over the same time period (figure 2).

To keep pace with demand, the state built hundreds of new schools: fifty-six were built in 2000 alone. The schools were built with little coordination between local governments, which approve new subdivisions, and local school districts, which are responsible for building new schools

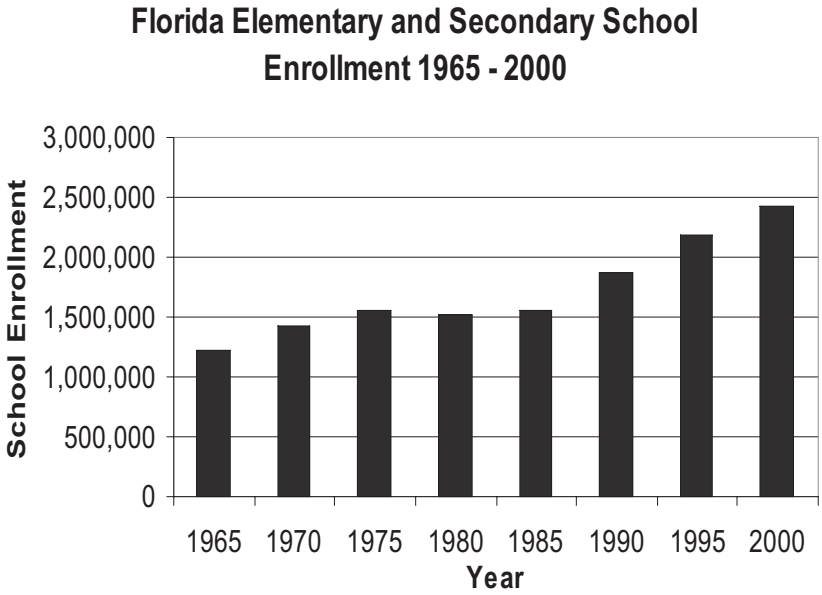

Figure 2 School Enrollment Growth in Florida. *Source*: Florida Division of Community Affairs

to meet the demand for additional capacity. In 2002 and 2005, the lack of coordination spurred the state legislature to enact laws to encourage or require local governments and schools to work together more closely.

Florida has a long history of state-mandated local planning. In 1985, the state adopted legislation requiring local governments to prepare comprehensive plans that address such specific issues as housing, transportation, and infrastructure. In addition, the state required that local plans be consistent with regional plans and with state planning goals. In 2002, Florida adopted legislation (S.B. 1906) that required coordination between school boards and local governments (counties, cities, and towns), with the goal of fostering cooperative relationships to help align school planning with decisions about residential development and the provision of infrastructure. Under S.B. 1906, local governments and county school boards must adopt interlocal agreements (ILAs) that address school siting, enrollment forecasting, school capacity, infrastructure, colocation, joint use of civic and school facilities, and dispute resolution. The goal of the legislation is to integrate local land-use planning with school facility planning, which could result in schools that are better integrated into neighborhoods and could increase the number of children who walk or bike to school. Greater

collaboration between schools and local governments could also result in jointly developed recreational facilities, such as ball fields, which provide opportunities for physical activity for children and adults alike.

In enacting S.B. 1906, the Florida legislature recognized the tremendous growth pressures at work in many of Florida's sixty-seven counties. The Florida legislation requires each of the sixty-seven county school boards (there are exemptions for slow-growing counties in which the school board has no plans for new schools) and local governments to adopt ILAs that address

- coordination of population projections and school enrollment projections;
- sharing of information regarding school facilities and land development;
- local government participation in the preparation of school facilities plans and school site selection;
- school board participation in rezoning and comprehensive plan amendments;
- colocation of facilities, such as ball fields, parks, and recreation centers; and
- a process for resolving disputes.

To facilitate implementation of the legislation, the Florida Department of Community Affairs conducted pilot programs in three counties: Lee, Pasco, and Polk. Those pilots generated, among other things, model ILAs that are easily adapted to local conditions, both urban and rural.

By the end of 2003, all jurisdictions in Florida had adopted the required ILAs. There is some evidence that the ILAs have improved information sharing and coordination as well as school siting and planning (Hubbard 2004). However, the full effect of this legislation has not yet been completely understood or documented.

We chose Lee County as our study site because it was one of the three pilots and is representative of the many Florida counties experiencing heavy growth pressures. As is often the case, the school board and county government are separate entities. Lee County, home to the cities of Fort Myers and Cape Coral as well as many smaller communities, had a population of about 455,000 in 2005.

With over seventy thousand students and eighty-two public schools, the Lee County School District is the tenth largest in the state and sixtieth largest in the nation. The school district plans to build thirty-five schools over the next ten years. In response to this growth, the state enacted leg-

islation requiring local governments to coordinate planning with local school boards. The state Department of Community Affairs facilitated implementation of the legislation by providing technical assistance, including model agreements, to local governments and schools. More recently, the state adopted legislation requiring that, by December 1, 2008, school capacity be in place concurrent with residential development—the so-called school concurrency requirement.[1]

Study Methods

To examine the impact of mandated collaboration between school boards and local governments, we conducted a descriptive case study of Lee County, Florida. Case-study research is ideally suited to understanding factors that support or hinder collaboration between school boards and local governments and the resultant effect on physical activity, because case-study research clearly defines the boundaries of the object of study (Merriam 1998). Our study involved an initial review of existing plans and intergovernmental agreements and subsequent semistructured interviews with key informants to identify perceptions of and experiences with legislatively mandated coordination and collaboration between local governments and local school boards. We also explored the attitudes of key informants on integrating local land-use planning with school facility planning. Key informants were selected from the principal stakeholder groups, including state policy makers and facilities officials, as well as local planners, the school superintendent, and county manager, plus representatives from the local school board, county commissions, and the Lee County Health Department. After developing an initial list of key informants, we used conceptually driven sequential sampling to identify and recruit additional participants (Miles and Huberman 1994). Since most new schools are being built in or planned for the unincorporated areas of the county rather than the cities, our focus was on the ILA between the Lee County School Board (a countywide school district) and the Lee County Government (see table 1).

The semistructured interview questionnaires for key informants were drawn up after a review of relevant materials to orient the interviews in the local context. Materials included model and actual ILAs for several coun-

1. S.B. 360, signed into law on June 24, 2005, and effective July 1, 2005, requires all local governments and school boards not eligible for a waiver or exemption to adopt school concurrency by December 1, 2008. See paragraphs 163.31777 and 163.3180(g) F.S.

Table 1 Lee County at a Glance

Population (2000)	440,888
Population growth (1990–2000)	31.6%
Size	804 square miles
School enrollment (2005)	Over 70,000
Number of schools	82

ties, Web sites for the various agencies and organizations, the 2006–2010 Strategic Plan for the Lee County School District, copies of Florida S.B. 360, and memoranda and reports on the status of the legislation. Given a paucity of information about the impact of ILAs on land use, Linden's (2002) study of individual, organizational, and societal challenges to collaboration informed our research. Questions relating to physical activity and the environment were grounded in the literature on environmental correlates of physical activity (Saelens, Sallis, and Frank 2003; Humpel, Owen, and Leslie 2002), with particular emphasis on barriers (Ewing, Schroeer, and Greene 2003). Each questionnaire included a core set of questions, with additional items tailored to the specific knowledge and roles of each group of key informants.

Key informant interviews, each lasting approximately one hour, were conducted in person and by telephone. Interviews focused on learning about (1) the current status and results of coordination and collaboration at the local level following ILA implementation and (2) how local land-use ordinances (e.g., zoning and subdivision regulations) and school siting criteria affect the planning process and the goals of active schools. We also explored possible obstacles to building schools that could facilitate or promote physical activity.

All interviews were tape-recorded, transcribed (with multiple passes through each recording to ensure accuracy), and coded for analysis. The interviewers also took field notes by hand during and after interviews. Initial coding categories were taken from the discussion topics contained in the semistructured interview guide; emergent themes arose from the transcribed interviews.

A thematic analysis of verbatim transcripts revealed categories and themes, which the researchers discussed after initial transcription of interviews and revised to account for emerging, overlapping, and conflating themes. Each transcript was coded by two team members other than the interviewer; discrepant codes were discussed until agreement was reached. After all responses were coded, they were grouped into cat-

egories and again reviewed until the team reached consensus on all codes. This iterative process allowed the research team to discern major and recurring themes as well as differences in how the ILA legislation and the collaborative process are viewed by participants at the various levels of government.

Findings

Detailed review of the transcripts generated from our case study revealed that there were three categories, each with multiple themes. The first category, processes, comprised background knowledge of the issues, institutional obstacles to collaboration, communication, role of personalities and personal ties, and the limited role of the health department. The second category, impact, included lack of follow-up, degree of success, attitude toward concurrency, siting, and joint use of facilities. The third category comprised additional barriers to increasing physical activity of children through mandated collaboration: suburban model, school choice, and parental attitudes and perceptions.

Processes

Background Knowledge of the Issues. Participants were generally aware of the impetus for the ILA and the new concurrency requirement. One participant explained that "when local governments make land use decisions, . . . that is the appropriate time . . . to be coordinating with the school board in terms of what school impacts are going to be, and planning for those impacts." Another observed that "each local government is required to have in their plans policies that encourage the location of schools in residential areas that they're serving, and that also they seek to colocate schools with other public facilities, like parks."

Although participants acknowledged the need to include schools in the planning process, they did not generally recognize the impact on physical activity. For example, a participant commented that discussions of school design or location did not consider physical activity beyond ensuring facilities for physical-education classes. Another added that policy to date had focused on providing physical activity within the school setting. One participant, however, indicated that there was some discussion at the state level about the need to encourage more schoolchildren to walk or bike to school.

Institutional Obstacles to Collaboration. Fragmentation of governance was seen as the greatest obstacle to collaboration: "Down here, school districts [are] . . . separate from the county. There were few incentives to collaborate: the statutes really leave it up to the school board itself to determine their site planning needs. The only time the local government can really get involved is with respect to environment issues, adjacent compatibility issues, and public safety issues." Fragmentation also occurs at the local school level. As one interviewee commented, "I think the interesting thing about schools is, they may be under the umbrella of the Lee County School District, but they belong to themselves. Whoever is in charge of that school is the boss."

The related lack of formal communication was also identified as an obstacle. One key informant observed, "There are sixty-seven counties; most of them have been operating independently of [school districts] forever. Some have better relations [with the schools] than others. Some have horrible relations—they don't even talk." Another echoed this observation. Even when communication between government entities did occur, key informants stated that there was little consistency.

Communication was often described as personality based or personality dependent. One participant explained that "where there was an individual that had a lot of initiative and cared a lot, [who] wanted to . . . make sure that they shared information and that their plans were coordinated, . . . then [communication] usually occurred. Where there wasn't that sort of dedication or initiative, it occurred sporadically if at all."

In addition, collaboration seemed to occur when the parties had a long-standing relationship based on trust and open communication. A county official explained that a recent successful collaboration between the school board and the parks and recreation department occurred because "both M__ and I have been with the county for thirty years . . . , and I have a continuity and a sense of history." In contrast, turnover among policy makers and staff at the school district hindered collaboration: "M__ and I have worked with . . . over twenty different people at the school board who have been our liaison, but there is no sense of history there." Another county official commented, "The school board planner just changed, a new one started today . . . so she won't know" about working within the scope of the interlocal agreement.

Limited Involvement with the Local Health Department. The impact of collaborative planning on physical activity was not perceived as central. One official admitted that for the schools, at least, "it's not a high priority."

The role of the health department was limited: one high-ranking health department official stated flatly, "I am not aware of any coordination," and "we are not part of any interlocal agreement." Another, however, had observed some efforts at involving the health department: "Used to be that we were maybe the last ones invited. Now, when they have a meeting, they want someone from public health at the table . . . I think a lot of that came about too when our growth started escalating so much." Programs, however, had been limited to walk-to-school days and programs on bicycle and pedestrian safety.

Impact of Legislation

Degree of Success. Participants were divided on their assessment of the success of the ILAs. Some saw very little impact: "I don't have any evidence that they have been [successful]." A local official reported that the ILA had been "on the shelf" ever since statutory compliance. Another stated that the agreement had worked well sometimes but not always. Others were enthusiastic in their support. A state official remarked that local governments and schools have found that the ILAs have "systematized and made more regular their coordination with one another and that the local governments and school boards are working more closely on siting schools. The fact that they're working together is a big step in the right direction."

Communication among agencies has been enhanced by the ILA. Comments included, "The county commission and the school board are separate. Now it's kind of forcing them to get together and talk," and "Now that we have a school board member that's required to be an ex-officio member of the local planning agency and now that we have these interlocal agreements that require that they share information, there's more awareness of what the local government's doing and what its impact is on the school board and their ability to keep up."

One of the cited limitations of the ILAs was that there is little, if any, monitoring and enforcement. Many interviewees stated that the ILAs lacked teeth and that signing the agreements was largely a paper exercise, because there is no penalty for failure to implement or act on the ILAs. As one interviewee remarked, "We met once to sign the agreement and that was it." Another key informant stated that, "in terms of their actual effect, there's been no follow-up."

Attitude toward Concurrency. Although there was some disagreement, key informants were generally optimistic in their expectations for the new

concurrency requirement. One participant called concurrency "a useful tool" and indicated that it would change how schools are built or located. Concurrency was described as "forward-looking planning." While the ILAs had lacked real incentives for collaboration, key informants felt that the new requirement would be enforceable: "This new legislation actually has teeth to it, where their funds can be withheld." One expressed doubt, however, saying, "I don't know whether you can make a mandate. You know [you can] put the water out there but that doesn't necessarily make the horse drink."

Impact of Collaboration on School Siting. There was disagreement about the impact that the ILA had had on the location of schools. One key informant stated, "I believe that it has made a difference in terms of how schools are sited," but admitted to an inability to give specific examples. In contrast, another commented, "I don't have any evidence that they have been [successful]." There was hope for future collaboration under concurrency: "although we have a . . . long history [of collaboration], we have not been involved in any site selections. So, maybe that will help get us involved."

Increased Joint Use. Joint use of facilities by school districts and local governments was seen as key to promoting greater collaboration and to increasing physical activity. Veteran's Park, a joint project between the Lee County Department of Parks and Recreation and the Lee County School Board, was an example of success. A Parks and Recreation official explained that "we gave them twenty acres [in Veteran's Park], and then we entered into an agreement to build a recreation center attached to their gymnasium. The community can use the recreation center half, the school uses the school half, and then in the evenings the community can use all of it." A representative from the Lee County Health Department observed,

> I think one of the most interesting things I've heard lately as far as schools and physical activity was when we went over to that meeting in Lehigh, and they were using a Parks and Rec facility . . . located right next door to a school, and . . . they were sharing that facility with schools, which I thought was a very cool idea . . . Parks and Rec is running into the same problems as the school district as our growth is increasing.

Additional examples of collaboration included swimming pools built with county dollars on school board property, as well as outdoor athletic facilities at several schools.

One key informant observed that the new concurrency requirement would go further than the ILAs regarding promotion of physical activity:

> Now they're going to have to actually have dialogue and talk about the future and how they're going to make it better together. One of those pieces needs to be schools, and it also needs to be how we're going to get kids to and from schools. It can't be cars, and it can't be buses, totally. We've seen everywhere that that costs too much money and it's tying up too much roadway and everything else. So if there's a safe way to get them to school walking and biking, we definitely need to explore that.

Additional Barriers to Increasing Physical Activity through Mandated Collaboration

Despite optimism over the anticipated impact of the concurrency requirement, key informants identified numerous barriers to increasing the physical activity levels of school-age children through collaboration between the local government and the school board.

Land Use. A major barrier was the spread-out, low-density, automobile-centered model upon which the county had been built: "I don't know that we have much hope for going back to neighborhood schools . . . The suburban model that we've developed in this county is not going to lend itself real well to us being able to . . . do that." Retrofitting would not be successful because it would entail "trying to do something that doesn't really fit the model." The scarcity and cost of land were related issues: the school board was "just chasing down whatever [land] they can find that's large enough" and "the high cost of land sometimes drives the school board to look for sites that are further out that would certainly not be walkable, but may be less expensive for them in terms of land cost." Because of the need to locate schools in greenfield areas, there were few sidewalks, and schools were often located near major thoroughfares. One key informant summed up the problem of school siting, saying,

> We're going in the opposite direction, all the way from neighborhood schools to mega schools that are located more for just transportation, well, (a) they can get the land, and (b) more of something that's conducive to a lot of vehicles coming in and out of the school, and you get shut down when you try to do that in the neighborhood, with the size of these schools, so they're putting them on the intersections or nearby on busy roads.

School Choice. School choice, which had recently replaced a more than twenty-year-old desegregation order, was also perceived as an obstacle to increasing the number of children who walk or bike to school. Some participants observed that parents would choose schools convenient to their places of work rather than in their neighborhoods.

Attitudes and Perceptions. Parents' attitudes and perceptions were another barrier to increasing walking and biking. Speaking of traffic safety, one key informant observed, "I think you just have to structure your schools so that [they are] conducive for walking . . . If you can design and build schools, make it safe to walk and ride bikes, kids are going to walk and ride bikes." Another concurred that "if there's safe access, if there's a place to walk or ride that's not directly on the road, if there's not a lot of cut-through traffic, if they don't have to cross any major intersections . . . I think those are the kinds of things that encourage children walking to school." However, "some neighborhoods don't want schools because of the increased traffic they would generate." Key informants noted that personal safety was also an issue for parents, and several key informants used the term "stranger danger." According to one interviewee, the key factor that discourages children from walking or biking is "crime, in general. I know as a parent, I wouldn't want my child riding a bike or walking to school, if they had to go more than a few blocks, just because of the people that could ride by and pick them up."

Conclusion

Coordinated Planning

Florida has a long tradition of state-mandated planning initiatives. Because of this, some of the institutional infrastructure for coordinated planning already exists, such as concurrency for roads, water, and sewer. In Florida, however, as in other states, one of the challenges of improving coordination across institutions is that school boards and local governments often have no history of working together. School boards and county commissioners are elected separately and have their own missions and budgets. Building the trust and relationships necessary for collaboration takes time. In addition, school concurrency requires a much stronger link between residential development and school capacity. The ILAs, then, have set the stage for the greater intergovernmental coordination that will be required under concurrency, offering school districts and local governments a

means to practice collaboration before it is forced on them in 2008. The looming concurrency requirement itself, however, may have an unknown effect on current collaboration, as county and school officials try to anticipate and accommodate the requirements that concurrency will impose; some may delay otherwise timely action because of uncertainty about the impact of the legislation.

To improve planning across agencies, it is necessary to break down existing institutional barriers (Vincent 2006). We found that participants agreed that the voluntary ILAs sparked more discussions across departments, boards, or agencies. The level of collaboration, however, continued to be dependent on factors such as turnover among key staff, personal relationships, and the commitment of the parties. Interviewees from different levels of government (local, county, and state) and from different professional perspectives (planning and school management) tended to express different opinions about the current status and future potential of the legislation: state officials were more optimistic about the effectiveness of the agreements, while local officials were more circumspect.

Joint Use

In fast-growing regions where land prices have risen dramatically and land for schools is scarce, schools and local governments may be drawn together to coordinate their planning. Across the country, school boards and local governments are looking for creative ways to stretch scarce public resources. One recommendation is to share the cost of planning, designing, constructing, and operating such facilities as ball fields, libraries, and gymnasiums. By combining resources, schools and local governments can achieve together what they could not alone. Participants in our study were enthusiastic in their descriptions of facilities shared between the county and the schools. Joint use of parks was given as an example of the way in which local government and schools encouraged physical activity. These findings support the recommendation made for joint use of facilities in a 2004 presentation to the National Institute of Environmental Health Sciences Conference on Obesity and the Built Environment (Morris 2004). Recently, a model has been developed to guide public use of school facilities for physical activity (Spengler, Young, and Linton 2007). A growing emphasis on environmental change as a means of increasing physical activity has motivated collaboration between public health practitioners and urban planners (Hoehner et al. 2003).

Despite the advantages, joint use poses several obstacles, such as the

lack of coordination and difficulty communicating across departments. Communication between agencies was one concern expressed by key informants at all levels in our study. Planning and funding cycles of agencies are often asynchronous, making it difficult to plan jointly. There may be disagreements over responsibilities, and issues of turf may need to be settled. Finally, agencies may fear loss of control if they agree to share facilities. Joint use offers many advantages, including substantial cost savings, but it also poses major challenges, including financing of facilities. More research will be needed to determine how joint use can best be facilitated and what the impact on children's physical activity can be.

Limited Impact on Physical Activity

Nationwide, there are few comprehensive plans that mention health or physical activity (Morris 2004). Although participants in our study acknowledged the need for such environmental supports as increased sidewalks and protected crossings at intersections, they did not explicitly link these changes to health outcomes. The role of the local health department in planning was largely ignored, and there was a disconnect between governmental support of programs sponsored by the health department that encourage walking and bicycling and the lack of infrastructure needed to enable such activities. Health department officials should be involved at every level of planning. By ignoring health and activity as key components of good planning, stakeholders are missing an opportunity to educate the public and advance other progressive planning goals (ibid.).

Even when collaborative planning takes into account children's physical activity during the school commute, there remain barriers to walking or bicycling to school. The suburban model with its inherent sprawl, the location of large schools in outlying areas, the presence of multilane roads, and the absence of sidewalks and crossings all limit the ability of children to walk or bicycle. Other goals, including desegregation and the need to provide quality education to all socioeconomic levels, may conflict with providing opportunities for physical activity.

Key informants also identified parental attitudes and behaviors as barriers to increasing physical activity. Even when planning resulted in accessible schools, few children walked or biked to those schools. Personal safety, particularly the threat of abduction, was a major factor in parents' decisions to drive their children to school. Perceived levels of personal safety may bear little resemblance to actual levels, however (McMillan 2005). Additionally, parents found it more convenient to choose schools

close to their workplaces, rather than ones in their neighborhood. Educational campaigns may be a necessary component of planning in order to assuage fears and increase parental awareness of the advantages of walking or biking to school as a component in children's physical activity.

The state and local officials represented in our study were clearly dedicated to the health and well-being of schoolchildren and interested in finding new strategies for increasing physical activity. The issue of collaborative planning involving local government and school boards is complex, however, and more research is needed to determine how such planning can best contribute to increased physical activity for children. Environmental conditions for active travel to school are necessary but not sufficient. Collaborative planning with school boards alone cannot counteract the trend toward increasing automobile travel, given environmental and socioeconomic realities. Similarly, school-based opportunities for physical activity are not sufficient.

Creative approaches are needed to overcome barriers to physical activity. Joint-use facilities, in-school programs, and changes in school siting and design all show promise for effecting change. A transdisciplinary approach involving communication among all governmental agencies, including the health department and school boards, will be necessary to identify which barriers are immutable and which are not (Davison and Lawson 2006). Some solutions may be simple: removing fencing and gates to provide access to such facilities as tracks, tennis courts, ball fields, and gyms and using public awareness and education campaigns to lower such perceptual barriers as fear of crime and traffic. Other solutions may require long-term changes in society's attitudes toward land use and travel.

References

Beighle, A., C. F. Morgan, G. LeMasurier, and R. P. Pangrazi. 2006. Children's Physical Activity during Recess and outside of School. *Journal of School Health* 76:516–520.

Boarnet, M. G., C. L. Anderson, K. Day, T. McMillan, and M. Alfonzo. 2005. Evaluation of the California Safe Routes to School Legislations: Urban Form Changes and Children's Active Transportation to School. *American Journal of Preventive Medicine* 28:134–140.

Braza, M., W. Shoemaker, and A. Seeley. 2004. Neighborhood Design and Rates of Walking and Biking to Elementary School in Thirty-Four California Communities. *American Journal of Health Promotion* 19 (2): 128–136.

Brener, N. D., L. Kann, D. Garcia, G. MacDonald, F. Ramsey, S. Honeycutt, J. Hawkins, S. Kinchen, and W. A. Harris. 2007. *Morbidity and Mortality Weekly Report Surveillance Summaries* 56 (2): 1–16.

Council on Sports Medicine and Fitness and Council on School Health. 2006. Policy Statement: Active Healthy Living: Prevention of Childhood Obesity through Increased Physical Activity. *Pediatrics* 117:1834–1842.

Davison, K. K., and C. T. Lawson. 2006. Do Attributes in the Physical Environment Influence Children's Physical Activity? A Review of the Literature. *International Journal of Behavioral Nutrition and Physical Activity* 3:19. July 27. www.ijbnpa.org/content/3/1/19.

Ewing, R., C. Forinash, and W. Schroeer. 2005. Neighborhood Schools and Sidewalk Connections: What Are the Impacts on Travel Mode Choice and Vehicle Emissions? *Transportation Research News* 237:4–10.

Ewing, R., W. Schroeer, and W. Greene. 2003. *School Location and Student Travel: Analysis of Factors Affecting Mode Choice*. Washington, DC: U.S. Environmental Protection Agency.

Federal Highway Administration (FHA). 1972. *Transportation Characteristics of School Children*. Nationwide Personal Transportation Study, Report No. 4. Washington, DC: FHA.

Gurwitt, R. 2004. *Edge*-ucation: What Compels Communities to Build Schools in the Middle of Nowhere? *Governing*, March 2004. www.governing.com/textbook/schools.htm.

Hallal, P. C., C. G. Victora, M. R. Azevedo, and J. C. Wells. 2006. Adolescent Physical Activity and Health: A Systematic Review. *Sports Medicine* 36:1019–1030.

Hoehner, C. M., L. K. Brennan, R. C. Brownson, S. L. Handy, and R. Killingsworth. 2003. Opportunities for Integrating Public Health and Urban Planning Approaches to Promote Active Community Environments. *American Journal of Health Promotion* 18 (1): 14–20.

Hubbard, V. 2004. *Coordinating School Planning and Growth Management in Florida*. Florida Department of Community Affairs, presentation at the Annual Conference of the American Planning Association, Washington, DC, April 22–24.

Humpel, N., N. Owen, and E. Leslie. 2002. Environmental Factors Associated with Adults' Participation in Physical Activity: A Review. *American Journal of Preventive Medicine* 22:188–199.

Keppel, K. G., J. N. Pearcy, and R. J. Klein. 2004. *Measuring Progress in Healthy People 2010*. Healthy People 2010 Statistical Notes No. 25. Hyattsville, MD: National Center for Health Statistics.

Kerr, J., D. Rosenberg, J. F. Sallis, B. E. Saelens, L. D. Frank, and T. L. Conway. 2006. Active Commuting to School: Associations with Environment and Parental Concerns. *Medicine and Science in Sports and Exercise* 38:787–794.

Krizek, K., A. Birnbaum, and D. Levinson. 2004. A Schematic for Focusing on Youth in Investigations of Community Design and Physical Activity. *American Journal of Health Promotion* 19 (1): 33–38.

Linden, R. 2002. *Working across Boundaries: Making Collaboration Work in Government and Nonprofit Organizations*. San Francisco: Jossey-Bass.

Lowry, R., N. Brener, S. Lee, J. Epping, J. Fulton, and D. Eaton. 2004. Participation

in High School Physical Education — United States, 1991–2003. *Morbidity and Mortality Weekly Report* 53:844–847.

Malina, R. M. 1996. Tracking of Physical Activity and Physical Fitness across the Lifespan. *Research Quarterly of Exercise and Sport* 67 (suppl. 3): S48–S57.

Martin, S., and S. Carlson. 2005. Barriers to Children Walking to or from School — United States, 2004. *Morbidity and Mortality Weekly Report* 54:949–952.

May, P., R. Burby, N. Ericksen, J. Handmer, J. Dixon, S. Michaels, and D. I. Smith. 1996. *Environmental Management and Governance: Intergovernmental Approaches to Hazards and Sustainability*. London: Routledge.

McDonald, M. 2005. Children's Travel: Patterns and Influences. PhD diss., University of California, Berkeley.

McDonald, N. 2007. Active Transportation to School: Trends among U.S. Schoolchildren, 1969–2001. *American Journal of Preventive Medicine* 32:509–516.

McMillan, T. 2005. Urban Form and a Child's Trip to School: The Current Literature and a Framework for Future Research. *Journal of Planning Literature* 19:440–456.

Merchant, A. T., M. Dehghan, D. Behnke-Cook, and S. S. Anand. 2007. Diet, Physical Activity, and Adiposity in Children in Poor and Rich Neighbourhoods: A Cross-sectional Comparison. *Nutrition Journal* 6. January 11. www.nutritionj.com/content/6/1/1.

Merriam, S. 1998. *Qualitative Research and Case Study Applications in Education*. San Francisco: Jossey-Bass.

Miles, M. B., and A. M. Huberman. 1994. *Qualitative Data Analysis*. 2nd ed. Thousand Oaks, CA: Sage.

Morris, M. 2004. Rethinking Community Planning and School Siting to Address the Obesity Epidemic. Report for the National Institute of Environmental Health Sciences Conference on Obesity and the Built Environment, Washington, DC, May 24–26.

Mota, J., M. Almeida, P. Santos, and J. C. Ribeiro. 2005. Perceived Neighborhood Environments and Physical Activity in Adolescents. *Preventive Medicine* 41:834–836.

Office of Economic and Demographic Research. 2006. Demographic Estimating Conference Database. July. edr.state.fl.us/population.htm.

Ogden, C. L., M. D. Carroll, L. R. Curtin, M. A. McDowell, C. J. Tabak, and K. M. Flegal. 2006. Prevalence of Overweight and Obesity in the United States, 1999–2004. *Journal of the American Medical Association* 295:1549–1555.

Rosenberg, D. E., J. F. Sallis, T. L. Conway, K. L. Cain, and T. L. McKenzie. 2006. Active Transportation to School over Two Years in Relation to Weight Status and Physical Activity. *Obesity* 14:1771–1776.

Saelens, B. E., J. F. Sallis, and L. D. Frank. 2003. Environmental Correlates of Walking and Cycling: Findings from the Transportation, Urban Design, and Planning Literatures. *Annals of Behavioral Medicine* 25:80–91.

Saksvig, B. I., D. J. Catellier, K. Pfeiffer, K. H. Schmitz, T. Conway, S. Going, D. Ward, P. Strikmiller, and M. S. Treuth. 2007. Travel by Walking before and after School and Physical Activity among Adolescent Girls. *Archives of Pediatric and Adolescent Medicine* 161:153–158.

Sallis, J. F., T. L. McKenzie, and J. E. Alcaraz. 1993. Habitual Physical Activity and Health-Related Physical Fitness in Fourth-Grade Children. *American Journal of Diseases of Children* 147:890–896.

Schlossberg, M., J. Greene, P. Paulsen Phillips, B. Johnson, and B. Parker. 2006. Effects of Urban Form and Distance on Travel Mode. *Journal of the American Planning Association* 72:337–346.

Sirard, J. R., W. F. Riner Jr., K. L. McIver, and R. R. Pate. 2005. Physical Activity and Active Commuting to Elementary School. *Medicine and Science in Sports and Exercise* 37:2062–2069.

Spengler, J. O., S. J. Young, and L. S. Linton. 2007. Schools as a Community Resource for Physical Activity: Legal Considerations for Decision Makers. *American Journal of Health Promotion* 21 (suppl. 4): 390–396.

Steinbeck, K. S. 2001. The Importance of Physical Activity in the Prevention of Overweight and Obesity in Childhood: A Review and an Opinion. *Obesity Reviews* 2:117–130.

Timperio, A., K. Ball, J. Salmon, R. Roberts, B. Giles-Corti, D. Simmons, L. A. Baur, and D. Crawford. 2006. Personal, Familial, Social, and Environmental Correlates of Active Commuting to School. *American Journal of Preventive Medicine* 30:45–51.

Tudor-Locke, C., B. E. Ainsworth, and B. M. Popkin. 2001. Active Commuting to School an Overlooked Source of Childrens' Physical Activity? *Sports Medicine* 31:309–313.

Vincent, J. 2006. Public Schools as Public Infrastructure: Roles for Planning Researchers. *Journal of Planning Education and Research* 25:433–437.