



ASSESSING NORTH COUNTY POLICIES THAT INFLUENCE HEALTHY EATING AND PHYSICAL ACTIVITY

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Background

The area of North Saint Louis County adjacent to the city of Saint Louis contains 38 municipalities, each with a unique set of ordinances and body of governance (Jones, 2000). These municipalities also contain a history of social injustice based on racial discrimination, brought about by historically unfair practices in mortgage lending, property pricing, and school segregation, and leading to poor living conditions, diminished economic opportunity, and crime (Gordon, n.d.; Rothstein, n.d.). Anxiety about the latter impacts physical activity, increasing the likelihood of chronic non-communicable disease and poor health outcomes (Foster & Giles-Corti, 2008). Research has found that safe, walkable neighborhoods with access to recreational areas are as influential in mediating obesity as are the individual characteristics of their residents (Cutts, Darby, Boone, & Brewis, 2009).

Additionally, the socioeconomic and cultural composition of neighborhoods impacts the availability of healthy food (Moore & Diez Roux, 2006), leading to an association of low-income neighborhoods with food deserts (where nutritionally dense food choices are lacking) and food swamps (where high-calorie, low-nutrition foods are in abundance) (Pine & Bennett, 2014); these neighborhoods have a significantly higher rate of obesity and poor health outcomes (Vinter, St. Laurent, & Segal, 2010).

The Project

To that end, the Health Management and Policy Department of the College for Public Health and Social Justice at Saint Louis University inaugurated a collaboration with community advocates to identify policies promoting healthy eating and active living (HEAL). The Safety-Net Healthcare, Advocacy, Research and Policy (SHARP) Collaborative initiated its first project, "Assessing North County Policies that Influence Healthy Eating and Physical Activity," with the Gateway Region YMCA and two of its programs: Women Empowered to End Disparities in Obesity (WEDO), and Healthy Schools, Healthy Communities (HSHC).

The goals of the project were to:

- 1) identify and summarize current public policies that promote or impede access to healthy foods and safe spaces for physical activity (e.g., walking, biking, exercise, recreation) in 38 North Saint Louis County, Missouri municipalities;
- 2) identify, summarize and compare evidence-based public policies in communities across the US that support healthy eating and PA to existing public policies affecting North County; and
- 3) based on these findings, recommend policy changes to increase access to healthy foods and safe spaces for PA in North County

SHARP is faculty-supervised and student-led; graduate students enrolled in the Master in Health Administration (MHA) and Master in Public Health (MPH) programs were invited to participate (see Methods). Every phase of the project included training

and dialog with community partners in advocacy, and students attended community events to elicit feedback from participants (“Project Directive,” Appendix I). The project culminated in a presentation by the students to an interactive audience of community members and advocates, who were invited to provide feedback and suggestions for future areas of study.

Methods

After an introductory presentation by WEDO and HSHC leaders, students were recruited to participate. Initially, 26 students volunteered. Planning meetings discussed schedule conflicts and workload constraints. The research team depended on distributed collaboration to accommodate student schedules across two different campuses and various concentrations (Wilson, 1991). Data was compiled and edited in a shared virtual workspace via Google Team Drive. Each member possessed the authority to amend entries.

Phase One

The 38 municipalities of interest were distributed between four groups of students, who were responsible for locating ordinances supporting or presenting potential barriers to healthy eating and active living. A research template was provided by Melissa Vatterot, JD, of the Saint Louis Food Policy Coalition, and converted to Google Sheets. This databook served as a reference to the ordinance inventory compiled in Google Docs by the teams and was coded qualitatively.

First pass research was performed through Municode (www.municode.com) (3 municipalities), and eCode360 (www.ecode360.com) (15 municipalities), two online databases of municipal ordinances which were used variously. The Saint Louis County website (stlouisco.com) provided links to municipal websites when available (13 municipalities), and Better Together STL (www.bettertogetherstl.com), a nonprofit advocacy group for municipal consolidation, stored PDF files for three municipalities. Teams also searched websites for any media presence through which a point of contact could be garnered for direct information requests.

Once the ordinances were located, searches were run using keywords such as *market, food, grocery, parks, health, garden* and more (“Master Coded Ordinances,” Appendix II). When ordinances containing these topics were located, they were added to the ordinance inventory. The ordinance inventory was then analyzed for items offering either opportunities or barriers to healthy eating and active living, with pertinent ordinances copied into a Google Doc (“HEAL Ordinances,” Appendix III).

Phase Two

With diminished participation from students, a need for prioritization was identified. Community advocates were consulted, and participant feedback was provided (YMCA Survey, Appendix IV). Four areas of concern were of highest priority for address:

- Lack of healthy food choices and opportunities for physical activity at community schools
- Safe access to physical activity – safe streets and safe areas
- Proliferation of beverage stores and fast food restaurants
- Lack of access to nutritious foods

Teams then analyzed extant policies for their impact on each area of concern and performed a rapid review of peer-reviewed literature for the implementation of successful policy amendment (“Rapid Review,” Appendix V).

Phase Three

The teams met to identify any overlap in policy recommendations, identify limitations in research and analysis, design a coding schema, and develop a presentation format. The paucity of applicable policy amendments was discussed, and the desire to involve community participants led to a consensus of soliciting feedback before finalizing a recommendation. In the end, the team addressed three focus areas:

- Nutrition in Schools
- Opportunities for Active Living
- Zoning

Upon conclusion of the presentation, the feedback received led to an additional recommendation with an implementation that would delay the public release of the project’s findings; it was decided to provide the results of the findings while seeking a logistically-expedient method to implement the final recommendation (“Community Feedback, Appendix VII).

Phase Four

Additionally, the authors concluded that there were areas of code which hadn’t been analyzed for their impact – notably, authors found that many restrictive ordinances were used to prohibit what were at one time or another deemed “nuisances,” a designation possibly problematic unto itself. Thus, a final reading of all available ordinances was undertaken to elicit areas of opportunity for change.

Results

Codebook

The original structure for research was based on a previous search provided by advisors from the St. Louis Food Policy Coalition, which was rigorous and oriented toward examining opportunities to improve food access and availability. Sixteen municipalities were not represented online vis-à-vis ordinances; community partners reached out to municipal leaders for their support in providing applicable links, but as of reporting, none were received.

While performing the ordinance review, several observations were made:

- Barriers to healthy eating and active living existed in several areas beyond the original search terms
 - Upon a deeper review, the sections most likely to produce either opportunities or barriers included *traffic codes, nuisances, offenses, parks, streets and sidewalks (civic areas), and zoning (see Table I)*
- Ordinances were often uniform between municipalities, indicating a degree of cooperation or, at a minimum, a standard template from which the municipalities drew
 - Occasionally the codes were numbered identically
 - Occasionally, changes were made to verbiage which *contextually* provided greater opportunity or restriction

Category	Count
Zoning, General	10
Restaurants/Tobacco/Alcohol	7
Markets/Gardens/Livestock	1
Permits:	
Restaurants/Tobacco/Alcohol	6
Markets/Gardens/Livestock	2
Food Safety	1
Active Living:	
Access/Traffic	30
Nuisance Laws (curfew)	1
Parks	12
Other Civic Areas	12
Public Property, other	1
Private Property	2
Park Traffic	3
Park Rentals and Facilities	9
Outdoor Cooking	3

Table I. Count of ordinances found which impact community wellness.

Barriers to Healthy Eating

Zoning and public nuisance laws held barriers to healthy eating, largely in either allowing liquor and wine stores or fast food stores to be issued neighborhood commercial permits (for light commercial use, placing them in close proximity to residential areas) or prohibiting outdoor cooking demonstrations on public or private property; the latter ordinances were not uniform and only applied to a few municipalities.

Support for Healthy Eating

Ordinances which curtailed zoning of fast-food restaurants, beverage stores, and bars or taverns near residential areas were the most common supportive ordinances,

although municipalities also established guidelines for composting and community gardens, as well as the sale of produce.

Barriers to Active Living

Traffic laws were primarily friendly to pedestrians and bicyclists, providing rights-of-way, access, and safety measures. However, some municipalities had no provisions for riding bicycles off the road, which could lead to children riding in bike lanes.

Curfews ranged in application to certain ages, times of day, and exemptions. While none disallowed minors to be outside without a parent, guardian, or other adult with custody, very few provided for exceptions in cases of employment, school, or religious activities. Whether these activities could be better promoted with more clearly-defined curfew laws is unknown.

Park regulations were the most varied and often restrictive. Some municipalities prohibited riding bicycles in city parks (either during specific hours or altogether), which would act as a barrier to families for whom parks are too far away for travel as pedestrians. If bicycles are banned from the parks, there are typically few provisions for securing them within the park. Within parks, roller skates, skateboards, and scooters are also variously regulated; in some parks, there are designated areas for these methods of exercise and play, whereas they are banned outright in others.

Additionally, sports games (especially involving a thrown game object) were heavily codified for safety with different strengths of prohibition, as were the use of specific areas designed for particular sports. Fees for renting both pavilions and designated areas (such as tennis or basketball courts, and football, baseball, or soccer fields) were varied, as were the regulations for submitting a request to use facilities. Outside of parks, ordinances exist which prohibit the playing of games in alleys and streets, which serve to secure the safety of children and motorists, but also preclude the adoption of play streets.

Support for Active Living

Among the ordinances providing support for active living were authority for the establishment of play streets, authority to designate new crosswalks, and guidelines for riding bicycles on sidewalks. Examples of ordinances impacting healthy eating and active living are provided in Table II.

Section	Title	Summary	Comment
Traffic	Authority to Establish Play Streets	City Traffic Engineer is authorized to declare any street/portion thereof a play street	
Parks and Recreation	Games	no propelled objects except balls, frisbees, and similar objects	Least restrictive of thrown objects ordinances – could serve as a model
Health & Sanitation	Smoking prohibitions	smoking prohibited in enclosed public places	
Offenses Concerning Minors	Playing of Certain Games Prohibited	no football, soccer, baseball, etc in public places INCLUDING PARKS by anyone over 13, or by anyone of any age after 4:30 pm	Huge barrier to family activity

Table II. Sample list of ordinances providing barriers to or support for healthy eating and active living.

Nutrition in Schools

Status of North County School Districts

No ordinances existed which provided support for or barriers against the ability to impact nutritious offerings in St. Louis County Public Schools, which are administered at district levels. According to the CDC, Missouri stands alone as the only state without policy regarding competitive foods and beverages in schools (“School Nutrition Environment | Healthy Schools | CDC,” 2019). Since state agencies evaluate all contracts with food service management companies serving schools, this lack of regulation providing healthy oversight is concerning. Additionally, each school district within North St. Louis County has a different procedure for food service management; one district uses a national food service management corporation, while another uses a bid system that is managed by the district’s food service authority. Two additional districts do not have a transparent food service management system but do have staff at the district level.

Data collected through Empower Missouri, Operation Food Search, and the Food Research and Action Center indicate that North St. Louis County school districts are enrolled in the School Breakfast Plan, National School Lunch Plan, and Community Eligibility Plan (“MO School Breakfast Report (2016-17),” 2018), which provides free meals to all students in participating schools. Additionally, Ferguson-Florissant School District, Jennings School District, and Normandy Schools Collaborative are grantees of Partners For Breakfast in the Classroom, which provides funding to allow all students an opportunity to eat nutritious food served on the way into their first class (“Where has Breakfast in the Classroom Been Implemented?,” n.d.). Only one of the school districts listed below was a grantee under the USDA Fresh Fruits and Vegetables Program, which offers children additional servings of fruit and vegetables separate from lunch or

breakfast (Strange, 2014). It is unclear whether the remaining districts applied for the program and were not approved.

District	SBP	NSLP	CEP	FFVP	Food Services
Ferguson-Florissant	6,141	7,909	25 schools	17 schools	Unknown
Jennings	1,345	1,987	7 schools		Aramark
Normandy Collaborative	1,685	2,552	8 schools		Bid system
Riverview Gardens	3,154	4,244	13 schools		Unknown

Table III. Sample of schools eligible for federal programs

Because these programs are federally subsidized, school districts are required to develop and implement wellness policies which “include specific goals for nutrition promotion and education, physical activity, and other school-based activities that promote student wellness (“Healthy Meals Resource System (HMRS) | USDA-FNS,” n.d.)” Riverview Gardens has posted its policy and designated a wellness coordinator; while other districts may have posted their policies, they were not found during a search.

Research – School Policies

A review of research literature supporting policies for nutrition in schools indicated that where federal and state policies did not exist, districts adopted a variety of their own in order to promote well-being amongst their students (“School Health Policies and Practices Study (SHPPS),” 2019). In the North St. Louis County area, this may be the most effective level of governance, given the lack of involvement at the state level in regulating competitive food and beverages, establishing local requirements for wellness policies, and publicly promoting legislation to support funding for school nutrition programs. The Healthy, Hunger-Free Kids Act of 2010 created initiatives to improve nutrition in competitive food offerings, snacks, and nutritional value of meals; research has indicated these efforts have been well-received and implemented (Cullen et al., 2007). Additionally, when schools replaced between-meals vended goods with water and low-salt snacks, and provided fruits and vegetables during the day, students consumed more fruits and vegetables without significant loss of revenue to the schools (Story, Nannery, & Schwartz, 2009).

While existing research does not prove a longitudinal association between school nutrition programs and improved physical outcomes, some evidence exists for nutrition improving school attendance and reducing behaviorally-related infractions (“Benefits of School Breakfast,” n.d.). Supporting healthier food choices by promoting healthier food service management is an optimal strategy for North St. Louis County school districts.

Community recommendation: continue to advocate for healthier foods for our kids, and advocate for additional activity in classrooms. A strong parent coalition is needed.

Opportunities for Active Living

The research for this component of the project originally aimed to identify ways of increasing access to safe spaces for recreation. After further examination, it was decided that 'safe spaces for recreation' could be broken down into two subcategories. The first subcategory was safe and active streets and the second was active and green spaces. Safe and active streets related to infrastructure for walking, biking, and active transport, while active and green spaces related to designated areas for recreation and sports activities, such as fields and parks.

Active living interventions primarily seemed to address distinct age groups, with children and seniors the most common. Of potential application to any group is the importance of social capital and social networking in order to support and promote physical activity within social groups. A Sumter County walking program increased intent, goal-setting, and social support for improving rates of physical activity (Forthofer, Wilcox, Kinnard, Hutto, & Sharpe, 2018). Within neighborhoods and social groups, community leaders can be identified and trained to provide support for physical activity programs (Werner, Teufel, & Brown, 2014).

Safe and Active Streets

In a systematic review and update of thirty active school transportation interventions, 13 demonstrated an increase in overall rates of physical activity among school-aged children (Larouche, Mammen, Rowe, & Faulkner, 2018). Students in North St. Louis County may need some vehicular transportation, but programs to walk a portion of the route en masse could be effective and provided needed physical activity.

The Centers for Disease Control (CDC) administer a national level grant program for which North St. Louis County may be eligible. The Racial and Ethnic Approaches to Community Health (REACH) program was implemented within 14 African American communities across the United States. Although each community was able to choose which programs and policies they want to focus on with their REACH funding, the 14 communities consistently utilized community coalitions to implement culturally appropriate interventions that focus on improvements that impact policy, integrated-systems, and the overall environment. The authors of this article found that "the age-standardized prevalence of obesity decreased in REACH US communities..., but not in the comparison populations (Liao et al., 2016).

Active and Green Spaces

While a systematic review was not available, several programs were identified which could be beneficial for North St. Louis County residents. A low-income community in Nebraska examined the impact of additional structured activity time for students in grades kindergarten through fifth. Children who partook in the extended physical activity programs had improved behavior and attention to their work within the classroom setting (Adkins, Bice, Heelan, & Ball, 2017). An additional class was offered on days

when physical education was not, reinforcing the skills learned through the physical education class. A case study demonstrated the process a school undertook to find time for additional activity, including student involvement and training of paraprofessionals (Scudieri & Schwager, 2017). By providing outlets for energy, schools can create avenues for success in their students.

It should be noted that although the walking group program and active school transport interventions have the ability to positively impact physical activity at the school and community levels, it is understood that these programs require a certain level of capacity in regard to infrastructure and the built environment. Additionally, some neighborhoods may not have adequate sidewalks, bike paths, or park access to implement these types of programs successfully. Of the 46 articles reviewed for inclusion, the assumption of a supportive infrastructure was predominant, which is one of the reasons these interventions were not included. While implementing a supplemental physical activity program within schools and applying for the CDC REACH program are not the only means of supporting physical activity, they represent opportunities which should be attainable given the resources and interest at hand.

Community recommendation: Implementing a second recess and changing the narrative on rewards within the schools by empowering parent advocates.

Additional Opportunities

After the presentation of the team's initial findings, questions were raised about other programs the team had not explored. This section presents additional research undertaken on behalf of the community to answer those questions.

Joint Use Agreements

In 2011, The Centers for Disease Control and Prevention (CDC) began to consider participation in shared or joint use agreements (SUAs or JUAs) integral to Community Transformation Grants (CTGs). Joint use agreements exist between a municipality and public school districts for the use of their grounds, with or without access to facilities, to promote a "culture of health (Hodge, 2015)." By using existing infrastructure to promote physical activity, communities can theoretically provide safe spaces for families to incorporate playground and/or physical education spaces and equipment into their evening routines.

As CTG recipients, North Carolina public schools engaged in a statewide initiative to promote SUA with communities (Kanters, Bocarro, Moore, Floyd, & Carlton, 2014). Of 2,359 public schools, 89=8.9% entered into agreements to share facilities with community members. Schools in areas similar to North Saint Louis County were less likely to share facilities; the most frequent reason given for lack of participation was that an outside group had not asked.

In Ohio, a survey of administrators reported that implementing formal SUAs mitigated concerns over liability and costs, and benefits of sharing facilities led to improved relationships with taxpayers and community organizations, as well as increased opportunities for physical activity (Chace & Vilvens, 2015).

Based on the results of a systematic review conducted in 2002, The Community Preventive Services Task Force found that joint use agreements positively impacted physical health for participants through increasing participation, improving aerobic capacity, and increasing energy expenditure; a cost-benefit analysis of studies selected for economic review pointed toward savings in medical costs, reduced disability days, and reduced disability costs – after controlling for program costs including personnel, non-salary operating expenses, and medical claims (Kahn et al., 2002). The American Heart Association issued a policy statement supporting JUA/SUA adoption in every community as part of a toolkit to support and improve community-based health endeavors (Young et al., 2014).

Safety Programs for Active Communities

Studies of environmental impact on physical activity have revealed correlations between perceived safety and activity levels (Kerr et al., 2010; King et al., 2006; Sallis, King, Sirard, & Albright, 2007); conversely, efforts between law enforcement offices and community organizations to provide safe outdoor activities lead to increased outdoor activities – as well as increased safety for residents. The National Institute for Justice has supported pilot programs that target urban areas of blight within residential zones for renovation as community Fitness Improvement Training (FIT) Zones (Markovic, 2012). In East Palo Alto, shootings within FIT Zones were decreased by an average of 50% (Schweig, n.d.). Levels of physical activity and health outcomes were not recorded in the study.

In 2011, The Robert Wood Johnson Foundation convened “The Role of Community Safety in Obesity Prevention: Exploring How Exposure to Crime and Violence Impact Physical Activity and Healthy Eating” in Atlanta¹. Experts in violence prevention met with community-based practitioners, researchers, funders, and experts in psychology, criminology, public health, transportation, housing, and more to discuss methods for improving community wellness through increasing personal safety. From their report, several themes common to all communities emerged:

- Violence prevention is a public health issue that needs to be addressed by broader partnerships beyond law enforcement and housing services
- Research is needed to explore the impact of violence prevention on perceptions about physical activity and health

¹ <https://www.rwjf.org/en/library/research/2012/11/the-role-of-community-safety-in-obesity-prevention---a-summary-f.html>

- Cross-sectoral community action is impactful in both reducing violent crime and improving infrastructure that increases physical activity

Five community model programs were introduced at the conference. Common initiatives included:

- Strong partnerships between housing agencies and law enforcement
- Civic investment in parks and programming, and
- Programs helping community members develop marketable skills

Additional measures to increase safety while promoting physical activity include patrolling parks, creating play street events, and community policing (Heinze et al., 2016). The common factor in all studies was a relationship between law enforcement and community representatives that prioritized safe, healthy activities which in turn led to reduction in violent crime.

Zoning

There were two concerns for zoning: the density of alcoholic beverage retail stores (hereafter called “liquor stores”) and fast-food restaurants, and lack of access to healthy foods due to a scarcity of appropriate retail presence.

Proliferation of beverage stores and fast food restaurants

Controlled zoning of areas into commercial and non-commercial districts would seem to be a powerful deterrent to the proliferation of retail stores selling alcoholic beverages and fast food restaurants. While the crime that accompanies liquor stores does appear to be more prevalent in low-SES neighborhoods (Teh, 2007), there are no ordinances within the 38 municipalities that differentiate zoning which allows for liquor stores from zoning which prohibits their inclusion. And as a recent study of the impact of a ban on new fast-food restaurants in South Los Angeles demonstrated, the characteristics of a fast-food restaurant such as stand-up service, pre-cooked food items, and lack of nutritious offerings also describe small, family-run restaurants serving important cultural niches (Sturm & Cohen, 2009). Thus the problem is two-fold: re-defining zoning areas to limit the prevalence of these establishments, and re-defining establishment characteristics without inadvertently prohibiting culturally important foods.

There are several alternative zoning mechanisms by which the impact of liquor stores could be mitigated; restricting hours of sale and implementing additional taxes have both enjoyed a modicum of success in other localities (Ashe et al., 2007). The challenge lies within the unique nature of North County – a municipality may be the size of a neighborhood subdivision, and unless the surrounding municipalities also adopt the same ordinances, the political will expended on change will be wasted.

There exists, however, a model ordinance within the Normandy municipality which explores mixed-use zoning (“E” Neighborhood Shopping District²); this ordinance explicitly lists the types of eligible businesses which may be permitted within the zone. Although the Zoning map is not available at the city website, it is viewable in the County Clerk’s files and should be reviewed for opportunities to promote converting additional commercial zones (“F” Commercial Districts) to E zones.

Community recommendation: Forming a citizen coalition to address a multi-municipality initiative exploring zoning changes.

Access to healthy food

A variety of policy implementation has born fruit in the fight to provide access to healthy food; the opportunities considered by the research team included:

- Incentivizing grocery stores to build in North St. Louis County
- Incentivizing retail operators to provide healthier foods
- Creating non-traditional access points for healthy foods
- Creating transportation to bring residents to the healthy foods instead

A model that is frequently cited in the fight against healthy food scarcity is the Pennsylvania Food Trust. The statewide endeavor to fund and promote a “Supermarket Challenge” and a financing initiative to support its objectives has had great success, with 74 fresh food outlets serving 500,000 children and adults (Karpyn et al., 2010). The commitment by the state legislature to seed the Trust with \$30 million has sustained the public-private partnership, which is led by co-chairs from the supermarket industry and the civic sector. A case study of one supermarket and its clientele noted that challenges still exist in procuring food; issues of transportation, working during the store’s hours of operation, and lack of familiar items exist (Chrisinger, 2016).

The Supplemental Food Assistance Program (SNAP) and Women, Infants, and Children (WIC) program require authorized vendors to provide a range of healthy food choices in order to be reimbursed by the USDA, but the incentive programs require equipment, space, and store hours to which small retailers may not be able to adhere (Fleischhacker, Flournoy, & Moore, 2013). New York created a separate standard – the “FRESH” designation – which provided real-estate tax reductions, sales tax exemptions, and more. Elsewhere, Boston, Montgomery County in Maryland, and Philadelphia have incentivized the use of SNAP and other supplemental nutrition programs at farmers’ markets by doubling the value of their vouchers; Philadelphia and other local governments have reduced permit costs for farmers’ markets that serve areas of food scarcity (Leib, 2013).

Baltimore solved an access problem in ways similar to St. Louis’ own Metro Market – mobile food vendors deliver groceries ordered online to the local library. New York City

² [R.O. 2012 §405.460; CC 1975 §31-51; Ord. No. 346 Art. 8, §2, 2-10-1969; Ord. No. 317 §2, 2-12-1991]

developed the Green Carts program, which requires the sale of only fresh fruits and vegetables in areas with limited access (“Green Carts,” n.d.). When barriers to reaching expanded opportunities still exist, cities are developing other options. Grocery bus lines serve Knoxville, Tennessee and Austin, Texas; Washington, D.C. created additional space for bike racks on Metrobuses and trains (Leib, 2013).

Urban agriculture may offer an opportunity to address food deserts, when ordinances are amended to allow a variety of agricultural activities; experts warn, however, that victory gardens, co-ops, and other programs often disappear or decline over time, with zoning laws reoriented to separate production once a perceived crisis passes (Choo, 2011). Community gardens are not necessarily a long-term, sustainable model, but they can serve a dual purpose – they provide healthy nutrition to communities which may have no other means of access, and they make use of unproductive, unsightly land (Johnson et al., 2013).

Community Recommendation: Several models have been tried in the community, particularly a grocery shuttle, a fresh foods corner store, and urban gardens. While lack of information sharing and difficulty in distributing information effectively created barriers to their success, the community expressed more interest in mobile markets, community co-ops, and healthy food incentives. Operation Food Search is actively interested in working with any community groups interested in food policy advocacy.

Limitations

Manpower: Students were engaged with the project to the extent that their academic, service, and personal commitments allowed; thus, the final team was comprised of two second-year MPH students, one first-year MPH student, and two undergraduate Public Health students. During this time, the second-year students also took the national certification exam and completed their competency boards.

Skill Set: The skills used and developed during the course of this project are necessary for all public health professionals, but each student progressed in knowledge at a different rate, necessitating supervision and remediation for some project deliverables.

Fragmentation: There is no single online repository for municipal ordinances. Finding 38 sets of ordinances provided an interesting challenge that sharpened the team’s investigative skills.

The original scope of the project directive included investigating the history and efficacy of public policies affecting North County, but that proved unrealistic within the constraints of this project.

In many cases, ordinances that contained zoning and nuisance regulations that fell outside the initial search parameters were found by perusing the entire document. Because the format, depth of legislation, and focus of each municipal council were

different, additional insight should be sought from community partners who may be aware of missed legislation.

Discussion

Historicity: North County and Saint Louis City have recently experienced continuous civic tumult.

The death of Michael Brown in 2015 created a focus on the civil rights abuses, discriminatory policing, corruption, and need for reform in Ferguson, but also in all of North County; the Ferguson Commission was formed to address the existing system-wide racial disparity and injustice (FTF, 2015). The Department of Justice condemned the efforts of local police departments to generate revenue through targeting black men and women for traffic violations with egregious fines and arrest warrants pending one missed or partial payment (DOJ, 2017).

Simultaneously, a movement to consolidate the municipalities was spearheaded by Better Together STL, a nonprofit organization initially funded solely by Libertarian Rex Sinquefeld, a retired index fund investor who has spent millions in donations to political campaigns in Missouri. Within a month of the project's culmination, St. Louis County Executive Steve Stenger (who at one point would have become the consolidated region's de facto mayor) pled guilty to three felony counts of corruption. Within one week of this project's culmination, the initiative would be withdrawn from consideration.

At the same time as they were devoting resources to resist the city-county merger as presented, coalitions of advocates for social and racial equity continued to build, plan, and propose changes to improve the lives of North County residents. Working with the Urban League of St. Louis, the municipalities of Ferguson, Dellwood, and Jennings have signed a memorandum of understanding "to standardize and coordinate their zoning codes" prior to initiating projects revitalizing the West Florissant commercial area. This memorandum has no online presence that the research team could find; the initiative was reported in the St. Louis Post-Dispatch³. While researching endeavors to improve the area, the research team identified more than a dozen coalitions involved in urban planning and projects in the area ("North County Coalitions," Appendix VI). This list does not include community organizations with interests other than infrastructure, such as Better Family Life, the Municipal League, Mission: St. Louis, the Deaconess Foundation, and more.

A common thread arose from the research team's analysis and was confirmed by community feedback: there exists a need for a centralized information hub. As with the failure of the grocery shuttle, community members felt that many opportunities were missed by residents because they weren't aware of program availability. The community

³ https://www.stltoday.com/business/local/nonprofits-ferguson-dellwood-and-jennings-working-toward-a-revived-west/article_ae9ff8d9-4625-596b-b41f-82e3e873840a.html#1

members also expressed a desire for sustainable programs, and for community engagement sought and facilitated by the safety-net infrastructure (see “Community Feedback,” Appendix VII).

Conclusion

There are several options for affecting change in North County which are supported by research:

- Change in schools:
 - Empower parent advocacy coalitions to work with school districts on revising food service contracts to make definitions and volumes for required healthy food provisions explicit in vendor contracts
 - Empower parent advocacy coalitions to campaign for extended activity programs which include additional structured and free play time throughout the day
 - Work with each school district’s Wellness Coordinator to create a rewards program that uses alternatives to candy or other foods
- Change in communities:
 - Explore creating joint use/shared use agreements with school administrators to allow after-hours access by community-based organizations to school facilities, in order to promote safe places for family-oriented physical activity
 - Create relationships with law enforcement agencies to support safe physical activity
 - Apply jointly for a REACH program grant to create an infrastructure of recreation that can be shared by several communities together
 - Work with Operation Food Search, Missouri Coalition for the Environment, and other advocacy groups to develop community-based programs which:
 - Fit the needs and lifestyles of the communities
 - Are accessible and safe
 - Are sustainable at the coalition level through partnerships with other organizations
- Change in policy
 - Propose changes to:
 - Restrict zoning near residential areas to prohibit liquor sales
 - Remove restrictions on play equipment in residential areas and in parks
 - Refine park hours where necessary to allow evening and weekend family activities
 - Promote play streets and refine language to support organized school and community activities past curfew
 - Support pedestrians and cyclists, as well as alternate means of transportation

Appendices

Appendix I. Directive for Project

Project Name: Assessing North County Policies that Influence Healthy Eating & Physical Activity

This appendix is in repository at www.slusharp.com

Appendix II. Codebook

A. Search Terms for Ordinances

Category	Looking For:	Term/ Codes Used	Outcome
FOOD	Ratio of grocery stores to corner stores regulated, produce/fruit/vegetable sales regulations, farmers markets regulations, co-op gardens, market stand/produce stand regulations	food	too broad, general regs mostly linked to alcohol/outdoor bbq
		fresh	no results
		organic	leads to organization/organs
		vegetable	links to vegetation, useless
		produce	far too broad
		fruit	only wine, def of farm
ACCESS		grocery	not helpful
		convenience store	no relevant results, leads to convenient
		corner store	no relevant results, leads to corner (parking etc)
		farmer market	no farmer results, market leads to marketing or market value
HINDRANCE TO BEING SELF-SUFFICIENT	Safety endeavors for local spaces, actions or verbiage that protects recreational spaces, including parks (parks and recreation)	grow	definition of farm, lawn upkeep and weeds
		community garden	leads to communications, some moderate success seen in larger municipalities
		private garden	found regulations about what can be kept vaguely, better in Larger municipalities
		greenhouse	not helpful
		nurseries	not helpful, directs to day care etc
		poultry	same reg as private garden, mostly definition of what is considered poultry
		fowl	good regs
		domesticated	some good leads but can lead to domestic/abuse etc
PHYSICAL ACTIVITY	Physical activity programs and support for programming, wellness promotion, health education	backyard	not helpful, too broad, mostly zoning requirements eg Fencing
		playground	one or two regs but too broad
		play area	not helpful
		recreational	brought up parks etc
MISCELLANEOUS	Liquor and tobacco advertisement	health	too broad, leads to health and safety
	zoning	healthy	no results or too broad
	permits	eating	housing requirements, garbage disposal

Appendix III. "HEAL Ordinances"

This Excel spreadsheet is in repository at www.slusharp.com

Appendix IV. Community Input Survey

Where the sentence is in red, the community rated this a high priority. The number indicates the ranking as decided by the number of responses:

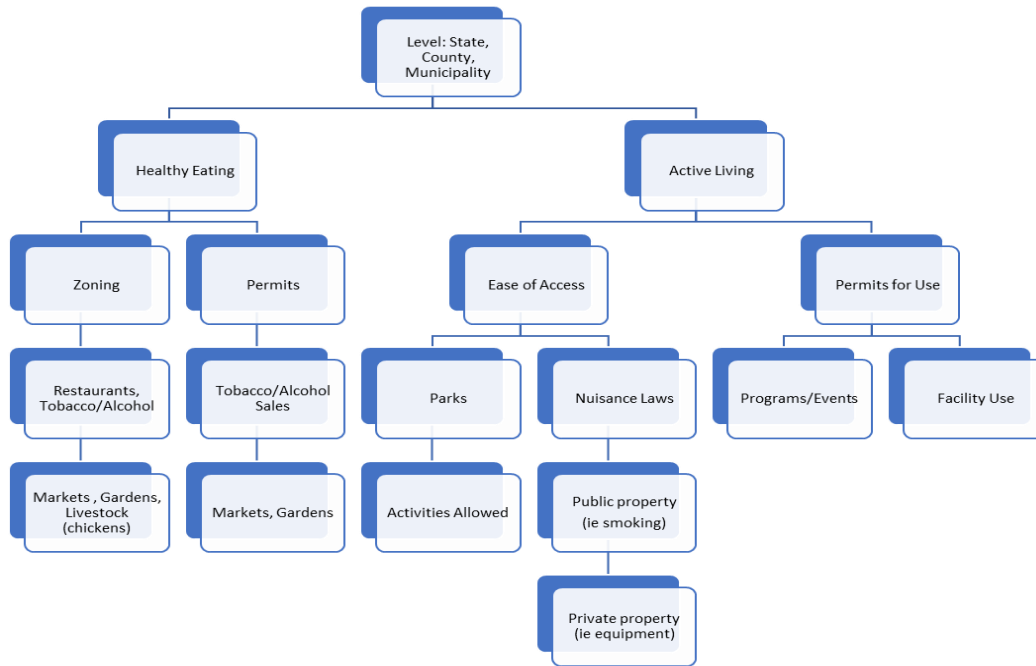
We Have Too Little	We Have Too Much	Comments
support infrastructure for lifestyle change, policy and accountability	gun violence	
lack of opportunities, businesses in community (3)		
School participation in both food and physical activities (5)		
lack of healthy food options/establishments to provide them (1)	fast food, liquor (2)	"perceived risk" - businesses will not invest in a black neighborhood
more affordable healthy eating options		educators needed to advocate for child nutrition
school food is not nutritious		
Kmart closed		no more liquor stores
need a mall		
Metro Market	convenience stores	
recreational opportunities/facilities lacking (4)		need for safer trails
schools cut back on physical activity		"open old jamestown mall for winter walking"
public participation outside dwindled		
walkable neighborhoods	lack of community (6)	
no community center		
walkable neighborhoods		

Appendix V. Coding and Rapid Review

A. Schema for Coding

Name	What it is	How it is defined	Why it matters
Level	State, county, municipality	Includes any mention of state, county, municipality, local, city	Impacts enforcement, ownership, potential for repeal or enactment
Healthy Eating	Ordinances that impact how a community is exposed to food choices	References nutrition, healthy eating, diet, consumption, caloric intake, meal preparation, produce, processed, fresh	Access, affordability, and education impact nutrition and the health of a community
Zoning	Ordinances that limit or promote location of resource access points, including licensing	Includes language regarding zones, limits, access, location, permit, distance, proximity, licensing	Availability of health-promoting resources, or health-harming resources, is regulated by zoning
Restaurants	Ordinances that distinguish restaurants from taverns, provide for inspections, and mandate food storage	Includes fast food, tobacco, and alcohol sales	Defining which products are welcome in which areas, and under which rules, can impact access to resources
Markets	Ordinances that define and provide standards & requirements	Includes community gardens, farmer's markets, mobile markets, livestock	
Active Living	Ordinances that impact a community's ability to partake in physical activity	References terms such as movement, active lifestyle, access, safety, space, exercise, sports,	Sedentary lifestyles may be exacerbated by safety concerns, lack of space, lack of resources
Ease of Access	Ordinances that limit or promote types, locations, and equipment of physical activity	Includes curfews for parks and neighborhoods, prohibited sports, and prohibited equipment	Facilities, programs, and security all need to be accessible for a community to engage in activity

Name	What it is	How it is defined	Why it matters
Parks	Ordinances governing the use, maintenance, or administration of recreation spaces	Mentions terms such as play, green space, activity, recreation, access, shared space, sports, fields, safe	The condition, location, and safety of a park impact everyone
Nuisance Laws	Includes animals, mobility (bikes, skateboards, etc), noise, group gatherings	Includes any mention of disturbance, noise, music, avoid, limit, groups, gatherings	Nuisance laws can create safe, sanitary, peaceable spaces, or oppress and restrict physical activity and aids to exercise
Public Property	What a community has decided can take place in its common areas	Uses language such as community use, public space, equipment, shared, reservation, schedule	Curfews, types of sports programs, allowed activities and equipment
Private Property	What home or business owners can and cannot do with their personal spaces	Includes any mention of ownership, purchased, personal, restricted, off limits	Equal access to businesses for all, restrictions on home modifications or outside equipment
Permits	Regulations governing community and private public activities	Uses terms such as allowed, permitted, approved, apply for, denied, application, fee, oversight	Cost, eligibility to apply, and authority of approval impact programming and activity
Facilities	How public facilities may be used, by whom, and for what purposes	References gyms, sports complexes, swimming pools, sports fields, courts (basketball, tennis), outdoor track, walking paths, membership	Facility use can be restrictive to the point of discouraging physical activity
Events	Which/how events and organizations are accepted as program providers	Includes any mention of programs, types of programs, limits to participation, fees collected	Allowing/promoting consistent, quality programs creates demand and excitement about healthy living



B. Search Strings

Details	Search String	Results
Date: Researcher: Suzanne: Database: EbscoHost	(food desert OR food swamp OR healthy food access) AND (vulnerable OR minority OR underserved) AND community advocacy OR community initiative OR ordinances AND systematic review; 2010-2018 Full text, academic journals, USA, English	150 records returned
Date: Researcher: Suzanne: Database: EbscoHost	(food desert OR food swamp OR “healthy food access”) AND (“community advocacy” OR “community initiative” OR ordinances) AND “systematic review”; Full text, references available, year 2010-2018 Peer reviewed, USA, English	13 records returned
Date: Researcher: Suzanne: Database: Pubmed	(food desert OR food swamp OR “healthy food access”) AND (“community advocacy” OR “community initiative” OR ordinances) AND “systematic review”; Full text, references available, year 2010-2018 Peer reviewed, USA, English	158 records returned, 154 duplicates

Details	Search String	Results
Date: 4/12/19 Researcher: Allison Database: EbscoHost	Access to active spaces	2 records returned, none useful
Date: 4/12/19 Researcher: Allison Date: 4/13/19 Researcher: Imani Database: Pubmed	"access to active spaces" Full text, year 2010-2019 Added systematic reviews as a possible type (others were clinical trial and review) **quoted phrase was not found (school program) AND (healthy eating OR active living) AND "systematic review"; Full text, English	56 records returned 78 records returned
Date: 3/31/19 Researcher: Kerri Database: Ebscohost	"safe streets" or "safe roads" AND programs or interventions or "policy initiatives" or "community initiatives" or "ordinances" AND "vulnerable communities" or "minority communities" or "low income communities" Filters for: peer reviewed, academic journal, english, 2010 or newer, full text	65
Date: 4/11/19 Researcher: Kerri Database: Ebscohost	"safe streets" or "safe roads" or "walkability" AND programs or interventions or "community development" or "policy initiatives" or "community initiatives" or "ordinances" AND "vulnerable communities" or "minority communities" or "low income communities" AND "systematic review" Filters for: peer reviewed, academic journal, english, 2010 or newer, full text	112 *however ebsco cut this down to 49 after auto removal of duplicates
Date: 4/15/19 Researcher: Kerri Database: Ebscohost	"active spaces" or "green spaces" or "recreation spaces" AND policies or initiatives or "community development" or ordinances AND "vulnerable communities" or "minority communities" or "low income communities" AND "systematic review"	51 *however ebsco cut this down to 31 after auto

Details	Search String	Results
	Filters for: peer reviewed, academic journal, english, 2010 or newer, full text	removal of duplicates
<p>Date: 5/1/19 Researcher: Kerri (to supplement Allison's search) Database: Ebscohost</p> <p>Researcher: Mishaal</p>	<p>"recreation areas" or "access to recreation" or "creating active spaces" or "activity programs" AND intervention or policy or program AND "vulnerable community" or "low income community" or "underserved community" AND "systematic review"</p> <p>Limited for Peer reviewed, full text, since 2010, academic journal, english</p> <p>"school" and "healthy eating" or "active living" AND intervention or policy or program AND "vulnerable community" or "low income community" or "underserved community" AND "systematic review"</p> <p>Limited for Peer reviewed, full text, since 2010, academic journal, English language</p>	<p>Returned 15 results</p> <p>Returned 19 results</p>

Appendix VI. Coalitions Serving West Florissant

These coalitions have an active Internet presence, have announced an initiative to improve North County infrastructure, and have one or more partner organizations:

- Urban League
- Beyond Housing
- STLPartnership
- St. Louis Mosaic
- One West Florissant
- One STL
- Urban Strategies, Inc.
- Community Builders Network of Metro St. Louis
- Civic Progress
- Project Connect
- Cities Strong

Appendix VII. Community Feedback

- Present: local civic leaders, City library, Operation Food Search, WEDO, St Louis Food Policy Coalition, residents of North County

Nutrition Questions from Group

- Grants for multi-use purposes for schools – how to access these and apply for them
- Translating food products from community to schools – how to address concerns with schools
- Summer grants for feeding kids?
 - USDA will reimburse programs for school/afterschool/summer meals
 - Qualification from health and senior services
 - Have to follow meal pattern but will be reimbursed
 - Library does this – Operation Food Search answered several questions
- How would competitive prices for vending machines work?
 - Healthy food vending machines and food swaps to healthier options.
- Will schools be willing to raise prices?
 - Most school districts contract with food service companies with non-compete clause with vending machines.
- Is it possible to engage school-based health centers such as Affinia
- Time frame for recess/physical activities?
 - Morning or afternoon, for the extension piece
- Before or after lunch? The 10.30, thing here? How would that work
 - Parents can and should address lunches with their schools – have children eat in place if the cafeteria is not accessible at an appropriate time

Activity in Schools Questions

- How to address the disciplinary measure of taking away recess
 - Organize parents to argue that inactivity changes the developmental health of children
- Federal grants are not very accessible
 - Need to locate grants that would be

Access to Healthy Food/Zoning Questions

- Grocery shuttle was tried by Beyond Housing and was not successful, why didn't it work?
 - Team would have to talk to Beyond Housing
- Information dissemination is a problem!

- Agreed; information centralization would help
 - Resident received a flyer for a shuttle, will inquire more
- Fresh convenience store “Simply Healthy” is now a liquor store, what makes the NYC model sustainable?
 - At a guess, the NYC model doesn’t have the same SNAP standards
- Why are we giving up on zoning?
 - Coordinating ordinance changes between all the municipalities has been difficult in the past
 - All municipalities have to agree, doesn’t work
- Community organizations need to talk about ownership, community engagement
- Community does not want new programs that are just going to leave!
- Urban Gardens:
 - Don’t need more gardens, need to attract more people, how to incentive that?
 - Give them ownership, ask nonprofit hospitals to volunteer hours
 - Alderman: ordinances promoting wellness?
 - resolutions
- Zoning map, mixed use zoning / areas?
 - Idea is growing, but not enough political support yet
- Operation Food Search: A bill incentivizing grocery to move in has been on the radar there forever, mixed bag but not a long-term solution for profit-seeking businesses (traditional grocery stores)
- OFS has been investigating nontraditional grocery modes such as community co-ops, would be very happy to assist parent advocacy groups

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