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# Comprehensive Smoke-Free Ordinance Community Impact Study

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**Social Science Research Institute**



*University of North Dakota*

*Knowledge to Bring People  
and Resources Together*

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# Comprehensive Smoke-Free Community Impact Study

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## Purpose

The purpose of this study is to assess community attitudes and perceptions regarding the expanded City of Grand Forks Smoke-Free Workplace and Public Place Ordinance which went into effect on August 15, 2010. The study was commissioned by the Grand Forks Tobacco Free Coalition with support from the Grand Forks Public Health Department and funded by BreatheND – Saving Lives Saving Money. The main study areas include:

- Awareness of and reaction to the expanded smoke-free ordinance
- Perceived risks of secondhand smoke
- Attitudes toward public smoking
- Ordinance impact on bars, casinos and truck stops patronage
- Ordinance impact on smoking behavior

## Methodology Overview

The results of this study are based on telephone interviews of 691 randomly selected adults age 18 or older in the City of Grand Forks conducted from November 30 through December 17, 2011. 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 City of Grand Forks sample yields an error margin<sup>1</sup> of +/- 3.7%.

Moreover, in order to increase the number of interviews with younger adults 21 to 34, a supplemental sample was used to reach such respondents. An additional 172 interviews were conducted to increase the total sample size of young adults to 385. This subsample yields an error margin of +/- 4.9%. The total number of interviews conducted was 863. For the comprehensive methodology report please see Appendix B.

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<sup>1</sup> This means that one can be 95 percent confident that the mean response for any question in the Grand Forks City sample of adults will not vary more than 3.7% in either direction from the actual mean for the response if all adults age 18 or older in the City of Grand Forks were surveyed.

# Executive Summary

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## Key Findings

### I. Awareness of and Reaction to the Expanded Smoke-free Ordinance

- Overall, 93% of respondents were aware that in August 2010 an expanded smoke-free ordinance in the City of Grand Forks went into effect that prohibits smoking inside all public places and places of employment.
- Overall, 84% of respondents favor the current comprehensive smoke-free city ordinance (71% strongly and 13% somewhat favor).
- Over 75% of all age groups favor the current comprehensive ordinance, with older respondents (age 35 or older) more likely to support the ordinance compared to those ages 18 to 34.
- Overall, as the level of education increases, so does the level of support for the current comprehensive smoke-free ordinance

### II. Perceived Risks of Secondhand Smoke

#### Exposure to Secondhand Smoke

- Over nine out of ten adults (91%) believe secondhand smoke is a health hazard to those who breathe it (64% “serious” and 27% “moderate health hazard”).
- Women (72%) are more likely to consider exposure to secondhand smoke as a serious health hazard compared to men (56%).
- A clear majority of current smokers (70%), former smokers (95%) and of respondents who had never smoked (93%) agree that exposure to secondhand smoke is a "serious" or "moderate health hazard".

#### Impact of Occasionally Breathing Secondhand Smoke

- Over eight out of ten adults (85%) believe if a nonsmoker occasionally breathes secondhand that this exposure is a "serious health hazard" (48%) or a "moderate health hazard" (37%).

### III. Attitudes toward Public Smoking

#### Importance of Smoke-free Environment in All Workplaces

- Nine out of ten adults (90%) feel that it is "very important" (81%) or "somewhat important" (9%) to have a smoke-free environment inside all workplaces.
- Respondents with higher educational levels are more likely to feel that it is important to have a smoke-free environment inside all workplaces, although 79% to 100% of those at all levels believe that this is “very” or “somewhat important”.

## **Importance of Smoke-free Environment in Specific Workplaces**

### **Bars**

- Nearly nine out of ten respondents (88%) feel that it is "very important" (74%) or "somewhat important" (14%) to have a smoke-free environment inside of bars.

### **Casinos**

- Eight out of ten respondents (80%) feel that it is "very important" (58%) or "somewhat important" (22%) to have a smoke-free environment inside of casinos.

### **Truck Stops**

- Over eight out of ten respondents (82%) feel that it is "very important" (63%) or "somewhat important" (19%) to have a smoke-free environment inside of truck stops.

### **Importance of Smoke-free Environment in Specific Workplaces by Smoking Status**

- Almost half of current smokers (49%), 94% of former smokers and 94% of young adults who had never smoked believe that it is "very important" or "somewhat important" to have a smoke-free environment inside of bars.
- In Casinos, only 20% of current smokers, 87% of former smokers and 85% of young adults who had never smoked believe that it is "very important" or "somewhat important" to have a smoke-free environment inside of this workplace.
- Over one-third of current smokers (34%), 97% of former smokers and 95% of young adults who had never smoked believe that it is "very important" or "somewhat important" to have a smoke-free environment inside of truck stops.

### **Smoking Points of View**

- Nearly nine out of ten respondents believe it is "much" (80%) or "somewhat" (8%) 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 (7%).
- Over nine out of ten former smokers (94%), 93% of respondents who had never smoked and 45% of current smokers 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. Ordinance Impact on Bars, Casinos and Truck Stop Patronage

### Bars

- Almost half (45%) of bar patrons in the past year indicated that the expanded smoke-free ordinance has impacted how often they visit these business establishments. Two-thirds of these patrons now go to bars more often (19% “much more often” and 47% “somewhat more often”).
- Nearly eight out of ten (79%) of bar patron respondents believe since smoking has been prohibited in bars the experience is more enjoyable (70% “much more” and nine percent “somewhat more enjoyable”).

### Casinos

- Over one-fifth (21%) of current casino patrons indicated that the expanded smoke-free ordinance has impacted how often they visit these types of business establishments. Fifty-nine percent of these patrons now go to casinos more often (18% “much more often” and 41% “somewhat more often”).

### Truck Stops

- Almost one-third of current truck stop patrons (29%) indicated that the expanded smoke-free ordinance has impacted how often they visit these types of business establishments. Seventy-two percent of these patrons now go to truck stops more often (30% “much more often” and 42% “somewhat more often”).
- Two-thirds of casino and truck stop patron respondents believe since smoking has been prohibited in these establishments the experience is more enjoyable (53% “much more” and 13% “somewhat more enjoyable”).

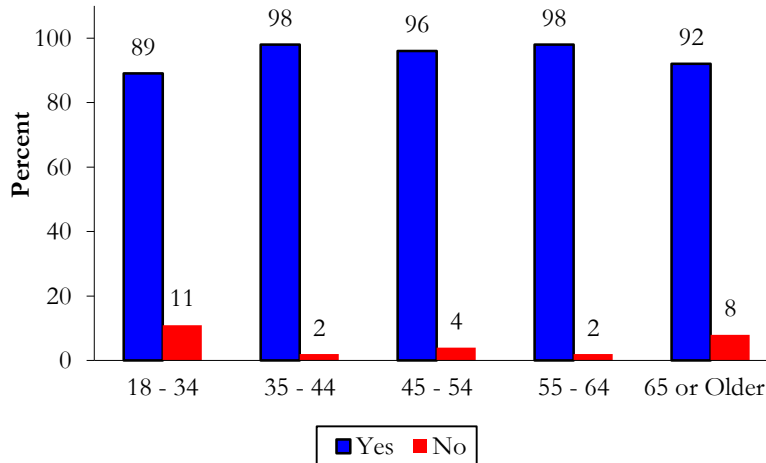


# I. Awareness and Reaction

## Expanded Smoke-free Ordinance Awareness

Overall, 93% of the persons interviewed were aware that in August 2010 an expanded smoke-free ordinance in the City of Grand Forks went into effect that prohibits smoking inside all public places and places of employment. Figure 1 presents respondents awareness by age category.

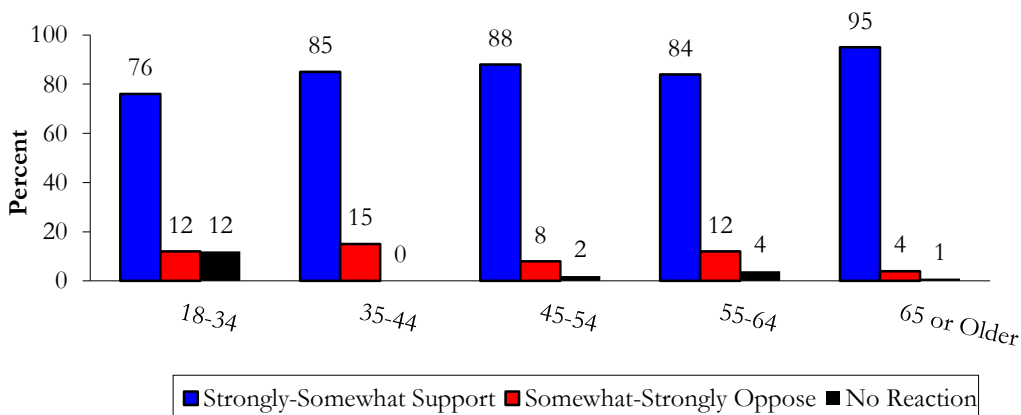
**Figure 1. Awareness of Expanded Smoke-Free Ordinance by Age**



## Reaction to Current Comprehensive Smoke-free City Ordinance

Overall, 84% of respondents favor the current comprehensive smoke-free city ordinance (71% strongly and 13% somewhat favor). Over 75% of all age groups favor the current comprehensive ordinance (Figure 2).

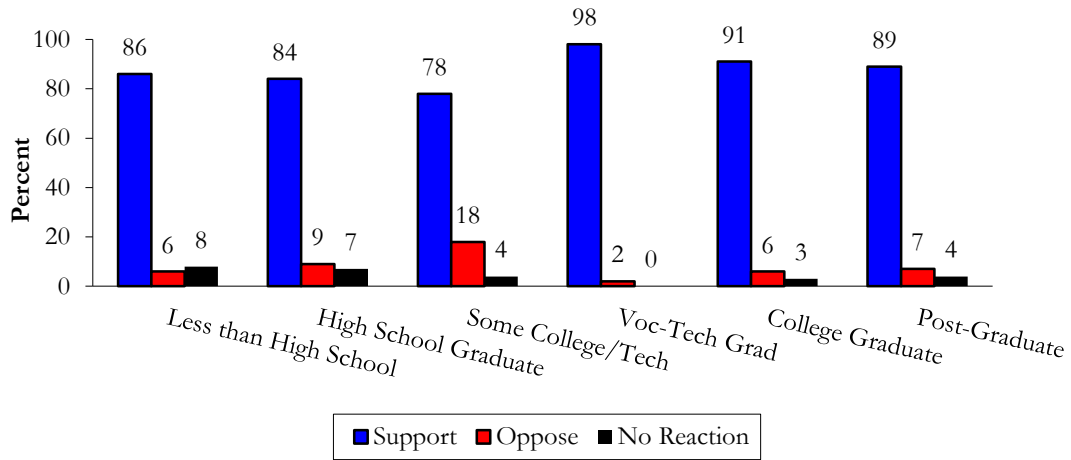
**Figure 2. Reaction to Current Comprehensive Smoke-Free City Ordinance by Age**



Reaction by Educational Attainment

The majority of respondents by all educational attainment levels (78% to 98%) support the current comprehensive smoke-free ordinance (Figure 3).

**Figure 3. Reaction to Current Comprehensive Smoke-Free City Ordinance by Educational Attainment**

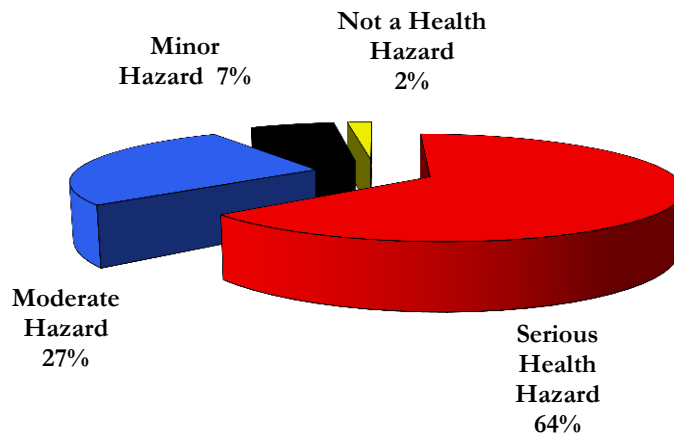


## II. Perceived Risks of Secondhand Smoke

### Exposure to 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-four percent agree that exposure to secondhand smoke is a "serious health hazard" and 27% believe exposure is a "moderate health hazard" (Figure 4). Seven percent feel that exposure to secondhand smoke is a "minor health hazard" and two percent feel that such exposure is "not a health hazard at all".

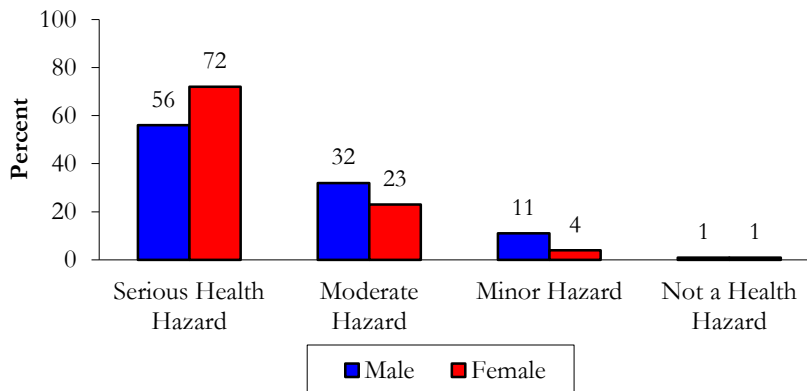
**Figure 4. Exposure to Secondhand Smoke**



### Exposure to Secondhand Smoke by Gender

Women (72%) are more likely to consider exposure to secondhand smoke as a serious health hazard compared to men (56%). Overall, ninety-five percent of women believe that secondhand smoke is a serious (72%) or moderate (23%) health hazard compared to 88% of men (Figure 5).

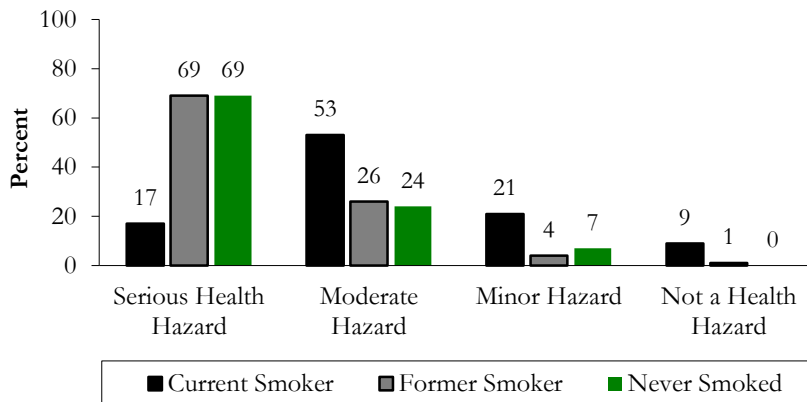
**Figure 5. Exposure to Secondhand Smoke by Gender**



### Exposure to Secondhand Smoke by Smoking Status<sup>2</sup>

Seventy percent of current smokers, 95% of former smokers and 93% of respondents who had never smoked agree that exposure to secondhand smoke is a "serious" or "moderate health hazard" (Figure 6). Conversely, 30% of current smokers believe secondhand exposure is a "minor" or "not a health hazard at all".

**Figure 6. Exposure to Secondhand Smoke by Smoking Status**



### **Impact of Occasionally Breathing Secondhand Smoke**

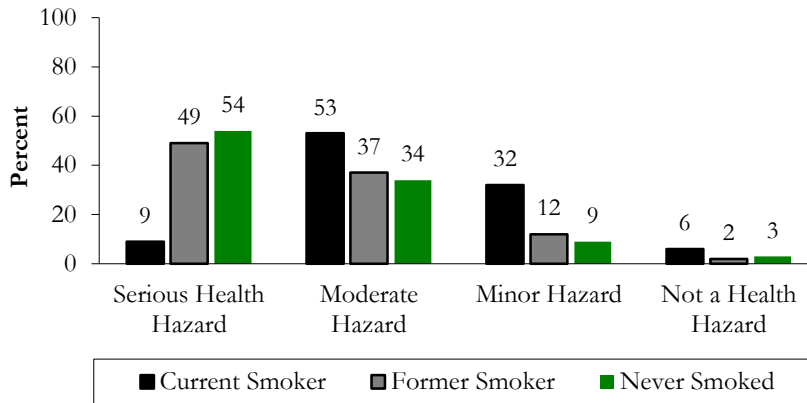
Survey respondents were asked specifically what impact secondhand smoke will have on the health of a nonsmoker if the nonsmoker occasionally breathes secondhand smoke. Forty-eight percent agree if the nonsmoker occasionally breathes secondhand that this exposure is a "serious health hazard" and 37% believe that this exposure is a "moderate health hazard". Twelve percent feel that occasional exposure to secondhand smoke is a "minor health hazard" and three percent feel that such exposure is "not a health hazard at all". In respect to gender, 86% of women believe if a nonsmoker occasionally breathes secondhand smoke this is a serious (52%) or moderate (34%) health hazard compared to 82% of men.

<sup>2</sup> Ten percent of those surveyed currently smoke; 33% are former smokers, 57% have never smoked and less than one percent are smokeless or other tobacco users.

### Impact by Smoking Status

Sixty-two percent of current smokers, 86% of former smokers and 88% of respondents who had never smoked agree that exposure to secondhand smoke is a "serious" or "moderate health hazard" (Figure 7). Conversely, 38% of current smokers believe secondhand exposure is a "minor" or "not a health hazard at all".

**Figure 7. Impact of Occasionally Breathing Secondhand Smoke by Smoking Status**

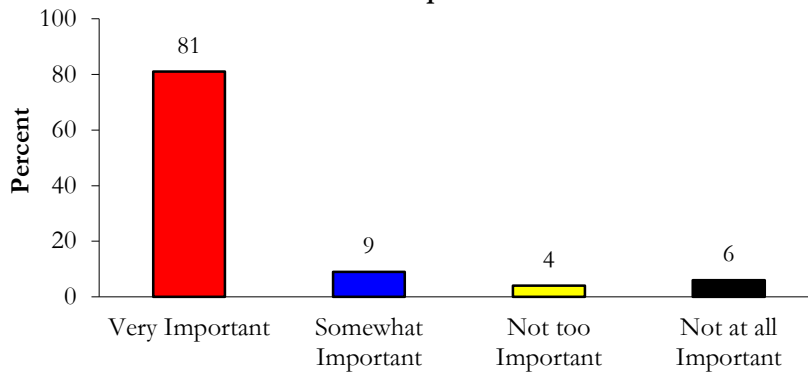


# III. Attitudes toward Public Smoking

## Importance of Smoke-free Environment in All Workplaces

The majority of respondents (90%) feel that it is "very important" or "somewhat important" to have a smoke-free environment inside all workplaces (Figure 8). Six percent feel it is "not at all important" and four percent indicated it was "not too important". In respect to gender, women have stronger opinions compared to men, with 92% of women believe it is important to have a smoke-free environment inside all workplaces (87% "very important" and five percent "somewhat important") compared to 87% of men (74% "very important" and 13% "somewhat important").

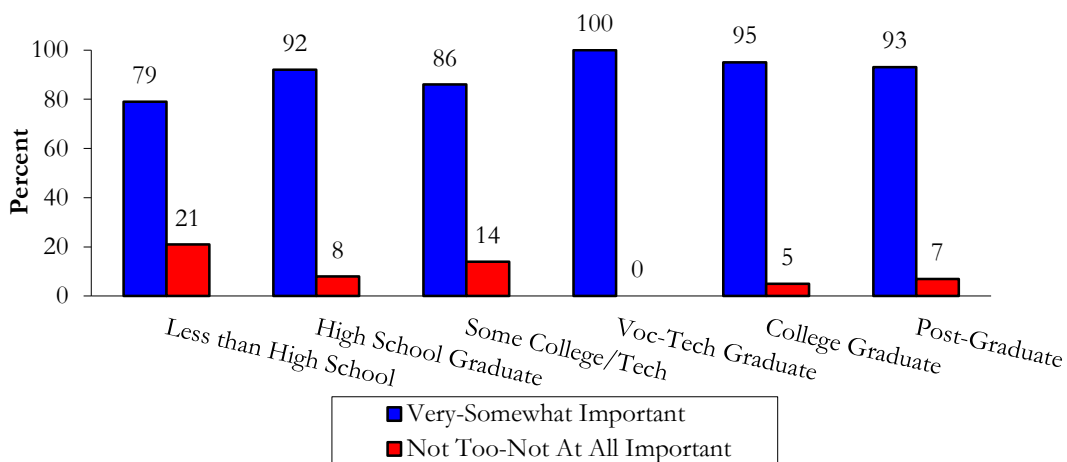
**Figure 8. Importance of Smoke-Free Environment inside All Workplaces**



### Importance by Educational Attainment

Respondents with higher educational levels are more likely to feel that it is important to have a smoke-free environment inside all workplaces, although 79% to 100% of those at all educational levels believe that this is "very" or "somewhat important" (Figure 9).

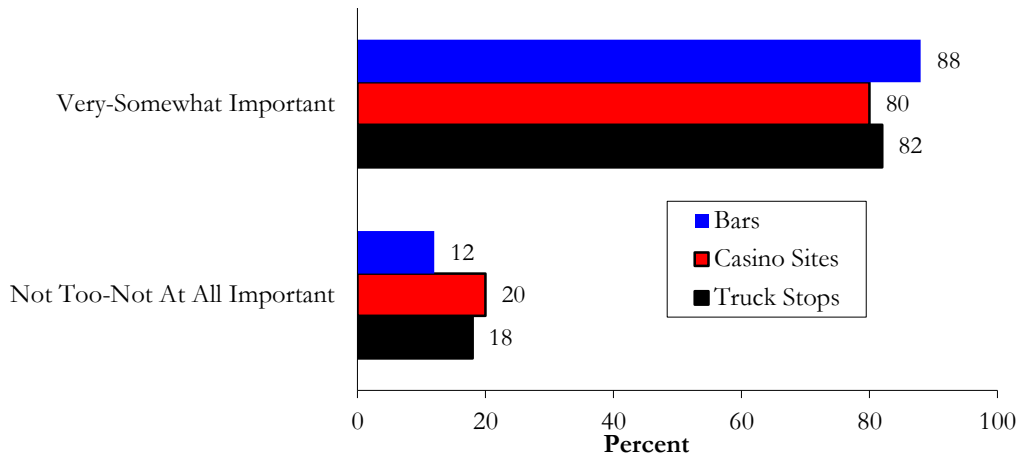
**Figure 9. Importance of Smoke-Free Environment inside All Workplaces by Educational Attainment**



### Importance of Smoke-free Environment in Specific Workplaces

Survey respondents were then asked their opinion on the importance of having a smoke-free environment inside of specific workplaces. On average, 83% of those interviewed feel that it is "very important" or "somewhat important" to have a smoke-free environment inside of bars, casino gaming sites and truck stops (Figure 10).

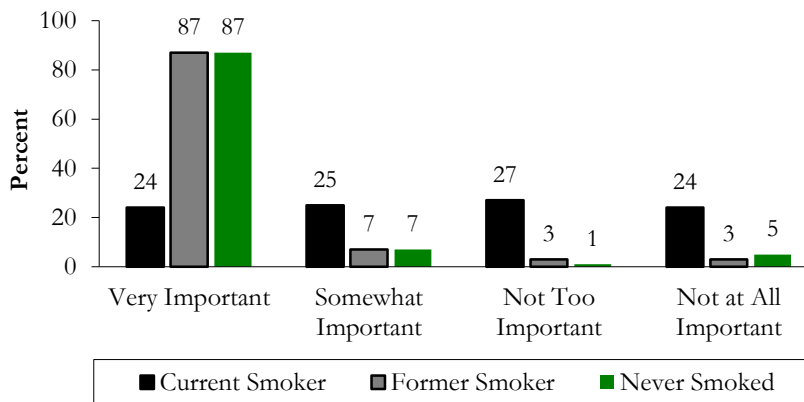
**Figure 10. Importance of Smoke-Free Environment inside Specific Workplaces**



### Importance in Bars by Smoking Status<sup>3</sup>

Almost half of current smokers (49%), 94% of former smokers and 94% of respondents who had never smoked believe that it is "very important" or "somewhat important" to have a smoke-free environment inside of bars (Figure 11). Conversely, 51% of current smokers believe it is "not too" or "not at all important" of an issue.

**Figure 11. Importance of Smoke-Free Environment in Bars by Smoking Status**

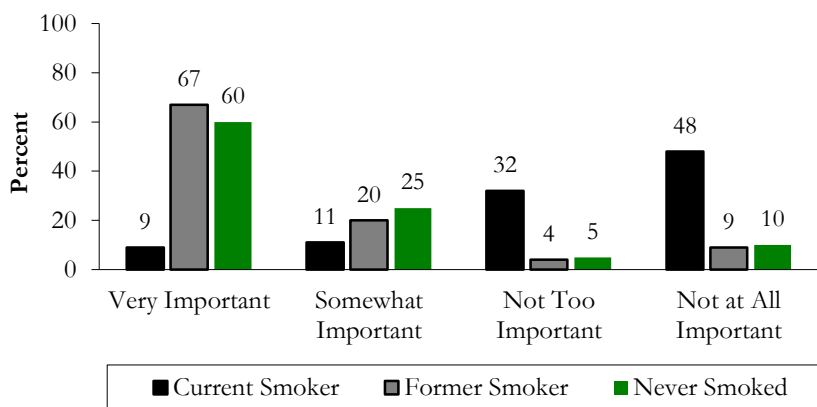


<sup>3</sup> Ten percent of those surveyed currently smoke; 33% are former smokers, 57% have never smoked and less than one percent are smokeless or other tobacco users.

### Importance in Casinos by Smoking Status<sup>4</sup>

In respect to Casinos, only 20% of current smokers, 87% of former smokers and 85% of young adults who had never smoked believe that it is "very important" or "somewhat important" to have a smoke-free environment inside of casinos (Figure 12). Current smokers held stronger opinions in regards to the importance of having a smoke-free environment inside casinos. Eight out of ten smokers (80%) believe this issue is "not too" or "not at all important".

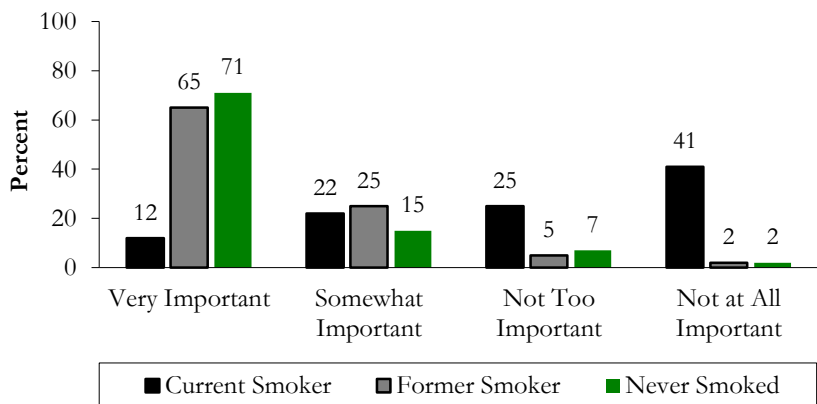
**Figure 12. Importance of Smoke-Free Environment in Casinos by Smoking Status**



### Importance in Truck Stops by Smoking Status<sup>4</sup>

Over one-third of current smokers (34%), 87% of former smokers and 86% of young adults who had never smoked believe that it is "very important" or "somewhat important" to have a smoke-free environment inside of truck stops (Figure 13). Again current smokers held stronger opinions in regards to the importance of having a smoke-free environment inside truck stops. Two-thirds of smokers (66%) believe this issue is "not too" or "not at all important".

**Figure 13. Importance of Smoke-Free Environment in Truck Stops by Smoking Status**



<sup>4</sup> Ten percent of those surveyed currently smoke; 33% are former smokers, 57% have never smoked and less than one percent are smokeless or other tobacco users.



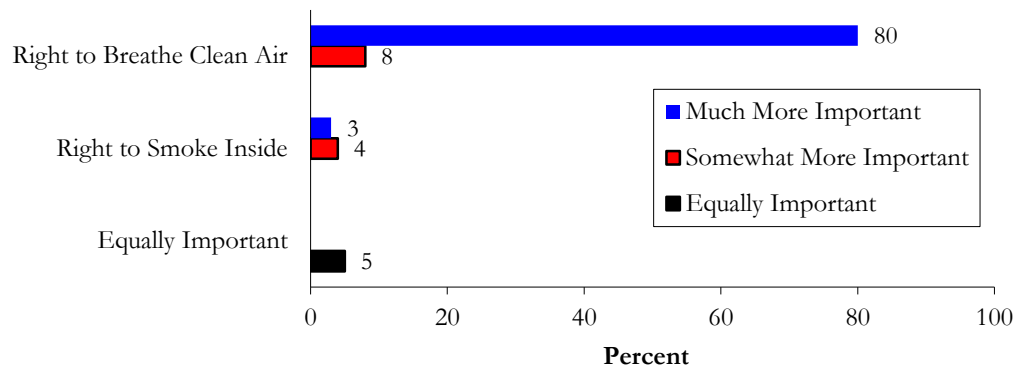
## Smoking Points of View

Survey respondents were asked which of two statements<sup>5</sup> concerning smoking comes closest to their point of view. The two statements are:

- 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-eight percent of respondents agreed with statement one. The majority believe it is “much” (80%) or “somewhat” (8%) more important for customers and employees to have the right to breathe clean air in workplaces and all indoor public places (Figure 14). Seven percent of those surveyed agreed with statement two and five percent volunteered the position that both statements are equally important.

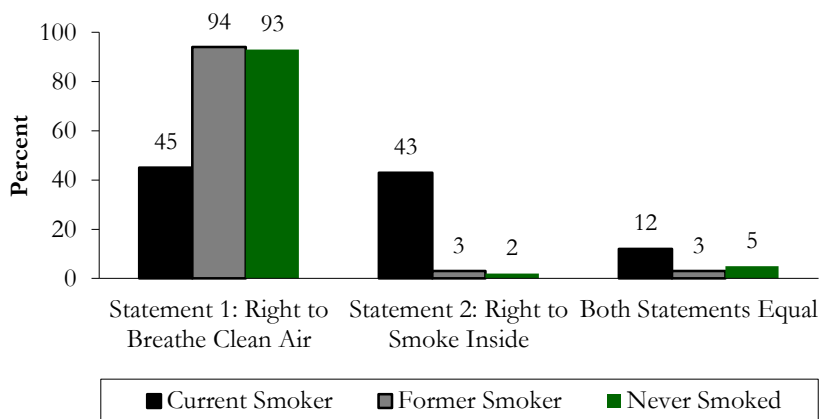
**Figure 14. Smoking Points of View**



### Smoking Point of View by Smoking Status<sup>6</sup>

Forty-five percent of current smokers, 94% of former smokers and 93% 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 (Figure 15).

**Figure 15. Smoking Points of View by Smoking Status**



<sup>5</sup> During interviewing these statements were rotated in respect to which was first read to the respondent. Then after the initial response interview staff asked if they thought it was “much more important” or “somewhat more important”.

<sup>6</sup> Ten percent of those surveyed currently smoke; 33% are former smokers, 57% have never smoked and less than one percent are smokeless or other tobacco users.

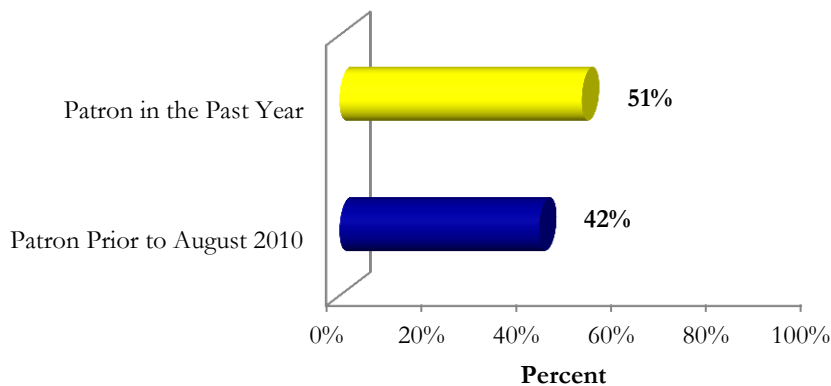
# IV. Ordinance Impact on Patronage

## Ordinance Impact on Bars, Casinos and Truck Stops Patronage

### Bar Patronage

Prior to August 2010, when the comprehensive smoke-free ordinance went into effect, 42% of survey respondents reported they normally frequented bars. Respondents were also asked how often they frequent Grand Forks bars in the past year. Overall, 51% indicated patronizing bars in the past year (Figure 16). In particular, five percent frequent Grand Forks bars "more than once a week", 10% "about once a week", 18% "about once or twice each month" and 18% frequent bars "less than once a month" in the past year. Forty-nine percent of respondents do not patronize bars.

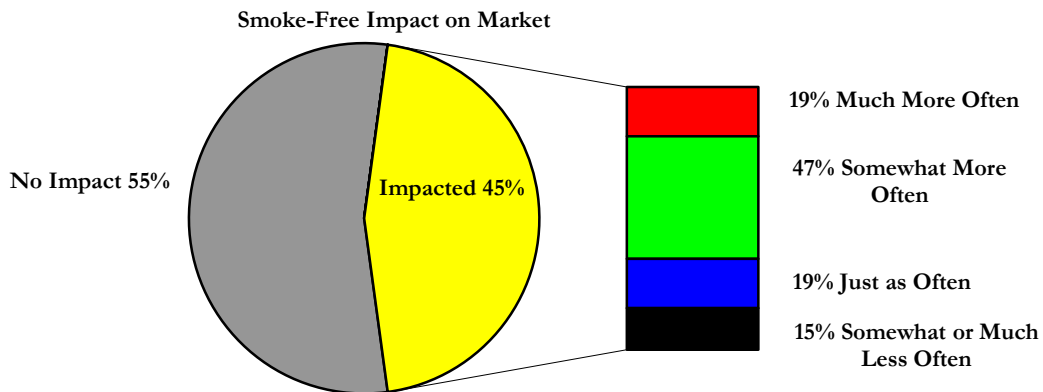
**Figure 16. Bar Patronage "Pre and Post" Smoke-Free Ordinance**



### Ordinance Impact on Bar Patronage

Forty-five percent of bar patrons in the past year indicated that the expanded smoke-free ordinance has impacted how often they visit these business establishments. Two-thirds of these patrons now go to bars more often (19% "much more often" and 47% "somewhat more often"). Nineteen percent patronize bars "just as often" while 15% frequent less often (nine percent "somewhat" and six percent "much less often") (Figure 17).

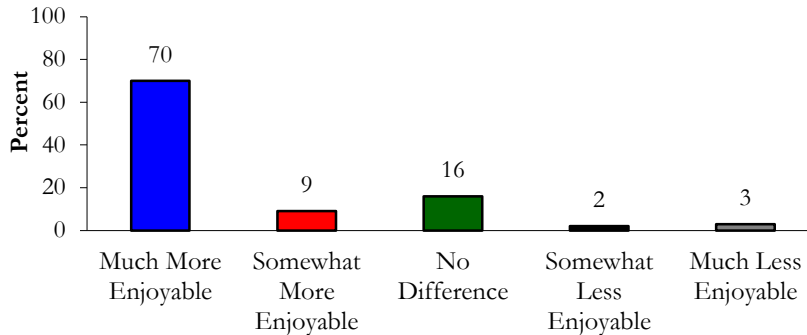
**Figure 17. Impact of Comprehensive Smoke-Free Ordinance on Bar Patronage**



### Impact on Bar Experience

Seventy-nine percent of bar patron respondents believe since smoking has been prohibited in bars the experience is more enjoyable (70% “much more” and nine percent “somewhat more enjoyable”). Sixteen percent report “no difference” and five percent a less enjoyable experience (three percent “much less” and “somewhat less enjoyable”) (Figure 18).

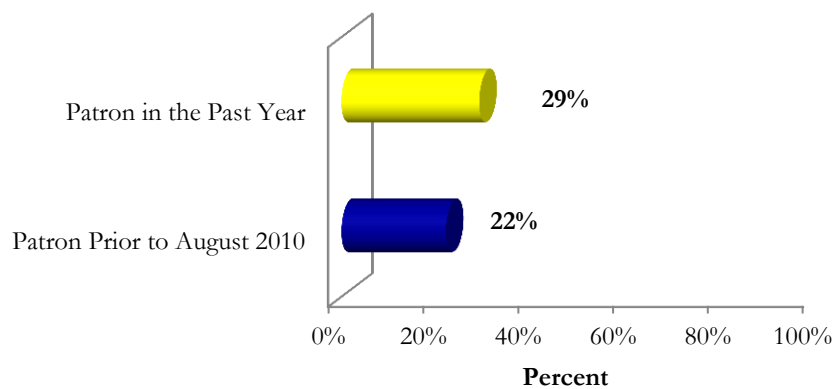
**Figure 18. Ordinance Impact on Bar Experience**



### Casino Patronage

Prior to August 2010, when the comprehensive smoke-free ordinance went into effect, 22% of survey respondents reported they normally frequented casinos. Respondents were also asked how often they frequent Grand Forks casinos in the past year. Overall, 29% indicated patronizing casinos in the past year (Figure 19). In particular, one percent frequent Grand Forks casinos "more than once a week", two percent "about once a week", five percent "about once or twice each month" and 21% frequent casinos "less than once a month" in the past year. Seventy-one percent of respondents do not patronize casinos.

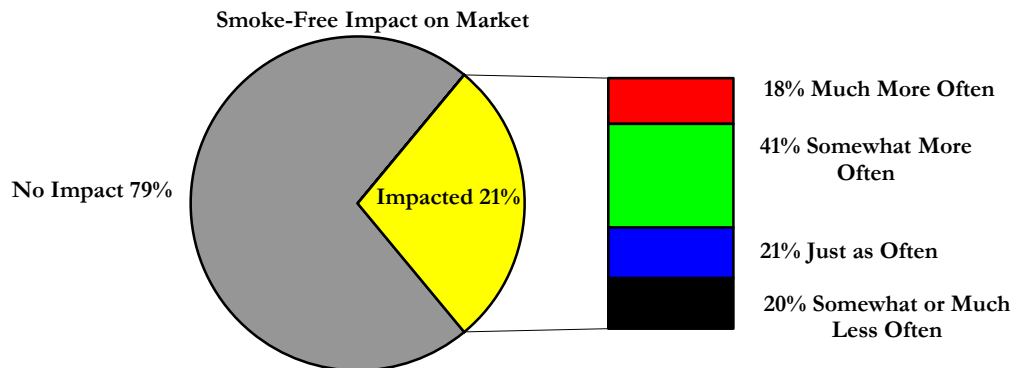
**Figure 19. Casino Patronage "Pre and Post" Smoke-Free Ordinance**



### Ordinance Impact on Casino Patronage

Twenty-one percent of casino patrons in the past year indicated that the expanded smoke-free ordinance has impacted how often they visit these types of business establishments. Fifty-nine percent of these patrons now go to casinos more often (18% “much more often” and 41% “somewhat more often”). Twenty-one percent patronize casinos “just as often” while 20% frequent less often (10% “somewhat” and 10% “much less often”) (Figure 20).

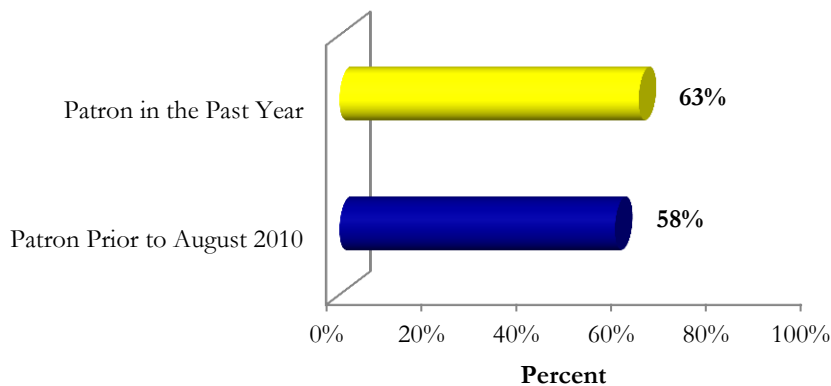
**Figure 20. Impact of Comprehensive Smoke-Free Ordinance on Casino Patronage**



Truck Stop Patronage

Prior to August 2010, when the comprehensive smoke-free ordinance went into effect, 58% of survey respondents reported they normally frequented truck stops. Respondents were also asked how often they frequent Grand Forks truck stops in the past year. Overall, 63% indicated patronizing truck stops in the past year (Figure 21). In particular, five percent frequent Grand Forks truck stops "more than once a week", three percent "about once a week", 27% "about once or twice each month" and 27% frequent truck stops "less than once a month" in the past year. Thirty-eight percent of respondents do not patronize truck stops.

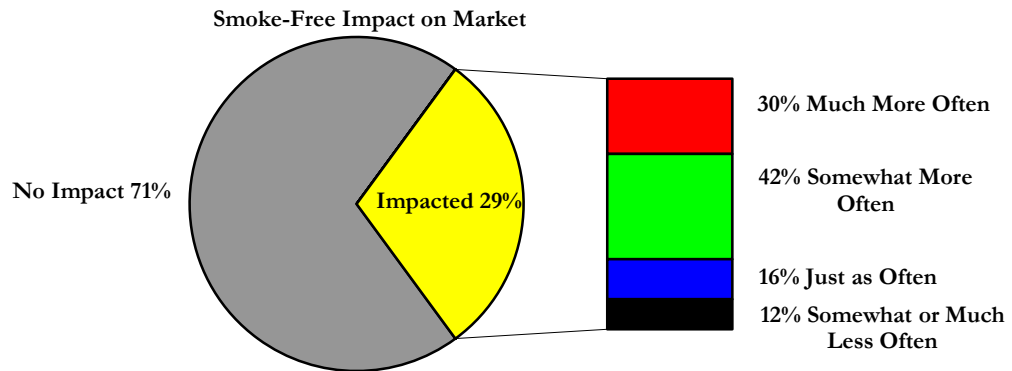
**Figure 21. Truck Stop Patronage "Pre and Post" Smoke-Free Ordinance**



Ordinance Impact on Truck Stop Patronage

Twenty-nine percent of truck stop patrons in the past year indicated that the expanded smoke-free ordinance has impacted how often they visit these types of business establishments. Seventy-two percent of these patrons now go to truck stops more often (30% "much more often" and 42% "somewhat more often"). Sixteen percent patronize truck stops "just as often" while 12% frequent less often (three percent "somewhat" and nine percent "much less often") (Figure 22).

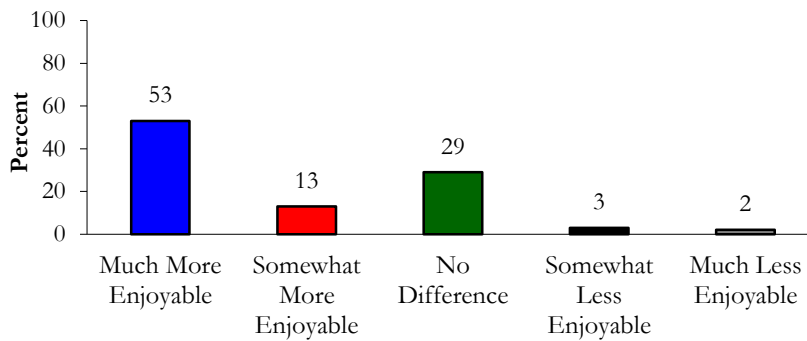
Figure 22. Impact of Comprehensive Smoke-Free Ordinance on Truck Stop Patronage



Impact on Casino and Truck Stop Experience

Two-thirds of casino and truck stop patron respondents believe since smoking has been prohibited the experience is more enjoyable (53% “much more” and 13% “somewhat more enjoyable”). Twenty-nine percent report “no difference” and five percent a less enjoyable experience (two percent “much less” and three percent “somewhat less enjoyable”) (Figure 23).

Figure 23. Ordinance Impact on Casino and Truck Stop Experience



# V. Young Adults Attitudes and Perceptions

## Oversampling of Young Adults

Preventing the initiation of tobacco use among youth and young adults is one of the major goals according to the North Dakota Center for Prevention and Control Policy State Plan. To better understand young adults' attitudes, perceptions and impacts of the expanded comprehensive smoke-free ordinance oversampling of those ages 21 to 34 was conducted. An additional 172 interviews were conducted to increase the total sample size of young adults to 385. This subsample yields an error margin of +/- 4.9%.

## Awareness and Reaction

### Expanded Smoke-Free Ordinance Awareness

Overall, nine out of ten young adults (90%) interviewed were aware that in August 2010 an expanded smoke-free ordinance in the City of Grand Forks went into effect that prohibits smoking inside all public places and places of employment.

### Reaction to Current Comprehensive Smoke-Free City Ordinance

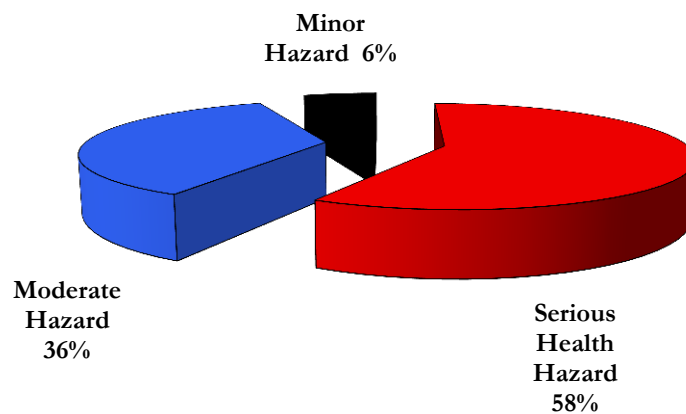
Eighty-six percent of the young adults surveyed favor the current comprehensive smoke-free city ordinance (76% "strongly" and 10% "somewhat favor").

## Perceived Risks of Secondhand Smoke

### Exposure to Secondhand Smoke

Young adult 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. Fifty-eight percent agree that exposure to secondhand smoke is a "serious health hazard" and 36% believe exposure is a "moderate health hazard" (Figure 24).

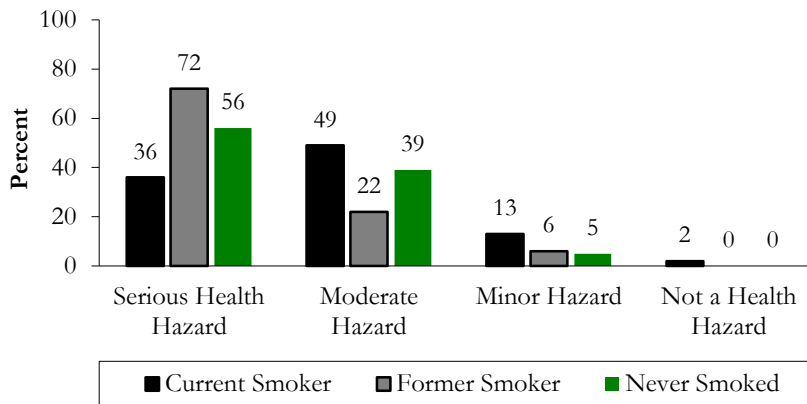
Figure 24. Young Adults Perceptions: Exposure to Secondhand Smoke



### Exposure to Secondhand Smoke by Smoking Status<sup>7</sup>

Eighty-five percent of current smokers, 94% of former smokers, 95% of respondents who had never smoked agree that exposure to secondhand smoke is a "serious" or "moderate health hazard" (Figure 25). Conversely, 15% of current smokers believe secondhand exposure is a "minor" or "not a health hazard at all".

**Figure 25. Young Adults Perceptions: Exposure to Secondhand Smoke by Smoking Status**



### **Impact of Occasionally Breathing Secondhand Smoke**

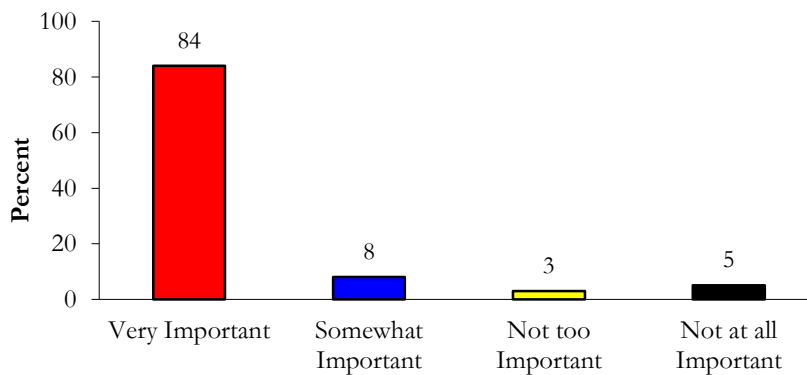
Young adult respondents were asked specifically what impact secondhand smoke will have on the health of a nonsmoker if the nonsmoker occasionally breathes secondhand smoke. Forty-four percent agree if the nonsmoker occasionally breathes secondhand that this exposure is a "serious health hazard" and 40% believe that this exposure is a "moderate health hazard".

### **Attitudes towards Public Smoking**

#### **Importance of Smoke-Free Environment in All Workplaces**

Over nine out of ten young adults (92%) feel that it is "very important" or "somewhat important" to have a smoke-free environment inside all workplaces (Figure 26). Five percent feel it is "not at all important" and three percent indicated it was "not too important".

**Figure 26. Young Adults Perceptions: Importance of Smoke-Free Environment inside All Workplaces**

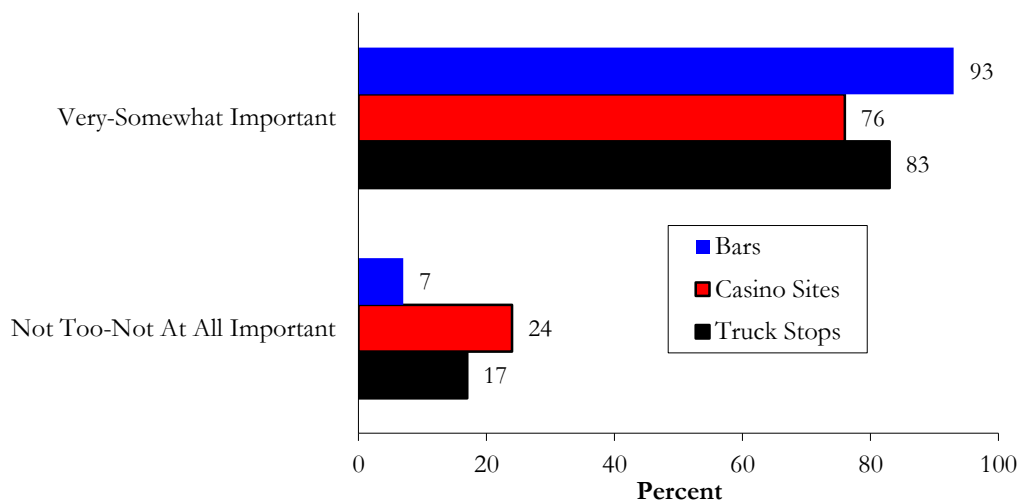


<sup>7</sup> Sixteen percent of young adults surveyed currently smoke; 33% are former smokers and 51% have never smoked.

## Importance of Smoke-Free Environment in Specific Workplaces

Young adults were then asked their opinion on the importance of having a smoke-free environment inside of specific workplaces. On average, 84% of those interviewed feel that it is "very important" or "somewhat important" to have a smoke-free environment inside of bars, casino gaming sites and truck stops (Figure 27).

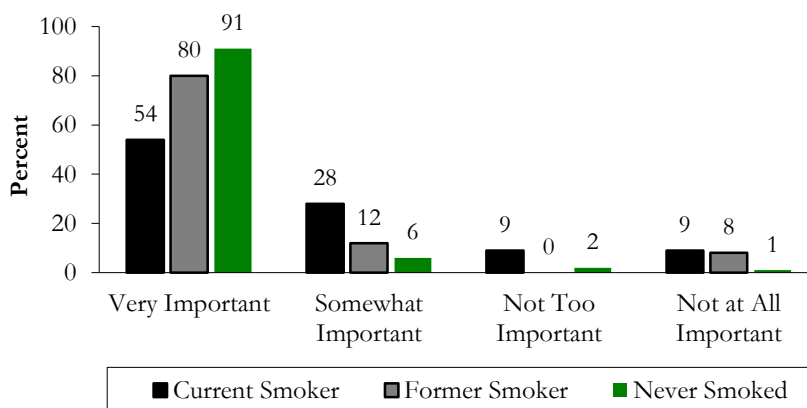
**Figure 27. Young Adults Perceptions: Importance of Smoke-Free Environment inside Specific Workplaces**



### Importance in Bars by Smoking Status<sup>8</sup>

Eighty-two percent of current smokers, 92% of former smokers and 97% of young adults who had never smoked believe that it is "very important" or "somewhat important" to have a smoke-free environment inside of bars (Figure 28). Conversely, 18% of current smokers believe it is "not too" or "not at all important" of an issue.

**Figure 28. Young Adults Perceptions: Importance of Smoke-Free Environment in Bars by Smoking Status**

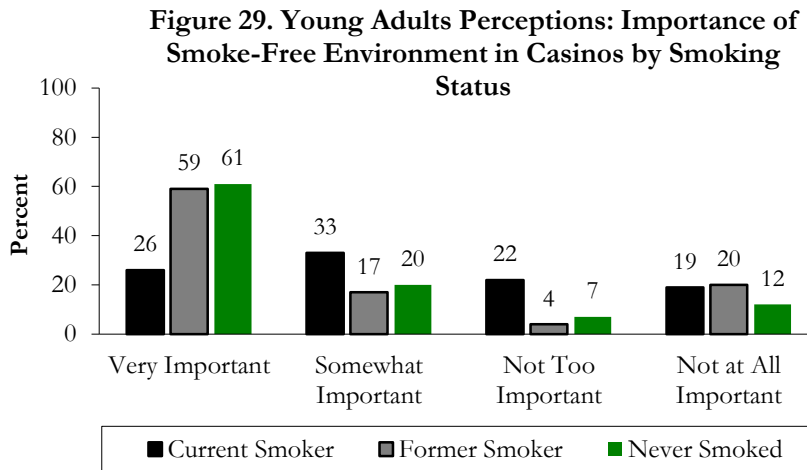


<sup>8</sup> Sixteen percent of young adults surveyed currently smoke; 33% are former smokers and 51% have never smoked.



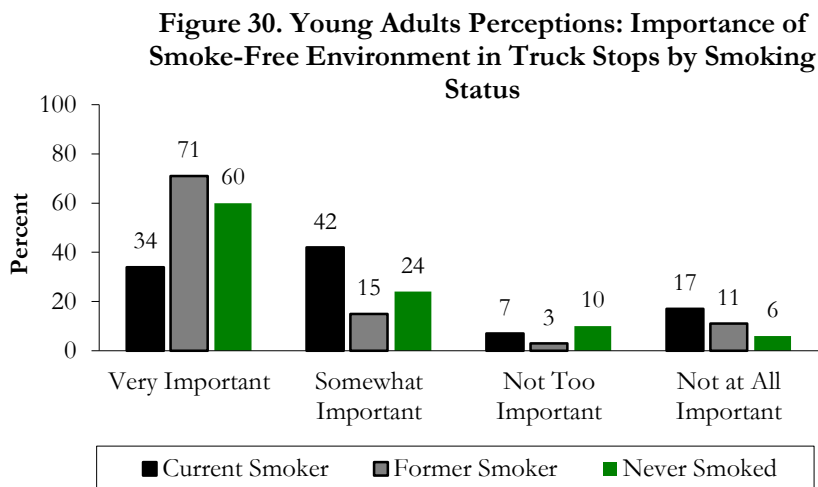
### Importance in Casinos by Smoking Status<sup>9</sup>

In respect to Casinos, 59% of current smokers, 76% of former smokers and 81% of young adults who had never smoked believe that it is "very important" or "somewhat important" to have a smoke-free environment inside of casinos (Figure 29). Current smokers held strong opinions in regards to the importance of having a smoke-free environment inside casinos. Forty-one percent smokers believe this issue is "not too" or "not at all important".



### Importance in Truck Stops by Smoking Status<sup>8</sup>

Over two-thirds of current smokers (76%), 86% of former smokers and 84% of young adults who had never smoked believe that it is "very important" or "somewhat important" to have a smoke-free environment inside of truck stops (Figure 29). Twenty percent of smokers believe this issue is "not too" or "not at all important".



<sup>9</sup> Sixteen percent of young adults surveyed currently smoke; 33% are former smokers and 51% have never smoked.

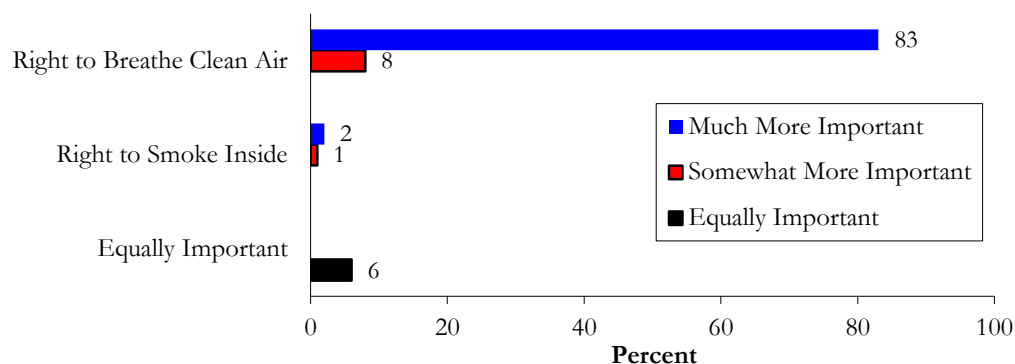
## Smoking Points of View

Young adults were asked which of two statements<sup>10</sup> concerning smoking comes closest to their point of view. The two statements are:

- 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.

Ninety-one percent of young adults respondents agreed with statement one. The majority believe it is “much” (83%) or “somewhat” (8%) more important for customers and employees to have the right to breathe clean air in workplaces and all indoor public places (Figure 31). Three percent of young adults surveyed agreed with statement two and six percent volunteered the position that both statements are equally important.

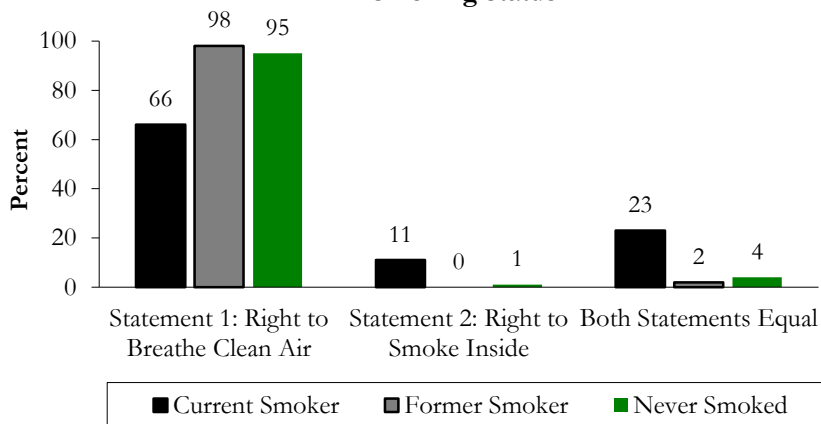
**Figure 31. Young Adults Smoking Points of View**



### Smoking Point of View by Smoking Status<sup>11</sup>

Two-thirds of current smokers, 98% of former smokers and 95% of young adults 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 (Figure 32).

**Figure 32. Young Adults Smoking Points of View by Smoking Status**



<sup>10</sup> During interviewing these statements were rotated in respect to which was first read to the respondent. Then after the initial response interview staff asked if they thought it was “much more important” or “somewhat more important”.

<sup>11</sup> Sixteen percent of young adults surveyed currently smoke; 33% are former smokers and 51% have never smoked.

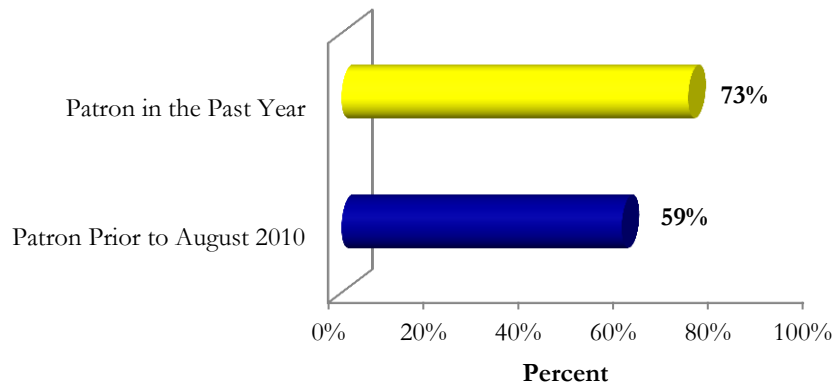
## Ordinance Impact on Young Adult Patronage

### Ordinance Impact on Bars, Casinos and Truck Stops Patronage

#### Bar Patronage

Prior to August 2010, when the comprehensive smoke-free ordinance went into effect, 59% of young adult respondents reported they normally frequented bars. Respondents were also asked how often they frequent Grand Forks bars in the past year. Overall, 73% indicated patronizing bars in the past year (Figure 33). In particular, six percent frequent bars in Grand Forks "more than once a week", 15% "about once a week", 30% "about once or twice each month" and 22% frequent bars "less than once a month" in the past year. Twenty-seven percent of young adults indicated they had not patronized bars in the past year.

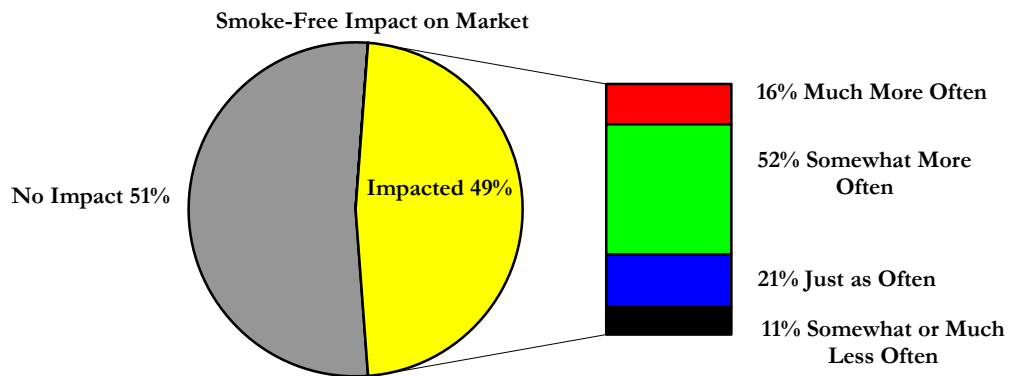
**Figure 33. Young Adults: Bar Patronage "Pre and Post" Smoke-Free Ordinance**



#### Ordinance Impact on Bar Patronage

Forty-nine percent of bar patrons in the past year indicated that the ordinance has impacted how often they visit these types of business establishments. Over two-thirds of young adult patrons (68%) indicated they now go to bars more often (16% "much more often" and 52% "somewhat more often"). Twenty-one percent patronize bars "just as often" while 11% frequent less often (eight percent "somewhat" and three percent "much less often") (Figure 34).

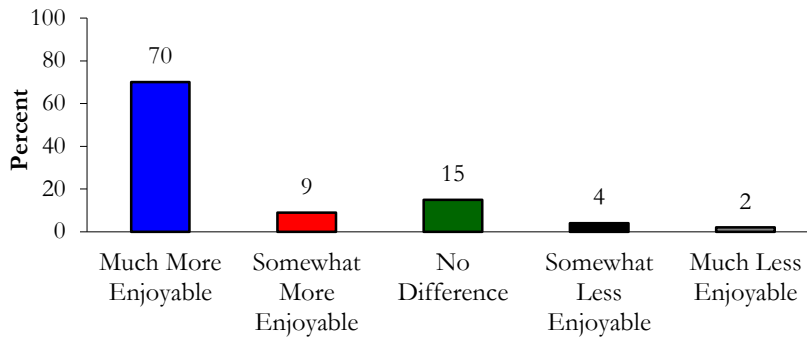
**Figure 34. Impact of Comprehensive Smoke-Free Ordinance on Young Adults Bar Patronage**



### Impact on Bar Experience

Seventy-nine percent of bar patron respondents believe since smoking has been prohibited in bars the experience is more enjoyable (70% “much more” and nine percent “somewhat more enjoyable”). Fifteen percent report “no difference” and six percent a less enjoyable experience (four percent “much less” and two percent “somewhat less enjoyable”) (Figure 35).

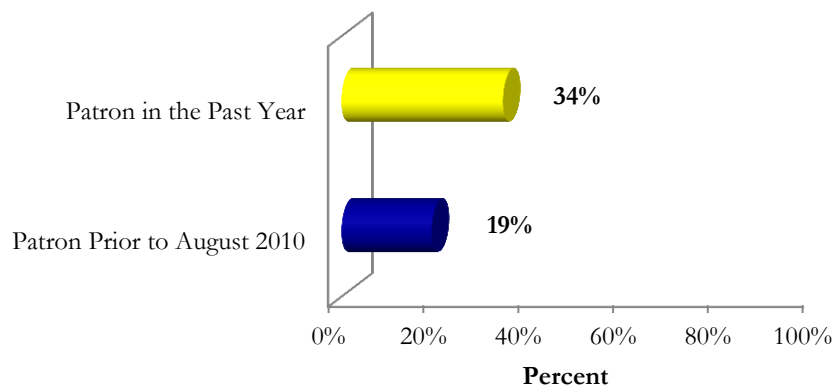
**Figure 35. Ordinance Impact on Young Adults Bar Experience**



### Casino Patronage

Prior to August 2010, when the comprehensive smoke-free ordinance went into effect, 19% of young adult survey respondents reported they normally frequented casinos. Respondents were also asked how often they frequent Grand Forks casinos in the past year. Overall, 34% indicated patronizing casinos in the past year (Figure 36). In particular, one percent frequent Grand Forks casinos "more than once a week", two percent "about once a week", five percent "about once or twice each month" and 26% frequent casinos "less than once a month" in the past year. Sixty-six percent of young adults indicated they had not patronized casinos in the past year.

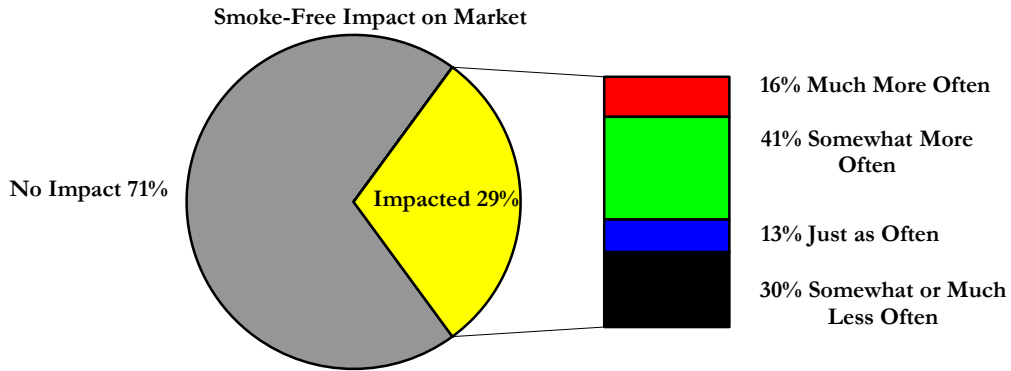
**Figure 36. Young Adults: Casino Patronage "Pre and Post" Smoke-Free Ordinance**



### Ordinance Impact on Casino Patronage

Twenty-nine percent of casino patrons in the past year indicated that the ordinance has impacted how often they visit these types of business establishments. Fifty-seven percent of these patrons now go to casinos more often (16% “much more often” and 41% “somewhat more often”). Thirteen percent patronize casinos “just as often” while 30% frequent less often (27% “somewhat” and three percent “much less often”) (Figure 37).

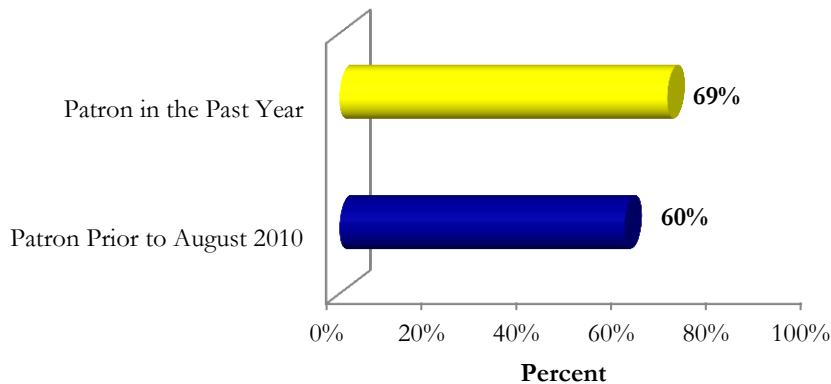
**Figure 37. Impact of Comprehensive Smoke-Free Ordinance on Young Adults Casino Patronage**



Truck Stop Patronage

Prior to August 2010, when the comprehensive smoke-free ordinance went into effect, 60% of young adult survey respondents reported they normally frequented truck stops. Respondents were also asked how often they frequent Grand Forks truck stops in the past year. Overall, 69% indicated patronizing truck stops in the past year (Figure 38). In particular, six percent frequent Grand Forks truck stops "more than once a week", eight percent "about once a week", 23% "about once or twice each month" and 32% frequent truck stops "less than once a month" in the past year. Thirty-one percent of young adults indicated they had not patronized truck stops in the past year.

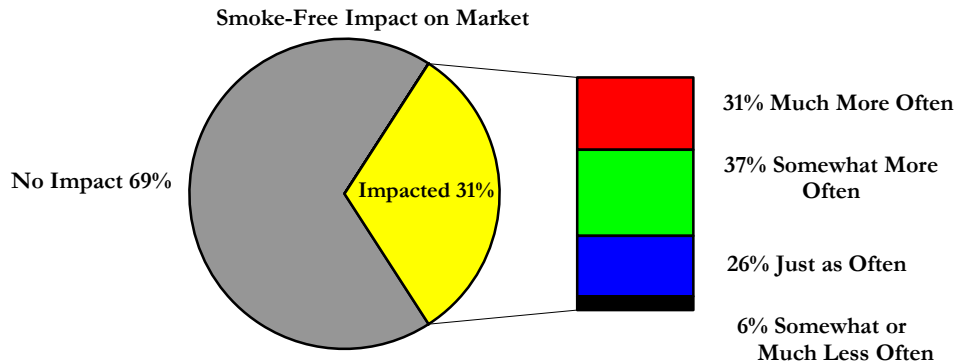
**Figure 38. Young Adults: Truck Stop Patronage "Pre and Post" Smoke-Free Ordinance**



Ordinance Impact on Truck Stop Patronage

Thirty-one percent of truck stop patrons in the past year indicated that the ordinance has impacted how often they visit these types of business establishments. Sixty-eight percent of these patrons now go to truck stops more often (31% "much more often" and 37% "somewhat more often"). Twenty-six percent patronize truck stops "just as often" while seven percent frequent less often (one percent "somewhat" and five percent "much less often") (Figure 39).

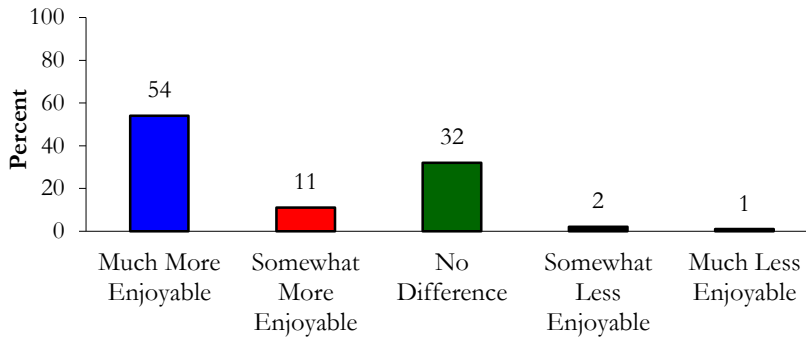
**Figure 39. Impact of Comprehensive Smoke-Free Ordinance on Young Adults Truck Stop Patronage**



Impact on Casino and Truck Stop Experience

Nearly two-thirds of casino and truck stop patron respondents believe since smoking has been prohibited in these establishments the experience is more enjoyable (54% “much more” and 11% “somewhat more enjoyable”). Thirty-two percent report “no difference” and three percent a less enjoyable experience (two percent “much less” and one percent “somewhat less enjoyable”) (Figure 40).

**Figure 40. Ordinance Impact on Casino and Truck Stop Experience**

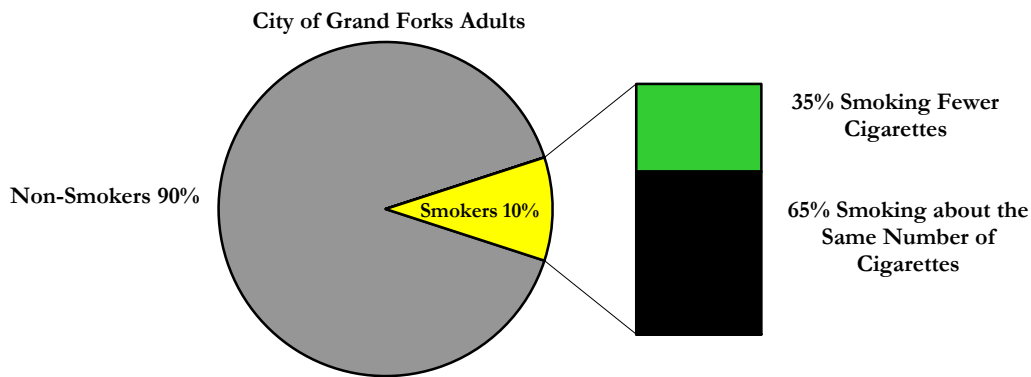


# VII. Ordinance Impact on Smoking Behavior

## Ordinance Impact on Smoking<sup>12</sup>

Since implementation of the comprehensive smoke-free ordinance in Grand Forks over one-third of smokers (35%) report smoking fewer cigarettes while sixty-five percent are smoking “about the same number” (Figure 41). Thirty-five percent of smokers also indicate the ordinance has caused them to think seriously about quitting.

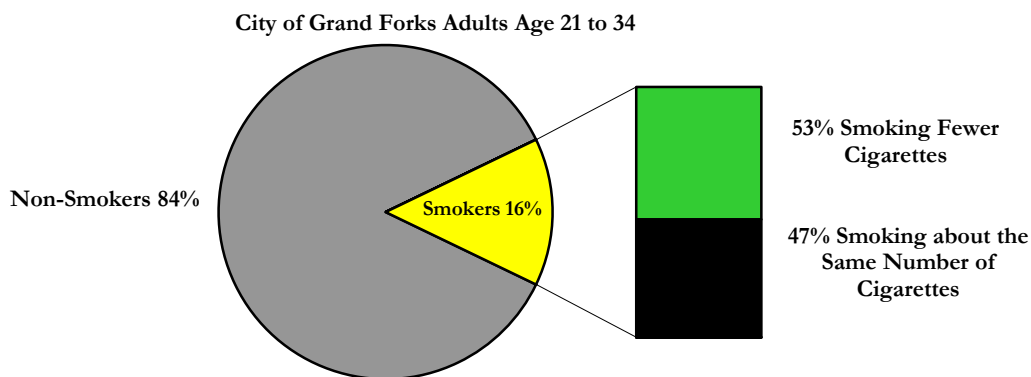
Figure 41. Impact of Comprehensive Smoke-Free Ordinance on Current Smokers



## Ordinance Impact on Young Adults<sup>12</sup>

Since implementation of the comprehensive smoke-free ordinance in Grand Forks over half of young adult smokers (53%) report smoking fewer cigarettes while forty-seven percent indicate smoking “about the same number” (Figure 42). Forty-four percent of young adult smokers also indicate the ordinance has caused them to think seriously about quitting.

Figure 42. Impact of Comprehensive Smoke-Free Ordinance on Young Adult Smokers



<sup>12</sup> City of Grand Forks Adult Population: Ten percent of those surveyed currently smoke; 33% are former smokers, 57% have never smoked and less than one percent are smokeless or other tobacco users. Young Adults Oversampled Population: Sixteen percent of young adults age 21 to 34 surveyed currently smoke; 33% are former smokers and 51% have never smoked.

# Appendix A

## Demographic Crosstables



# Crosstables

Crosstables present the findings in a table form which provide 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

		Total	Gender		Age Group			Age					
			Male	Female	18 to 54	55 or Older	21 to 34 Only <sup>13</sup>	18 to 20	21 to 34	35 to 44	45 to 54	55 to 64	65 or Older
1. First, are you aware that in August, 2010 a comprehensive smoke-free ordinance went into effect in the City of Grand Forks that prohibits smoking inside all public places and places of employment?	Yes	93%	95%	92%	93%	95%	90%	88%	90%	98%	96%	98%	92%
	No	7%	5%	8%	7%	5%	10%	12%	10%	2%	4%	2%	8%
2. Overall, how would you describe your reaction to the current comprehensive smoke-free city ordinance prohibiting smoking inside all Grand Forks public places and places of employment?	Strongly Support	71%	66%	76%	66%	82%	76%	58%	73%	68%	66%	77%	86%
	Somewhat Support	13%	16%	10%	16%	8%	10%	14%	9%	17%	24%	7%	9%
	Somewhat Oppose	7%	7%	6%	7%	5%	5%	7%	5%	14%	5%	4%	2%
	Strongly Oppose	4%	5%	3%	4%	3%	3%	3%	6%	1%	5%	8%	2%
	No Reaction	5%	6%	5%	7%	2%	6%	18%	7%	--	--	4%	1%
3. Next, I'd like to ask you a few questions about secondhand smoke -- that is -- smoke you breathe from other people's cigarettes, cigars, or pipes. Overall, how much of a health hazard do you feel exposure to secondhand smoke is to those who breathe it - would you say exposure to secondhand smoke is a . . .	Serious Hazard	64%	56%	72%	62%	70%	58%	50%	59%	76%	62%	72%	68%
	Moderate Hazard	27%	32%	23%	30%	22%	36%	36%	30%	19%	33%	17%	26%
	Minor Hazard	7%	11%	4%	7%	7%	6%	11%	10%	5%	3%	10%	4%
	Not a Health Hazard	2%	1%	1%	1%	1%	--	3%	1%	--	2%	1%	2%

<sup>13</sup> 21 to 34 Only table heading represents the percentages from the subsample of young adults as a group.

## Tables by Gender and Age

		Total	Gender		Age Group			Age					
			Male	Female	18 to 54	55 or Older	21 to 34 Only <sup>14</sup>	18 to 20	21 to 34	35 to 44	45 to 54	55 to 64	65 or Older
4. Next, using the same hazard scale - what impact do you feel secondhand smoke will have on the health of a nonsmoker if the nonsmoker occasionally breathes secondhand smoke? Would you say occasional exposure is a . . .	Serious Hazard	48%	44%	52%	44%	56%	44%	35%	46%	48%	50%	51%	60%
	Moderate Hazard	37%	38%	34%	39%	31%	40%	39%	32%	45%	42%	32%	29%
	Minor Hazard	12%	14%	11%	13%	12%	14%	19%	19%	5%	7%	14%	10%
	Not a Health Hazard	3%	4%	3%	4%	1%	2%	7%	3%	2%	1%	3%	1%
5. How important is it to you to have a smoke-free environment inside all workplaces?	Very Important	81%	74%	87%	77%	88%	84%	65%	78%	86%	83%	82%	93%
	Somewhat Important	9%	13%	5%	11%	5%	8%	18%	11%	6%	7%	6%	4%
	Not too Important	4%	7%	2%	4%	5%	3%	2%	6%	4%	6%	8%	2%
	Not at all Important	6%	6%	6%	8%	2%	5%	15%	5%	4%	4%	4%	1%
6. Next, I'm going to read a list of specific workplaces. After each please tell me how important is it to you to have a smoke-free environment inside of this place. The first is bars.	Very Important	74%	68%	79%	71%	79%	81%	--	74%	79%	73%	73%	85%
	Somewhat Important	14%	18%	11%	15%	13%	11%	--	14%	8%	14%	14%	12%
	Not too Important	6%	8%	4%	6%	5%	3%	--	7%	8%	9%	9%	2%
	Not at all Important	6%	6%	6%	8%	3%	5%	--	5%	5%	4%	4%	1%
7. How important is it to you to have a smoke-free environment inside of casinos?	Very Important	58%	49%	64%	48%	76%	55%	36%	51%	56%	50%	72%	80%
	Somewhat Important	22%	25%	19%	27%	10%	21%	30%	20%	27%	32%	9%	11%
	Not too Important	8%	10%	5%	9%	4%	16%	13%	11%	5%	8%	4%	4%
	Not at all Important	12%	16%	12%	16%	10%	8%	21%	18%	12%	10%	15%	5%

<sup>14</sup> 21 to 34 Only table heading represents the percentages from the subsample of young adults as a group.

## Tables by Gender and Age

		Total	Gender		Age Group			Age					
			Male	Female	18 to 54	55 or Older	21 to 34 Only <sup>15</sup>	18 to 20	21 to 34	35 to 44	45 to 54	55 to 64	65 or Older
8. How important is it to you to have a smoke-free environment inside of truck stops?	Very Important	63%	60%	66%	57%	74%	59%	47%	55%	67%	64%	73%	76%
	Somewhat Important	19%	18%	20%	22%	13%	24%	18%	22%	26%	24%	9%	16%
	Not too Important	8%	12%	4%	9%	8%	8%	13%	11%	2%	7%	10%	5%
	Not at all Important	10%	10%	10%	12%	5%	9%	22%	12%	5%	5%	8%	3%
9. Which statement is the closest to your own view on smoking? <u>Statement 1:</u> I believe customers and employees have the right to breathe clean air in workplaces and all indoor public places. <u>Statement 2:</u> 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	88%	85%	91%	86%	93%	91%	76%	89%	90%	93%	88%	96%
	Statement 2 “Much” or “Somewhat More” Important	7%	8%	6%	8%	4%	2%	13%	4%	9%	5%	6%	3%
	Both Important	5%	7%	3%	6%	3%	7%	11%	7%	1%	2%	6%	1%
10. Now thinking back, prior to August 2010 this is when the comprehensive smoke-free ordinance went into effect, did you normally go out to bars in Grand Forks?	Yes	42%	41%	44%	41%	44%	59%	--	60%	62%	42%	52%	37%
	No	58%	59%	56%	59%	56%	41%	--	40%	38%	58%	48%	63%
11. And now thinking about the past year about how often do you normally go out to a bar in Grand Forks?	More than once a week	5%	8%	2%	6%	3%	6%	--	8%	8%	6%	7%	--
	About once a week	10%	9%	11%	10%	9%	15%	--	18%	6%	10%	17%	3%
	About once or twice a month	18%	16%	20%	18%	17%	30%	--	33%	27%	17%	24%	12%
	Less often than once a month	18%	16%	20%	16%	23%	21%	--	19%	27%	17%	20%	25%
	Never	49%	51%	47%	50%	48%	28%	--	22%	32%	50%	32%	60%

<sup>15</sup> 21 to 34 Only table heading represents the percentages from the subsample of young adults as a group.

## Tables by Gender and Age

		Total	Gender		Age Group			Age					
			Male	Female	18 to 54	55 or Older	21 to 34 Only <sup>16</sup>	18 to 20	21 to 34	35 to 44	45 to 54	55 to 64	65 or Older
12. Now that all bars in Grand Forks are smoke-free, has this influenced how often you visit these types of establishments?	Yes	45%	44%	46%	44%	45%	49%	--	51%	37%	46%	44%	47%
	No	55%	56%	54%	56%	55%	51%	--	49%	63%	54%	56%	53%
13. Would you say you now go out to bars ...	Much more often	19%	19%	20%	18%	22%	16%	--	18%	14%	21%	38%	--
	Somewhat more often	47%	45%	48%	47%	46%	52%	--	52%	39%	49%	51%	--
	Somewhat less often	19%	21%	17%	16%	24%	21%	--	22%	6%	14%	6%	40%
	Just as often	6%	8%	3%	8%	2%	6%	--	5%	19%	3%	--	49%
	Much less often	6%	4%	9%	9%	2%	2%	--	2%	20%	7%	3%	6%
	No Impact	3%	3%	3%	2%	4%	3%	--	1%	2%	6%	2%	5%
14. Since smoking has been prohibited in bars, would you say that going out in Grand Forks has become a more enjoyable experience, a less enjoyable experience, or has it made no difference to you? (after initial response) Ask: Is that much (more/less) enjoyable, or somewhat (more/less) enjoyable?	Much More Enjoyable	70%	70%	71%	68%	74%	70%	--	64%	77%	71%	75%	73%
	Somewhat More Enjoyable	9%	11%	7%	9%	8%	9%	--	9%	8%	5%	8%	9%
	No Difference	16%	13%	17%	16%	15%	15%	--	17%	11%	19%	14%	16%
	Somewhat Less Enjoyable	2%	3%	--	2%	1%	4%	--	4%	2%	--	3%	2%
	Much Less Enjoyable	3%	3%	5%	5%	2%	2%	--	6%	2%	5%	--	--
15. Again, thinking back, prior to August, 2010, this is when the comprehensive smoke-free ordinance went into effect - did you normally go out to Casinos in Grand Forks?	Yes	22%	20%	25%	22%	23%	19%	28%	21%	26%	14%	24%	22%
	No	78%	80%	75%	78%	77%	81%	72%	79%	74%	86%	76%	78%

<sup>16</sup> 21 to 34 Only table heading represents the percentages from the subsample of young adults as a group.

## Tables by Gender and Age

		Total	Gender		Age Group			Age					
			Male	Female	18 to 54	55 or Older	21 to 34 Only <sup>17</sup>	18 to 20	21 to 34	35 to 44	45 to 54	55 to 64	65 or Older
16. And now thinking about the past year about how often do you normally go out to a casino in Grand Forks?	More than once a week	1%	1%	1%	1%	1%	1%	2%	1%	--	--	1%	--
	About once a week	2%	3%	1%	1%	4%	2%	1%	--	1%	1%	6%	2%
	About once or twice a month	5%	4%	5%	4%	7%	5%	3%	6%	5%	13%	6%	7%
	Less often than once a month	21%	19%	23%	23%	18%	26%	29%	26%	24%	86%	17%	18%
	Never	71%	73%	70%	71%	70%	66%	65%	67%	70%	--	70%	73%
17. Now that all casinos in Grand Forks are smoke-free, has this influenced how often you visit these types of establishments?	Yes	21%	25%	17%	18%	26%	29%	8%	37%	13%	17%	34%	18%
	No	79%	75%	83%	82%	74%	71%	92%	63%	87%	83%	66%	82%
18. Would you say you now go out to casinos ...	Much more often	18%	24%	9%	11%	27%	16%	37%	3%	13%	--	42%	--
	Somewhat more often	41%	27%	61%	38%	44%	41%	--	52%	53%	18%	43%	48%
	Just as often	20%	21%	19%	21%	19%	13%	63%	19%	--	--	--	52%
	Somewhat less often	11%	14%	6%	14%	5%	27%	--	22%	21%	--	8%	--
	Much less often	10%	14%	5%	16%	5%	3%	--	4%	13%	82%	7%	--
19. Again, thinking back, prior to August, 2010, this is when the comprehensive smoke-free ordinance went into effect - did you normally go out to truck stops in Grand Forks?	Yes	58%	54%	62%	59%	55%	60%	65%	64%	45%	60%	55%	56%
	No	42%	46%	38%	41%	45%	40%	35%	36%	55%	40%	45%	44%

<sup>17</sup> 21 to 34 Only table heading represents the percentages from the subsample of young adults as a group.

## Tables by Gender and Age

		Total	Gender		Age Group			Age					
			Male	Female	18 to 54	55 or Older	21 to 34 Only <sup>18</sup>	18 to 20	21 to 34	35 to 44	45 to 54	55 to 64	65 or Older
20. And now thinking about the past year about how often do you normally go out to a truck stop in Grand Forks?	More than once a week	5%	7%	4%	5%	6%	6%	3%	8%	1%	10%	6%	6%
	About once a week	3%	5%	1%	3%	4%	8%	4%	4%	1%	1%	3%	5%
	About once or twice a month	27%	27%	28%	30%	22%	23%	50%	31%	16%	18%	26%	19%
	Less often than once a month	27%	20%	34%	24%	33%	32%	9%	28%	32%	31%	35%	31%
	Never	38%	41%	33%	38%	35%	31%	34%	29%	50%	40%	30%	39%
21. Now that all truck stops in Grand Forks are smoke-free, has this influenced how often you visit these types of establishments?	Yes	29%	37%	22%	31%	24%	31%	32%	35%	13%	39%	31%	17%
	No	71%	63%	78%	69%	76%	69%	68%	65%	87%	61%	69%	83%
22. Would you say you now go out to truck stops	Much more often	30%	27%	35%	28%	38%	31%	10%	27%	23%	48%	38%	38%
	Somewhat more often	42%	48%	33%	44%	36%	37%	61%	43%	57%	24%	39%	32%
	Just as often	16%	13%	22%	15%	18%	26%	11%	27%	7%	11%	20%	20%
	Somewhat less often	3%	3%	1%	2%	4%	1%	--	2%	13%	3%	--	--
	Much less often	9%	9%	9%	11%	4%	5%	18%	1%	--	14%	3%	10%

<sup>18</sup> 21 to 34 Only table heading represents the percentages from the subsample of young adults as a group.

## Tables by Gender and Age

		Total	Gender		Age Group			Age					
			Male	Female	18 to 54	55 or Older	21 to 34 Only <sup>19</sup>	18 to 20	21 to 34	35 to 44	45 to 54	55 to 64	65 or Older
23. Since smoking has been prohibited in casinos and truck stops, would you say that going out in Grand Forks has become a more enjoyable experience, a less enjoyable experience, or has it made no difference to you? (after initial response) Ask: Is that much (more/less) enjoyable, or somewhat (more/less) enjoyable?	Much More Enjoyable	53%	54%	52%	49%	60%	54%	39%	51%	57%	54%	62%	59%
	Somewhat More Enjoyable	13%	16%	10%	14%	11%	11%	17%	13%	8%	14%	11%	11%
	No Difference	29%	24%	33%	31%	25%	32%	34%	35%	29%	29%	22%	28%
	Somewhat Less Enjoyable	3%	4%	2%	2%	1%	2%	7%	--	4%	1%	3%	2%
	Much Less Enjoyable	2%	2%	3%	4%	3%	1%	3%	1%	2%	2%	2%	--
24. Which of the following statements describes your use of tobacco products: (1) I currently smoke cigarettes, (2) I used to smoke cigarettes, but I've quit - or (3) I have never been a cigarette smoker.	Current Smoker	10%	13%	7%	11%	8%	16%	8%	14%	7%	14%	13%	3%
	Former Smoker	33%	37%	30%	30%	40%	33%	21%	35%	39%	28%	31%	48%
	Never Smoked	57%	50%	63%	59%	52%	51%	71%	51%	54%	58%	56%	49%
25. Since the new smoking ordinance restrictions took effect in August 2010, are you smoking more cigarettes, fewer cigarettes or about the same number of cigarettes per day?	More cigarettes	--	--	1%	--	--	1%	--	2%	--	--	--	--
	Fewer cigarettes	35%	37%	31%	38%	25%	53%	51%	60%	23%	13%	17%	51%
	About the same number of cigarettes	65%	63%	68%	62%	75%	46%	49%	38%	77%	87%	83%	49%
26. Has the new ordinance caused you to think seriously about quitting smoking?	Yes	35%	37%	31%	39%	19%	44%	52%	48%	19%	36%	17%	27%
	No	65%	63%	69%	61%	81%	56%	48%	52%	81%	64%	83%	73%

<sup>19</sup> 21 to 34 Only table heading represents the percentages from the subsample of young adults as a group.

## Tables by Smoking Habits and Education

		Total	Smoking Status			Educational Attainment					
			Current Smoker	Former Smoker	Never Smoked	Less than HS	HS Grad	Some Voc-Tech\College	Voc-Tech Grad	College Grad	Advanced College Deg.
1. First, are you aware that in August, 2010 a comprehensive smoke-free ordinance went into effect in the City of Grand Forks that prohibits smoking inside all public places and places of employment?	Yes	93%	97%	95%	92%	85%	93%	92%	95%	97%	95%
	No	7%	3%	5%	8%	15%	7%	8%	5%	3%	5%
2. Overall, how would you describe your reaction to the current comprehensive smoke-free city ordinance prohibiting smoking inside all Grand Forks public places and places of employment?	Strongly Support	71%	15%	72%	80%	59%	72%	61%	88%	83%	81%
	Somewhat Support	13%	24%	16%	10%	27%	12%	16%	10%	8%	8%
	Somewhat Oppose	7%	29%	5%	3%	1%	7%	12%	2%	2%	6%
	Strongly Oppose	4%	25%	2%	1%	4%	2%	6%	--	4%	1%
	No Reaction	5%	7%	5%	6%	9%	7%	5%	--	3%	4%
3. Next, I'd like to ask you a few questions about secondhand smoke -- that is -- smoke you breathe from other people's cigarettes, cigars, or pipes. Overall, how much of a health hazard do you feel exposure to secondhand smoke is to those who breathe it - would you say exposure to secondhand smoke is a . . .	Serious Hazard	64%	17%	69%	69%	55%	70%	51%	78%	73%	78%
	Moderate Hazard	27%	53%	26%	24%	32%	22%	40%	22%	21%	15%
	Minor Hazard	7%	21%	4%	6%	6%	8%	7%	--	5%	7%
	Not a Health Hazard	2%	9%	1%	1%	7%	--	2%	--	1%	--
4. Next, using the same hazard scale - what impact do you feel secondhand smoke will have on the health of a nonsmoker if the nonsmoker occasionally breathes secondhand smoke? Would you say occasional exposure is a . . .	Serious Hazard	48%	9%	49%	54%	35%	58%	38%	55%	54%	54%
	Moderate Hazard	37%	53%	37%	33%	47%	29%	43%	41%	34%	36%
	Minor Hazard	12%	32%	12%	10%	13%	11%	16%	4%	11%	8%
	Not a Health Hazard	3%	6%	2%	3%	5%	2%	3%	--	1%	2%



## Tables by Smoking Habits and Education

		Total	Smoking Status			Educational Attainment					
			Current Smoker	Former Smoker	Never Smoked	Less than HS	HS Grad	Some Voc-Tech\College	Voc-Tech Grad	College Grad	Advanced College Deg.
5. How important is it to you to have a smoke-free environment inside all workplaces?	Very Important	81%	24%	87%	87%	70%	86%	72%	93%	91%	84%
	Somewhat Important	9%	25%	7%	7%	9%	6%	14%	7%	3%	9%
	Not too Important	4%	27%	3%	1%	13%	3%	5%	--	2%	7%
	Not at all Important	6%	24%	3%	5%	8%	5%	9%	--	4%	--
6. Next, I'm going to read a list of specific workplaces. After each please tell me how important is it to you to have a smoke-free environment inside of this place. The first is bars.	Very Important	74%	21%	78%	80%	66%	79%	65%	85%	82%	77%
	Somewhat Important	14%	28%	14%	12%	12%	12%	20%	15%	9%	13%
	Not too Important	6%	27%	5%	3%	14%	4%	7%	--	5%	10%
	Not at all Important	6%	24%	3%	5%	8%	5%	8%	--	4%	--
7. How important is it to you to have a smoke-free environment inside of casinos?	Very Important	58%	9%	67%	60%	47%	59%	48%	67%	65%	73%
	Somewhat Important	22%	11%	20%	25%	28%	19%	29%	17%	19%	13%
	Not too Important	8%	32%	4%	5%	18%	11%	3%	10%	6%	6%
	Not at all Important	12%	48%	9%	10%	7%	11%	20%	6%	10%	8%
8. How important is it to you to have a smoke-free environment inside of truck stops?	Very Important	63%	12%	65%	71%	39%	73%	52%	75%	67%	83%
	Somewhat Important	19%	22%	25%	15%	31%	14%	24%	18%	22%	7%
	Not too Important	8%	25%	5%	7%	21%	6%	11%	7%	4%	6%
	Not at all Important	10%	41%	5%	7%	9%	7%	13%	--	7%	4%
9. Which statement is the closest to your own view on smoking? <b>Statement 1:</b> I believe customers and employees have the right to breathe clean air in workplaces and all indoor public places. <b>Statement 2:</b> 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	88%	44%	94%	93%	94%	91%	86%	100%	91%	93%
	Statement 2 "Much" or "Somewhat More" Important	7%	44%	3%	2%	4%	6%	5%	--	4%	5%
	Both Important	5%	12%	3%	5%	2%	3%	9%	--	5%	2%

## Tables by Smoking Habits and Education

		Total	Smoking Status			Educational Attainment					
			Current Smoker	Former Smoker	Never Smoked	Less than HS	HS Grad	Some Voc-Tech\College	Voc-Tech Grad	College Grad	Advanced College Deg.
10. Now thinking back, prior to August 2010 this is when the comprehensive smoke-free ordinance went into effect, did you normally go out to bars in Grand Forks?	Yes	42%	54%	53%	34%	39%	32%	43%	61%	49%	43%
	No	58%	46%	47%	66%	61%	68%	57%	39%	51%	57%
11. And now thinking about the past year about how often do you normally go out to a bar in Grand Forks?	More than once a week	5%	14%	5%	4%	17%	5%	5%	--	6%	1%
	About once a week	10%	14%	12%	7%	8%	6%	5%	21%	15%	15%
	About once or twice a month	18%	10%	17%	20%	6%	14%	17%	37%	21%	20%
	Less often than once a month	18%	13%	30%	12%	19%	15%	19%	27%	21%	15%
	Never	49%	49%	36%	57%	50%	60%	54%	15%	37%	49%
12. Now that all bars in Grand Forks are smoke-free, has this influenced how often you visit these types of establishments?	Yes	45%	38%	40%	50%	48%	34%	47%	50%	44%	51%
	No	55%	62%	60%	50%	52%	66%	53%	50%	56%	49%
13. Would you say you now go out to bars ...	Much more often	19%	12%	18%	21%	13%	22%	18%	35%	15%	22%
	Somewhat more often	47%	--	30%	66%	36%	54%	31%	54%	54%	58%
	Just as often	19%	18%	31%	10%	3%	14%	31%	--	23%	15%
	Somewhat less often	6%	22%	8%	2%	38%	--	8%	5%	--	3%
	Much less often	6%	45%	7%	--	10%	7%	10%	--	5%	--
	No Impact	3%	3%	6%	1%	--	3%	2%	6%	3%	2%

## Tables by Smoking Habits and Education

		Total	Smoking Status			Educational Attainment					
			Current Smoker	Former Smoker	Never Smoked	Less than HS	HS Grad	Some Voc-Tech\College	Voc-Tech Grad	College Grad	Advanced College Deg.
14. Since smoking has been prohibited in bars, would you say that going out in Grand Forks has become a more enjoyable experience, a less enjoyable experience, or has it made no difference to you? (after initial response) Ask: Is that much (more/less) enjoyable, or somewhat (more/less) enjoyable?	Much More Enjoyable	70%	30%	68%	80%	55%	74%	63%	84%	72%	77%
	Somewhat More Enjoyable	9%	8%	10%	8%	15%	2%	13%	3%	12%	8%
	No Difference	16%	27%	18%	11%	26%	19%	17%	11%	11%	13%
	Somewhat Less Enjoyable	2%	5%	2%	1%	2%	4%	4%	2%	1%	1%
	Much Less Enjoyable	3%	30%	2%	--	2%	1%	3%	--	4%	1%
15. Again, thinking back, prior to August, 2010, this is when the comprehensive smoke-free ordinance went into effect - did you normally go out to Casinos in Grand Forks?	Yes	22%	30%	26%	19%	32%	29%	19%	29%	18%	11%
	No	78%	70%	74%	81%	68%	71%	81%	71%	82%	89%
16. And now thinking about the past year about how often do you normally go out to a casino in Grand Forks?	More than once a week	1%	4%	--	1%	3%	2%	--	--	1%	--
	About once a week	2%	1%	4%	2%	2%	2%	3%	--	4%	--
	About once or twice a month	5%	6%	5%	4%	2%	6%	6%	8%	2%	6%
	Less often than once a month	21%	13%	26%	20%	30%	22%	25%	21%	16%	12%
	Never	71%	76%	65%	73%	63%	68%	66%	71%	77%	82%
17. Now that all casinos in Grand Forks are smoke-free, has this influenced how often you visit these types of establishments?	Yes	21%	58%	15%	20%	17%	25%	18%	9%	31%	22%
	No	79%	42%	85%	80%	83%	75%	82%	91%	69%	78%

## Tables by Smoking Habits and Education

		Total	Smoking Status			Educational Attainment					
			Current Smoker	Former Smoker	Never Smoked	Less than HS	HS Grad	Some Voc-Tech\College	Voc-Tech Grad	College Grad	Advanced College Deg.
18. Would you say you now go out to casinos ...	Much more often	18%	22%	3%	25%	50%	14%	24%	100%	5%	--
	Somewhat more often	41%	--	55%	46%	24%	25%	22%	--	74%	77%
	Just as often	21%	--	24%	24%	--	40%	15%	--	10%	23%
	Somewhat less often	10%	13%	18%	5%	--	8%	30%	--	--	--
	Much less often	10%	65%	--	--	26%	13%	9%	--	11%	--
19. Again, thinking back, prior to August, 2010, this is when the comprehensive smoke-free ordinance went into effect - did you normally go out to truck stops in Grand Forks?	Yes	58%	58%	56%	59%	42%	67%	65%	55%	55%	40%
	No	42%	42%	44%	41%	58%	33%	35%	45%	45%	60%
20. And now thinking about the past year about how often do you normally go out to a truck stop in Grand Forks?	More than once a week	5%	8%	6%	4%	9%	3%	9%	17%	3%	1%
	About once a week	3%	6%	3%	3%	11%	6%	1%	4%	2%	2%
	About once or twice a month	27%	24%	19%	33%	13%	40%	25%	26%	31%	10%
	Less often than once a month	27%	13%	36%	24%	23%	21%	30%	32%	29%	33%
	Never	38%	49%	36%	36%	44%	30%	35%	21%	35%	54%
21. Now that all truck stops in Grand Forks are smoke-free, has this influenced how often you visit these types of establishments?	Yes	29%	50%	27%	27%	29%	34%	24%	26%	29%	25%
	No	71%	50%	73%	73%	71%	66%	76%	74%	71%	75%

## Tables by Smoking Habits and Education

		Total	Smoking Status			Educational Attainment					
			Current Smoker	Former Smoker	Never Smoked	Less than HS	HS Grad	Some Voc-Tech\College	Voc-Tech Grad	College Grad	Advanced College Deg.
22. Would you say you now go out to truck stops	Much more often	30%	--	44%	30%	20%	11%	47%	76%	41%	--
	Somewhat more often	42%	11%	27%	58%	49%	59%	29%	--	40%	78%
	Just as often	16%	9%	29%	12%	4%	24%	21%	24%	5%	22%
	Somewhat less often	3%	8%	--	--	16%	1%	3%	--	1%	--
	Much less often	9%	72%	--	--	11%	5%	--	--	13%	--
23. Since smoking has been prohibited in casinos and truck stops, would you say that going out in Grand Forks has become a more enjoyable experience, a less enjoyable experience, or has it made no difference to you? (after initial response) Ask: Is that much (more/less) enjoyable, or somewhat (more/less) enjoyable?	Much More Enjoyable	53%	5%	55%	59%	50%	58%	48%	58%	52%	69%
	Somewhat More Enjoyable	13%	10%	12%	13%	21%	15%	11%	2%	17%	6%
	No Difference	29%	52%	27%	27%	27%	25%	38%	32%	28%	21%
	Somewhat Less Enjoyable	3%	20%	6%	1%	--	--	1%	3%	--	--
	Much Less Enjoyable	2%	13%	--	--	2%	2%	2%	5%	3%	4%
24. Since the new smoking ordinance restrictions took effect in August 2010, are you smoking more cigarettes, fewer cigarettes or about the same number of cigarettes per day?	More cigarettes	10%	1%	--	na	--	--	--	--	3%	--
	Fewer cigarettes	33%	25%	59%	na	27%	39%	28%	32%	47%	--
	About the same number of cigarettes	57%	74%	41%	na	73%	61%	72%	68%	50%	100%
25. Has the new ordinance caused you to think seriously about quitting smoking?	Yes	35%	30%	48%	na	46%	10%	35%	52%	45%	4%
	No	65%	70%	52%	na	54%	90%	65%	48%	55%	96%

# Appendix B

## Methodology

## Methodology Summary

### Introduction

The Comprehensive Smoke-Free Ordinance Community Impact Study, commissioned by the Grand Forks Tobacco Free Coalition with support from the Grand Forks Public Health Department and funded by BreatheND – Saving Lives Saving Money and conducted by SSRI, interviewed 863 adults in the City of Grand Forks, North Dakota. Statistical results were weighted to correct known demographic discrepancies. The City of Grand Forks sample yields an error margin<sup>20</sup> of +/- 3.7%.

Moreover, in order to increase the number of interviews with younger adults 21 to 34, a supplemental sample was used to reach such respondents. An additional 172 interviews were conducted to increase the total sample size of young adults to 385. This subsample yields an error margin of +/- 4.9%.

### Sample Design

A combination of landline and cellular random digit dial (RDD) samples was used to represent adults in the City of Grand Forks who have access to either a landline or cellular telephone. Both samples were provided by Marketing Systems Group (MSG), Genesys Sampling Systems<sup>21</sup> 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<sup>22</sup>.

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 November 30 through December 17, 2011. 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.

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<sup>20</sup> This means that one can be 95 percent confident that the mean response for any question in the Grand Forks City sample of adults will not vary more than 3.7% in either direction from the actual mean for the response if all adults age 18 or older in the City of Grand Forks were surveyed.

<sup>21</sup> Marketing Systems Group, 565 Virginia Drive, Fort Washington, PA, 19034, 1-800-336-7674 [www.genesys-sampling.com](http://www.genesys-sampling.com)

<sup>22</sup> Please see Appendix C: Construction of Cellular RDD Sampling Frames based on Switch Locations.

**Table 1. City of Grand Forks Call Dispositions**

	<u>Landline</u>	<u>Cellular</u>
Total	7,500	4,430
Released	7,500	4,430
Unreleased	0	0
Usable	4,958	4,154
Unusable	2,541	791
Qualified	3,825	2,250

<b>DETAIL</b>		
Disconnected	2,194	780
Fax	115	3
Govt./Business	232	8
Unusable	2,541	791
No Answer	1,089	42
Busy	141	5
Usability Unknown	1,230	47
Complete	619	244
Break-off	32	20
Usable/Eligible	651	264
Refused	824	585
Language Barrier	19	7
Voice Mail	672	799
Call Back-Retired	399	409
Strong Refusal	125	73
Usable/Eligible Unknown	2,039	1,873
Under 18	na	771
Not a Grand Forks Resident	1,039	1,455
Usable/Ineligible	1,039	1,455
<b>Response Rate</b>	<b>16.2%</b>	<b>10.8%</b>



**WEIGHTING METHODOLOGY REPORT  
COMPREHENSIVE SMOKE-FREE ORDINANCE COMMUNITY  
IMPACT STUDY**

**Design Overview:**

This survey has secured a total of 863 interviews with adults 18 years of age or older residing in Grand Forks, 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. Moreover, in order to increase the number of interviews with younger adults 21 to 34, a supplemental sample was used to reach such respondents. In total, 7,500 landline and 4,430 cellular telephone numbers were used from extensions covering Grand Forks.

**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<sup>23</sup>. 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 *Wgt.Adjust* procedure of SUDAAN ([www.rti.org/sudaan](http://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 (<http://www2.sas.com/proceedings/sugi29/207-29.pdf>). The needed population totals for this study were obtained from the latest Claritas estimates for Grand Forks, as summarized in the following tables.

**Table 1. Respondent and population counts by gender and age for the 1<sup>st</sup> raking dimension**

Gender	Age	Respondents		Population	
Male	18 to 20	33	3.1%	3,162	7.5%
	21 to 34	310	28.8%	8,238	19.5%
	35 to 44	49	4.6%	2,522	6.0%
	45 to 54	56	5.2%	2,663	6.3%
	55 to 64	53	4.9%	2,480	5.9%
	65 and over	43	4.0%	2,284	5.4%
Female	18 to 20	28	2.6%	3,071	7.3%
	21 to 34	288	26.8%	6,988	16.6%
	35 to 44	59	5.5%	2,221	5.3%
	45 to 54	58	5.4%	2,769	6.6%
	55 to 64	50	4.6%	2,432	5.8%
	65 and over	49	4.6%	3,357	8.0%
<b>Total</b>		<b>1,076</b>	<b>100.0%</b>	<b>42,187</b>	<b>100.0%</b>

<sup>23</sup> 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 2. Respondent and population counts by education for the 2<sup>nd</sup> raking dimension**

Education	Respondents		Population	
Less than high School	46	4.3%	2,591	6.1%
High school or equivalent	200	18.6%	9,589	22.7%
Some college	274	25.5%	15,246	36.1%
College graduate and beyond	556	51.7%	14,761	35.0%
<b>Total</b>	<b>1,076</b>	<b>100.0%</b>	<b>42,187</b>	<b>100.0%</b>

**Table 3. Respondent and population counts by telephone status for the 3<sup>rd</sup> raking dimension**

Telephone Status	Respondents		Population	
Cell-only	165	15.3%	18,647	44.2%
Others	911	84.7%	23,540	55.8%
<b>Total</b>	<b>1,076</b>	<b>100.0%</b>	<b>42,187</b>	<b>100.0%</b>

**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  $i^{\text{th}}$  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,  $\delta$ , 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- $\alpha$ ) percent confidence interval for  $P$  would be given by:

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

## Appendix C

# Construction of Cellular RDD Sampling Frames Based on Switch Locations

## 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 of 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<sup>24</sup> 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.

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<sup>24</sup> 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.