ROLL CALL: Mueller, Gunn, Hull, Meehlhause, Bergeron

PUBLIC COMMENT

Citizens may speak to issues not on tonight's agenda. Before speaking, please give your full name and address for the minutes. Also, please limit your comments to three minutes.

Agenda Items Discussed by Consensus

1. Rental Licensing – Verbal Report - Martin
2. Smoking Age Overview – Alicia Leizinger, Association for Non-Smokers
   a. Action Requested - Council direction on whether or not to move forward.
3. Cable TV Discussion/Trial Schedule – Zikmund
   a. Action requested – feedback/direction on staff report recommendation
4. SBM Fire/Fridley Proposal – Zikmund
   a. Action Requested – Generate any questions/concerns regarding proposal.
5. Age Friendly Communities – Verbal Report – Zikmund
   a. Action requested – none, just providing overview at this time
WHY RAISE THE TOBACCO SALE AGE?

The tobacco industry heavily targets young adults ages 18-21 in order to recruit new tobacco users and guarantee profits. Approximately 95 percent of current adult smokers started before they were 21.¹ In Minnesota, no one under 18 years old is allowed to buy tobacco. Youth get tobacco from several sources, including social sources. A 16-year-old has more contact with and access to 18-year-olds who can buy tobacco. However, it is less likely a 16-year-old would ask a 21-year-old for tobacco. Increasing the age gap between young people and those who can legally buy tobacco will reduce youth access to tobacco.

A 2015 report from the Institute of Medicine (IOM) found that increasing the legal age to purchase tobacco to 21 would decrease smoking initiation among 15-17-year-olds by 25 percent.² A Minnesota-specific study looked at the impact of raising the tobacco age and found that 25 percent fewer 15-year-olds would start smoking by the time they turn 18 and 15 percent fewer 18-year-olds would start smoking by the time they turn 18. This translates into 30,000 young people not becoming smokers over the next 15 years.³ If youth don't smoke by the time they are 21, they likely never will.

WHAT IS THE IMPACT OF NICOTINE ON ADOLESCENT BRAIN DEVELOPMENT?

Nicotine is addictive and is particularly harmful to the developing adolescent brain. Evidence suggests that nicotine interferes with brain maturation and can have a long-term effect on cognitive development and mental health.⁴ Even brief or intermittent nicotine exposure during adolescence can cause lasting damage.⁵

The addictive properties of nicotine can lead adolescents to heavier daily tobacco use and a more difficult time quitting later in life.⁶ Nicotine exposure can also increase the risk of addiction to other harmful substances.⁵ The long-term effects of nicotine on the adolescent brain is a significant public health concern.⁷ ⁸

WHO SUPPORTS RAISING THE TOBACCO SALE AGE TO 21?

A 2014 national survey shows that 75 percent of adults favor increasing the minimum sale age for tobacco to 21. A national consensus is growing to protect young people from a lifetime of addiction and health problems caused by tobacco by raising the tobacco sale age. In addition, 70 percent of current smokers and 65 percent of those age 18-24 support raising the minimum tobacco sale age.⁹
"Raising the legal minimum age for cigarette purchaser to 21 could gut our young adult market where we sell about 25 billion cigarettes and enjoy a 70 percent market share."

Philip Morris report, 1986

IS YOUTH TOBACCO USE STILL A PROBLEM?
The percent of students who smoke cigarettes is declining, but the 2016 Minnesota Student Survey found that 9th and 11th graders in Minnesota are now using e-cigarettes at twice the rate of regular cigarettes. Increasing the sale age to 21 would reduce youth access to all harmful tobacco products, including e-cigarettes, cigars and hookah.

WHAT CAN STATE AND LOCAL GOVERNMENTS DO?
California, Hawaii, New Jersey, Maine, and Oregon, along with a growing list of more than 300 cities in the United States, have raised the tobacco sales age to 21. Edina, Saint Louis Park, Bloomington, Plymouth, North Mankato, Falcon Heights, Shoreview, Minneapolis, Saint Peter, Richfield and Roseville have raised the age in Minnesota. The city of Needham, Mass., raised the legal tobacco sales age to 21 in 2005. Within five years, tobacco use among high school students decreased by nearly half.

California, Hawaii, New Jersey, Maine and Oregon raised the minimum legal sales age for tobacco products to 21 since 2016.

More than 300 localities in the United States have raised the minimum legal sales age for tobacco products to 21.

Some organizations who support raising tobacco sale age to 21 include:
- American Cancer Society Cancer Action Network
- American Heart Association
- American Lung Association
- ClearWay Minnesota
- Minnesota Academy of Family Physicians
- Service Employees International Union Minnesota State Council

SOURCES

The Association for Nonsmokers-Minnesota is dedicated to reducing the human and economic costs of tobacco use in Minnesota.

2395 University Avenue W, Suite 310, St. Paul, MN 55114 | 651-646-3005 | www.ansrmn.org
2017 HEALTH CARE COSTS AND SMOKING IN MINNESOTA
The Bottom Line
THE COST: $3.19 BILLION ANNUALLY

While the overall smoking rate in Minnesota has decreased dramatically over the last two decades, the cost of smoking remains significant. In Minnesota, smoking was responsible for $3.19 billion in excess medical expenditures in 2014 — a per capita expense of $593 for every person in the state.¹

A CALL TO ACTION: PREVENTION & POLICY

Many factors impact our health. One is prevention efforts, such as deterring young people from starting to smoke and helping current smokers quit, which offer significant opportunities for controlling health care costs. Another is our surroundings — where we live, work, learn and play. Tobacco-free spaces are essential to decreasing the impact of smoking — including its costs. It’s also imperative to address the inequities within commercial tobacco use.

Despite years of progress, some populations continue to smoke at disproportionately high rates and are more frequently targeted by tobacco-industry marketing.

For instance, low-income individuals experience significantly higher rates of smoking and smoking-related health issues than the general population.² Additionally, people suffering from mental health issues smoke at rates almost double that of the general population.³ We also know that in Minnesota, 59 percent of American Indians smoke,⁴ along with approximately 24 percent of Somalis,⁵ compared to 14 percent of all Minnesota adults.⁶

As a result, these and other communities are at a greater risk for premature death and disease. We can’t afford to ignore these inequities.

A COMPARISON: HOW COSTS STACK UP

To get a sense of the magnitude of smoking-related medical costs, it is helpful to compare $3.19 billion in public and private health care expenditures attributed to smoking with other investments. This juxtaposition is for comparison purposes only and shows a relative view of just how much taxpayers, employers and government spend on these preventable costs.

$3.19 billion could also buy:

- 6,380 fire trucks
- 200 libraries
- 58,000 four-year degrees

And is equal to:

- 79,750 jobs at $40,000
- 10 state capitol renovations

6,380 fire trucks x $500,000 = $3.19 billion
200 libraries x $16 million each = $3.2 billion
58,000 four-year undergraduate degrees at the University of Minnesota x $55,360 each = $3.2 billion
79,750 jobs at $40,000 per year each = $3.19 billion
10 state capitol renovations x $310 million = $3.1 billion
A CLOSER LOOK: $3.19 BILLION BROKEN DOWN

The $3.19 billion Minnesotans spent on excess medical costs related to smoking includes nursing home care, ambulatory care, hospital care, prescription drugs and other personal health care for adults. These total expenditures do not include the costs of lost productivity or workers’ compensation that are indirectly attributable to smoking.

SMOKING-ATTRIBUTABLE HEALTH CARE COSTS: MINNESOTA, 2014

<table>
<thead>
<tr>
<th>COST COMPONENT</th>
<th>COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing home (adult)</td>
<td>$472,000,000</td>
</tr>
<tr>
<td>Ambulatory care (adult)</td>
<td>$410,000,000</td>
</tr>
<tr>
<td>Hospital care (adult)</td>
<td>$1,144,000,000</td>
</tr>
<tr>
<td>Prescription drugs (adult)</td>
<td>$243,000,000</td>
</tr>
<tr>
<td>Other services (adult)</td>
<td>$924,000,000</td>
</tr>
<tr>
<td><strong>Total costs</strong></td>
<td><strong>$3,194,000,000</strong></td>
</tr>
</tbody>
</table>

This information has been developed using data provided by the state of Minnesota and calculated using methods developed by the Centers for Disease Control and Prevention to calculate these costs on a state-by-state basis. Totals may not equal sums because of rounding.

THE HUMAN COST: LIVES LOST

In 2014, smoking was responsible for the deaths of 6,306 adults in Minnesota and six infants whose mothers smoked during pregnancy. These individuals suffered from one or more of 24 adult and four infant conditions that have been tied to premature death in smokers or infant mortality. The chart below demonstrates the staggering proportion of overall deaths from these conditions that can be tied directly to smoking.

ALL DEATHS AND SMOKING-ATTRIBUTABLE DEATHS: MINNESOTA, 2014

<table>
<thead>
<tr>
<th>DISEASE CATEGORY</th>
<th>ALL DEATHS</th>
<th>SMOKING-ATTRIBUTABLE DEATHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer* (adult)</td>
<td>5,669</td>
<td>2,584</td>
</tr>
<tr>
<td>Respiratory diseases* (adult)</td>
<td>2,813</td>
<td>1,881</td>
</tr>
<tr>
<td>Heart and vascular diseases† (adult)</td>
<td>9,946</td>
<td>1,703</td>
</tr>
<tr>
<td>Other diseases* (adult)</td>
<td>1,193</td>
<td>138</td>
</tr>
<tr>
<td>Perinatal conditions** (infant)</td>
<td>64</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total deaths</strong></td>
<td><strong>19,685</strong></td>
<td><strong>6,312</strong></td>
</tr>
</tbody>
</table>

* Includes: Lip, oral cavity, pharynx; esophagus; stomach; colorectal; liver; pancreas; larynx; trachea, lung, bronchus; cervix uteri; kidney, other urinary; urinary bladder; and acute myeloid leukemia.
† Includes: Tuberculosis; pneumonia, influenza; bronchitis, emphysema; and chronic airway obstruction.
‡ Includes: Ischemic heart disease; other heart diseases; cerebrovascular disease; atherosclerosis; aortic aneurysm; and other arterial disease.
* Includes: Macular degeneration and diabetes mellitus.
** Includes: Short gestation/low birth weight; respiratory distress syndrome; other respiratory-newborn; and sudden infant death syndrome.

This information has been developed using data provided by the state of Minnesota and calculated using methods developed by the Centers for Disease Control and Prevention to calculate these costs on a state-by-state basis. Totals may not equal sums because of rounding.
Smoking claims the lives of more than 6,000 Minnesotans each year. Much work remains to reduce the burden that smoking and other tobacco-related health inequities put on our state.

ENDNOTES
Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products

Over the past 50 years, tobacco control in the United States has led to an estimated 8 million fewer premature deaths. However, tobacco use continues to significantly affect public health, and more than 40 million Americans still smoke.

In 2009, the Family Smoking Prevention and Tobacco Control Act granted the U.S. Food and Drug Administration (FDA) broad authorities over tobacco products, though it prohibited FDA from establishing a nationwide minimum age of legal access—an MLA for tobacco products—above 18 years of age. It also directed FDA to convene a panel of experts to conduct a study on the public health implications of raising the minimum age to purchase tobacco products. At FDA's request, the Institute of Medicine (IOM) convened a committee in 2013 for this purpose.

In the resulting report, *Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products*, the committee of experts reviews existing literature on tobacco use initiation, developmental biology and psychology, and tobacco policy and predicts the likely public health outcomes of raising the MLA for tobacco products to 19 years, 21 years, and 25 years. The committee also uses mathematical modeling to quantify these predictions. Of note, the report contains only conclusions regarding raising the MLA; as requested by FDA, the committee does not offer recommendations as to whether the MLA should be raised.
Lowering Initiation Rates

The initiation age of tobacco use is critical. Among adults who become daily smokers, approximately 90 percent report first use of cigarettes before reaching 19 years of age, and almost 100 percent report first use before age 26. As mentioned above, FDA cannot raise the MLA nationwide. However, states and localities can set a higher minimum age for their communities. Most states currently set the MLA at 18 years. Four states set it at 19 years, and several localities around the country have raised the minimum age to 21 years.

Based on its review of the literature, the committee concludes that overall, increasing the MLA for tobacco products will likely prevent or delay initiation of tobacco use by adolescents and young adults. The age group most impacted will be those age 15 to 17 years. The committee also concludes that the impact of raising the MLA to 21 will likely be substantially higher than raising it to 19. However, the added effect of raising the MLA from 21 to 25 will likely be considerably less.

The parts of the brain most responsible for decision making, impulse control, sensation seeking, and susceptibility to peer pressure continue to develop and change through young adulthood, and adolescent brains are uniquely vulnerable to the effects of nicotine. In addition, the majority of underage users rely on social sources—like family and friends—to get tobacco.

Raising the MLA to 19 will therefore not have much of an effect on reducing the social sources of those in high school. Raising the MLA to 21 will mean that those who can legally obtain tobacco are less likely to be in the same social networks as high school students. In the same vein, increasing the MLA from 21 to 25 is not likely to achieve additional notable reductions in social sources for those under age 15.

Reducing Prevalence, Decreasing Disease

Delaying initiation rates will likely decrease the prevalence of tobacco users in the U.S. population. To quantify this decrease in both prevalence of tobacco users and in related health concerns

FIGURE: Committee Estimates Regarding Effects on Initiation Rates

![Bar chart showing estimates of decrease in initiation rates by age group and MLA level](image)

NOTE: This figure was created using data from Table 7-2 in the report.
that could be a result of raising the MLA, the committee commissioned the use of two established and complementary tobacco simulation models, SimSmoke and the Cancer Intervention and Surveillance Modeling Network smoking population model (CISNET).

In using the models, the committee employed all available evidence and expert judgment to project outcomes. The committee also had to make assumptions with important implications. The models only address cigarette smoking, but the committee expects the MLA and relative effects on initiation to apply to all tobacco products. In addition, the models project the effects of raising the MLA on the United States as a whole and do not take into account existing variations in tobacco use—such as by race or socioeconomic status—initiation rates, and tobacco control activities. In addition, the rapidly changing landscape of tobacco products—for example, e-cigarettes—provides unknowns and could affect the future of tobacco product use in ways that the committee was unable to anticipate due to lack of evidence.

Based on the modeling and backed up by the literature review, the committee concludes that raising the minimum age of legal access to tobacco products in the United States, particularly to ages 21 and 25, will likely lead to a substantial reduction in smoking prevalence. If the MLA were raised now, the models projected that by the time today's teenagers were adults, there would be a 3 percent decrease in prevalence of tobacco use among those adults if the MLA were raised to 19, a 12 percent decrease if raised to 21, and a 16 percent decrease if raised to 25.

Given a decline in the initiation rates of tobacco use by adolescents and lower prevalence in the population, it follows that tobacco-related disease would also decrease in proportion to the reduction in tobacco use. It is generally known that smoking-related diseases like cancer and heart disease develop over decades, and therefore, it could take many years to lower rates of these diseases; however, there could be immediate decreases in other tobacco-related health effects.

The committee concludes that raising the MLA will likely immediately improve the health of adolescents and young adults by reducing the number of those with adverse physiological effects such as increased inflammation and impaired immune functioning caused by smoking, as these could potentially lead to negative health consequences, including increased hospitalizations and lessened capacity to heal wounds. Adverse maternal, fetal, and infant outcomes—including preterm births, low birth weight, and sudden infant death—will also probably decrease due to reduced tobacco exposure in mothers and infants. Raising the MLA will also lessen the population’s exposure to secondhand smoke and its associated health effects, both now and in the future.

Over time, the committee concludes that raising the MLA will likely lead to substantial reductions in smoking-related mortality, though results from the models suggest that these results will not be observed for at least 30 years, assuming that the MLA increase occurs now. The CISNET model
projected that if the MLA were raised now to 21 nationwide, there would be approximately 223,000 fewer premature deaths, 50,000 fewer deaths from lung cancer, and 4.2 million fewer years of life lost for those born between 2000 and 2019.

Conclusion

The public health impact of raising the MLA for tobacco products depends on the degree to which local and state governments change their policies. These decisions will depend on each state’s or locality’s balance between personal interests and the privacy of young adults to make their own choices versus society’s legitimate concerns about protecting public health.

The IOM committee makes conclusions about likely public health outcomes of raising the MLA for tobacco products. Overall, in the absence of transformative changes in the tobacco market, social norms and attitudes, or in the knowledge of patterns and causes of tobacco use, the committee is reasonably confident that raising the MLA will reduce tobacco use initiation, particularly among adolescents 15 to 17 years of age; improve the health of Americans across the lifespan; and save lives.
Community reductions in youth smoking after raising the minimum tobacco sales age to 21

Shari Kessel Schneider,1 Stephen L Buka,2 Kim Dash,1 Jonathan P Winickoff,2 Lydia O'Donnell1

ABSTRACT
Objective Raising the tobacco sales age to 21 has gained support as a promising strategy to reduce youth cigarette access, but there is little direct evidence of its impact on adolescent smoking. Using regional youth survey data, we compared youth smoking trends in Needham, Massachusetts—which raised the minimum purchase age in 2005—with those of 16 surrounding communities.
Methods The MetroWest Adolescent Health Survey is a biennial census survey of high school youth in communities west of Boston; over 16 000 students participated at each of four time points from 2006 to 2012. Using these pooled cross-section data, we used generalised estimating equation models to compare trends in current cigarette smoking and cigarette purchases in Needham relative to 16 comparison communities without similar ordinances. To determine whether trends were specific to tobacco, we also examined trends in youth alcohol use over the same time period.
Results From 2006 to 2010, the decrease in 30-day smoking in Needham (from 13% to 7%) was significantly greater than in the comparison communities (from 15% to 12% p<.001). This larger decline was consistent for both genders, Caucasian and non-Caucasian youth, and grades 10, 11 and 12. Cigarette purchases among current smokers also declined significantly more in Needham than in the comparison communities during this time. In contrast, there were no comparable differences for current alcohol use.
Conclusions Our results suggest that raising the minimum sales age to 21 for tobacco contributes to a greater decline in youth smoking relative to communities that did not pass this ordinance. These findings support local community-level action to raise the tobacco sales age to 21.

INTRODUCTION
Raising the legal age of tobacco sales to 21 to reduce youth smoking has gained increasing support among prevention advocates1 who are working to reduce youth smoking initiation as a primary means of preventing addiction later in life. Nearly 1 in 10 high school youth experiment with cigarettes before age 13, and 4% have smoked regularly.2 These youth who initiate smoking in adolescence are at greater risk of becoming addicted to tobacco as adults.3 4 Conversely, research shows that the majority of adults who are addicted to cigarettes began smoking daily before age 18.4

In addition, many people who purchase cigarettes for minors are under 21 themselves.5 This suggests that prohibiting young adults under 21 from purchasing cigarettes would reduce the number of legal buyers in adolescents' social circles, thereby disrupting the supply of cigarettes to adolescents. Given that youth attitudes towards smoking, such as perceived risk and disapproval of smoking, have levelled off or lessened since 2007,6 reducing access to cigarettes is an important prevention strategy.

A recent report by the Institute of Medicine suggests that raising the minimum age of legal access to tobacco to 21 would result in a 12% decrease in the prevalence of tobacco use among today’s teenagers once they become adults.7 Another simulation of the impact of raising the legal smoking age to 21 in the USA suggests that adolescent smoking would be reduced by more than half in 7 years.8 There is broad public support for this effort, with 70% of adults in support of raising the minimum sales age to 21, including a majority of adults in all demographic and smoking status categories.9 Despite these promising projections, there is little direct evidence that raising the minimum purchase age for tobacco would lead to a decline in youth smoking.

In April of 2005, Needham, Massachusetts became the first town in the USA to raise the minimum tobacco sales age to 21; it was not adopted elsewhere in the USA until 2012 (DJ Wilson, Director, Massachusetts Municipal Association Tobacco Control Technical Assistance Program, personal communication, 7 November 2014.). In this paper, we use data from the MetroWest Adolescent Health Survey (MWAHS) to compare youth smoking trends from 2006 to 2012 in Needham with 16 surrounding communities that did not pass this ordinance. To the best of our knowledge, this is the first study to examine trends in the actual prevalence of smoking associated with raising the minimum sales age. We examined: (1) whether smoking declined more in Needham than in the nearby communities; and (2) whether the effect was specific to tobacco or if similar patterns were also found for alcohol.

METHODS
The MWAHS is a school-based census of youth in 25 communities in the Boston metropolitan area served by the MetroWest Health Foundation, having the primary goal of informing local prevention efforts. It has been administered biennially since fall, 2006 to students in grades 9–12. Of the 26 public high schools in the region served by the foundation, 18 began the survey in 2006. Of these, 17 high schools participated in all four surveys (2006, 2008, 2010 and 2012) and are included in this analysis. Student participation rates ranged from 88.8% to 89.6% over the four surveys, and the number of participants ranged from 16 385 to...
17 089 each year. Student gender and grade distributions were similar across all years.

**Measures**

The MWAHS instrument is a classroom-administered anonymous survey that incorporates items from the Center for Disease Control and Prevention's Youth Risk Behavior Survey. We examined two tobacco outcome measures: (1) current (30-day) cigarette smoking (any vs none) using the question “During the past 30 days, on how many days did you smoke cigarettes?”, and (2) current (30-day) purchase of cigarettes in a store (any vs none), using the question “During the past 30 days, how did you usually get your own cigarettes?” with seven response categories: did not try to get cigarettes/bought them in a store/gave someone else money to buy them for me/borrowed or bummed them/a person 18 or older gave them to me/took them from a store or family member/got them some other way. This latter measure of store purchases was restricted to current smokers under age 18 who gave a response other than that they did not try to get cigarettes in the past 30 days. We also examined current (30-day) alcohol use (any vs none) to determine if trends for smoking and drinking differed.

**Analyses**

To compare smoking outcomes in Needham with the 16 comparison communities, we conducted pooled cross-sectional analyses. First, we fit a series of Poisson regression models for each of the two smoking outcomes (current smoking and current purchase of cigarettes in a store) using generalised estimating equations (SAS Proc GENMOD). The models estimated three parameters: (1) differences in the proportion of youth reporting each outcome at baseline (2006), comparing Needham to the 16 surrounding communities ($\beta_1$); (2) change in these proportions across consecutive survey years (eg, 2006–2008, 2008–2010, and 2010–2012) across all study communities ($\beta_2$); and (3) whether the change over time differed between Needham and the comparison communities, the main parameter of interest ($\beta_3$). All models adjusted for two measures of school composition: per cent of students receiving free/reduced cost school lunch (an index of socioeconomic status) and per cent of Caucasian students (an index of racial/ethnic composition), both mean centred. For example, to compare the prevalence of current smoking between 2006 and 2008, we used data for these 2 years only and fit the following model:

$$\text{Smoking} = \beta_0 + \beta_1 \text{Needham} + \beta_2 \text{2008} + \beta_3 \text{2008} \times \text{Needham} + \beta_4 (\% \text{free lunch}) + \beta_5 (\% \text{non - white})$$

Similar models were fit comparing 2008 with 2010 and 2010 with 2012, with separate models estimated for the prevalence of current cigarette use, current purchase of cigarettes in a store and current alcohol use.

Second, we modelled the prevalence of current smoking, current store purchases of cigarettes and current alcohol use for years 2006–2010 only, with a linear term for study year because, as shown below, models including these years produced a consistent pattern of results. This final model was:

$$\text{Smoking} = \beta_0 + \beta_1 \text{Needham} + \beta_2 \text{Study year} + \beta_3 \text{Study year} \times \text{Needham} + \beta_4 (\% \text{free lunch}) + \beta_5 (\% \text{non - white})$$

where again $\beta_3$ is the coefficient of interest reflecting differences in change over time for Needham compared with the 16 comparison communities from 2006 to 2010. This model was fit for current smoking and current alcohol use for various subgroups (gender, race/ethnicity, grade) to examine whether the overall pattern of results was consistent across different student populations.

**RESULTS**

**Smoking behavior**

Thirty-day smoking prevalence is shown in figure 1A, along with the results of the Poisson regression models that summarise the findings for consecutive survey years. In 2006, current smoking did not differ significantly between Needham and the 16 comparison communities. From 2006 to 2008, current smoking decreased at a greater rate in Needham than in the comparison communities ($\beta_3 = -0.174$, $p<0.001$), and again from 2008 to 2010 ($\beta_3 = -0.278$, $p<0.001$). However, from 2010 to 2012, decreases in current smoking were significantly greater in the comparison communities than in Needham ($\beta_3 = 0.143$, $p<0.01$).

Results of additional analyses on current smoking restricting data to the time period 2006–2010 are presented in table 1. These analyses were restricted to the first three surveys because that was the period of time during which the decline in youth smoking was significantly greater in Needham relative to the comparison communities. In 2006, shortly after the minimum purchase age was raised in Needham, the estimated prevalence of 30-day smoking between Needham and the comparison communities did not differ ($\beta_3 = 0.062$, ns (non-significant)); the prevalence for all communities decreased significantly with time ($\beta_2 = -0.050$; $p<0.001$). Most notably, the overall decline in Needham’s 30-day smoking prevalence exceeded that of the comparison communities combined ($\beta_3 = -0.108$; $p<0.001$). This statistically greater decline in Needham was observed for all subgroups (females, males, Caucasian, non-Caucasian, and by student grade), with the exception of ninth grade youth, who reported low levels of smoking.

**Cigarette purchases in stores**

From 2006 to 2012, the percentage of youth under age 13 who purchased cigarettes in stores decreased significantly more in Needham (from 18.4% to 11.6%) than in the comparison communities (from 19.4% to 19.0%; $p<0.001$) (see figure 1B). The findings follow the same general pattern as current smoking: the rate of decline in purchasing cigarettes in Needham relative to the comparison communities was greatest for the period from 2006 to 2008 ($\beta_3 = -0.667$; $p<0.001$), lessened for the period from 2008 to 2010 ($\beta_3 = 0.200$; $p<0.05$), and did not show a significant change from 2010 to 2012 ($\beta_3 = 0.029$; ns). Since the pattern of findings was similar to that of current smoking, we also examined the overall change from 2006 to 2010; the decline in store purchases in Needham over this period was greater than in the comparison communities ($\beta_3 = -0.465$, $p<0.001$).

**Comparison to alcohol use**

Notably, the findings for current alcohol use were distinct from those for current cigarette smoking: from 2006 to 2012, there was a general decline in the 30-day prevalence of drinking, with no significant differences between Needham and the comparison communities over any of the consecutive survey waves (see figure 1C). Models for the combined years spanning 2006–2010 also show that there was no significant difference in the 30-day prevalence of drinking in Needham compared with the 16 comparison communities ($\beta_3 = -0.003$; ns (data not shown)).
Figure 1  Trends in current (A) cigarette smoking, (B) store purchases of cigarettes and (C) alcohol use in Needham vs 16 comparison communities, 2006–2012. *p<0.05, **p<0.01, ***p<0.001. †Among current smokers who tried to obtain cigarettes in the past 30 days. Note: The minimum purchase age was raised to 21 in 2005. The numbers between time points represent the β coefficients from a series of Poisson regression models that estimated the change in use/purchase in Needham relative to the 16 comparison communities over consecutive time periods (2006–2008, 2008–2010, and 2010–2012) controlling for race/ethnicity and socioeconomic status at the school level.

**DISCUSSION**

As more communities are debating whether or not to raise the minimum sales age of tobacco, it is important to examine the effects this policy may have on youth smoking and access to cigarettes. Comparing data from Needham and 16 surrounding communities, we showed a significantly greater decline in current smoking in Needham soon after the minimum purchase age was raised, overall and for males, females, Caucasian and

Table 1  Stratified models predicting 30-day cigarette smoking, Needham versus 16 comparison communities, 2006–2010

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Females</th>
<th>Males</th>
<th>Caucasian</th>
<th>Non-Caucasian</th>
<th>9th</th>
<th>10th</th>
<th>11th</th>
<th>12th</th>
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<tbody>
<tr>
<td><strong>Cigarette smoking</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Intercept</td>
<td>-1.922***</td>
<td>-2.032***</td>
<td>-1.831*</td>
<td>-1.947***</td>
<td>-1.794***</td>
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<td>-1.809***</td>
<td>-1.546***</td>
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<tr>
<td>β — target community (Needham)</td>
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<td>0.258***</td>
<td>-0.101</td>
<td>0.089*</td>
<td>0.068</td>
<td>0.046</td>
<td>-0.162*</td>
<td>0.022</td>
<td>0.270***</td>
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<tr>
<td>β — time</td>
<td>-0.050***</td>
<td>-0.084***</td>
<td>-0.025</td>
<td>-0.058***</td>
<td>-0.034*</td>
<td>-0.082*</td>
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<td>-0.044**</td>
<td>-0.023*</td>
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<tr>
<td>β — time × target community</td>
<td>-0.108***</td>
<td>-0.214***</td>
<td>-0.038*</td>
<td>-0.120***</td>
<td>-0.074**</td>
<td>-0.028</td>
<td>-0.059**</td>
<td>-0.134***</td>
<td>-0.192***</td>
</tr>
<tr>
<td>Percentage of free/reduced lunch</td>
<td>0.026***</td>
<td>0.032***</td>
<td>0.021***</td>
<td>0.030**</td>
<td>0.019***</td>
<td>0.044**</td>
<td>0.029**</td>
<td>0.024**</td>
<td>0.099**</td>
</tr>
<tr>
<td>Percentage of Caucasian</td>
<td>0.020***</td>
<td>0.026***</td>
<td>0.016***</td>
<td>0.021***</td>
<td>0.022***</td>
<td>0.032**</td>
<td>0.019***</td>
<td>0.015***</td>
<td>0.019***</td>
</tr>
</tbody>
</table>

The coefficient of time × target community represents the change in prevalence of 30-day use in Needham relative to the 16 comparison communities from 2006 to 2010. *p<0.05, **p<0.01, ***p<0.001.

β1, difference in log-odds of a 30-day prevalence of smoking between Needham and non-Needham communities at 2006; β2, change in log-odds of a 30-day prevalence of smoking per 2-year interval, from 2006 to 2010, in non-Needham communities; β3, difference in change of log-odds of a 30-day prevalence of smoking per 2-year interval, from 2006 to 2010, between Needham and non-Needham communities.
non-Caucasian youth, and for students in grades 10, 11 and 12. These trends were significant from 2006 to 2010, but not from 2010 to 2012, suggesting that raising the minimum purchase age may contribute to a greater decline in smoking in the years immediately following its adoption. As the smoking rate decreased in Needham, floor effects might have slowed the rate of decline in the period from 2010 to 2012; however, the smoking rate still declined by 18% in that final period.

In addition to lower levels of smoking, Needham youth also reported a significantly greater decline in purchasing cigarettes from stores in the years immediately following the legislation. This was true despite the fact that the youth population in Needham is very mobile, and closely neighbouring suburban communities maintained a minimum sales age of 18 throughout the study period. The decline in smoking in Needham may have been even more pronounced if surrounding communities had also increased the tobacco sales age to 21, as this would have further limited access. Youth who purchase cigarettes are more likely to supply cigarettes to other youth, and these social sources of tobacco have become more common as commercial restrictions have increased. Our findings suggest that by successfully reducing commercial availability of cigarettes to Needham youth, there was a decrease in underage purchases, as well as a potential disruption of the social availability of cigarettes to other youth, resulting in less smoking.

Also notable was the fact that alcohol use did not decline significantly more in Needham relative to the comparison communities during any portion of the study period. This indicates that the observed pattern of change appears to be specific to cigarette smoking and not due to a broader decline in substance use or reporting patterns. Enforcement may partially explain the apparent success of raising the minimum tobacco sales age in Needham. Effective enforcement is important in the success of laws designed to prevent tobacco sales to minors. In 2008, more than 18,000 compliance checks for cigarette sales to adolescents under the age of 18 were conducted in Massachusetts towns with state-funded tobacco control programmes, with an illegal sales rate of 8.3%. In Needham, 57 compliance checks were conducted with zero illegal sales to those under the age of 18 occurring. Increasing the tobacco sales age to 21 may have made it less likely that adolescents under the age of 18 would have been sold tobacco.

Several limitations are worth noting. First, this study was not initially designed to evaluate the minimum sales age legislation; the 2006 survey was administered more than 1 year after the legislation was adopted in April of 2005; therefore, there is no baseline measure of youth smoking. It also does not take into account the fact that the minimum sales age in Needham was increased in phases: it was first raised from 18 to 19 in April of 2003, then to 20 in April of 2004, and finally to 21 in April of 2005. Data reported from the Youth Risk Behavior Survey conducted in Needham (Needham Youth Risk Behavior Survey, unpublished raw data, 2001-2005) and the state of Massachusetts in 2001, 2003 and 2005 provide some information on trends prior to the current study. In Needham, current smoking was similar in 2001 (21%) and 2003 (20%), and then dropped to 15% in 2005, corresponding with the first two increases in the minimum sales age. During the same time period, smoking decreased in Massachusetts from 26% to 21% during 2001-2003, and then was stable at 21% in 2005. This suggests that the greater decline in smoking in Needham in this study may be a continuation of a trend that began earlier, possibly around the time when the minimum sales age was initially raised. Second, Needham also passed a law in 2009 prohibiting tobacco sales in pharmacies, which may have contributed to the smoking decline after the 2008 survey. With the exception of one other study community that banned pharmacy sales in 2011, neither Needham nor any of the comparison communities adopted any of the Massachusetts Tobacco Control Program’s five priority prevention policies during the study period (banning pharmacy sales, capping tobacco licenses, regulating single cigar purchases, banning flavoured tobacco sales and regulating electronic cigarette purchases) (M Paskowsky, Director of Surveillance and Evaluation, Massachusetts Tobacco Cessation and Prevention Program, Massachusetts Department of Public Health, personal communication, 6 November 2014). This study did not account for non-policy-related programmes in Needham or the other communities. Finally, this study analysed the use of cigarettes only and did not examine the use of other tobacco products.

Despite these limitations, this study shows promising results on the potential impact of raising the minimum sales age of tobacco. Further, raising the minimum age is relatively simple to implement given the existing mechanisms to restrict tobacco purchases and conduct compliance checks. As this approach is considered in more and more localities, our findings provide strong evidence of its potential to save lives by preventing youth access, initiation and ultimately addiction.

**What this paper adds**

- An increasing number of communities are implementing policies to raise the minimum sales age of tobacco to 21, but there is little direct evidence regarding whether this strategy is effective in reducing youth smoking.
- We have demonstrated that, after raising the minimum sales age in Needham, Massachusetts, smoking and cigarette purchases declined significantly more in Needham relative to 16 comparison communities.
- These findings are valuable to localities that are considering raising the minimum age, in showing that this approach has the potential to reduce youth access and initiation, with potentially life-saving benefits.

**Acknowledgements** The authors express their gratitude to the MetroWest Health Foundation, specifically Martin Cohen, CEO/president, and Rebecca Donham, senior program officer, for funding the MetroWest Adolescent Health Survey (MWASH) initiative and encouraging Education Development Center’s (EDC) efforts to conduct this analysis. They thank the Needham Public Schools and Needham Health Department for permitting public use of the Needham data and assisting with documentation of local substance use prevention activities. They also acknowledge Dr Robert Crane for encouraging them to engage in this analysis, and Professor George Papadonatos and Dr Michelle Rogers for biostatistical and programming guidance. Finally, they thank the MWASH team at EDC, including Erin Smith, Robert Coulter and Stefia Allord, and the many school administrators and staff who worked to ensure the successful administration of the MWASH since 2006.

**Contributors** All authors participated in the study conceptualisation. SKS originated the study, oversaw data collection and drafted portions of the manuscript. SLB and KD oversaw the analysis and contributed substantially to the manuscript writing. JPW contributed to the conceptualisation and manuscript editing. LO contributed substantially to the study design and manuscript writing.

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**Competing interests** None declared.

**Ethics approval** The study was approved in all years by the Institutional Review Board at Education Development Center, Inc, Waltham, Massachusetts, USA.
Provenance and peer review Not commissioned; externally peer reviewed.

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Community reductions in youth smoking after raising the minimum tobacco sales age to 21
Shari Kessel Schneider, Stephen L Buka, Kim Dash, Jonathan P Winickoff and Lydia O'Donnell

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doi: 10.1136/tobaccocontrol-2014-052207

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E-Cigs 2.0: The Next Generation

In the decade-plus since their U.S. introduction, electronic cigarettes, known as e-cigarettes or vapes, drastically evolved. E-cigarettes first resembled conventional cigarettes, and now have morphed into sleek gadgets, like the JUUL pictured at left, that have become the next big thing. Youth love them for the big hit of nicotine and their easily-hidden, deceptive looks. Their resemblance to USB flash drives prompted some schools to ban the drives as teachers can’t tell the difference between the two. Terms like “JUULing or jewelings” and “vaping” have entered the teen vernacular. Users have coined dedicated hash tags on social media and created videos of themselves doing vape tricks or blatantly vaping at school.

So, what’s an e-cigarette?

E-cigarettes are battery-operated devices that contain a mixture of liquid nicotine and other chemicals. The device heats this mixture, called e-juice, producing a nicotine aerosol that is inhaled. E-cigarettes are also called e-hookahs, e-pipes, vape pens, hookah pens or personal vaporizers.

FACT:

Nicotine is harmful to developing brains.

Nicotine interferes with brain development and can have a long-term effect on mental health. Even brief or intermittent nicotine exposure during adolescence can cause lasting damage. E-cigarette use by youth and young adults increases their risk of using conventional cigarettes in the future.

FACT:

E-cigarette use has increased among MN youth.

The youth tobacco usage rate has increased for the first time since 2000. This is because of the increase in the use of e-cigarettes. One in five youth (19.2 percent) currently use e-cigarettes, according to the 2017 Minnesota Youth Tobacco Survey. That is a 49 percent increase since 2014’s survey.

FACT:

E-cigarettes are not approved as a cessation tool.

E-cigarettes have not been proven to be better for quitting than existing programs. For those wanting to quit, there are FDA-approved quit aids such as gum, patches and lozenges, available at little or no cost through insurance companies or Minnesota’s statewide QUITPLAN® Services (www.quitplan.com).
The evolution of e-cigarettes

Early e-cigarettes resembled conventional cigarettes and were called "cig-a-likes." They evolved into pen-shaped devices with small tanks that held "e-juice." Tanks got bigger, morphing into the "mods," which give users more control of the device. Now, USB-shaped e-cigarettes such as JUUL and Myblu are often discreetly used by youth and pack a huge nicotine punch.

FACT: E-cigarettes are marketed toward youth.

Companies such as JUUL, NJoy, blu and MarkTen target youth with heavy marketing in magazines and social media. In Minnesota, 88.4 percent of students had seen ads promoting e-cigarettes in the past 30 days. E-cigarettes come in a variety of youth-friendly flavors, such as gummy bear, fruit punch, chocolate, cherry, crush and mango.3

(Images courtesy of trinketsandtrash.org)

FACT:

E-cigarettes are not harm-free.

E-cigarettes contribute to indoor air pollution. Studies have found nicotine, heavy metals, toxins, and carcinogens in e-cigarette aerosol.4

SOURCES


The Association for Nonsmokers-Minnesota is dedicated to reducing the human and economic costs of tobacco use in Minnesota.

(4/2018)

Association for Nonsmokers-Minnesota

2395 University Avenue W, Suite 310, St. Paul, MN 55114

651-646-3005 | www.ansrmn.org
$3.19 billion in smoking-related health care expenditures is a staggering figure on its own. Yet it’s only part of the story. The 2017 Health Care Costs and Smoking in Minnesota report also reveals significant costs related to lost productivity.

Each year, smoking costs Minnesota $4.3 billion in lost productivity. Lost productivity costs include the loss of regular earnings and the "replacement value" for unpaid work typically performed within the home. This figure factors in the years of life lost due to premature death, and is based on the 6,306 smoking-attributable adult deaths recorded in 2014.

These 6,306 deaths represent people who are no longer able to work, earn money for their families, or contribute to their communities because of cigarette smoking. Tying a cost to these deaths shows the tangible economic impact of smoking in Minnesota.

THE FINANCIAL IMPACT ON EMPLOYERS

While premature deaths place an enormous burden on families and society, a 2012 study (not commissioned by Blue Cross) also demonstrated a significant financial impact on employers. The study estimated that on average, businesses spend an additional $5,816 annually per employee who smokes. These costs include excess absenteeism, lower productivity related to nicotine addiction, excess health care costs and lost productivity due to smoking breaks.¹

$4.3 billion could also pay for:

- The annual utility bill for 282,152 MEDIUM BUSINESSES
  ($1,270/MONTH or $15,240/YEAR FOR A MEDIUM-SIZED BUSINESS)²

- Office supplies for 4.3 MILLION SMALL BUSINESSES
  with five employees
  ($200 PER EMPLOYEE PER YEAR)³

- IT spending for 434,343 EMPLOYEES
  ($9,900 AVERAGE IT SPENDING PER EMPLOYEE PER YEAR)⁴

- Professional development for 5.28 MILLION EMPLOYEES
  ($814 PER EMPLOYEE PER YEAR)⁵
ADDING UP THE NUMBERS

In total, nearly $7.5 billion in excess health care costs and lost productivity cost can be attributed to smoking on an annual basis. This is an alarming figure. It highlights the urgency of the efforts to continue driving down Minnesota’s smoking rate. It also represents a call to action to employers, government agencies and all Minnesotans.

WHAT YOU CAN DO

- **Support policies that reduce commercial tobacco use.** Consider including policies such as keeping tobacco prices high or requesting more tobacco prevention funding in your state policy agenda.

- **Talk to people in your community.** Find out what your neighbors and fellow community members know about the burdens smoking puts on our state.

- **Encourage your employees who smoke to quit.** Smoking cessation is often covered as a preventive benefit in employer-sponsored health plans. This means it is available at no additional cost to your employees, other than the premium they are already paying.**

* Under the Affordable Care Act, most plans must treat tobacco cessation as a preventive service. *That does not include grandfathered health plans, such as certain plans that were in existence before March 2010 and have not made significant changes since. (American Lung Association website, lung.org/our-initiatives/tobacco/cessation-and-prevention/tobacco-cessation-treatment-what-is-covered.html)

* Additionally, many Minnesota health plans, including Blue Cross and Blue Shield of Minnesota, offer telephonic tobacco-cessation coaching as a separate program outside of preventive health benefits. Those without health plan coverage can also get help quitting tobacco through QUITPLAN® Services [quitplan.com].

NOTES


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Minnesota

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X21749 (04/17)
Raising the Minimum Legal Sale Age for Tobacco to 21

The Estimated Effect for Minnesota

BY RAYMOND G. BOYLE, PHD, JOHN H. KINGSBURY, PHD, AND MICHAEL J. PARKS, PHD

A campaign to raise the minimum legal sale age for tobacco products from 18 to 21 years known as Tobacco 21 is having a nationwide impact, with at least 200 localities in 14 states having already implemented a Tobacco 21 policy. A 2015 report from the Institute of Medicine (IOM) estimated the effects of such policy on cigarette use at the national level; however, little is known about the expected effects for individual states. The purpose of this study was to consider the effect on smoking initiation in Minnesota if the minimum sale age were 21 in 2015. Estimates from the Minnesota Adolescent Community Cohort and Minnesota Adult Tobacco Survey were used to calculate the uptake of smoking in a hypothetical cohort of Minnesota adolescents 15 to 20 years of age. Expected reductions in initiation in the IOM report were used to calculate the effects of Tobacco 21 policy on smoking uptake in this cohort. Results revealed that raising the sale age to 21 in 2015 would prevent 3,355 young Minnesotans from starting to smoke.

Minnesota addresses tobacco use through a comprehensive approach that includes coordinating smoke-free policies, promoting normative changes in the social acceptability of tobacco use, establishing and expanding the reach of cessation programs, keeping the price of tobacco high and preventing young people from initiating tobacco use. The overall effect of these actions has been a 35% reduction in cigarette smoking in Minnesota since 1999; however, tobacco use remains popular among young adults in Minnesota and nationally.

The persistence of tobacco use among young adults, coupled with an evolving marketplace that includes new flavored products (e.g., flavored cigars and cigarillos) and new delivery methods (e.g., electronic cigarettes), has led to a desire for increased regulation of tobacco. In 2009 the U.S. Congress granted authority to the Food and Drug Administration (FDA) through the Family Smoking Prevention and Tobacco Control Act to regulate the manufacture, distribution and marketing of tobacco products.

Although this law prohibited the FDA from increasing beyond age 18 the national minimum sale age for tobacco products, state and local governments are able to raise the minimum sale age for tobacco. In addition, the law required a study of the health implications of a higher minimum age of legal access. The Institute of Medicine (IOM), now the National Academy of Medicine, conducted the study using national data to consider the effects of different minimum purchase ages (19, 21 or 25 years) and examine multiple outcomes, including preventing young people from starting and encouraging current smokers to quit smoking; and the health benefits from reduced smoking because of an increased purchase age. Nationally, increasing the purchase age to 21 would result in approximately 223,000 fewer premature deaths and 50,000 fewer deaths from lung cancer.

Adolescents younger than age 18 frequently obtain tobacco from social sources who are older than 18 but younger than 21. If tobacco could not be sold to 18- to 20-year-olds, they would be far less likely to provide tobacco to younger teens. By age 21, young adults are likely to have friends older than high-school age and, therefore, less likely to provide tobacco to minors.

The IOM's 2015 report is particularly important because it provides scientific guidance for state and local governments as they seek to protect public health. Although the report provided novel information on the expected effects of Tobacco 21 policy on a national level, it provided little
information about the expected effects at a state level.

The purpose of this study was to consider the effects on smoking initiation in Minnesota if the legal minimum sale age for tobacco products were 21. The specific goal was to calculate how many young people ages 15 to 20 years would not start smoking if the assumptions from the IOM report were applied to Minnesota.

Methods and Assumptions

Age groups: The 2015 IOM report examined effects among specific age groups: under 15 years, 15- to 17-year-olds and 18- to 20-year-olds. In this analysis, we limited the consideration to ages 15 and older.

Initiation rate: Cohort studies that follow participants over time provide the best estimates of smoking initiation. The Minnesota Adolescent Community Cohort (MACC) study was a population-based study of Minnesota youth ages 12 to 16 in 2000 who were followed until 2008. In 2003, approximately 19% of the cohort reported smoking in the previous month. Smoking among Minnesota high school students has fallen to about 10% since 2003. Therefore, in this analysis we used 10% as the estimate of smoking initiation among youth 15 to 17 years of age.

In a later analysis of the MACC data, 16% of the cohort who did not start smoking in high school took up smoking (smoked in the past month) between the ages of 18 and 21. This estimate of smoking uptake is consistent with the prevalence of smoking among young adults in the Minnesota Adult Tobacco Survey. For this analysis we used 16% as the estimate of 18- to 20-year-olds who would initiate smoking.

Estimated effects of Tobacco 21 policy: An increase in the minimum sale age is expected to apply to all commercial tobacco products; however, for the purpose of estimating effects similar to those in the IOM report, the scope of this study was restricted to cigarette smoking. In addition, the expected reduction in smoking initiation is thought to vary by age. The effect is expected to be larger among youth 15 to 17 years of age, with an expected reduction in the uptake of smoking of 25%. Among those 18 to 20 years of age, the expected reduction is 15%.

Variation by demographic variables: Smoking rates vary substantially by population groups in Minnesota. For example, in 2014 the overall adult smoking rate was about 14%, but within the urban American Indian population the smoking rate was 59%. There is a lack of literature on how smoking initiation would be affected in population groups with higher smoking rates if the sale age were increased. Thus, the estimate here is not adjusted by gender or other demographic variables (eg, race/ethnicity, income).

Enforcement: States are required to enact and enforce laws prohibiting the sale or distribution of tobacco products to individuals younger than 18 years of age. A major assumption of Tobacco 21 policy is that the same level of current enforcement and retailer compliance would remain in effect. Although Minnesota has a high rate of retailer compliance with current law, retailer cooperation has been lower in other places. For example, in New York City, compliance has fallen over time after Tobacco 21 policy was implemented.10

Calculation: In this analysis, we began with a cohort of Minnesota 15-year-olds in 2015—approximately 72,000. We estimated the smoking initiation rate in two periods: during high school (ages 15 to 17 years) and after high school (ages 18 to 20 years). Next, the reduction in smoking was calculated for each period if the sale age for tobacco were raised to 21 in 2015. We assumed that the smoking uptake in high school and after high school would not change in future years. The difference is reported as the number of young people 15 to 20 years of age who would not have started smoking.

Results

In 2015, the Minnesota population of those 15-year-olds was approximately 72,000. Of these, an estimated 7,200 will start smoking during their high school years. If the minimum legal sale age in 2015 were 21, an estimated 1,800 would not start smoking in high school.
Of those who finished high school without initiating smoking, 10,368 will begin smoking between ages 18 and 21. Under a Tobacco 21 policy, 1,555 fewer young people would start smoking after high school. Overall, 3,355 fewer young people would start smoking in this cohort of youth if a Tobacco 21 policy were in effect (see Figure). In other words, increasing the sale age to 21 would increase the proportion of nonsmokers in a cohort of 15-year-olds from 76% to 80%.

**Discussion**

Increasing the sale price to purchase tobacco products from 18 to 21 would have a positive effect on Minnesota, where tobacco use remains popular among young adults. Given that almost 95% of smokers start smoking by age 21, raising the age of sale to 21 years would prevent the vast majority of young people from becoming addicted to the nicotine in tobacco.

At least 200 localities in 14 states have raised the minimum legal sale age for tobacco products to 21 years. Notably, Hawaii was the first state (2015) followed by California (2016), and New York City (2013) is the largest city to adopt a Tobacco 21 policy. This policy has broad support and is viewed positively by both smokers and nonsmokers. In New York City, 60% of smokers and 69% of nonsmokers have supported the age increase. In a national sample of adults, 70.5% supported the increase. And in an online survey, 77.5% of never smokers and 70% of current smokers either strongly favored or somewhat favored raising the legal purchasing age to 21.

We acknowledge that some young people will begin using tobacco at a later age. The amount is unknown; but even if 5% eventually take up smoking, this would not diminish the overall effect of Tobacco 21 policy. In addition, while we have highlighted how Tobacco 21 would inhibit more than 2,300 youth from initiating smoking, it is important to note the policy could have additional and more indirect benefits. Youth tend to respond more strongly to smoking bans than to other types of tobacco control in part because a ban is an unambiguous anti-tobacco message that indirectly influences social norms, creating a social environment that discourages health-risk behavior. Put differently, the effects of Tobacco 21 policy would extend into the future as new cohorts of young people do not start using tobacco.

Our analysis considered only cigarette smoking; but a Tobacco 21 policy would apply to all tobacco products. Whether the effects of raising the purchasing age to 21 would be similar across all demographic and racial/ethnic groups is not known. Similar to the IOM, we did not adjust the Minnesota estimate for any variation by demographics other than age. This question should be examined when there is sufficient data on communities that have implemented the policy.

**Conclusion**

Raising the minimum sale age for tobacco to 21 would prevent the uptake of smoking among younger and young adults, subsequently reducing smoking prevalence over time. Applying national estimates from the 2015 IOM report to Minnesota, we found that implementing a Tobacco 21 policy could have a marked impact on smoking initiation among Minnesota’s young people. Tobacco 21 should be considered an effective strategy for reducing smoking initiation. Preventing smoking among youth remains a primary focus for reducing morbidity and mortality as well as promoting health across the lifespan. MM

Raymond Boyle is director of research programs for CleanWay Minnesota. John Kinsbury and Michael Parks are research scientists for the Minnesota Department of Health.

**References**

Retail Impact of Raising Tobacco Sales Age to 21 Years

The majority of tobacco use emerges in individuals before they reach 21 years of age, and many adult distributors of tobacco to youths are young adults aged between 18 and 20 years. Raising the tobacco sales minimum age to 21 years across the United States would decrease tobacco retailer and industry sales by approximately 2% but could contribute to a substantial reduction in the prevalence of youths’ tobacco use and dependency by limiting access. (Am J Public Health. 2014;104:e18–e21. doi:10.2105/AJPH.2014.302174)

RECENT RESEARCH HAS HIGHLIGHTED the susceptibility of the young adult brain to rapid nicotine addiction.1,2 While individuals are still experimenting with tobacco use and before they are aware of their own level of addiction, they first want, then crave, then need cigarettes, at which point they are unable to quit.3 Individuals who begin smoking at a young age are more likely to become addicted, progress to daily smoking, become heavier tobacco users as adults, and have difficulty quitting.3,4 The US Surgeon General has expressed concern about the potential long-term cognitive effects of exposure to nicotine during brain development with the potential for lasting adverse consequences.5

For many years, public health strategies focused on preventing the onset of nicotine addiction by relying on the strict enforcement of laws that prevent the sale of tobacco to minors younger than 18 years. Indeed, successful efforts to limit tobacco access of minors by disrupting the sale of tobacco to minors have made an important contribution toward reductions in the prevalence of tobacco use among minors.6 A factor that might limit the impact of preventing the sale of tobacco to minors is the fact that, in most communities, 18- to 20-year-olds who can legally purchase cigarettes provide them to younger friends and family members.7 The majority (59%) of 18- and 19-year-olds have been asked by someone younger than 18 years to buy cigarettes for them.8 Also, high-school students are less likely to have 21-year-old adults than 18- to 20-year-old adults in their social circles, suggesting reduced opportunities to access tobacco from older buyers.9 Inhibiting this well-established distribution cycle provides one rationale for increasing the legal age for tobacco sales to 21 years.

Another rationale stems from the 2012 Surgeon General’s report finding that almost 90% of smokers in the United States began smoking before the age of 21 years.4,5 The report concludes that if young people can remain free of tobacco, most will never start to smoke. Currently, people who reach the age of 21 years as a nonsmoker have a minimal chance of ever becoming a smoker. For these reasons, there is interest in extending the benefits of restricting tobacco sales to individuals younger than 21 years.

RECENT CHANGES IN US TOBACCO SALES AGE LAWS

In consideration of the potential beneficial public health impact of raising the tobacco sales age to 21 years, some US cities and counties (New York City; Suffolk County, NY; Hawaii County, HI; and Needham, Arlington, Sharon, Canton, Ashland, Wellesley, Dedham, Dover, Norwood, Scituate, West Boylston, Hudson, Winchester, Wakefield, Reading, and Melrose counties, MA) have already approved legislation for raising the age to 21 years, and other cities, counties, and states are making legislative or regulatory efforts to approve similar proposals. With a single exception, all of these measures were adopted in either 2013 or 2014. Clearly, the idea of increasing the minimum tobacco sales age to 21 years has momentum.10

The tobacco industry and retailers argue that raising the sales age to 21 years will significantly hurt businesses that depend on tobacco sales.12,13 We sought to determine the proportion of the current legal tobacco market (≥18 years) that is consumed by 18- to 20-year-old smokers to determine the potential impact to retailers if the tobacco sales age of 21 years was universally implemented and enforced.

We obtained self-reported data regarding cigarette consumption by age from the 2011 National Health Interview Survey (NHIS). The survey includes both citizen and noncitizen noninstitutionalized civilian American households. We analyzed data from 33,014 respondents who were asked questions about smoking in the NHIS Sample Core Adult Health Behavior Section (≥18 years) database. Current smokers were identified as having smoked at least 100 cigarettes in their lifetime and still smoking when surveyed. We sought to calculate the volume of cigarette products consumed by individuals, between the ages of 18 and 20 years. Because the data were derived from self-reported cigarettes smoked, it accounts for any tobacco used to “roll your own,” as well as small cigars that are functionally identical to cigarettes. Tobacco consumed by 15- to 17-year-old smokers was not included as sales to this population are already illegal under federal law.
We used SAS version 9.3 (SAS Institute, Cary, NC) to conduct data analysis. We calculated mean average daily and annual cigarette consumption for current smokers aged 18 to 20 years and those aged 21 years or older to determine the proportion of total cigarette consumption that is attributable to 18- to 20-year-old smokers.

In our sample of 33,014 (Table 1), there were 6138 (18.6%) current smokers, 188 (5.2% smoking prevalence) in the 18- to 20-year-old group and 5950 (18.7% smoking prevalence) in the group aged 21 years and older. The 18- to 20-year-old group of current smokers were 49% female, 77% White, 18% Hispanic, and 16% Black, and the current smokers aged 21 years or older were 48% female, 77% White, 12% Hispanic, and 17% Black. About 37% of 18- to 20-year-old respondents lived with 3 or more household members compared with 4% of those aged 21 years or older (P < .001).

Table 2 demonstrates the lower daily cigarette consumption of those aged 18 to 20 years versus those aged 21 years or older (6.6 per day vs 12.5 per day; P < .001). We also found out that 18- to 20-year-old smokers make up 3.6% of the total adult smoking population but account for just 2.12% of cigarette consumption.

**EFFECTS ON TOBACCO INDUSTRY AND RETAILERS**

If one assumes that the number of cigarettes smoked by 18- to 20-year-old smokers corresponds to the number of cigarettes sold to them or to others on their behalf, the maximum immediate loss of sales would be just 2% of the total cigarette sales in the United States. If we assume that this intervention would have a long-term impact on the prevalence of smoking by adolescents and young adults, the gradual aging of this low-tobacco-use cohort would give plenty of time for small businesses to adjust to changing market conditions were the minimum legal tobacco sales age raised to 21 years.

Similar objections were raised decades ago when the national minimum drinking age was proposed to be raised to 21 years. After the law was passed and implemented by most states in the 1980s, a reduction in drinking, problematic drinking, driving and alcohol-related crashes among youths was seen. The alcohol industry still survived by adapting to the changing market despite the loss of sales to those younger than 21 years. Furthermore, retailers are already required under federal rules to check the ID of anyone who appears to be younger than 27 years seeking to purchase tobacco, so an age-21 requirement would place no additional compliance burdens on their staff. The fact that more than one third of the 18- to 20-year-old young adults live with 3 or more individuals highlights the additional potential for blocking the transfer of tobacco use behavior to other household members.

**OVERALL IMPLICATIONS**

The evolving neuroscience of the young adult brain demonstrates...
TABLE 2—Average Cigarette Consumption by Age for Current Smokers and Percentage of 18- to 20-Year-Old Smokers as a Percentage of Total Adult Cigarette Consumption: 2011 National Health Interview Survey, United States

<table>
<thead>
<tr>
<th>Variable</th>
<th>All Participants Aged ≥ 18 Years, Mean of No.</th>
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<th>Participants Aged ≥ 21 Years</th>
<th>Participants Aged 18-21 Years, % of Total Sample</th>
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<td>12.38</td>
<td>8.57</td>
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</tr>
<tr>
<td>average annual cigarette consumption per smoker</td>
<td>4520.28</td>
<td>3131.62</td>
<td>4546.16</td>
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<td>No. of current smokers</td>
<td>6138</td>
<td>188</td>
<td></td>
<td>3.06</td>
</tr>
<tr>
<td>Total no. of cigarettes smoked in 2011</td>
<td>27,745,475</td>
<td>588,745</td>
<td></td>
<td>2.12</td>
</tr>
</tbody>
</table>

Note. Current smokers included both daily and nondaily users, and lifetime consumption of greater than 100 cigarettes. The same size was n = 33,014 participants, including n = 6138 current smokers; 18.6% of the population reported lifetime use of greater than 100 cigarettes and some level of current use.

a special susceptibility to even experimental tobacco use. Low minimum sales age laws exploit that susceptibility to addict youths to cigarettes for life, with relatively few cigarettes. Meanwhile, raising the sales age would appear likely to have a significant effect on current tobacco use rates among youths, decreasing the chances of a person ever becoming tobacco dependent. By some estimates, raising the tobacco sales age to 21 years would reduce tobacco use prevalence by 55% for 15- to 17-year-old adolescents within 7 years.

In 2005, Needham, Massachusetts, was the first town in the country to implement the law to raise the tobacco sales age to 21 years. Following the implementation of the law, the Youth Risk Behavior Surveillance System and Metro West Health Foundations’ Adolescent Health survey data showed a 47% reduction in Needham high school smoking rate in the 4 years (2006–2010) after the legislation was implemented. Of note, no tobacco retailers have gone out of business in Needham since implementation.

LIMITATIONS

Although we have not specifically accounted for other non-cigarette tobacco or smokeless tobacco sales, we have accounted for any tobacco that is smoked and self-reported as a cigarette, the form that has the highest disease burden. According to the Centers for Disease Control and Prevention’s Morbidity and Mortality Weekly Report, about 90% of all combustible tobacco consumption is cigarettes among adult smokers.

In addition, 2012 National Youth Tobacco Survey data indicate that the majority of tobacco consumption remains cigarettes, and high-school students in the young adult age range (>17 years) are 3 times more likely to smoke cigarettes daily than use any other combination of cigars, bids, and cigarillos on a daily basis.

Adult versus youth smokeless tobacco use rates and amount consumed are much harder to quantify and we intentionally excluded these to avoid reporting bias. In addition, the US retail cigarette market is more than 30 times greater than the smokeless tobacco market, making any adult versus youth consumption discrepancy unlikely to change our overall estimate of the tobacco sales impact.

CONCLUSIONS

Overall, a small percentage of total tobacco sales (2%) is attributed to those younger than 21 years, yet most lifetime tobacco users start smoking before the age of 21 years. Early tobacco initiation during young adulthood comes with a high probability of addiction, progression to daily smoking, and heavier tobacco use in adulthood, and has long-term harmful health consequences. Action on this critical issue of raising the minimum tobacco sales age to 21 years across the United States has excellent public health and ethical rationales, and costs almost nothing to implement through existing regulatory frameworks.

Contributors

J.P. Winickoff originated and designed this study, drafted the article and revised it, and takes full responsibility for the final submission. L. Hartman, M. Gottlieb, E. Nahi-Burra, and J.R. DiFranza made substantial intellectual contributions to the conceptualization and design of the study, and to editing the authors. M.L. Chen advised on and conducted data analyses, and participated in the interpretation of results. All authors approved the final article as submitted.

Acknowledgments

This study was supported by the National Institutes of Health, National Cancer Institute grant R01-CA127127 (J.P. Winickoff) and 2R01-CA087571 (M. Gottlieb), the National Institute on Drug Abuse, and the Agency for Healthcare Research and Quality.

Note. The funders had no role in the design or conduct of the study analysis and interpretation of the data, or preparation, review and approval of the article.

Human Participant Protection

This study was exempt from institutional review board approval because it is a secondary data analysis of a publicly available data set.

References

4. US Department of Health and Human Services. Preventing tobacco use...


6. DiFranza JR. Which interventions against the sale of tobacco to minors can be expected to reduce smoking? Tob Control. 2012;21(4):436–442.


15. Cigarettes and smokeless tobacco, 21 CFR § 1140.140(b).


Research shows that youth access laws successfully reduce youth tobacco use when they are well enforced and disrupt the sale of tobacco products to minors.1 Today, all 50 states and the District of Columbia have laws that restrict the sale of tobacco products to minors. But in addition to restricting the sale, 45 states and the District of Columbia have laws that also prohibit the purchase and/or underage possession (PUP) of tobacco products by minors. Penalties for youth who violate a PUP law typically include a fine but may also include other penalties like community service, attending mandatory smoking education or cessation programs, or the suspension of a driver’s license or permit.2 Only five states—Maryland, Massachusetts, Nevada, New Jersey, and New York—do not have PUP laws.3

Some states passed PUP laws with the intention of reducing youth smoking by making kids more personally responsible for buying and using tobacco products. Penalizing children, however, has not been proven to be an effective strategy for reducing youth smoking; and some experts argue that PUP laws could actually detract from more effective enforcement measures and tobacco control efforts.4

PUP laws also unfairly punish and stigmatize children, many of whom became addicted at a young age as a result of the tobacco industry’s aggressive marketing to kids. In this way, PUP laws shift the blame from the industry’s irresponsible marketing to its victims. Penalties against youth become even more unreasonable when little is done to counter the tobacco industry’s targeted marketing to kids. Rather than treat children as the wrongdoers, youth access laws should focus on limiting access to tobacco products by conducting ongoing retailer compliance checks with strong penalties for sales to minors.

Additional Concerns about PUP Laws

- Penalizing youth can divert enforcement officials’ attention from stopping retailers from illegally selling tobacco to kids in the first place. PUP laws are more difficult to systematically enforce than sanctions against retailers, especially since PUP laws rarely provide additional enforcement resources. It is easier and more effective to conduct compliance checks for retailers, who are fewer in number compared to youth and whose locations are both known and constant.5

- The ease of discretely possessing and using some tobacco products makes PUP laws more challenging to enforce than laws restricting sales to minors. Similarly, the perceived risk among youth of getting caught and punished is likely too low to have a meaningful impact on deterring tobacco use. In fact, there is little evidence showing that PUP laws have been enforced well enough to reduce youth smoking.6

- Tobacco companies and their allies have a history of supporting PUP laws as alternatives to other laws that would produce greater declines in youth smoking, such as increasing the price of cigarettes. Tobacco companies have also promoted the passage of PUP laws in order to get additional provisions enacted that make implementing or enforcing additional tobacco control measures more difficult (e.g., preemption of strong local laws/ordinances).7

- Despite the fact that many youth smokers are addicted, making it difficult for them to quit, few PUP laws include provisions ensuring that quit smoking resources are made available to them. Some research even suggests that penalizing youth could deter them from seeking support for cessation.8 Promoting interventions that provide cessation resources for youth interested in quitting could be a more beneficial alternative.

Youth Access Laws Should Emphasize Restricting Sales to Minors

Youth access laws that restrict sales to minors are better supported by research as a way to reduce youth smoking than laws that focus primarily on penalizing youth for purchase or possession of tobacco. While
PUP laws may have some potential if combined with laws banning sales to minors, evidence of their effectiveness still is lacking, and many concerns about how to effectively implement them remain.

Regardless of whether a state chooses to implement PUP provisions as part of its youth access law, rigorous enforcement of restrictions against sales to minors is critical to minimizing the accessibility of tobacco products and ultimately, reducing youth tobacco use. The most successful youth access programs incorporate routine retailer compliance checks which use minors to make attempted tobacco purchases.⁹

Campaign for Tobacco-Free Kids, November 18, 2014 / Lorna Schmid:

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¹ DiFranza, JR. “Which interventions against the sale of tobacco to minors can be expected to reduce smoking?” Tobacco Control, doi:10.1136/tobaccocontrol-2011-050145, published online first October 12, 2011.
⁹ DiFranza, JR. “Which interventions against the sale of tobacco to minors can be expected to reduce smoking?” Tobacco Control, doi:10.1136/tobaccocontrol-2011-050145, published online first October 12, 2011.
The Station
2280 Cty Rd I
Mounds View, MN  55112

July 31, 2018

TO: Mayor and City Council Members

RE: Changing the Legal Age to Buy Cigarettes

I want to tell you a true story -

March 1, 1966, I turned 19, I went home from working my job, got a draft notice in the mail. I spent two years serving our country. Lots of my friends and relatives did not come home like I did. Now 50 years later, you want to change a law that these men and women need to be 21 to buy cigarettes?

We have people right now in the military serving our country that are 18-20 years old. It's alright for them to serve our country, but not have the right to choose to smoke a cigarette? I am speaking out for them! I am opposed to this, not because of my store, I don't think I will lose any sales, because they will have someone else buy cigarettes for them.

When my 18-20 year old customers come in complaining; I will give them your name, and phone number, and you can explain to them WHY you voted as you did.

Also in regard to Kwik Trip -

At the last council meeting, council member Bill, stated that “property values go up when located by gas/convenience stores.” I have researched this, and this is untrue. Gas stations/convenience stores are the SECOND worst thing for property values.

Leon Theis, The Station

Leon Theis
City of Mounds View Staff Report

To: Honorable Mayor and City Council
From: Nyle Zikmund, City Administrator
Item Title/Subject: Cable Broadcast Schedule

Introduction:
Following up on our April and May retreat discussion on balancing staffing and budgetary concerns, council consensus was to conduct a trial period from September thru the end of the year.

Discussion:
An update since that discussion includes a new director for CTV coming on board, a setback on the installation of the new equipment with a current completion date of September 1, and we had no interest from current staff to take on cable back-up duties; thus, it was included as part of the job description for the new receptionist.

Recommendation:
Beginning in September, live broadcast/web stream the following meetings:
- Council
- EDA meetings
- Planning and Zoning

Have Staff Video Record providing Vanessa ability to playback the following:
- Workshop
- Charter
- Parks, Recreation and Forestry
- Any other meetings such as Comprehensive Plan

Respectfully submitted,

Nyle Zikmund
City Administrator
RESOLUTION NO. XXXX

CITY OF MOUNDS VIEW
COUNTY OF RAMSEY
STATE OF MINNESOTA

RESOLUTION APPROVING A TEMPLATE FOR RESOLUTIONS TO BE USED FOR FUTURE REFERENCE

WHEREAS, the City Council reviewed and approved the template at its work session on April 4, 2012; and,

WHEREAS, as a result of the template existence, a suitable number of supporting clauses should be used to support a reasoned and justified conclusion; and,

WHEREAS, in recognition of these additional clauses, a certain action would be appropriate and consistent with the City’s adopted policies.

NOW, THEREFORE BE IT RESOLVED THAT the Mounds View City Council approves the format and structure of the template attached as Exhibit A and includes additional clauses as may be necessary.

NOW, THEREFORE BE IT FURTHER RESOLVED THAT the Mounds View City Council authorizes the preparation and execution of the template by the Mayor and City Administrator.

NOW, THEREFORE BE IT FINALLY RESOLVED THAT the cost associated with the execution of the template shall be paid from Account # 100-4160-3030 and that the 2012 Budget shall be amended accordingly.

Adopted this 25th day of January 2010.

________________________________________
Joe Flaherty, Mayor

ATTEST:

________________________________________
James Ericson, City Administrator

(seal)
## SBMFD Decision Matrix Analysis

**Question:** Shall we submit a proposal for providing service to the City of Fridley

<table>
<thead>
<tr>
<th>Factors to Consider</th>
<th>Go</th>
<th>No-Go</th>
<th>Options</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do we have the time and resources available?</td>
<td>CEO preparation along with SBM staff support</td>
<td>Four staff members required for 4 weeks</td>
<td>Outsource to consultant</td>
<td>5</td>
</tr>
<tr>
<td>Is the project in our area of expertise?</td>
<td>Proposal is same service model as Blaine/SBM model</td>
<td>Proposal requires Public Safety Officer Model</td>
<td>None</td>
<td>5</td>
</tr>
<tr>
<td>Is the project profitable for us, based on budget and fees?</td>
<td>Creates small net profit to SBMFD annually</td>
<td>Causes loss to SBMFD annually</td>
<td>If budget shortfall exists, additional funds be requested from City of Fridley</td>
<td>5</td>
</tr>
<tr>
<td>Would the project present a possibility to expand our expertise or market?</td>
<td>Expands SBMFD expertise and service model to larger market</td>
<td>Does not expand to larger market</td>
<td>Partial contractual service provided for Northern Fridley from SBM Stations</td>
<td>5</td>
</tr>
<tr>
<td>Is the cost to develop proposal reasonable, relative to odds of winning the project?</td>
<td>Proposal development approximately 30 hours of staff time</td>
<td>Proposal development requires 100 hours of staff time</td>
<td>Outsource to consultant</td>
<td>5</td>
</tr>
<tr>
<td>How well do we know the client’s needs and preferences?</td>
<td>Needs known to provide proposal and start revision process</td>
<td>Needs not specifically known</td>
<td>None</td>
<td>5</td>
</tr>
<tr>
<td>Is our competition better prepared or better connected, relative to this project?</td>
<td>SBMFD is the only competitor in the proposal process</td>
<td>More than one competitor in proposal process</td>
<td>None</td>
<td>5</td>
</tr>
<tr>
<td>Do we have the internal or outsourcing resources to pull this project off effectively?</td>
<td>Proposal merges current FFD staffing into SBMFD, staffing available is adequate</td>
<td>Proposal requires hiring all new staff for FFD</td>
<td>Contract with other Fire Service personnel to fill needs</td>
<td>4</td>
</tr>
<tr>
<td>Does this project fit our corporate strategy and goals?</td>
<td>Proposal is within SBMFD Strategic Plan, Goal 6, Strategy 3</td>
<td>Proposal does not align with SBMFD Strategic Plan</td>
<td>Modify existing plan</td>
<td>5</td>
</tr>
<tr>
<td>How would our present clients react if we took on this project?</td>
<td>Protect current Contract/JPA. Fridley separate Contract</td>
<td>Add Fridley to current Contract/JPA</td>
<td>Neogotiate with current client to include Fridley in current Contract/JPA</td>
<td>5</td>
</tr>
<tr>
<td>What are the odds of winning this project?</td>
<td>SBMFD proposal reduces cost to taxpayers and provides more efficient and effective service</td>
<td>SBMFD does not reduce cost to taxpayers nor provide more efficient/effective service</td>
<td>Revise proposed budget</td>
<td>4</td>
</tr>
<tr>
<td>Is the project’s funding certain?</td>
<td>Proposed Operations and Capital Budget fully funded</td>
<td>Proposed Operations and Capital Budget not fully funded</td>
<td>Revise proposed budget</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Score (Out of a Possible 60): 56
Minimum score to proceed = 48
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VI. SUMMARY
EXECUTIVE SUMMARY

Providing all hazard response and Community Risk Reduction services is a dynamic and a critical service for all communities. Traditional service models are the norm for most organizations, which have served their communities well for a very long time. However, circumstances may dictate an unconventional solution to providing service may be in order. The SBMFD provides unconventional and unique services to its stakeholders. While not an exact fit for each community, services primarily depend on risk profile, the size of the community and other factors.

The SBMFD has operated an unconventional service model for decades, which includes unique staffing for operations as well as innovative Community Risk Reduction programs, coming together to create a balance between effectiveness and efficiency. This balance is dependent upon many factors including response profile, apparatus and equipment, station locations, personnel, corporate structure, leadership and organizational culture.

This proposal is lengthy and does not cover all facets of contractual language or all parts of the implementation of a new service model. However, it does provide details as to what the City of Fridley, and it stakeholders, can expect with the SBMFD leading the Fire Department within their community. This proposal will create more questions about the implementation of the different items contained within. Proper and effective implementation of this proposal will require significant levels of communication as well as the collaboration of many different, and equally important, internal and external stakeholders.
Receipt of this proposal does not imply any agreement between any parties, but, is designed to provide information and a strategic picture of the organizational framework, deployment of resources and the financial aspect of such a merger. It is important to note that any contract entered into by the SBMFD and the City of Fridley, must first be approved by the SBMFD Board of Directors, Spring Lake Park City Council, Blaine City Council and Mounds View City Council.

SBMFD PROFILE

The Spring Lake Park-Blaine-Mounds View Fire Department (SBMFD), also known as the Spring Lake Park Fire Department, Incorporated, was founded in 1944 and serves three communities totaling 85,000 permanent residents with a service area of 40 square miles. The SBMFD is a non-profit corporation that receives its annual funding from the three cities it serves.

Our mission, vision and values guide our organization. Our mission is the reason our organization exists: our purpose. Our vision is where we want to be: our future. Our values are the guiding principles we follow each day and provide the foundation for attaining our vision.

Our Mission

The Spring Lake Park-Blaine-Mounds View Fire Department will preserve life and property by providing exceptional fire prevention, innovative public education and effective all hazard emergency response, ensuring unparalleled customer service.

Our Vision

The Spring Lake Park-Blaine-Mounds View Fire Department will be an industry leader in fire prevention, all hazard emergency mitigation and customer service by possessing an innovative spirit; exhibiting steadfast dedication to the wellbeing of our personnel and the communities we
serve; exercising competent and caring leadership at all levels; championing collaboration and embracing continual organizational change.

Our Values

The Spring Lake Park-Blaine-Mounds View Fire Department is a high performing and dynamic organization, which exceeds expectations of all our stakeholders. Our personnel are dedicated to providing innovative and exceptional services, now and in the future. To achieve our vision, we accept that we must:

- Provide innovative fire prevention and all hazard emergency response through continuous program development, implementation of industry best practices, use of cutting edge technology and integration of emerging methodology.
- Create high performance personnel through intensive training, professional development, mentorship and altruistic leadership.
- Provide an agile, effective and efficient force by ensuring personnel possess state of the art equipment, employ sound tactics and strategy, and utilize efficient and effective resource management.
- Provide the highest level of customer service with integrity, pride and commitment, which exceeds the expectations of all external and internal stakeholders.
- Grow our business, capitalizing on new opportunities by leveraging our organizational strengths, resources and our personnel’s knowledge, skills and abilities.
- Maintain our unique service model; ensuring stakeholders receive exceptional service while striving for equity between efficiency and effectiveness.
- Create an organizational culture that is built upon integrity, selfless dedication to service, honesty and extraordinary excellence.
- Engage in collaborative teamwork at all levels to ensure the success of our programs as well as those of our response partners.

The SBMFD operates out of five fire stations utilizing 6 Engines, 2 Quints, 3 Rescues/RIV, 1 Tender, 1 Command Vehicle and numerous support vehicle. Operations staffing currently consists of 12 full-time SBMFD employees and 55 volunteer firefighters. In addition, the City of Blaine has 12 full-time City Responders who operate out of Station 5 at Blaine City Hall.

The SBMFD is governed by a Board of Directors who are made up of:

- Three appointed representatives from the City of Blaine
- One appointed representative from the City of Mounds View
- One appointed representative from the City of Spring Lake Park
• Two representatives from the SBMFD, who are not full-time employees

The Board of Directors serve terms of three years and are responsible for the fiscal oversight of the SBMFD as well as the CEO/Fire Chief. The CEO/Fire Chief is responsible for day to day operations and fiscal management of the SBMFD. The SBMFD receives its authority through and executed contract and Joint Powers Agreement with the three cities.

COMMUNITY PROFILE

The City of Fridley was incorporated in and is a community of 27,500 people located within the Twin Cities greater metropolitan area in Anoka County. The City of Fridley is a mixed community with wide variety of residential, commercial and industrial facilities and is the home to major international manufacturers/distributors such as Medtronic, Cummins, Target and United Defense. In addition, Fridley contains significant rail infrastructure including BNSF’s Northtown Railyard.

CURRENT SERVICE

The City of Fridley Fire Department (FFD) was organized in 1951 with the first full-time fire chief appointed in 1965. Currently, the Fridley Fire Department provides all hazard response from three stations which house three engines, one ladder and multiple support vehicles. The FFD staffing includes seven full-time personnel which includes the positions of Fire Chief, Assistant Fire Chief, Fire Marshal, three Fire Captains and an executive assistant. Volunteer/Paid-on-Call staffing is provided by approximately 24 personnel who respond from their homes to augment the FFD’s full-time force. The three Fire Captains provide 24-hour staffing along with a duty crew which consists of a varied number of paid-on-call personnel. In 2017, the FFD responded to 3,570 calls for service which includes 2,403 Emergency Medical Service type calls.
SERVICE PROPOSAL

In May of this year, City of Fridley Public Safety Staff requested the Spring Lake Park-Blaine-Mounds View Fire Department (SBMFD) provide a proposal for providing service to the City of Fridley. As an organization, our position is that we will provide service proposals only to organizations who request such work. In addition, the staff at SBMFD recognizes the many complexities and political implications of such a proposal. For this model to succeed, the proposal must be implemented in whole. Implementation can be accomplished over a period of time to maintain organizational flexibility, provide for feedback during the transition and allow for proper communication to all involved. During this type of organizational transition, constant communication to all parties affected is critical to success.

This proposal aligns with the SBMFD's sixth strategic goal, which is Service Growth - Ensure organization is prepared for future growth, changing demographics and providing for additional service demands. This strategic goal is supported three strategies and multiple action steps to achieve the goals.

Organizational Structure, Administration

The SBMFD operates within a hierarchical organizational structure, ensuring a clearly defined chain of command and communication flow. However, full-time SBMFD job descriptions and positions are unconventional as compared to traditional fire departments. All full-time employees' primary duty is emergency response, but, their position responsibilities often include various prevention, administration and operational aspects. Besides emergency response, the full-time staff's primary purpose is to support the Volunteer/Paid-on-Call side of the organization.
Creating an organizational structure which will blend with the current SBMFD structure is paramount to identifying clear lines of authority, communication flow and organizational parity (Appendix 1). Reorganization of the current FFD organizational structure will be necessary. Major changes to the Paid-on-Call/Volunteer structure would be the addition/modification of the following positions at both FFD Fire Stations 1 and 2:

- Battalion Chief
- Captain
- Lieutenant

The full-time organizational structure would be modified and contain newly defined positions which are positions currently identified within the SBMFD, except for the position of Division Chief. The FFD Division Chief would oversee daily operations of the Fridley Division, coordinating needs and communicating with both the SBMFD Assistant Chief of Operations and Assistant Chief of Administration who provide oversight.

If this plan is accepted and implemented, all Fridley Fire Department positions will become positions within and employed by the SBMFD and will no longer be employed by the City of Fridley. This includes any volunteer/paid-on-call positions. All administrative/human resource procedures/policies followed will be those of the SBMFD.

The City of Fridley Fire Department will remain in name the Fridley Fire Department, however, apparatus colors, equipment, some apparatus insignia and other items will be changed, as funding allows, to match current SBMFD equipment. Reporting structure with the City of Fridley, yet to be determined.

**Operational Deployment**

The SBMFD is an operationally aggressive fire department, understanding that quickly and effectively mitigation of our customer’s problem is the best way to limit damage and reduce the incidence of injury and death. The SBMFD maintains this aggressive profile by using proper
risk management assessment as well as operating a very robust and strongly structured incident command system. Dependent upon community hazard profile(s), the SBMFD works ardently to find the balance between effectiveness and efficiency when it comes to staffing, methodology and apparatus.

To maximize our operational capability with limited staffing, the SBMFDs philosophy is to use modern apparatus, technology and operating principles/theory as force multipliers. In 2016, the SBMFD began a process to change the operational deployment profile in Stations 1 and 3 to a Quint/Mini Pumper concept, like that of Los Angeles Fire Department’s Light Force concept. When responding to a major emergency, such as a structure fire, the Quint and the Mini Pumper operate together as a mutually supporting two-piece company. In addition, the addition of Quints gives SBMFD significant operational flexibility with limited staffing. If there is only enough staff to deploy one apparatus, the Quint is deployed, ensuring all necessary equipment needed arrives on one apparatus. While the Quints are more expensive to purchase than a straight ladder, the cost of a mini-pumper is significantly less than a full-size engine. This retains the traditional and effective Engine/Truck combination while reducing the overall capital costs.

Should this proposal be approved and implemented, the SBMFD would work to change operational deployment to a Quint centered operation at one of the FFD Stations. This would be done in accordance with the Capital Fund (Figure 2) as funds become available, most likely in 2024.

Structure Fires

While structure fires are somewhat infrequent, they still occur over 100 times a year, just in the City of Fridley. In the Fire Service, we would label a structure fire as a low frequency/high risk event, one that carries significant consequences for mistakes. As with most
operations in the Fire Service, staffing makes all of the difference. To ensure we have the proper staffing on each large incident, all working incidents within the City of Fridley will receive a Fridley all call along with auto aid from Columbia Heights, St. Anthony Village and other mutual aid partners. For effective mitigation, it is critical to achieve a goal of having 17 firefighters on the scene of a working fire within 8 minutes. The FFD will become part of the SBMFD organization and will therefore be treated as two additional fire stations. When a general alarm for the FFD is sounded, it will be a general alarm for the SBMFD instead of an auto aid response. Normal 1st alarm response to the City of Fridley will be SBM Stations 1 and 2 as well as additional Chief Officers and support vehicles.

Emergency Medical Services

Ever increasing Medical calls (Emergent and Non-Emergent) continue to put an increasing and significant burden on the staffing for all fire departments, with the FFD falling into that category. Recently, the FFD reduced the amount and type of EMS calls it responds on, providing Emergency Medical Technician response to incidents they can have a significant impact on. This process would be reviewed and response to call types may be added or reduced to ensure the most effective and efficient use of resources possible. The SBMFD currently responds to Personal Injury Accidents and Code Blue (cardiac arrest) calls upon dispatch with other agencies. Other call types are upon request by the municipal police departments. With this system, however, EMS calls for service will continue to require a response, most likely the police department.

With the significant decrease in response to non-emergent medical calls, FFD EMTs can focus on the future by training on and providing, advanced interventions as protocols and medical direction allow. Some of these would be NARCAN administration, glucose monitoring
and low blood sugar intervention, nitro glycerin administration, aspirin administration, nebulizer application, advanced airway application, advanced trauma care and others. These interventions will be provided by highly training and equipped FFD EMTs who will respond on medical emergencies where appropriate advanced lifesaving interventions are required or potentially required.

**Staffing**

The heart of the SBMFD staffing model is the flexibility it offers by providing an effective and efficient scaled response depending in the type of emergency. This model is based from the highly successful and efficient City of Blaine/SBMFD staffing model. To make this model work the following action items are required:

**Full-Time**

Within the SBMFD culture, the purpose of the full-time staff is not only to perform daily duties including emergency response, but, to fully support the volunteer firefighter side of the organization. This ensures the lightest burden possible is placed on the volunteers, one method to creating the best organizational culture to ensuring the nest retention rates possible. The full-time SBMFD (dba FFD) employees will be organized in the following manner:

- Maintain 5-6 full-time SBMFD (dba FFD) employees. The work schedule will vary according to policies and needs as determined by the SBMFD, but, will generally be between the hours of 0800-1630, M-F and will be a 40-hour week.
- Transfer the Fire Marshal position to the FPD. The Fire Marshal will lead the City Responder Group and will be an employee of the City of Fridley.
- Create a City Responder Group of 4-6 personnel whose primary responsibility on their job description is firefighting/ems/rescue response. The city responders will respond out of Station 1 and will staff fire suppression apparatus co-located at the new Fire Station 1. The City Responders will participate in PERA P&F and will be employed by the City of Fridley. Council resolution designating personnel participating in the City Responder program may be required. City Responders may be part of the Volunteer/POC group and will not be required to respond outside of normal work hours, unless part of the Volunteer/POC group.
• Reduce the Executive Assistant to .6. The Executive Assistant will be an employee of the SBMFD (dba FFD) and may be a responder if so desired.
• This program nearly doubles available full-time day staff
• Long range, remodel Fire Station 2 and base SBMFD (dba FFD) full-time employees which will result in two Fire Stations fully staffed M-F.
• Full-time position titles will be: Division Chief, Support Services Supervisor, Training Officer, Community Risk Reduction Coordinator and Records Technician.

City Responder Program

Following the resounding long term success of the SBMFD/Blaine City Responder program, a major part of the proposal is to create a City Responder Program using City of Fridley full-time employees. Based on a Blaine City Responder ratio of 1:6500, the City of Fridley would need to have approximately 5 City Responders on staff. This program is especially feasible in the very near future with the opening of the new FFD Station 1, which is co-located with many other divisions within the new Civic Complex.

 Ideally, those making up the City Responder Group will be personnel who are involved in inspections of some type, however, other positions who desire to participate in the program would be welcome to participate. Major points of the City Responder program:

• Job descriptions modified to include first job responsibility to be firefighting, rescue and EMS response.
• Being able to perform firefighting duties becomes a condition of employment
• Any positions part of the City Responder program, should participate in the PERA P&F Plan
• When responding to emergencies, City Responders fall under the authority of the SBMFD
• Normal duties, City Responders fall under the authority of the City of Fridley and are City of Fridley employees
• Any overtime costs and workers comp claims will be handled by the City of Fridley
• Council Resolution(s) may be needed to designate positions as those participating in the City Responder Program.
• Personal Protective Gear will be provided by SBMFD, funding provided in the annual FFD operations budget.
• City Responders must participate in weekly training and maintain/obtain EMR/EMT certifications as well as all other SBMFD requirements.
This program will increase day-time staff immediately available to respond to emergencies from 6 to 10 (if fully staffed), without significantly increasing cost to the City. Participants of the City Responder program may be added at any time at the discretion of the City of Fridley, provided a minimum of five are maintained. Increasing the City Responder pool shall not decrease Fridley Fire Department staffing in any way. The City Responder is intended to provide a flexible program designed to augment the full-time staff of the Fridley Fire Department.

**Volunteer**

- Maintain a group of 24 Volunteer/POC personnel
- Reorganize structure and add two volunteer Battalion Chiefs. Identical structure to SBMFD volunteer Stations
- Work with Relief Association to merge plans
- Follow all service requirements of the SBMFD
- Volunteer/POC personnel will primarily staff the City of Fridley on weeknights, weekends and holidays
- Full-time staff may be part of the Volunteer/POC group
- Pay and relief plan decisions yet to be determined

**Duty Chief Program**

- Primarily staffed by Volunteer/POC Battalion Chiefs. To maintain depth, Volunteer Captains may also participate.
- Battalion Chiefs will be assigned a take-home emergency response vehicle equipped with BLS, Command and atmospheric monitoring equipment and other necessary tools and equipment.
- Weekday Duty Chief will be staffed by full-time personnel.
- The Duty Chief will respond to all alarms during their assigned shift. Many calls including Automatic Fire Alarms will be a Duty Chief Only response. The response matrix and resources assigned by call type will be determined in accordance with current SBMFD Policies/Standard Operating Guidelines.

**National Standard Staffing**

- Goal of the staffing plan is to provide staffing and response times in accordance with NFPA 1710
  - Four personnel on the first arriving unit for medical emergencies, fires and rescues
  - Minimum 17 for working structure fires
  - Safe staffing is considered four personnel per Engine/Truck/Quint
  - Auto Aid from SBMFD and other will fill out the rest of the assignment
Fire Stations

There are many factors that contribute to determining the need for a Fire Station and where it will be located. Some of these are risks to the community/neighborhood, population density, per capita firefighters, and anticipated calls for service, Insurance Services Office (ISO) requirements and most importantly, response times. Service delivery is measured in seconds and providing emergency response within recognized benchmarks is a critical aspect of business. According to NFPA 1710 (Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments), response times should have a goal of being met 90% (80% is a more realistic goal) of the time. National Standard response objectives are:

- Travel time is the time the apparatus leaves the Fire Station and arrives at the scene
- The 90th percentile is for emergency calls only
- Maximum 240 seconds of travel time for arrival of 1st Engine/Quint
- Maximum 240 seconds of travel time for AED equipped Basic Life Support arrival
- Maximum 480 seconds of travel time for full first alarm arrival (structure fire response)
  - A first alarm response currently consists of the deployment of 3 FFD Fire Stations
- For total response time, add:
  - 80 seconds or less for call processing time 90% of the time
  - 80 seconds or less for turnout 90% of the time
  - 120 seconds for firefighters to respond to Fire Stations from their homes (nights and weekends only)

While response times are not a be-all-end-all measure of performance, they are important indicators when analyzing operational deployment, station locations and number of apparatus and personnel. Seconds do count in all emergencies, especially in cases where cardiac arrest has occurred or a structural fire. Quick response to these incidents gives the patient the best chance for survival with early defibrillation and CPR (4 minutes of less) as well as the extinguishment of fire while it is still in the development stage (9 minutes from time of ignition).
Station Locations

It is recommended that the FFD maintain Stations 1 and 2 to ensure proper response to all hazards within the City of Fridley as well as automatic aid responses to our neighbors. The following figures illustrate the following information:

- Figure 1 illustrates 240 seconds travel time from FFD Station 1 as well as SBMFD Stations 1 and 2.
- Figure 2 illustrates 240, 360 and 480 seconds travel time from FFD Station 2.
- Figure 3 illustrates 480 seconds travel time for FFD Station 1 and SBMFD Stations 1 and 2.
- Figure 4 illustrates 240, 360 and 480 seconds travel time from FFD Station 1 and 2, SBM Station 1.

Brief response time analysis reveals that once Station 1 is complete and staffed, Station 3 may be closed, however, deeper response time analysis to the Northwest part of the city will be need. When Station 3 is closed, the equipment should be moved to Station 1, with Engine 3 re-designated as Engine 1. This reorganization will delay the purchase of another Engine until 2028. In addition, the analysis reinforces the need to maintain Station 2 in service to ensure minimal response times now and into the future. Future consideration should be given to relocating
Station 2 to a new location further south on Hwy 65 to ensure response times are kept to a minimum.

The ideal deployment is to have the City Responders or a combination of City Responders/FFD personnel staff Station 1. Once Station 1 is finished and staffed, Station 2 should be remodeled so it can be effectively and efficiently staffed with FFD personnel, ensuring proper staffing city wide during the day and effectively doubling the responding staff and equipment to major emergencies. According to the Feasibility Study for Shared or Cooperative Fire and Emergency Services (2013), calls for service start to rise at approximately 6:00 a.m., peak at approximately 3:00 p.m. and then begin to decline into the evening. This staffing model ensures peak staffing during peak demand, especially with the City Responder program providing significant flexibility during high demand times. Crews may be split during the day (depending on staffing) to handle Duty Chief calls or other non-emergency calls for service. It is also important for incidents such as structure fires, the full-first alarm assignment is to arrive within 480 seconds as close to 90% of the time as much as possible.
During regular day shift, the volunteer firefighters will not be paged out unless an all-call/general alarm is sounded. With a larger and more robust day shift staff, day shift volunteers are not necessary for most emergencies. This methodology assist with retention as the volunteers are most exclusively night shift and weekends. This provides them the opportunity to concentrate on their civilian jobs and not be penalized for missing a call during the day when the overwhelming majority of them are at work.

**Prevention Programs**

A very important part of any fire department is its ability to prevent fires and other disasters from occurring. The majority of these efforts are geared to fire and housing inspections which focus on enforcement of various adopted codes. The SBMFD is no different, however, the SBMFD focuses its prevention energy on public fire education and safety programs including innovative home safety surveys, neighborhood canvassing, bike helmet fitting, senior safety fair, safety camp and many others.

**Fire Inspections**

To better organize the FFD, the SBMFD is recommending the Fridley Fire Marshal position be realigned into the Zoning Division or the Police Department to leading the Fire and Zoning Inspections as well as the City Responder program. This realignment will put all inspection activities into the same division as well as free the FFD to focus on other comprehensive education, prevention and safety programs.

The SBMFD generally does not conduct fire inspections, with the exception of the City of Mounds View where the SBMFD is contracted to perform fire inspection separately from the original contract/JPA. The City of Fridley would have the option of contracting with the FFD to perform fire inspections at a cost in addition to the primary contract cost.
Educators

There are three groups of outstanding volunteers on the SBMFD and those programs will be brought to the FFD and implemented. The Community Risk Reduction Coordinator supervises the Educator Program as well as coordinates the overwhelming majority of public education programs including equipment demos, open houses, tours, school visits, safety fairs and many other prevention activities. The volunteer firefighters are heavily involved in public relations events, which will become a part of their annual service requirements.

The Educators lead the public education programs and coordinate the related activities with the volunteer firefighters and the Fire Corps. The SBMFD believes that robust and innovative education, safety and prevention programs are the key to not only reducing the incidence of death and injury by fire, but, other causes of injury and death as well.

Fire Corps

The Fire Corps is a unique group of non-firefighting volunteer personnel, who help with a myriad of task throughout the Fire Department. One of the primary purposes and critical tasks the Fire Corps performs is running rehab during large incidents, which has proven invaluable during fire ground operations. In addition, the Fire Corps participates in neighborhood canvassing, home safety surveys and many other public education events department wide. The Support Services Supervisor oversees the Fire Corps program.

2019 Proposed Budget

The proposed 2019 Budget is the result of all of the proposal factors coming together to achieve an organizational structure that is efficient, effective and maintains significant operational flexibility. To eliminate or change most parts of the proposal would make
implementation more difficult while reducing efficiency and effectiveness which would have been achieved with full implementation.

**Operations Budget**

The SBMFD achieves its reduced cost through innovative programs, unconventional programs, deployment methodology and most importantly the hard work and dedication of all its personnel. Our people are the most precious of assets and without them, the organizations would cease to exist. The proposed operational budget for 2019 for the SBMFD (dba FFD) is $1,183,400 which includes all the aforementioned programs, with the details included in Appendix 2.

**Capital Budget**

One of the key to successful operations is possessing equipment and apparatus that meet National Standards regarding service life and equipment carried. Substandard and obsolete equipment puts firefighting personnel at much greater risk than they should be taking. The design of the capital program is to put the FFD on a good capital plan that replaces apparatus before they have reached the end of their service life and new ones that are equipped with modern features and safety equipment. In addition, this Capital program is funded like an operations budget, with the SBMFD managing the long-term plan and its purchases. This plan requires commitment to its funding to ensure its long-term success and continuation. This plan also does not require the City of Fridley to issue Municipal Bonds to purchase needed fire equipment and apparatus. The only time bonds may be required would be for a large capital purchase such as a new fire station.

The Capital plan covers a period of 15 years (Appendix 3) and provides funding for all fire related equipment including two engines, a quint, two rescues and numerous support
vehicles. To ensure success of the plan, an initial deposit of approximately $550,000 would need to be made to start the program. Each subsequent year, the capital amount funded ($300,000) increases 1%.

**Relief Organizations**

Benefits upon retirement for is one of the largest tools we have for recruiting and retaining volunteer personnel. Currently, the Spring Lake Park Firefighter’s Relief has an excellent retirement plan and is the only volunteer firefighter’s relief that provides a monthly annuity through the Statewide Volunteer Firefighter Retirement Plan. Currently, retirees who meet plan requirements received $41/month/year of service upon retirement. The SBMFD contributes (along with the Cities and State Aid amounts) to the Spring Lake Park Firefighter’s Relief Retirement plan.

The Fridley Firefighters Relief does not participate in the Statewide Volunteer Retirement Plan and is a lump sum program. Upon implementation of the proposal, SBMFD Staff, City Staff and Relief Officers from both departments will need to meet and discuss options for the Fridley Firefighter’s Relief Association. It is anticipated that this will the most difficult and time-consuming portion of the proposal.

**Legal Provisions**

The legal provisions of this agreement will be executed in a fee for service contact like the contractual agree between SBMFD and the Cities of Spring Lake Park, Mounds View and Blaine. Details of the contract have yet to be determined.

**Performance Measures**

Performance measures for operations deployment will include, but, are not limited to:

- Travel time, emergency
  - First arriving, 80% within 240 seconds (fire, ems and rescue)
• Full alarm arrival, Structure Fires, 80% within 480 seconds
• Turnout time, all emergencies 80% within 60 seconds
• Call processing time, 80% within 60 seconds (Anoka County Communications)
• Total Response Time, Day (call processing+turnout+travel time), 80% within 360 seconds
• Total Response Time, Night (call processing+turnout+travel time), 80% within 360 seconds
• Staffing
  o 80%, 17 personnel on scene for Structure Fires
  o Average emergency staffing, day structure fires
  o Average emergency staffing, day other
  o Average emergency staffing, night structure fires
  o Average emergency staffing, night other
• % of property saved from fire, annual
• Fire loss, annual
• Civilian injuries from fire, annual

Performance measures for community risk reduction activities will include, but not limited to:

• Number of PR programs delivered
• Number of Home Safety Surveys Completed

Implementation Timeline

The implementation timeline will vary depending on many factors and conversations with various stakeholders, both internal and external.

Conclusion

At the SBMFD, we strive to provide exemplary service at the lowest possible cost to our stakeholders. While this service is the lowest per capita for population served, the SBMFD provides safely staffed and well-equipped forces that are efficient and effective.

The creation and implementation of the City Responder Program will augment the daily staffing of the FFD and provide a flexible and scalable response to major, multiple incidents. The City Responder program is critical to the success of this proposal as the sum of the parts of this proposal all play an integral role in the culture and deployment of SBMFD’s operational and
community risk reduction activities. The flexible staffing plan will allow for two fire stations to be staffed during peak call demand times, allowing for focused deployment of SBMFD (dba FFD) resources. All full-time and volunteer positions created under this plan will become employees of the SBMFD.

The overall budget for the FFD will be significantly reduced, due to the service model change, however, consistent investment into the FFD is required to ensure personnel are operating with excellent apparatus and equipment. New equipment is a force multiplier by incorporating new technologies, making operations more efficient and effective. Without consistent capital investment, FFD will operate at greater levels of risk, reducing their effectiveness. This fact ultimately impacts our external stakeholders in a negative way. The Capital Budget plan contained in this document, relieves the City of Fridley from having to issue debt to fund capital equipment purchases for the foreseeable future, except for major projects such as a new fire station or significant remodel of existing structure(s).

Developing and implementing robust Community Risk Reduction programs in the City of Fridley will have a definite and profound positive impact on external stakeholders, significantly increasing the value of the FFD to its customers served. The goal of all the CRR programs is to increase awareness of fire and home safety as well as education about the FFD and what it requires to be effectively and efficiently deploy emergency and non-emergency resources.

The SBMFD has a very efficient and effective organization because of its corporate structure, supportive culture, collaborative mindset as well as many other factors. We treat all our employees with respect, empower them in their daily duties and recognize that individual effort and strength come together to create an amazing team. Our personnel are the most precious of assets and supporting them is our highest priority!
Appendix 2

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Volunteer Payroll

| 4280 Special Duty | 30,000 | 30,000 |
| 4281 Cleanup | 3,000 | 3,000 |
| 4283 Training - Regular Drills | 2,500 | 2,500 |
| 4284 Special Training | 8,000 | 8,000 |
| 4285 Fire Calls | 5,000 | 5,000 |
| 4288 Supplemental Pay - Vol FF Lump Sum | 16,000 | 16,000 |
| 4293 Pre-Plan Assistance | 3,000 | 3,000 |
| 4298 District and Volunteer Chief Monthly Pay | 4,000 | 4,000 |
| 4310 Miscellaneous Pay | 8,000 | 8,000 |
| 4390 Vol FF Retire Pension - Employ Contrib | 70,291 | 70,291 |
| Total Volunteer | 149,791 | 149,791 | 100.00% |

Payroll Taxes

| 4810 FICA Employer Tax | 12,028 | 12,028 |
| 4811 Medicare Employer Tax | 8,009 | 8,009 |
| Total Payroll Taxes | 20,037 | 20,037 | 100.00% |

Benefits

| 4400 Employee Medical/Dental Insurance | 74,250 | 74,250 |

23 | Page
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2019 Capital $550,000
2019 Operations $1,183,400
2019 Total $1,733,400