Community Health Councils

California's Sweetened Beverage Tax: *A Health Impact Assessment*

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Community Health Councils (CHC) is a non-profit, community-based health education and policy organization. Established in 1992, our mission is to promote social justice and achieve equity in community and environmental resources to improve the health and well-being of underserved populations.

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Acknowledgements

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In Memoriam

This project was started under the guidance and leadership of founding Executive Director **Lark Galloway-Gilliam**, who led Community Health Councils from 1992 through her passing in December 2014. We did not have the benefit of having her input all the way through completion of this project, but know that this and all future CHC activities and publications reflect the quality of work pioneered by her leadership and dedication to the communities we serve.

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Executive Summary

In January 2014, SB 622 sponsored by the California Center for Public Health Advocacy and Senator Bill Monning was shelved for the 2014 legislative session. If enacted, this bill would have imposed a one cent per fluid ounce tax on every distributor of sugar-sweetened beverages (SSBs) throughout the state. All revenue collected from the tax would have gone to support the establishment of a Children's Health Fund which was to allocate funds to the State Department of Public Health, community-based organizations, evidence-based prevention, and elementary/secondary schools for the purposes of statewide childhood obesity prevention activities and children's dental programs. Subsequently, a similar bill was introduced in two successive legislative sessions. The latest version of this bill in the 2016 session called for a two cent per fluid ounce fee. See Appendix A for details about SSB taxes throughout the United States.

This HIA study was conducted from 2012-2014, while SB 622 was still being considered by the legislature. Community Health Councils along with a multi-sectorial steering committee of community-based organizations, university faculty and public health advocates led a health impact assessment (HIA) study on this proposed policy to inform future iterations of the bill.

The primary research questions for this study were:

(1) What are the various social, environmental, and economic factors that influence the disproportionate consumption of SSBs in LA's households of color with children ages 0-5?
(2) What, if any, are the potential nutrition-related health consequences of a tax? How does a tax on SSBs address factors that can change consumption and health outcomes for low-income and communities of color?
(3) What are alternative policies and/or modifications that can best improve SSB consumption patterns in low-income and households of color with children ages 0-5?

To answer these questions the steering committee collected data on low-income communities in LA County with high concentrations of racial and ethnic populations including: South Los Angeles, Central/East Los Angeles, Long Beach/Wilmington and Pacoima/East Valley. Each of these communities had a high rate of SSB consumption and a high prevalence of nutrition-related chronic diseases, most notably amongst children. Our primary objective was to assess the potential impacts of a tax on children ages 0 to 5 and their parents in these target areas.

Key Findings

Findings from the study revealed that: (1) Changes in the price of SSBs alone would not likely lead to substantial improvements in health outcomes when considering substitution. The tax must be paired with targeted community interventions that also discourage unhealthy substitutions and make healthy options

more accessible. (2) Significant impacts could be achieved through the tax revenue if it is distributed to low-income and communities of color and prioritized for interventions that address school and community impacts, incorporate parents, mitigate targeted marketing and increase access to alternatives.

Through our multi-pronged, community-led research process, we were able to develop the following impact projections:

SSB TAX IMPACTS

POLICY COMPONENT	OUTCOME	MAGNITUDE OF HEALTH IMPACTS	LIKELIHOOD OF OUTCOME	STRENGTH OF EVIDENCE
DIRECT OUTCOMES RESULTING FROM POLICY				
Change in Price	Change in SSB-related health outcomes	Minimal-Moderate	Somewhat likely	**
Revenue Expenditures	Change in SSB-related health outcomes	Moderate	Somewhat likely	**

Determining Strength of Evidence

(--): No empirical studies identified to support this claim

(*): 1-5 unreliable/ weak studies identified to support this claim

(**): 5-10 moderate quality empirical studies with mixed findings support this claim

(***): 5-10 strong studies with findings supporting this claim

(****): More than 10 strong studies with findings supporting this claim

Key Study Recommendations

Based on stakeholder feedback on this study's findings, the steering committee developed the following key recommendations:

1) **Utilize Tax Revenue to Discourage Unhealthy Substitution by Making Healthier Drinks More Accessible**
   a) Establish price subsidies for healthier SSB alternatives
   b) Grant incentives to retailers; namely liquor stores, drug stores and convenience stores, for selling healthier beverages through programs such as corner store conversions or healthy restaurant incentive programs
   c) Increase investment in local public health department inspections to ensure that only quality, non-expired healthy food and beverages are sold at retail outlets in the target communities

d) Develop culturally relevant educational campaigns on how to increase the accessibility of quality tap water through the dissemination of action-oriented educational materials that includes "myth busting" about water access points in targeted communities

e) Distribute funding to support the implementation and enforcement of the California Human Right to Water Act[a] which encourages clean, affordable, and accessible water access for children and adults in public facilities.

2) Ensure that Tax Revenue Goes to Communities of Need

a) Create a lock-box mechanism which ensures that funds generated from the tax cannot be diverted to the General Fund

b) Establish a competitive request for proposals (RFP) process for the distribution of revenue that prioritizes interventions in communities with the highest rates of nutrition-related chronic disease amongst children and adults. Utilize disaggregated data on small geographic levels to identify communities of need and ensure that these neighborhoods are not overlooked in the process.

3) **Establish Targeted & Culturally Relevant Interventions that Address Targeted Marketing, Parental Modeling & Other Factors Impacting Consumption as Identified in this Study**

a) Prioritize interventions for parents of children ages 0 to 5 with a paired school-based component directed towards both pre-adolescents and adolescents

b) Write and orally present materials with consumer-friendly language presented in all threshold languages (the primary language spoken by at least 5% of the population). These materials should also include images that can be understood by those with little-to-no literacy in any language

c) Vet messaging through impacted stakeholders to identify what best resonates with each of the target groups

d) Utilize multiple mediums that includes, but is not limited to, face-to-face interventions, billboards, public transit advertisements, consumer education in stores, radio and television advertising and social media to ensure that more stakeholders can be exposed to the marketing and educational materials

e) Establish nutrition education interventions that address SSB addiction amongst children and parents specifically

f) Restrict SSB company ads and endorsements on school campuses and at district-sponsored events

[a] In 2011, legislation was passed in California to promote clean tap water access in public facilities throughout the state including parks, libraries and schools. Limited resources have been available to implement and enforce these provisions, and as a result disparities in access to healthy and clean tap water still prevail in schools and parks in this study's target areas and other low-income and communities of color.

g) Create a statewide policy that requires SSBs to carry warning labels that can easily educate consumers on which beverages are SSBs similar to SB 1000.

From Research to Action

Despite recent failures of proposed SSB tax legislation in California, momentum has continued to build at the state and local levels to implement a tax on SSBs. During the first quarter of the 2015 California legislative session, the steering committee conducted advocacy training with community residents from the target communities to educate them on the legislative process and how they can utilize findings from this report to influence future SSB tax policy at the state and/or local level. The training culminated with a policy educational campaign with participation of advocacy trainees.

We encourage other advocates and policy decision makers working on SSB tax legislation to utilize this report in the following ways:

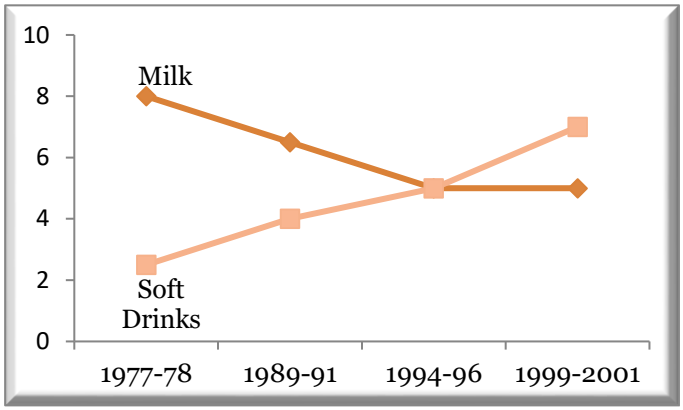
1. Utilize the recommendations and key findings from this report to inform future iterations of SSB tax legislation in California and throughout the nation. Findings from this study could be used by legislators as they revealed some voter opinions on an SSB tax which is likely to be continually reintroduced over the coming years. Results from this study's analysis revealed that there was a desire to support SSB tax legislation if the revenue was distributed in a way that prioritized communities with the most need.
2. Build upon the community-led process that guided the development of this study so that it could be replicated by other community stakeholder groups or HIA practitioners interested in utilizing HIA as a tool. We encourage others to recognize the value of incorporating those most impacted by a proposed policy in the policy development process.

I. Introduction

The Skinny on Sugar-Sweetened Beverages

Sugar-sweetened beverages (SSBs) have been identified as the single largest contributor of added caloric intake in the United States.[1] Obesity, diabetes and poor diet are more strongly associated with sweetened beverage consumption than any other food category.[2] Children are the most vulnerable to these negative health outcomes. Each additional can or glass of SSBs consumed by a child per day increases their chance of obesity by up to 60%.[3]

Figure 1



Source: Adapted from Nielsen, Samara Joy, and Barry M. Popkin. "Changes in beverage intake between 1977 and 2001." American journal of preventive medicine 27.3 (2004): 205-210.

In 2011, about 15.3% of LA County 2-5 year-olds were overweight.[4] Research shows that on average, 4 year olds consume almost 65 lbs. of added sugar a year, and the largest source of added sugar comes from SSBs.[5,6] Today, children are consuming more calories from SSBs than they did 40 years ago, and during this same timeframe childhood obesity has more than quadrupled from 4.2% to 17%[7]. Meanwhile, as SSB consumption amongst children has steadily increased, consumption of milk has decreased by nearly 50% (see Figure 1).[8]

Soda is also consumed more in the U.S. with 165 liters consumed per capita compared to many places internationally (34 liters per capita in Japan, 30 liters in Russia, and 49 liters in Italy).[9] The difference in consumption is primarily because soda costs less in the U.S than it does internationally. In some places in the U.S, soda is cheaper than water and consumption trends indicate that it is consumed about twice as much as bottled water.[10] Longitudinal research on food price trends reveals that SSBs are more affordable than healthier food alternatives nationwide. When adjusted for inflation, the real price of soda beverages declined in the U.S by a third between 1990 and 2007, while the real prices of fruits and vegetables (which impacts the price of natural juices) continuously increased.[11] The most price sensitive groups in the U.S are low-income households, which also have the highest SSB consumption rates.[12]

Policy Interventions

Millions of dollars have been invested in initiatives to reduce SSB consumption and combat nutrition-related diseases.[13] However, a policy taxing SSB consumption is growing in consideration throughout the nation and worldwide. In 2009, as many as 33 states had sales taxes on SSBs. These taxes were small, ranging between 1-7%, and had minimal effects on behavior because the small tax rates were created mostly

for more revenue generating purposes.[14] Since 2009, the federal government and 26 states and municipalities have considered the adoption of SSB excise taxes, which would charge a fee per beverage unit and encompass a larger percentage of the total beverage price, potentially having a more substantial impact on consumption. Philadelphia was the first major U.S. City to approve a 1.5 cent per ounce tax in June 2016. It is now being challenged by the beverage industry.

California and some of its local cities have proposed a total of five excise tax bills over the past three years. The City of Berkeley passed such a bill in 2015. California has had an SSB tax considered in the State legislature since 2013, starting with SB 622. SB 622, which died in legislative session in January 2014. It would have:

- Imposed an excise tax on every beverage distributor at a rate of $0.01 per fluid ounce for each beverage sold within the state that had caloric sweeteners and contained more than 25 calories per 12 ounces including soda, fruit drinks, sports drinks and energy drinks (100% fruit juice, juices with more than 50% fruit or vegetable juice, diet sodas, and sweetened milks were not included in tax proposal).
- Required all taxes, penalties, and interests collected, minus refunds and administrative costs, to be deposited into a Children's Health Promotion Fund[15] which would have allocated:
    - 20% to the State Department of Public Health for the purposes of statewide childhood obesity prevention activities and children's dental programs.
    - 35% for community-based childhood obesity prevention programs, with priority given to counties that established childhood obesity prevention coalitions.
    - 10% for evidence-based prevention, early recognition, monitoring, and weight management intervention activities in the medical setting.
    - 35% for elementary and secondary schools for educational, environmental, policy, and other public health approaches that promoted nutrition and physical activity.[16]

AB 2782 was introduced and died in the 2015-2016 legislative session. This bill was closely modeled after SB 622, however, it imposed an excise tax on every beverage distributor at a rate of $0.02 per fluid ounce of sugar-sweetened beverages (as defined above) and would create the Healthy California Fund to be allocated to the State Department of Public Health, State Department of Health Care Services, Department of Education, and Department of Food and Agriculture to address diabetes and childhood obesity through the creation and support of treatment and prevention programs.[17]

HIA Framework

In 2012, with financial support from First 5 Los Angeles, Community Health Councils (CHC) convened a steering committee comprised of Pacoima Beautiful, Families in Good Health and Urban and Environmental Policy Institute. These groups shared the common goal of combatting health disparities

amongst children in low-income and communities of color through programmatic and policy interventions. The committee decided to conduct a Health Impact Assessment (HIA) on SB 622 which at the time was still being considered by the legislature, in order to identify the potential effects of a tax on low-income families with children ages 0 to 5 in the ethnically diverse communities of South Los Angeles, Long Beach/ Wilmington, Central/East LA and Pacoima. The committee conducted this HIA from 2012-2014 and was able to collect data from these communities afflicted with disproportionately high SSB consumption through a community guided process that shed light on the factors that impacted their consumption and how a tax and other interventions could help improve consumption rates. This report is a summation of those findings and recommendations were designed to inform current and future iterations of the tax and other policy initiatives aimed at reducing SSB consumption.

The Stages of HIA

The objective of this study was to analyze the impacts of the proposed SB 622 tax policy on the health of low-income and communities of color in LA County, namely households with children ages 0-5. To conduct this study, the standard five-stage HIA approach was utilized which included the following:

1) ***Screening**:* assessing the feasibility, timeliness, and value of an HIA to a policy's decision-making process
2) ***Scoping:*** establishing a research plan that includes: determining the geographic boundaries of study, determining research questions, choosing a methodology and solidifying participant roles for the HIA
3) ***Assessment:*** creating a baseline assessment profile, evaluating the magnitude of impact of the analyzed policy, and developing recommendations based upon study findings
4) ***Reporting:*** developing a communication plan to educate decision-makers and impacted stakeholders on opportunities to integrate the findings of the analysis into the decision making process
5) ***Monitoring/Evaluation:*** establishing a plan to track the progress of advocacy efforts, and to facilitate the implementation of the recommendations into the policy framework

II. Screening

Health impact assessments are typically conducted on policies that are not intended for health purposes to reveal to decision-makers the unintended health implications of a given policy. This study analyzed the unintended health consequences of a health policy to inform decision-makers of lesser explored health-related outcomes, particularly for historically disenfranchised populations.

The HIA Team

The focus of this study was developed through a multi-sectorial collaboration between a diverse group of stakeholders from the public, private and non-profit sector. These collaborators included: Community Health Councils (South LA), Pacoima Beautiful (Pacoima), Families in Good Health (Long Beach/ Wilmington), Urban and Environmental Policy Institute (Central/East LA), First 5 LA, with support from the Los Angeles County Department of Public Health, University of Southern California (USC) and a number of other community based organizations. The goal of bringing together diverse collaborators was to utilize the expertise of stakeholders that worked directly with the study's target populations to develop cohesive, feasible, and effective policy analysis and recommendations. Members of the committee worked to design the research methods, tools, and analyze results. This committee also collaborated to develop mechanisms for monitoring and evaluating the proposed recommendations. The objectives of this committee included:

Figure 2

- Executing a multi-sectorial group study on the health impacts of an SSB tax on low-income and communities of color throughout LA County
- Creating recommendations for policy makers to include into current future iterations of the policy or the development of policy alternatives

Political Context[b]

Although AB 2782 was the most recent iteration of a "soda tax" bill to be considered by the State legislature, it was not intended to be a final product. To pass, this bill needed a two-thirds majority vote from the California State Senate and State Assembly. This relatively high threshold for bill passage led many policy experts to predict that the actual passing of a state-wide soda tax bill would not take place for at least another six to ten years. AB 2782 (as were its predecessors) was intended to spark discussion on a state, regional and local level about the need to promote healthy beverage consumption, and to ease the passage of less politically controversial bills that also address SSB consumption.[18] Since the first statewide soda tax was proposed, numerous local municipalities including Berkeley, San Francisco, and El Monte have

[b] As of this writing September 2014. Since that time the AB 1357 Health Impact Assessment fee has been introduced by Assemblymember Richard Bloom (AD 50). The City of Berkeley, CA approved a 1-cent soda tax in 2015.

attempted to pass similar taxes, with Berkeley passing a tax in 2014. A renewed effort to support a California SSB tax could take place in the coming legislative sessions.

There are a number of parallels between efforts to regulate sugar-sweetened beverages and tobacco regulation efforts. The long-term policy development strategy of the SSB tax movement parallels that of tobacco legislation in California, which took nearly 20 years to be enacted.[19] Moreover, both tobacco and sugar-sweetened beverages are consumed by low-income communities of color at a higher rate than more affluent, white communities. This higher consumption rate makes these communities more vulnerable to negative health conditions and outcomes.[20]

The concept of an SSB tax is extremely controversial amongst public health advocates, researchers, business industry representatives and community groups. Supporters of a tax believe that the increased price will lead to decreased consumption, namely for those individuals that are most price-sensitive, low-income individuals and children, who suffer the most from the negative implications of SSB consumption. Others believe that the regressive[c] nature of the tax will cause a disproportionate economic burden on low-income and very low-income families who often times have limited access to healthier alternatives (see Appendix B for a more in-depth analysis of these debates).

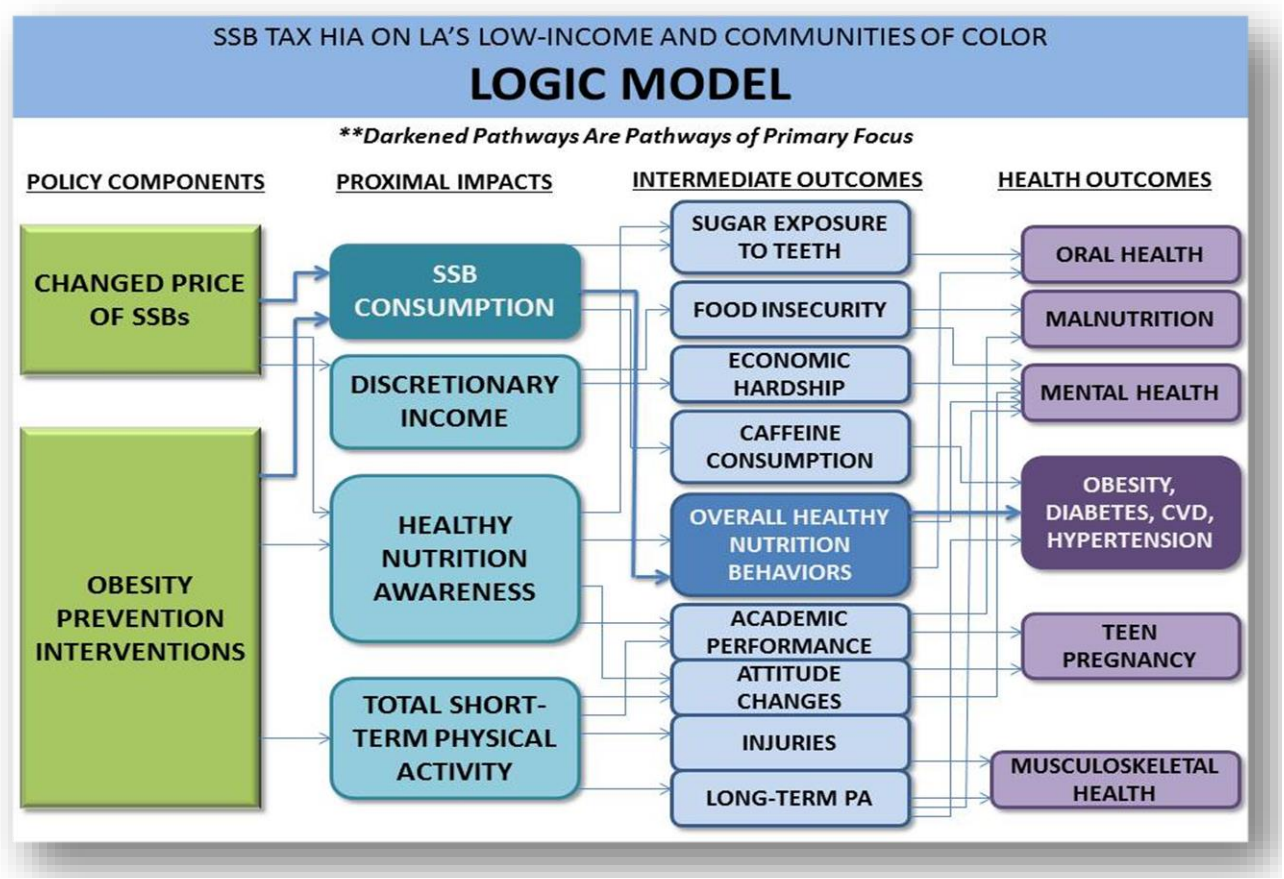
III. Scoping

An SSB tax has the potential to lead to changes in many health and quality of life outcomes, ranging from nutrition-related, financial, and even academic performance. This steering committee decided to focus the scope on the nutrition-related aspects of SSB consumption, but from a lesser explored perspective. Most of the data collected on the impacts of an SSB tax solely considered the impacts of price changes alone and did not take into account localized environmental factors that may also influence price elasticity and demand. This study analyzed the health impacts of a tax based on both the potential changes in price and the revenue expenditures, accounting for many factors that impact nutrition behaviors including: access to alternative beverages, the quality of alternatives and various tax pass-through scenarios. Based on this scope, the following logic model and research questions were developed:

[c] Proportionately more economically burdensome for those with lower incomes

Logic Model

Figure 3



Research objectives/questions

1) What are the various social, environmental, and economic factors that influence the disproportionate consumption of SSBs in LA's households of color with children ages 0-5?
2) What, if any, are the potential nutrition-related health consequences of a tax? How does a tax on SSBs address factors that can change consumption and health outcomes for low-income and communities of color?
3) What are alternative policies and/or modifications that can best improve SSB consumption patterns in low-income and households of color with children ages 0-5?

Geographic Scope

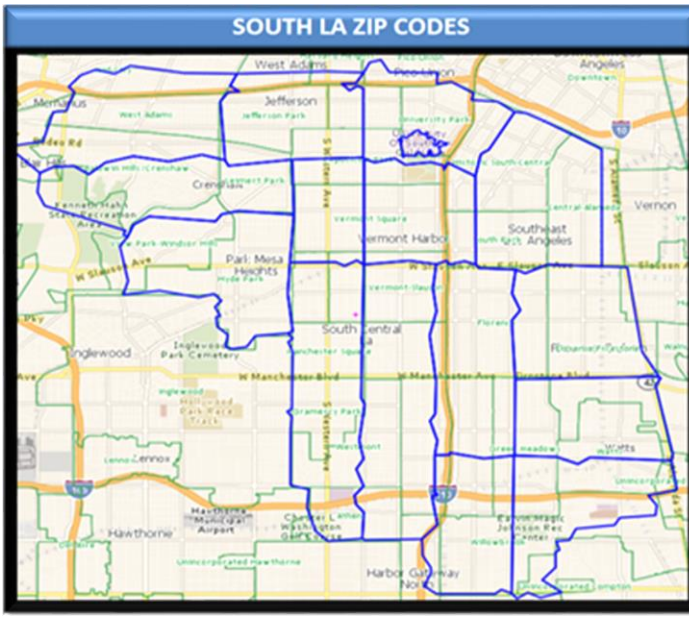
Whereas the tax will affect all of California, this study focused on South Los Angeles, Pacoima, Central/East LA and Central/West Long Beach[d]. Through extensive research, we identified these predominantly low-

[d] Areas were defined by zip codes: Pacoima/East Valley (91331, 91342, 91405, 91352, 91605); Long Beach/Wilmington (90805, 90221, 90723, 90744, 90813, 90831); South Los Angeles (90001, 90002, 90003, 90007, 90008, 90011, 90016, 90018, 90037, 90043, 90044, 90047, 90059, 90061, 90062); Central/ East Los Angeles (90006, 90057, 90071, 90021, 90090, 90031, 90033, 90063, 90023, 90201, 90040, 90270).

income communities as the areas in LA County most vulnerable to poor health outcomes. Residents of these communities suffered higher rates of morbidity and mortality than the LA County average primarily due to preventable nutrition-related chronic diseases, which are discussed below. These communities were also comprised of racial and ethnic groups with high rates of SSB consumption nationwide including: Latinos, African-Americans & Southeast Asians/ Pacific Islanders.[21] Finally, these communities were chosen based on their high percentage of households with children ages 0-5 vs. the LA County average.[22]

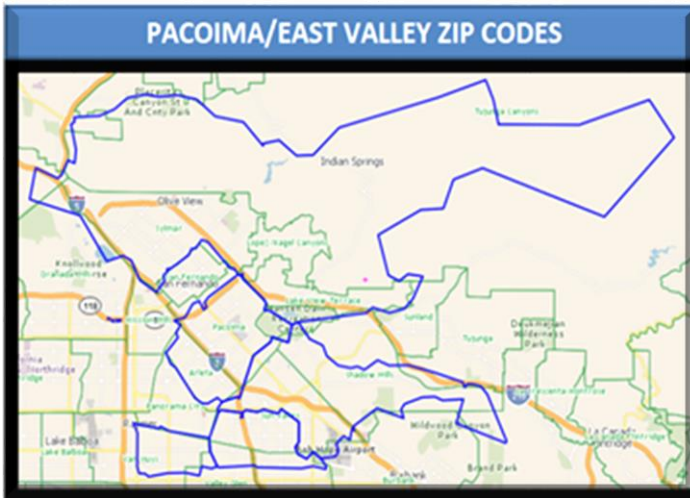
South Los Angeles (South LA)

Figure 4



South LA is a diverse and vibrant community that is the most populous region in the City of Los Angeles and neighbors the affluent community of West Los Angeles to the west, Central and Downtown Los Angeles to the north, East Los Angeles and portions of unincorporated LA County to the east and an array of cities to the south including Inglewood, Gardena, and Compton. 8.6% of the South LA population is under five years old as compared to 6.6% LA Countywide.[23] South LA has the highest concentration of African-Americans in the City of LA with 32% African-American residents and 66% Latino residents. South LA is also an economically diverse community, with some of the most affluent as well as impoverished residents in LA County. Despite the range of incomes, negative health outcomes are similar for residents regardless of economic status. These disparities will be highlighted in detail in the baseline section of this study.

Figure 5



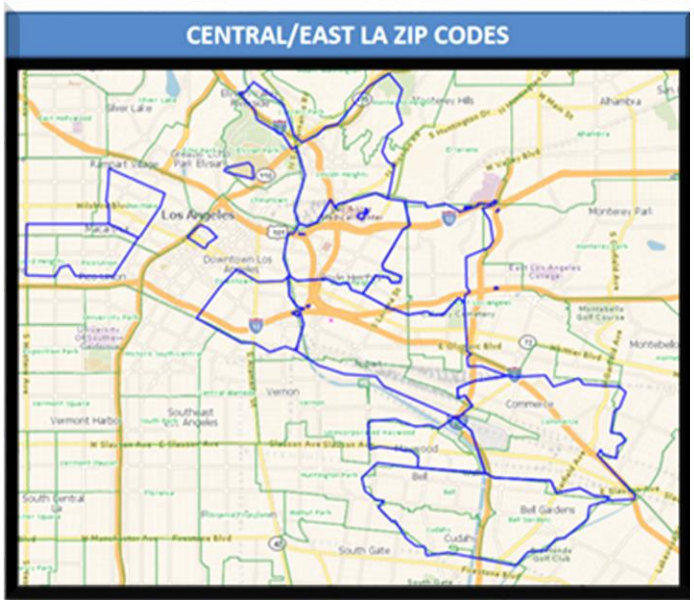
Pacoima/East Valley

The Pacoima/East Valley region of LA County is located in the North East San Fernando Valley portion of Los Angeles City, and for the purposes of this study includes the cities of Pacoima, Arleta and Panorama City. Pacoima has an under five population that is larger than the LA County average at 7.6%. This region is predominantly Hispanic with 76% of residents identifying as such, 15% White, 6% Asian and 3% African-American. The area is located in the northern portion of LA County and is surrounded by

affluent communities such as Sun Valley, Granada Hills and Northridge. The Pacoima/ East Valley community is filled with strong social networks and an immense community pride, despite it being one of the lowest income communities in the San Fernando Valley region.[24]

Central/East LA

Figure 6



Central/East LA includes the communities of Downtown Los Angeles, Boyle Heights, Lincoln Heights, El Sereno, and portions of unincorporated East LA. This community is on the eastern side of LA County and is bordered by the San Gabriel Valley to the east and the north, and South LA to the west and south. Central/East LA has the third highest percentage of under-five population at 8.2%.This community is also predominantly Hispanic with 82% of residents identified as Latino, 13% Asian, 3% White and 2% Black. Downtown Los Angeles is another place that includes some of the highest and lowest income residents in LA County as it houses a majority of the area's homeless population on skid row. There is a unique cultural diversity present in this region, which includes the strong and historic Chicano/Latino community of Boyle Heights and areas like Little Tokyo, Historic Filipinotown and Chinatown in the central areas.[25]

Figure 7

Long Beach/Wilmington

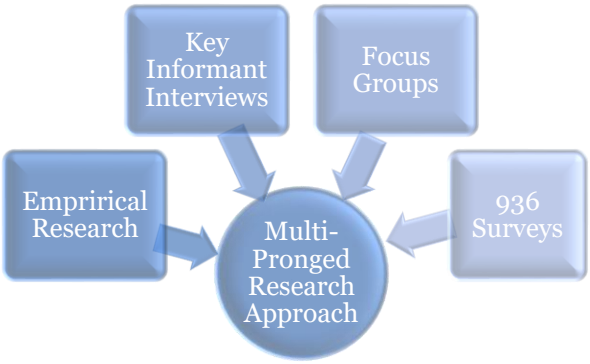
The Long Beach/Wilmington community is one of the most racially heterogeneous communities in Los Angeles County with 71% of residents that are Hispanic, 15% African-American, 7% Asian, 6% White and 1% Pacific Islander. Long Beach has one of the highest concentrations of South East Asian/ Pacific Islander populations including a large variety of Kmher (Cambodian), Samoan, and Filipino residents. Many of these populations get aggregated with East Asian populations in the collection and analysis of health, economic and social data, despite the fact these communities are not homogenous and experience prolific disparities in the aforementioned outcomes. Long Beach/Wilmington also has the highest percentage of the population that

is under five years old at 9.1%.[26] A large amount of the jobs in the Long Beach/ Wilmington area generated through the adjacent Ports of Long Beach and Los Angeles, which are huge economic drivers for Los Angeles County and together bring in over 40% of total imports into the United States. Despite the many jobs generated in the area as a result of the port, economic disparity still prevails.

Research Methods

For this study, we developed a comprehensive methodology that was directed, crafted and informed by a community-led process involving the steering committee, vetting from community workshops, and input from subject-matter experts. We collected both primary and secondary data to inform the analysis (see Figure 8).

Figure 8



To assess the data collected, we utilized the Constant Comparative method which involved: identifying the phenomenon or event of interest, determining local concepts, principles and other features of the phenomenon; analyzing the data utilizing thematic analyses informed by our understanding of the phenomenon and engaging in theoretical sampling[e] to support the development of emerging themes and categories[27]. Out of this analysis, we were able to develop our "grounded theories", which are simply research-based explanations for sociological questions. For the purposes of this study, the sociological questions were the research questions identified above. **The phenomenon that was the subject of this investigation was the disproportionate consumption of SSBs by our target populations**.

Identifying the Phenomenon of Interest

Empirical Research: We analyzed 205 articles, many of them peer reviewed, to gain more in-depth knowledge of the phenomenon of interest. The empirical analysis assisted the steering committee in identifying the research already conducted on SSBs and their impacts on low-income and communities of color, the potential implications of a tax on the health behaviors of the target populations, and the successes and challenges of other interventions aimed at reducing SSB consumption. Out of the 205 articles analyzed, 16 of them focused on low-income populations and communities of color.

Determining Concepts, Analyzing Data & Theoretical Sampling

Focus Groups: To further illuminate the concepts, features, and principals of our phenomenon of interest, we conducted focus groups to identify from the subjects' perspectives the factors that impact their soda consumption, whether they would support an SSB tax and if they thought the tax would have a positive

[e] A qualitative research tool used in the Grounded Theory to sample people, time-periods or incidents based on theoretical constructs.

impact on their health behaviors. Focus group participants also provided insight on how the tax revenue should be spent, if a tax were enacted. We executed a total of twelve focus groups, three in each target area, with parents and grandparents of children ages 0-5, and youth ages 14-19. There were a total of 132 participants in the twelve focus groups. Although the primary target population of the study was children ages 0-5, SSB consumption of children 0-5 has been linked to higher consumption throughout the lifespan- most notably in teenage years. Studying teenage consumption helped inform our projections of future consumption trends amongst our target 0-5 group. To assess the focus group data, we conducted a thematic analysis of the focus group responses to identify major themes that emerged from the discussions in the target communities. Participants identified several influences on their or their children's consumption of SSB, including: addiction, cultural influences, targeted marketing, high preference, easy accessibility, and children modeling behaviors after parents.

Focus group participants were aware of the harm caused by SSB overconsumption but felt that a lack of access to healthier, affordable alternatives influenced their purchase and consumption of SSB. Although many supported a tax on SSB, participants were concerned that the funds would not be equitably allocated to the communities of highest need. Please see Appendix C for a more detailed breakdown of themes.

Surveys: We surveyed over 936 residents in a theoretical sample of four zip codes within our four target areas. The theoretical sample was primarily based on age, gender and ethnicity to identify the factors that influenced SSB consumption specifically amongst African-American, Latino and Southeast Asian/Pacific Islander parents and youth. The ethnic breakdown of the survey participants can be seen in Figure 9. Surveys asked residents to indicate where they purchased their SSBs and alternative beverages to help identify all of the prominent access points for SSBs and alternative beverages in the respective communities. The survey also asked participants to identify the amount of billboard advertising present in the respective communities for both healthy and less healthy beverage options. The residents surveyed included teens and adults ranging from 11-54 years old. Many of the adults were parents of children ages 0-5.

Figure 9. Demographic Breakdown of Survey Participants

	Long Beach/ Wilmington	*South LA*	*Pacoima*	*Central/ East LA*
Black	9%	47%	5%	7%
Latino	8%	40%	87%	75%
White	8%	5%	0%	0%
Southeast Asian/ Pacific Islander	73%	0%	0%	5%
Other	0%	7%	8%	10%
Survey Findings				
Seen Soda Billboards	44%	60%	58%	51%
Seen Water Billboards	17%	22%	26%	27%

***Key Informant Interviews*:** These were conducted with subject matter experts, State legislator staff, local city and county departments related to public health, water access, and housing; and local community

groups including neighborhood councils. Findings from these interviews helped to provide insights on prevailing gaps in the SSB tax research, potential beverage industry responses to a tax, and factors influencing public opinion of a tax that may not have been accessible through secondary data alone. Findings from the interviews assisted us in projecting the feasibility of this study's impact projections on health behaviors, and the feasibility of the policy recommendations considering the political climate.

IV. Assessment

Overview

The assessment portion of this study was conducted in two parts. First, the steering committee completed a baseline analysis to identify the current conditions related to SSB consumption and nutrition-related health outcomes in each of the target areas. The second part of this assessment was an impact analysis that aimed to determine whether the factors that effected SSB consumption would be adequately addressed through SB 622.

Our literature review for the assessment of this study identified 33 national and international peer-reviewed studies conducted on SSB taxes specifically. To ensure that this study's assessment did not duplicate efforts already made, we conducted a gap analysis of the literature to find what was missing and how this study could contribute to the already vast body of knowledge regarding the subject of SSB taxes. Our literature review revealed that a majority of the 33 studies were based on presumptions and conditions that were not realities for the low-income communities of focus in this report. This assessment investigated the lesser-explored factors impacting SSB consumption in low-income and communities of color, specifically as they related to the outcomes of a tax, including:

- **Pass-Through:** Most studies analyzing the effects of a sweetened beverage tax on health outcomes assumed that the industry would pass on 100% of the tax expenses to consumers. However, it is unlikely that 100% pass-through will occur, given that studies on the implementation of SSB tax and similar "sin[f]" taxes internationally indicated that the industry would likely respond differently.
- **Local Access and Quality of Alternatives:** Many studies assessed SSB tax impacts on low-income populations based on price elasticity. However, disparities in the quality, quantity and accessibility of alternatives were not integrated into any analyses. Price is not the only factor that impacts consumer choice. A majority of the economic models projecting the impacts of a tax on consumption patterns did not consider disparities in access to alternatives and were based on an economic concept, *Ceretis Paribus,* meaning "with all other things being equal." In actuality, low-income and communities of color often times have disproportionate barriers to healthy food access when compared to other communities.

[f] Taxes on products considered harmful or bad for health. These taxes include food products like junk food and SSBs, but they can also include other products such as tobacco and alcohol.

- **Substitution Effect:** 39% of the 33 studies considered the substitution effect which assumed that a portion of individuals that did not consume SSBs as a result of the increase in price would substitute their consumption of SSBs for other unhealthy food or beverages that was not taxed. Studies that did consider substitution to other high-caloric food and beverages indicated that findings from studies that did not consider substitution likely inflated the impacts of an SSB tax on consumption patterns.
- **Impacts of SSB Addiction:** 9.1% of studies reviewed on SSB taxes specifically considered the impacts of addiction or habit formation on tax outcomes. Studies that considered habit and addiction related to SSB consumption predicted lower health improvements amongst low-income households than other households. While we found substantial documentation on the links between sugar and addiction, this concept was not explored thoroughly in this section because more research is needed on SSB addiction, specifically in communities of color. The literature that we did find indicated that excessive sugar consumption was connected to dependence and its removal led to withdrawal symptoms similar to morphine or nicotine amongst rats.[28]

Key findings of the assessment are highlighted in this chapter with additional information regarding data sources and limitations in Appendix D.

Baseline Assessment

KEY FINDINGS

- Each of the target communities had demographic and environmental characteristics that made them vulnerable to high SSB consumption rates and related health outcomes amongst children ages 0-5 and adults.
- SB 622 would address a portion of the factors identified that impacted these disproportionate consumption rates.

This baseline analysis aimed to identify the current SSB consumption rates and related health outcomes in the target areas of South LA, Long Beach/ Wilmington, Central/East LA and Pacoima in comparison with the rest of LA County. Data collected for this section also highlighted the demographic characteristics of each of the target areas that may have influenced their respective SSB consumption rates. The primary question this section aimed to answer was: **what were the various economic social and environmental factors that influenced the disproportionate consumption of SSBs in LA's households of color with children ages 0-5?**

Figure 10: Nutrition Behaviors in Target Areas Vs. LA County Average

Geographic Area	*SSB consumption Adults**	*SSB consumption Children*	*Daily SSB consumption 0-5 (2003)**	*Obesity Adults*	*Overweight Children* 2-5*
South LA	35.2%**	**51.8%**	**25.7%**- 1 glass **28.1%**- 2 glasses	**32.6%**	3 years-19.81% 4 years-19.87%
Pacoima	31.6%	**39.7%**	20.1%- 1 glass **26.5%**- 2 glasses	20.4%	3 years-17.15% 4 years-18.09%
East/Central LA	**38.2%**	**40.9%**	21.9%- 1 glass **27.0%**- 2 glasses	**28.0%**	3 years-19.1% 4 years-18.93%
Long Beach/ Wilmington	**37.7%**	**45.4%**	**25.1%**- 1 glass 18.4%- 2 glasses	**26.3%**	3 years-19.23% 4 years-19.35%
LA County Average	35.5%	38.3%	23.1%- 1 glass 21.7%- 2 glasses	23.6%	3 years- 19.3% 4 years-19.53%

*Geographic areas for these indicators are based on SPA data which exceed the study geographic boundaries for each of the designated areas.

**Data statistically unreliable due to small sample size

Source: Los Angeles County Department of Public Health Key Indicators of Health (March 2013)

Sugar Sweetened Beverage Consumption Patterns

Literature reviewed on SSB consumption indicated that low-income and individuals of color had a higher propensity to consume SSBs than other groups.[29] Data collected from the UCLA California Health Interview Survey (CHIS) revealed that in 2011, overall SSB consumption was highest amongst individuals of African-American, Latino, Pacific Islander and Native American decent.[30] Results from the 2011 LA County Department of Public Health Key Indicators of Health survey revealed that all the target areas were well above the LA County average (38.3%) of children who consumed at least one soda or sweetened drink a day. South LA had the highest percentage (51.8%) and Long Beach/Wilmington was second highest (45.4%) followed by East/Central LA (40.9%) and Pacoima (39.7%).[31] Service Planning Area (SPA) level data from the California Health Indicator Survey (CHIS) showed that in 2003, consumption of 2 or more glasses of SSBs in one day amongst children ages 0 to 5 was higher than the LA County average of 21.7% in three of the four target communities. In the South LA SPA[g] , 28.1% of children ages 0 to 5 consumed more than 2 glasses of SSBs in one day, in the East LA SPA[h] it was 27% and in the San Fernando Valley SPA[i] it

[g] The South LA SPA includes the portion of South Los Angeles that is in the City of Los Angeles, along with the neighboring cities of Compton and Lynwood

[h] The East LA SPA includes Boyle Heights, unincorporated East LA and more affluent communities adjacent to the San Gabriel Valley

[i] The San Fernando Valley SPA includes Pacoima and surrounding affluent valley communities including Sun Valley, Calabasas, Thousand Oaks and Westlake Village

was 26.5%. The South Bay SPA[j] had a lower consumption rate of 2 or more glasses of SSBs, but a higher rate of consumption of 1 glass per day as compared to the LA County average (see Figure 10).

Additional SPA level data from the Los Angeles Department of Public Health indicated a trend of high SSB consumption amongst adults in some of the target areas as well. East LA had the highest rate of adult SSB consumption at 38.2%, followed closely by the South Bay which had an adult consumption rate of 37.7%, South LA had an adult SSB consumption rate of 35.2% (although the data was determined to be statistically unreliable due to small sample size) and the San Fernando Valley had the lowest SSB consumption rate in the target area amongst adults at 31.6%. Based on this data, the East LA and South Bay SPAs had adult SSB consumption rates above the LA County average (35.5%), however, disaggregated data on the target zip codes within the SPAs may have yielded different results (see Figure 10).[32]

Literature asserts that SSB consumption is associated with obesity and diabetes.[33] March 2014 data from the LA County Women Infants and Children Supplemental Nutrition Program (WIC) found that 19.8% of 3 year-old WIC participants and 19.87% of 4 year-old WIC participants in the South LA SPA were overweight. The percentage of overweight 3 and 4 year olds in the East LA SPA were 19.1% and 18.9% respectively. Similarly, 19.2% of South Bay 3 year olds and 19.4% of 4 year olds were overweight. 17.2% of San Fernando 3 year olds and 18.1% of 4 year olds were overweight. The LA County average was 19.3% amongst 3 year olds and 19.5% amongst 4 year olds. These data showed that in each of the areas surrounding this study's target regions, nearly one in five children ages 3 and 4 were overweight. There is no standard of overweight for children younger than age 2.[34]

The adult obesity rates in our target area zip codes were also high based on LA County Key Indicators data with 32.6% of South LA adults, 20.4% of Pacoima adults, 26.3% of Long Beach/Wilmington and 28% in Central/East LA identified as obese. The LA County average for obesity was 23.6%.[35] Therefore, adult obesity was above the LA County average in every target community except Pacoima.

Economic Factors: Income

Our research indicated that poverty was strongly correlated with high SSB consumption and poor health outcomes.[36] Low-income households purchased more SSBs than other households and at a lower price due to the prevalence of generic brands in low-income stores.[37] Children from low-income households had higher odds of heavy total SSB consumption and higher caloric intake from SSBs and fruit drinks than high-income children.[38] Low-income children were also more likely to replace nutritious calories with SSBs containing little-to-no nutritional value than high-income children.

Addressing high SSB consumption amongst low-income populations has been viewed by many public health advocates as an issue of life or death. U.S. trends demonstrate that citizens in the highest income

[j] The South Bay SPA includes Long Beach/ Wilmington as well as the affluent communities of Palos Verdes, Torrance and the Beach Cities

group could expect to live 6.5 years longer than those in the lowest income group primarily due to lower rates of preventable illnesses associated with poor nutrition behaviors like SSB consumption.[39] Los Angeles County Department of Public Health research indicated that economic hardship was strongly correlated with diabetes and mortality, and moderately correlated with obesity and mortality from stroke, all of which are connected to SSB consumption.[40]

Based on this data, individuals in this study's target communities were more vulnerable to the negative outcomes associated with SSB consumption due to their prevalence of low-income residents. 2010 U.S. census data revealed that in South LA, 59.8% of residents had incomes that were less than 200% of the Federal Poverty Level (FPL), in Pacoima 46.4%, in Central/East LA 63.9% and in Long Beach/Wilmington 57.6%.[41] The LA County average was 38.4%. Therefore, each community in this study's target area had a poverty rate that was substantially higher than the LA County average.[42]

Income was found to be associated with SSB consumption and related health outcomes due to factors including geographic proximity to healthy food outlets for low-income populations and the price of SSBs as compared to healthy alternatives. These factors will be explored more in depth later in this chapter.

Figure 11: Income & Education in Target Areas

Geographic Area	*Income Less than 200% FPL*	*Less than HS Education*
South LA	59.8%	43.9%
Pacoima	46.4%	39.2%
East/Central LA	63.9%	43.9%
Long Beach/ Wilmington	57.6%	41.9%
LA County Average	38.4%	23.9%

*Geographic areas for these indicators are based on SPA data which exceed the geographic boundaries for each of the designated areas.

**Data statistically unreliable due to small sample size

Social Factors: Education

Findings from a National Poverty Center study concluded that better educated people had a lower morbidity rate, independent of demographic and labor market factors.[43] The study also stated that individuals with higher levels of education were linked to better health behaviors, which included healthier food consumption patterns and lower obesity rates. Research on education and its connection to SSBs indicated that children with lesser educated parents were more likely to consume SSBs. Children with parents who had a high school education or less drank nearly one-quarter of a serving more SSBs than those with one parent attending college; and just under half a serving more SSBs than those whose parents had some college or higher education.

According to U.S. Census data, the percentage rates of adults with less than a high school diploma or equivalent in each of this study's target geographic areas were: 53.0% in Central/East LA, 43.9% in South LA, 41.85% in Long Beach/Wilmington and 39.24% in Pacoima/ East Valley. The LA County average was 23.9%.[44] Based on this data, each of the target communities had an education rate that was substantially lower than the LA County average, and as a result was likely more vulnerable to poor nutrition behaviors and outcomes including those associated with SSB consumption.

It is well known that education can be a key influence on an individual's opportunity for financial and income stability[45]. Considering this claim, education may be connected to SSB consumption for many of the same reasons as income. In fact, the above research also noted that even when controlled for demographic and labor forces, educated individuals had better health rates. This may be attributed to education's impact on a person's knowledge of the consequences associated with specific health behaviors.[46] The connection between poor education and limited knowledge of consequences associated with health behaviors could be addressed with obesity-prevention programming, a SB 622 provision that will also be explored in more detail in the impact analysis section of this report.

Social & Environmental Factors: Race, Marking & Access

The scoping section of this study highlighted that each of the target communities was primarily comprised of individuals of color. A large body of research has connected race and ethnicity to SSB consumption rates.[47] We found that both children and adults of color were more likely to consume SSBs than white children and adults, regardless of economic status.[48] SSB consumption was highest amongst youth of color than any other demographic group. One study found that African-American children were 4.6 times more likely to consume SSBs by age two than white children even when controlled for income. Similarly, Hispanic/Latino children were 2.7 times more likely to consume SSBs by age two than white children. Additional research concluded that 82% of black mothers and 74% of Hispanic mothers allowed their 2 year olds to drink SSBs regularly as compared to 45% of white mothers.[49] Research indicated that racial and ethnic minorities also had higher rates of obesity and other nutrition-related chronic diseases. One national study on overweight and obesity amongst three-year-old children found that Latino children were twice as likely as black or white children to be overweight or obese. Contributing factors to this disparity included birth weight, mother's weight status, and taking a bottle to bed[50].

The disproportionate consumption of SSBs amongst children and adults of color could be attributed to a number of factors including: racial and ethnic disparities in access to healthy food options, targeted marketing campaigns towards individuals of color, and the complex intersection between race, income and education rates which have all been determined to be risk factors for SSB consumption. Our research found that communities of color were more likely to have disproportionate access to SSBs and were more likely to be targeted for SSB advertising.[51] Neither access to food options nor targeted marketing was specifically incorporated into the proposed provisions of SB 622. Their influences on SSB consumption can be seen in the impact analysis section as well.

Discussion

The baseline indicators of income, education and race would not have been directly affected by an SSB tax. However, identifying why these indicators were risk factors for SSB consumption helped inform how a tax could potentially influence consumption rates amongst communities with high concentrations of racial/ethnic, low-income and/or low educated populations. This section found that some of the factors

impacting SSB consumption rates amongst vulnerable populations would be addressed through a tax including: beverage prices nutrition education. However, this section also summarized that other factors related to these baseline indicators, namely the disproportionate marketing of SSBs to both children and adults of color and access to alternatives would not be directly addressed through a tax. Findings from our primary and secondary data indicated that targeted marketing and access to alternatives were notable factors that impacted SSB consumption for people of color. Based on this, the tax's inability to directly address these factors may influence how strongly the tax effects SSB consumption amongst study populations. These issues will be discussed in more detail in the section below.

Impact Analysis

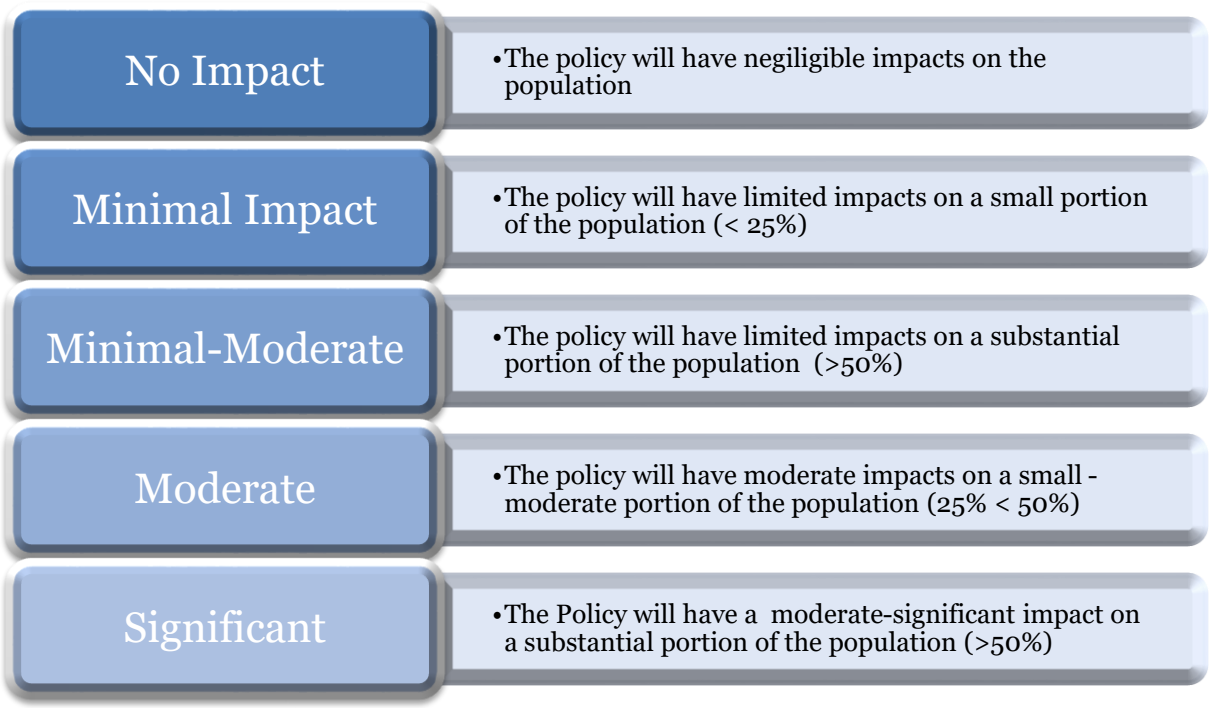
KEY FINDINGS

- Changes in the price of SSBs alone would not likely lead to substantial improvements in health outcomes when considering substitution. The tax must be paired with targeted community interventions that also discourage unhealthy substitutions and make healthy options more accessible.
- Significant impacts could be achieved through the tax revenue if it is distributed to low-income and communities of color and prioritized for interventions that address school and community impacts, incorporate parents, combat targeted marketing and increase access to alternatives.

This impact analysis summarized the factors that affected SSB consumption in each of the study's four target areas utilizing the constant comparative analysis method. From the constant comparative analysis, two grounded theories were developed to answer the following research questions: **what, if any, are the potential nutrition-related health consequences of a tax? How does a tax on SSBs address factors that can change consumption and health outcomes for low-income and communities of color?**

Through the myriad of secondary and primary data collected for this analysis, we were able to project the potential impacts of a tax on SSB-related health outcomes based on a scale ranging from no impact to significant impact. The criteria for determining the degree of impact can be found in Figure 12.

Figure 12: Impact Analysis Criteria



Policy Components: Change in Price

SB 622 was comprised of 2 major policy components that included change in SSB price and obesity-prevention programming. This section investigated the potential impacts of the change in price on SSB consumption rates amongst this study's target population. To provide a more unique contribution to the already vast body of literature on the subject, this section considered three different tax pass-through scenarios and developed impact projections based on each of these scenarios.

Price Change Projections

We found numerous studies that concluded that a tax would be an effective solution to address the price disparities between SSBs and healthier beverage alternatives.[52] Studies that analyzed the impacts of a penny-per-ounce SSB tax but did not consider factors such as limited pass-through, substitution, addiction or alternative beverage access, asserted that a tax would lead to changes in beverage consumption habits. Studies that did consider substitution and other factors suggested that taxes must be combined with subsidies for water to maximize effectiveness.[53]

SB 622 included a one-cent per fluid ounce tax on beverage distributors. Studies assuming that all tax costs would be passed to consumers concluded that an SSB tax at a national level would lead to $17 billion in medical cost savings and generate $13 billion in revenue over 10 years.[54] However, a tax on SSB distributors

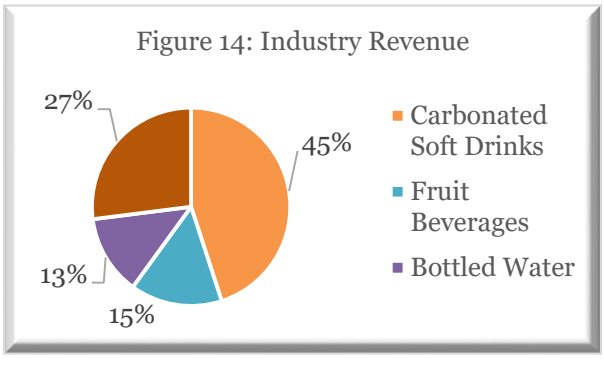
would not have necessarily resulted in a price increase for consumers. SSB distributors are middle-men between SSB manufacturers/producers and retailers. Although most studies assumed that distributors would pass 100% of the tax increase onto their consumers, additional research indicated that a 100% pass through was not a likely scenario.[55] Case studies of other countries with taxes on unhealthy foods and/or beverages revealed that the tax costs were not fully passed through to consumers and were often fully or partially absorbed by distributors or retailers.[56] This section analyzed the potential impacts of a California SSB tax if the beverage industry responded in the following ways:

0% Pass Through of Tax: This implies that the beverage industry distributors absorbed the whole tax and did not pass on any price increases to consumers. To analyze the health effects of a tax with 0% pass-through, we collected the average prices for 4 different types of beverages: milk, bottled water, soda and 100% fruit juice based on advertised retail prices at major supermarket outlets, as well as liquor stores and smaller corner stores in the target areas. We then calculated the price per ounce of each beverage type and found that milk was cheaper per ounce than bottled water, soda and 100% fruit juice. Bottled water and soda cost the same per ounce and 100% fruit juice was substantially more expensive than the other beverage options. If prices stayed the same with 0% pass through from the distributor, there would likely be no notable changes in consumption patterns based on price alone (see Figure 13).

Figure 13: Average Price of SSBs Per Ounce vs. Healthy Alternatives

Beverage	*0% pass through*	*Limited Pass through*	*100% pass through*
Milk	2.7 cents	2.7 cents	2.7 cents
Bottled Water	3.6 cents	4.1 cents	**3.6 cents**
Soda	3.7 cents	**4.2 cents**	**4.7 cents**

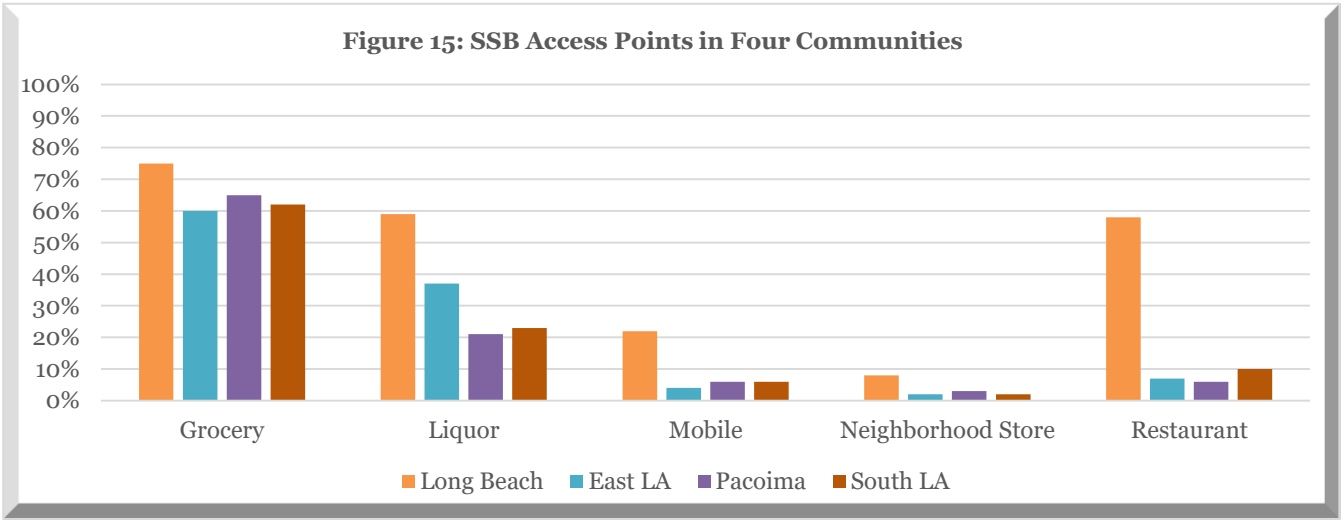
***Limited Pass-Through on all industry beverages*:** This could have taken place if the tax was distributed across all beverages sold by the distributor and/or producer or if the distributor simply absorbed a part of the tax. For large beverage companies, the bottling company and distributing company are the same. Coca Cola, for example, bottles and distributes Dasani water, Minute Maid Juice, Diet Coke and other SSB alternatives.[57] In the limited pass-through scenario, a tax on SSBs would be offset by increased prices across all of the above-mentioned beverages making SSBs and their alternatives slightly more expensive.



Some retailers in other countries, such as Denmark, that adopted SSB taxes used their limited pass-through as an advertising strategy to attract consumers.[58] This tactic was called price manipulation or price-related marketing, and referred to industry efforts to recruit and retain consumers by artificially lowering the price

of their goods temporarily and then increasing them gradually after consumers were addicted or developed brand/product loyalty.[59] Price-sensitive groups like youth and low-income communities were often targeted by these pricing schemes.[60]

On January 1st 2014, Mexico adopted an SSB and junk food excise tax that was also a limited pass-through. The tax of one peso per liter increased SSB and junk food prices by 8-10% and led to an increase in the price of diet drinks, juice and yogurt drink prices as well[61]. Despite the paralleled increase in alternatives, SSB purchases and junk food purchases declined by 6% after its first month of implementation and consumption of alternatives have increased.[62,63] [64] A study utilizing a commercial panel of consumers to estimate the effect of the tax on household purchases found that there was approximately a 10% decline in purchases of taxed beverages in the first quarter of 2014 compared to the first quarter of 2013. Additional results revealed a nearly 7% increase in the purchase of untaxed beverages (including diet sodas, 100% juices, flavored water with non-caloric sweeteners, water, and milk with no added sugar). Within this category, plain water purchases alone increased by approximately 13% while purchases of untaxed carbonated drinks and other untaxed beverages including milks, diet sodas and 100% fruit juices did not change significantly.[65]



Mexico's SSB consumption trends were calculated using consumer-spending data, which did not include sales from the informal economy. In the case of Denmark's limited pass-through tax, consumers began to travel to neighboring countries to purchase their food and beverages at cheaper, untaxed prices. Some sold these goods informally. As a result, gains in excise tax revenue ended up being less than administrative costs when combined with losses in business tax revenue.[66] If similar unregulated sales of SSBs were taking place in Mexico, this may have led to inaccurate assessments of SSB consumption trends present in the above studies and negative impacts on tax revenue generated. In this study's survey of SSB consumption trends amongst the target population, as many as 20% of polled residents of the Long Beach/Wilmington community purchased their SSBs from informal vendors (Figure 15). More research is needed on the effects

of the informal economy on consumption patterns in Mexico to better determine the degree of impact these vendors would have in the target areas as well.[67]

SSB tax literature asserted that taxes needed to be at least 20% to lead to significant changes in consumption. In Brazil, a 30% increase in the average price of an SSB led to about a 25% reduction in SSB consumption- 30.9% amongst low-income households and 18.9% amongst other households.[68] Therefore, while Mexico's 8-10% price increase was notable, this increase led to changes in behaviors that fell well below the estimated 15-25% reductions in SSB consumption projected from the literature. Little research has been disseminated on the impacts of the tax on junk food purchases as well. Based on this, it is unclear whether the reduction in SSB consumption would have led to significant changes in health outcomes if unhealthy food substitutions were taking place simultaneously. Additional research on Mexico's junk food consumption trends is also needed to shed light on this issue.

In the case of SB 622, if the tax was distributed across all industry beverages based on their percentage of total industry revenue (see Figures 13 and 14), then this would have led to a 13.5% increase in the price of SSBs per ounce (see Figure 13). This limited pass-through would have likely led to decreased SSB consumption by slightly more than 10% but less than 15% considering the Mexico scenario and SSB tax literature projections.

***100% pass through of tax on SSBs*:** In a 100% pass-through scenario, the entire one-cent per fluid ounce price increase would have been passed on to consumers. Based on the beverage prices in Figure 15, a 100% pass-through would have made sodas notably more expensive than water but still less expensive than 100% fruit juice. This would have led to an averaged 27% increase in the price of SSBs per ounce—slightly more than 20% increase heavily studied in SSB tax literature. Considering these findings, a 100% pass through could have led to reduced SSB consumption by more than 25%. The extent of these changes on weight loss, however, may not have been as substantial. One study that utilized a dynamic economic model[k]found that static modeling[l], the method typically used in SSB tax literature, significantly overestimated the impacts of a 20% tax on weight loss from reduced energy intake by 63 percent in year one, 346 percent in year five, and 764 percent in year 10, which likely contributed to unrealistic expectations for the tax as an obesity intervention strategy.[69]

Grounded Theories & Impact Assessment

The international tax examples highlighted previously revealed that a limited pass-through of SB 622 would be the most likely scenario due to the industry's creativity in circumventing barriers to distributing

[k] An economic model that considers economic variables such as consumption in a dynamic state, considering changes in factors such as: population growth, personal habits and customs of individuals

[l] An economic model that considers economic variables such as consumption in a static state, with no future or past changes in factors from those analyzed in the current moment

and selling their products. In this section we will assess the potential impacts of the limited pass-through scenario on SSB consumption and related health outcomes for this study's target population.

When considering the impacts of SB 622's change in price on children 0-5 and their families, our literature review found young children had limited influence on the purchasing patterns of their parents and were more likely to consume what their parents give them than their older counterparts.[70] Our focus groups' data on parent consumption rates revealed mixed results on whether a one-cent per ounce tax would lead to changes in health behaviors. While some parents, namely males, stated that they would continue to purchase sodas **"because the price only went up slightly"**, most other parents, predominantly the women, explained that they would stop or reduce their purchase of sodas **"because they would be too expensive."** Others believed that regardless of the changes in price, people would buy sweetened beverages no matter what. One Pacoima father stated **"as long as it's available the kids are going to drink it."** These findings were consistent across each of the geographic areas and also coincided with the literature which did not project that everyone's behaviors will change as a result of a tax, but that consumption would decrease amongst a portion of the population.

Those that decided to stop or reduce their consumption in the target areas could have experienced significant changes in their health outcomes. One study noted that the difference between obese and normal weight individuals is only the consumption of an additional 100 calories a day.[71] A typical 12oz serving of SSBs is 160 calories. Thus, if a portion of the parents in our study population reduced SSB consumption by one serving a day it could have led to notable changes in weight. It is unclear that the impacts of SB 622 on price changes would have led to a reduction in consumption by one serving a day, however. Studies considering SSB substitution to non-taxed caloric foods posited much smaller changes in overall caloric consumption than 100 calories a day.[72]

The previous section indicated that in a limited pass-through scenario, reduction in SSB consumption may have ranged between 10-15%. Although the above paragraph suggests that the reduction would likely be less, we considered the current SSB consumption rates in each of the target areas and reduced the rates by 12.5% based on the limited pass-through scenario. We calculated the potential changes consumption rates which can be seen in Figure 16.

Figure 16: SSB Consumption Rates in Target Communities

Geographic Area	*Adult Pre Tax**	*Adult Post Tax*	*Child Pre Tax*	*Child Post Tax*
South LA	35.2%**	30.8%	51.8%	45.3%
Pacoima	31.6%	27.7%	39.7%	34.7%
East LA	38.2%	33.4%	40.9%	35.8%
Long Beach/ Wilmington	37.7%	32.9%	45.4%	39.7%
LA County Average	35.5%		38.3%	

*Geographic areas for these indicators are based on SPA data which exceed the study geographic boundaries for each of the designated areas.
**Data statistically unreliable due to small sample size

Despite the possibly inflated reduction rate assumed in the calculations above, the chart showed that a 12.5% reduction in SSB consumption rates alone would not have been enough to lead to significant changes in SSB consumption rates. Particularly amongst South LA and Long Beach/ Wilmington children, SSB consumption rates would have still been higher than the LA County average prior to the tax. This suggested that more community-specific interventions would have been necessary to effectively address disparities in consumption and related health outcomes amongst areas with the greatest needs.

Findings from the above section also concluded that the tax could have led to an increase in the price of healthy alternatives. Although the consumption of healthy alternatives increased in Mexico, despite some slight changes in price, this increase could have contributed to financial burdens for the population as well. Studies considering substitution and other factors suggested that taxes must be combined with subsidies for water to maximize effectiveness.[73] This provision was not a component of SB 622 and based on this, the impacts of the tax would not have been as effective for the target population of this study.

Based on findings collected from the above analysis, the following grounded theory was developed:

> Changes in the price of SSBs alone will not likely lead to substantial improvements in health outcomes when considering substitution. The tax must be paired with targeted community interventions that also discourage unhealthy substitutions and make healthy options more accessible.

Although SSB consumption may have decreased amongst the target population as a result of SB 622, the impacts of that decrease on health outcomes may have been limited due to the accessibility of other unhealthy foods. If the tax did lead to a reduction in SSB consumption by a majority of the target population considering the focus groups' data, but the tax had minimal impacts on health outcomes considering substitution then, based on the impact analysis criteria in Figure 12, the change in price alone would have had ***minimal-moderate impacts*** on the overall population. The likelihood of this outcome taking place was considered somewhat likely, because more information and research was needed on the long-term impacts of these taxes on health behaviors and health outcomes. We determined the strength of the evidence (**) because of the mixed findings of the SSB tax studies that we identified that considered substitution.

SSB TAX IMPACTS				
POLICY COMPONENT	OUTCOME	MAGNITUDE OF HEALTH IMPACTS	LIKELIHOOD OF OUTCOME	STRENGTH OF EVIDENCE
DIRECT OUTCOMES RESULTING FROM POLICY				
Change in Price	Change in SSB-related health outcomes	Minimal-Moderate	Somewhat likely	**

Determining Strength of Evidence

(--): No empirical studies identified to support this claim

(*): 1-5 unreliable/ weak studies identified to support this claim

(**): 5-10 moderate quality empirical studies with mixed findings support this claim

(***): 5-10 strong studies with findings supporting this claim

(****): More than 10 strong studies with findings supporting this claim

Policy Components: Revenue Expenditures

Revenue from the tax would be spent on obesity prevention programming at the State level that included: community-based initiatives; nutrition education and physical activity programming in schools implemented through environmental, policy or other public health approaches; and evidence-based intervention activities in the medical setting. In this section we analyzed to what extent the revenue generated from the fund would be distributed to the target communities and what degree the above programs would impact health.

Revenue Expenditure Projections

When we asked focus group participants if they would support a tax on SSBs, many respondents had mixed opinions. While most participants supported the tax because they found the programs funded by SSB tax revenue to be beneficial, others did not support the tax namely because they did not believe that the tax revenue would go to communities of need. One South LA parent exclaimed that **"If they actually used the money for us it would help, but how do we know it comes back to us?"** Another parent was concerned that the money would not be distributed to the Children's Health Promotion Fund at all, but simply go to the state's General Fund to mitigate budget cuts. Key informant interviews with legislative staff at the state level revealed that currently there is no mechanism in the bill to ensure that funds are distributed to the target communities or communities in need.

While the question of whether the tax revenue would be distributed to the target communities remains, given the policy's provisions, we conducted this study based on the assumption that revenue would be distributed to our target communities considering two different scenarios:

***No Administrative Costs*:** This scenario was based on the presumption that all of the revenue generated from the tax would go to the Children's Health Promotion Fund without any administrative expenses being deducted. To calculate the projected revenue generated from the tax for the state, we used the Yale Rudd Center's Tax Revenue Generator, based on estimated 2011 SSB consumption patterns, to find that $1.16 Billion a year would be generated by a tax at the state level.[74] Then we assumed that the revenue would be distributed to each of the target communities based on population density. The four target areas combined had populations that made up 4.9% of the state's total population. So we assumed that 4.9% of the revenue would have been distributed to our target communities. If this scenario occurred, then approximately $54.7 million dollars would have been distributed to the target communities annually (see Figure 17). Based on the Children's Health Promotion Fund's stated revenue distribution, the LA Department of Public Health would have received almost $11 million a year to promote nutrition education and physical activity programming for children, community based programs would receive over $19 million on an annual basis, more than $5 million would go to evidence-based interventions, and more than $19 million could go to schools.

Figure 17

Similar to the tobacco tax, however, if the interventions were successful in reducing SSB consumption, the revenue for these interventions would likely decrease over time. Even in the short-term, $54 million in annual investment into the target communities for obesity prevention activities would have had the potential to lead to substantial improvements if the programs were administered strategically and appropriately. Unfortunately, this scenario was the least likely to take place because the bill explicitly states that the Children's Health Promotion Fund will be comprised of tax revenue generated after administrative expenses were subtracted.

Figure 18: NO ADMINISTRATIVE COSTS

Prevention Activity	*Percent*	*Amount in priority communities (4.9%)*
Department of Public Health	20%	$10,942,680
Community Based Programs	35%	$19,146,910
Evidence-Based Interventions	10%	$5,471,340
Schools	35%	$19,146,910

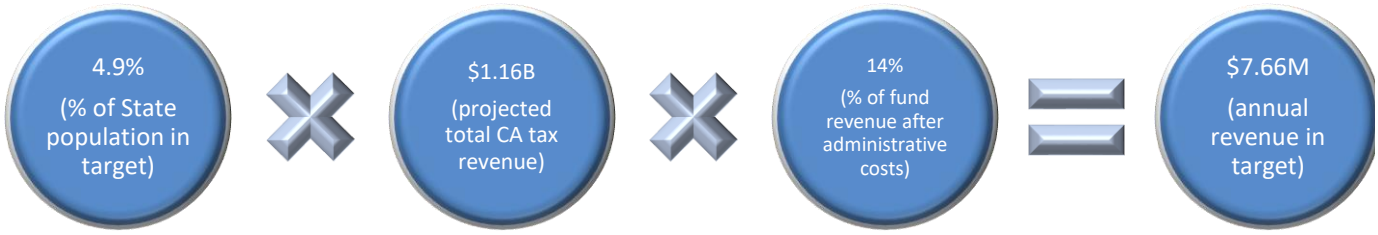


FIGURE 19

Administrative Costs Similar to Tobacco Tax: This scenario was based on the presumption that administrative expenses were taken from the tax revenue prior to distribution. To estimate the administrative expenses, we utilized the ratio of California Tobacco Tax revenue distributed to identify programs after administrative costs were deducted. Based on the tobacco tax, only about 14% of the revenue generated from the tax would have gone to the Fund. This equated to approximately $7.66 million in annual revenue distributed to the target area annually. Based on the provisions of SB 622, approximately $1.5 million would have gone to the Department of Public Health annually, over $2.6 million would have gone to community based programs, greater than $760,000 would have gone to evidence-based interventions, and approximately $2.6 million would have gone to schools in the target communities each year. Although these amounts were not as substantial as the "no administrative tax" scenario, the steering committee determined that this $7.66 million in additional annual funding in the target communities could have still had the potential to notably transform the stated interventions.

Figure 20: ADMINISTRATIVE COSTS INCLUDED

Prevention Activity	*Percentage*	*Amount in priority communities (4.9%)*
Department of Public Health	20%	$1,531,936
Community Based Programs	35%	$2,680,888
Evidence-Based Interventions	10%	$765,968
Schools	35%	$2,680,888

Obesity Prevention Interventions within Target Populations

In this section, we analyzed the potential effects of SB 622's obesity prevention programming on children ages 0-5 and their parents in the four target regions. To assess these impacts, we considered funding distribution based on the "administrative costs similar to tobacco" scenario mentioned above.

School-Based Interventions: A meta-analysis of 134 articles studying obesity prevention programs in school, medical, community and home settings found that school-based interventions were the most effective in leading to notable changes in obesity-related behaviors and outcomes. School-based interventions alone had moderate impacts on obesity. However, school-based interventions that were paired with a home component had a significant effect amongst the interventions analyzed. Thirty-five percent of revenue generated from SB 622 would have been allocated to school-based interventions. Funding for a paired home component was not specified in SB 622's school-based provisions, however, and therefore would not have had a significant impact based on the meta-analysis above.[75]

Community-Based & Public Health Interventions: More research was needed to specifically determine the effects of community-based obesity prevention programming on health outcomes. However, researchers from the Institute of Medicine (IOM) found that a comprehensive approach to obesity prevention that included both diet and exercise interventions in the community and school-based interventions was most effective in reducing obesity. One study found that community-based interventions with a school component had moderate effects on health outcomes. Community members also stressed the

importance of a comprehensive approach that did not just target schools but paired them with community interventions, stating that: **"There are vendors near schools selling our kids energy drinks; they can buy them anywhere!"** Schools only address a small portion of this study's target population, so to determine the potential impacts of additional interventions on the study population, we also considered the effects of community and public health-based interventions that focused on parents.

Research on early childhood development revealed that programmatic interventions were less effective for pre-adolescents than adolescents due to difficulty with grasping complex concepts. Other studies highlighted parental influences, attitudes and behaviors as primary influences on both physical and mental development amongst younger children. Findings from empirical studies concluded that parental modeling of SSB consumption did influence children's nutrition-related health[76]. This coincided with our primary data in which one parent of a two year old claimed **"I blame myself for my kids drinking SSBs, because I buy them."** One study sampled 1,139 parent/child groups, or dyads, to find that there was a statistically significant association between parent and child SSB consumption amongst white parent/child dyads but the relationship was less strong for children/parent groups of color.[77] Low-income children were at greater risk for obesity based on the frequency of SSB consumption by their parents and their parental relationships even when controlled for ethnicity.[78] Findings from our focus groups with parents in each of our target areas demonstrated that most parents did consume SSBs regularly and purchased them for their children for a variety of factors including accessibility and their children's preferences. Many parents recognized the influence of their behaviors on their children's nutrition behaviors and one parent of a three-year old stated: **"[Our kids] drink sodas because we drink them. We have to be models for our kids. Don't drink sodas in front of them."** Additional research found that interventions that targeted females had a stronger outcome than those that target males. Based on the information presented above, community-based and public health interventions that desired to target children ages 0-5 and their families should focus on parents, specifically mothers, to impact the health outcomes of low-income children.[79]

Evidence-Based Clinical Interventions: Based on the scenario in the previous section, $765,968 a year in SB 622 tax revenue would have been distributed towards evidence-based interventions in the medical setting. Studies on the effectiveness of obesity-prevention programming found that more evidence was needed on the effects of clinical interventions on obesity prevention. However, research did indicate that when these efforts were combined with community-based interventions they had a greater impact. Due to the insufficient evidence, however, we could not determine what impact these interventions would have on the health of the target population.[80]

What the Tax Missed: Targeted Marketing & Environmental Access

While the tax's revenue expenditures may have had minimal-moderate impacts on the health of the target population, these effects could have been more substantial if the revenue expenditures also included

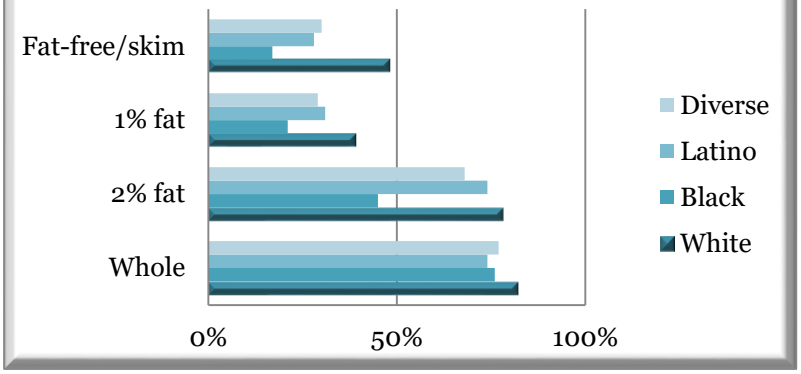
provisions for targeted marketing and environmental access to alternatives. These factors were identified in the baseline analysis as dominant contributors to SSB consumption amongst the target population, and their level of influence on SSB consumption, specifically amongst children and parents of color, can be seen below.

Targeted Marketing: One of the primary factors contributing to the disproportionate consumption of SSBs amongst people of color was targeted marketing. Programming and print advertisements for people of color were more likely to contain ads for SSBs than non-targeted ones.[81] In 1999, soda ads comprised 13% of the ads on black prime time shows, compared with 2% of general shows.[82] Between 2003 and 2007, African-American children ages 2-5 saw more food advertisements than white children.[83] Even more prolific was the targeted advertising of SSBs to children of color. Research showed that African-American and Latino children were more likely to see advertisements for SSBs than white children, and this targeted advertising was on the rise.[84,85] African-American and Latino youth were estimated to consume approximately 4.5 hours more digital media than white youth, and with the increase of SSB marketing on social media children of color were increasingly more vulnerable.[86]

Research on billboard advertising of SSBs showed that Black and Latino neighborhoods had the most ads for higher calorie/low-nutrient foods, which included sugary beverages[87]. Furthermore, unhealthy food advertising was clustered around child-serving institutions predominantly in racial and ethnic communities.[88] Findings from this study's survey on SSB access revealed that in South LA 60% of survey participants saw billboards in their community advertising soda, 58% in Pacoima, 51% in Central/East LA and 44% in Long Beach. Conversely, 27% of Central/ East LA residents recalled seeing water billboard advertising in their community, 26% of Pacoima residents, 22% of South LA residents and 17% of Long Beach residents.

Communities with higher concentrations of billboard advertising for unhealthy non-alcoholic beverages like SSBs had higher obesity rates. Focus group participants identified advertising as a substantial impact on their SSB consumption patterns as well. One resident exclaimed that her and her children drank SSBs **"because of all of the advertising, we are bombarded with it! So we are subliminally programmed to buy them."** Thus, both adults and children in communities of color were more susceptible to obesity and other nutrition-related chronic diseases as a result of the targeted billboard marketing of unhealthy food and beverages.[89] If a portion of the revenue expenditures were dedicated towards targeted marketing, these vulnerabilities could have been better mitigated.

Figure 21. Availability of Milk in Food Stores, by Race and Ethnicity, 2010 & 2011

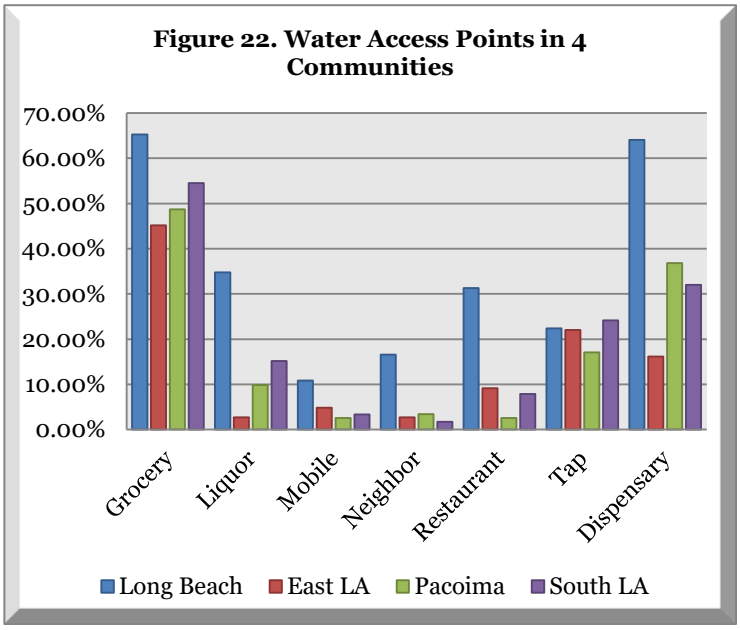


Source: Adapted from *Rimkus L, Powell LM,Isgor Z, Adetoro ER, BarkerDC, Chaloupka FJ. Beverage Availability in Food Stores Nationwide–A BTG Research Brief. Chicago,IL: Bridging the Gap Program, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2013.* www.bridgingthegapresearch.org

FOOD ACCESS: When we asked focus group participants to identify barriers to their healthy beverage consumption, the following themes emerged: the prevalence of SSBs at food outlets as compared to healthier alternatives and the price of soda versus healthier alternatives.

SSB Prevalence: Our research found that soda was more likely to dominate the beverage choices in retail outlets in the target communities than in other areas. An analysis of healthy and unhealthy beverage availability in four food store typologies (supermarkets, small grocery stores/corner markets, drug stores, and liquor/convenience stores) found that regular soda, diet sodas and plain bottled water were present in 97% of stores regardless of racial/ ethnic community. However, reduced-fat (2%) milk was significantly more available in stores in predominately white communities than in predominately black and diverse communities. By contrast, sugar-sweetened juice drinks containing less than 50 % juice were significantly more available in stores located in predominately black communities than in predominately white communities.[90]

Additional findings showed that white communities had three times more grocery stores than African-American communities, and 2 times more than Latino communities.[91] While all food retail stores sold sodas, 99% of super markets and 64% of grocery stores carried low fat and/or fat free milk as compared to only 40% of convenience, drug, and other limited service stores.[92] Research from the U.S Economic Census indicated that the number of liquor and convenience stores present in South LA, Long Beach/ Wilmington, Pacoima and East/Central LA was 20% or above, as compared to the LA County average of 13% (see Appendix E).[93] Based on this data, the target communities likely had more retail outlets dominated by sodas and unhealthy beverages than the LA County average.



Price of Alternatives: Research on consumer behavior reveals that people will choose the healthier options when it is cheaper. Literature on disparities in healthy food access also indicated that communities with high concentrations of liquor, drug and convenience stores were more likely to pay higher prices for healthy beverages as compared communities with super markets and grocery stores.[94] One focus group participant claimed that in the stores in her community, "sometimes soda is cheaper than water!"

Tap water could have been a significantly cheaper, more accessible alternative to SSBs, but recent studies from the Medical College of Wisconsin and The Archives of Pediatric Adolescent Medicine revealed that African-American and Latino families were three times more likely to give only bottled water to their children as compared to white families.[95] Survey findings indicated that only 24.2% of South LA residents surveyed consumed tap water, 22.0% in East LA, 22.3% in Long Beach and 17.1% in Pacoima. Many factors influenced the low consumption rates of tap water including cultural influences from first generation American families whose countries of origin had poor water quality; inequities in the quality of water for low-income families due to poor piping and water infrastructure; and limited education.

Furthermore, low-income and households of color may have been incurring additional costs for water consumption than more affluent households due to the prevalence of unregulated dispensaries in the communities. Our research revealed that the "dispensarias" or water dispensaries often found in predominantly Latino neighborhoods sold presumably filtered water, though this claim and the filtration systems used at these stores were never validated nor regulated. It was likely that water dispensary consumers were simply spending additional money for chilled tap water. Findings from those surveyed on the number of residents in each community that received their water from dispensaries, revealed: 64.1%

of residents in Long Beach/Wilmington used dispensaries, 36.8% in Pacoima, 32.0% in South LA and 16.1% in Central/East LA. As one previously noted, one study indicated that the tax should be paired with subsidies for water to maximize effectiveness.[96]

Based on the data presented above, revenue expenditures should have been expanded to include provisions for targeted marketing and access to beverage alternatives especially for under-resourced communities. Since these factors disproportionately impact individuals of color, culturally relevant initiatives that consider the unique dynamics of communities of color should have been incorporated into the revenue expenditures to address these issues. The effects of omitting these factors from SB 622's expenditures will be reviewed in the next section.

Grounded Theories & Impact Analysis

Studies that comprehensively analyzed SSB taxes from a political and environmental perspective asserted that ultimately, earmarked health programs and subsidies derived from tax revenue would be more effective on health than the increase in price alone.[97] Programs had to be directed towards the appropriate communities and interventions to lead to desired impacts. Findings from this section revealed that while some of the interventions indicated in the Children's Health Promotion Fund would have led to positive impacts on SSB consumption and/or related health outcomes, many factors that impact consumption amongst our target population including marketing and environmental factors were omitted from the provisions. Considering the above findings, the steering committee came to the following grounded theory: ***significant impacts could be achieved through the tax revenue if it is distributed to low-income populations and communities of color and prioritized for interventions that address school and community impacts, incorporated parents, combat targeted marketing and increase access to alternatives.***

Since SB 622 had no provisions for targeted marketing or environmental access to alternatives, the impacts of the policy would not have been significant. Funding for school-based interventions alone were determined to have moderate effects on health outcomes, however, the schools included in SB 622 would have been limited to primary and secondary schools, which encompassed a limited portion of those in this study's 0-5 target population (kindergarteners). Based on the projected moderate impacts in conjunction with the relatively small portion of this study's target population effected by school-based interventions, we concluded that the estimated $2.6 million distributed to school-based provisions in the target communities would have had a ***moderate effect on health behaviors and overall obesity in the target population*** (see Figure 12).

The findings from the above sections also indicated that the public health and community-based interventions had potential to have a moderate effect on the health of the target population. With younger children, developing effective interventions aimed at them presented unique challenges; however,

targeting parents seemed to have positive effects.[98] We assumed that the public health and community-based interventions would be directed towards parents, but due to the weaker relationship between parent modeling and the health behaviors of children of color, we determined that the combined $4.21 million in annual community & public health obesity-prevention interventions would have had a limited impact. Considering the limited impacts of the interventions on the target population combined with the substantial amount of the 0-5 population and their parents that would be affected by community and public-health interventions, we projected that it would have led to ***minimal-moderate impacts on nutrition-related health of the target population,*** (see Figure 12).

Although the impacts of the public health and community-based interventions were determined to be minimal-moderate and the school-based interventions were determined to be moderate, the cumulative effects of all of the interventions together was determined to be moderate because community-based interventions paired with school-based programs had more positive impacts on outcomes than community-based alone. The likelihood of this outcome was determined to be somewhat likely, considering that there were no mechanisms in the bill that would ensure that these communities received any funding at all. The strength of the evidence was (**) because there were mixed findings on the impacts of various obesity-prevention interventions on health outcomes and more data was needed on the cumulative effects of obesity-prevention interventions in medical settings.

SSB TAX IMPACTS

POLICY COMPONENT	OUTCOME	MAGNITUDE OF HEALTH IMPACTS	LIKELIHOOD OF OUTCOME	STRENGTH OF EVIDENCE
DIRECT OUTCOMES RESULTING FROM POLICY				
Revenue Expenditures	Change in SSB-related health outcomes	Moderate	Somewhat likely	**

Determining Strength of Evidence

(--): No empirical studies identified to support this claim

(*): 1-5 unreliable/ weak studies identified to support this claim

(**): 5-10 moderate quality empirical studies with mixed findings support this claim

(***): 5-10 strong studies with findings supporting this claim

(****): More than 10 strong studies with findings supporting this claim

V. Reporting

This section highlights findings from our analysis of the third research question: **what modifications or alternatives can be developed to reduce SSB consumption rates in the target communities?** Consistent with this study's community-led process, findings were vetted through 12 community workshops and forums; three in each of the target areas. The workshops were comprised of community

residents, health care professionals, and other stakeholders. The findings from the study were also vetted with policy professionals to determine the feasibility of the recommendations considering the current political climate. In addition to the community workshops, the reporting strategy for this study includes this HIA report, social media outreach, and consumer-friendly summaries of the study to educate community stakeholders on solution-oriented strategies towards addressing SSB consumption in their communities. The recommendations provided in this section are not only directed towards state-level policy makers but were cultivated to support locally developed policy alternatives at the regional, county and/or city municipal levels.

Key Study Recommendations

1) **Utilize Tax Revenue to Discourage Unhealthy Substitution by Making Healthier Drinks More Accessible**
   a) Establish price subsidies for healthier SSB alternatives
   b) Grant incentives to retailers; namely liquor stores, drug stores and convenience stores, for selling healthier beverages through programs such as corner store conversions or healthy restaurant incentive programs
   c) Increase investment in local public health department inspections to ensure that only quality, non-expired healthy food and beverages are sold at retail outlets in the target communities
   d) Develop culturally relevant educational campaigns on how to increase the accessibility of quality tap water through the dissemination of action-oriented educational materials that includes "myth busting" about water access points in targeted communities
   e) Distribute funding to support the implementation and enforcement of the California Human Right to Water Act[m] which encourages clean, affordable, and accessible water access for children and adults in public facilities; and encourages use of low-cost household water filters.

2) **Ensure that Tax Revenue Goes to Communities of Need**
   a) Create a lock-box mechanism which ensures that funds generated from the tax cannot be utilized in the General Fund
   b) Establish a competitive request for proposals (RFP) process for the distribution of revenue that prioritizes interventions in communities with the highest rates of nutrition-related chronic disease amongst children and adults. Utilize disaggregated data on small geographic levels to identify communities of need and ensure that these neighborhoods are not overlooked in the process.

[m] In 2011, legislation was passed in California to promote clean tap water access in public facilities throughout the state including parks, libraries and schools. Limited resources have been available to implement and enforce these provisions, and as a result disparities in access to healthy and clean tap water still prevail in schools and parks in this study's target areas and other low-income and communities of color.

3) **Establish Targeted & Culturally Relevant Interventions that Address Targeted Marketing, Parental Modeling & Other Factors Impacting Consumption as Identified in this Study**
   a) Prioritize interventions for parents of children ages 0 to 5 with a paired school-based component directed towards both pre-adolescents and adolescents
   b) Write and orally present materials with consumer-friendly language that is provided in all threshold languages. These materials should also include images that can be understood by those with little-to-no literacy in any language
   c) Vet through impacted stakeholders to identify the messaging that best resonates with each of the target groups
   d) Utilize multiple mediums that includes, but is not limited to, face-to-face interventions, billboards, public transit advertisements, consumer education in stores, radio and television advertising and social media to ensure that more stakeholders can be exposed to the marketing and educational materials
   e) Establish nutrition education interventions that address SSB addiction amongst children and parents specifically
   f) Restrict SSB company ads and endorsements on school campus grounds and at district-sponsored events should be developed
   g) Create a statewide policy that requires SSBs to carry warning labels that can easily educate consumers on which beverages are SSBs similar to SB 1000

Additional Recommendations to Consider

The community stakeholders engaged in the workshops provided additional recommendations that were not within this study's primary focus, but were relevant to the issue of reducing SSB consumption and access in communities of color. Based on their own experiences and knowledge of their community, stakeholders suggested the following recommendations to help curb consumption in their households:

1) **Incorporate Informal Economies by Legalizing Street Vending Incentivizing Healthy Vendors**

   For communities with strong informal economies, the increase in SSB price from SB 622 could have been undermined by the unregulated sale of SSBs from unlicensed vendors. A tax on SSB distributors may have encouraged these unregulated vendors to access untaxed beverages from neighboring states or other unregulated places and sell them at untaxed prices. The informal economy played a prevalent role in undermining the effects of a tobacco tax in low-income and communities of color as well.[99] SB 622 included a monitoring and enforcement component that could have had some impact on limiting informal economies, however, community residents

doubted the effectiveness of these provisions in their individual neighborhoods. Instead, some residents recommended:

a) Provide permitting, financial, and other resource incentives for mobile and street vendors that dedicate their entire inventory to the sale of healthy food and beverages based on USDA nutrition standards.

2) Provide Incentives for Supplemental Nutrition Assistance Program (SNAP) Users to Purchase Healthier Food & Beverage Options

The SNAP program was created for low-income households to address challenges in food security. Data on SNAP participation in target communities revealed that in 2011, SNAP participation in South LA was 24.4% amongst households with children under 18 years, 12.4% in the South Bay region, 11.3% in the East Los Angeles region and 7.7% in the San Fernando Valley area. The LA County average was 11.8%[100].

Assessments of the SNAP program and similar public programs like WIC (Women, Infant and Children Supplemental Nutrition Program) indicate that they had been effective in reducing barriers to healthy food access for low-income households. Research on the purchases of SNAP users has also revealed, however, that SNAP was utilized to purchase unhealthy foods and beverages. Recent analysis highlighted that nationally, SNAP was utilized to purchase close to $2.1 billion of SSBs annually. A U.S. Department of Agriculture study found that when SNAP was paired with incentives for healthier purchases, the purchase rates of more expensive, healthy alternatives increased.[101] Based on this data, interventions aimed at encouraging healthy beverage purchases amongst SNAP recipients could have substantial impacts on SSB consumption rates, particularly in South LA where the SNAP participation rate was double that of LA County average.[102] Therefore, stakeholders recommended the following:

a) Adopt the currently piloted SNAP Health Incentives Program (HIP), which provides financial incentives for SNAP users that encourage healthy food purchases.
b) Utilize SB 622 tax revenue to support Market Match programs, which provide matching dollars for SNAP users that purchase fruits and vegetables at farmers markets. This program has been effective in increasing the purchase of healthy foods amongst low-income populations and should be supported through SSB tax revenue if a tax is implemented.[103,104]

3) Invest in Physical Activity Resource in Communities Making them More Walkable, Bikable, & Safe to Play

This report did not focus on the health impacts of physical activity programming, which was also a provision of the school-based obesity prevention funding from SB 622's Children's Health Promotion Fund. Literature did show that obesity prevention interventions that focused on nutrition alone were less successful than those that were paired with physical activity. Most physical activity for individuals was not done in the gym or on the playground, however. Most physical activity was achieved by people walking, biking or even skateboarding to and from destinations in their own neighborhoods. As a result, community members recommended that tax revenue be invested in the pedestrian, bicycle and active transportation infrastructure of their neighborhoods to truly achieve positive changes in health outcomes. This could be achieved through the support of:

a) Investments in communities of need to prioritize street, sidewalk and bicycle infrastructure improvements for areas with the highest obesity rates and rates of other nutrition-related chronic diseases.
b) Play streets, which turn streets to playgrounds for interim periods to promote physical activity.
c) The development of Healthy Kids Zones[n] in communities of need to create a culture of healthy living by establishing healthy eating and beverage consumption, and active living policies and programs on and around primary and secondary school campuses.

VI. Conclusion

In 2006 alone, obesity cost Los Angeles County over $3.6 billion in health care costs and an additional $2.3 billion in lost productivity.[105] It is imperative that comprehensive solutions towards reducing nutrition-related chronic diseases such as obesity be implemented given the existing strain on the healthcare system and the high need to create policies that support prevention efforts – especially given the current federal landscape and the uncertain future of healthcare in America. However, no matter what policies are considered, health equity must be an integral part of these solutions. This study analyzed the impacts of SB 622 from a health equity lens with a particular focus on children ages 0 to 5 and their parents so that findings could be utilized to help reduce nutrition-related disparities for future generations.

Recommendations from this study were targeted at deepening the language of future SSB tax bills and ensuring that they prioritized populations most impacted by high SSB consumption rates. Data collected in the baseline analysis revealed that these communities were not homogenous, and that each community had different dynamics that made them uniquely vulnerable to poor health outcomes. It was important that the revenue expenditures incorporated locally focused strategies that responded to these unique

[n] For more information about Healthy Kids Zones, visit www.chc-inc.org.

barriers. It was also equally important for those most impacted by a tax to be a part of the policy development, implementation and monitoring processes.

Findings from this study posited that a tax had the potential to change the health of vulnerable populations if it was done in a manner that prioritized health equity for the entire family and ensured that the communities most impacted by high SSB consumption benefited from the revenue expenditures. Although SSB taxes and similar excise taxes have been adopted internationally, and momentum towards these policy interventions continues to build, we project that more time will be needed to influence public opinion and overcome fears regarding the potential externalities of an SSB in California. It is important for decision-makers at the State and local levels to realize that an SSB tax is not the "silver bullet" for overcoming obesity. Other recommendations coming from the public health community and impacted stakeholders including SSB Warning Labels, healthy food incentives and culturally relevant obesity prevention interventions may also be successful in contributing to the fight against obesity and may be more feasible to implement in the short-term. Equal energy and advocacy efforts should be put towards these interventions.

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Appendix

APPENDIX A: Sugar Sweetened Beverage Taxes in the U.S.A.

Jurisdiction	SSB Tax	Date Passed	Effective Date
1. **Berkeley, CA**	Voter approved 1 cent per oz (Measure D)	November 4, 2014	January 1, 2015
2. **Philadelphia, PA**	City Council approved 1.5 cents per oz	June 16, 2016	January 1, 2017
3. **San Francisco, CA**	Voter approved 1 cent per oz (Proposition V)	November 8, 2016	January 1, 2018
4. **Oakland, CA**	Voter approved 1 cent per oz (Measure HH)	November 8, 2016	July 1, 2017
5. **Albany, CA**	Voter approved 1 cent per oz (Proposition O1)	November 8, 2016	Took effect immediately upon approval
6. **Boulder, CO**	Voter approved 2 cents per oz (Measure 2H)	November 8, 2016	July 1, 2017
7. **Cooks County, IL**	Board of Commissioners approved 1 cent per oz	November 10, 2016	July 1, 2017

APPENDIX B: Analysis of Stances on SSB Taxes

Issue	SSB Tax Supporters	SSB Tax Opposition
Tax is Regressive	• Higher cost burden = larger impact on consumption in low-income communities • Can help to reduce obesity, which disproportionately affects low-income households	• Costs of sweetened beverages will disproportionately affect low-income households
Limits Beverage Options	• Water is a healthier, low-cost alternative	• Low access to other healthy beverage alternatives • Tax does not make healthier beverages cheaper, and will result in higher portions of income being used on food to purchase alternatives
Reduction of sweetened-beverage consumption	• A 10% tax could result in an 11.5% reduction in consumption [o]. This would lead to a reduction in healthcare costs that would significantly outweigh tax expense	• Reduction in sugar beverage consumption may not automatically result in consumption of healthier alternatives
Establishment of Children's Health Fund	• In FY 2011- 2012, Fund would generate over $1.66 billion [p] for reducing childhood obesity throughout state	• Funds may not be distributed proportional to communities' contribution

[o] Beverage Digest, November 21, 2008, pp 3-4.
[p] Andreyeva T, Chaloupka FJ, Brownell KD, 2011. Estimating the potential of taxes on sugar-sweetened beverages to reduce consumption and generate revenue. Preventive Medicine, Apr 3.

APPENDIX C: Sugar Sweetened Beverage HIA Focus Group Preliminary Findings

INFLUENCES ON CHILD SSB CONSUMPTION - THEMES
Misperceptions of SSBs
• "I give them Sunny D. The doctor said no more Capri-sun. They have about 2 glasses of Sunny D a day."
Children Model Parents
• "We have to be models for our kids, don't drink sodas in front of them."
High Accessibility
• "There are vendors near schools selling our kids energy drinks, they can buy them anywhere!"
Children's Preference
• "My little one only drinks juice. I try to make her drink water, but sometimes it's hard."

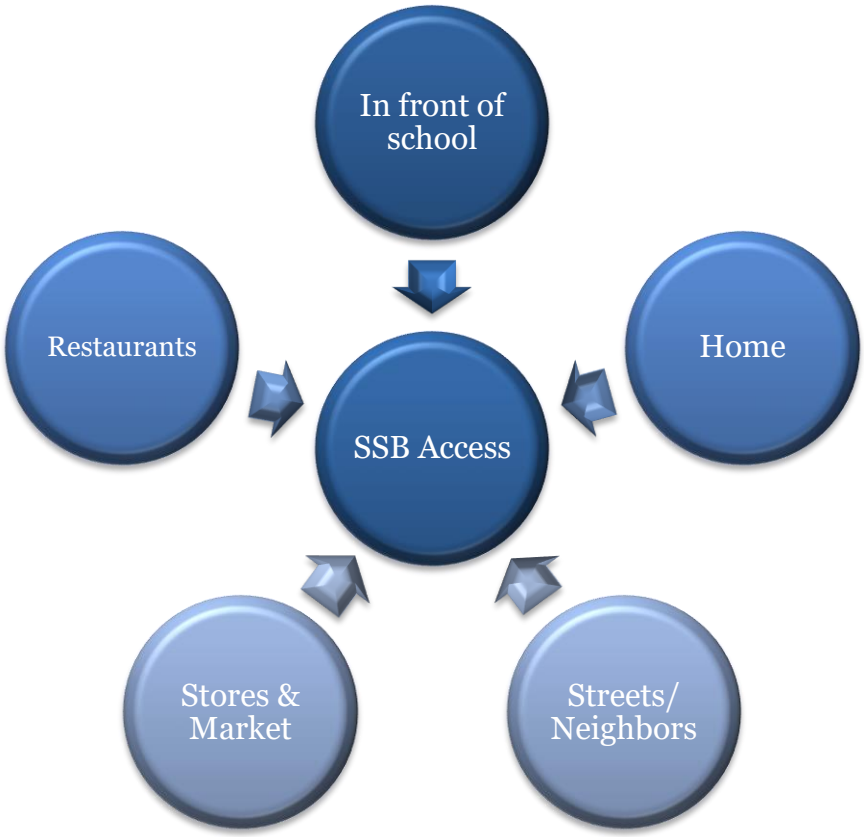
INFLUENCES ON ADULT SSB CONSUMPTION – THEMES
Addiction
• "Because I'm addicted to soda. It's like a bad habit, if I don't drink it I'm cranky. I have no energy and my head hurts. I hate having a meal without soda, if I do without, I really feel stressed until I have one."
Cultural Influences
• "We are used to soda from our home countries"
Targeted Marketing
• "Because of all the advertising, we are bombarded with it! So we are subliminally programmed to buy these"
High Accessibility
• "SOMETIMES SODA IS CHEAPER THAN WATER!"

SSB TAX PERCEPTIONS – "WOULD YOU SUPPORT A TAX ON SSBs?"
YES – Because of the Programs
• "If that money can be used for good, great"
NO – The Money won't go to Our Communities
• "I don't really think this will be positive because we are so far in debt that the money is just going to go to that. We already cut programs so we won't see any of that money in our community" • "If they actually used the money for us it would help, but how do we know it comes back to us?"
It Will Curb Consumption
• "Yes, because then I would say 'I don't have enough for soda'"
It Will Not Curb Consumption
• "Soda will be bought no matter what"

COMMUNITY RECOMMENDATIONS

Still Fund the Programs, but Not at Our Expense
• "Take the tax from the actual cost, don't increase the price. It sounds good, but it affects our pocket"
Ensure that Funds Come to Our Communities
• "It has to go to the community where the taxes are raised"
Support Local Physical Activity Resources
• "Make sure we can actually maintain the public spaces for exercise. We have some resources, but no funding to keep them open"
Increase Accessibility of Healthy Options
• "Use it to make healthy drinks cheaper"
Limit EBT Instead
• "I say limit EBT because why would government want to support unhealthy food? Why would the government want to make you fat?"

SSB Access Points for Children and Families



APPENDIX D: Data Limitations

CHIS and LA COUNTY INDICATORS: The California Health Interview Survey (CHIS) and LA County Key Indicators of Health (Key Indicators) data were utilized to analyze most of the health behaviors and outcomes in this analysis. CHIS and Key Indicators data have a few noteworthy limitations resulting from their telephone survey based methods. First, most of this data does not include information from households without landline telephones, or households that only utilize telephones. Secondly, the information from these surveys are all self-reported which leaves a level of subjectivity and the potential for underreporting of various health outcomes. Moreover, the methodology for the 2011 LA County Indicators data changed to include cell phone survey responses as well. This led to more accurate data findings; however, as a result of the change in methodology, data from previous years should be compared with caution.

It is also important to note that the SSB consumption data for both children and adults was based on self-reported responses from a phone survey. Focus group data from this study reveals that many residents in our target communities are not fully aware of the breadth of beverages that are within the umbrella of sugar-sweetened beverages. Many do not consider beverages such as Capri-Sun, Sunny Delight or Vitamin Water SSBs although each of these beverages would be taxed under the proposed SSB tax. Based on this information, self-reported consumption in the target communities, and potentially other communities surveyed through this method, may be lower than actual SSB consumption rates.

SOCIOLOGICAL MODEL OF DIETARY BEHAVIORS: Although the Sociological Model for Dietary Behaviors identifies the various factors that influence nutrition behaviors, each of the identified factors do not influence nutrition behaviors in the same way. These factors including macro, physical environment, social and individual level influences effect nutrition behaviors differently. More information is needed to be able to determine which of the above factors have more of an effect on nutrition behaviors than others.

SECONDARY DATA: Due to limited resources, we were only able to collect primary and secondary data on a few indicators. Additional relevant indicators were supplemented through LA County Department of Public Health data at the Service Planning Area (SPA) level which encompasses geographic areas well beyond the boundaries of our target areas. Many of the SPA level communities, namely for the East, San Fernando Valley and South Bay regions include affluent areas near the target regions of this study and thus did not adequately reflect the conditions, behaviors and outcomes of target populations.

Very few studies existed that analyzed the impacts of an SSB tax or even other types of unhealthy food and beverage taxes on a local, neighborhood level. Many of these analyses were conducted on a County, regional, state or national level and did not take into account local factors that may impact individuals' behaviors differently. Additionally, no economic models existed that accounted for local factors and cumulatively considered addiction, racial and ethnic disparities and substitution. Therefore, we could not quantify our projections due to limited available data.

SOUTHEAST ASIAN / PACIFIC ISLANDER DATA: More data and empirical articles are needed on the health behaviors and cultural influences of Southeast Asian and Pacific Islander populations. Some of the data collected from our focus groups shed light on these factors, but more disaggregated Asian population data should be collected on these vulnerable populations.

GEOGRAPHIC BOUNDARIES: Although the steering committee worked diligently to identify the geographic boundaries that best captured the target populations for this study, these boundaries were grouped at the zip code level which are arbitrary geographies that vary over time and are not community based. As a result, the geographic areas as reflected by the zip codes did not exactly reflect the communities of focus in the study, although they are more accurate than the SPA level data.

APPENDIX E: U.S Economic Census Data on Food Retail Types

UNHEALTHY FOOD AND BEVERAGE ACCESS IN TARGET COMMUNITIES						
Food Retail Outlet	*Literature*	*South LA*	*Central/ East*	*Long Beach/ Wilmington*	*Pacoima*	*LA County Avg*
Super markets	Sell both healthy & unhealthy beverages in high quantity (99%)	8%	8%	7%	8%	6%
Liquor stores & convenience	Low ratio of healthy to unhealthy (40%)	20%	11%	20%	23%	13%
Drug stores	only 40% sold healthy options	13%	17%	13%	10%	11%
Corner markets	64% sold healthy options	12%	6%	9%	5%	4%
Fast Food	1-2 days= 1.25 3 days= 2.94	35%	31%	37%	33%	33%