

# A Step Toward a Healthier South Los Angeles: Improving Student Food Options Through Healthy Sidewalk Vendor Legalization

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## Abstract

*Obesity, especially among children and adolescents, is a critical issue that marginalized urban communities nationwide confront. This article reports on the results of a Health Impact Assessment (HIA) conducted regarding the reconsideration of a ban on sidewalk food vending in Los Angeles, California. The HIA explored the potential impacts that the regulatory change would have on the food environment near schools, which research shows can play an important role in the eating behaviors of young people, and examined potential ways to encourage healthy alternatives in this nutrition landscape.*

## Introduction

The potential long-term health effects of the obesity epidemic are particularly adverse in the young. As rates of overweight and obese children and adolescents have risen, concerns about their future and the epidemic's economic and social impacts have led activists and policymakers to reconsider longstanding customs and laws. This article explores one such law in which the City of Los Angeles, California, decades ago outlawed all sidewalk vending and its recent reconsideration of that

law. Community Health Councils (CHC), a local health policy education organization, conducted a Health Impact Assessment (HIA) to examine the health considerations of this proposed reform and to inform the dialogue regarding a potential new regulatory structure (Baird, 2015).

HIAs are an increasingly common way for stakeholder groups, advocacy organizations, and public agencies to examine the potential health outcomes of policy changes and development proposals and to educate policymakers about their positive and negative effects. HIAs focus on a specific proposal that is or may soon be considered for adoption or implementation within a given geography. Environmental and economic factors often contribute to these findings, which make it easier to identify specific populations that are vulnerable to environmental or regulatory changes. The foci of this HIA are the effect of the proposed legislative change on areas surrounding public schools and a proposal to use the reconsideration of this legislation as an opportunity to reshape the food environment around schools, thereby potentially creating healthier food options that will aid children while creating new opportunities for vendors.

## Background

With the dramatic rise of children's weight over the past 40 years, overweight and obesity rates have become prominent public health concerns because of their relationship with chronic health conditions (Child Trends Databank, 2014). South Los Angeles, which has the highest childhood obesity rate (29 percent) in Los Angeles County (OHES, 2013), includes the four City Council districts with the lowest life expectancy (75 to 79 years), which ranges from 1 to 5 years less than the city average (OHES, 2010).

Although few studies have considered the specific relationship of sidewalk food vendors and the health of school-age children, the existing research suggests reason for concern, especially at elementary schools (Tester, Yen, and Laraia, 2010). As part of this assessment, observers surveyed the presence of food vendors at two high schools, two middle schools, and eight elementary schools. Food vendors were most prevalent around elementary schools. This finding led us to devise a more systematic approach to studying the presence and impact of food vendors around elementary schools.

A previous analysis of three elementary schools in South Los Angeles determined that the most common snack purchased from vendors (chips) contains about 300 calories, which accounts for 15 to 20 percent of the U.S. Department of Agriculture (USDA)-recommended daily caloric intake for a child between the ages of 8 and 11, depending on the child's physical exertion that day. When a soda is added to the purchase (61 percent of purchases in the study included more than one item), the average caloric intake rises to 480 calories and 24 to 31 percent of the daily recommendation. These measurements led to the finding that students who exercise less than 30 minutes per day (likely most students) may be overconsuming calories by 16 percent with the purchase of one bag of chips and 27 percent with the purchase of one bag of chips and one container of soda. The study also noted that many of these calories are "empty,"<sup>1</sup> leading to passive overconsumption caused by unrelieved feelings of hunger (Goetz and Wolstein, 2007).

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<sup>1</sup> Many chips and candy items purchased from sidewalk vendors have an energy density that is two or three times greater than the 1.5-kilocalorie-per-gram threshold marking passive overconsumption (Goetz and Wolstein, 2007).

## **Student Nutrition Environments in South Los Angeles**

In response to pressures from parent groups and health advocates, the Los Angeles Unified School District (LAUSD) is reforming policy and lunchroom programs in an effort to make school meals healthier, more accessible, and more presentable to students. These reforms are often works in progress, attracting continual scrutiny and revision (Gase et al., 2014). The process has been driven by a series of resolutions enacted by the Board of Education to limit the sale of sugary drinks during school hours,<sup>2</sup> set nutrition standards for snack food sold on campuses,<sup>3</sup> improve the marketability and nutrition content of school food,<sup>4</sup> establish minimum lunch periods and improve school breakfast participation,<sup>5</sup> and enhance procurement standards.<sup>6</sup>

Although on-campus nutrition environments are gradually improving, the low-quality food environment that surrounds many South Los Angeles school campuses remains a stubborn health challenge (Rose et al., 2009). South Los Angeles hosts three of the city's five lowest-scoring community plan areas as rated by the Modified Retail Food Environment Index (mRFEI), which measures the ratio of healthy food outlets to total food outlets (DCP, 2013). In South Los Angeles, 75 percent of restaurants employ a limited-service fast-food format compared with 50 percent of restaurants for all of Los Angeles County (U.S. Census Bureau, 2013). The prevalence of liquor stores and dearth of full-service grocery stores in South Los Angeles are also well documented, especially in contrast with West Los Angeles (Park, Watson, and Galloway-Gilliam, 2008). It is not surprising that rates of fast-food and sugar-sweetened beverage consumption among children and adolescents in South Los Angeles are substantially higher than in the county overall, and rates of fruit and vegetable consumption are the lowest in the county (OHES, 2013).

Awareness is growing that mobile food vendors (including sidewalk vendors and food trucks) are an important, if challenging to quantify, component of this wider food ecology. Also, commentators share a growing awareness that student nutrition advocacy must eventually pivot from campus-oriented interventions toward a wider consideration of resource environments in surrounding communities (Mieszkowski, 2013; Mikkelsen and Chehimi, 2007). As lunchroom operators and students navigate a transition to a new and healthier menu, the real possibility remains that students will negate this effort by purchasing nutrient-poor snacks and sugary beverages outside schools. At the same time, sidewalk vendors represent an alternative opportunity to introduce healthier food (for example, fresh fruit and vegetables) into communities where major retailers either do not exist or do not provide it (Fuchs et al., 2014).

## **Sidewalk Vending Regulatory Environment**

Sidewalk vending (including food sold from street carts) is currently prohibited citywide in Los Angeles.<sup>7</sup> Los Angeles is the only major U.S. city to prohibit the activity on such a comprehensive scale,

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<sup>2</sup> LAUSD Board of Education, Motion to Promote Healthy Beverage Sales (2002).

<sup>3</sup> LAUSD Board of Education, Obesity Prevention Motion (2003).

<sup>4</sup> LAUSD Board of Education, Cafeteria Improvement Motion (2005).

<sup>5</sup> LAUSD Board of Education, Improving Food Nutrition Policy (2012).

<sup>6</sup> LAUSD Board of Education, Good Food Procurement Policy (2012).

<sup>7</sup> Ordinance appears in Los Angeles Municipal Code, section 42.00(b).

rather than regulate it as a legitimate commerce. A separate ordinance prohibits general vending (including sidewalk vendors and mobile food trucks) within 500 feet of school campuses during normal school hours.<sup>8</sup> The latter regulation exists in numerous jurisdictions across the nation, although the specific distances and times vary, and they often include other sensitive locations (for example, libraries, parks). Los Angeles County, through the Department of Public Health, regulates the food handling aspects of sidewalk vending, but local jurisdictions have the discretion to regulate the spatial and commercial aspects of vendor activity. Regardless of whether food vendors in Los Angeles County are compliant with local rules, they are required to maintain a *food service cart* permit, which commits them to having pushcarts of a sufficient quality and overnight storage in a commissary. The certification process subjects vendors to permit fees, warehousing fees, higher equipment costs, and periodic safety inspections.

Enforcing these regulations involves law enforcement citing sidewalk vendors, public health officials confiscating products and equipment, or both. Officials can simply warn a vendor to move on or they can arrest them and confiscate and destroy their property (Rosales, 2013). Even given these possible adverse outcomes, sidewalk vending is very widely practiced in Los Angeles, with one agency estimating that around 10,000 food vendors are in the public domain on any particular day.<sup>9</sup> With only limited resources available, enforcement may appear arbitrary, often driven by complaints from local merchants, property owners, or school administrators. Rather than discouraging illegal sidewalk vending, enforcement may actually be trapping people within the city's shadow economy by eliminating the economic gains that would help them secure a foothold in more legitimized enterprises (Morales, 2000; Vallianatos, 2014).

Seeking to relieve pressure on these informal sector workers and microentrepreneurs, dozens of community-based organizations have partnered on a campaign to highlight the legal challenges that sidewalk vendors face and to recognize their influence on Los Angeles' emergent food culture.<sup>10</sup> The Los Angeles City Council initiated the legislative process to legalize sidewalk vending in November 2013—calling for the formulation of regulatory alternatives.<sup>11</sup> Although many councilmembers agree the current citywide prohibition of sidewalk vending is impractical and in need of at least a partial repeal, debates about the details of a new regulatory structure have stalled the issue in committee.

## Methods

This HIA employs a comparison between the nonpermissive regulatory environment in South Los Angeles and a more permissive regulatory environment in Compton, California, to measure differences in vendor-related activity near selected schools. These jurisdictions have similar socioeconomic conditions that may influence sidewalk vendor activity. Unlike Los Angeles, though, Compton allows sidewalk vending but limits it to specific locations and times.<sup>12</sup> We capitalize on

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<sup>8</sup> Los Angeles Municipal Code, section 80.73, defines normal school hours as 7:30 a.m. to 4:30 p.m. on weekdays.

<sup>9</sup> The report is available in City of Los Angeles, Chief Legislative Analyst, Council file 13-1493 (November 26, 2014).

<sup>10</sup> A list of partner organizations is available at <http://streetvendorcampaign.blogspot.com/p/partners.html>.

<sup>11</sup> The motion is available in Los Angeles City Council, Council file 13-1493 (November 6, 2013).

<sup>12</sup> The Compton Municipal Code, section 9-26, restricts vending in the following ways: not within 10 feet of vehicle realm, not within 50 feet of another pushcart, not within 300 feet of school campuses on school days between 7:00 a.m. and 5:00 p.m., and not in residential areas between 6:00 p.m. standard/8:00 p.m. daylight and 8:00 a.m.

this variation and compare vendor prevalence and use across multiple schools in each jurisdiction. The framework enables us to consider the roles of both environment and regulation in the context of vending and student nutrition. Results may indicate that certain socioeconomic factors correlate with higher or lower sidewalk vendor activity regardless of jurisdictional regulation, suggesting influences other than vendor regulations help shape the student nutrition environment. Differences between the two jurisdictions that are consistent across socioeconomic factors, however, would suggest that vendor regulations do influence the student nutrition environment.

This HIA considers three variables that are closely related to sidewalk vendor activity and can be measured using field observations and student surveys. First, the presence of sidewalk vendors in proximity to school campuses provides one measure of how nutrient-poor snacks and sugary beverages are made accessible to students and how effectual vendor prohibitions are in regulating access. Snack and beverage offerings are also observed for any distinction between vendors who offer more and less healthy options. Second, surveying student and caretaker purchases provides insight on nutrition behaviors in relation to sidewalk vendors and, by including other food retail points, assesses the role of sidewalk vendors within the wider food resource environment. Third, sidewalk vendors have been viewed both as a safety hazard, because they may congest sidewalks, and as a positive influence on safety in the public realm, because vendors represent “eyes on the street” that can check bad actors. This question is addressed by recording bicyclist and pedestrian activity and sidewalk conditions near the same schools where vendor activity was observed.

## **School Comparisons**

To construct the comparison between a nonpermissive and a permissive regulatory environment, a statistical analysis was performed to identify similar jurisdictions. Percentage of *Spanish-speaking population* was one criterion, based on local studies that connect sidewalk vending with the culture of Latin American immigrants (Rosales, 2013; Goetz and Wolstein, 2007). The second criterion was *population living under the poverty level*, taken from studies that show sidewalk vending is a fallback enterprise for many people who struggle to generate sufficient incomes within the formal economy (Austin, 1994; Morales, 2000). Three jurisdictions with more permissive vendor regulations were chosen for deeper analysis based on Spanish-speaking populations at least as high as in South Los Angeles and poverty rates that were more than 20 percent.

The statistical analysis was then extended to specific schools to identify the closest matches for specific environmental variables. Data were compiled reflecting the socioeconomic characteristics of residents living within a 1/2-mile proximity of the applicable school campus, as opposed to students attending that school or their households. In addition, mRFEI scores were collected for the applicable census tract of each school,<sup>13</sup> as was the aggregate number of bicyclist and pedestrian collisions within 1/2 mile of each school from 2007 through 2009.<sup>14</sup> Compton emerged as the ideal comparison environment because it was the only jurisdiction to offer close matches to South Los Angeles school neighborhoods for each of the environmental variables. Elementary schools from these jurisdictions were then matched based on close similarities for one of the previously mentioned environmental variables.

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<sup>13</sup> mRFEI data are accessible at <http://www.cdc.gov/obesity/>.

<sup>14</sup> These data were compiled from the Safe Transportation Research and Education Center, Transportation Injury Mapping System, Safe Routes to School collision map viewer (2007 through 2009), accessed November 2013.

## Field Data Collection

School environments selected for the assessment were observed during March and April 2014 each for a 60-minute period beginning at the closing bell, which earlier studies documented as the time when sidewalk vendors make most of their sales near schools (Goetz and Wolstein, 2007). Observations took place only on midweek days (Tuesday through Thursday), but days with irregular bell schedules were avoided. In most cases, observations for matching schools took place on the same day or on consecutive days, so that conditions between the comparison schools would be most similar.

During each observation period, an assessor walked the periphery of the school campus and adjacent streets within a two-block radius to record the presence of any sidewalk food vendors and the general content of snacks and beverages offered. Two to four additional assessors were placed at key observation points, as needed, to tally the number of pedestrians and bicyclists present during the observation period.

Student surveys were administered from October through December 2014 at the four elementary schools in South Los Angeles where field observation had occurred previously. CHC was not able to coordinate with school personnel to administer surveys at comparison schools in Compton. Survey respondents (anonymous 4th and 5th grade students) indicated the general frequency (never, occasional, or frequent) for which they obtained snacks from eight types of access points within the wider nutrition environment and how often they obtained items from sidewalk vendors from five categories. Students also indicated how often they ate lunch or snacks provided at school.

## Results

Overall, results did not show noticeable differences between the two jurisdictions for sidewalk vendor presence. The quantity of observed vendors ranged from the highest (eight) to the lowest (zero) in South Los Angeles, while Compton had a more moderate range (exhibit 1). The permissiveness of the regulatory environment does not seem to clearly influence vendor presence near schools in these communities.

The analysis of socioeconomic factors, however, suggests that poverty and language might influence the presence of sidewalk vendors near schools. Elementary S1 and Elementary S3 had the highest number of vendors (eight and six, respectively) and also the highest percentage of people living in poverty (32.1 and 31.5 percent, respectively). By comparison, Elementary S2 and Elementary S4 had no vendor presence and the lowest population of Spanish speakers (42.6 and 46.8 percent, respectively). A similar pattern was not evident in Compton, where differences in poverty rates between schools were smaller and rates of Spanish speakers were higher.

Results also did not reveal a clear relationship between sidewalk vendor presence and the quality of the retail food environment or bicyclist and pedestrian safety (exhibit 1). Underdeveloped retail food environments might be expected to correlate with higher sidewalk vendor activity, but schools in this assessment with the highest local mRFEI scores (Elementary C2 and Elementary C4) had only moderate vendor presence (two and three observed, respectively), whereas schools with the lowest local mRFEI scores (Elementary S4 and Elementary S1) had highly differentiated vendor

**Exhibit 1**

**Sidewalk Vendors and Environmental Conditions Within 1/2 Mile of Schools**

School	City	Sidewalk Vendors	Students per Vendor <sup>a</sup>	Spanish-Speaking (%)	Population < Poverty (%)	mRFEI Score	Bike/Pedestrian Collisions
Elementary S1	LA	8	104	58.2	32.1	2	24
Elementary S3	LA	6	126	58.8	31.5	10	12
Elementary C1	C	4	136	59.4	23.9	13	3
Elementary C4	C	3	211	74.6	25.0	19	11
Elementary C2	C	2	202	54.2	22.5	29	1
Elementary C3	C	1	466	65.1	24.4	10	4
Elementary S2	LA	0	—	42.6	22.9	7	13
Elementary S4	LA	0	—	46.8	26.8	0	11

*C = Compton, California. LA = Los Angeles, California. mRFEI = Modified Retail Food Environment Index.*

<sup>a</sup> *Calculated based on 2013–14 enrollment statistics. Accessible at <http://dq.cde.ca.gov/dataquest/>.*

*Sources: Health Impact Assessment field assessments and student surveys; Missouri Census Data Center, Circular Area Profiles, American Community Survey version (2007 to 2011); Centers for Disease Control and Prevention, Children’s Food Environment State Indicator Report (2011); Safe Transportation Research and Education Center, Transportation Injury Mapping System, Safe Routes to School collision map viewer (2007 through 2009), accessed November 2013*

presence (zero and eight observed, respectively). Another expectation could be that higher vendor presence leads to safer or less safe bicyclist and pedestrian environments, but schools with the lowest local collision rates (Elementary C2 and Elementary C1) had moderate vendor presence (two and four observed, respectively), and schools with the highest local collision rates (Elementary S1 and Elementary S2) had highly differentiated vendor presence (eight and zero observed, respectively).

South Los Angeles survey responses indicate that 62.8 percent of students at least occasionally obtain snacks and beverages from sidewalk vendors. Although this percentage represents a significant rate of patronage by students and caretakers, it is less than the rate with which they, not surprisingly, even more regularly patronize formal commercial sources within the wider nutrition environment (exhibit 2). By comparison, 84.1 percent of students patronize fast-food restaurants at least occasionally, and 76.7 percent patronize corner stores at least occasionally. These two access points are routinely highlighted as a source of high-calorie food and sugary beverages in underdeveloped food retail environments (Bassford et al., 2012; Borradaile et al., 2009). Although snack and beverage purchasing trends vary somewhat between schools, sidewalk vendors appear to compete for student and caretaker patronage on relatively close terms with mobile food trucks, which offer many of the same items, and with vending machines, which are healthier food sources in some cases because of tighter inventory regulations at schools and other public facilities. Survey responses also indicate that households remain a highly prevalent source of the snacks and beverages that students consume.

The frequency of snack and beverage purchases from sidewalk vendors, in general, is consistent with the degree of vendor presence observed in field observations. As vendor presence moved from a high of eight observed at Elementary S1 to zero observed at Elementary S2 and Elementary S4, the rate of at least occasional student patronage also fell from 84.5 to 40 percent. Indeed, the school with the highest vendor presence had a percentage of students patronizing vendors (84.5 percent) that was higher than the patronage of corner stores (77.3 percent) and near that of



**Exhibit 2**

**Student/Caretaker Patronage of Food Access Points**

Access Point	Elementary S1 (%)	Elementary S3 (%)	Elementary S2 (%)	Elementary S4 (%)	Overall (%)
From home	90.7	91.8	95.4	93.2	92.5
Fast-food restaurants	92.8	80.7	83.9	78.6	84.1
Corner stores	77.3	80.7	72.9	71.2	76.7
Mobile food trucks	66.0	78.4	63.5	60.3	69.3
Vending machines	62.9	72.8	66.3	66.7	68.0
Sidewalk vendors	84.5	59.7	58.1	40.0	62.8
Someone else	43.3	57.7	56.0	56.4	53.5
School lunch	36.5	40.9	48.9	49.2	42.9
School snack	36.5	30.7	31.8	44.6	34.6
School stores	5.2	46.7	22.0	39.3	29.9

Source: Health Impact Assessment student surveys

fast-food restaurants (92.8 percent). Results of the student survey suggest, however, that Elementary S2 typically may have more sidewalk vendors than was observed in the assessment, because rates of vendor purchases there are very similar to those at Elementary S3 (exhibit 2).

Student responses also raise questions about the competition between home and school foods, which researchers have consistently found are healthier sources, and neighborhood food (Lachat et al., 2012). An inverse relationship was found between sidewalk vendor presence and participation in school meal programs and obtaining snacks and beverages from students' households. Overall, only 42.9 percent of elementary school students reported eating school lunches at least occasionally. The rate of at least occasional school lunch patronage, however, rose within the school sample as sidewalk vendor patronage decreased. Elementary S4 had the highest rate of frequent snacks and beverages obtained from home (72.9 percent), and it also had the lowest rate of at least occasional sidewalk vendor patronage (40.0 percent) and the lowest rate of at least occasional fast-food restaurant patronage (78.6 percent). Elementary S1 conversely had the lowest rate of frequent snacks and beverages obtained from home (34 percent) and had, by far, the far highest rates of at least occasional sidewalk vendor patronage (84.5 percent) and occasional fast-food restaurant patronage (92.8 percent).

As seen in previous studies (Tester, Yen, and Laraia, 2010), unhealthy snack food (for example, chips, cookies, candy, ice cream, elote) was, by far, the likeliest item sold by sidewalk vendors in this assessment (exhibit 3). Sugar-sweetened beverages (for example, soda, sports drinks, fruit punch, hot chocolate) were offered by all but two of the observed vendors found in South Los Angeles. Hot or prepared foods (for example, tamales) and healthy beverages (for example, 100 percent fruit juice, water) were offered by vendors at only one school (Elementary S3). Despite the popularity of frutereros throughout the city, no vendors at any schools observed in this assessment offered fruits or vegetables.

As expected, survey responses indicated that unhealthy snack food was purchased at least sometimes by 92.3 percent of occasional vendor patrons and purchased often by 60.9 percent of frequent vendor patrons (exhibit 3). Each of the previously mentioned product categories, however, was purchased at least sometimes by 72.8 to 92.3 percent of occasional vendor patrons



### Exhibit 3

#### Sidewalk Vendor Inventories and Reported Item Purchase Frequency

Item	Sidewalk Vendors (South LA)	Occasional Vendor Patrons		Frequent Vendor Patrons	
		Purchased ≥ Sometimes (%)	Purchased Often (%)	Purchased ≥ Sometimes (%)	Purchased Often (%)
Unhealthy snack food	13	92.3	12.4	97.8	60.9
Fruits and vegetables	0	72.8	25.6	75.6	40.0
Hot/prepared foods	3	77.3	17.5	84.8	39.1
Sugar-sweetened beverages	11	81.3	18.8	84.8	41.3
Healthy beverages	3	85.3	38.7	87.0	56.5

LA = Los Angeles, California.

Source: Health Impact Assessment field assessments and student surveys (limited to responses indicating occasional or frequent sidewalk vendor purchases)

and purchased often by 39.1 to 60.9 percent of frequent vendor patrons, including products that were rarely or never observed during field assessments. A lack of clarity in the survey question or recall difficulty may have skewed survey response data toward a less accurate depiction of snack and beverage purchases from sidewalk vendors.

Field assessments indicated that one-half of the sidewalk vendors observed near schools caused sidewalk congestion among pedestrians (because of the crowding of waiting customers). In no instance did observers note that vendor-related congestion caused pedestrians to walk into the street or otherwise come into conflict with vehicles.

Observations indicated that a range of 22 to 82.5 percent of students at each elementary school walked home and a very small number of students bicycled home at the conclusion of the school day (see exhibit 4). During each observation period, 38 to 271 adult pedestrians (most of whom accompanied exiting students) and 1 to 9 adult bicyclists were noted in the vicinity of school campuses. Schools with higher sidewalk vendor presence in either jurisdiction were not likelier to have more or fewer pedestrians or bicyclists active in their vicinity. Schools with the lowest student pedestrian rates (Elementary S4 and Elementary S3) had highly differentiated vendor presence (0 and 6 observed, respectively), and schools with no vendor presence (Elementary S4 and

### Exhibit 4

#### Bicyclist/Pedestrian Counts and Sidewalk Vendors Observed Near Schools

School	City	Sidewalk Vendors	Pedestrians		Bicyclists	
			Students (%)	Adults	Students	Adults
Elementary S1	LA	8	35.7	156	2	1
Elementary S3	LA	6	27.5	122	4	1
Elementary C1	C	4	40.0	100	0	4
Elementary C4	C	3	73.9	271	11	9
Elementary C2	C	2	52.7	62	1	2
Elementary C3	C	1	80.3	216	0	1
Elementary S2	LA	0	82.5	165	6	8
Elementary S4	LA	0	22.0	38	2	3

C = Compton, California. LA = Los Angeles, California.

Source: Health Impact Assessment field assessments

Elementary S2) had highly differentiated student pedestrian rates (22.0 and 82.5 percent of school enrollment, respectively). Schools with moderate vendor presence (Elementary C4 and Elementary C1) had highly differentiated student bicyclist rates (11 and 0 observed, respectively).

## **Discussion**

The evidence gathered for this assessment does not suggest that citywide prohibitions against sidewalk food vending are functioning as a protection of good-quality nutrition environments surrounding school campuses. Whether enforcement resources are inadequate to consistently enforce the prohibitions or the income-generation needs of low-income people are acute enough to justify the risks, school environments in South Los Angeles appear as likely to include an abundance of sidewalk vendors selling snacks and beverages as those in Compton, which has more permissive regulations. Assessment data appear to confirm other research suggesting a higher presence of sidewalk vendors in areas where residents have a more tenuous foothold in the formal economy and where the cultural context is more accustomed to informal enterprise in the public realm (Devlin, 2011; Dunn, 2014). As a result, reasonable, legitimized forms of sidewalk vending would be adaptable and socioeconomically beneficial in many sections of Los Angeles. Because the prohibition does not appear to discourage vendor activity near schools, permitted sidewalk vending would not likely amplify the hazards from nutrient-poor snacks and sugary beverages that already exist within the wider food ecology occupied by students.

Combined results of the observations and surveys reveal that more vendors generate sales from students by offering items that are less healthy than food and beverages offered by schools. If sidewalk vending were legalized, these results suggest that efforts should be made to limit the presence of vendors near schools or encourage those offering healthier items.

This assessment does not clarify whether sidewalk vendors have a positive effect on bicycle and pedestrian safety or the creation of defensible space. The study, however, does not support unsubstantiated views that the presence of sidewalk vendors contributes to unsafe and unkempt conditions in a neighborhood. More specific evidence is needed to assess the relationship of sidewalk vendors to a variety of environmental factors, such as crime prevention, food safety, and ancillary business activity.

Future studies can improve the understanding of sidewalk vending as a commercial activity and component of the environment with access to a broader school and student sample and more detailed transaction data. Single observation periods of four elementary schools provide a small picture of the vendor transactions that occur in each community. Assessing a greater proportion of school environments in each jurisdiction and conducting repeated observations at each location has the potential to reveal more consistent trends and clearer relationships. Including more jurisdictions in the assessment can also provide additional comparison opportunities based on differing regulatory and socioeconomic factors.

Studies that can coordinate with willing vendors and ample observer staffing have the potential to gather data that more directly measure the nutrition content of snacks and beverages purchased by students and caretakers. The current political sensitivity of the issue made it difficult to reach out to vendors for purposes of research. Tracking sales for individual vendors and, perhaps, the

purchase history of segmented consumer groups can help determine the proportion of students who are only supplementing their daily nutrition needs through vendor snacks and beverages and those who may be skewing their diets toward the more acute end of caloric overconsumption. Gathering primary data at the point of sale would also provide more reliable information on sidewalk vendor transactions than what can be gathered through survey responses. Although classroom surveys employed by this assessment were helpful in outlining a general student perception of the off-campus nutrition environment, answers regarding individual purchases and preferences were subject to recall fatigue and respondent bias.

## **Conclusion**

Reforming the regulatory environment of sidewalk vending offers an opportunity to focus closer on the food access challenges that students and caretakers in South Los Angeles face. To address the child obesity epidemic locally, a comprehensive policy and programmatic approach is evolving that includes restrictions on the proliferation of unhealthy food sources (for example, fast-food density limitations) and development initiatives to scale the presence of healthier food sources (for example, corner store conversions, nutrition benefits matching, food retail financing initiatives). Both approaches have implications for the regulation of sidewalk vending.

Although vendors in many areas make authentic and valued contributions to the city's emergent food culture, observations confirmed that students and caretakers represent a market niche that is served by vendors largely with unhealthy snack and beverage choices. Survey evidence suggests that a large majority of elementary school students in South Los Angeles participate in this market on a regular basis. Although exercise can mitigate some of the negative health effects from these snack and beverage purchases, in many cases they are contributing to varying degrees of caloric overconsumption (Goetz and Wolstein, 2007). The continued prohibition of this sidewalk vending mode in proximity to school campuses should, therefore, be a distinct consideration within the wider legalization of sidewalk vending. New permitting structures that would be implemented with these regulatory reforms may also include revenue sources that can be allocated for more consistent enforcement. If this funding were applied with student nutrition as a primary concern (as opposed to with business as a major concern), it could make school-proximal regulations of sidewalk vending more effective than yet seen.

Our findings should encourage policymakers to consider avenues that promote, even mandate, the selling of healthier food near schools. Vendors who elect to sell healthy food provide a compelling justification for allowing approved modes of sidewalk vending near schools that complement campus-based nutrition efforts. Definitions of "healthy vending" can vary based on cultural perceptions, but an enforceable definition agreeable to nutrition and vendor advocates and food regulators would likely commence with a minimum of drinking water, raw fruits and vegetables, and packaged "smart snacks."<sup>15</sup> Research suggests that this type of health-oriented sidewalk vendor can be sustained independently (Tester, Yen, and Laraia, 2012), but their economic prospects could

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<sup>15</sup> The USDA Food and Nutrition Service provides guidance for "smart snack" nutrition standards, to which distributors are increasingly adapting.

be significantly enhanced if granted exclusive access to a regulated environment near schools, offered other regulatory incentives (for example, fee waivers, permit expediting), and supported by a public or philanthropic vendor incubation initiative.

The assessment's data on student nutrition behaviors do provide outlines of a multifaceted food resource environment containing multiple challenges to healthy eating. Based on the patronage rates indicated in student surveys, addressing the presence and product offerings of fast-food restaurants, convenience stores, and ice cream trucks operating near schools, all of which are larger sources of nonnutritious snacks and sugary beverages, may be more imperative than considering the nutrition impacts of sidewalk vending.

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