Valley City Secondhand Smoke Study
Final Report

Prepared for the:

Barnes County Tobacco-Free Network
and the
Barnes County ACHIEVE Partnership

October 10, 2012

This survey is funded with a Special Initiative Grant from the Center for Tobacco Prevention and Control Policy. BreatheND is the official website and logo of the Center, which is a division of the Tobacco Prevention and Control Executive Committee. North Dakota voters passed a statewide initiated measure that created the Tobacco Prevention and Control Executive Committee and requires a portion of the money North Dakota receives from tobacco settlement dollars to be used for tobacco prevention and control programs. The Center, along with the North Dakota Department of Health, local public health units and other partners, is charged with implementing North Dakota's comprehensive state tobacco prevention plan: ***Saving Lives – Saving Money***.

BreatheND
Saving lives, saving money. The voice of the people.

Social Science Research Institute
University of North Dakota
Knowledge to Bring People and Resources Together

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Purpose

The purpose of this study is to assess public support for a local comprehensive smoke-free policy in Valley City, North Dakota, and assess community attitudes and perceptions regarding secondhand smoke. The study was commissioned by the Barnes County Tobacco-Free Network and the Barnes County ACHIEVE Partnership, and funded by the Center for Tobacco Prevention and Control Policy [BreatheND – Saving Lives Saving Money]. The main study areas include:

- Public support for a comprehensive smoke-free policy
- Perceived risks of secondhand smoke
- Attitudes toward public smoking
- Views on secondhand smoke

Methodology Overview

The results of this study are based on telephone interviews of 688 randomly selected adults age 18 or older in Valley City conducted from January 15 through 26, 2012. In order to provide a probability-based sample representative of all such individuals, the Social Science Research Institute, University of North Dakota (SSRI) used a dual-frame random digit dial (RDD) sampling methodology, whereby both landline and cellular telephone numbers were included in the sample. The Valley City sample yields an error margin[1] of +/- 3.5%. For the methodology summary please see page 30.

[1] This means that one can be 95 percent confident that the mean response for any question in the Valley City sample of adults will not vary more than 3.5% in either direction from the actual mean for the response if all adults age 18 or older in Valley City were surveyed.

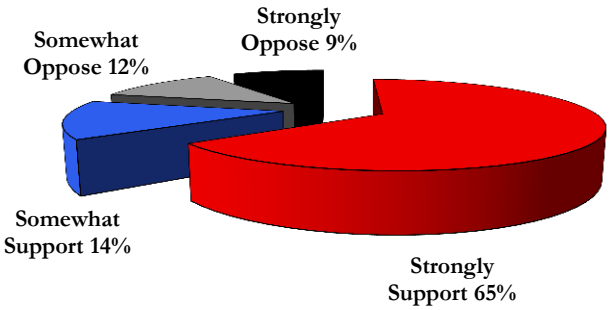
Executive Summary

Key Findings[2]

I. Attitudes Regarding a Valley City Law to Protect People from Secondhand Smoke in All Public Places

- Seventy-nine percent of those interviewed support a Valley City law that would prohibit smoking in all public places, including workplaces, offices and all areas of restaurants and bars. [65% "strongly support" and 14% "somewhat support".]

Attitudes regarding a Valley City Law to Protect People from Secondhand Smoke in All Public Places



BREAKDOWNS:

- Seventy-five percent of men and 82% of women "strongly" or "somewhat" support a Valley City law that would prohibit smoking in all public places.
- Forty-four percent of current smokers[3], 77% of former smokers and 88% of respondents who had never smoked support a Valley City law that would prohibit smoking in all public places.

II. Perceived Risks of Secondhand Smoke

- Nearly nine out of ten adults (87%) believe secondhand smoke is a health hazard to those who breathe it (61% "serious" and 26% "moderate health hazard").

BREAKDOWNS:

- Eight-five percent of men (54% "serious" and 31% "moderate health hazard") and 90% of women (68% "serious" and 22% "moderate health hazard") believe secondhand smoke is a health hazard to those who breathe it.
- Seventy-two percent of current smokers[3], 91% of former smokers and 89% of respondents who had never smoked agree that exposure to secondhand smoke is a "serious" or "moderate health hazard".

[2] Complete case analysis was used for the final survey results. It is assumed that respondents who did not provide an answer (no response) are completely at random and therefore provides unbiased parameter estimates.

[3] Thirteen percent of those surveyed currently smoke; 34% are former smokers and 53% have never smoked.

III. Views on Secondhand Smoke, Health and Rights

- The majority of respondents believe it is "much" (68%) or "somewhat" (13%) more important for customers and employees to have the right to breathe clean air in workplaces and all indoor public places compared to the right to smoke inside (19%).

BREAKDOWN:

- Thirty-two percent of current smokers[3], 87% of former smokers and 89% of respondents who had never smoked believe it is "much" or "somewhat" more important for customers and employees to have the right to breathe clean air in workplaces and all indoor places compared to the right to smoke inside.

IV. Exposure to Secondhand Smoke in the Workplace

- 91% of respondents agree that all workers should be protected from secondhand smoke in the workplace. [76% "strongly agree" and 15% "somewhat agree."]

BREAKDOWNS:

- Eight-seven percent of men and 92% of women agree that all workers should be protected from secondhand smoke in the workplace.
- Seventy-four percent of current smokers[2], 89% of former smokers and 95% of respondents who had never smoked agree that all workers should be protected from secondhand smoke in the workplace.

V. Attitudes towards Secondhand Smoke in Restaurants and Bars

- Almost nine out of ten respondents (88%) agree they would prefer to be able to enjoy restaurants and bars without being exposed to cigarette smoke and smelling like cigarettes.

BREAKDOWNS:

- Eighty-seven percent of men and 90% of women agree they would prefer to be able to enjoy restaurants and bars without being exposed to cigarette smoke and smelling like cigarettes.
- Fifty percent of current smokers[2], 89% of former smokers and 97% of respondents who had never smoked agree they would prefer to be able to enjoy restaurants and bars without being exposed to cigarette smoke and smelling like cigarettes.

VI. Restaurants and Bars Healthier if Smoke-Free

- Over nine out of ten respondents (94%) agree it would be healthier for customers and employees if restaurants and bars were smoke-free.

BREAKDOWNS:

- Ninety-two percent of men and 96% of women agree it would be healthier for customers and employees if restaurants and bars were smoke-free.
- Seventy-nine percent of current smokers[3], 93% of former smokers and 97% of respondents who had never smoked agree it would be healthier for customers and employees if restaurants and bars were smoke-free.

VII. Smoke-Free Potential Impact on Restaurant and Bar Patronage

- If Valley City passes a law making all areas of restaurants and bars smoke-free, 93% of respondents would patronize these establishments "just as often" [64%] or "more often" [29%].

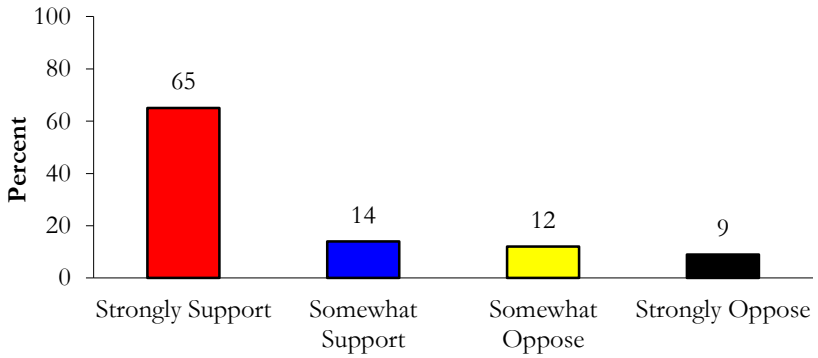
BREAKDOWN:

- Seventy-three percent of current smokers, 93% of former smokers and 93% of respondents who had never smoked would patronize restaurants and bars "just as often" or "more often" if Valley City passes a smoke-free law.

I. Attitudes Regarding a Valley City Law to Protect People from Secondhand Smoke in All Public Places

Seventy-nine percent of those interviewed "strongly support" (65%) or "somewhat support" (14%) a Valley City law that would prohibit smoking in all public places, including workplaces, offices and all areas of restaurants and bars (Figure 1). Twelve percent "somewhat oppose" and nine percent "strongly oppose" oppose this law.

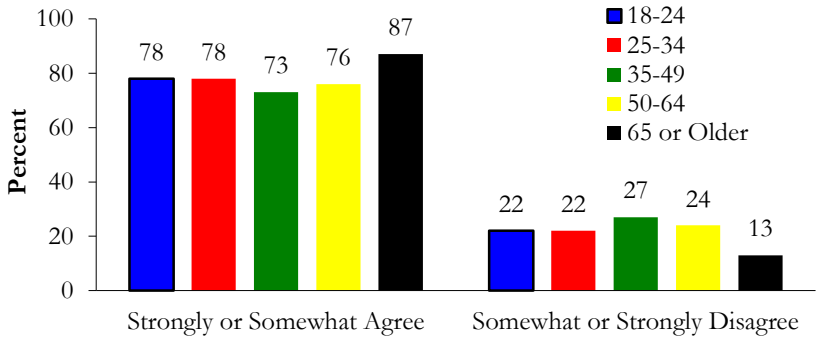
Figure 1. Reaction to a Law to Prohibit Smoking in All Public Places



Reaction to a Law to Prohibit Smoking in All Public Places by Age

Seventy-three percent or more of all age groups "strongly" or "somewhat" support a Valley City law that would prohibit smoking in all public places, including workplaces, offices and all areas of restaurants and bars (Figure 2).

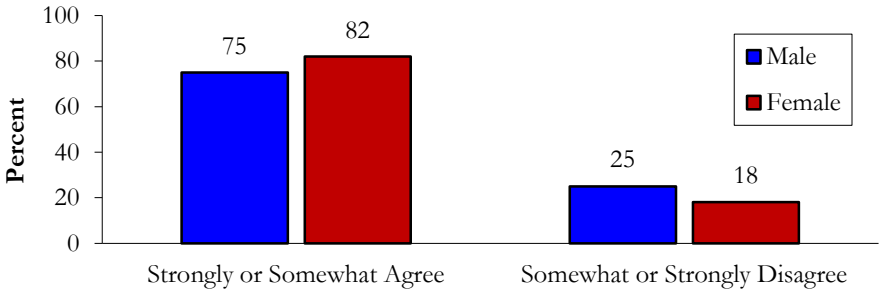
Figure 2. Reaction to a Law to Prohibit Smoking in All Public Places by Age



Reaction to a Law to Prohibit Smoking in All Public Places by Gender

Seventy-five percent of men and 82% of women "strongly" or "somewhat" support a Valley City law that would prohibit smoking in all public places, including workplaces, offices and all areas of restaurants and bars (Figure 3).

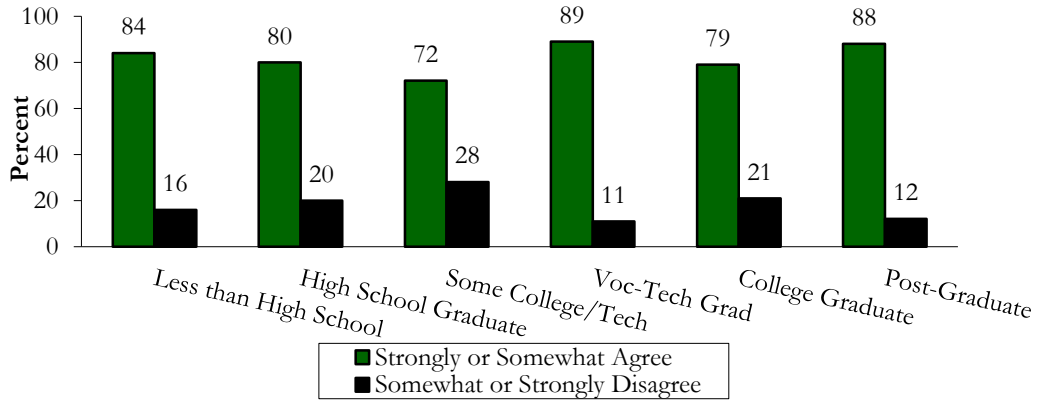
Figure 3. Reaction to a Law to Prohibit Smoking in All Public Places by Gender



Reaction to a Law to Prohibit Smoking in All Public Places by Educational Attainment

The majority of all respondents by educational attainment "strongly" or "somewhat" support a Valley City law that would prohibit smoking in all public places, including workplaces, offices and all areas of restaurants and bars (Figure 4).

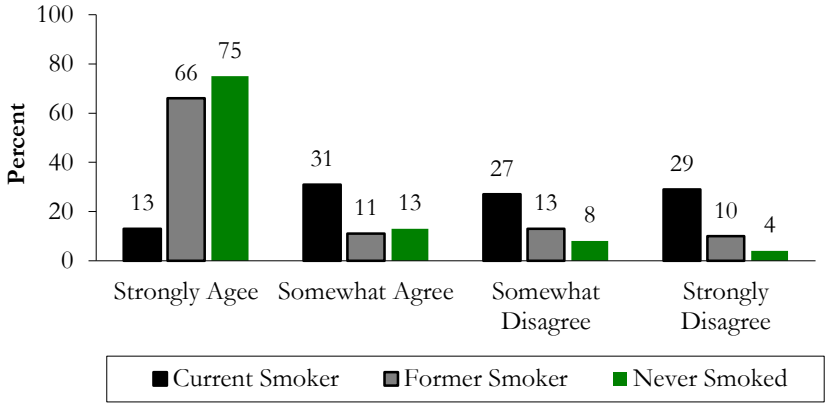
Figure 4. Reaction to a Law to Prohibit Smoking in All Public Places by Educational Attainment



Reaction to a Law to Prohibit Smoking in All Public Places by Smoking Status[4]

Forty-four percent of current smokers, 77% of former smokers and 88% of respondents who had never smoked support a Valley City law that would prohibit smoking in all public places, including workplaces, offices and all areas of restaurants and bars (Figure 5).

Figure 5. Reaction to a Law to Prohibit Smoking in All Public Places by Smoking Status

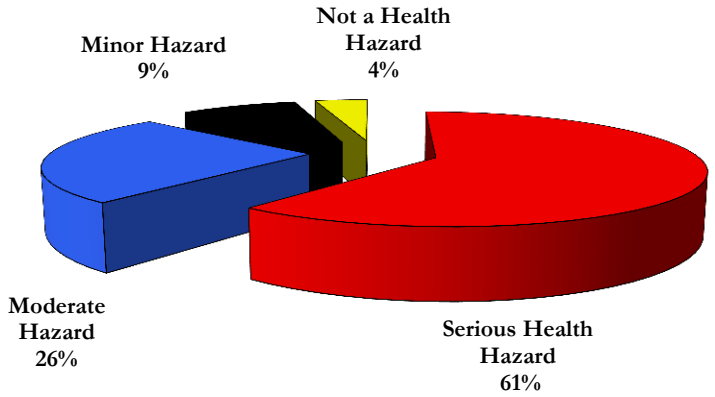


[4] Thirteen percent of those surveyed currently smoke; 34% are former smokers and 53% have never smoked.

II. Perceived Hazards of Secondhand Smoke

Survey respondents were asked how much of a health hazard they feel that exposure to secondhand tobacco smoke is to those who breathe it. They were asked to rate this exposure as a serious health hazard, a moderate health hazard, a minor health hazard or not a health hazard at all. Sixty-one percent agree that exposure to secondhand smoke is a "serious health hazard" and 26% believe exposure is a "moderate health hazard" (Figure 6). Nine percent feel that exposure to secondhand smoke is a "minor health hazard" and four percent feel that such exposure is "not a health hazard at all".

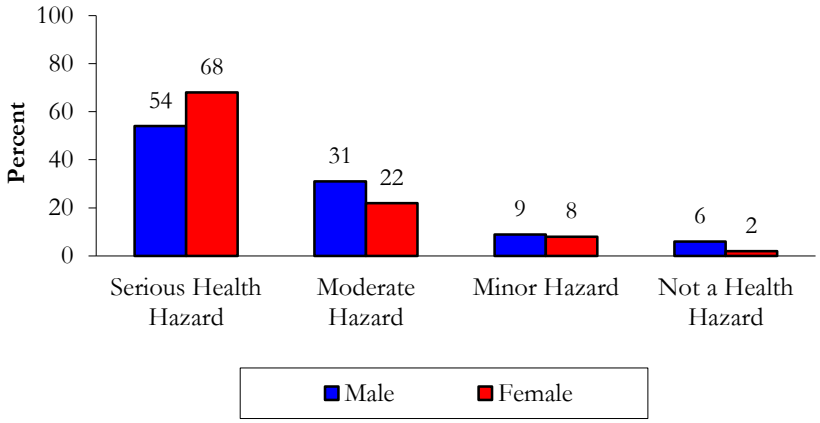
Figure 6. Perceived Risk of Secondhand Smoke Exposure



Hazards of Exposure to Secondhand Smoke by Gender

Eight-five percent of men (54% "serious" and 31% "moderate health hazard") and 90% of women (68% "serious" and 22% "moderate health hazard") believe secondhand smoke is a health hazard to those who breathe it (Figure 7).

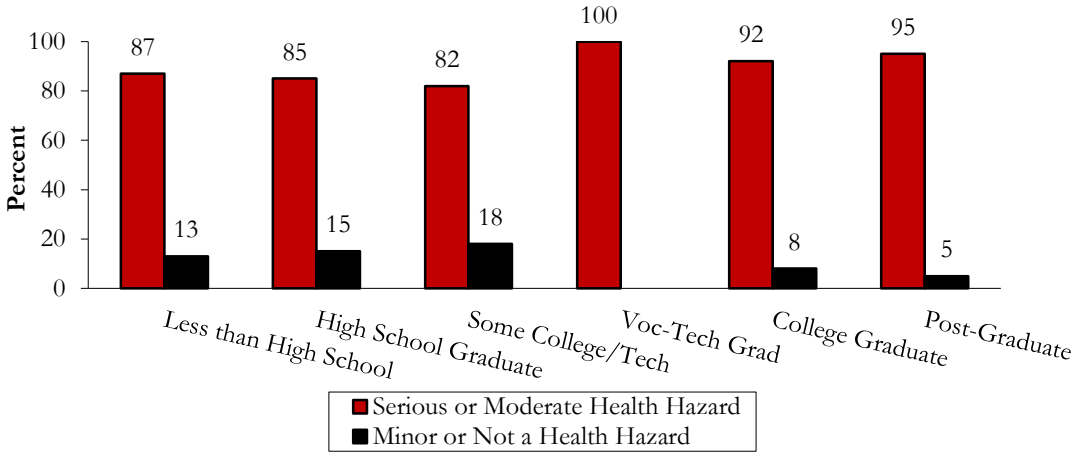
Figure 7. Perceived Risk of Secondhand Smoke Exposure by Gender



Hazards of Exposure to Secondhand Smoke by Educational Attainment

Respondents with higher educational attainment are more likely to consider exposure to secondhand smoke as a "serious" or "moderate" health hazard; although the majority at all levels believe such exposure is a health hazard (Figure 8).

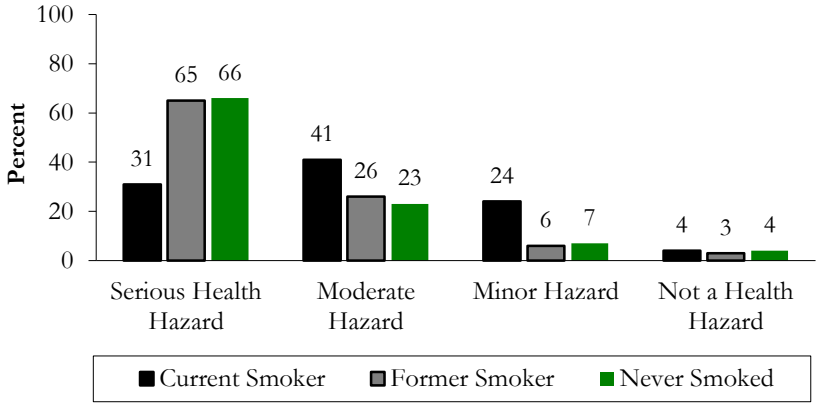
Figure 8. Perceived Risk of Secondhand Smoke Exposure by Educational Attainment



Hazards of Exposure to Secondhand Smoke by Smoking Status[5]

Seventy-two percent of current smokers, 91% of former smokers and 89% of respondents who had never smoked agree that exposure to secondhand smoke is a "serious" or "moderate health hazard" (Figure 9). Conversely, 28% of current smokers believe secondhand exposure is a "minor" or "not a health hazard at all".

Figure 9. Perceived Risk of Secondhand Smoke Exposure by Smoking Status



[5] Thirteen percent of those surveyed currently smoke; 34% are former smokers and 53% have never smoked.

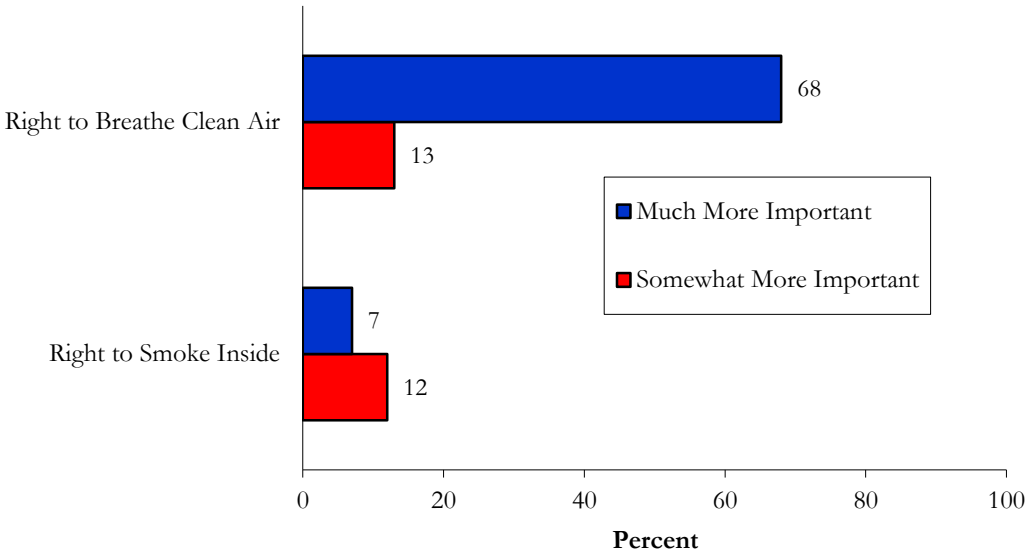
III. Views on Secondhand Smoke, Health and Rights

Survey respondents were asked which of the following two statements[6] comes closest to their point of view. The two statements were:

- Statement 1. I believe customers and employees have the right to breathe clean air in workplaces and all indoor public places.
- Statement 2. I believe customers and employees have the right to smoke inside workplaces and all other indoor public places.

Eighty-one percent of respondents agreed with statement one, that it is "much" (68%) or "somewhat" (13%) more important for customers and employees to have the right to breathe clean air in workplaces and all indoor public places compared to the right to smoke inside . Conversely, 19% of those surveyed believe it is "much" (7%) or "somewhat" (12%) more important for customers and employees to have the right to smoke inside workplaces and all other indoor public places (Figure 10).

Figure 10. Points of View

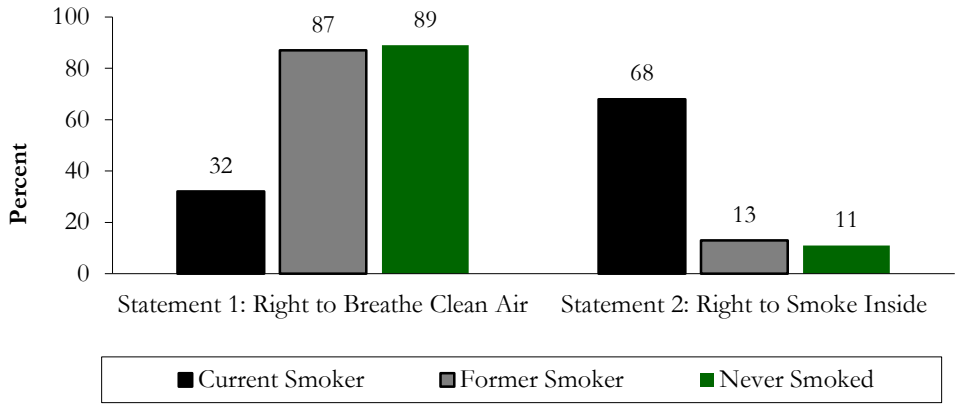


[6] During interviewing these statements were rotated in respect to which was first read to the respondent. Then after the initial response interview staff asked respondents if they thought it was "much" or "somewhat" more important.

Points of View by Smoking Status

Thirty-two percent of current smokers, 87% of former smokers and 89% of respondents who had never smoked believe it is "much" or "somewhat" more important for customers and employees to have the right to breathe clean air in workplaces and all indoor places compared to the right to smoke inside (Figure 11).

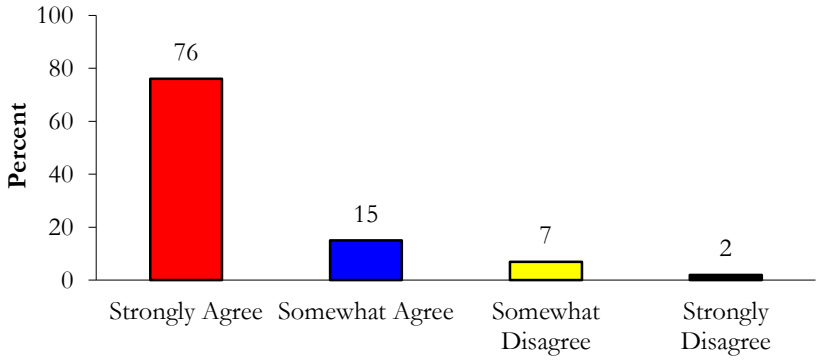
Figure 11. Smoking Points of View by Smoking Status



IV. Workplace Exposure to Secondhand Smoke

The clear majority of respondents (91%) ["strongly (76%)" or "somewhat (15%)"] agree that all workers should be protected from secondhand smoke in the workplace (Figure 12).

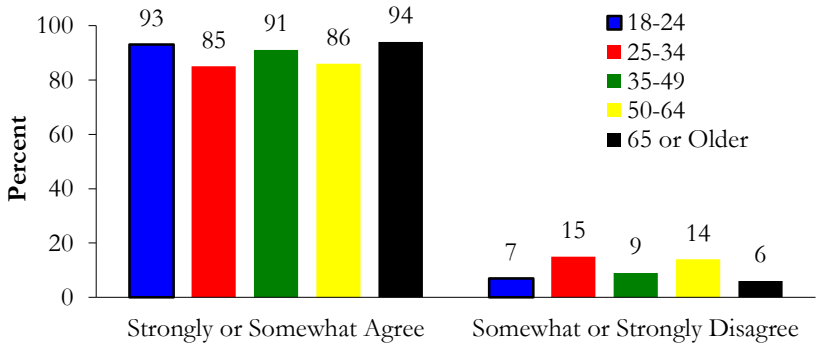
Figure 12. Workers should be Protected from Workplace Secondhand Smoke



Workplace Smoke-Free Environment by Age

Over 85% of all age groups "strongly" or "somewhat" agree that all workers should be protected from secondhand smoke in the workplace (Figure 13).

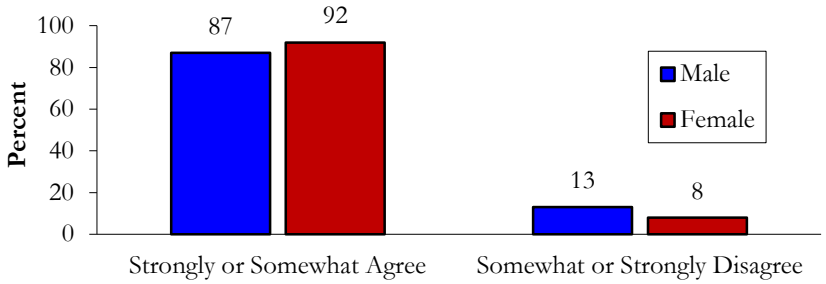
Figure 13. Workers should be Protected from Workplace Secondhand Smoke by Age



Workplace Smoke-Free Environment by Gender

Eighty-seven percent of men and 92% of women agree that all workers should be protected from secondhand smoke in the workplace (Figure 14).

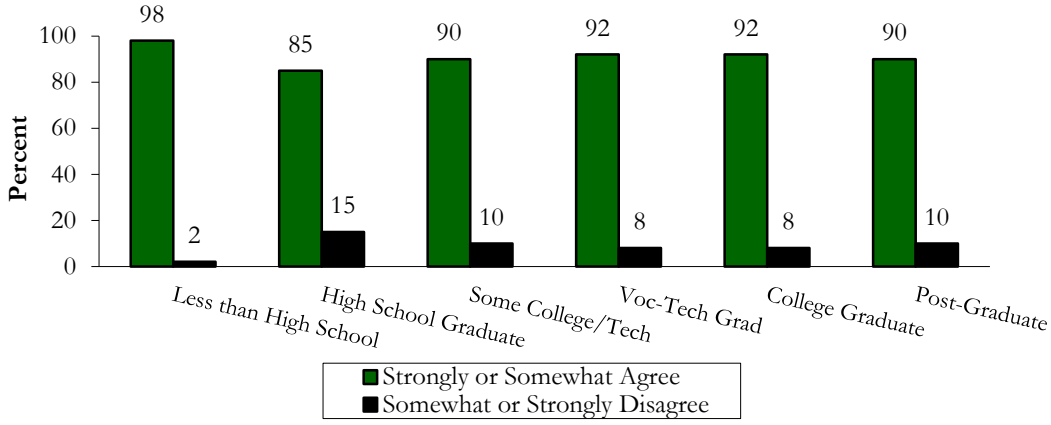
Figure 14. Workers should be Protected from Workplace Secondhand Smoke by Gender



Workplace Smoke-Free Environment by Educational Attainment

The majority of all respondents by educational attainment agree that all workers should be protected from secondhand smoke in the workplace (Figure 15).

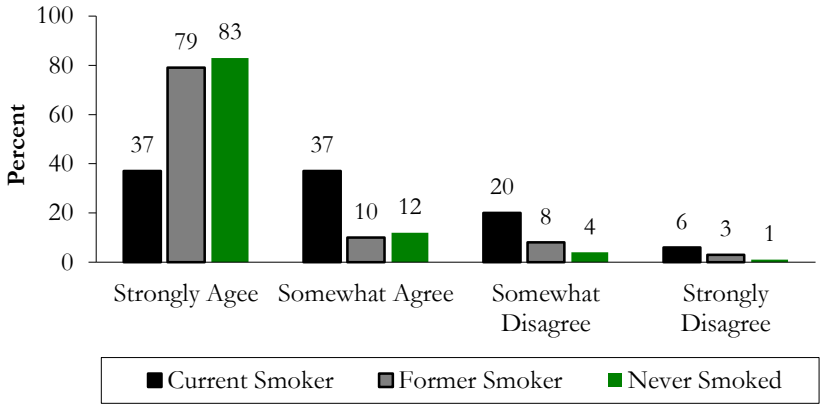
Figure 15. Workers should be Protected from Workplace Secondhand Smoke by Educational Attainment



Workplace Smoke-Free Environment by Smoking Status[7]

Seventy-four percent of current smokers, 89% of former smokers and 95% of respondents who had never smoked agree that all workers should be protected from secondhand smoke in the workplace (Figure 16).

Figure 16. Workers should be Protected from Workplace Secondhand Smoke by Smoking Status

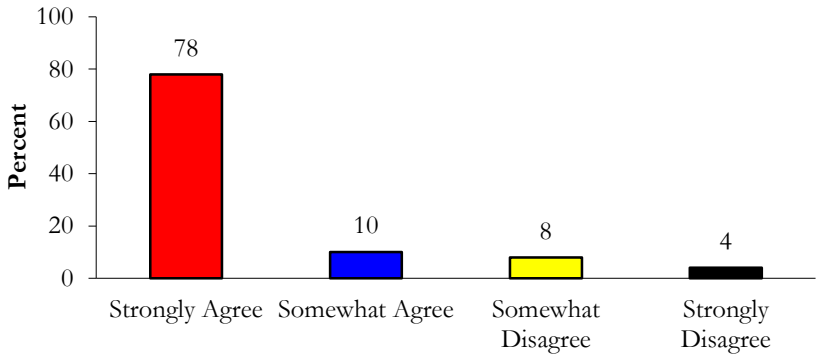


[7] Thirteen percent of those surveyed currently smoke; 34% are former smokers and 53% have never smoked.

V. Preferences regarding a Smoke-Free Environment in Restaurants and Bars

Survey respondents were asked their opinion whether it would be nice to go out and enjoy restaurants and bars in Valley City without being exposed to cigarette smoke and smelling like cigarette when they returned home. Almost nine out of ten respondents (88%) agree they would prefer to be able to enjoy restaurants and bars without being exposed to cigarette smoke and smelling like cigarettes (Figure 17).

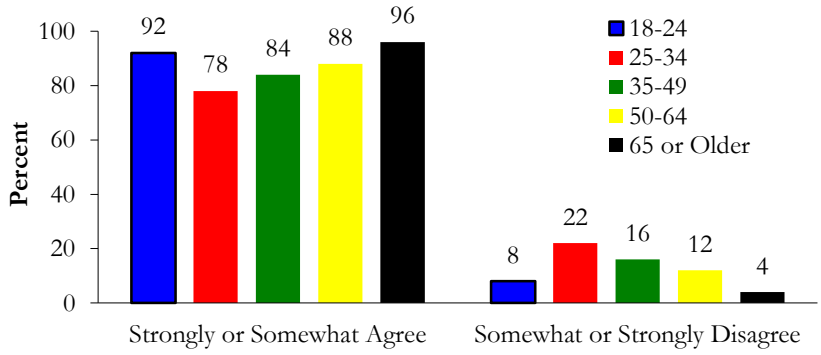
Figure 17. Prefer a Smoke-Free Environment in Restaurants and Bars



Smoke-Free Environment in Restaurant and Bars by Age

Seventy-eight percent or more of all age groups "strongly" or "somewhat" agree they would prefer to be able to enjoy restaurants and bars without being exposed to cigarette smoke and smelling like cigarettes (Figure 18).

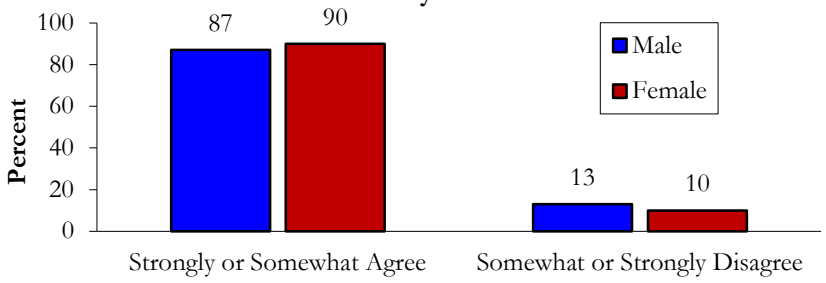
Figure 18. Smoke-Free Environment in Restaurants and Bars by Age



Smoke-Free Environment in Restaurant and Bars by Gender

Eighty-seven percent of men and 90% of women agree they would prefer to be able to enjoy restaurants and bars without being exposed to cigarette smoke and smelling like cigarettes (Figure 19).

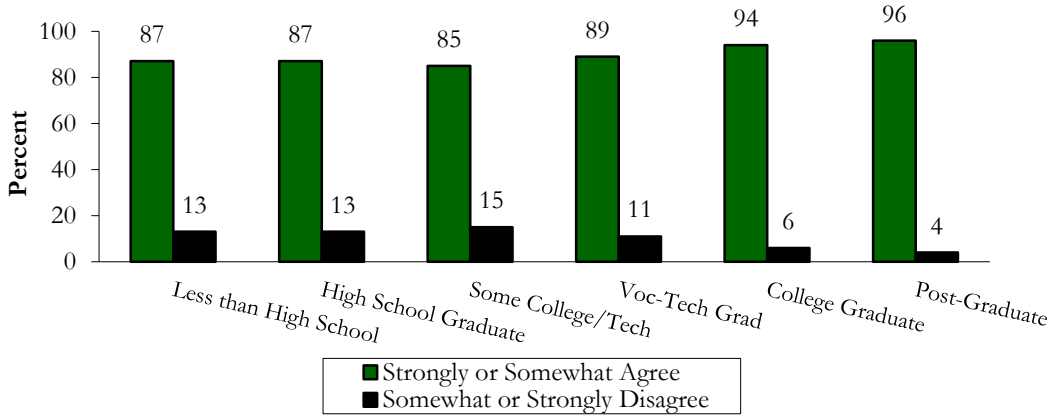
Figure 19. Smoke-Free Environment in Restaurants and Bars by Gender



Smoke-Free Environment in Restaurant and Bars by Educational Attainment

The majority of all respondents by educational attainment agree they would prefer to be able to enjoy restaurants and bars without being exposed to cigarette smoke and smelling like cigarettes (Figure 20).

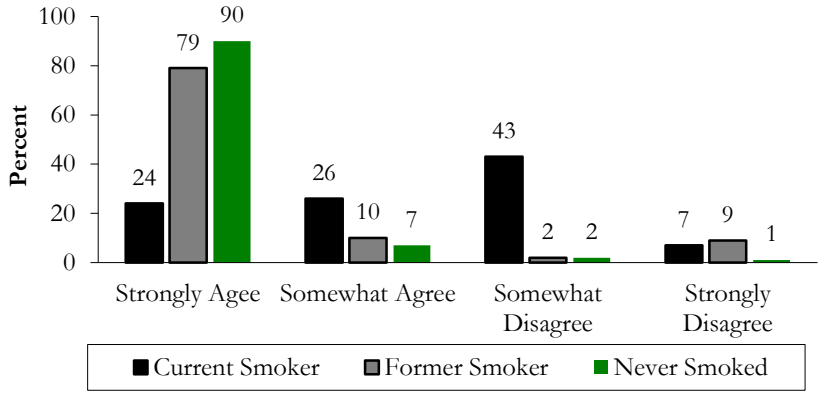
Figure 20. Smoke-Free Environment in Restaurants and Bars by Educational Attainment



Smoke-Free Environment in Restaurant and Bars by Smoking Status[8]

Fifty percent of current smokers, 89% of former smokers and 97% of respondents who had never smoked agree they would prefer to be able to enjoy restaurants and bars without being exposed to cigarette smoke and smelling like cigarettes (Figure 21).

Figure 21. Smoke-Free Environment in Restaurants and Bars by Smoking Status

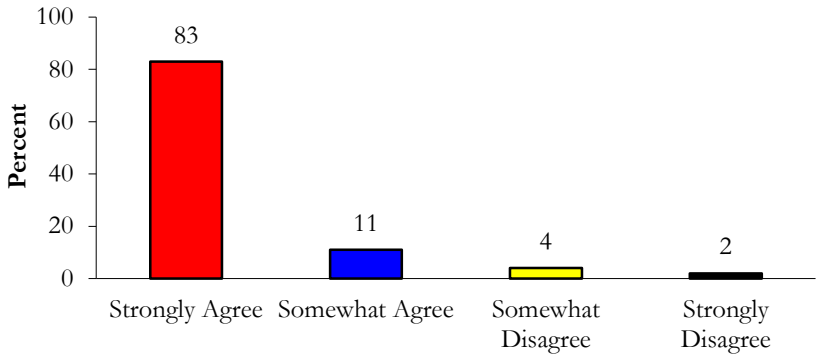


[8] Thirteen percent of those surveyed currently smoke; 34% are former smokers and 53% have never smoked.

VI. Restaurants and Bars Healthier if Smoke-Free

Survey respondents were asked their opinion whether it would be healthier for customers and employees if restaurants and bars were smoke-free. Over nine out of ten respondents (94%) agree it would be healthier for customers and employees if restaurants and bars were smoke-free (Figure 22).

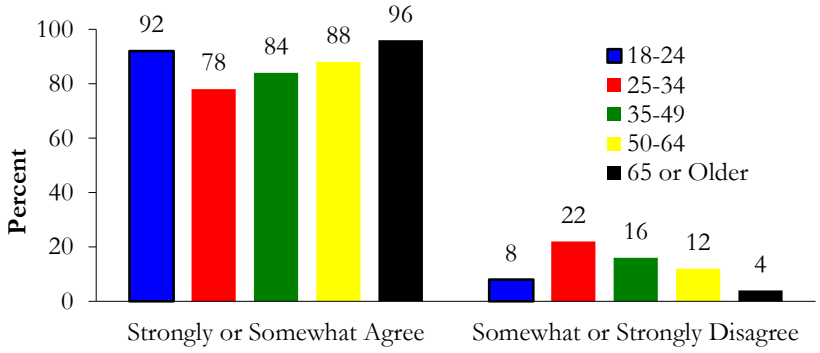
Figure 22. Restaurants and Bars would be Healthier for Customers and Employees if Smoke-Free



Restaurants and Bars Healthier if Smoke-Free by Age

Seventy-eight percent or more of all age groups "strongly" or "somewhat" agree it would be healthier for customers and employees if restaurants and bars were smoke-free (Figure 23).

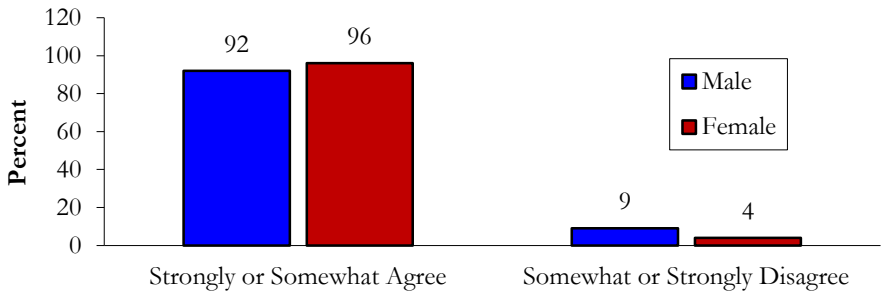
Figure 23. Restaurants and Bars would be Healthier for Customers and Employees if they were Smoke-Free



Restaurants and Bars Healthier if Smoke-Free by Gender

Ninety-two percent of men and 96% of women agree it would be healthier for customers and employees if restaurants and bars were smoke-free (Figure 24).

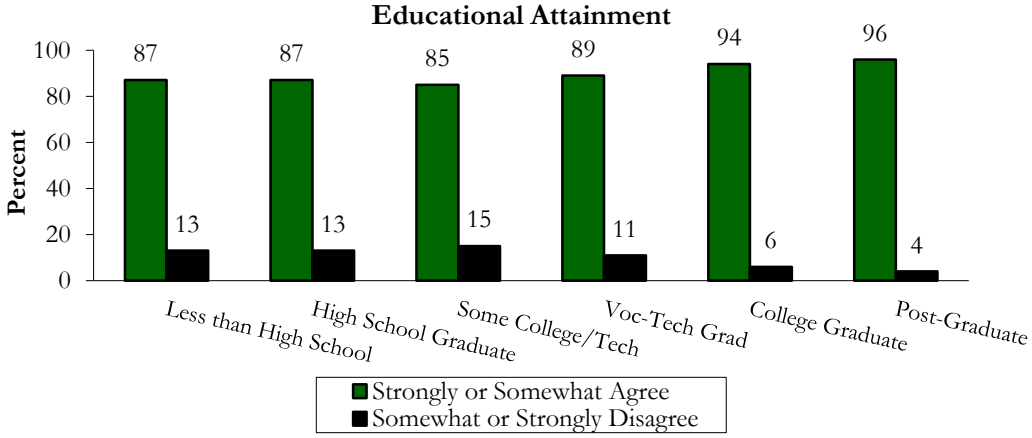
Figure 24. Restaurants and Bars would be Healthier for Customers and Employees if they were Smoke-Free by Gender



Restaurants and Bars Healthier if Smoke-Free by Educational Attainment

The majority of all respondents by educational attainment agree it would be healthier for customers and employees if restaurants and bars were smoke-free (Figure 25).

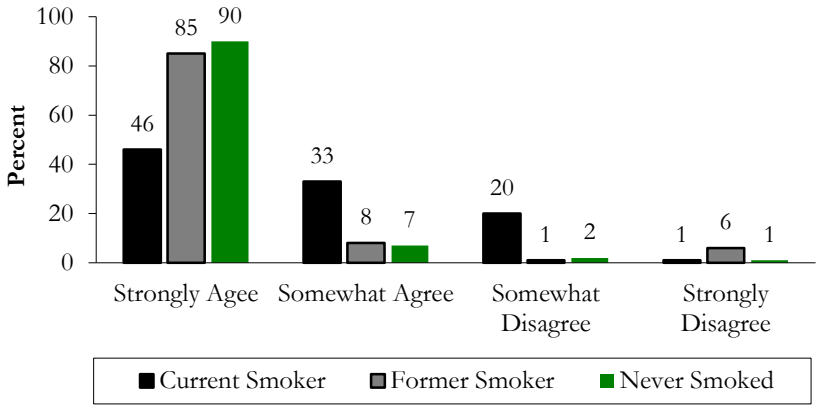
Figure 25. Restaurants and Bars would be Healthier for Customers and Employees if they were Smoke-Free by Educational Attainment



Restaurants and Bars Healthier if Smoke-Free by Smoking Status[9]

Seventy-nine percent of current smokers, 93% of former smokers and 97% of respondents who had never smoked agree it would be healthier for customers and employees if restaurants and bars were smoke-free (Figure 26).

Figure 26. Restaurants and Bars would be Healthier for Customres and Emplyees if they were Smoke-Free by Smoking Status



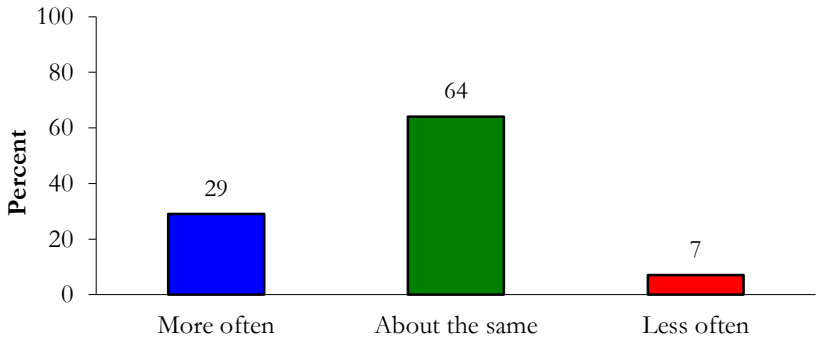
[9] Thirteen percent of those surveyed currently smoke; 34% are former smokers and 53% have never smoked.

VII. Smoke-Free Potential Impact on Patronage

Smoke-Free Potential Impact on Restaurant and Bar Patronage

Survey respondents were asked if Valley City passes a law making all areas of restaurants and bars smoke-free, would this law potentially impact how often they frequent these establishments. If Valley City passes a law making all areas of restaurants and bars smoke-free, 93% of respondents would patronize these establishments "just as often" [64%] or "more often" [29%] (Figure 27).

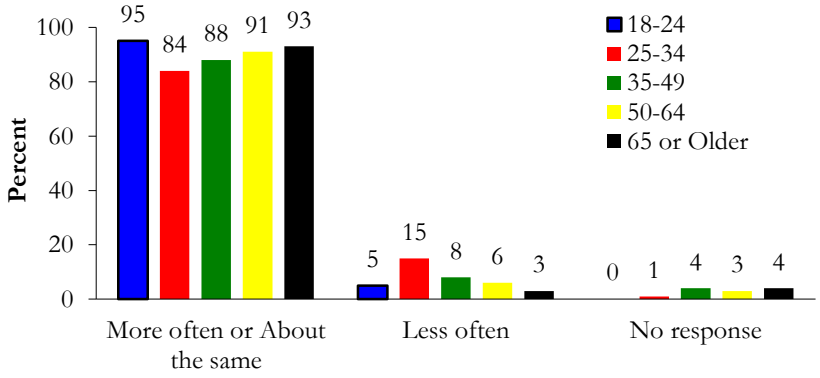
Figure 27. Smoke-Free Potential Impact on Restaurant and Bar Patronage



Smoke-Free Potential Impact on Patronage by Age

Eight-five percent or more of all age groups would patronize restaurants and bars "just as often" or "more often" if Valley City passes a comprehensive smoke-free law (Figure 28).

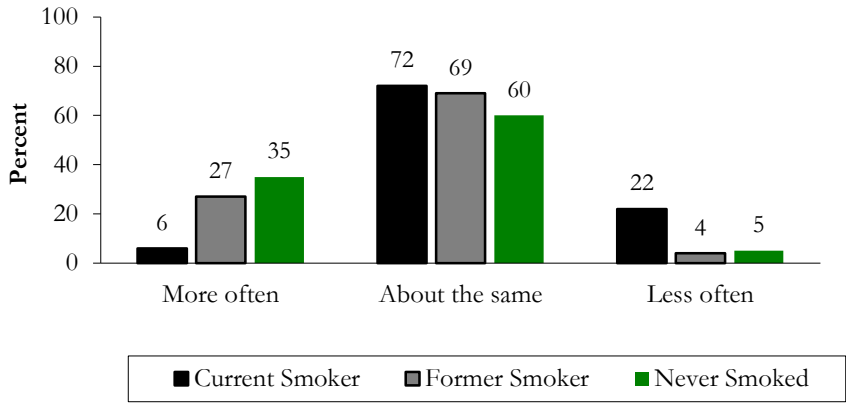
Figure 28. Smoke-Free Potential Impact on Restaurant and Bar Patonage by Age



Smoke-Free Potential Impact on Patronage by Smoking Status[10]

Seventy-eight percent of current smokers, 96% of former smokers and 95% of respondents who had never smoked would patronize restaurants and bars "just as often" or "more often" if Valley City passes a comprehensive smoke-free law (Figure 29).

Figure 29. Smoke-Free Potential Impact on Restaurant and Bar Patronage



[10] Thirteen percent of those surveyed currently smoke; 34% are former smokers and 53% have never smoked.

Appendix A

Demographic Crosstables

Crosstables

Crosstables present the findings in a table form which provides the percentage of all respondents who gave various responses to each question, as well as the proportion of specific sample segments (i.e. gender, age group, educational attainment, smoking habits, etc.) that provided a particular response.

This detail will enable you to determine which segments are more likely (or less likely) to have certain habits, intentions, opinions, perceptions and/or levels of awareness. Please note the tables are separated into sections. The tables in each section have the same "banners" or sample segments across the top. Within each section, the tables are in order by question number, which appears on the top, left-hand side of each table.

Tables by Gender and Age

			Gender		Age Group		Age				
		Total	Male	Female	18 to 49	50 or Older	18 to 24	25 to 34	35 to 49	50 to 64	65 or Older
1. Do you support or oppose a law in Valley City that would prohibit smoking in all public places, including workplaces, offices and all areas of restaurants and bars? (If support/oppose; ask: And would you strongly or somewhat (support - oppose) this law?)	Strongly Support	**65%**	62%	66%	60%	69%	56%	62%	62%	61%	75%
	Somewhat Support	**14%**	13%	16%	16%	13%	22%	15%	11%	15%	12%
	Somewhat Oppose	**12%**	10%	14%	13%	11%	14%	14%	12%	14%	8%
	Strongly Oppose	**9%**	15%	4%	11%	7%	8%	9%	15%	10%	5%
2. In general, do you feel that exposure to second-hand smoke is a serious, moderate, minor or not a health hazard at all?	Serious Hazard	**61%**	54%	68%	53%	69%	50%	49%	60%	61%	75%
	Moderate Hazard	**26%**	31%	22%	32%	20%	36%	31%	28%	28%	14%
	Minor Hazard	**9%**	9%	8%	10%	8%	12%	12%	7%	10%	6%
	Not a Health Hazard	**4%**	6%	2%	5%	3%	2%	8%	5%	1%	5%

Tables by Gender and Age

			Gender		Age Group		Age				
		Total	Male	Female	18 to 49	50 or Older	18 to 24	25 to 34	35 to 49	50 to 64	65 or Older
3. Which statement is the closest to your own view on smoking? **Statement 1**: I believe customers and employees have the right to breathe clean air in workplaces and all indoor public places. **Statement 2:** I believe customers and employees have the right to smoke inside workplaces and all other indoor public places.	Statement 1 "Much" or "Somewhat More" Important	**81%**	82%	80%	78%	83%	74%	93%	71%	84%	83%
	Statement 2 "Much" or "Somewhat More" Important	**19%**	18%	20%	22%	17%	26%	7%	29%	16%	17%
4. Now I'm going to read a series of statements. After I read each one, please tell me whether you personally agree or disagree with that statement. [If Agree - Disagree] Do you strongly or somewhat? All workers should be protected from exposure to secondhand smoke in the workplace.	Strongly Agree	**76%**	72%	79%	72%	79%	82%	62%	72%	74%	83%
	Somewhat Agree	**15%**	15%	14%	18%	11%	11%	23%	18%	12%	11%
	Somewhat Disagree	**7%**	10%	5%	9%	5%	7%	14%	8%	5%	5%
	Strongly Disagree	**2%**	3%	2%	1%	5%	--	1%	2%	9%	1%
5. It would be really nice to go out and enjoy restaurants and bars in Valley City without being exposed to cigarette smoke and smelling like cigarette smoke when you get home. Would you say you strongly or somewhat (agree/disagree)?	Strongly Agree	**78%**	75%	81%	75%	82%	80%	73%	72%	73%	88%
	Somewhat Agree	**10%**	12%	9%	10%	11%	13%	5%	12%	15%	7%
	Somewhat Disagree	**8%**	8%	7%	11%	3%	7%	15%	11%	4%	3%
	Strongly Disagree	**4%**	5%	3%	4%	4%	--	7%	5%	8%	2%

Tables by Gender and Age

			Gender		Age Group		Age				
		Total	Male	Female	18 to 49	50 or Older	18 to 24	25 to 34	35 to 49	50 to 64	65 or Older
6. Restaurants and bars would be healthier for customers and employees if they were smoke free. Would you say you strongly or somewhat (agree - disagree)?	Strongly Agree	**83%**	82%	84%	82%	84%	84%	76%	84%	78%	88%
	Somewhat Agree	**11%**	10%	12%	12%	10%	15%	10%	11%	11%	10%
	Somewhat Disagree	**4%**	3%	4%	4%	3%	1%	7%	5%	5%	2%
	Strongly Disagree	**2%**	5%	--	2%	3%	--	7%	--	6%	--
7. If Valley City passes a law making all areas of restaurants and bars smoke free, would you go out to bars and restaurants more often, less often, or about the same amount as you do now?	More often	**29%**	28%	30%	25%	34%	16%	27%	30%	27%	39%
	Less Often	**7%**	8%	5%	9%	4%	4%	15%	8%	6%	3%
	About the Same	**64%**	64%	65%	66%	62%	80%	58%	62%	67%	58%
8. Which of the following describes your use of tobacco products ... I currently smoke cigarettes... I used to smoke cigarettes, but I've quit ... or I have never been a cigarette smoker.	Current Smoker	**13%**	12%	13%	17%	8%	15%	17%	19%	15%	3%
	Former Smoker	**34%**	38%	30%	29%	39%	31%	31%	28%	30%	46%
	Never Smoked	**53%**	50%	57%	54%	53%	54%	52%	53%	55%	51%

Tables by Smoking Habits and Education

			Smoking Status			Educational Attainment					
		Total	Current Smoker	Former Smoker	Never Smoked	Less than HS	HS Grad	Some Voc-Tech\College	Voc-Tech Grad	College Grad	Advanced College Deg.
1. In general, do you feel that exposure to second-hand smoke is a serious, moderate, minor or not a health hazard at all?	Serious Hazard	**61%**	31%	65%	66%	60%	64%	56%	68%	65%	59%
	Moderate Hazard	**26%**	41%	26%	23%	27%	21%	26%	32%	27%	36%
	Minor Hazard	**9%**	24%	6%	7%	11%	12%	8%	--	8%	4%
	Not a Health Hazard	**4%**	4%	3%	4%	2%	3%	10%	--	--	1%
2. Do you support or oppose a law in Valley City that would prohibit smoking in all public places, including workplaces, offices and all areas of restaurants and bars? (If support/oppose; ask: And would you strongly or somewhat (support - oppose) this law?)	Strongly Support	**65%**	13%	66%	75%	48%	68%	65%	60%	65%	79%
	Somewhat Support	**14%**	31%	11%	13%	37%	13%	7%	29%	14%	9%
	Somewhat Oppose	**12%**	27%	13%	8%	11%	11%	14%	7%	13%	6%
	Strongly Oppose	**9%**	29%	10%	4%	4%	8%	14%	4%	8%	6%
3. Which statement is the closest to your own view on smoking? **Statement 1**: I believe customers and employees have the right to breathe clean air in workplaces and all indoor public places. **Statement 2:** I believe customers and employees have the right to smoke inside workplaces and all	Statement 1 "Much" or "Somewhat More" Important	**81%**	32%	87%	89%	81%	78%	75%	88%	92%	90%
	Statement 2 "Much" or "Somewhat More" Important	**19%**	68%	13%	11%	19%	22%	25%	12%	8%	10%

Tables by Smoking Habits and Education

			Smoking Status			Educational Attainment					
		Total	Current Smoker	Former Smoker	Never Smoked	Less than HS	HS Grad	Some Voc-Tech\College	Voc-Tech Grad	College Grad	Advanced College Deg.
4. Now I'm going to read a series of statements. After I read each one, please tell me whether you personally agree or disagree with that statement. [If Agree - Disagree] Do you strongly or somewhat? All workers should be protected from exposure to secondhand smoke in the workplace.	Strongly Agree	**76%**	37%	79%	83%	75%	75%	71%	79%	78%	87%
	Somewhat Agree	**15%**	37%	10%	12%	23%	10%	19%	17%	14%	4%
	Somewhat Disagree	**7%**	20%	8%	4%	2%	13%	5%	4%	6%	8%
	Strongly Disagree	**2%**	6%	3%	1%	--	2%	5%	--	2%	1%
5. It would be really nice to go out and enjoy restaurants and bars in Valley City without being exposed to cigarette smoke and smelling like cigarette smoke when you get home. Would you say you strongly or somewhat (agree/disagree)?	Strongly Agree	**78%**	24%	79%	90%	79%	72%	74%	71%	87%	90%
	Somewhat Agree	**10%**	26%	10%	7%	8%	14%	11%	18%	7%	5%
	Somewhat Disagree	**8%**	43%	3%	2%	13%	9%	8%	7%	4%	2%
	Strongly Disagree	**4%**	7%	8%	1%	--	5%	7%	4%	2%	3%
6. Restaurants and bars would be healthier for customers and employees if they were smoke free. Would you say you strongly or somewhat (agree - disagree)?	Strongly Agree	**83%**	46%	85%	90%	74%	76%	84%	77%	91%	95%
	Somewhat Agree	**11%**	33%	8%	7%	21%	14%	9%	19%	5%	4%
	Somewhat Disagree	**4%**	20%	1%	2%	5%	4%	5%	4%	3%	--
	Strongly Disagree	**2%**	1%	6%	1%	--	6%	2%	--	1%	1%

Tables by Smoking Habits and Education

			Smoking Status			Educational Attainment					
		Total	Current Smoker	Former Smoker	Never Smoked	Less than HS	HS Grad	Some Voc-Tech\College	Voc-Tech Grad	College Grad	Advanced College Deg.
7. If Valley City passes a law making all areas of restaurants and bars smoke free, would you go out to bars and restaurants more often, less often, or about the same amount as you do now?	More often	**29%**	5%	26%	35%	31%	26%	23%	44%	31%	36%
	Less Often	**7%**	21%	4%	5%	10%	6%	11%	4%	2%	1%
	About the Same	**64%**	68%	67%	58%	54%	64%	64%	52%	65%	62%

Appendix B

Methodology

Methodology Summary

Introduction

The Valley City Secondhand Smoke Study was commissioned by the Barnes County Tobacco-Free Network and the Barnes County ACHIEVE Partnership, and was funded by the Center for Tobacco Prevention and Control Policy [BreatheND – Saving Lives Saving Money]. SSRI conducted the study by interviewing 688 adults in Valley City, North Dakota. Statistical results were weighted to correct known demographic discrepancies. The Valley City sample yields an error margin[11] of +/- 3.5%.

Sample Design

A combination of landline and cellular random digit dial (RDD) samples was used to represent adults in Valley City who have access to either a landline or cellular telephone. Both samples were provided by Marketing Systems Group (MSG), Genesys Sampling Systems[12] according to SSRI specifications. Landline telephone numbers were generated using GENESYS, a stand-alone, in-house RDD windows based program through MSG. Cellular RDD sample replicates were purchased from MSG based upon cellular prefixes in the respective target survey area based on switch locations[13].

SSRI starts with a database of all listed telephone numbers, updated on a four- to six-week rolling basis, 25 percent of the listings at a time. All active blocks—contiguous groups of 100 phone numbers for which more than one residential number is listed—are added to this database. Blocks and exchanges that include only listed business numbers are excluded.

Numbers for the landline sample were drawn with equal probabilities from active blocks (area code + exchange + two-digit block number) that contained three or more residential directory listings. The cellular sample was not list-assisted, but was drawn through a systematic sampling from dedicated wireless 100-blocks and shared service 100-blocks with no directory-listed landline numbers.

Contact Procedures

The telephone interviews were conducted from January 15 through 26, 2012. As many as eight attempts were made to contact every sampled telephone number. Sample was released for interviewing in replicates, which are representative subsamples of the larger sample. Using replicates to control the release of sample ensures that complete call procedures are followed for the entire sample. Calls were staggered over times of day and days of the week to maximize the chance of making contact with potential respondents. Each phone number received at least one daytime call.

Call Dispositions and Response Rates

Call dispositions and response rates for sampled landline and cell phone numbers are presented in Table 1.

[11] This means that one can be 95 percent confident that the mean response for any question in the Valley City sample of adults will not vary more than 3.5% in either direction from the actual mean for the response if all adults age 18 or older in Valley City were surveyed.

[12] Marketing Systems Group, 565 Virginia Drive, Fort Washington, PA, 19034, 1-800-336-7674 www.genesys-sampling.com

[13] Please see Methodology Summary (page 35) Construction of Cellular RDD Sampling Frames based on Switch Locations.

Table 1. Valley City Call Dispositions

Landline	Cellular	
6,196	3,000	Total Numbers Dialed
192	5	Non-residential (NR)
95	1	Computer/Fax (CF)
0	1,049	Not a Valley City Resident
0	--	Cell Phone (C)
1,813	450	Other Not Working (NW)
4,096	1,495	Working Numbers
66.1%	**49.8%**	**Working Rate**
1,016	24	No Answer / Busy (NB)
555	4	Voice Mail (VC)
2,525	1,467	Contacted Numbers
61.6%	**98.1%**	**Contact Rate**
330	236	Call Back (CB)
681	380	Refusal (R)
1,514	851	Cooperating numbers
60.0%	**58.0%**	**Cooperation Rate**
16	3	Language Barrier (L)
0	262	Child's Cell Phone (CC)
1,498	586	Eligible Numbers
98.9%	**68.9%**	**Eligibility Rate**
30	9	Break-off (B)
572	116	Completes (CM)
38.2%	**19.8%**	**Completion Rate**
14.0%	**7.8%**	**Response Rate**[14]

[14] Response Rate is the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others) plus all cases of unknown eligibility (unknown if housing unit, plus unknown, other).

WEIGHTING METHODOLOGY REPORT
VALLEY CITY SECONDHAND SMOKE STUDY

Design Overview:

This survey has secured a total of 688 interviews with adults 18 years of age or older residing in Valley City, North Dakota. In order to provide a probability-based sample representative of all such individuals, a dual-frame random digit dial (RDD) sampling methodology was used, whereby both landline and cellular telephone numbers were included in the sample. The following table provides a summary of the sampling parameters for this study

Table 1. Sampling summary for landline and cellular components

Sample Type	Sample Size	Universe[15]
Landline	6,196	76,000
Cellular	3,000	9,000
Total	**9,196**	**85,000**

Weighting:

Virtually, all survey data are weighted before they can be used to produce reliable estimates of the population parameters. While reflecting the selection probabilities of sampled units, weighting also attempts to compensate for practical limitations of a sample survey, such as differential nonresponse and undercoverage. The weighting process for this survey entailed two major steps. The first step consisted of computation of the *design weights* to reflect selection probabilities of households[16]. In the second step, design weights were adjusted so that the resulting final weights would aggregate to reported totals for the target population with respect to specific geodemographic characteristics.

For the second step final weights were adjusted using the method of *raking*, whereby design weights were simultaneously adjusted along several dimensions using the *WgtAdjust* procedure of SUDAAN (www.rti.org/sudaan). This iterative proportional fitting process ensures that all weighted frequency counts along any of the raking dimensions match their corresponding population totals obtained from external sources. The needed population totals for this study were obtained from the latest Claritas estimates for Valley City, North Dakota, as summarized in the following tables.

Table 2. Respondent and population counts by gender and age for the 1st raking dimension

Gender	Age	Sample		Universe	
Male	18-24	36	5.2%	399	7.5%
	25-34	37	5.4%	459	8.6%
	35-49	74	10.8%	506	9.5%
	50-64	90	13.1%	552	10.3%
	65+	91	13.2%	594	11.1%
Female	18-24	49	7.1%	440	8.2%
	25-34	40	5.8%	363	6.8%
	35-49	75	10.9%	536	10.0%
	50-64	98	14.2%	600	11.2%
	65+	98	14.2%	898	16.8%
Total		**688**	**100.0%**	**5,347**	**100.0%**

[15] The universe is the total number of target sample telephone numbers available for this sample.

[16] When only one adult is selected in each household the resulting selection probabilities must be reflected in the design weights as well, however, for this study this step was omitted because the number of adults in each household was not recorded.

Table 3. Respondent and population counts by education for the 2nd raking dimension

Education	Sample		Universe	
Less High School	57	8.3%	642	12.0%
High School Graduate	160	23.3%	1,511	28.3%
Some College	174	25.3%	1,672	31.3%
Bachelors or Higher	297	43.2%	1,522	28.5%
Total	**688**	**100.0%**	**5,347**	**100.0%**

Table 4. Respondent and population counts by telephone status for the 3rd raking dimension

Telephone Status	Sample		Universe	
Cell-Only	72	10.5%	1,614	30.2%
Others	616	89.5%	3,733	69.8%
Total	**688**	**100.0%**	**5,347**	**100.0%**

Variance Estimation for Weighted Data:

Survey estimates can only be interpreted properly in light of their associated sampling errors. Since weighting often increases variances of estimates, use of standard variance calculation formulae with weighted data can result in misleading statistical inferences. With weighted data, two general approaches for variance estimation can be distinguished. One method is *Taylor Series Linearization* and the second is *Replication*. There are several statistical software packages that can be used to produce design-proper estimates of variances, including SAS, SUDAAN, SPSS, and Stata.

An Approximation Method for Variance Estimation can be used to avoid the need for special software packages. Researchers who do not have access to such tools for design-proper estimation of standard errors can approximate the resulting variance inflation due to weighting and incorporate that in subsequent calculations of confidence intervals and tests of significance. With w_i representing the final weight of the i^{th} respondent, the inflation due to weighting, which is commonly referred to as *Design Effect*, can be approximated by:

$$\delta = 1 + \frac{\sum_{i=1}^{n} \frac{(w_i - \bar{w})^2}{n-1}}{\bar{w}^2}$$

For calculation of a confidence interval for an estimated percentage, $\hat{p}$, one can obtain the conventional variance of the given percentage and multiply it by the approximated design effect, δ, and use the resulting quantity as adjusted variance. As such, the adjusted standard deviation for the percentage in question would be given by:

$$S(\hat{p}) \approx \sqrt{\frac{\hat{p}(1-\hat{p})}{n-1}\left(\frac{N-n}{N}\right) \times \delta}$$

Subsequently, the (100-α) percent confidence interval for P would be given by:

$$\hat{p} - z_{\alpha/2}\sqrt{\frac{\hat{p}(1-\hat{p})}{n-1}\left(\frac{N-n}{N}\right) \times \delta} \leq P \leq \hat{p} + z_{\alpha/2}\sqrt{\frac{\hat{p}(1-\hat{p})}{n-1}\left(\frac{N-n}{N}\right) \times \delta}$$

Construction of Cellular RDD Sampling Frames Based on Switch Locations

Constructing cellular sampling frames for small geographic domains is subject to both operational and definitional challenges. Many such challenges are due to the simple fact that, unlike landline telephone numbers, cellular numbers are assigned to mobile devices that may be located across the nation – if not the globe. In spite of this indeterminable mobility, however, most US cellular telephone numbers are assigned to exchanges that are native to specific locations as is the case with landline telephone numbers. Cognizant of these dynamics, MSG has developed a methodology for constructing cellular sampling frames for small areas based on the location each 1000-series block of cellular numbers is associated with. While not a one-to-one correspondence, with this methodology it is possible to identify the broader area (e.g., county) where the subscriber of a specific cellular number has a higher likelihood of residing.

Briefly, the North American Numbering Plan Administration (NANPA) is the governing body that regulates the assignment of all area codes, exchanges, and 1000-series blocks of telephone numbers in the US. The NANPA assignment protocols, which tend to be location-centric, apply uniformly to all types of numbers including those used for landline, cellular, and paging services. While area codes conform to state boundaries, for 1000-series blocks, Switch Centers[17] serve as the basic unit of geography for the telecom industry. Moreover, newly activated cellular numbers are assigned within a finite set of 1000-series blocks allocated to these switch centers.

Given that each switch center has a unique latitude and longitude, cellular switch centers and the set of 1000-series blocks they serve can be identified and included in the sampling frame for specific geographic locations. Unlike landlines for which their associated centers blanket the entire country, cellular switch centers tend to cluster around larger population centers. As such, in metro areas with high volume of telephone calls there can be many cellular switch centers whereas in rural areas such centers may cover several counties. In fact, less than half of the counties in the US have dedicated cellular switch centers. Consequently, the proposed methodology tends to have better coverage properties in populated areas. In order to better understand this situation, in what follows a brief description of the US cellular network topology is provided.

When a call is initiated by a cellular device the resulting signal is detected by the nearest Cell Site, which typically includes a tower or other elevated structure for mounting antennas and associated equipments for signal transmission. Most cell sites are connected to switch centers on a wired network, while others may rely on microwave technology for transmitting information through radio waves. Once a call has been detected and transmitted – either over the wired network or radio waves – the corresponding switch center determines the destination point for the given call and routes it out on the US telephony network. If the destination is a wired residence or business, the call is routed to the local Central Office to be connected to its final destination point. When the destination point is another cellular telephone, however, the closest cell site to the cellular device is identified in order to route the call to the corresponding switch center.

Since in rural areas cell sites and their controlling switch center can be far apart, cellular frame construction in such instances may require inclusion of switch centers that are well outside of the target geography. While improving coverage, however, this inevitable dilution of the frame will increase the likelihood of reaching individuals who reside outside of the geography of interest. As such, determining the optimal set of rural switch centers for a small geographic location is somewhat indecisive and subject to under- and over-coverage.

[17] Switch or wire centers describe the organization of the local telephone exchange system, with each center serving a unique set of exchanges and their associated telephone numbers.