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Municipal Dissemination of Utilizable Information with Mobile Applications to Effectuate Lifestyle Changes to Combat and Prevent Obesity

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Municipal Dissemination of Utilizable Information with Mobile Applications to Effectuate Lifestyle Changes to Combat and Prevent Obesity.

I. INTRODUCTION

Obesity is something that most persons in the United States of America (“USA”) are familiar with, but would most people know that obesity may now be considered a world-wide pandemic?¹ Currently, more than two-thirds of the adults in the USA are considered obese or overweight, more than one-third of adults are considered obese, and approximately one-third of children and adolescents aged six to nineteen are considered overweight or obese.² In most of our daily lives, we are inundated with information and advertisements about delicious foods, sweet treats, fast-food snacks and meals, and other delectable goods that we should go out and eat (or, perhaps, devour). In addition, people are expending less energy than ever due to technological advancements in energy saving machines like automobiles and computers, and passive entertainment machines such as television and electronic games.³ It may be that these increasingly obesogenic environments—“environments that encourage people to eat unhealthy and not do enough exercise”—are driving the obesity pandemic.⁴ It is not our human biology that has changed in the past forty years, but rather it is the physical, economic, and socio-cultural—

¹ Boyd A. Swinburn, *Obesity Prevention: The Roles of Policies, Laws and Regulations*, AUSTL. AND N.Z. HEALTH POL’Y, June 2008, at 5:12.

² *Overweight and Obesity Statistics*, NAT’L INST. OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES (Oct. 2012), <https://www.niddk.nih.gov/health-information/health-statistics/Pages/overweight-obesity-statistics.aspx>.

³ Swinburn, *supra* note 1, at 5:12 (“humans have, for good survival reasons, evolved a biology that is designed to maximiz[e] energy intake and minimiz[e] physical activity”).

⁴ *Who, What, Why: What is an ‘Obesogenic’ Environment?*, BBC NEWS (May 28, 2014), <http://www.bbc.com/news/blogs-magazine-monitor-27601593>.

“attitudes, beliefs, perceptions, values, and norms of the societal or cultural group”—
environments around us that have significantly changed.⁵

According to the World Health Organization (“WHO”), obesity is one of “today’s most blatantly visible – yet most neglected – public health problems.”⁶ The obesity pandemic must be addressed because, “if immediate action is not taken, millions will suffer from any array of serious health disorders”⁷ The Centers for Disease Control and Prevention (“CDC”) has found that obese people are at increased risk for many serious diseases and health conditions, such as “all-causes of death;” type 2 diabetes; strokes; some cancers; “mental illnesses such as clinical depression and anxiety;” and “body pain and difficulty with physical functioning.”⁸ In addition, some public health advocates have argued that healthy populations can stimulate economic growth, attract new businesses, decrease health care costs, and create new jobs.⁹ As such, obesity prevention strategies should be investigated as they have the potential to not only prevent many expensive health conditions and diseases, but they may also promote economic growth and provide for a more physically and mentally capable workforce.

In 2008, the CDC convened the National Summit on Legal Preparedness for Obesity Prevention and Control, and noted six target areas for obesity prevention.¹⁰ Those areas are (1)

⁵ Swinburn, *supra* note 1, at 5:12 (arguing that the biggest obesity-driving environmental change has been the “increased availability and promotion of cheap, energy-dense foods”).

⁶ *Controlling the Global Obesity Epidemic*, WORLD HEALTH ORG. (last visited Dec. 13, 2016), <http://www.who.int/nutrition/topics/obesity/en/>.

⁷ *Id.*

⁸ *The Health Effects of Overweight and Obesity*, CENTERS FOR DISEASES CONTROL AND PREVENTION (last updated June 5, 2015), <http://www.cdc.gov/healthyweight/effects/>.

⁹ Belinda Reeve, Marice Ashe, Ruben Farias & Lawrence Gostin, *State and Municipal Innovations in Obesity Policy: Why Localities Remain a Necessary Laboratory for Innovation*, 105 AM. J. PUB. HEALTH 442, 445 (2015).

¹⁰ William H. Dietz, Donald E. Benken & Alicia S. Hunter, *Public Health Law and the Prevention and Control of Obesity*, 87 MILLBANK Q. 215, 217-18 (2009) (finding that “law has

increasing fruit and vegetable consumption; (2) increasing physical activity; (3) increasing duration and initiation of breast feeding; (4) decreasing consumption of sugar-sweetened beverages; (5) decreasing consumption of foods that are high energy density and low nutrition value; and (6) decreasing the time spent watching television.¹¹ These target areas demonstrate that there are real, tangible solutions to the obesity pandemic and how a multi-faceted approach may be beneficial in preventing obesity. However, isolated initiatives should not be overlooked as “even small improvements in diet quality, small increases in time spent physically active and decreases in time spent sitting, are significantly inversely associated with weight gain and obesity and the risk of chronic diseases and mortality.”¹² These target areas also highlight how lifestyle changes are necessary to begin preventing obesity because no single change in isolation is likely to prevent obesity on a large-scale. Multiple initiatives may be necessary to create a healthy lifestyle which, according to Pomeranz and Gostin, exists “when the environment facilitates physical activity and healthy food choices.”¹³

This paper is structured around the principal belief that obesity is preventable, and that local municipalities—the cities, towns, borough, and other localities in which we live in—are in the perfect position to lead the obesity-prevention movement because of their close and constant

played a critical role in the control of chronic diseases and the behaviors that lead to them,” but also that the direct and indirect impact that legislation, regulation, and policy may have on obesity is not yet understood).

¹¹ *Id.* at 217-18 (noting also that social issues that policy and environmental changes can be organized around include “reducing health disparities for obese persons and reducing disability related to obesity”).

¹² Adela Hruby et al., *Determinants and Consequences of Obesity*, 106 AM. J. PUB. HEALTH 1656, 1661 (2016).

¹³ Lawrence O. Gostin & Jennifer L. Pomeranz, *Improving Laws and Legal Authorities for Obesity Prevention and Control*, 37 J.L. MED. & ETHICS (Supp. 1.) 62, 62 (2009) (noting that the “overarching contributors to choosing healthy foods are the cost, quantity, and quality of the food supply”).

contact with their residents.¹⁴ However, municipalities cannot act to prevent obesity without first considering what their objective is, what authority the municipality possesses to create a regulation or law, what the public reaction will be and how to deal with challenges to the objective, whether any legal challenge could overrule and thereby nullify the objective, and what is the best avenue for achieving the objective.¹⁵

This paper proposes that municipalities should take advantage of smart phone technology and should create a downloadable, voluntary mobile application that provides residents with varying information pertaining to obesity prevention.¹⁶ The information provided by the application should be specifically tailored to each municipality as much as possible so that the information is provided in a way that not only provides general obesity-preventing information, but also provides each person with the ability to utilize the information. However, the application should be developed and utilized in conjunction with as many municipal interventions as possible as the application will not be as effective if it only provides information or it is not utilizable by the resident.

¹⁴ See generally Reeve, *supra* note 9, at 442 (“[i]n this current political environment, states and localities provide a natural laboratory for testing innovative policies”).

¹⁵ See generally Dietz, *supra* note 10, at 218 (noting that the CDC’s Public Health Law Program has identified four core elements necessary to effectively address a broad range of public health issues: “[1] identifying and understanding essential laws and legal authorities pertaining to the issue; [2] identifying and developing the competency of public health professionals to apply those laws and authorities; [3] coordinating actions across jurisdictions, sectors, and settings; and [4] identifying and disseminating information on public health laws’ best practices”).

¹⁶ See generally Malden Davis, *Average Person Now Spends More Time on Their Phone and Laptop than Sleeping, Study Claims*, DAILY MAIL (Mar. 11, 2015, 11:49 AM), <http://www.dailymail.co.uk/health/article-2989952/How-technology-taking-lives-spend-time-phones-laptops-SLEEPING.html> (utilizing a mobile application will allow municipalities to take advantage of the prevalence of smart phone usage as one recent study found that people are now spending more time on their electronic devices (eight hours and forty-one minutes) than sleeping (eight hours and twenty-one minutes), and that four in ten smartphone users will check their phone if it wakes them in the night).

Section II of this paper will discuss the obesity pandemic, its effect on a person's quality of life and health, obesity's connection to lifestyle and genetics, and obesity's preventable nature. Section III will discuss where the authority to pass laws and regulations comes from, mention some legal challenges that may arise from these laws and regulations, and explain why taking the softest approach possible (i.e. non-mandatory application) is advisable so as to allow municipalities to avoid some of the legal complications that may be involved in many obesity-preventing initiatives. Section IV will provide a brief overview of the general aims of local actions and discuss obesity-preventing municipal laws, regulations, and initiatives. Sections V will discuss this paper's specific recommendation that an information-providing mobile application should be developed—in conjunction with as many other obesity strategies, initiatives, laws, and regulations as possible—so that utilizable information may be (1) updated frequently with little cost, (2) incorporated into the daily lives of residents via smart-phone usage, and (3) disseminated instantaneously.

II. OBESITY BACKGROUND

Historically, the prevalence of obesity remained fairly consistent, low, and comparatively unchanging until about thirty to forty years ago.¹⁷ Currently, adults are considered overweight if they have a body-mass index (BMI) of 25 to 29.9, they are considered obese if their BMI is over thirty, and they are considered extremely obese if their BMI is over forty.¹⁸ The dramatic explosion in obesity rates has not come without significant costs. Indeed, according to the CDC, the estimated annual cost of obesity in 2008 was \$147 billion dollars.¹⁹ Pomeranz notes that

¹⁷ Swinburn, *supra* note 1, at 5:12.

¹⁸ *Overweight and Obesity Statistics*, *supra* note 2 (noting that BMI is computed by using weight and height because, for most people, “it correlates with the amount of fat in their bodies”).

¹⁹ *Adult Obesity Facts*, CENTERS FOR DISEASES CONTROL AND PREVENTION (last updated Sep. 1, 2016), <https://www.cdc.gov/obesity/data/adult.html>.

“annual obesity-attributable medical expenditures range from \$87 million to \$7.7 billion per state,” with about half of the funding being financed by Medicare and Medicaid.²⁰

Obesity-prevention is necessary to not only protect adults, but also because childhood obesity poses a serious threat to the lifetime health of our youths. For example, one study found that children with a BMI greater than the 95th percentile have a greater chance of developing a lifelong obesity-related chronic disease.²¹ Astonishingly, some commentators have suggested that life expectancy, despite technological and medical advancements, may actually level off or decrease throughout the first half of the twenty-first century.²² These findings demonstrate that obesity-prevention strategies must attempt to create a healthy lifestyle (i.e. an environment that promotes healthy food choices and physical activity) for both children and adults. Our society has to recognize that obesity-prevention strategies are critical to the future wellbeing of our society because children and adults are developing unhealthy habits that may lead them to lifelong suffering from a condition that is completely preventable!

A. Economic Profits Drive the Obesogenic Food Environment

Economic profits and incentives are one major reason that there is an overabundance of calorie-dense foods.²³ In the USA, there are federally-provided economic incentives for farmers

²⁰ Jennifer L. Pomeranz, *The Unique Authority of State and Local Health Departments to Address Obesity*, 101 AM. J. PUB. HEALTH 1192, 1192 (2011).

²¹ Dietz, *supra* note 10, at 216.

²² See S. Jay Olshansky et al., *A Potential Decline in Life Expectancy in the United States in the 21st Century*, 352;11 NEW ENG. J. MED. (Special Report) 1138, 1142 (2005) (stating that “we anticipate that as a result of the substantial rise in the prevalence of obesity and its life-shortening complications . . . life expectancy at birth and at older ages could level off or even decline within the first half of this century”).

²³ See Swinburn, *supra* note 1, at 5:12 (noting that there are a massive number of products which promote “excessive energy intake or decreased energy expenditure” that are usually heavily marketed, but that the number of products that promote healthy energy intake (“e[.]g[.] fruit and vegetables”) or increased physical activity (“e[.]g[.] bicycles”) is much smaller and their respective marketing budgets are “tiny”).

to produce major commodity crops, such as corn, soy, and wheat.²⁴ The farmers use those crops to produce calorie-dense, nutrient poor foods which contribute to the obesity pandemic by providing empty, calorie-dense foods at relatively low prices.²⁵ The 2014 Farm Bill, signed into law by President Obama, reduced a large amount of direct subsidies to farmers, but also provided more subsidized federal crop insurance so that farmers are protected when their revenues drop below a certain benchmark.²⁶ In effect, those major commodity crops are still being incentivized by the 2014 Farm Bill as the covered farmers will be still protected should the market fail to produce adequate revenues for them, despite the direct subsidies to these farmers being much smaller than before.²⁷ As such, the current economic climate is a major challenge to decreasing the overall prevalence of obesogenic environments.²⁸ However, even small improvements in diet quality or physical activity levels are “significantly inversely associated with weight gain and obesity and the risk of chronic diseases and mortality” so small modifications that create a healthier lifestyle should not be overlooked.²⁹

B. Obesity Risk Factors and Known Solutions

²⁴ See Pomeranz, *supra* note 13, at 62-63 (noting that farm subsidies are one major factor that affects the pricing of food in the USA and that “from 1985 to 2000, the price of fruits and vegetables in the U.S. rose 117%, compared to 46% for sweets and deserts and 20% for soft drinks”).

²⁵ Gostin, *supra* note 13, at 63.

²⁶ Agricultural Act of 2014, 7 U.S.C.A. § 9001-9097 (West, Westlaw through P.L. 114-248).

²⁷ See Tamar Haspel, *Farm Bill: Why don't Taxpayers Subsidize the Foods that are Better for Us?*, WASH. POST (Feb. 18, 2014), https://www.washingtonpost.com/lifestyle/food/farm-bill-why-dont-taxpayers-subsidize-the-foods-that-are-better-for-us/2014/02/14/d7642a3c-9434-11e3-84e1-27626c5ef5fb_story.html (noting that there are no insurance payments and no insurance policies, but rather farmers choose between two different types of coverage (PLC and ARC) and receive payments when prices drop below a certain benchmark).

²⁸ See Dietz, *supra* note 10, at 217 (“because these crops [(soybean and corn)] are cheaper, they are widely used in food production, thereby lowering the cost of foods, which makes them more attractive to customers”).

²⁹ Hruby, *supra* note 12, at 1661.

According to a 2016 American Journal of Public Health (AJPH) article reviewing forty years of research (“AJPH 2016”), there is a direct correlation between weight gain and an increased risk for major chronic conditions, including “type 2 diabetes, cardiovascular diseases, cancers, and mortality.”³⁰ In addition, weight and weight gain have been linked to a plethora of other diseases, including “gallstones, infertility, asthma, cataract, [and] psoriasis.”³¹ These findings suggest that chronic conditions may be reduced in prevalence through a regimented diet and physical activity.³²

Not only will obesity affect a person’s life expectancy, but it may also affect their quality of life. One 1996 study reviewed by AJPH 2016 found that women who gained 2.25 kilograms (4.96 pounds) or more were more likely to have “decreased levels of physical functioning and vitality and increased bodily pain, irrespective of baseline weight.”³³ Conversely, losing 2.25 or more kilograms (4.96 or more pounds) was correlated with improvements in bodily pain, vitality, and physical functioning.³⁴ Furthermore, obesity is “associated with a significant increase in workdays absent, from 1.1 to 1.7 extra days missed annual compared to normal weight employees.”³⁵ As such, it is critical that interventions are developed to enable persons to understand how to lose or gain weight so that they may not only relieve themselves of the

³⁰ *Id.* at 1659 (reviewing forty years of research provided by Nurses’ Health Studies and noting that there were more than 200,000 participants followed for up to forty years).

³¹ *Id.*

³² World Cancer Research Fund & Am. Inst. for Cancer Research, *Policy and Action for Cancer Prevention. Food, Nutrition, and Physical Activity: A Global Perspective*, WORLD CANCER RES. FUND INT’L 22 (2009), http://www.wcrf.org/sites/default/files/Policy_Report.pdf (stating that a 2010 report estimated that USA citizens that keep their body weight within a healthy BMI (21-23) will prevent approximately 19-20% of cancers whose risks are increased by excess body fatness).

³³ Hruby, *supra* note 12, at 1660.

³⁴ *Id.*

³⁵ Tatiana Andreyeva et al., *State-Level Estimates of Obesity-Attributable Costs of Absenteeism*, 56 J. OCCUPATIONAL & ENVTL. MED. 1120, 1120 (2014).

physical and mental burdens of obesity, but also to relieve society of the enormous cost associated with obesity-caused absenteeism.³⁶

C. A Healthy Lifestyle Is The Key To Obesity-Prevention

According to AJPH 2016, lifestyle choices play a large part in maintaining a healthy weight and curbing obesity.³⁷ These lifestyle choices include dietary patterns, diet quality, physical activity level, sedentariness, shift work, sleep, and built environment characteristics.³⁸ Critically, the authors of AJPH 2016 state that, based on their review of 40 years of research, limiting obesity and weight gain “is possible through healthy diet, physical activity, and other positive lifestyle choices, which have been consistently shown to be the best preventive measures against most chronic morbidity and mortality.”³⁹ Although some people believe that genetics have predisposed them to obesity, one study demonstrated that poor lifestyle choices may aggravate genetic risks, but, conversely, “healthy lifestyle choices mitigate genetic risk.”⁴⁰ As such, the summary of these findings seem to suggest that facilitating a healthier lifestyle for residents should be central to most local municipal obesity-prevention strategies as a healthier lifestyle may increase residents’ qualities of life, benefit the economy, prevent many chronic conditions and diseases, and protect the future health of our youth.

³⁶ *See id.* (noting that obesity imposes a considerable financial burden on states, accounting for 6.5% to 12.6% of total absenteeism costs in the workplace, and that obesity-attributable absenteeism among American workers costs the nation an estimated \$8.65 billion per year).

³⁷ Hruby, *supra* note 12, at 1657.

³⁸ *Id.* at 1656-59.

³⁹ *Id.* at 1661.

⁴⁰ *Id.* at 1659; *see also* Dietz, *supra* note 10, at 217 (noting that genetic makeup may make persons more susceptible to obesity, but “genetic makeup cannot explain the rapid rise in obesity between 1980 and 1999”).

III. MUNICIPAL AUTHORITY AND AVOIDING MUNICIPAL CHALLENGES BY MAKING THE APPLICATION VOLUNTARILY DOWNABLE⁴¹

The U.S. Constitution provides the federal government with specifically-enumerated powers, and reserves all other powers to the States.⁴² Federal legislation passed by Congress is the supreme law of the USA, and no law or regulation may contradict the U.S. Constitution.⁴³ The federal legislature may delegate federal legislative power to federal agencies as long as the agencies are guided by an intelligible principle.⁴⁴ Federal regulations, created by federal agencies, will be trumped by the U.S. Constitution and federal laws because the federal agencies are subordinate to and created by the federal legislature. In addition, the Supremacy Clause provides that the U.S. Constitution, federal laws, and federal regulations will trump any State's constitution, laws, or regulations, assuming the U.S. Constitution provides for the specific power that is the subject of the conflict.⁴⁵ Furthermore, the doctrine of preemption provides that federal

⁴¹ See generally Seth E. Mermin & Samantha K. Graff, *A Legal Primer for the Obesity Prevention Movement*, 99 AM. J. PUB. HEALTH 1799, 1799-1804 (2009) (noting police power, allocation of power among federal, state, and local governments, federal preemption, state preemption, dormant commerce clause, freedom of speech, takings clause, substantive due process, equal protection, and the contract clause as “the legal concepts most relevant to formulating policies aimed at preventing obesity”).

⁴² See U.S. CONST. art. I (legislative powers); see also U.S. CONST. art. II (executive powers); see also U.S. CONST. amend. X (“[t]he powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people”).

⁴³ U.S. CONST. art. VI, § 1, cl. 2 (the Supremacy Clause that establishes the U.S. Constitution, federal laws, and federal regulations as the supreme law of the USA).

⁴⁴ See, e.g., *J.W. Hampton, Jr. & Co v. U.S.*, 276 U.S. 394, 409-410 (1928) (authorizing Congress to delegate federal legislative power to persons or bodies if Congress “lay down by legislative act an intelligible principle to which the person or body authorized” is “directed to conform,” then “such legislative action is not a forbidden delegation of legislative power”).

⁴⁵ See, e.g., U.S. CONST. art. I, § 8, cl. 3 (commonly known as the Commerce Clause, this U.S. Constitution provision provides that Congress has the authority “to regulate commerce with foreign nations, and among the several states [i.e. interstate commerce], and with the Indian Tribes”). If a state passes a law overly burdens or discriminates against interstate commerce, what's known as the “Dormant Commerce Clause” (“DCC”) may be triggered and the state law may be struck down as the DCC, considered implicit in the Constitution, prohibits states from passing legislation that discriminates against or excessively burdens interstate commerce. See, e.g., *Or. Waste Sys., Inc. v. Dep't of Env'tl. Quality of Or.*, 511 U.S. 93, 108 (1994) (holding a

legislation will trump any state legislation that is expressly or implicitly in conflict with the federal law.⁴⁶

States derive their authority from their state constitution.⁴⁷ The hierarchy of state law is similar to the federal structure: “state constitutional provisions trump state statutes, which in turn prevail over state regulations,” which in turn, unless otherwise defined by the state’s constitution, prevail over “municipal and other local laws and policies.”⁴⁸ Municipalities may be granted their specific powers through a State’s constitution, and they may be granted additional powers through a state’s statute.⁴⁹ Some municipalities are subject to “Dillon’s Rule” which requires a strict interpretation of the municipality’s local governmental authority.⁵⁰ However, some municipalities are subject to the “Home Rule” which authorizes legislation beyond the expressly

discriminatory surcharge on in-state disposal of solid waste generated in other states as “facially invalid” as it imposed a three-times surcharge on out-of-state solid waste as compared to in-state solid waste).

⁴⁶ See, e.g., *Lorillard Tobacco Co v. Reilly*, 533 U.S. 525, 546 (2001) (holding that the Federal Cigarette Labeling and Advertising Act (“FCLAA”) expressly preempted Massachusetts’ regulations governing outdoor and point-of-sale cigarette advertising because the FCLAA preempts any requirement or prohibition based on smoking and health that relate to the advertising or promotion of cigarettes).

⁴⁷ See, e.g., N.J. CONST. art. 4, § 1, ¶ 1 (West, Westlaw through Nov. 2016 amendments) (delegating New Jersey’s legislative power to a “Senate and General Assembly”).

⁴⁸ Mermin, *supra* note 41, at 1799.

⁴⁹ See, e.g., C.A. CONST. art. XI (West, Westlaw through 2016 amendments) (local government article of California’s Constitution); N.J. STAT. ANN. § 40:48-2 (West, Westlaw through 2016 legislation) (“Any municipality may make, amend, repeal and enforce such other ordinances, regulations, rules and by-laws not contrary to the laws of this state or of the United States, as it may deem necessary and proper for the good government, order and protection of persons and property, and for the preservation of the public health, safety and welfare of the municipality and its inhabitants, and as may be necessary to carry into effect the powers and duties conferred and imposed by this subtitle, or by any law”).

⁵⁰ See, e.g., *Davis v. City of Blytheville*, 478 S.W.3d 214, 217 (Ark. 2016) (“[d]illon's [r]ule is a restrictive view of municipal power that a municipal corporation possesses and can exercise only powers granted in express words, those necessarily or fairly implied in, or incident to, the powers expressly granted, and those essential to the accomplishment of the declared objects and purposes of the corporation—not simply convenient, but indispensable”) (citing to *Tompos v. City of Fayetteville*, 658 S.W.2d 404, 406-07 (Ark. 1983)).

granted powers.⁵¹ Finally, the doctrine of preemption provides that state law trumps municipal laws that are expressly or implicitly in conflict with the state law.⁵²

As mentioned above, municipalities cannot utilize their legislative power to prevent obesity without knowing what their objective is, what authority they possess, what the public reaction will be, what challenges to the law may arise, and what the best avenue is for achieving the objective. Many obesity-preventing laws and regulations have the potential for far-reaching implications and, innately, have many hurdles to overcome before they can be enacted and effectuated. To avoid many of the challenges that may arise from a municipality enacting legislation or regulation, this paper proposes that municipalities should take the soft approach possible (i.e. creating non-mandated, incentivizing laws and making the application voluntarily-downloadable) to avoid many of the background legal considerations while still utilizing each municipality's administrative power by connecting with their respective residents and providing them with helpful and utilizable obesity-preventing information.

IV. MUNICIPAL LAWS, REGULATIONS, AND INITIATIVES

A. General Aims of Local Actions

⁵¹ See, e.g., *City of Asbury v. Iowa City Dev. Bd.*, 723 N.W.2d 188, 198 (Iowa 2006) (under the Dillon rule, cities were powerless to act in the absence of an express legislative grant of authority." "Home rule authority reversed this presumption by giving cities broad police powers").

⁵² State laws that conflict with federal laws and municipal laws that conflict with state laws may be found invalid if the laws (1) are expressly preempted, (2) are in conflict with the superior laws, (3) stand as an obstacle or otherwise interfere with the superior laws, or (4) if the field is occupied by the superior law (i.e. the amount of legislation in the area is so extensive that the "field" is considered completely occupied by the superior law). See, e.g., *O'Connell v. City of Stockton*, 162 P.3d 583, 592 (Cal. 2007) (holding a municipal ordinance that permitted city to seize and hold for forfeiture any motor vehicle used to solicit acts of prostitution or to consummate drug transactions as preempted because the field was occupied and "our Legislature has comprehensively addressed through various provisions of this state's Penal and Vehicle Codes, leaving no room for further regulation at the local level").

According to Reeve, Ashe, Farias, and Gostin, local actions have generally been designed to (1) increase the quantity of healthy foods, (2) decrease marketing of unhealthy foods and products, and (3) redesign physical environments to facilitate physical activity.⁵³ Also, they note that public officials have employed various regulatory tools to promote healthy lifestyles, including (1) providing health information, (2) tax and economic incentives, and (3) direct regulation.⁵⁴ Diller and Graff note that local strategies have largely focused on how retail food establishments affect public health because of the “enormous influence a community’s food environment has on the quality and quantity of what people eat.”⁵⁵

These findings suggest on a general level that there are varying and differing approaches that municipalities have and can use to promote healthier lifestyles.⁵⁶ However, these findings also demonstrate the fact that a multi-dimensional approach may be necessary to effectuate healthy lifestyles as, by definition, a lifestyle is about the continual, cumulative effect of an

⁵³ Reeve, *supra* note 9, at 443 (noting that “local action aims to reshape physical environments that powerfully influence personal lifestyle—making health the easier choice while facilitating new norms”).

⁵⁴ *Id.* (noting other regulatory tools including (4) altering the built environment and (5) “dismantling laws that impede healthy lifestyles.”); *see also* Mermin, *supra* note 41, at 1800 (noting that “state and local governments have used their authority under the police power to counter obesity, including” restrictions on junk food advertising to children; mandating school nutrition and physical education programs; asking schools to measure, monitor, and report students’ BMI; regulating the sale of junk food in schools; enforcement of mixed-use zoning rules to encourage supermarkets and prevent aggregated fast food restaurants; and improving opportunities and potential incentives for nonmotorized transportation).

⁵⁵ Paul A. Diller & Samantha Graff, *Regulating Food Retail for Obesity Prevention: How Far Can Cities Go?*, 39 J.L. MED. & ETHICS 89, 89 (2011).

⁵⁶ *See, e.g., id.* at 91-92 (noting other examples of municipal laws such as (1) resolutions requiring city vending machines to carry products that meet certain nutritional standards; (2) creating a tiered award system for restaurants who establish a certain quota of healthy eating options; (3) providing financial incentives to encourage new full-service grocery stores, such as a sales tax exemption; (4) allowing farmers’ markets in residential zones; (5) prohibiting the sale of artificial trans-fat in restaurants; and (6) imposing taxes on soft drink sellers for the sales of bottled and canned soft drinks, and for fountain drinks).

individual's daily efforts.⁵⁷ This paper suggests that municipalities should attempt to provide as many structural improvements as possible to facilitate physical activity and to incentivize the consumption of healthier foods (e.g. providing free local advertising to restaurants that meet a certain number of healthier eating options. If possible, these initiatives should be designed so that non-participants are not punished and that participants are incentivized so that some issues relating to the scope of the municipal's authority may be avoided.⁵⁸ However, municipalities must understand their inherent authority before acting as the non-mandatory approach to local actions will not allow municipalities to legislate in areas that they do not have the authority to do so. If funding is an issue, a municipality should attempt to implement cost-effective obesity-preventing solutions while providing (via the mobile application) obesity-related utilizable information so that minor modifications of residents' lifestyles can be effectuated at a relatively low-cost (as compared to building new parks or recreation areas).

B. New York City's Health Code – Requiring Physical Activity in Day Care

In 2007 and 2008, New York City's Board of Health implemented and modified a rule that required day-care service providers (1) to schedule at least sixty minutes of physical activity for their full-day program children ages twelve months or older; (2) provide sufficient equipment, indoors and outdoors, that is "designed to foster physical and motor development;"

⁵⁷ See Benjamin Gardner et al., *Making Health Habitual: The Psychology of 'Habit-Formation' and General Practice*, 62 BRIT. J. GEN. PRAC. 664, 664 ("decades of psychological research consistently show that mere repetition of a simple action in a consistent context leads, through associative learning, to the action being activated upon subsequent exposure to those contextual cues (that is, habitually). Once initiation of the action is 'transferred' to external cues, dependence on conscious attention or motivational processes is reduced. Therefore[,] habits are likely to persist even after conscious motivation or interest dissipates").

⁵⁸ See Diller, *supra* note 55, at 89-90 ("municipal authority depends largely on state delegation of powers and the effect of preemptive state laws" so municipalities "must determine whether preemption threatens the legality of their chosen policies").

(3) completely precluded television and visual recordings for children under two; and (4), for children over two, restricted the viewing of visual recordings and television to only thirty minutes per week of “educational programs or programs that actively engage child movement.”⁵⁹

Although no supporting data are available, this initiative has the potential to modify unhealthy behaviors like sitting and watching television, and to increase physical activity from an early age. Also, implementing physical activity in the daycare setting appears promising because the children may learn to incorporate physical activity into their daily lives—a critical aspect of creating a healthier lifestyle and reducing lifelong obesity-related chronic diseases—while also learning to function for multiple hours with limited or no access to visual programming (i.e. reducing time spent on passive activities). Furthermore, some research suggests that children who exercise more have the potential to achieve substantial improvements in cognitive functions (i.e. increase testing scores), in addition to the physical benefits.⁶⁰ Finally, municipalities may utilize this rule as a blueprint for other settings (e.g. the school setting and the summer camp setting) so that they may attempt to create healthier lifestyles by incorporating physical activity into many different settings.

C. **Watsonville, California – Requiring New Restaurants to Provide Healthier Food Options and Incentivizing Older Restaurants to Participate**

⁵⁹ Judith A. Monroe et al., *Legal Preparedness for Obesity Prevention and Control: A Framework for Action*, 37 J.L. MED. & ETHICS 15, 17 (2009) (citing N.Y.C., N.Y., HEALTH CODE § 47.71 (2008)).

⁶⁰ See Gretchen Reynolds, *How Exercise Can Boost Young Brains*, NEW YORK TIMES (Oct. 8, 2014, 12:01 AM), <http://well.blogs.nytimes.com/2014/10/08/how-exercise-can-boost-the-childs-brain/> (noting that a full-year after-school program that provided for sixty to seven minutes of moderate or vigorous activity not only reduced the children’s body fat and increased their physical fitness, but it also “substantial improvements in their scores on each of the computer-based tests of executive function” because they were more capable of blocking “out irrelevant information and concentrat[ing] on the task at hand”).

In 2010, the City of Watsonville, California enacted its “healthy eating options” ordinance which required new restaurants and restaurants remodeling more than one-hundred square feet to meet a certain threshold number of healthy option points (six) before they could receive a building permit.⁶¹ The ordinance provided what “menu food options” would qualify as healthy eating options and how many points each option would be worth.⁶² In addition, any restaurant in the municipality could participate in the ordinance’s two-tiered healthy options award system. Restaurants that acquired nine points would receive one free month of advertising on the City’s programming channel and the City would pass a resolution that provided that the restaurant had met the healthy eating option criteria.⁶³ Restaurants that acquired thirteen points would receive two free months of advertising on the City’s programming channel and “will be featured in the high school’s newsletters to students.”⁶⁴

This ordinance has the potential to incentivize restaurants to incorporate healthier food choices into their menus by providing free advertising for the businesses at a low-cost to the municipality. Existing restaurants are still incentivized to comply with the program which appears critical to facilitate as many healthy eating options in the City as possible and to modify the physical environment of the City so that healthier eating options are the norm. Furthermore, the menu food options require very minimal changes to a restaurant’s overall menu (e.g. offering

⁶¹ Diller, *supra* note 55, at 91 (citing to WATSONVILLE, CAL., MUN. CODE § 14-29 (2010), <http://www.codepublishing.com/CA/Watsonville/?Watsonville14%2FWatsonville1429.html#mainContent>).

⁶² WATSONVILLE, CAL., MUN. CODE § 14-29.050 (2010), (listing fifteen different healthy eating options that restaurants may provide, including (1) offering at least four fruit or vegetables prepared in a low-fat way for two points; (2) offering water and making it accessible to customers free of charge for two points; (3) offering smaller portion meals at a lower cost for one point; (4) offering whole beans instead of refried beans for one point; and (5) preparing meat, fish, poultry, or meat alternatives in a low-fat way for two points).

⁶³ WATSONVILLE, CAL., MUN. CODE §§ 14-29.030, 14-29.050.

⁶⁴ WATSONVILLE, CAL., MUN. CODE §§ 14-29.030, 14-29.050.

fruits and vegetables that are cooked in a healthier way) so compliance with the ordinance appears to be simple and cost-effective for the business. The overall value of the advertising to the business is limited by the municipality's programming channel viewer base and the number of high school students who read the newsletter. Nevertheless, this ordinance demonstrates that a municipality's obesity-curbing law may be cost-effective, simple to comply with, and increase the prevalence of healthier foods at a low-cost to the municipality and to the business.

D. New York City's Food Retail Expansion to Promote Health (FRESH) Program: Using Zoning and Financial Incentives to Promote Full-Line Grocery Stores

In 2009, New York City enacted its food retail expansion to support health ("FRESH") program which provided for discretionary zoning and financial incentives to renovating grocery store operators or developers seeking to construct new full-line grocery stores in areas that were underserved by grocery stores.⁶⁵ Grocery stores that are within the designated FRESH-eligible areas and that meet the FRESH criteria⁶⁶ have the potential to receive (1) reductions in required parking requirements; (2) one additional square foot of additional residential floor area for every square foot provided for a grocery store in a mixed-used building (up to 20,000 square feet); (3) a twenty-five year tax abatement, equal to five-hundred dollars per each full-time employee at the time of the application; (4) an exemption from sales tax (8.875%) for materials bought to

⁶⁵ Diller, *supra* note 55, at 91 (citing to *Food Retail Expansion to Support Health (FRESH)*, N.Y.C. ECON. DEV. (last visited Dec. 1, 2016), <http://www.nycedc.com/program/food-retail-expansion-support-health-fresh>; Diller, *supra* note 55, at 91 (citing to N.Y.C., N.Y., ZONING RESOLUTION art. VI, ch. 3, §§ 63-00 to 63-60 (2009))).

⁶⁶ *Food Retail Expansion to Support Health*, *supra* note 65 (requiring that the restaurants "a. provide a minimum of 6,000 square feet of retail space for a general line of food and nonfood grocery products intended for home preparation, consumption and utilization; b. [p]rovide at least 50 percent of a general line of food products intended for home preparation, consumption and utilization; c. [p]rovide at least 30 percent of retail space for perishable goods that include dairy, fresh produce, fresh meats, poultry, fish and frozen foods; and d. [p]rovide at least 500 square feet of retail space for fresh produce").

construct, renovate, or equip facilities; and (5) a mortgage recording tax deferral.⁶⁷ Currently, more than 627,000 square feet of full-line grocery stores have been developed or renovated through the FRESH program.⁶⁸

This discretionary program has the potential to encourage the development or renovation of full-service grocery stores in low-income areas that would otherwise be undeserved by full-line neighborhood grocery stores.⁶⁹ People who don't live by a supermarket are as much as 46% less likely to have a healthy diet than people whom have the most supermarkets in close proximity because these communities are generally served by smaller convenience or corner stores.⁷⁰ The main issue with these corner stores are that they are (1) less likely to carry healthy foods (e.g. fresh fruits or vegetables), (2) they "heavily advertise unhealthy products," and (3) the stores are filled with high-calorie convenience items.⁷¹ Handbury, Rahkovsky, and Schnell question the effectiveness of providing these full-service grocery stores in these low-income areas because they found that "the nutritional quality of household purchases responds very little to changes in their retail environment, especially among households with low levels of income and education."⁷² However, some research has demonstrated that changes to the retail

⁶⁷ *Food Retail Expansion to Support Health*, *supra* note 65; N.Y.C., N.Y., ZONING RESOLUTION art. VI, ch. 3, §§ 63-00 to 63-60.

⁶⁸ *Food Retail Expansion to Support Health: Fresh Projects*, N.Y.C. (last visited Dec. 3, 2016), http://www.nyc.gov/html/misc/html/2009/fresh_projects.shtml.

⁶⁹ *Food Retail Expansion to Support Health*, *supra* note 65 (noting that "many low-income areas across the city were undeserved by full-line grocery stores" and that "the resulting lack of nutritious, affordable, and fresh foods in these neighborhoods has been linked to higher rates of diet-related diseases, including heart disease, diabetes, and obesity").

⁷⁰ Rachel Dannefer et al., *Healthy Bodegas: Increasing and Promoting Healthy Foods at Corner Stores in New York City*, 102 AM. J. PUB. HEALTH e27, e27 (2012).

⁷¹ *Id.*

⁷² Jessie Handbury, Ilya Rahkovsky & Molly Schnell, *Is the Focus on Food Deserts Fruitless? Retail Access and Food Purchases Across the Socioeconomic Spectrum* (Univ. of Penn., Nat'l Bureau of Econ. Research, Econ. Research Serv., U.S. Dep't of Agric & Princeton Univ., Working Paper No. 21126, 2015), *available at*

environment, such as increasing in-store advertising and locating foods in prime areas, may increase sales for those promoted items.⁷³ In addition, Handbury, Rahkovsky, and Schnell's findings do not negate the fact that eating a healthier diet may lead to weight loss, and residents whom have greater access to healthier food choices will have an easier time facilitating a healthier lifestyle.

Although NYC may have parking issues arise due to the parking reduction requirements, this burden is partially alleviated by the fact that the FRESH program is available in only certain underserved areas of the City. In addition, NYC's outgoing cost (i.e. monies spent) is relatively low because the businesses only benefit from reductions in taxes and they receive no monies from NYC for their participation in the program. On the one hand, NYC will still incur some costs because the City is foregoing the collection of certain tax revenues so this strategy may not be advisable for municipalities that do not have adequate funding. On the other hand, mixed-used businesses that qualify for and receive the 20,000 additional square feet of residential floor area will receive additional rental monies which reduces the businesses burden of placing the grocery store in a low-income area and increases tax revenues collected by the City. As such, NYC's FRESH program demonstrates how a municipality can utilize taxing and zoning incentives to encourage the development and renovation of full-line grocery stores in areas that would otherwise lack access to more affordable and nutritious foods.

E. Oklahoma City's Million Pound Challenge

https://www.brown.edu/academics/economics/sites/brown.edu/academics/economics/files/uploads/Jesse%20Handbury_Is%20the%20focus%20on%20food_Paper.pdf.

⁷³ Dannefer, *supra* note 70, at e27.

In 2007, Oklahoma City residents were challenged by then-and-current Mayor Mick Cornett to lose one million pounds.⁷⁴ An informational website with resources for losing weight was launched for residents, and residents could add their lost pounds to the city's overall weight loss tally.⁷⁵ Utilizing a 1% tax increase, business loans, and federal funding, Mayor Mick Cornett improved the city's "parks, sidewalks, bike lanes, and sports facilities."⁷⁶ By January, 2012, the city had cumulatively lost one-million pounds, residents were living healthier lifestyles, and the one million pound challenge may have contributed to a revitalized economy.⁷⁷ This demonstrates how a non-invasive approach to weight-loss may still be effective and lead residents to live healthier lifestyles. However, potential sources of funding will be critical for any structural-improvement goals as not every municipality may have the funding or ability to take on loans to improve their infrastructure like Oklahoma City. Nevertheless, this initiative demonstrates how effective a lifestyle obesity-prevention approach may be when residents are (1) informed about how to lose weight (by the website) and (2) are able to act on that information (via utilizing the new parks, sidewalks, bike lanes, sport facilities, and the weight loss information on the website).

F. Shape Up Somerville

In 2002, the city of Somerville, Massachusetts, assisted by Tufts University, led a three-year CDC-funded study named Shape Up Somerville ("SUS") that focused on preventing obesity in first through third graders through environmental change.⁷⁸ Some of the community-based

⁷⁴ Reeve, *supra* note 9, at 442.

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ *Shape Up Somerville*, CITY OF SOMERVILLE (last visited Dec. 13, 2016), <http://archive.somervillema.gov/departments/health/sus>.

interventions included (1) food service enhancements to lunch and breakfast; (2) walk to school activities; (3) outreach to and education of families through materials, forums, and events; (4) developing school wellness policies; and (5) community outreach programs.⁷⁹ The study results for 2003-2004 found that the BMI percentile for Somerville children decreased approximately one percentile point.⁸⁰ Although the data collectors noted that they cannot demonstrate that SUS directly caused the demonstrated reductions, the City of Somerville continues today to use the strategy to “build and sustain a healthier, more equitable community for everyone that lives in, works in, and visits the City [of Somerville].”⁸¹

Notwithstanding the fact that initiative was initially funded by the CDC, the SUS initiative demonstrates the potential effects of a wide-reaching multi-faceted approach to preventing obesity. Utilizable information about healthier eating and physical activity for before, during, and after school was provided by Somerville (e.g. educating information sent to home regarding obesity and school wellness policies), and physical activity was incorporated into the daily lives of the school children (e.g. walk to school activities). This utilizable information may, in turn, have lead those children to develop healthier habits and become more physically active. In addition, the effort appears to have been successful as the effort evolved from only focusing

⁷⁹ *A Decade of Shape Up Somerville: Assessing Child Obesity Measures 2002-2011*, CITY OF SOMERVILLE 13 (April 12, 2013), http://archive.somervillema.gov/sites/default/files/SUS-BMI-ReportFINAL-4-12-2013_0_0.pdf (noting other interventions such as staff professional development; Shape-Up Somerville after-school curriculum and professional development; outreach and capacity building through policy development, and trainings and media placement).

⁸⁰ *A Decade of Shape Up Somerville*, *supra* note 79, at 14, 23 (noting that the obesity rate of students analyzed between 2010 and 2011 declined from 30% to 28%).

⁸¹ *Shape Up Somerville*, *supra* note 78 (discussing the vision and mission of Shape Up Somerville).

on children to becoming a community-wide approach to “build and support community-wide health, health equity, and social justice for all.”⁸²

Furthermore, some research on the SUS initiative found that the childhood obesity intervention indirectly reduced the schoolchildren’ parents BMIs.⁸³ These indirect benefits suggest that the information that parents learn about preventing childhood obesity may, in fact, also lead the parents to modify their own lifestyles. As such, there appears to be great potential in expansive community-based programs that educate residents about healthier eating (e.g. by disseminating information about healthier food choices) and that modify the environment to facilitate more physical activity throughout the community (e.g. creating walkable and bikeable streets).⁸⁴

G. Nutrition Labeling

“Nutrition labeling” can be defined as “the provision of nutritional information about standard menu items at the point of purchase.”⁸⁵ One meta-analysis study of various nutrition labeling initiatives found that menu calorie labeling in restaurant settings lead to a reduction in calories consumed (-8) and that menu calorie labeling outside the restaurant context lead to a

⁸² *Shape Up Somerville*, *supra* note 78.

⁸³ See Edward Coffield et al., *Shape Up Somerville: Change in Parent Body Mass Indexes During a Child-Targeted, Community-Based Environmental Change Intervention*, 105 AM. J. PUB. HEALTH e83, e83 (2015) (finding that Shape Up Somerville decreased parents BMIs by .411 points as compared to the control parents).

⁸⁴ See *Shape Up Somerville*, *supra* note 78 (noting other changes such as increasing access to healthy food through affordable mobile farmers’ markets and creating healthier worksites, and increasing physical activity opportunities through changes such as creating walkable and bikeable streets, neighborways, and healthier worksites).

⁸⁵ *Menu Labeling*, CENTERS FOR DISEASES CONTROL AND PREVENTION (last updated Aug. 5, 2015), http://www.cdc.gov/phlp/winnable/menu_labeling.html (noting also that nutrition labeling can include (1) disclosing calories on a menu board and (2) providing written information, upon request, with information regarding the total calories, calories from fat, “amounts of fat and saturated fat, cholesterol, sodium, total and complex carbohydrates, sugars, dietary fiber, and protein”).

reduction in total calories consumed (-18).⁸⁶ Although menu labeling may only reduce the total number of calories consumed by a minor amount, even small improvements in diet quality can lead to great reductions in obesity rates so its effect should not be overlooked by municipalities.

The federal government, as part of the Patient Protection and Affordable Care Act (“PPACA”), enacted federally-mandated menu labeling standards (i.e. required nutritional disclosures) for chain restaurants that have twenty (20) or more locations that serve substantially the same menu items.⁸⁷ However, for smaller chains that do not meet the requirement or independent restaurants, municipalities should require or request—with the mandatory approach being recommended when calorie-dense, low-nutrition foods are prevalent—that these restaurants provide nutrition labeling information as it is a “relatively low cost education strategy that may lead consumers to purchase slightly fewer calories.”⁸⁸ The municipality should draft the legislation so that only restaurants that do not meet the PPACA requirements are required to provide the required nutritional disclosures so as to avoid being preempted by the PPACA. In addition, the municipality should draft the legislation so that the required nutritional disclosures are at least as restrictive as the PPACA so that there is no inherent conflict between the PPACA and the municipality’s legislation.

⁸⁶ Michael W. Long et al., *Systematic Review and Meta-Analysis of the Impact of Restaurant Menu Calorie Labeling*, 105 AM. J. PUB. HEALTH e11, e11 (2015); *but see* Brian Elbel et al., *Calorie Labeling and Food Choices: A First Look at the Effects on Low-Income People in New York City*, HEALTH AFF. (Oct. 6, 2009), <http://content.healthaffairs.org/content/early/2009/10/06/hlthaff.28.6.w1110.full.pdf> (noting that persons said that the calorie labeling influenced their choices, but finding that calorie labeling did not change calories purchased after the introduction of calorie labeling).

⁸⁷ Diller, *supra* note 55, at 91 (citing to 21 U.S.C.A. § 343(q)(5)(h) (West, Westlaw through P.L. 114-248)).

⁸⁸ Long, *supra* note 86, at e11.

Nutrition labeling is a perfect illustration of how obesity prevention strategies that, when viewed in isolation, appear to lead to only minor changes may, in fact, lead to significant changes when viewing the cumulative effect of those individual efforts (i.e. a significant reduction in calories consumed). Furthermore, menu labeling also illustrates the potential preemption issues that may arise if a challenger of the law claims that state law (or federal law) preempts the municipal law.⁸⁹

V. **RECOMMENDATION**

A. **Culmination of Municipal Laws, Regulations, and Initiatives**

Although each of the above-reviewed municipal initiatives, laws, and regulations may, in isolation, appear to have only a minimal impact, an effective obesity-preventing effort requires many different avenues and efforts that simultaneously interact and thereby culminate into an obesity-preventive environment (i.e. one that facilitates healthier eating and increases physical activity). The effect of isolated initiatives should not be overlooked by municipalities, but municipalities should strive to effectuate as many strategies as possible so that each independent measure will have a greater overall impact. For example, residents will have a greater chance of finding healthy food options if a municipality both zones to promote healthier grocery stores and provides free local advertising to restaurants that carry enough healthy food options because the local environment will facilitate healthier choices by having healthier groceries (for at-home consumption) and healthier restaurants (for out-of-home consumption). In addition, non-

⁸⁹ See Diller, *supra* note 55, at 91-92 (“opponents may argue that state retail food codes preempt local regulations of restaurants and grocery stores” and, therefore, the state “has occupied the field of restaurant or grocery store regulation completely and thus precluded local ordinances in the area”).

residents that utilize the municipality's grocery stores and restaurants will also indirectly benefit and thereby have an easier time facilitating healthier choices for themselves.

B. Utilizing Technology to Spread Utilizable Information: Creating a Mobile Application that is Tailored to the Needs of Each Locality

Advances in technology have made it possible to reach large numbers of people with relative ease. Until 2008, websites were the essential tool for disseminating massive amounts of information to large audiences because the medium allowed large quantities of data to be organized, stored and reached by persons around the globe. Since 2008, applications for smartphones (and computers and laptops) have been widely used and have been developed for many different purposes. Many municipalities will already possess a website, but the application may provide an alternative and convenient way to reach a municipality's population (i.e. its residents) en masse. Although the utility and appeal of a municipality disseminating obesity-preventing information (and other health-related information) is untested, the mobile application has the potential to be a viable resource for the public. This paper proposes that the local government is the perfect ground for creating and testing a mobile application that utilizes the prevalence of smartphones to provide weight-loss information that is tailored to the municipality's cultural, social, political, socioeconomic, and demographic needs.⁹⁰

Specifically, this paper proposes that a mobile application should be created and utilized so that the information provided by the application may be (1) updated frequently with little cost,

⁹⁰ See, e.g., *Number of Smartphone Users in the United States from 2010 to 2021 (in Millions)*, STAT. PORTAL (last viewed Nov. 24, 2016), <https://www.statista.com/statistics/201182/forecast-of-smartphone-users-in-the-us/> (noting that there are approximately 207.1 million smartphone users in the USA); Davis, *supra* note 16 (utilizing a mobile application will allow municipalities to take advantage of the prevalence of smart phone usage as one recent study found that people are now spending more time on their electronic devices (eight hours and forty-one minutes) than sleeping (eight hours and twenty-one minutes, and that four in ten smartphone users check their phone if it wakes them in the night).

(2) incorporated into the daily lives of residents via smartphone usage, and (3) disseminated instantaneously. Ideally, municipalities should attempt to modify the obesity-prevention informational environment by providing a plethora of general information including, but not limited to, diet, nutrition, exercise, health risks and the preventability of those risk, illustrations of the effect of one poor food choice a day, and how to incorporate more physical activity into sedentary lifestyles. Although this general information will not vary from municipality to municipality, the primary goal of the application is to provide usable information. Therefore, the general information must be supplemented with demonstrations that show how to use the information within the municipality.

For example, the application could provide (1) locations of healthier grocery stores, restaurants, and farmers markets that provide fresh goods and offer healthier choices (which may include both existing and developing stores); (2) locations of recreational parks, walking paths, biking paths, recreational facilities, fields, public and private gymnasiums, health clubs, and places to workout, with maps that provide directions for walking, biking, and driving routes and that show available parking; (3) locations and illustrations of proposed municipal development projects that have explanations attached which describe the potential health benefit to the community so as to incentivize voters to back potential initiatives (if it's on a ballot) or to educate the municipal voters so that they understand why municipal funds are being utilized for obesity-prevention (if the residents don't have any say in the utilization of the municipal funds); (4) general information that is utilizable in a resident's daily life (e.g. providing the fact that fruits are healthier for post-workout snacks than sugar-filled drinks, and then also providing a Global Positioning System ("GPS") map that shows the resident directions to the closest local stores that carries fresh produce); (5) listing health-related events on an interactive calendar that

can save relevant dates onto a smartphone user's phone, such as free health clinics, health seminars, and mobile health assessment units; and (6) zoning maps of the municipality, similar to the FRESH program maps, that highlight specific areas within the municipality that have been or will be rezoned to provide healthier restaurants, grocery stores, and recreational space.⁹¹

To further utilize the mobile application's utility, municipalities should, in conjunction with the creation of the mobile application, attempt to effectuate as many obesity-preventing initiatives, laws, and regulations as possible so that information is not only presented in a general sense, but also presented in the demonstration section of the application so that the information will be immediately utilizable and applicable to that mobile-user's life. The mobile application must be developed so that it is easily accessible for any potential user, and so that it provides benefits to the user so that residents are incentivized to use the application.

In terms of developing the application, there are now simplified tools that are usable by experienced mobile-applications developers, but that are also usable by traditional web programmers or non-developers.⁹² Also, municipalities should reach out to their communities and seek volunteers who have mobile-application development experience or knowledge so that persons who are interested in performing community service can fulfill that need while limiting

⁹¹ This suggestion is more focused on potential business owners, whether residents or nonresidents, but it was included because it has the potential to indirectly generate revenue for the municipality. For example, a business may open a health food store in an area that they otherwise were precluded from operating within. The additional benefits to the municipality include taxes, fees, and potential employment opportunities for residents.

⁹² See, e.g., *17 Solutions to Build Your Own Mobile App*, PRAC. ECOMMERCE (Feb. 8, 2011), <http://www.practicalecommerce.com/articles/2573-17-Solutions-to-Build-Your-Own-Mobile-App> (“non-developers, who may not know the ins-and-outs of various programming languages used to produce apps, can use these tools to create apps for Apple's Ios—which includes iPhone, iPad, and iPod—Android OS and Blackberry.” The costs of these application development tools for non-developers ranges from \$9.99 per month with no startup fee to \$149.99 per month with up to a \$1,799 one-time fee);

the municipality's initial investment in the application. However, there are established mobile application development firms that exist that will tailor an application to a municipality's specific needs.⁹³

⁹³ See, e.g., MY CITY MOBILE APP, <http://mycitymobileapp.com/features-1/> (last visited Nov. 29, 2016) (providing an already-developed mobile application that was specifically designed for municipal use, with features such as (1) maps; (2) local store lists; (3) tabs for categories (e.g. municipal services and local shopping); (4) alerts that can be sent to users; (5) share content features (i.e. the software connects to social media websites and emails so that the user can share what they found); (6) driving directions; and (7) an option to provide forms to citizens (e.g. contact us)).