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Collecting Data in Support of a Local Strategic Plan Using a Logic Model:

A Guide for States in Support of
Environmental Prevention

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Collecting Data in Support of a Local Strategic Plan Using a Logic Model: A Guide for States in Support of Environmental Prevention

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This reference guide is part of a series of community guides and manuals entitled :

Guides for States and Communities in Support of Environmental Prevention

The guides and manuals provide instructions to assist States in supporting communities in full implementing and evaluating the effects of environmental prevention strategies focused on alcohol, tobacco and other drug problems. The guides in this series include the following:

- Guide to Strategic Planning of Environmental Prevention Using a Logic Model
- Scientific Evidence for Developing a Local Logic Model On Alcohol-Related Motor Vehicle Crashes: *A Reference Guide for Community Environmental Prevention*
- Scientific Evidence for Developing a Local Logic Model On Underage Drinking: *A Reference Guide for Community Environmental Prevention*
- Collecting Data in Support of a Local Strategic Plan Using a Logic Model: *A Guide for States in Support of Environmental Prevention*
- Using Archival Data to Develop Local Alcohol, Tobacco, and Other Drug Problem Indicators: *Reference Guide for Community Environmental Prevention*
- Creating a Local Prevention Data Storage and Retrieval System: *Guide in Support of a Local Management Information System for Environmental Prevention based upon a Logic Model*
- Implementation and Operation of a Local Strategic Plan for Environmental Prevention: *Guide in Support of a Logic Model*

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I. Overview: Local Data in Effective Environmental Prevention

A. Introduction: Purpose of data in a local prevention project

Relevant, locally specific data provides critical information to any community-based environmental prevention effort. This information forms a Management Information System (MIS) which supports necessary changes in the efforts of local environmental prevention both to made modifications as needed and to determine whether key intermediate variables are moving in desired directions. Environmental Prevention focused on the entire community population seeks to make changes in the entire local system including structure, economics, physical, etc. in order to increase public health and safety.

This is a reference guide to assist state prevention staff in supporting local environmental prevention efforts in obtaining the essential and necessary information to establish and operate a MIS for that effort. As reference guide, the local data needed by the environmental prevention effort is specified as a part of the local strategic plan using a logic model (See Guide for Strategic Environmental Prevention Planning Using a Logic Model). A strategic plan using a logic model as developed by a community will define the specific alcohol, tobacco, or other drug (ATOD) outcome which is the target of the plan. In addition, the logic model identifies the key intermediate variables which research has shown to interact both together and with the ATOD target outcome. See **Scientific Evidence for Developing a Logic Model on Underage Drinking: A Reference Guide for Community Environmental Prevention** and **Scientific Evidence for Developing a Logic Model on Alcohol-Related Motor Vehicle Crashes: A Reference Guide for Community Environmental Prevention**. **The current version of this guide only contains alternative measurements related to alcohol but is relevant to other substance related problems. For example, Section V of this guide describes a local Management Information System in which key data can be entered and analyzed no matter the specific ATOD outcome in support of an environmental prevention effort. Later versions of this guide will include measures relevant to other substances.**

In order for strategic plan to be both implemented and effective, local data are essential to determine (a) changes in key intermediate variables, (b) implementation and strength/dosage of planned interventions following the strategic plan, and (c) effects or changes in targeted outcomes. Thus local data supports: (1) Outcome Evaluation, (b) Process Evaluation, and (c) Prevention Implementation Documentation as defined in the local strategic plan.

This guide may certainly be used by local prevention staff, especially staff responsible for local data collection. However, most likely in practice, state staff will be essential technical support and assistance in implementing most local management information systems based upon a strategic plan. In practice, the amount of state staff support will be dependent upon the technical capacity of local prevention staff.

B. Intermediate Variables from the Logic Model which specifies strategic plan

Outcome Evaluation

Outcome is a specific variable (event or level) which is the target for ATOD (alcohol, tobacco, and other drugs) environmental prevention. This may include a level of ATOD use, e.g., high risk drinking over the past 30 days, or a consequence of such use, e.g., alcohol-related traffic crashes. The outcome variable is the target that is to be changed (usually lowered) as a result of the prevention effort. Outcome evaluation has the purpose of documenting that the outcome variable has changed over time. Outcomes can include:

- a. **Consumption and High Risk Use.** Patterns of ATOD use including initiation (first use), regular or typical use, and/or high risk use (amount, frequency, and situation/settings of use). And/or:
- b. **Social, Health, and Safety Problems** associated with ATOD use. Outcomes including mortality and morbidity or undesired events for which one or more ATOD substances is clearly or consistently involved. While specific ATOD use may not be the single cause of a societal problem, it can often be a significant contributor. To use a social, health, or safety outcome as a target of change, there must be scientific evidence supporting a causal link from ATOD use as a contributing factor to the problem.

A **logic model** is a documentation (most often as a diagram) or causal model of the set of **intermediate variables** and their relationships that cause or contribute to the outcome. These variables affect ATOD consumption and their related problems. Prevention interventions rarely change an outcome directly. Rather, intermediate variables interact to produce the outcome. Thus a logic model reflects the best scientific evidence of (a) key intermediate variables and (b) their relationship to the outcome and/or other key intermediate variables. For example, underage drinking has been shown to be related to such intermediate variables as alcohol price, retail availability of alcohol to underage persons, and social availability of alcohol to underage persons. Changes in these intermediate variables through prevention has been shown to lower underage drinking.

Note: For prevention, a relatively valid and reliable measure of a prevention targeted outcome is necessary as the purpose of outcome evaluation is the accurate determination of CHANGES in the outcome variable AND the ability to attribute any changes to the prevention effort itself, i.e., ruling out other explanations or factors. Typically attribution of effects is based upon a baseline measure prior to prevention implementation and following implementation, i.e., pre and post measures. Such a design is traditional in experiments but has a number of limitations in practical prevention evaluation. For example, it is certainly possible to observe a change in the outcome variable simply as a

result of the historical patterns or trend and NOT the result of the prevention intervention effects. More refined analyses may help detect intervention effects, but there may still be limitations.

Process Evaluation

Process evaluation is concerned with the over-time measurement of key intermediate variables as specified in the local logic model or strategic plan. A key intermediate variable is one that has been shown via research to affect or contribute to a specific outcome or other intermediate variables. Any key intermediate variable should have research evidence that it has an effect on the defined outcome and/or the other key intermediate variables. Process evaluation requires both a conceptual definition and a measurement, i.e., what data is necessary to monitor each intermediate variable as specified. Note that this definition of process evaluation is different from other approaches in which the activity or mobilization or attendance might be used as process measures. *This is not the approach used in environmental prevention.*

Intervention Documentation

Interventions are the strategies implemented by a local environmental prevention effort to cause changes in one or more intermediate variables. In short, as illustrated by the local model, no environmental strategy can directly impact the targeted outcome of the local effort. Thus, it is essential to document what the local effort has actually implemented in practice. Therefore, implementation documentation is the recording of (a) the specific activities of prevention that are implemented in the community, (b) the extent of each prevention strategy as a measure of strength or “dosage”, and (c) the dates of implementation as well as level, strength, or “dosage” of the activity. Such documentation enables us to determine when and if the planned interventions have been implemented and how much of the intervention has actually been put in effect. Documentation of dates and amount of planned environmental intervention (as specified in the local logic model and the strategic plan) becomes important to the local effort in monitoring how much of its strategic plan has been put in place and the strength or dosage of this implementation.

Standards for Local Data for Prevention

While a “gold standard” or the very best, is always the preferred standard for data in supporting the planning and evaluation of local prevention, resources, capacity, or timing often do not permit achievement of that standard. As a result, this local data collection guide is organized to suggest what is likely the “best” but also recognize “minimum” or adequate standards and somewhere in between, called “better”. One of the advantages of utilizing the “best” standard is that the data is more reliable and less subject to bias. The disadvantage is very often this highest standard is difficult or impossible to achieve in a local situation, e.g., political considerations, costs to implement and maintain, and legal barriers. The other standards can be useful and helpful in local decisions about an environmental effort but their limitations and bias must be realized. These biases or limitations do not make such data bad or even incorrect to utilize, only that their limitations should be considered in interpreting them and efforts should be made as much as possible to both improve the quality of local data where possible, but also seeking other data that can be utilized to further confirm or support the conclusions or implications derived.

As a result, each of the intermediate variables described in Section II contain three suggested alternatives for standards of measurement or data collection that can be utilized to monitor key intermediate variables in a local environmental prevention effort. These three levels of measurement are:

★ **Minimum or Adequate Measure:** A measure that has biases or other limitations but is collected in a consistent way can be quite useful in a local environmental prevention effort and likely requires the least cost and difficulty. Such minimum data may or may not be as representative as a proper random sample or the result of carefully implemented data collection. **However, if the local prevention effort recognizes the limitations of such minimum data and it is collected in a consistent way each time, these data can be used to monitor intermediate variables over time**, especially as a measure of changes in trends.

★★ **Better:** A measure that is an improvement over the minimum standard and is most likely to be more costly and/or difficult than the minimum or adequate measurement. These data are typically more representative than a minimum standard and have some other advantages over the minimum or adequate standard.

★★★ **Best/Preferred:** A measure that is considered the most valid and representative. In principle, there can be two or more data alternatives that meet this standard, but this guide emphasizes the one (or perhaps two) approach(es) that seem most practical or that have been frequently used with success. This standard would be used in epidemiology to provide valid estimates of the intermediate variable. Measurements at this level can be typically more costly and difficult to obtain than data collection in lower standards but, if possible for the local prevention effort, can be more trusted and valid than data collected with lower standards. **However, it is not essential (or even necessary) that this standard be used throughout by local environmental prevention efforts.**

For example, in thinking about alternative ways to measure the level of youth ATOD use or the levels of alcohol-related problems for youth, three alternative standards for data collected might be considered.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Youth ATOD Use	youth focus groups (for example, seniors)	Self-reported 30-day use from a brief, representative classroom survey.	Representative youth survey of self-reported 30-day use conducted in a school survey or home/telephone survey.

General Standards for guiding local data collection and the interpretation of data include:

1. **Valid:** The measure should, in the best situation, meet a basic criteria for validity, i.e., the data accurately measure the specific variable. As much as possible, the measure should yield a true snapshot of the intermediate variable. One would not, for example, use estimates from a survey where 30% of respondents are known to substantially under report their ATOD use as a valid estimate (suitable to epidemiology) of local substance. However, if the 30% under reporting is consistent over time, changes in self-reported use could be monitored by the environmental prevention effort to detect real changes in use over time, i.e., if the environmental prevention effort is actually having an effect on use..

2. **Periodic collection:** A single measure of any intermediate variable is not very useful in monitoring local environmental prevention nor detecting changes. Therefore, it is most desired that any measures be collected over an extended period of time to provide a series of values for intermediate variable, i.e., a time series of data. Ideally, measures would be available over at least three to five past years at least annually as a baseline. It is preferred that a measure be available for the three to five years prior to initiation of the environmental prevention effort. These pre-implementation measures enable a community to determine not only the level of an intermediate variable (e.g., average over 3 years) but also the trend in the level of the intermediate variable prior to implementing environmental prevention strategies.
3. **Consistent or Reliable:** The measure must be consistent, i.e., the method or means of collecting and organizing data should be relatively unchanged over time. This means that the method of measurement is the same at each data collection point. If the data collection or reporting method did change, documentation of this change allows the local prevention effort to adjust for these changes. In general, consistency across time is more valuable than representativeness or generalizability. Why? Because we want to know whether there is significant change in behaviors or intermediate variables that comprise the logic model. Thus, consistent measurement is utilized and the same procedures and measures are obtained throughout (as much as practically possible). Example: If a short survey is given to a set of classes one time (say at baseline), then use the same classes each time. Consistency in the youth sample is more important than being fully representative of all youth in the community. Similarly, repeated samples of high school seniors may be more helpful (and informative) than a sample that may change from one time to another, i.e., fluctuate over time because it would be difficult to determine if any changes found were due to the interventions or just the change in respondents.
4. **Relevant Vs. Representative Sampling:** The goal of any environmental prevention effort is to reduce ATOD use or associated problems. Since prevention is NOT necessarily attempting to always obtain valid or representative values for the entire population, **the same standards utilized in research or in epidemiology are not always necessary** for local environmental prevention monitoring. For example, an effort to measure the level of youth drinking does not have to be representative of all youth. The sample may well over-represent youth who are likely to drink since that is the major target behavior. A consistent or homogenous sample of youth who are drinkers can be more helpful in monitoring the effects of local prevention than a sample which is heterogeneous to reflect such characteristics as age and gender as well as race and ethnicity, i.e. generalizable to the entire youth population.
5. **Available:** The measure is available (or at a minimum cost).
6. **Sensitive:** For monitoring, the measure must be sufficiently sensitive to reflect changes in intermediate variables and thus enable the local environmental prevention effort to monitor and make changes in strategies as necessary. For example, using the rate of lung cancer deaths as an outcome measure of your local tobacco environmental prevention efforts would not be using a sensitive measure because any impact you would be making in the progression of such a disease would not be evident for many, many years.

Bottom Line: The most significant standard for local data collection is to collect the same measurement over time in a consistent and unchanging fashion. This enables the local prevention effort to determine if the level of the specific intermediate variable is changing over time and then whether this change is the result of prevention strategies implemented, for example, by determining the month the intermediate variable changed, and if this was associated in time with implementation and strength of environmental strategies.

C. Prevention interventions—documentation of prevention strategy, schedule, and strength or dosage

These local data are necessary for monitoring the frequency and strength (how much is actually implemented in practice, if you will) of any planned prevention intervention. The monitoring of each environmental prevention strategy is based upon the local strategic plan and thus the data to be collected is to be uniquely specified in this plan as described in **Section V. Procedures for Entering and Storing Local Data.**

II. Intermediate Variables

A. Introduction

This guide is to be used as a reference for local environmental prevention efforts and, depending upon the intermediate variables included in the logic model, the relevant suggested measures can be selected from this guide. Measurements of intermediate variables as specified in the local logic model should use at least one suggested measure from the spectrum: Minimum or alternative, Better, and Best. In some instances, there may be alternative measures, as well. From the set of possible indicators for each variable, the most reliable and available set of indicators should be selected for use in local planning and evaluation. It is not expected that each and every intermediate variable in this guide will be useful or relevant to the local environmental prevention strategic plan. In some cases, no known measure may exist for a specific variable but may be important enough to identify future data needs.

For example, the typical way for local prevention to measure the use of specific substances is through self reports, usually as part of a survey. For youth in a community, these data are typically collected via a school survey and for adults they are collected through a community survey. School surveys in current times have been increasingly expensive and difficult to administer due to regulations and requirements concerning administration of surveys, difficulty obtaining parental consent, and competing interests for class time. While there are a series of youth surveys administered through states, researchers, and federal agencies such as the Centers for Disease Control and Prevention (CDC) and the Substance Abuse and Mental Health Services Administration (SAMHSA), these surveys almost never provide measurements that are relevant to a county, city, town, or neighborhood. As a result, less costly and difficult methods for measurement are suggested.

Suggested alternatives for measuring Youth Use of Alcohol include:

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Youth Use of ATOD	Youth Panel or focus groups (for example, seniors in high school)	Classroom or Brief School Survey of 30-day use (in a time limited classroom setting, e.g., homeroom).	Representative Youth Survey of self-reported 30-day use conducted in a school survey or home/telephone survey.

★ Minimum or Adequate: Youth Panel

A youth panel provides a means to systematically obtain “best estimates” of quantitative values for specific variables concerning the youth population represented by the group, e.g., level of youth drinking over the past 30 days (on the average) or level of perceived availability of alcohol to youth from retail (restaurants, liquor stores, etc) or social (parties, friends, homes, etc) sources. In addition, the group can be used to obtain qualitative information about their personal experiences and those of their friends, thus using the group for exploring less structured questions as might occur in a traditional focus group. Results from a youth panel study can be useful in monitoring changes in key outcome variables in a prevention project that would be difficult if not impossible in a one-shot case study (or cross-sectional study). Because youth panels continue to provide data over a period of time, the evaluation can allow for the influences of other factors, which may appear later in the project.

Strength of Panel Design: A potential strength of a panel design is the ability to collect information about key variables in the prevention project over time at a low cost (compared to a school-based or telephone survey). Because the variables are measured over time from a consistent set of respondents, it is relatively more valid to identify changes in key outcome variables and thus to attribute changes to the prevention interventions of the project than changing the panel composition or membership each time. Obviously other alternative variables or factors can cause changes in measured outcomes. For example, if the dropout rate in a panel study is high, the remaining panelists might differ in regard to the variable being studied. If that is the case, the variation in the panel data may simply reflect the change in composition.

Schedule: This group should be interviewed (derive group estimates for specific variables) at the baseline (as soon as the group can meet together) as well as at least every 6 months over the life of the project. In this way, the project has access to youth estimates of key variables for use in monitoring project success (or lack of success). The group should be maintained intact as long as possible. Because the participants are growing older each year, it may be necessary to select replacements at the younger age groups as well as select replacements for students (in any age group) who have left or dropped out of the panel.

Selection: In order for the group to be as useful as possible to project evaluation, members should represent or reflect the age groups that the project is targeting, e.g., 14-18 year olds. At a minimum the group should contain 12 members but closer to 20 members would be ideal. For example, if there were 20 members, then each age group (14, 15, 16, 17, 18 and older) could be presented by 5 members. For each age group, it would be important to select members who reflect that age group in the community. Avoid selecting “good students” only, i.e., students are active and thus more easily recruited to participate in the focus group. If possible, marginal or drop-out students should be recruited along with students who are “average,” as well as high achieving students. While it is impossible to select group members who exactly represent their contemporaries, once formed, it is key to retain the group as intact as possible over time in order to data collected to reflect this group of youth over time.

Group dropouts: Once the membership has been secured, the problem of dropouts emerges. Some panel members will drop out for one reason or another. Because the strength of panel studies lies in interviewing the same respondents at different times, this advantage diminishes as the membership decreases.

Considering Other Factors when Using Results: In using the data obtained in a panel study, it is important to consider confounding factors, including drop outs or actual representation of the youth population by the selection process, that potentially affect the results. Other alternative explanations must be ruled out to the extent possible.

Threats to Validity: One potential serious threat to the youth panel is a testing effect, i.e., participants can shape their responses (even unconsciously) as a result of repeated interviewing, thus making results less valid. Panel data can also be biased through an instrumentation threat in which data collected in later panel meetings were not contained in the baseline or early panel meetings. Certainly it is possible that over time, the project may need to obtain measures of new variables that have become important to monitoring the prevention project. This may result in adding new variables and even modifying measurement procedures using a different means to collect data. This change in instrumentation can introduce bias that is more related to the instrument than an actual change in the intermediate variables.

Facilitator: An adult should serve as the group discussion leader or facilitator. The facilitator sets the agenda, manages the group discussion, and distributes questionnaires to be completed by individual members. The facilitator collects and organizes responses, and common and conflicting viewpoints are identified. If consensus is not reached, the process continues to gradually work towards synthesis and building consensus.

Using the group to derive estimates of key variables: Unlike the process used in typical focus groups, this youth panel is tasked with developing quantitative estimates of key variables, based upon structured questions. This process is to be conducted through a series of rounds or cycles in which panel members develop their own best quantitative estimate (for example, privately), then by sharing their individual estimates and a group discussion, further cycles of estimates as needed are then carried out. Before the process begins the reference group for which estimates are to be made must be defined, i.e., all seniors in high school, all students in high school, youth between ages of 17-19, etc. Thus the participations in the panel should have sufficient experience with the defined reference group. This process can begin via having individuals document their estimates in private for the defined reference group, e.g., entire youth population or just for their own age group. This first round of estimates can be summarized and/or reported to the entire group and then followed by group discussion attempting to seek an agreement on quantitative estimates. Depending upon the protocol provided, these group estimates should represent a generally agreed estimate for each cell or response alternative in the form shown in Example A.

Example A: Youth Panel or Focus Group Estimation Survey

For your grade (age group) what is your estimate for each of the following. There are no correct answers but the estimates should total 100% for each question:

1. In the past 30 days, what percentage of people in your grade or age group had one or more whole drinks (not just a sip or taste) of an alcoholic beverage (beer, wine, wine cooler, or liquor)?
____ % Not at all.
____ % Once in the past 30 days
____ % 2-3 times in the past 30 days
____ % 1-2 times a week
____ % 3-4 times a week
____ % 5-6 times a week
____ % Every day
100% TOTAL of Estimates

Continued on next page

Example A: Youth Panel or Focus Group Estimation Survey (Continued)

2. In the past 30 days, what percentage of people in your grade or age group drank enough to get drunk?
 % Not at all.
 % Once in the past 30 days
 % 2–3 times in the past 30 days
 % 1–2 times a week
 % 3–4 times a week
 % 5–6 times a week
 % Every day
100% TOTAL of Estimates
3. On how many days in the past 30 days, what percentage of people in your grade or age group had 5 or more whole drinks in a row?
 % Not at all.
 % Once in the past 30 days
 % 2–3 times in the past 30 days
 % 1–2 times a week
 % 3–4 times a week
 % 5–6 times a week
 % Every day
100% TOTAL of Estimates
4. Over the past 6 months, what percentage of people in your grade or age group have driven a car, truck, motorcycle or bicycle after or while drinking?
 % Never
 % Once
 % 3 to 5 times
 % 6+ times (about once a month)
100% TOTAL of Estimates
5. What percentage of people in your grade or age group would estimate their chances as “unlikely” to “likely” for being stopped and arrested by police if driving a motor vehicle while or after drinking:
 % 1. Very unlikely
 % 2. Unlikely
 % 3. They would be uncertain
 % 4. Likely
 % 5. Very likely
100% TOTAL of Estimates
6. Suppose people in your grade or age group wanted to obtain alcohol. What percentage would believe it was easy or difficult to-----? (Enter an estimated % in each one box for each question. Rows should total 100%)

	1. Very Easy	2. Easy	3. Unsure or Don't Know	4. Difficult	5. Very Difficult	TOTAL of Estimates
A. Purchase alcohol in a liquor store, grocery store, etc.?						100%
B. Purchase alcohol in a bar, restaurant, club or pub?						100%
C. Obtain from Parents?						100%
D. Obtain from siblings						100%
E. Obtain from friends or in a social gathering or party?						100%
F. Find an adult (not a family member) to purchase alcohol						100%

The estimation process may be repeated as many times as is deemed appropriate. Because the goal is consensus (or at least general agreement about percentage estimates in each cell) and there may initially be a wide range of responses, the process of obtaining consensus or general agreement may require several iterations. At least a couple of rounds are needed to see how others have scored or listen to recommendations or estimates of peers, which can be very useful to increase confidence in the final scoring.

It is important that divergent points of view are encouraged and in some way incorporated into final group estimates, i.e., while consensus is desired, representativeness or generalizability to the larger youth population that the focus group is designed to reflect is even more desired. **It is essential that participants recognize they are estimating for a larger defined youth group (either age or school class) and not reporting their own behavior.**

Note: This means that diverse estimates or range of estimates may be necessary. In analyzing the scores, one method used for smaller groups and especially when percentage scores are used is to use the formula: [lowest score + highest score + (4 x average score)] / 6. This gives more weight to the average while allowing for outliers or divergent views.

Validation: If a school survey is available or will be administered, it would be valuable to conduct a panel meeting for estimation concurrent or prior to such a survey administration in order to provide an independent validation of the estimates of the youth panel.

References:

Paul S. Albert and C. Hendricks Brown (1991) Design of a Panel Study under an Alternating Poisson Process Assumption. *Biometrics* Vol. 47, No. 3 (Sep., 1991), pp. 921-932

★★ Better: Classroom or Other Short Questionnaire

Classroom or youth group short questionnaires should be designed to be focused and completed in 15-20 minutes or less, i.e., (a) brief, not more than two pages printed back to back or stapled and (b) contain only the key essential questions necessary to project evaluation and monitoring (see logic model for prevention project). The point of such survey is to be easy to administer and not necessarily as representative (for epidemiological purposes) as a randomized sample of classrooms or schools. Because this is a relatively brief and focused questionnaire, it may be possible, depending upon school policies, to be administered to a large group of students, e.g., in homerooms or in a student assembly where most students are present, with little disruption to the school day. However, consent issues will still be a factor.

The point of this standard is to actually ask students their own behavior and perceptions and not make an estimate of their same-age peers.

These questionnaires can contain identical (if possible) questions to those used in more systematic or larger youth/school surveys (say, a statewide school survey) as well as unique questions of particular importance to project evaluation. This questionnaire should be used consistently over time in order for increase reliability of estimates derived. An example of a two page brief survey containing brief questions for both drinking, availability, and drinking/driving is shown in Example B which reflects similar information as shown in Example A.

Example B: Youth Brief Survey

This is an anonymous survey. Please answer the following questions as truthfully as possible. Instructions: Using a blue or black pen, please fill in the circle that represents your answers, like this ●. If you change your mind about an answer cross through the entire circle that you do not want to use with an X like this ✕. Please mark only one response per question, unless otherwise noted.

1. What is your gender? ☐ Male ☐ Female
2. How old are you? ____ years
3. What racial or ethnic group best describes you? (Mark any that apply.)
☐ Black, African American ☐ Latino, Hispanic ☐ White, Caucasian or Middle Eastern ☐ Asian
☐ Other, Please describe _____
4. What grade are you now in?
☐ 7th ☐ 8th ☐ 9th ☐ 10th ☐ 11th ☐ 12th ☐ Not in school ☐ Graduated High School
5. In the past 30 days, how often have you had one or more whole drinks (not just a sip or taste) of an alcoholic beverage (beer, wine, wine cooler, or liquor)?
☐ Not at all **GO TO QUESTION 10.**
☐ Once in the past 30 days
☐ 2–3 times in the past 30 days
☐ 1–2 times a week
☐ 3–4 times a week
☐ 5–6 times a week
☐ Every day
6. On how many days in the past 30 days did you drink enough to get drunk?
☐ None
☐ 1–2 days
☐ 3–4 days
☐ 5–6 days
☐ 7–8 days
☐ 9–10 days
☐ 11–12 days
☐ More than 12 days
7. On how many days in the past 30 days did you have 5 or more whole drinks in a row?
☐ None
☐ 1–2 days
☐ 3–4 days
☐ 5–6 days
☐ 7–8 days
☐ 9–10 days
☐ 11–12 days
☐ More than 12 days
8. On how many days in the past 2 weeks did you have 5 or more whole drinks in a row?
☐ None
☐ 1–2 days
☐ 3–4 days
☐ 5–6 days
☐ More than 6 days
9. How many days in the past 6 months have you driven a car, truck, motorcycle or bicycle after or while drinking?
☐ Never ☐ Once ☐ 3 to 5 times ☐ 6+ times (about once a month)

10. If you were to drive a motor vehicle while or after drinking, what do you think are your chances of being stopped and arrested by Police? Select one number:

☐ 1. Very unlikely ☐ 2. Unlikely ☐ 3. Not certain, don't know ☐ 4. Likely ☐ 5. Very likely

11. In the past 6 months, how many times did you get alcohol in each of the following ways? (Check one box for each item. If you did not drink alcohol in the past 12 months, check NEVER for all of the items).

Ways to get Alcohol	Never	Once or twice	3 to 5 times	6 or more times or (about once per month)
You bought it yourself from a store ?				
You bought it yourself from a restaurant, bar, club or pub?				
You bought it from someone who sells alcohol illegally (a bootlegger).?				
You got it from home <u>with</u> your parents' permission.				
You got it from home <u>without</u> your parents' permission.				
You got it from your brother or your sister or another relative				
You got it from someone you know (but not a relative) who is 21 or older.				
A stranger bought it for you.				
You took it from a store without paying for it.				
You got it yourself (that is, you served yourself) at a party or some other social event or gathering that you attended.				
You got it from another source not listed here?				

12. Suppose you wanted to obtain alcohol. How easy or difficult do you think it would be for you to-----? (Just check one box for each item)

	1. Very Easy	2. Easy	3. Unsure or Don't Know	4. Difficult	5. Very Difficult
A. Purchase alcohol in a liquor store, grocery store, etc.?					
B. Purchase alcohol in a bar, restaurant, club or pub?					
C. Obtain from Parents?					
D. Obtain from siblings					
E. Obtain from friends or in a social gathering or party?					
F. Find an adult (not a family member) to purchase alcohol					

★★★ Best: Representative School Survey

Many states and communities conduct school surveys of ATOD use and often use a sampling design that achieves representativeness for the overall school population. In addition, there are surveys collected in states that are conducted with considerable resources and support by the Center for Disease Control (YRBS) and the U.S. Department of Health and Human Services. Unfortunately, most often the survey sample may be representative of the state as a whole, but the results are unlikely to be representative of a specific local area, community, or even a county.

B. Retail Availability of Alcohol to Underage Persons

Retail availability is likely to be a key intermediate variable in most local strategic plans. In the case of alcohol and tobacco, retail availability exists in retail outlets that are licensed (almost certainly for alcohol, but not in all states/communities for tobacco) to sell those products to take away for consumption elsewhere (depending upon state regulations) including liquor stores, grocery stores, etc., i.e., off premise. Some alcohol establishments are licensed to sell alcohol for consumption on site, e.g., bars, clubs, pubs, and restaurants, i.e., on premise.

1. Level of Retail Sales of Alcohol to Underage Customers

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Retail Availability to Youth	Youth panel or focus groups and estimates of perceived retail availability of alcohol to youth (as concluded by the panel)	Brief classroom self-report survey or a representative youth survey of the perceived ease of buying retail alcohol	Compliance checks of alcohol sales to youth or youth purchase surveys (non-enforcement)

★ Minimum or Adequate: Youth Panel

As with using a youth panel to estimate level of youth drinking, the same approach can be used to provide estimates of the perceived level of retail availability of alcohol. **See Example A for questions concerning retail availability.**

★★ Better: Brief Classroom or a Representative School Survey

A similar question can be included in a brief classroom survey as well as more specific questions about alternative sources of alcohol. **See Example B for questions concerning alcohol availability for a Brief (2 page) Youth Survey.**

★★★ Best: Compliance checks for alcohol sales to youth (Non-Enforcement or Enforcement)

Direct purchasing of alcohol by minors at off-site premises liquor stores, convenience stores, and supermarkets, or on-site premises, restaurants, bars, pubs or clubs is often relatively easy. Studies in different communities around the U.S. report that approximately 50% of minors age 16-20 are asked for age identification when attempting to purchase alcohol.

The specific purpose of this data collection is to determine the rate at which youthful buyers are able to purchase liquor at off or on-site premises in the communities under study. The preferred data collection approach is NOT an enforcement survey but rather a means to provide consistent measurement of frequency in which youthful looking customers are asked to provide age identification when purchasing alcohol. The most accurate way to measure changes in the overall buy rate in a community is to conduct “pretest compliance checks” before the actual intervention begins (this includes any use of media or development of community support) and conduct “post-test compliance checks” after all the. The complication in doing these pre- and post-tests is that in order to separate the pre-test from the intervention, the merchants *should not know* they were checked.

The youth buyers must be over the age of 21 but appear to be much younger. A panel of citizens from the community could be established to judge the apparent age of these buyers (using photographs) or the actual persons in order to establish what might be considered “local standards” of age judging. It is recommended that youthful-looking females are used because past research has indicated that they are more successful in buying liquor than are youthful-looking males.

The buyers will go into stores that sell alcohol and attempt to buy a six pack of beer, a bottle of spirits or wine, or a pre-mixed drink (something with alcohol almost mixed with juice or soda). If they are asked for ID, they will leave or if the clerk after checking the ID still agrees to sell, then the buyer should leave. They will not lie about their age. Important Note: Whatever the protocol utilized in handling alcohol purchasing, it must be carried out consistently across time. The results of this attempt will be collected and later summarized in aggregate, i.e., percentage of total purchase attempts without age identification being requested.

The benefits of using this standard for measuring alcohol retail availability to youth include:

1. Monitor change in local alcohol sales to minors over time.
2. Provide information to the community on the extent of underage purchase of liquor at off-site premises.
3. Provide data to produce news stories on the ability of minors to make alcohol purchases to inform the community.
4. Potentially play a role in determining which premises are recruited for clerk training.

Procedure Summary: Young-looking women (or young-looking men) will attempt to purchase alcohol from a randomly selected sample of off-sale retail outlets. Buyer's apparent age will be judged by a diverse local panel of people having somewhat regular contact with youth. It is suggested that a pair of women (or young men) judged to be about 18 years old (but who are actually 21 to 24 years old) will be selected. It is essential that potential young adult buyers look underage by utilizing residents in the community to guess each buyer's age. If estimates average between 17.5 and 19.5 years of age, then a buyer is suitable. If the youthful buyer is asked for ID, then they may leave the store or on-premise establishment. However, if the local prevention effort wishes to document if clerks or servers actually check IDs, then the buyer should provide actual ID and then assess whether the merchant or server actually studied the ID, which is defined as looking at the identification with enough attention to confirm they calculate the correct age of the buyer. Buyers will attempt to purchase a predetermined type and amount of alcohol, e.g., 6-pack of beer, bottle of spirits or wine, or a pre-mixed alcohol drink, in off-premise outlets or a glass of beer or wine or spirits in an on-premise establishment without showing an ID. Two purchase attempts will be made at each selected outlet, one on Friday evening, the other on Saturday evening, one by each of the two pairs. Data will be used in aggregate form to inform the community about the ability of minors to purchase alcohol. At a minimum compliance checks should be done annually beginning with the "pretest" compliance check and more often if practically possible, e.g., perhaps semi-annually or even quarterly. The fewer stores or restaurants/bars that are inspected each year, the less value one should put on the accuracy of the alcohol sale rate because small numbers produce less stable rates from year to year. Complete guidelines and forms for setting up and conducting the Under Age Compliance Check Survey are contained in Appendix I-E. .

Practical Information: Even if it is legal to 21 or older persons to attempt to purchase alcohol, it is sensible to inform law enforcement that a local prevention effort is conducting compliance checks., The result of the check is recorded for data collection purposes, but not reported to law enforcement. Best practice suggests that young adult buyers should be accompanied by a non-law enforcement adult (waiting in the car). While quite proper for legal age people to attempt to purchase alcohol (the buy rate should always be 100%), pre-test and post-test percentages are be calculated based on the number of times they are asked for an ID and another percentage based on how many times the ID is carefully studied (enough to conclude they were calculating age and matching the picture to the buyer). Improvement in these percentages indicates merchants are increasing the checking for proper age and would likely correspond to their being less likely to sell to an underage person.

Enforcement Compliance Checks: Level of Enforcement of Alcohol Sales to Underage Persons is described in Section 4 below and typically these results reflect enforcement actions. However, if there exists the possibility of regular at least bi-monthly systematic enforcement compliance checks, the number of these checks and the actual successful purchases can be a practical alternative to non-enforcement checks. However, it should be noted that enforcement compliance checks will typically be under estimates of the level of actual retail sales being completed. These enforcement compliance checks are most representative if conducted randomly with sufficient numbers of establishments to be representative.

2. Level of Manager/staff skill in Checking Age of customers (Training and Evaluation)

The skill of retail outlet clerks in checking the IDs of youthful-looking customers who are attempting to purchase alcohol is a desired outcome of staff and manager training for off-premise alcohol

outlets. It is possible to determine the skill level of clerks and managers in age identification, at the time of the training as well as at a follow up to training.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Staff/Manager Skill in Checking Age of Customers	Training Evaluation: Self-report from staff and managers about frequency and intention to check age of alcohol purchase (pre/post training)	Observational Survey of clerk or server behavior in checking age identification in establishments that participated in training	Compliance checks of alcohol sales or service to youth or youth purchase surveys. (Non Enforcement of Enforcement).

★ Minimum or Adequate: Training Evaluation

Using a pre and post set of measures, it is possible evaluate the level of reported commitment of staff and managers in checking age identification as well as the effectiveness of training for off- or on-premise alcohol outlets. The survey can evaluate the specific knowledge, values, and skills of participants both before and after completing the training session as well as their strong personal commitment not to sell or service after they leave the training. The validity of pre and post training evaluation is increased when a trainee is making two non-connected assessments of what they think the best answer is for them. When the trainee can easily recall their pre-training answer the first time, this can influence the post-training selection. The training evaluation is strongest when there is a means to determine if clerks, servers or managers are leaving this training with strong intentions to not sell to or serve youth. as opposed to “did this training trengthen their intentions not to sell?” Training evaluation forms and protocols are show in Appendix I-C. Overall, a pre and post training measurement is unable to assess retail staff’s actual and future behavior. Local prevention staff should recognize this limitation. At best, pre and post training results provide helpful but short-term data on attitudes, knowledge, skill, and future intentions to check age in alcohol sales and service. The information can also assist the prevention staff in documenting and assessing (perhaps modifying) future training. The recommended means to determine the longer effects of training is to use the “better” and/or “best” options described below.

★★ Better: Observational Survey

This survey is completed through a visitation to off or on-premise outlets (with an emphasis on outlets that participated in training but could be extended to other outlets as well, i.e., non-participants) and provides a means to observe and assess the frequency and skill of clerks in actually checking age identification in conjunction with alcohol purchases. This survey can also be used to document hours of operation, condition of premise, and business name as it appears on the business and be used to inventory the number, type, and characteristics of outlets licensed to sell alcohol. It is also possible that this survey can be used to establish a foundation for a youth alcohol purchase survey by having a more accurate license listing. The off-premise documentation can be conducted by staff from the local prevention project or trained volunteers. Local staff and/or trained volunteers are assigned to visit each designated off-premise alcohol outlet, make observations and record information requested on the survey form. If hours are not posted, the telephone number may be looked up in a

local phone directory and a call to the outlet should be made to determine the closing time on both Friday and Saturday nights. See Form in Appendix I-D.

★★★ **Best: Compliance Checks (Non Enforcement)**

This survey is the same that is potentially used for measuring overall retail availability but here the compliance check data is directed toward evaluation of age checks by clerks in specific outlets who have participated in training. It is especially important when using this approach for the purpose of assessing training effectiveness that the youth making the purchase attempts to get the name or description of the specific clerk who made the sale. Your training classes may not always be attended by every members of the establishment's sales staff (a grocery store may have dozens of employees working registers at various times), and more weight should be put on the clerks' actions if they were an attendee. If your training is more geared toward management level staff who are expected to train and encourage all front-line staff to be more vigilant about checking IDs, then this is less of an issue. Similarly if Enforcement Compliance Checks are utilized, the specific establishments which are checked should include those in which staff have participated in training.

3. Level of Enforcement of Alcohol Sales to Underage Customers

In general, enforcement refers to enforcing policies to decrease the availability and/or use of alcohol. Enforcement might include arrest, prosecution, and punishment for alcohol-related violations. Punishment might include fines to stores or the loss of their alcohol license for the sale of alcohol to underage customers.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Enforcement of Underage Access to Retail Alcohol	Monthly totals of alcohol-related citations by law enforcement .	Monthly total off-or on-premise citations to clerk/stores/servers for sales or service to underage customers.	Monthly total decoy enforcement operations per month as a percentage of total licensed off-or on-premise outlets

★ **Minimum or Adequate: Monthly total alcohol-related citations**

A recent study involving over 30 communities in one state analyzed indicators of enforcement of retail sales and social availability of alcohol to underage customers and developed a composite enforcement indicator, i.e., the total number of citations for alcohol-related offenses including (a) compliance check citations, (b) party dispersal citations, (c) Minor in Possession (MIP) of alcohol in party dispersal situation, (d) Minor in Possession (MIP) of alcohol in other situations, and (e) underage alcohol traffic citations involving alcohol. This composite enforcement indicator was strongly associated with the level of youth drinking. In other words, this indicator was found to have a statistically significant effect on current use of alcohol among high school students, i.e., as citations increased,

current self-reported alcohol use decreased. This indicator was also associated (but not statistically significant) with less acquisition of alcohol in communities with a high number of citations issued, as was binge drinking, perceived availability of alcohol, and self-reported successful underage purchase attempts. In terms of social availability, party dispersal and checking accounted for about 11% of total man hours expended but accounted for over 27% of citations. These results are sufficient for a conclusion that overall amount of enforcement can affect important intermediate variables in reducing underage drinking. These findings suggest that monthly counts of total alcohol-related citations in the community can be a sound indicator as a minimum indicator of enforcement. Note: This study combined retail and social enforcement citations into one indicator and thus the results mainly support the use of citations as a minimum indicator.

On the other hand, this study found that the effect of the number of police officer hours expended on intervention activities including presentations to schools and to communities had no statistically significant effects on youth drinking. As noted above, by far the majority of officer enforcement time was on traffic activities. Thus, one implication of this finding is that amount of time of officers involved in enforcement activities and community information is not as potent as visible enforcement actions, expressed in number of citations and arrests. *Citation (to be added when paper is published).*

Examples of possible citations that local law enforcement might utilize in retail availability enforcement include:

Use of False ID: This is an infraction which occurs when an law enforcement officer witnesses a youth purchasing alcohol in which his ID stating his legal age is false, i.e., not an official identification. This can include utilizing a valid ID from someone else and or utilizing an altered ID in some way, e.g., changing the birth year.

Underage Alcohol Sale: this is an infraction to a clerk or the store (or both) where law enforcement officer witnesses the actual sale of alcohol to an underage person (usually when the youth is known to the police to be underage) or a law enforcement officer witnesses an alcohol sale and finds that the customer is actually underage and the clerk/store failed to check or to refuse the sale.

Third Party Purchase of Alcohol for Underage Person: this is the infraction in which a person over 21 years (or is under 21 in some states) purchases alcohol on behalf of an underage person (sometimes in exchange for a fee or tip) or subsequently sells/provides alcohol to an underage person. Some states may have a more general Transfer of Alcohol to an Underage Person charge that applies to this scenario and others where it may not have been pre-arranged that the adult's purchase was for the intent of giving or selling it to the underage person.

★★ **Better: Monthly total off-or on-premise citations to clerk/stores/servers for sales or service to underage customers**

This is an enforcement indicator that is directly related to the citations to licensed off-premise outlets and/or clerks in these stores for sales to or service by on-premise establishments to underage customers. This indicator is more specific than overall citations in that it enables the local environmental prevention effort to monitor the amount of citations for underage alcohol service to either off-premise or on premise licensed establishments. These citations are based upon a detection of sales or service of alcohol to an underage person (someone not of legal age to purchase alcohol) and or in contrast to compliance checks or alcohol purchase surveys, which are not enforcement checks but a method to measure the extent to which licensed establishment practice proper identification check-

ing skills. This indicator can be weighted by the number of licensed alcohol outlets (separately for off- and on-premise outlets) to produce Ratio of arrests or citations for selling or serving alcohol to underage persons per number of licensed outlets, either off or on premise establishments.

★★★ **Best: Monthly total enforcement operations per month as a percentage of total licensed off or on-premise outlets**

This indicator is a direct measure of the level of visible law enforcement to check the actual sales or service of alcohol to underage customers by licensed establishments. Typically this entails the use of an actual underage person (young looking person who is under 21 years old) who should have his/her ID checked for actual age while accompanied by a law enforcement person (likely out of uniform and in plain clothes). If this young person is allowed to purchase alcohol, the law enforcement officer steps forward and issues a warning or citation or arrest. This indicator is considered best since it measures the actual amount and frequency of law enforcement efforts to check underage alcohol sales or service. The purpose of enforcement operation is **not** to generate citations or arrests but to increase the actual level of enforcement against sales of alcohol to underage persons but to increase merchant awareness of enforcement risks. Note: it is recognized here that law enforcement personnel are often motivated to make arrests or give citations and can be disappointed or lack motivation if arrests or citations do not occur. While local prevention staff should support and encourage law enforcement to undertake regular compliance checks, one should recognize that arrests or citations are not totally valid indications of retailer compliance in practice.

4. Level of Visibility of Enforcement of Alcohol Sales to Underage Customers

While local enforcement against retail sales to underage customers can be a central strategy in an effort to reduce underage drinking, to achieve its maximum effectiveness actual enforcement must be highly visible both to the general public and also sales clerks and store managers of off-premise alcohol outlets. Thus local news attention to this enforcement in one means to increase the visibility of this enforcement and is an essential compliment to actual enforcement. A part of increasing this visibility is to have regular news coverage in local newspapers, radio, and/or TV. The visibility of enforcement against retail sales to underage customers is directly impacted by regular public attention to this enforcement. Achieving this type of coverage most likely requires new and interesting aspects of enforcement to get attention in local news media. The measurement of local news concerning underage alcohol retail enforcement is via content analysis and the level of news coverage is the total counts of news stories, their length, and other the amount of time given to underage alcohol retail enforcement each month.

The purpose of this monitoring is to derive a measure of visibility of enforcement and monthly monitoring enables the local environmental prevention effort to assess the level of attention to such enforcement. Three levels of data collection for measuring visibility via local news are suggested.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Local News about Specific ATOD Problem(s)	Keyword search of local newspapers in which all text is archived in electronic format.	Routine content coding of local newspapers alone.	Routine content analyses of all media sources in the community.

Note: The descriptions of these alternative approaches to monitoring the level of Visibility of Enforcement of Alcohol Sales to Underage Customers is contained in Sec. G: Media Advocacy: Use of Local News to Set and Support Environmental Prevention Strategies C. Alternatives for Measurement of Local News.

In practice, information about enforcement, particularly to the merchant community, can expand beyond local news media to include (but not as a substitute) merchant newsletters, officer/prevention staff/coalition member visits or sending letters to all stores checked (pass or not) following inspections. The concept of “visible” enforcement is both for general community awareness but perhaps more important the awareness of elected officials, law enforcement, or managers of alcohol-licensed establishments. The concept of “media advocacy”, described later is that local news stories can have more influence if the information about enforcement is shared with the total community. However, targeted communications to establishments (which should also be documented and monitored) can provide complimentary re-enforcement.

★ Minimum or Adequate: Keyword Search of Local Newspapers—potential key words or word combinations include:

For sale of alcohol to underage

- alcohol AND sale AND minor
- alcohol AND sale AND underage
- alcohol AND sale AND minor or underage and enforcement (or citations)

C. Retail Availability and Over-Serving of Alcohol

Retail outlets, such as bars, restaurants, clubs, and pubs, can be a substantial source of alcohol-related problems including drinking and driving or domestic violence. For example, it has been estimated that up to 50% of drivers who have been drinking come from on-premise alcohol outlets. Interventions with on-premise establishments can be a key point of environmental strategies.

1. Level of Over-serving of Alcohol in Licensed Establishments

Documenting the level or extent (and changes over time) of heavy drinking in licensed on-premise establishments is one indicator of heavy high risk drinking in a community.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Amount of over-serving of alcohol by on-premise alcohol outlets including restaurants, bars, etc.	Observational survey of licensed on-premise establishments using a standard reporting form.	Pseudo Patron Survey 1: Use of “customers” who “act” as though they are drunk to determine if the serving staff will permit more alcohol to be purchased.	Pseudo Patron Survey 2: Use of “customers” who actually over-consume alcohol within a very short time period and attempt to purchase even more alcohol (just prior to leaving the establishment).

★ Minimum or Adequate: Observational Survey of On-Premise Establishments

For this approach, an observational survey for this intermediate variable is conducted in either a sample of or a total census of all licensed on premise alcohol outlets. The survey should involve a trained observer documenting alcohol-serving behavior (especially during weekends and/or night-time serving hours), as well as making an estimate of the level of over-serving (including licensed establishment promotions of drinking, e.g., price incentives).

This survey can also assist in identifying establishments for recruitment into manager and server training programs or to collect information about the size and nature of the outlet in preparation for the pseudo patron surveys (described below). A suggested observational survey form is included in Appendix II-A.

★★ Better: Pseudo Patron Survey 1

This pseudo patron survey is to determine if there is any serving-staff action (including refusal of further alcohol purchase) for a customer who appears to be intoxicated. This survey is to measure server willingness to serve to “intoxicated” customers or patrons in a local community. The survey can also be used to evaluate the potential changes in server behavior (either a specific establishment or establishments overall) following a Responsible Beverage Service (RBS) training, i.e., verify the effectiveness of the training (See Section 2 below), and to provide measurements over time about the level of over-serving of alcohol.

Pairs of trained volunteers will enter selected on-premise outlets. One person is an observer and the other appears or “acts” to be intoxicated. Note: this is a type of “street theater” and some local environmental prevention efforts have been successful in working with local drama teachers in locating students who are willing to take on the role of a “drunk patron” as long as the student is 21 or older. The person who is acting intoxicated attempts to order an alcoholic beverage. Both the actor and the observer record information about the encounter and the establishment. Pseudo Patron 1 Surveys are best conducted on Friday and Saturday evenings. It may require several months to complete a full cycle of the survey. It would be recommended that the types and quantities of alcohol beverages ordered is somewhat standardized in order not to bias the analyses. Protocols, scenarios and forms needed for this survey are contained in Appendix II-A. Analysis: The primary relevant analyses for

this data collection would be (1) the percentage of establishments visited that did and did not continue to serve the “intoxicated” volunteer and (2) the average number of drinks that were served to the “intoxicated” volunteer before service was cut off. Additional information that may be useful to collect that could add context to the analyses would be:

- Type of establishment (bar, restaurant, etc.)
- Number of visible employees working and in what capacities (bartenders, waitresses, etc.)
- Number of customers (could allow for an analysis of whether establishments are busy/slow influence their actions)
- Types of tactics, if any, used by sales staff to refuse or “slow down” the purchases of the “intoxicated” volunteer (offering non-alcoholic beverages, encouraging food purchases, citing store policy)
- Comments by staff or signage within the establishment that encourages high consumption

One analysis that may be useful would be to “estimate” the “intoxicated” volunteers’ BAC at the time of arrival by comparing their portrayed behaviors (slurred speech, loss of coordination) to a chart of common behaviors at various BAC levels and then calculating, using best available resources, how much their BAC would have risen with the amount of alcohol they were served. This would allow the project to (1) determine a rough BAC at which establishments typically cut off service (and how far above standard intoxication BACs that would be) and (2) better communicate to the public the extent to which over-service takes place.

As the surveys are repeated over time, primary analyses could focus on changes in the percentages of outlets that over-serve and whether the average amount of over-service is increasing or decreasing.

Advantages: This is a lower-cost approach to an effort to document the level of over-serving of alcohol by serving staff. The staff person who acts intoxicated must be comfortable with public behavior and acting but a test event at an establishment can occur relatively quickly (say within one hour of arrival) and then the team can move to another establishment.

Limitation: A limitation of this survey is that the “intoxicated” patron arrives at an establishment with the pretense of drinking elsewhere and is therefore already “drunk” or intoxicated. Thus Pseudo Patron Survey 1 is most directly measuring the level or action of serving staff to a customer who arrives drunk, rather than becoming intoxicated through the service of that establishment. This is not a direct documentation of the willingness of servers to provide a larger quantity of alcohol to a customer over a period of drinking, i.e., not a true direct test of over serving but more directly a willingness of serving staff to refuse service to an obviously intoxicated customer.

Note on “Place of Last Drink”: Some local environmental prevention efforts have been successful in partnering with law enforcement to ask every person arrested for drinking and driving to name the location of their last drink prior to arrest, including home or a social event. This information can assist both law enforcement and local prevention staff to identify licensed establishments which are more frequently named by arrested persons. While these reports are not sufficient for legal action against these establishments, the information can be used by local prevention staff as a rough indicator of how much over serving is being done in general (say compared to coming from home or social events) which is associated with drinking and driving as well as identifying licensed establishments

which may require more enforcement or training attention in order to reduce the level of over serving (and thus alcohol-involved problems).

★★★ Best: Pseudo Patron Survey 2

“This survey provides a direct measurement of whether a licensed establishment will take action with a patron when his drinking puts him at risk of impairment or being drunk. Patron Survey 2 is a means to document how willing servers are to provide large amounts of alcohol to a customer over a period of time without any question or refusal. In this survey, there is a driver, as an observer, and a drinker. Following a defined protocol in which the designated drinker (following a protocol) consumes a standard size drink at 20 minute intervals until making the sixth and last order one hour and forty minutes after the first drink is ordered. The sixth order will be for a “double” (or two beverages at once) and will not be consumed. The Drinker’s behavior should not suggest drunkenness and should not call attention to the Drinker at any rate. The protocol for this survey is shown in Appendix II-C.

Advantage: This is a valid means to directly measure the level of over-serving of alcohol. In this type of survey, the designated drinker is consuming a relatively (but not necessarily unusually) large amount of alcohol over a short period of time in a manner that would clearly represent over serving, if the requests are accommodated.

Limitations: While this is a direct means to measure over-serving of alcohol, it is time consuming and the most expensive means to conduct a pseudo patron survey. This results from the safety measures that must be utilized and the cost of actually purchasing alcohol at an establishment, i.e., a drinking pseudo patron can only visit only one establishment and thus the team (driver and drinker) can only conduct a survey in one establishment per evening. In addition, for safety, the drinking observer must be held in a safe space until his BAC has been lowered to a relatively safe level before being released to go home.

2. Level of Server Skill in Reducing Over-serving (RBS Training and Evaluation)

At a licensed establishment, serving staff skills, the nature and type of establishment serving policies, the amount of management awareness and support are all key factors in reducing over-serving of alcohol. Staff and manager training has been a key point of intervention for environmental strategies. This training has often been called Responsible Beverage Service (RBS). Responsible Beverage Service (RBS) training of servers at on-premise establishments is an environmental strategy to reduce heavy drinking and intoxication among bar patrons, and protecting already intoxicated patrons from engaging in risky activities such as driving. Prior evaluations of RBS training can produce significant changes in staff behavior and attitudes. More importantly, they have been shown to reduce by as much as one-half the number of patrons who are intoxicated at the establishment.

Direct evaluation of RBS training and its effectiveness can include at least two approaches:

1. Pre- and post-training questionnaires, for servers around their knowledge and attitude towards responsible beverage service (minimum) and their intentions and attitudes..

2. Implementation documentation aimed at determining whether the RBS training skills have been actually implemented as designed through observational surveys of establishments whose staff have participated in training. (Better).

It is certainly preferred (if resources permit) a combination of minimum (pre-post survey at time of training) and Observational Survey (better). This can also be combined with the manager self-report risk survey. See Section 3 below.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Server Skill in reducing over-serving alcohol	Responsible Service Training Evaluation: Pre-post test of knowledge at time of Responsible Beverage Service (RBS) training	Observational Survey of staff behavior in establishment.	Pseudo Patron Survey 1 or Pseudo Patron Survey 2

★ Minimum or Adequate: Responsible Beverage Service Evaluation

Evaluation conducted at the time of the RBS training has typically consisted of a combination of knowledge, attitudes, skills and intentions items. A pre and post design is used in that participants are asked to complete a short survey prior to the beginning of training and then immediately following. See Appendix II-D.

★★ Better: Observational Survey

The same observational survey described in the previous section for measuring over-service by establishments can be used to measure pre and post RBS training serving behavior in an on-premise establishment that has had staff participate in training. In this instance, the survey is used to collect alcohol serving behavior for a specific establishment. It will be worth recording whether the specific staff being observed actually attended the training class.

★★★ Best: Pseudo Patron Survey 1 or Pseudo Patron Survey 2

See description in the previous section for measuring over-service by establishments.

3. Level of Manager Training and Written Policy Implementation

Manager training has also been included in recent RBS training that provides an opportunity for local authorities, prevention effort staff, or other concerned citizens to work cooperatively with retailers to review and revise policies regarding the service of alcoholic beverages and to support the training for managers and personnel. Management training includes review of dram shop liability issues, training in how to develop written policies which will reduce legal liability, and assistance in writing and implementing improved policies. Manager training has a different purpose than server training but can be an essential compliment. Prior research suggests that RBS training without the

support of management and the development and posting of a written establishment policy against over serving of alcohol to customers is much weaker in effect.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Manager Training and Written Policy Implementation	Manager Survey of knowledge, attitudes, and intentions as well as implementation of a written and posted establishment policy	Observational Survey of establishments to document policy against prevention of over serving and perceived level of support of servers.	Pseudo Patron Survey 1 or Pseudo Patron Survey 2

★ Minimum or Adequate: Manager Risk Assessment Survey

A survey of managers is a self-report of manager knowledge, attitudes, and intentions concerning over-serving of alcohol to customers as well as level of support of servers in intervening with customers or refusing service in order to reduce over-serving. The survey can also address whether any new policies have been developed and whether they have been posted. The survey should go beyond simply asking if the establishment has a written policy, yes or no. Therefore, the retailer could be asked to complete a self-assessment checklist that lists a number of common sense or research-supported actions establishments can undertake as supported by policy. See Appendix II-E for a survey form that can be a mailed survey or a telephone or in-person interview which include a suggested “self-assessment” checklist of practices and policies concerning over-serving.

★★ Better: Observational Survey of Establishment

The observational survey can not only document serving practices of staff (whether staff were in RBS training or not) as well as the presence of a written establishment policy against over-serving of alcohol as well as other features of the establishment that might encourage or stimulate over serving, e.g., happy hours, price specials, drinking competitions and events, etc., as well as whether the overall atmosphere appears to encourage drinking. This method can help illuminate to what extent a written policy is actually being carried out. A observation survey should go beyond simply documenting if there is a policy or not but should also address if the serving policy is viewed as strong or weak concerning the establishments view of heavy drinking, alcohol impairment or overserving. Therefore, the observational survey can also utilize the same check list which was suggested to be used in the manager survey above.

★★★ Best: Pseudo Patron Survey 1 or Pseudo Patron Survey 2

See above.

4. Level of Enforcement of Over-serving of Alcohol in Licensed Establishments

A measurement of the level and extent of enforcement of over-serving of alcohol by law enforcement (state and local) can be a compliment to measuring changes in staff skill in reducing over-serving. Depending on the regulatory policies of each state, data may need to be reviewed from local and/or state law enforcement to have a full picture of enforcement actions.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Enforcement of Over-serving of Alcohol in On-Premise Establishments	Routine enforcement actions against on-premise establishments.	Enforcement observational visits to on-premise establishments, i.e., visits by uniformed officers, to observe without enforcement actions.	Pre-planned Enforcement Operations directed at licensed establishments concerning over serving of alcohol in which non-uniformed officers visit establishments to observe over-serving. Warning letters may be sent if infractions are seen or risk behavior is observed and/or citations issued on the spot.

★ Minimum or Adequate: Routine Enforcement actions against on premise establishments

These are counts of enforcement actions taken by law enforcement, including calls for assistance against or associated with licensed establishments that are typically reported as a part of enforcement statistics and routine enforcement. The objective is to monitor response to calls. Suggested categories are: (a) Monthly total on-premise citations given, (b) Monthly total number of routine visits to on-premise establishments, and (c) Monthly total number of officers involved in routine enforcement. In addition, it can be useful to collect the monthly number of convictions/sanctions of licensed establishments for over-service violations. (It is acknowledged that typically a delay exists between time of citation and when a possible conviction would actually take place). While tracking specific citations and the final outcome, e.g., conviction, provides more detailed information about likelihood of conviction and consequence, the total count of citations for each month may be adequate over time to monitor the risk of conviction to an establishment when cited.)

★★ Better: Observational Visits by Law Enforcement

These visits are planned visits and not a part of routine enforcement in response to calls for assistance but rather the purposeful visits by uniformed law enforcement officers for the specific purpose of identifying establishments with potential problems. Such visits can be carried out with officers in uniform. In some cases, depending on the potential safety hazards, an observational visit might need to result in an immediate, on-site discussion with management of the risk concerns or an enforcement action, such as a written warning or citation. It should be expected that these high-vi-

bility visits should likely result in few blatant illegal actions, such as serving an intoxicated customer, while the officers are on-site as their presence should deter such behaviors. However, there are still a number of other types of violations that could be taking place and cannot immediately be hidden by staff. This could include highly intoxicated patrons possessing alcohol beverages in the establishment suggesting they likely would have been served their last drink after already demonstrating intoxication.

These intentional visible enforcement actions could have more potential effect than reactive enforcement on lowering the level of over-serving in establishments if continued regularly over time. Key areas to monitor would be (a) Monthly number of establishments visited, (b) Total number and type of identified infractions discussed with management, and (c) Total number of officers involved in officers involved in high-visibility enforcement.

★★★ Best: Pre-Planned Enforcement Operations

Such purposeful and planned enforcement visits carried out by non-uniform officers (undercover officers) are those which have a clear intention to enforce existing laws against over serving of alcohol to customers. When an infraction is observed, the law enforcement officer(s) can later send a warning letter or respond immediately with appropriate action including arrests, citations, written warnings, etc., in accordance with existing law. Such visits are neither a part of routine alcohol enforcement or responses to calls for assistance nor a purposeful, high-visibility observational visit (where enforcement actions are less likely). The planned enforcement operations are similar in purpose to roadside checks against drinking and driving where drivers with BAC higher than the legal limit are immediately cited and arrested and the purpose is to deter others from this behavior. This has been shown by McKnight and Streff (1994).

Note: each of the monthly total counts associated with each level of enforcement measurement above are simple totals. It is possible to increase the value and utility of such monthly measures by utilizing ratios. Therefore, each total can be adjusted according to the number of establishments as a ratio for each establishment, thus creating a local indicator of enforcement level per licensed establishment. Suggestions are:

- a. Monthly ratio of arrests/citations for over-serving per number of licensed outlets—*This ratio provides an indicator of enforcement actions per licensed establishment.*
- b. Monthly ratio of enforcement visits/observations to licensed outlets (by state beverage enforcement officers or local police)—*This ratio measures the level of enforcement via weighting the number of visits/observations by the number of licensed outlets, thus transforming the total number of visits/observations into a value per establishment.*
- c. Monthly number of enforcement visits between 8pm-2am on Fri/Sat per total number of licensed on-premise outlets—*This ratio measures the level of enforcement visits/observations during the time in weekend nights when the greatest amount of over serving can be expected. This ratio is an indicator of the level of enforcement per licensed established during the serving times of greatest risk.*
- d. Monthly ratio of convictions and sanctions (severity of alcohol outlet enforcement punishment) per licensed outlets—indicator of the severity of punishment.

References:

McKnight, J., and Streff, F. (1994). The effect of enforcement upon service of alcohol to intoxicated patrons of bars and restaurants. *Accident Analysis and Prevention* 26, 79-88

5. Level of Visibility of Enforcement of Over-Serving of Alcohol in Licensed Establishments

While local enforcement against over-serving of alcohol in licensed establishments can be a central strategy in an effort to reduce heavy/binge drinking in a community, actual enforcement to achieve its maximum effectiveness must be highly visible both to the general public and also to alcohol servers and establishment managers/owners of on premise alcohol outlets. Thus public attention to this enforcement can increase the visibility of this enforcement and is an essential compliment to actual enforcement. A part of increasing this visibility is to have regular news coverage in local newspapers, radio, and/or TV. The visibility of enforcement against retail sales to underage customers is directly impacted by regular public attention to this enforcement. One potential strategy to increase enforcement awareness is the use of local media to increase and maintain visibility. This news most likely requires new and interesting aspects of enforcement to get attention in local news media. The measurement of local news concerning enforcement of over serving of alcohol is via content analysis and the suggested level of news coverage is the total counts of news stories, their length, and other the amount of time given to over-service enforcement each month.

Here the purpose of this monitoring is to derive a measure of visibility of this enforcement, and monthly monitoring enables the local environmental prevention effort to assess the level of attention to such enforcement. Three levels of data collection for measuring visibility via for local news are suggested: minimum, better, or best.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Local News about Alcohol Over-Service	Key word search of local newspapers in which all text is archived in electronic format.	Routine content coding of local newspapers alone.	Routine content analyses of all media sources in the community.

Note: The descriptions of these alternative approaches to monitoring the level of Visibility of Enforcement of Over-Serving of Alcohol in Licensed Establishments is contained in Sec. III: Media Advocacy: Use of Local News to Set and Support Environmental Prevention Strategies, C. Alternatives for Measurement of Local News

★ **Minimum or Adequate: Key Word searches of electronic versions of Newspapers. Potential key words and/or word combinations for search include:**

Alcohol on Premise Outlets

- alcohol AND retail AND problem
- alcohol AND restaurant (or bar) AND Drunk (or intoxication) AND Enforcement

6. Level of Density/Concentration of Alcohol Outlets

Measures of outlet densities taken at the community level have been shown to be significantly related to the incidence of some alcohol-related problems. The primary means for control of the distribution of alcohol outlets in the community is the local zoning ordinance. However, because communities must deliberately choose to make preventive use of their local planning and zoning powers, a planning or land utilization processes for community groups and agencies to install prevention-oriented zoning ordinances and related regulations. Any measure of level of density or concentration of alcohol outlets is to monitor if local outlets are clustered or grouped in sufficient concentration to be of concern. For example, Gruenewald, et al (2002) found increased restaurant density is strongly related to higher rates of both self-reported driving after drinking and drinking frequency. Measures of outlet density, if collected, enable general public, special groups, and/or community coalitions to support local government in the use of local zoning and ABC licensing to reduce (or maintain) the density or absolute number or location of licensed alcohol outlets.

References:

Gruenewald, P.J.; Johnson, F.; and Treno, A.J. "Outlets, drinking and driving: A multilevel analysis of availability," *Journal of Studies on Alcohol*, 63(4):460-468, July 2002.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★ ★	BEST ★ ★ ★
Level of Density/ Concentration of Alcohol Outlets	Number of alcohol outlets by type: Off- and on-premise alcohol outlets per 1,000 population.	Number of licensed alcohol outlets (on- and off-premise) per square mile in a total community.	Number of licensed alcohol outlets by type (on-premise and off-premise) per square mile in specific areas of a community, such as neighborhoods .

★ **Minimum or Adequate: Number of alcohol outlets by type**

The total alcohol outlet by type of outlet can be obtained by contacting the state authority for licensing alcohol outlets. Dividing this number by the total population or total population over 21 years old, for example, produces this indicator.

★★ Better: Number of licensed alcohol outlets by type per square mile in a total community

The name and location address of each licensed outlet in the community can be obtained from the state alcohol licensing authority. This will enable the local prevention staff to map and analyze information on each licensed on- and off-premise retail seller of alcoholic beverages for the total community. Since the address given by the state licensing authority may not be the exact location of the establishment itself, it may be necessary to verify the existence and the exact physical location of each alcohol outlet as a confirmation of the state's data.

★★★ Best: Number of licensed alcohol outlets by type per square mile in specific areas of the community

The name and location address of each licensed outlet in the community can be obtained from the state alcohol licensing authority. This will enable the local prevention staff to map and analyze information on each licensed on- and off-premise retail sales of alcoholic beverages for the total community as well as specific neighborhoods or defined areas. Since the address given by the state licensing authority may not be the exact location of the establishment itself, it may be necessary to verify the existence and the exact physical location of each alcohol outlet as a confirmation of the state's data. Using the same information above, outlet density can also be determined for specific areas of the community, such as neighborhoods or any areas which appear to have higher number of alcohol-involved harm..

Complimentary data: documentation of any changes in local laws, local citizen activity or organizations involved, protests, etc. concerning licensing and permits for local alcohol retail outlets. Documentation of existing local zoning laws and review processes for new and renewal licenses for retail establishments selling alcohol (both on- and off-premise) can also be collected as supporting and complimentary information.

D. Social Availability of Alcohol to Underage persons

Youth obtain alcohol from a variety of commercial and social sources and research has shown that parties, friends, and adult purchasers are frequent sources of alcohol among adolescents. Underage drinking parties frequently involve large groups and are commonly held in a home, an outdoor area, or other location such as a hotel room. While in the past beer was the primary beverage of choice of the underage and a major source of beer is a social event where beer is available via a beer keg, increasingly spirits (and in some cases wine or pre-mixed alcohol drinks) are becoming more and more popular for youth in social gatherings.

1. Level of Social Availability of Alcohol to Underage Persons

STANDARDS OF MEASUREMENT				
MEASURES		MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Perceived Social Availability of Alcohol:	"How easy would it be to get alcohol from:.... parents, friends, strangers, older siblings?"	Youth Panel using a standard protocol for selection of participants and a consensus score	Classroom Survey with short questionnaire (administered to limit time required)	State-wide representative school or household survey with formal questionnaire.
	"In past 30 days, from which sources (perhaps by %) did you obtain alcohol?"	Youth Panel—The youth panel is the same approach described previously under Section C-1.	Classroom Brief Survey—The classroom brief survey is described previously under Section C-1.	Representative School Survey—The school survey is described previously under Section C-1.

2. Level (or Extent) of Parties or Social Gatherings in which alcohol is available to underage persons.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Frequency of Parties or Social Gatherings at which alcohol is available to underage persons.	Self report by youth of frequency or police reports of teen parties at which alcohol was observed or drinking occurred.	Weekend documentation of location and counts of social gatherings of teenagers where alcohol is available. For example, using some type of GPS locator plus documentation of drinking by adult monitors. Following the same route each time.	Monthly census of social gatherings in which alcohol is available to underage.

★ Minimum/Adequate: Self Report by Youth or Frequency or Police reports of Teen Parties in which alcohol was observed or drinking occurred

Self reports by youth could be obtained from the same types of sources as described above in estimating the level of social availability of alcohol. Alternatively, police reports (perhaps based upon patrol logs or special local reporting) of observing or visiting teen parties or social gatherings at which alcohol was available to underage can be used.

★★ Better: Weekend Documentation of Locations of Teen Parties or Social Gatherings where alcohol is available

This approach to local data gathering is to establish a standard route within the community that staff or volunteers can follow as they look for obvious gatherings of teens at residences, public spaces, or other open areas, where alcohol may be available. Teen focus groups may be used to identify popular locations to include in the route, and the number of volunteers will guide how much territory can be covered. The route should be traveled during the times that teen parties are likely (e.g., sometime between 8 pm and 2am). To cover more territory, teams of observers can be sent out on the same night, or across a Friday and Saturday night. Observation periods could be spread over 2 or 3 weekends. Each “wave” of observations might be done every six months or as the community desires and volunteers are willing. As always, it is important to repeat the same routes and protocols each time. Technology can be used to simplify the recording, especially where the location may be an open space. Mobile phones can be used to relay locations automatically.

Is it essential to identify a “teen” party as distinct from any other gathering or to confirm whether or not (based upon specific observation) that alcohol is actually available? In some ways, it may not matter, as an inventory of all gatherings may nevertheless show a decline as preventive measures take effect. Nevertheless, observers may want to wait at a location chosen because of noise or cars, etc. to see if anyone coming or going appears to be underage. The protocol can include waiting for some set number of teenagers to appear (e.g., 6 or 10) to increase the likelihood of the party being attended by others that age.

★★★ Best: Monthly Census of Social Gatherings at Which Alcohol is Available to Underage

While the “better” option is easier to obtain some type of estimate of social gatherings at which alcohol is available to youth, it is not a complete census or inventory. If possible, a complete census (investigating all neighborhood streets, public spaces, or other open areas) of social gatherings within the community is the “best” option in that this method produces an accurate accounting or inventory. However, this type of census is most costly and difficult to undertake and the “better” option may be more practical and thus feasible.

3. Level of Enforcement of Social Availability to Underage Persons

Local police and/or sheriffs will likely have reporting procedures and data collected prior to the initiation of the local prevention project. The number and location of arrests made, demographic characteristics of arrestees, and police force man hours allocated to enforcement activities provide essential information on a monthly basis. The number of patrols conducted each month and the priorities and emphases for these patrols may well shift over time as community priorities change or special problems occur. This means that any routine enforcement information should be evaluated within the context of the number of patrols and law enforcement priorities.

Data collection and monitoring should be summarized monthly. Arrests should be routinely plotted to detect changes in overall arrest levels as well as changes in types of arrests. Summary data can include: (a) Arrests by type and location each month and (b) Arrests and convictions by type of charge.

STANDARDS OF MEASUREMENT

MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Enforcement of social availability of alcohol to Underage Persons	Monthly Number of routine police patrol stops in response to calls or complaints.	Monthly Total of Parties visited by Law Enforcement as a check of underage drinking at Social Gatherings.	Monthly Total Purposeful Enforcement Against Social Gatherings in which Alcohol is Available to Underage Persons.

★ Minimum or Adequate: Monthly Number of Routine Police Patrol Stops in Response to Calls or Complaints

At minimum, this is simply a count of the number of times officers on routine patrol make a stop in response to calls or complaints about noisy nuisance parties. These counts are simply the number of stops concerning nuisance social gatherings. The monthly counts of citations which result from such stops (if any) can also be used, perhaps determining the ratio of citations to the number of stops. One risk of relying solely upon police records is that data collecting, reporting, and overall enforcement can change over time, especially as officers respond to the community's desire for action. For example, increased community attention to underage drinking could lead to increased calls for service to investigate possible underage drinking parties. However, this increase in calls/responses would not necessarily reflect any actual change in underage drinking prevalence or even in law enforcement's intentional level of enforcement, as they are generally obligated to respond to all calls.

★★ Better: Monthly Total of Parties Visited by Law Enforcement as Check of Underage Drinking at Social Gatherings

The number of parties checked by law enforcement where alcohol was found to be available to underage persons and/or the number of citations for organizing a party considered a nuisance under local ordinances may well be available in local police records. These police stops and the number (if any) citations given for nuisance parties typically results from regular police patrols and does not usually require a special ordinance for enforcement nor results from pre-planned enforcement actions. A ratio of number of police stops per patrol can also be calculated by determining the total number of law enforcement patrols between 8 pm and 2 am each evening. Counting the number of routine patrols daily or in total each month and calculating this ratio provides an indicator of the extent of social gatherings in which alcohol is available for underage per routine patrol or it can provide a measure to the attentiveness of law enforcement to recognizing possible underage drinking parties while on patrol, both of which can be important.

While existing reporting data may be helpful to the project, it will be essential to seek an agreement from law enforcement that establishes with them a protocol or means to collect data of specific and direct relevance to the goals and design of the project. In this planning with law enforcement, the project should have the specific types of data requested to be collected by law enforcement and a suggested format and procedure for collection of this data. The information requested should be clearly essential to the goals of the project and monitoring the level of enforcement that law enforcement is undertaking over time. As a general rule, try to negotiate the best protocols with police so to maximize consistency wherever possible.

Categories of Citations: Local law enforcement can have a variety of types of citations or arrest categories that are used in routine enforcement of underage drinking or even possession of alcohol by underage persons. For example:

Minor in Possession (MIP): this is an infraction that occurs when a person who is under 21 is found by a law enforcement officer to have alcohol in his/her possession or, in some states, having consumed alcohol even if they are not currently in physical possession. This citation can result from an investigation of a public gathering of youth or from check of passengers in a vehicle but also in conjunction with investigations of underage drinking at a party. Minor in Possession may be not the technical name of the violation in every state, but there will certainly be some violation addressing the same issues.

Transfer of Alcohol to a Minor: Not every instance of underage drinking identified by law enforcement leads to someone being charged with transfer of alcohol to that underage person. In fact, it can often be difficult for law enforcement to feasibly identify the provider of the alcohol. However, monitoring the frequency of transfer citations would certainly be a good measure of the level of enforcement of underage drinking. Similarly, if a community has a social host law/ordinance (where property owners can be cited for allowing underage drinking on their property, even if they do not provide the alcohol), that would be an important category to monitor.

★★★ **Best: Monthly Total Purposeful Enforcement Against Social Gatherings in which Alcohol is Available to Underage Persons**

This is a monthly total of purposeful enforcement actions against social gatherings (parties or informal youth groupings). This reflects a purposeful and visible enforcement against parties and other social gatherings to reduce the level of youth drinking and alcohol availability to underage persons. It is the monthly number of planned enforcement actions and not the result of routine patrol or calls for service.

As a compliment to enforcement action counts, it can be helpful to also obtain monthly citations (or arrests) by law enforcement of a violation concerning the provision of alcohol to an underage person. These counts could either be based upon (a) police issuing a citation or arresting an adult for provide alcohol to youth under general state or local law, or (b) a local social host ordinance that specifically makes the provision of alcohol to an underage person who is not a family member either a civil or criminal offense (depending upon the terms of the law/ordinance).

4. Level of Visibility of Enforcement of Social Availability of Alcohol for Underage Persons.

While local enforcement against social availability of underage persons in a community can be a central strategy in an effort to reduce youthful drinking and heavy/binge drinking in a community, actual enforcement to achieve its maximum effectiveness must be highly visible both to the general public and opinion leaders. Thus public attention to this enforcement can increase the visibility of this enforcement and is an essential compliment to actual enforcement. A part of increasing this visibility is to have regular news coverage in local newspapers, radio, and/or TV. The visibility of enforcement against social availability of alcohol to underage persons is directly impacted by regular public attention to this enforcement. One potential strategy to increase enforcement awareness is the use of local media to increase and maintain visibility. This news most likely requires new and

interesting aspects of enforcement to get attention in local news media. The measurement of local news concerning enforcement of over serving of alcohol is via content analysis and the suggested level of news coverage can be measured by the total counts of news stories, their length, and other the amount of time given to social availability enforcement each month.

The purpose of this monitoring is to derive a measure of visibility of this enforcement and monthly monitoring enables the local environmental prevention effort to assess the level of attention to such enforcement. Three levels of data collection for measuring visibility via for local news are suggested: minimum, better, or best.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Local News about Enforcement Against Social Availability of Alcohol to Underage Persons	Key word search of local newspapers in which all text is archived in electronic format.	Routine content coding of local newspapers alone.	Routine content analyses of all media sources in the community.

Note: The descriptions of these alternative approaches to monitoring the level of Visibility of Enforcement of Social Availability of Alcohol to Underage Persons is contained in Sec. G: Media Advocacy: Use of Local News to Set and Support Environmental Prevention Strategies C. Alternatives for Measurement of Local News

E. Drinking and Driving

While there are many factors including speed, weather, road conditions, etc. that contribute to the risk of a motor vehicle crash, alcohol is one of the major contributors to injuries and death. One way to measure the harm or outcomes associated with drinking and driving is alcohol-involved crashes. Analyses of crash records are described in Using Archival Data to Develop Local Alcohol, Tobacco, and Other Drug Problem Indicators: Reference Guide for Community Environmental Prevention. For monitoring a local prevention effort designed to reduce alcohol-involved motor vehicle crashes, there exist a series of intermediate variables that research has shown are associated with drinking and driving.

1. Level of Drinking and Driving—the extent or amount of driving in a community in which the driver has consumed any alcohol.

The first indicator simply addresses the extent or level of drinking and driving, i.e., driving events in which the driver has been drinking any alcohol. Experimental research has shown that crash risk begins with a first drink and this increases with the amount of alcohol that the driver has consumed, which is typically measured using Blood Alcohol Concentration (BAC). Each state sets the level of BAC that is defined as legally impaired even though individual driver risk of a crash increases with the first drink of alcohol.

STANDARDS OF MEASUREMENT

MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Drinking and Driving	Self-report of driving after drinking or “having too much to drink” from community survey or a focus group.	Monthly percentage of alcohol positive (BAC >0) drivers from local enforcement roadside checks (Sobriety Check Points)	Non-Enforcement Roadside Survey of BAC Levels for Drivers

★ Minimum or Adequate: Self Report of Drinking and Driving

This is based upon self-reported behaviors and provides an estimate of the frequency or amount of driving in which the driver has consumed any alcohol. This self report can come from a community survey (randomized telephone survey or some other form) or a community focus group to derive estimates of drinking and driving in the community. Example survey question(s) include:

“In the past 30-days, how often do you drive after consuming any alcohol?” _____none
 _____10-20% _____20-50% _____50% or higher.

“In the past 30-days, how often do you drive after consuming any alcohol?” _____never
 _____less than a quarter _____at least half the time

“In the last 6 months, have you ever driven a motor vehicle within 4 hours after consuming any alcoholic beverage. _____no _____yes _____refused/no answer _____don’t know.

“As best as you can remember or the last 6 months how many days did you drive within 4 hours after having consumed one or more alcoholic beverages? (Just your best estimate.) _____# of times
 _____DON’T KNOW _____REFUSED/no answer.

“How many days in the past 6 months would you say that you drove a vehicle after drinking when you probably had too much to drink and drive safely. (Just your best estimate.) _____# of times
 _____DON’T KNOW _____REFUSED/no answer.

Better: Monthly percentage of alcohol positive (BAC >0) drivers from local enforcement checks (Sobriety Checkpoints)

While law enforcement roadside checks (but not routine patrol stops of individual drivers), e.g., Sobriety Checkpoints, are not a random sample of community driving, the results of enforcement checks do provide a type of estimate of the amount of drinking and driving in the community. Arrests and citations for drinking and driving are based upon the legal BAC limit established as “impairment” for each individual driver, which is usually available as DUI Arrests in police records. Currently, most states have set a legal limit of .08 BAC and while a driver with a BAC > 0 but less than .08 has an increased crash risk, the police do not cite or arrest such a driver. However, for deriving an estimate of the level of drinking and driving over time (thus the risk of alcohol-involved crashes), the total percentage of drivers checked who are BAC > 0 is a useful indicator of overall level of drinking and driving. During an enforcement roadside check, law enforcement can utilize breathalyzers to provide an initial assessment of the driver BAC level. In most states, this measure

from driver breath is not legal in court as evidence of impairment. Therefore, if a driver's BAC level is higher than the legal limit based upon the breathalyzer, the person is taken to a specific location for drawing blood or collecting a legal breath sample in order to provide a measure of BAC that is suitable as evidence for a DUI charge in that state.

Obtaining the data suggested here will likely require agreement(s) from law enforcement. In practice, it is rare that law enforcement maintain counts of total drivers checked and even a total of those who were BAC positive but not above the legal limit. Thus, the local prevention program must work with law enforcement in order to obtain and share these types of data.

While these totals per month are the most desired, it is possible to develop estimates of community drinking and driving with decreasing validity as:

Preferred: Total drivers checked, total drivers with BAC >0, total drivers with BAC > legal limit. These three totals can be used to estimate the percentage of drivers who are alcohol-free, percentage drivers who had been drinking any amount, and percentage of drivers who are legally impaired.

Alternative 1: Total drivers checked, total drivers with BAC > legal limit based upon legal testing. These two totals provide an estimate of percentage of drivers who are legally impaired (on the average).

Alternative 1a: Total drivers checked, total drivers estimated by the officer to "have been drinking" based upon smell of alcohol, slurred speech, or any standard sobriety tests used by law enforcement including gaze nystagmus, walk and turn test and one-leg stand test. If the officer concludes that the driver's BAC is likely to be under the legal limit but there is sufficient evidence in the officer's mind that the driver has consumed any alcohol, then this represents a "had been drinking" count which the local prevention staff can utilize to estimate the level of local drinking and driving. Drivers whose legal BAC > legal limit are easily counted via arrests or testing with BAC < legal limit. This is then added to the total of those drivers who are not tested but are judged by the officer to have consumed any alcohol. Obviously collecting such data would require a working partnership and agreement with law enforcement to collect such data as a part of their routine sobriety checks.

NOT ACCEPTABLE: Total monthly DUI arrests: In any community, DUI arrests result both from enforcement checks (as described above), and routine patrol when the law enforcement officer stops a vehicle for irregular driving behavior, speeding, equipment violations, etc., or responding to a crash. In such cases, the officer will interview the driver, and the officer may decide that the driver had been drinking and thus investigate further, e.g., even requiring the driver to take a breathalyzer test. In the case of routine patrols, such patrols are not intentional drinking and driving checks in which all drivers passing through are breathalyzed for there exist prior reasons for being stopped by law enforcement. In practice, the number of DUI arrests are very likely to be related to the current emphasis that law enforcement give to drinking and driving enforcement or the priority given by law enforcement supervisors and can thus increase or decline in direct response to this emphasis or priority. Thus DUI arrests in total are not an acceptable estimate of the level of drinking and driving in a community and **should not be used as such. Remember** DUI arrests are almost totally dependent upon the amount of enforcement emphasis, vigilance, or priority that "drunk driving" is given by local law enforcement. DUI arrests are discussed below as a potential measurement of level of drinking and driving enforcement.

★★★ Best: Non-Enforcement Roadside Survey of BAC Levels for Drivers

A non enforcement Roadside Survey collects data on drinking and driving in a community. The purpose of the Roadside Survey is to gather information on the relationship between alcohol consumption and drinking and driving activity. A Roadside Survey collects data on the frequency of drinking and driving and will help evaluate the effectiveness of a local prevention effort with the goal of reducing drinking and driving in the community. The Roadside Survey is particularly important because it directly links Blood Alcohol Content (BAC) with driving in a non-crash, non-police enforcement setting. Roadside surveys have been utilized in a variety of community prevention projects in monitoring BAC levels in Minnesota, Ohio, South Carolina and California, for example. In addition, national estimates of the level of drinking and driving have periodically been sponsored by the National Highway Traffic Safety Administration, U.S. Department of Justice, utilizing non-enforcement roadside surveys.

The Roadside Survey is not operated as an enforcement check by law enforcement, though most likely traffic control must be carried out of law enforcement. The Roadside Survey is voluntary and confidential. Motorists are selected at random from traffic passing the survey site. Stopped drivers will be given both verbal and written information about the study and the voluntary nature of their participation. Only those who agree to participate will be interviewed, and drivers may refuse any portion of the survey after they have agreed to participate.

Data is therefore collected anonymously in the breathalyzer machine and later downloaded to a computer in order to be reported only in summary form. A roadside survey has as its primary purpose the voluntary and anonymous collection of a breathalyzer reading for each driver who consents. This is the minimum data to be obtained. If possible, the survey can be expanded and include interviewer observations, a short series of interview questions, a brief questionnaire to be completed in private by the driver, and a confidential, anonymous, breath test of the driver's BAC using a hand-held breathalyzer. This expanded Roadside Survey takes about 5 minutes to complete and consists of six oral questions, a nine-item written questionnaire and a collection of a breath sample. The breath sample is used to determine the driver's BAC. BAC data is stored electronically inside the breathalyzer and will not be available to the interviewer nor to the driver nor any law enforcement. The oral and written questions include background and demographic information, the driver's knowledge of BAC and drunk driving laws, and the driver's perception of risk for being stopped for driving under the influence while intoxicated. This survey is typically operated by the local prevention effort.

In preparation for roadside surveys, it is necessary to obtain traffic count and local crash location data from local law enforcement in the community in order to select the most representative sites in which to conduct roadside surveys. Certainly it is desired to work in conjunction local police department in selecting possible roadside survey sites. The recommended Roadside Survey team consists of one team leader, one traffic coordinator, and four trained interviewers. In addition there will be one or two off-duty but uniformed police officers to direct traffic and insure interviewer safety. Roadside surveys are suggested to be conducted during the weekend on Friday and Saturday evenings (unless it rains) from 8 p.m. to 2 a.m. in order to measure drinking and driving during the times of highest such behavior. The survey site should be moved several times during each survey evening.

It is possible to utilize breathalyzers in which the BAC readings are not shown when taken so no knowledge of actual level of alcohol in the driver's blood is available to either the subject or the sensor operator or any law enforcement. In the process of conducting the brief monitoring event, the stopped driver may acknowledge a concern about his/her BAC level and desire an alternative

means of transportation to their destination, or the interviewer may believe the driver to be impaired and suggest that he/she accept assistance in obtaining alternative transportation. The team leader is equipped with a cellular telephone and will call a taxi to provide a free ride home. If the driver prefers, the team leader will call a friend of the driver's choice to come provide the ride.

Complete procedures for setting up and conducting the Roadside Surveys, including recruiting survey sites and training interviewers is explained in Appendix IV-A and in the *Roadside Survey Operating Manual*.

2. Level of Drinking and Driving Enforcement

Enforcement of drinking and driving laws increases both the actual and perceived risk by drivers of their likelihood of having their BAC checked by law enforcement and potentially being arrested driving under intoxication (DUI). Increased enforcement can be achieved through increased officer hours devoted to DUI enforcement, but also to increased efficiency for DUI detection within existing law enforcement patrols. In general, roadside checks for drinking drivers represent a more effective level of enforcement, and, if coupled with publicity, can increase the perceived risk of detection for drinking and driving in the general public.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Drinking and Driving Enforcement	Monthly total of DUI arrests/citations	Number of monthly routine patrol stops to check driver BAC.	Number of monthly roadside drinking and driving enforcement checks, e.g., sobriety checkpoints.

★ Minimum or Adequate: Monthly Total of DUI arrests/citations

The most basic indicator of level of drinking and driving enforcement and the most readily available is the total number of DUI arrests made each month. The number of arrests is directly related to the level of attention and priority given to drinking and driving enforcement by local law enforcement and therefore can vary considerably over time, based upon enforcement priorities or emphases. Unfortunately, the total number of arrests is also related to the number of drivers as well as the number of driving events in a community over time, e.g., the number of DUI arrests can rise in direct relationship to simple population or economic growth and not either result from greater drinking and driving nor increased absolute drinking and driving enforcement.

An indicator of relative level of drinking and driving enforcement could be derived by expressing total number of arrests by the number of licensed drivers in the community or the number of driving events. In this way, increases in DUI arrests in direct ratio to increases in licensed drivers or driving events is not an actual increase in level of drinking and driving enforcement. Other indicators include: (a) **Ratio of monthly DUI arrests to total monthly regular patrols**—this indicator is calculated by dividing the monthly total DUI arrests by the total number of monthly regular patrols. (b) **Ratio of DUI Arrests by Police to amount of Driving**-- The number of actual DUI arrests by police divided by either (a) number of licensed drivers, (b) number of driving events, or (c) total number of driving miles

★★ Better: Routine patrol stops to check driver BAC

Increased vigilance and emphasis on drinking and driving can result in greater driver BAC checks based upon observed indicators, e.g., erratic driving behavior, very slow driving, speeding, or equipment problems (tail light burned out). Greater emphasis on routine patrol checks can indicate a higher level of drinking and driving enforcement, even though such routine patrol enforcement is based upon the law enforcement officer observing indicators that suggest a need to check the driver for drinking. As a result, enforcement of this type is largely dependent upon the skill and priority such enforcement is given and is not as effective as routine roadside checks. Routine patrols can be measured by number of (a) law enforcement vehicles in patrol, (b) law enforcement officers in patrol, or (c) discrete patrols in a month. Further, the monthly number of driver BAC checks (field sobriety checks) actually conducted is needed. **Ratio of number of patrol stops to check driver BAC to monthly regular patrol**—This indicator is calculated by dividing the monthly total number of patrol stops in which a driver's BAC is checked by the total monthly regular patrols. In this indicator, the emphasis is not on DUI arrests but the relationship of making traffic stops to check driver BAC as related over time.

★★★ Best: Monthly total roadside drinking and driving enforcement checks, e.g., sobriety checkpoints

The most effective (in terms of reducing drinking and driving) local enforcement is regular roadside checks. The purpose of such checkpoints is to randomly test the BAC level of a number of drivers and then move to another location and continue to test driver BAC. Such checks, if done frequently with high visibility, have been shown to be more effective in reducing alcohol-involved traffic crashes than increased DUI arrests or severe punishment (See Elder, et al, 2002). See Babor, et al (2010) for a summary of research on drinking and driving prevention. In fact, if done correctly and frequently, roadside checks can result in less DUI arrests as fewer drivers are actually driving after drinking. **Ratio of DUI Checks by Police to Driving**—The number of actual DUI checks (or vehicles checked) by police divided by either (a) number of licensed drivers, (b) number of driving events, or (c) total number of driving miles.

Note: Convictions for drinking and driving can be an indicator for level of enforcement, i.e., convictions are an indicator of the seriousness with which the judicial system takes drinking and driving. Further increases in DUI conviction rate can be a re-enforcement to law enforcement officers to maintain or increase current enforcement levels. The risk in emphasizing DUI conviction rate, however, is that the conviction rate or even the seriousness of the punishment is not related to reduced levels of alcohol-involved traffic crashes. That level is more influenced by the level of visible enforcement by police and the perception by the driving public that their personal risk to be checked is relatively high if they have been drinking. However, some communities may find utility in monitoring the DUI conviction rate. **DUI Conviction Rate**—actual percentage of DUI arrests that are brought to trial or court and convicted (no matter the severity of sanction or punishment). This is the number of convictions/divided by the number of arrests. This rate can be further divided into conviction rate for first DUI Offender and conviction rate for Repeat (multiple) Offender DUI.

References:

Babor, T.; Caetano, R.; et al (2002). Alcohol: No Ordinary Commodity: Research and Public Policy. New York: Oxford University Press

Elder RW, Shults RA, Sleet DA, Nichols JL, Zaza S, Thompson RS. (2002) Effectiveness of sobriety checkpoints for reducing alcohol-involved crashes. *Traffic Injury Prevention* 3:266-74.

3. Level of Visibility of Drinking and Driving Enforcement

While local enforcement against over drinking and driving can be a central strategy in an effort to reduce heavy/binge drinking in a community, actual enforcement to achieve its maximum effectiveness must be highly visible both to the general public and to drivers or potential drivers who have been drinking, especially in licensed establishments. Thus, public attention to this enforcement can increase the visibility of this enforcement and is an essential compliment to actual enforcement. A part of increasing this visibility is to have regular news coverage in local newspapers, radio, and/or TV as well as local news or information on the internet about drinking and driving enforcement

The visibility of enforcement against retail sales to underage customers is directly impacted by regular public attention to this enforcement. One potential strategy to increase enforcement awareness is the use of local media to increase and maintain visibility. This news most likely requires new and interesting aspects of enforcement to get attention in local news media. The measurement of local news concerning drinking and driving enforcement is via content analysis and the suggested level of news coverage is the total counts of news stories, their length, and other the amount of time given to drinking and driving enforcement each month.

The purpose of this monitoring is to derive a measure of visibility of this enforcement and monthly monitoring enables the local environmental prevention effort to assess the level of public attention given to such enforcement. Three levels of data collection for measuring visibility via for local news are suggested: minimum, better, or best.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Local News about Drinking and Driving Enforcement	Key word search of local newspapers in which all text is archived in electronic format.	Routine content coding of local newspapers alone.	Routine content analyses of all media sources in the community.

Note: The descriptions of these alternative approaches to monitoring the level of Visibility of Enforcement of Drinking and Driving Enforcement is contained in Sec. G: Media Advocacy: Use of Local News to Set and Support Environmental Prevention Strategies, C. Alternatives for Measurement of Local News

★ **Minimum or Adequate: For key word search of local newspapers in which all text is archives in electronic format some suggested search combinations might include:**

For DUI Enforcement (driving after drinking)

- DUI or DWI
- DUI and checkpoint

- DUI and breathalyzer
- drink* AND alcohol
- alcohol AND crash
- alcohol AND traffic

4. Level of Perceived Risk of Drinking and Driving Enforcement (or Arrest)

This intermediate variable is the public's perception (estimation) of their likelihood of being stopped and arrested while driving. The variable has been shown to be directly affected by the actual level of drinking and driving enforcement AND the level of local news concerning drinking and driving enforcement. This relationship was demonstrated in a three-community study in Florence County, SC; Oceanside, CA; and Salinas, CA. In these three communities, intensified and focused drinking and driving enforcement was used to increase the likelihood that law enforcement would detect a driver who had been drinking. The increase in enforcement resulted from more police officer hours for drinking and driving enforcement, greater use of breathalyzer equipment including installing breathalyzers for early detection installed on the flashlights of officers on night duty, increased officer training concerning drinking and driving enforcement, and more roadside checkpoints for random testing of driver BAC levels. This was complimented by increased news attention to all of these efforts including the special training and increased availability of breathalyzer equipment by officers both on routine patrol and as a part of roadside checks. As a result of local data collection in each community, it was possible to measure the monthly increases in actual enforcement and use content analyses to measure the monthly increase in news coverage of this enforcement. The project was also able to measure via community surveys the changes in the public's perception of their risk for being arrested if driving after drinking. It was found that perceived risk was highly associated with increases in both actual enforcement and news coverage. The project was also able to demonstrate that as perceived risk increased, the level of drinking and driving decreased in the three communities and subsequently the number of alcohol-related traffic crashes declined. Figure 1 below illustrates how these intermediates affected each other leading to a reduction in the targeted community outcome.

Drunk driving component effects

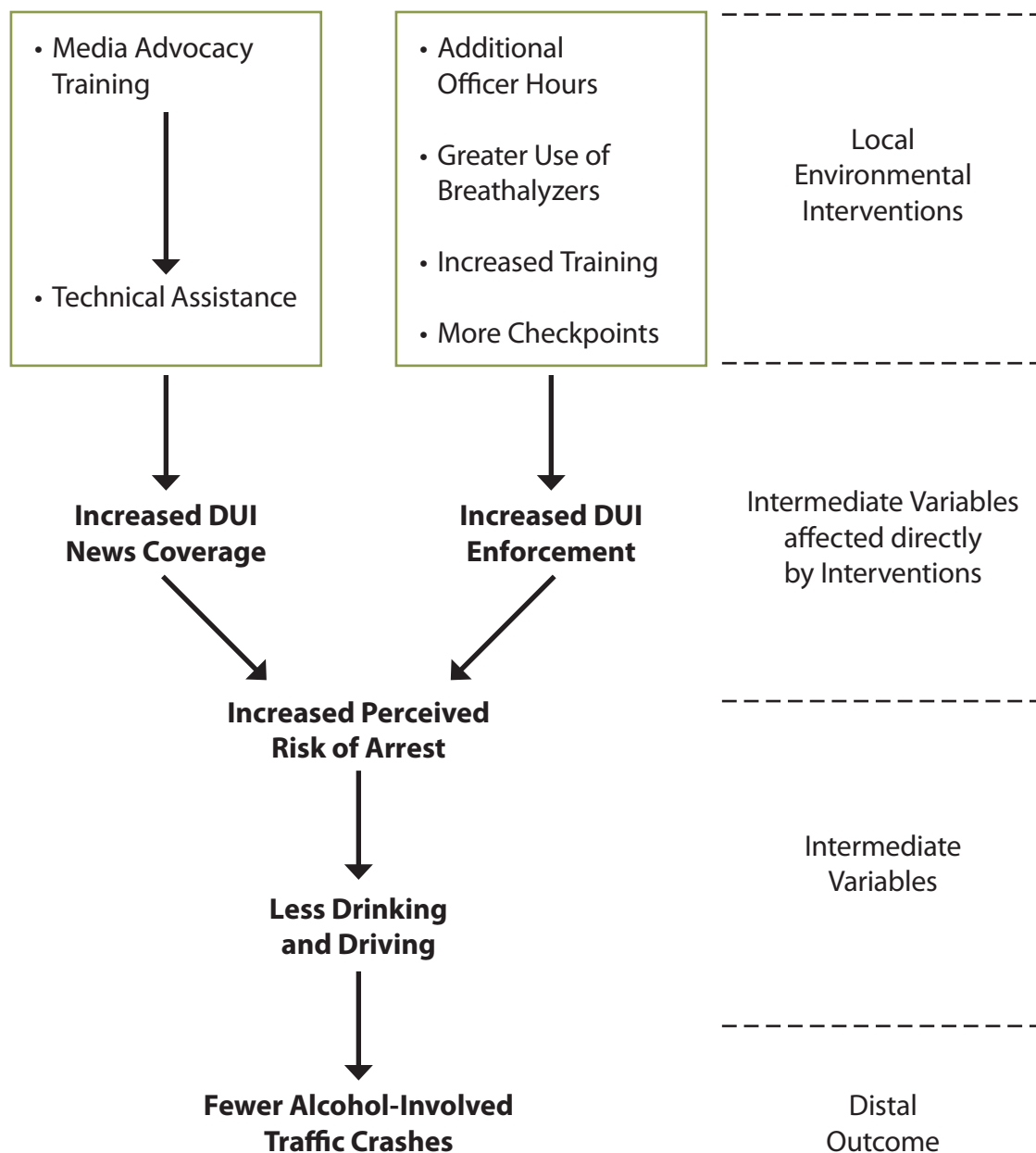


Figure 1. Causal model of drinking and driving component.

Source: Voas, R.B.; Holder, H.D.; and Gruenewald, P.J. "The effect of drinking and driving interventions on alcohol-involved traffic crashes within a comprehensive community trial," *Addiction*, 92(Supplement 2):S221-S236, June 1997.

Measurement of Level of Perceived Risk of Drinking and Driving Enforcement (or arrest). Regardless of the specific data collection method you select, a question like the following is an appropriate one to use to help measure this variable:

“If you are driving after drinking too much, what do you think are your chances of being stopped and arrested by police?” (On a 10-point scale, where “1” means not at all (very unlikely) and 10 means almost certainly (very likely))											
Very Unlikely	1	2	3	4	5	6	7	8	9	10	Very Likely

Alternative: On a five-point scale where “1” means not at all (very unlikely) and 5 means almost certainly (very likely).

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Perceived Risk of Drinking and Driving Enforcement (or Arrest)	Community focus group or panel in which perceived risk question is asked.	Community brief survey—obtained as a convenience sample or from a sample of bars or restaurants.	Representative survey of total community in which perceived risk question is asked.

★ **Minimum or Adequate: Community focus group in which perceived risk question is asked**

Inclusion of the perceived risk question within a set addressed by a community focus group in which estimates for the total community are derived.

★★ **Better: Community brief survey**

Obtained as a convenience sample or from a sample of bars or restaurants. This brief survey would use the same question(s) about perceived risk of drinking and driving enforcement.

★★★ **Best: Representative survey of total community in which perceived risk question is asked**

Household or telephone survey that is representative of the total community and includes the perception of risk question for individual responses.

III. Media Advocacy: The Use of Local News to Set and Support Environmental Prevention Strategies

A. Introduction

A local prevention effort can use local news as a means to support environmental strategies. There is little evidence that changes in personal values and beliefs can create population-level behavior change in ATOD use or associated problems, including use of planned (often expensive) public information campaigns. There is, however, much support for the approach of media advocacy. Media advocacy has been defined as the purposeful use of local news through a variety of media or news outlets in the community. It is a way to target local leaders and decision-makers by increasing the importance of your issue via the level of local news attention given.

In addition, media advocacy helps you to utilize local news to increase local support of the strategies proposed as well as provide key information to the community. Therefore, the level of local news providing key information to the community and local leaders can be a key intermediate variable (See Holder and Treno, 1997).

News coverage can stimulate changes in policies by local leaders and decision-makers because they feel compelled to address what has become an important community issue. Also, news coverage can operate indirectly by increasing community concern about specific ATOD problems and the awareness and support for environmental prevention strategies. This can be achieved, as a part of an environmental prevention effort by linking news coverage of existing problems with solutions. For example, as local news reports about traffic crashes, deaths, and injuries, your environmental efforts can work with the media to link those stories with news about existing or increased drinking and driving enforcement. This can be done on TV news stations, newspapers (including letters to the editor supporting enforcement), and even internet-based local news and blogs.

Treno et al. (1996) documented the dates and nature of training of local project staff in a three-community environmental prevention effort. This research found that the techniques of working effectively with the news media can be taught to both professionals and non-professionals in the community. As local residents become more proficient and comfortable with the news media, there is increased empowerment and local capacity. Media advocacy recognizes that local news organizations are interested in their own community and events, happenings and processes of local relevancy,

i.e., local news. There exists a relationship between the nature and extent of local news and print media circulation or electronic media audience, meaning media outlets that cover more local news typically have a larger audience.

The impact of news is enhanced or increased when real local information is used or authentic community spokespeople (voices) are the source of local news. Local news increases readership or audience and can increase the perceived validity or believability of the news content. Treno et al. (1996) found the following based upon content analyses of local news:

- These increased news events and material can increase both print (newspaper) and electronic (television) news coverage of local alcohol-involved topics necessary to the community prevention effort.
- Increased coverage can focus public and leader attention on specific issues and approaches to local policies of relevance to reducing alcohol-involved injuries.
- Since there are differential audiences/readers for the print (newspaper) and electronic (TV) media, both forms of news contribute to successful media advocacy in a community prevention effort.

References:

Treno, A. J., Breed, L., Holder, H. D., Roeper, P., Thomas, B. A. & Gruenewald, P. J. (1996) Evaluation of media advocacy efforts within a community trial to reduce alcohol-involved injury: preliminary newspaper results, *Evaluation Review*, 20(4), pp. 404-423.

Holder, H.D. and Treno, A.J. "Media advocacy in community prevention: News as a means to advance policy change," *Addiction*, 92(Supplement 2):S189-S199, June 1997.

B. Level of Local News about Specific ATOD Problem and/or Environmental Strategies Targeted at the Problem

All media coverage of health and safety, whether news, entertainment, or public service, will contribute to overall public awareness and knowledge on such matters. Therefore, the amount of attention that the media gives to substance use and associated problems (for example, heavy drinking and alcohol-involved traffic crashes) is an important indicator for most local prevention projects. This level of coverage to a specific issue can be affected by a proactive media advocacy approach (discussed above).

C. Alternatives for Measurement of Local News

Previously news coverage has been associated with a number of intermediate variables, e.g., Level of Visible Enforcement of Retail Alcohol Sales to Underage Customers or Level of Visibility of Drinking and Driving Enforcement or Level of Local News about Specific ATOD Problem and/or Environmental Strategies Targeted at the Problem. For each such intermediate variable in which measurement of local news is an important indicator, there are three alternatives: Minimum, Bet-

ter, or Best. These alternatives can be applied to the measure a number of specific intermediate variables including efforts to increase public awareness and support for environmental strategies but also efforts to increase the visibility of enforcement against alcohol sales to underage persons, overserving of alcohol, and social availability of alcohol as well as enforcement of drinking and driving. For each of these (and other) intermediate variables, the content analysis should be specific to that intermediate variable.

STANDARDS OF MEASUREMENT			
MEASURES	MINIMUM/ADEQUATE ★	BETTER ★★	BEST ★★★
Level of Local News about Specific ATOD Problem(s)	Key word search of local newspapers in which all text is archived in electronic format.	Routine Content coding of local newspapers alone.	Routine content analyses of all media sources in the community.

★ Minimum or Adequate: Key word search of local newspapers in which all text is archived in electronic format

Media content analysis as used for evaluation of community interventions differs from traditional media content analysis in that it quantifies exposure to a topic rather than analyzing the intent or linguistic aspects of the individual article. A time consuming search, reading and content coding of every article in the newspaper(s) of interest may not be necessary; rather, an electronic search of digital newspapers over a period of time beginning prior to any intervention activity should provide data useful to evaluation of the intervention. Evaluation of community interventions requires collection of local data that has a reasonable relationship to the intended intervention and that will be responsive to the changes anticipated by implementation of the intervention. In addition, the data must be collected in a consistent manner and tabulated for uniform periods over the entire time series.

Suggested steps in undertaking electronic newspaper content analysis are:

1. Determine which electronic newspaper resources are available to you
 - a. Local newspaper
Is your local newspaper available electronically? Can the archives be electronically searched? If so, is the search available to anyone over the Internet or must you be a subscriber or must you go into the newspaper offices and request (or pay) for someone to do the search?
 - b. Free Internet access
Is your desired newspaper included in Internet Public Library Newspapers Online? Check at <http://www.ipl.org/div/news/>. If so, you may be able to make free on-line

searches.¹ Another list of newspapers with links to their archives is available at <http://www.ibiblio.org/slanews/internet/archives.html>.² Wikipedia has a list of searchable newspaper archives http://en.wikipedia.org/wiki/Wikipedia:List_of_online_newspaper_archives. Not all of these archives are free, and many are historical rather than recent.

- c. Is your local newspaper available in fulltext? Fulltext means that at a minimum, all of the written portions of the newspaper are available and searchable electronically. Go to <http://www.fso-online.com>, click on Browse by Document Type, and select Newspaper – USA. If your paper is on this list, it is available for digital searching through one or more electronic databases. If it has an icon for free archives, try going directly to the newspaper's website and searching directly.
- d. Searchable electronic newspaper databases at public library or local college or university library.
Does your local public library have access to searchable databases such as NewsBank, LexisNexis, ProQuest, or others? Does the available database contain an appropriate newspaper for your community? Generally use of these databases is free to holders of a library card.
- e. Subscribe to an electronic version of your local newspaper or to an electronic database that includes your local newspaper.³
- f. Subscribe to an abstracting service that includes your local newspaper,⁴ or hire a clipping service or an information specialist (e.g., <http://www.aiip.org/HireAnInfoProfessional>) to do your queries for you.

2. Understand query techniques

- a. Once you have access to an electronic database for the newspaper of choice, you need to query it to get counts of articles of interest. Most electronic databases use Boolean operators to make a more complex and restrictive query, but it is important to understand how they work. If there is a tutorial or FAQ associated with the database, be sure to read it before beginning because the user interface may be misleading. The three most important operators available are OR, AND, and a wild card (usu-

1. The following summarizes the type of experience that Lillian Remer, Prevention Research Center of PIRE, encountered in attempting to conduct an electronic search of newspapers in Contra Costa County. In this example, the major daily newspaper, Contra Costa Times is not listed in the ipl, but many (both big and small) papers are. For example, I could select the Merced Sun Star and asked for DUI and 'Walnut Creek' but got 0 hits, when I requested DUI and 'San Jose' I got 7 hits in the past 2 years and when I requested just DUI I got 208 news hits and 4 gallery hits (but I couldn't filter by date which means in order to obtain a complete total for Contra Costa County, I would need to sort news stories by date which means you'd have to tabulate from a listing of hits).

2. The table includes links to the newspaper and the archives and /or archive search. many are free, some have a small per article charge but some have an article charge, but have the headline and first few lines of text accessible for free (from which a county may be made).

3. I don't know the cost of these subscriptions. I found a company called high beam on the internet <http://www.highbeam.com/publications/us-newspapers-and-newswires-2027> which has about 500 US newspapers (45 in CA) and charges about \$30/month or \$300/year for electronically searchable full text articles.

4. Abstracting services are less likely to have archival information and more likely to cover current events. Similarly, one can subscribe to Google News alerts for key words but it doesn't seem a useful strategy for evaluation purposes.

ally*). One common problem is grouping for AND and OR qualifiers and misuse can result in unexpected findings.

3. Select a consistent set of queries
 - a. Depending on the interventions being implemented, the query terms will vary. See examples below for some possible queries.
 - b. Depending on the appropriateness of your news source, it may be necessary to qualify each query with a community.
4. Systematically perform the queries
 - a. If the user interface for the query permits date restriction, the query should be repeated for each time period (e.g., each month or quarter or year) to create a time series collection of data.
 - b. If the interface does not permit restriction by date, try sorting the results by date so that simple counts can be made.
5. Log query counts in a spreadsheet or database.
 - a. If you log the monthly or quarterly counts of hits for each query in a spreadsheet such as Excel, you can also graph the data and even include trend lines for each period (pre-intervention, intervention, and post-intervention) to help visualize the changes.

Examples of Potential Electronic Queries (depending upon the Local Strategic Plan):

For alcohol-related injury:

- alcohol AND injury
- alcohol AND traffic
- alcohol AND assault
- alcohol AND drown*

For underage drinking

- alcohol AND minor AND drink*
- alcohol AND underage AND drink*

★★ Better: Routine Content Coding of Local Newspapers Alone

This standard for measuring local news of direct relevance to the local environmental prevention program moves one step beyond using electronic key word searches. Under this standard there is an actual reading and content coding of newspaper stories in order to more definitively determine the context and implication of the local news story. The limitation of this standard is that this coding

only reflects local newspapers, and the news coverage of local radio, television, or other media is not included. However, in most communities, the newspaper news coverage is monitored by radio and television in order to be competitive and influences their own coverage. Radio and television do have unique qualities and intensities that can be lost by only coding newspaper stories.

Once trained, media coders should read each newspaper and code all articles that address the target outcome, the key intermediate variables and environmental interventions. Examples (depending upon the strategic plan) could include news stories about alcohol-involved trauma, drinking and driving, alcohol outlets, responsible beverage service, community prevention efforts, youth drinking and prevention efforts, alcohol consumption and alcohol sales or promotion. In addition, control topics (those that are not directly stimulated by the environmental prevention effort) could also be coded, e.g, drug abuse, drug enforcement and smoking if alcohol prevention is the target outcome. Each article is coded for subject, type of coverage (news, editorial, advertising, etc.), locality, size of the article, photos or graphics and headline. Newspapers are also measured for total size and amount of paid advertising per issue.

During training and periodically thereafter, random newspapers are independently re-coded to ensure acceptable standards of coder reliability. Most papers are coded only once, but every issue is coded. If hard copies of a newspaper are unavailable to an effort, microfilm or electronic copies of full pages can be used. The major local daily or weekly newspapers in the community should be coded.

Procedures: The archives of newspapers can be in their original printed form or microfiche or microfilm. Instructions for coding newspapers are contained in the *Coding Manual for a Content Analysis of Newspapers, Appendix IV-A*. **All coding is completed by trained coders.**

Alternative: One alternative to content coding of the total newspaper is to limit the coding to only the front page. One study examined the differences between coding an entire newspaper and only the front page news and found that while the total number of news stories of relevance to the local environmental prevention effort were lower by limiting coding only to front page, the total hours of coding (and thus associated staff costs) are substantially lower and the relevant information for monitoring the level of news coverage in the community is essentially the same (Holder and Treno, 1997).

References:

Holder, H.D. and Treno, A.J. "Media advocacy in community prevention: News as a means to advance policy change," *Addiction*, 92(Supplement 2):S189-S199, June 1997.

★★★ Best: Routine content analyses of all media sources in the community

This standard calls for the routine and highly structured content coding of all news outlets in the community, including newspaper, radio and television, in order to obtain a representative count of the news specific to the ATOD problem that is the target of the community's prevention effort. Media content analysis measures the frequency, extent, and content of mass media coverage and can extend to internet-based local news and blogs. Local (or weekly) newspaper(s) can be coded and local radio and TV newscasts can also be recorded and analyzed for content. Patterns and changes in these data are used to understand community awareness as well as historical trends and project impact.

Possible data to be collected to measure the level of local news of importance to the project can include (depending upon the local strategic plan):

- Content analysis of newspaper, local television and radio coverage of ATOD 1 problems, including drinking and driving, teenage drinking, underage sales to minors, etc.
- Coding of news about ATOD events and issues of relevance to the local strategic plan, including any coverage stimulated by the local prevention project.

If a reliable video monitoring service is available for the local TV stations, prevention staff can to arrange for TV news monitoring abstracts. If such a service is not available, a staff person could be placed in charge of recording regular TV and radio broadcasts and downloading and archival internet news.

See *Manual for a Content Analysis of Newspapers* and *Coding Manual for a Content Analysis of TV News*, Appendices V-A .and *Coding Manual for a Content Analysis of TV News Appendix V-B*.

IV. Documenting and Monitoring Prevention Interventions

A. Introduction

In addition to regular and monthly measurement of the key intermediate variables defined in the local logic model, it is essential in like manner to document the implementation, scope and duration (“dose”) of each intervention as a part of the local Management Information System (MIS) for local prevention. Intervention with “0” dosage or strength can have no effect. In environmental prevention, the documentation of each intervention requires the determination of the date when an intervention began, the length of time or duration, and the dosage, scale or size. This information can help answer questions, such as:

- “If two new DUI patrol officers are placed in operation, what is the net increase in enforcement?”
- “What percentage of total servers has completed RBS training at any point in time?”

Documentation of project implementation is necessary to understand and interpret what actually occurred in each community. It is suggested that the local prevention effort undertake weekly documentation of project activities throughout the implementation and intervention phases of the project.

Tracking of intervention activities involves two aspects: Event and Intervention. **Events** are defined as any meeting, action, or “happening” that is undertaken by the local environmental effort. For example, meetings with local police concerning data collection or discussions about enforcement would be considered events and so reported. It is expected that important “events” have been planned as a part of the strategic plan and logic model and on-going process activities may occur that require documentation. **Intervention** is defined as any activity that is designed to affect intermediate variables. Therefore, implementation of drinking and driving roadside checks would have the intention to affect the intermediate variables level of drinking and driving enforcement and subsequently the level of perceived risk of enforcement in the community. Both event and intervention data can be useful throughout the project for the monitoring of environmental prevention.

B. Event Reporting Form

For purposes of data collection, all process activities that reflect the direct action of the local environmental prevention effort can be reported on an Event Form. The Event Form needs to capture not only what took place and when and where it occurred, but also the dosage or extent: how many

people were affected or trained and for how long. Because some types of events will happen repeatedly (important meetings or organizing events), there may need to be several Event Forms completed on these categories of events to ensure that the dosage is being fully captured. Other examples may include:

- media events, news coverage, public meetings, community forums, public rallies, etc, to educate or motivate the public about the community problem.
- resource acquisition, new appropriations from the city/county budgets to implement prevention programs, reallocation of resources, purchase of operational equipment such as passive alcohol sensors
- developing or obtaining programs such as developing a local RBS training program or curriculum
- formal changes in policies, procedures or law by city or county council, RBS council, local law enforcement, licensed on or off premise establishments, ABC, passage of a Social Host Ordinance, etc.
- documentation of any existing general safety or prevention efforts that can affect the targeted ATOD use or related harm indicator, e.g., water safety, bicycle safety, EMT service, trauma treatment, school-based health and alcohol education.

C. Intervention Forms:

These forms are essential to determining what, when, and how much of planned environmental interventions have actually occurred. In some ways, documentation of intervention is more important and higher priority than documenting events, for it is through intervention documentation that the local environmental effort can actually monitor what has actually occurred in the community that can change intermediate variables. Thus, interventions forms are to be used to document the dates, intensity or dosage, and extent of the selected efforts, as it is through these interventions that ATOD use and/or associated consequences can be reduced. In a real sense, the intervention only begins when the enforcement or other strategies actually begins in the community. All the meetings and training and equipment acquisition are preliminary and foundational to intervention implementation.

It is natural that community staff will not always know what should be documented, and the distinctions between events and interventions can be confusing. As a result, one simplification that can occur is to use the interventions forms for everything and attempt to monitor actions across time. However, in practice, considering all activities as interventions, e.g., meetings with the police, can hide or even obscure attention to the actual intervention, the date and strength of actual enforcement that results from the various meetings and training events.

For example, Exhibit _____ illustrates a completed Event Form that records a meeting with the local police to obtain agreement for collaborating with the local prevention effort to reduce retail sales of alcohol to underage persons. Note that this form simply documents the meetings, its participants and its general outcome. From an environmental prevention perspective, this is a preparatory meeting that is likely to be followed by other meetings (and perhaps Events Forms) with law enforcement that, if carried out as planned, can lead eventually to an increase in the level of law enforcement of

retail sales of alcohol to underage. However, the meeting(s) themselves are not interventions but essential steps within the planning and mobilization of the community toward reducing underage drinking.

For another example, Exhibit _____ illustrates a completed Intervention Form that documents the change or current monthly level of enforcement of retail alcohol sales to underage customers. This form becomes especially important in documenting when there is an increase or a step up in local enforcement as well as documenting the strength and extent of the enforcement within the month of initiation.

V.

Procedures for Entering and Storing Local Data

The specific data that a local community collects and stores is defined by the logic model, which serves as a strategic plan for a local community's prevention effort. The first part of this guide describes a series of possible intermediate variables that might be utilized by a local plan, depending largely upon the type of ATOD outcome that the community decides to target. Thus, obviously, the level of every intermediate variable that is included in the logic model should be measured by at least one indicator (in some instances it may be possible to have two or more indicators for a specific intermediate variable). It is recommended that whenever possible, monthly values for each intermediate variable should be obtained. If there is no value for that variable during that month, then simply enter a "0". When it is impossible or impractical to measure the level of an intermediate variable, then less frequent monitoring can be utilized. For example, if a retail compliance check of retail sales of alcohol or tobacco to underage persons is completed twice each year, the results of these compliance checks can be entered in the month in which they occur.

The rationale for utilizing a month-specific spread sheet for data storage and display is that many intermediate variables and most interventions are likely to have measurements for each month (or they should), and the monthly detail can be quite useful in monitoring the current levels and changes in many intermediate variables as well as environmental interventions. For example, if the targeted outcome for a community was alcohol-involved traffic crashes, then it would be important to measure the monthly level of drinking and driving (if practically possible). It is also essential to measure the level of drinking and driving enforcement because this increases the monthly values and news coverage of drinking and driving enforcement, which is critical to achieve a reduction in the level of drinking and driving in the community because it raises the level of community perception of getting caught if someone were to drink and drive and therefore reduces drinking and driving. Creating a monthly spreadsheet of all these important measurements helps reinforce the interconnectedness of all these key variables from the local logic model. This use of a spreadsheet format by month is illustrated below:

Note that measurement of some key variables are not available on a monthly basis (Not as a "0" for no activity but noted as no survey). When there are data, the relevant numbers can be shown for the month they were collected, as shown in the example.

A. Storing and Displaying Local Data—Monthly Format (An Example)

2012	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
Level of Youth Drinking: School Survey Data:										
30-day use-7th graders	28%	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	33%	No Survey
30-day use-9th graders	33%	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	38%	No Survey
30-day use-11th graders	42%	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	52%	No Survey
Binge drinking-9th graders. (5+ drinks per occasion in past 30 days)	Question not in Survey	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	25%	No Survey
Binge drinking-11th graders. (5+ drinks per occasion in past 30 days)	Question Not in Survey	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	40%	No Survey
Level of Drinking and Driving Enforcement										
DUI Arrests	15	23	28	10	33	41	43	37	23	37
Number of Roadside Checks of Driver BAC	2	0	6	8	8	10	10	8	12	15
Monthly Percentage of Drivers checked who had BAC >0%	35%	No Survey	32%	28%	22%	18%	12%	12%	10%	8%
Level of Retail Availability of Alcohol										
Youth Report of perceived availability of retail access—School Survey (Easy or Relatively Easy)	85%	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	38%	No Survey
Compliance Checks of Retail Sales to Underage Customers—Percent Sales without ID check	56%	No survey	63%	No Survey	53%	No Survey	36%	28%	32%	24%
Number of enforcement checks against selling/serving alcohol	0	0	1	0	2	4	10	12	8	9

2012	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
Citations or arrests for underage sales or service	0	0	0	0	0	1	3	4	3	2
Retail Availability—On-Premise Over-serving										
Number of Enforcement Checks against Over-serving	0	0	0	1	2	7	10	12	9	7
Number of citations or arrests for over-serving in licensed establishments	0	0	0	0	0	0	3	5	8	3
Ccumulative % of licensed establishments participating in RBS training	0	0	0	0	0	5%	8%	36%	58%	75%
Cumulative % of licensed establishments with written policies against over-serving	2%	2%	2%	2%	2%	3%	6%	25%	48%	62%
Level of Social Availability of Alcohol to Youth										
Youth Report of perceived availability of social access— School Survey (Easy or Relatively Easy)	85%	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	38%	No Survey
Monthly Total Enforcement Actions against Social Provision of Alcohol to Youth	0	0	0	0	5	0	2	12	3	0
Monthly Total Arrests, Warnings or Citations providing alcohol to underage persons	0	0	1	0	1	0	0	5	0	0
Youth reports of alcohol availability in the home (School Survey) (Easy or Relatively Easy)	88%	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	No Survey	55%	No Survey
Monthly counts of meetings with police to discuss, plan, and agree about enforcement of Social Availability of Alcohol to Youth	0	1	3	2	4	3	5	3	5	7

2012	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
Monthly Available funding for Police Enforcement of Social Availability of Alcohol to Youth	\$0	\$0	\$0	\$0	\$2,000	\$2,000	\$3,000	\$10,000	\$3,000	\$0
Social Norms (Media Advocacy and Local news)										
Monthly local news stories about social availability of alcohol to youth	0	0	1	0	2	5	3	10	8	9
Monthly local news stories about underage drinking and associated problems	3	0	0	3	1	8	10	8	6	5
Monthly public discussions and forums on underage drinking, including City Council	1	0	0	3	0	0	1	0	0	0
Monthly Public information pamphlets and PSAs concerning legal risks of Providing Alcohol to Youth	0	0	2000	0	100	0	0	500	0	0
Monthly Total News stories about legal risks about providing alcohol to Youth	0	0	3	4	10	0	3	13	5	0
Numbers of letters to editor and editorials in support of action on underage drinking	0	1	1	1	2	0	0	3	0	0

As noted, there are outcome and intermediate variables that cannot be practically measured as frequently as each month (or even once each year), e.g., school surveys of ATOD use completed in the classrooms. However, these measurements can be available over time for several years, and, if so, these historical values provide valuable information about over-time trends for these variables. Such available data can be entered within the month of the year of the survey as shown above or, alternatively, a separate annual spreadsheet can be created for such data, as shown below. In this illustration, the school survey is only administered every other year while information about medical treatment (usually from hospital data) for alcohol poisoning can be available each year. These annual data may also be available (and should be entered) for years prior to the initiation of the environmental prevention effort. As noted in the introduction, these pre-intervention data provide baseline information for monitoring and evaluating the environmental prevention effects as well as documenting any trends or changes.

B. Storing and Displaying Local Annual Data (Example)

	2004– 2005	2005– 2006	2006– 2007	2007– 2008	2008– 2009	2009– 2010	2010–2011	2011–2012
Level of Underage Drinking: School Survey Data:								
30-day use-7th graders	No Survey	28%	No Survey	31%	No Survey	34%	No Survey	33%
30-day use-9th graders	No survey	33%	No Survey	33%	No Survey	35%	No Survey	38%
30-day use-11th graders	No Survey	42%	No Survey	47%	No Survey	49%	No Survey	52%
Total Alcohol poisonings for youth	5	25	39	27	33	62	51	37
Self report of violence experience related to drinking—"ever experience violence related to drinking?"	No Survey	28%	No Survey	35%	No Survey	44%	No Survey	48%

VI. Maintenance and Protection of Local Data

In addition to collecting local data necessary for documentation of the project, outcome assessment, and process evaluation, the community prevention staff should assume responsibility for the careful and accurate storage, retrieval, and sharing of the data. The following guidelines can be helpful:

A. Data Quality

The quality and accuracy of data should be maintained at all times, as remember: “garbage in: garbage out”. The primary user of the local data is the community environmental prevention effort itself. The reporting requirements for others, e.g., funding sources, must be honored, but, for the most part, the Management Information System should be designed to best serve the local community effort. However, in most cases, it should be feasible to incorporate others’ requirements into its design generate the needed reports for all stakeholders.

B. Data Collection Procedures

All data collection procedures and sources should be documented including the source of any archival data provided by other organizations, e.g., local policy or operations data.

C. Data Security

Data security should be maintained at all times. Hard (paper) copies of data collection forms should be photocopied, and original documents safely stored. In the case of individual or personal data, these data should not contain any personal identifiers to protect respondent confidentiality (see below). All computer-based data files should be “backed up” at least weekly on separate protected and secure files.

D. Confidentiality

The confidentiality of all data collected should be actively protected. Each respondent or data source should be guaranteed confidentiality; therefore, all individual response data will be maintained in a locked cabinet. No individual information should be able to be linked by personally identifying in-

formation including names, addresses, social security numbers, phone numbers or addresses, if such information were even collected.

E. Release of Data

The data collected by a local environmental prevention effort should be considered the property and responsibility of the local coalition or community leaders of the effort. Data and data reports should be carefully used in the monitoring and deliberations of the project and distributed carefully and thoughtfully.

