University of Massachusetts at Amherst
School of Public Health and Health Sciences
Department of Public Health

RESEARCH PLAN for the SOCIAL AND ECONOMIC IMPACTS OF GAMBLING IN MASSACHUSETTS (SEIGMA)

in response to

Massachusetts Gaming Commission
Request for Response (MGC-RA-2012)
For Research Services

June 15, 2013
# SEIGMA RESEARCH TEAM

There are 4 main SEIGMA team groupings: Executive Management; Team Members; Data Collection Companies; and the External Review Panel. The SEIGMA team is further organized according to a) the type of data specific subgroups will be collecting (i.e., Prevention/Treatment data, Secondary Data (Social), Secondary Data (Economic), Population Surveys, Gambling Venue Data & Government Data, Gambling Employee Surveys, License Plate Surveys, Patron Surveys, Key Informant Interviews & Focus Groups) and b) how this data is analyzed and written up (i.e., specific individuals are responsible for analyzing and aggregating the overall Economic Impacts, overall Social Impacts, and the overall synthesis of the Economic and Social Impacts).

## Executive Management

<table>
<thead>
<tr>
<th>Dr. Rachel Volberg</th>
<th>Dr. Robert Williams</th>
<th>Dr. Edward J. Stanek III</th>
<th>Daniel Hodge, M.A., MPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjunct Associate Professor</td>
<td>Professor, Faculty of Health Sciences &amp; Research Coordinator, Alberta Gambling Research Institute</td>
<td>Professor and Chair</td>
<td>Director of Economic and Public Policy Research</td>
</tr>
<tr>
<td>Division on Biostatistics</td>
<td>University of Lethbridge</td>
<td>Department of Public Health</td>
<td>Donahue Institute, Office of the President</td>
</tr>
<tr>
<td>Department of Public Health</td>
<td>Lethbridge, Alberta; Canada</td>
<td>School of Public Health and Health Sciences</td>
<td>University of Massachusetts (Amherst)</td>
</tr>
<tr>
<td>School of Public Health and Health Sciences</td>
<td><a href="mailto:Robert.williams@uleth.ca">Robert.williams@uleth.ca</a></td>
<td>University of Massachusetts (Amherst)</td>
<td><a href="mailto:dhodge@donahue.umassp.edu">dhodge@donahue.umassp.edu</a></td>
</tr>
<tr>
<td>University of Massachusetts (Amherst)</td>
<td>403-382-7128</td>
<td><a href="mailto:stanek@schoolph.umass.edu">stanek@schoolph.umass.edu</a></td>
<td>413-577-2393</td>
</tr>
</tbody>
</table>

- Overall Team Leader
- Co-Principal Investigator
- Problem Gambling Treatment & Prevention Team Member
- Population Survey Team Member
- Key Informant & Focus Group Team Member
- Social Impacts Lead (Analysis & Report Writing)
- Co-Principal Investigator
- Population Survey Lead
- Consultant to all Sub-Teams
- Overall Synthesis Lead (Analysis & Report Writing)
- Co-Principal Investigator
- Financial Management Lead
- Population Survey Team Member
- Secondary Data (Economic Indices) Lead
- Gambling Venue & Govt Data Lead
- Economic Impacts Lead (Analysis & Report Writing)
Martha Zorn, M.S.
Biostatistician/Data Manager
Division on Biostatistics & Division on Epidemiology
Department of Public Health
School of Public Health and Health Sciences
University of Massachusetts (Amherst)
mzorn@schoolph.umass.edu

- Data Manager

TBD
- Project Manager

Team Members (alphabetical)

Lindsay Koshgarian, M.P.P.
Research Manager
Donahue Institute
Office of the President
University of Massachusetts
lkoshgarian@donahue.umassp.edu
413-545-6615

- Donahue Institute Research Manager
- Secondary Data (Economic Indices) Team Member

Becky Loveland, M.R.P.
Senior Research Manager
Donahue Institute
Office of the President
University of Massachusetts
rloveland@donahue.umassp.edu
413-545-0332

- Donahue Institute Research Manager
- Secondary Data (Economic Indices) Team Member

Dr. Mark Nichols
Professor
College of Business Administration & Institute for the Study of Gambling and Commercial Gambling
University of Nevada (Reno)
mnichols@unr.edu

- Consultant to the Donahue Institute

Dr. Krishna C. Poudel
Associate Professor
Community Health Education
School of Public Health and Health Sciences
University of Massachusetts at Amherst
kcpoudel@hotmail.com
413-545-1448

- Problem Gambling Treatment & Prevention Lead
| **Dr. Rosa Rodriguez-Monguio**  
Associate Professor  
Health Policy and Management  
School of Public Health and Health Sciences  
University of Massachusetts at Amherst  
rmonguio@schoolph.umass.edu  
413-545-7427 | • Secondary Data (Social Indices) Lead  
• Social Impacts Lead (Analysis & Report Writing) |
| **Laurie Salame, J.D.**  
Lecturer  
Isenberg School of Management  
Hospitality and Tourism Management  
University of Massachusetts at Amherst  
lsalame@isenberg.umass.edu | • Gaming Employee Survey Lead  
• Patron Survey Lead  
• License Plate Survey Lead  
• Gambling Venue & Govt Data Team Member |
| **Dr. Natasha Schull**  
Associate Professor  
Program in Science, Technology, and Society  
Massachusetts Institute of Technology  
nds@mit.edu | • Key Informant Interviews & Focus Groups Lead |

### Data Collection Agencies

| **Dr. Michael Johnson**  
**NORC Boston**  
225 Friend Street  
Suite 204  
Boston, MA 02114  
michaeljohnsondr@hotmail.com  
530-263-0347 | • Address Based Sampling (ABS) Population Surveys: General Population ($n=10,000$) and Targeted Population ($n=4,000$) |
| **Timothy Amsbary**  
**Ipsos Public Affairs**  
Timothy.amsbary@ipsos.com | • Online Panel Population Surveys: General Population ($n=5,000$) |
| **Dr. Julie Pokela**  
**Market Street Research**  
31 Trumbull Road  
Northampton, Massachusetts  
jpokela@marketstreetresearch.com | • Key Informant Interviews  
• Focus Groups |
## External Review Panel

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
<th>Email/Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. David Korn</td>
<td>Assistant Professor</td>
<td>Dalla Lana School of Public Health University of Toronto</td>
<td><a href="mailto:David.korn@utoronto.ca">David.korn@utoronto.ca</a> 416-978-8498</td>
</tr>
<tr>
<td>Michael O'Neil</td>
<td>Associate Professor &amp; Executive Director</td>
<td>Southern Australian Centre for Economic Studies University of Adelaide</td>
<td><a href="mailto:michael.oneil@adelaide.edu.au">michael.oneil@adelaide.edu.au</a> +61 8 8313 4545</td>
</tr>
<tr>
<td>Dr. Richard McGowan</td>
<td>Adjunct Associate Professor</td>
<td>Finance Department Carroll School of Management Boston College</td>
<td><a href="mailto:mcgowan@bc.ude">mcgowan@bc.ude</a> 617-552-3474</td>
</tr>
</tbody>
</table>

- SEIGMA Research Reviewer
DATA COLLECTION

External Review Panel
Korn, O'Neil, McGowan

Executive Management
Volberg, Williams, Stanek, Hodge

Project Manager
TBD

Data Manager
Zorn

Problem Gambling Treatment & Prevention
Poudel
Volberg

Secondary Data
Donahue Institute
(economic indices)
Rodriguez-Monguio
(social indices)

Population Surveys
Williams
Volberg
Stanek
NORC
Ipsos

Gambling Venue + Government Data
Donahue Institute
Salame

Patron & License Plate Surveys
Salame

Gambling Employee Surveys
Salame

1. Economic Indices: government revenue; public services; regulatory costs; business starts & failures (commercial bankruptcy); personal bankruptcy; business revenue; employment; tourism, personal income; property value, housing & rental changes. Social Indices: crime; suicide rates; divorce rates; domestic violence; child welfare involvement; educational changes.
ANALYSIS AND REPORT WRITING

External Review Panel
Korn, O'Neil, McGowan

Overall Synthesis
Williams, Volberg, Stanek, Hodge

Project Manager
TBD

Data Manager
Zorn

Social Impacts
Volberg
Rodriguez-Monguio

Economic Impacts
Donahue Institute
Nichols
BACKGROUND TO THE PROJECT

Massachusetts Expanded Gaming Act

In November 2011 an Act Establishing Expanded Gaming in the Commonwealth was signed into law (Chapter 194 of the Acts of 2011). This new legislation permits casinos and slot parlors to be introduced to Massachusetts for the first time under the regulatory auspices of the newly created Massachusetts Gaming Commission (MGC). Three casino licenses are available, with one allocated for the Greater Boston area, one for western Massachusetts, and one for southeastern Massachusetts. A single license for a slot parlour is also available, with no geographic restriction as to its location. A slot parlour license is expected to be awarded in Sep/Oct 2013 and the first casino licenses in Feb/Mar 2014. With construction time estimated to vary between 12 months (slot parlor) to 30 months (destination casino), the slot parlour may open as early as Sep/Oct 2014 and the first casinos in Feb/Mar 2016.

MGC Research Mandate

Section 71 of the Gaming Act requires the Massachusetts Gaming Commission to establish “an annual research agenda” to assist in understanding the social and economic effects of casino gambling in Massachusetts and in minimizing the harmful impacts. With the further requirement that the Commission and its Gaming Policy Advisory Committee make annual, scientifically-based recommendations to the Legislature, the new law is unique in enshrining the role of research in enhancing responsible gambling and mitigating problem gambling in Massachusetts.

A careful reading of Section 71 shows there to be three essential elements to this research agenda:

1. The first is “to understand the social and economic effects of expanded gambling”. Although there have been hundreds of socioeconomic impact studies of gambling (Williams, Rehm, & Stevens, 2011), almost all of these studies were initiated after gambling had already been introduced. The present situation is therefore very fortuitous in that a rare opportunity exists to establish a pre-casino baseline and to conduct world-class research on the true economic and social impacts of casino gambling in Massachusetts.

2. Investigating the socioeconomic impacts of casino gambling requires a comprehensive baseline of the pre-casino levels of the social and economic indices that could be potentially impacted. This includes the baseline level of problem gambling\(^1\). This fits well with the second element of MGC’s research agenda which is to implement a “baseline study of .... problem gambling.... and the existing programs ... that prevent and address the harmful consequences of problem gambling”. Associated with this mandate is the requirement “to examine the current research as to the causes for problem gambling and the health effects of problem gambling and the treatment methods currently available in the commonwealth”.

\(^1\) Various terms have been use to describe disordered gambling, including ‘compulsive gambling’, ‘addictive gambling’, ‘problem gambling’, and ‘pathological gambling’. ‘Problem gambling’ has become the preferred term amongst researchers and most clinicians because it has fewer etiological connotations (i.e., ‘pathological’ means ‘disease-like’) and because it is inclusive of less severe/compulsive forms where the person has still suffered significant harm. (A search of Google Scholar shows that the term ‘problem gambling’ is now used in scholarly articles 8 times more frequently than either ‘pathological gambling’ or ‘compulsive gambling’). The terms ‘compulsive gambling’ and ‘pathological gambling’ are now primarily used to refer to the most severe forms of problem gambling.
3. The third and final element of MGC’s research agenda is to commission independent studies to “obtain scientific information relative to the neuroscience, psychology, sociology, epidemiology and etiology of gambling”. This involves facilitating “individual studies conducted by academic institutions and individual researchers …. to study topics which shall include…. (i) reward and aversion, neuroimaging and neuroscience in humans, addiction phenotype genotype research, gambling-based experimental psychology and mathematical modeling of reward-based decision making; (ii) the sociology and psychology of gambling behavior, gambling technology and marketing; and (iii) the epidemiology and etiology of gambling and problem gambling in the general population. Collaboration among researchers both within Massachusetts and outside Massachusetts is encouraged. The ultimate goal of facilitating this type of broad-based research is to identify methods to enhance responsible gambling and mitigate the impacts of problem gambling in Massachusetts (similar to MGC’s second mandate).
OVERARCHING FEATURES OF RESEARCH PLAN

Our general research approach has five overarching features:

1. The assemblage of an experienced, multidisciplinary, scientifically rigorous, Massachusetts-based team to address all three of the elements contained in the MGC research agenda.
   a) Socioeconomic impact studies of gambling are methodologically complex and draw upon expertise in a wide range of areas. No single discipline has sufficient expertise to tackle all aspects of this project. In recognition of this, the 13 members of our Research Team consist of individuals with backgrounds in economics and econometrics, gambling research, psychology, public health, statistical analysis, sociology, public policy, and hospitality and tourism. Equally important, several team members have direct experience in both researching and conducting socioeconomic analyses of gambling.
   b) A baseline study of problem gambling with an additional focus on prevention and treatment requires people expert in these specific areas. This is why we have a particularly strong representation from the discipline of public health as well as some of the world’s leading experts in the prevention and population assessment of problem gambling.
   c) Coordination and integration of gambling research originating from different organizations requires an administrative structure to handle this (which we have created within this Research Plan), people with experience in research administration, as well as a diverse range of expertise in different areas. Our team contains all of these elements. This is also an administrative structure that could continue to exist beyond the duration of the present project (if so desired by MGC).

Over 10 years ago, Abbott and Volberg (1999) observed that gambling research is often conducted within a politically and emotionally charged context characterized by opposing ‘sides’ that draw selectively on research findings to support their particular ideological positions. More recently, gambling research has been the subject of criticism of bias both in academic forums (e.g., Adams, 2007, 2011) as well as in the media (e.g., Boston Globe, 2008a,b; Eagle-Tribune, 2008). Neutrality, objectivity, and scientific rigor (and the perception thereof) are therefore of paramount concern for all three of the research endeavors included in the statute.

Beyond their political sensitivity, there are other reasons to conduct studies of the impacts of new forms of gambling to the highest levels of ethical, professional and scientific quality by organizations and people who demonstrate the intellectual rigor and independence in their research role. The most important is that these studies form the basis for numerous subsequent actions and decisions—by legislators, regulators, operators, community groups and consumers. Consequently, their results need to serve, and be perceived as serving, as a neutral basis for decision making by a wide range of stakeholders.

This is why a) the SEIGMA Research Team is a university-based entity (Department of Public Health at the University of Massachusetts); b) all three Principal Investigators and almost every team member has an academic affiliation; and c) why the team does not include any individual who has received a significant amount of direct or indirect funding from the gambling industry.

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This also ensures that there will be a considerable number of academic publications deriving from this effort as desired by the MGC.
2. A **collaborative orientation** whereby the major stakeholders (i.e., casino developers, problem gambling treatment providers, municipal governments, etc.) are invited to provide both input and assistance to the project. The reality is that some aspects of this project will be difficult to carry out without the cooperation of these stakeholders. At the same time, these groups are some of the primary beneficiaries of this research, and thus, should have a keen interest in contributing to the project.

3. A **‘state of the art’ analytic framework** for socioeconomic impact studies. Decisions about what approach to take to study the social and economic impacts of gambling in a jurisdiction are fundamentally important because they ultimately determine what results are obtained. Historically there has been considerable controversy about the best theoretical and methodological approach to studying the impacts of gambling. However, much of this uncertainty has now been reduced with the recent release of the *Theoretical Framework for Conducting Socioeconomic Impact Analyses and Principles for Conducting Socioeconomic Impact Analyses of Gambling* contained in the *Social and Economic Impact of Gambling (SEIG)* Report commissioned by the Canadian Consortium for Gambling Research (Williams, Rehm, & Stevens, 2011). One of the Principal Investigators on the present project is the primary author of this report and will ensure that this theoretical framework and these principles are closely followed in the present study (this framework and these principles are discussed in greater detail in later in this research plan).

4. A **multiple methods research strategy** that employs both primary and secondary data collection/analysis, as well as both quantitative and qualitative research methods. Gambling is just one of many economic forces contributing to the dynamic social and economic landscape of Massachusetts, making the disentanglement of gambling’s unique contribution difficult. The use of multiple methods aids in this task, as it allows for triangulation of findings.

5. A **comprehensive analysis** that establishes the impacts of casino gambling:
   a. At a Massachusetts-wide level;
   b. At a regional level (Greater Boston; Western Massachusetts; Southeastern Massachusetts); and
   c. At a local level (in particular, in the communities where the new gambling venues are located).
THEORETICAL APPROACH

The specific theoretical approach used to study the effects of gambling is a fundamentally important determinant of the results obtained, as well as the validity of these results. Unfortunately, there is considerable controversy about the appropriate theoretical and methodological approach to studying gambling impacts. These issues have been the focus of conferences (‘Whistler Symposium’ in British Columbia in 1999, the ‘Social and Economic Costs and Benefits of Gambling’ conference in Banff, Alberta in 2006); special issues of the Journal of Gambling Studies (June 2003) and the Managerial and Decision Economics Journal (June 2004); books (Grinols, 2004; Morse & Goss, 2007; Walker, 2007); and many individual articles (e.g., Anielski & Braatan, 2008; Australian Productivity Commission, 1999; Barretta, 2004; Collins & Lapsley, 2003; Eadington, 2003; Gerstein, Volberg, Harwood, & Christiansen, 2004; Grinols, 2007; Grinols & Mustard, 2001; 2008; Grinols & Omorov, 1996; Hawke, 2000; Hayward & Colman, 2004; Henriksson, 1996; 2001; Johnson, 2002; Kelly, 2004; Kindt, 1994; 2003; Korn, Gibbins, & Azmier, 2003; Marfels, 1998; McGowan, 1999; O’Neil, Persky, 1995; Single, 2003; Stevens & Williams, 2004; Thompson, Gazel, & Rickman, 1995; Walker, 2003a, 2004, 2008a, 2008c, 2008d; Williams, 2011).

The most problematic issue concerns how to a) quantify the social impacts of gambling (e.g., leisure benefits, problem gambling, crime) and b) combine then with the economic impacts so that an overall determination of the positive or negative nature of gambling can be made (Collins & Lapsley, 2003; Eadington, 2003; Walker, 2003; Williams, Rehm & Stevens, 2011). Many studies have avoided this issue altogether by only focusing on the easily identified and quantifiable economic impacts (e.g., gambling revenue, tax revenue). However, this approach is obviously inadequate as it creates a very one-sided analysis.

Another approach is to estimate the monetary value of the social impacts so that they can be combined with the economic impacts that are traditionally quantified monetarily. This is the cost-benefit analysis (CBA) approach to gambling that is best illustrated by the work of the economist Earl Grinols (2004). However, while determining the financial cost of some social impacts is reasonably straightforward (e.g., costs of treating problem gamblers or the costs of prosecuting and incarcerating gambling-related crime), estimating costs for many other social impacts is not. This includes the costs of suicides, divorces, loss of social capital, the leisure benefit of gambling, as well as the psychic trauma of being a problem gambler. Most often these latter types of social impacts are excluded from cost-benefit analyses. However, this exclusion seriously limits the comprehensiveness and fairness of the overall analysis. An alternative approach is to try to establish an approximate financial cost for these ‘hard to quantify’ social impacts. For example, by asking people “how much would you pay not to be a problem gambler”; or tabulating the direct and indirect financial ramifications of gambling-related suicides (funeral costs, lost productivity, etc.); or trying to financially quantify the leisure benefit of gambling by calculating ‘consumer surplus’ (i.e., difference between what people would be willing to pay for gambling versus what they actually pay). Unfortunately, the figures obtained from this approach are fairly arbitrary and unreliable, resulting in widely different estimates. It also continues to remain unclear how to create a monetary value for some variables (e.g., loss of social capital). Aside from these practical issues, an argument can be made from a theoretical standpoint that it is inappropriate to apply an arbitrary monetary amount to something that is clearly nonmonetary in its value or consequences to the individual. Furthermore, doing so simply reinforces the erroneous notion that money is the appropriate and important metric upon which to judge the impact and/or the overall value of gambling.
This issue of how to measure and combine social impacts with economic impacts is not restricted to gambling. Widespread dissatisfaction with exclusive reliance on financial measures such as **gross domestic product** (GDP) or CBA to measure societal progress or well-being has existed for many years (e.g., Atkinson, 2000; Daly & Cobb, 1989; Dasgupta & Maler, 2000; Tinbergen & Hueting, 1992). This situation has directly led to the development of several alternative measures to assess progress/impacts in a more comprehensive fashion. These measures include the United Nations **Human Development Index**, the **Quality of Life Index**, **Full Cost Accounting**, the **Happy Planet Index** the **Canadian Index of Wellbeing**, the **Index of Sustainable Economic Welfare**, the **Green National Product** and the **Genuine Progress Indicator** (GPI). Most of these measures recognize economic productivity (e.g., GDP) as an important aspect to be considered, but they do not make it the central basis upon which a judgement about progress or societal well-being is made.

Unfortunately, while these approaches are more theoretically satisfying, they have practical problems of their own. First, although they all have similar goals, their specifics are markedly different from each other. This illustrates the fact that determining which indicators contribute to societal well-being is a very value-laden task that is not well agreed upon. Second, most of these approaches have the same problem as cost-benefit analysis in that they aspire to combine impacts into a single index, usually just by adding up the number of beneficial indicators against the detrimental ones. This is problematic because it makes all impacts equivalent in value and/or requires a subjective judgement about the relative value/weight of one impact against the others.

The reality is that there is no reliable way of combining social impacts with monetary impacts to produce a single summative measure (Williams, Rehm, & Stevens, 2011). **Instead, assessing the overall positive or negative nature of an enterprise that has wide ranging social and economic impacts (such as gambling) will always be a subjective judgement about the relative importance of the observed social impacts compared to the observed economic impacts.**

However, this does not preclude conducting meaningful socioeconomic analyses of gambling. Rather, there are many basic principles for conducting socioeconomic impact studies that can ensure that the obtained results are still comprehensive, balanced, and scientifically rigorous. These principles are as follows (Williams, Rehm, & Stevens, 2011):

**Measure ‘Impacts’ rather than ‘Costs and Benefits’**

While many gambling impacts are clearly negative (e.g., increased problem gambling) or positive (e.g., employment gains), the positive or negative nature of several other changes is less clear and somewhat subjective (e.g., changed societal pattern of leisure pursuits, cannibalization of competing industries, increase in tax revenue). ‘Impact’ is often a better term as it conveys the fact that a change has occurred without having to necessarily characterize it as positive or negative. Use of this term also avoids confusion with the CBA use of the terms ‘cost’ and ‘benefit’.

**Comprehensively Assess all Potential Economic and Social Impacts**

It is self evident that all impacts of gambling have to be included in an impact analysis. There are many different and equally legitimate ways of organizing and categorizing these impact areas. The important thing is not the overall organization, but ensuring that  a) all of the potential impact areas are covered, and  b) economic/monetary impacts are given equal prominence to the social/nonmonetary impacts.
Avoid Applying Arbitrary Monetary Values to Impacts that are clearly Non-Monetary in Nature.

As mentioned earlier, it is a mistake not to capture social impacts that do not have significant monetary consequences. However, it is also a mistake to try to capture them within a cost-benefit economic framework by applying an arbitrary monetary value to them. This approach is an overextension of an economic worldview that fails to recognize that the true nature of the impact is largely non-monetary/economic in nature.

In most cases, social impacts are best quantified and reported simply by means of percentage change in the variable and/or the actual number of people impacted (e.g., % change in rate of problem gambling, % change in crime, change in pattern of leisure behavior, etc.).

Create a Profile of the Economic and Social Impacts

The advantage of a common metric (e.g., money) is that it potentially allows for the combination of all impacts into an overall aggregate value. However, as mentioned, this approach is problematic because of a) difficulties applying monetary values to many social impacts, b) the need to construe everything as either a cost or benefit, c) the inappropriateness of using money as a way of characterizing the nature and magnitude of some social impacts (e.g., suicide).

Thus, in most cases the best way of treating these impacts is to simply list them and to create a profile of impacts. For most social impacts, reporting the percentage change in the variable and/or the percentage of people impacted is most descriptive. For many of the economic impacts a monetary value can be used to quantify the magnitude of the effect within each impact area. There can also be value in aggregating the monetary amounts within and/or across economic impact areas.

Apply Basic Economic Principles to Evaluate the Positive or Negative Nature of the Economic Impacts

One of the critiques of many socioeconomic approaches to gambling is that they fail to adequately consider important economic principles in judging the overall impacts (Walker 2003a, 2008a, 2008d; Walker & Barnett, 1999). For example, several ostensive “costs” of gambling (e.g., theft, unemployment, costs of treating problem gamblers) are unlikely to result in any real reduction in the economic wealth within a society/jurisdiction (i.e., just transfers of wealth within society) (Eadington, 2003; Walker, 2003, 2008a; Walker & Barnett, 1999). There is no doubt that theft and treatment for problem gamblers are important negative impacts that need to be identified and well documented. However, the point being made is that these types of impacts have relatively little influence on the overall economic vitality/wealth of a jurisdiction.

Rather, for something to have a meaningful economic/monetary impact one of the following needs to be present:

1. The economic activity causes either an influx of money/assets from outside the jurisdiction or a loss of money/assets to an outside jurisdiction. For gambling, an influx occurs when the primary patronage base is from outside the jurisdiction, or capital investments are made in the community by outside agencies (e.g., casino developer, private businesses, government).
2. The economic activity increases or decreases the value of existing assets. This impact generally does not apply to gambling, or to entertainment industries more generally, as gambling primarily involves a transfer of wealth rather than a creation of wealth. However, it can occur when the introduction of a new gambling venue either increases or decreases the market value of neighbouring property. It can also occur in the manufacture of gambling equipment (e.g., electronic gambling machines) that can be sold for an amount worth more than the sum of its parts.

3. The economic activity produces increased or decreased utilization of existing money. Money that sits dormant has very little economic utility to the broader economy. It has much greater utility if it is spent on gambling, this gambling revenue is then spent on employee wages, and these wages are then used to buy local goods and services. In general, money has increased economic value as a function of the number of people that use the money and the speed of the cash flow from one person to the next (Walker, 1999, 2007). Increased utilization of existing money is more likely to occur if gambling patronage comes from individuals who are not financing their gambling by reducing their spending on other activities (i.e., the income class of the patronage potentially speaks to this). Evidence of increased utilization of existing money is seen if the increased revenues and employment in the gambling industry (and supporting/complementary industries) occurs without there being offsetting declines in the revenues and employment in other industries. There is good evidence that adding a new and interesting service/good to the economy (e.g., gambling) can at least temporarily create increased monetary flow without negative impacts on other businesses (Walker & Jackson, 1998; 2007).

4. The transfer of wealth and changed monetary flow caused by the new economic activity strengthens or weakens sectors of the economy capable of producing an influx/outflow of wealth, increased/decreased value of existing assets, or increased/decreased utilization of money. One of the potential concerns with gambling is that it may redirect money from wealth-producing sectors (i.e., private business) to sectors not known for wealth creation (i.e., government, charity).

5. The failure to implement the economic activity would have resulted in an influx/outflow of wealth, increased/decreased value of existing assets, or increased/decreased utilization of money. Even if there is not a clear economic gain, an economic benefit still exists if the gambling activity prevented assets or money from leaving the jurisdiction, prevented a decrease in the value of existing assets, or prevented decreased utilization of existing money.

Recognize that Assessing the Overall Positive or Negative Nature of the Observed Impacts is a Qualitative Assessment that often Involves some Subjectivity

The judgement about whether the overall impacts of gambling are positive or negative (and the degree to which they are positive or negative), requires a joint qualitative assessment of a) the profile of social impacts, and b) the judged overall positive or negative economic value of the economic impacts. When

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3 Wealth creation is more typical of manufacturing industries. For example, a car manufacturing industry creates wealth by making things that are worth more than the sum of their constituent parts. Most entertainment industries, in contrast, simply redirect monetary flow from one sector of the economy to another.
these things are in alignment, then this assessment is straightforward (i.e., mostly positive social impacts and positive economic value; mostly negative social impacts and negative/no economic value).

However, the assessment is inherently subjective when these things are not in alignment (e.g., net economic gains but mostly negative social impacts). In this situation, the overall assessment will depend on the importance one assigns to the economic versus social impacts. In particular, whether one believes that the net economic value of the activity adequately offsets any negative social impacts.  

**Identify How Much Money is Involved, Where it is Coming From, and Where it is Going**

The principles listed up to this point have been focused primarily on resolving the central methodological issue of how to handle the social impacts of gambling. The following principles are focused more on some of the practical issues involved in conducting socioeconomic analyses of gambling and ensuring optimal scientific rigour.

Gambling is an economic activity characterized by a transfer of wealth. There are groups and sectors that are winners and there are groups and sectors that are losers, and most of the impacts are seen in these groups/sectors. Thus, the first step in a socioeconomic analysis of gambling is to document a) how much money is being transferred (a rough gauge of the magnitude of the potential impacts); b) where the money is coming from; and c) where the money is going. The demographic characteristics of the gamblers are particularly important, with the most important socioeconomic variables being age, gender, ethnicity, income, and problem gambling status. The geographic origin of the gamblers is also very important because it speaks to a) whether the revenue is an infusion of new wealth or just local money that has been redirected, and b) the geographic range in which to expect (and therefore, measure) impacts.

Next, it is important to clearly document which groups/sectors are the primary recipients of gambling revenue (i.e., private operator, different levels of government, charity, local community) as well as the geographic location of each of these groups. It is also essential to document how these groups then disburse or spend the money so as to identify all the downstream beneficiaries. The geographic origin of the operating expenses to run the new type of gambling, as well as the origin of any equipment purchased are also relevant to a socioeconomic accounting. (Note: if gambling revenues are primarily collected at the state or federal level (rather than at the municipal level) and are redistributed provincially or federally, then there is a good chance that there will be a net outflow of money from the local municipality hosting the gambling venue).

**Establish both the Micro and Macro Geographic Impacts**

Most socioeconomic impact studies have only focused on the changes in the community that received the new form of gambling. However, for a full understanding of the impacts, it is necessary to go beyond these boundaries, as financial inflow/benefits in one region usually come at the expense of

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4 Other areas of subjectivity also exist; for example, how some of the ambiguous impact categories are construed (e.g., is increased government revenue a positive or negative thing). Another example concerns whether you consider the micro (community-level) benefits more important than the macro (regional-level) benefits.

5 Some jurisdictions compensate for this by providing municipalities with a guaranteed fixed percentage of the profits.
financial outflow or loss of benefits in adjoining regions. Thus, one should aspire to assess both the micro (community specific) impacts and the macro (greater regional) impacts. As mentioned, the geographic origin of the patronage is a good indication of the regional scope of the impacts. Once the boundary of this larger region/jurisdiction is established, it is important to clearly identify the impacts within the community of interest as well as regionally.

**Compare Changes to those Observed in Control Communities/Regions**

It is important to be able to disentangle the unique influence of gambling on observed socioeconomic changes (Walker, 2008c, 2008d). Most socioeconomic impact studies simply examine the pre- and post-changes in a community after the introduction of a new gambling venue/format. However, there are a multitude of economic and social forces at work that account for social/economic changes in a community. Furthermore, gambling often represents only a small fraction of total economic activity within a community.

Similarly, many of the adverse effects of problem gambling cannot be uniquely attributed to the introduction of a single new gambling venue/activity, as most problem gamblers engage in a wide variety of gambling activities and also have comorbid conditions that contribute to their constellation of problems (e.g., substance abuse, mental health problems) (Australia Productivity Commission, 1999; Crockford & el-Guebaly, 1998; Lorains, Cowlishaw, & Thomas, 2011; Walker, 2008d).

A much stronger methodology is a matched control comparison where changes in the region receiving the new form of gambling are compared against changes in an economically, socially, and demographically similar region that did not receive this new form of gambling. This approach does not eliminate the contributing role of comorbidities to people’s problems, but it does show the unique impact that the introduction of legalized gambling has in exacerbating these problems. This approach has some of its own complications, however, as there may be baseline attitudinal differences in regions that opt to have the new form of gambling versus communities that have opted not to have it. Also, the control region must be far enough away so as not to be secondarily impacted by the introduction of the new form of gambling. This geographic separation makes it more difficult in finding a region that is a good match.

**Speculate on What the Situation would have been Without the Introduction of the New Form of Gambling**

Most studies compare economic and social indicators after the introduction of gambling to what these indicators were before the introduction of gambling. However, often the justification for the introduction of a new form of gambling is the desire to stem the outflow of gambling dollars to neighbouring jurisdictions that already offer this new form of gambling. Thus, an even more relevant comparison than ‘baseline’, is what the likely economic and social situation would have been if gambling had not been introduced (i.e., the ‘counterfactual situation’) (Walker, 2008c). The extent to which the introduction of domestic gambling opportunities has prevented losses to neighbouring jurisdictions is very difficult to judge, but nonetheless merits speculation.

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6 The latest research shows that the conditions having the high comorbidity to problem and pathological gambling are: nicotine dependence (60.1%), substance use disorder (57.5%), mood disorder (37.9%), and anxiety disorders (37.4%) (Lorains, Cowlishaw, & Thomas, 2011).
Use Longitudinal Designs when Possible

Most impact studies collect yearly statistical ‘snapshots’ of a community’s socioeconomic indicators. Attempts are then made to attribute any changes to the introduction of the new gambling activity (e.g., a problem gambling increase after one year being responsible for a corresponding bankruptcy rate increase after one year). However, two data points provide no information concerning whether problem gambling caused the bankruptcies, the bankruptcies caused the problem gambling, or whether they were independent events. Even if one event precedes the other (e.g., problem gambling increase in year 1 followed by bankruptcy increase in year 2), causal attributions are weak unless it can be established that increased bankruptcies occurred primarily within the problem gamblers.

A related problem with cross-sectional designs is that there is no way of knowing the exact meaning of a stable prevalence rates from Time 1 to Time 2. For example, although severe levels of problem gambling appear to be reasonably stable over time (e.g., Slutske, 2006; Williams, Hann, Schopflocher et al., 2011), less severe forms (which are much more common) are not. A couple of studies have found that the large majority of moderate problem gamblers are no longer problem gamblers at 1-year follow up (Wiebe et al., 2003) or 7-year follow up (Abbott et al., 1999). Thus, stable rates of problem/pathological gambling from Time 1 to Time 2 imply the existence of a large group of newly affected individuals roughly equivalent to the number of individuals who have recovered or remitted (meaning that gambling is producing a cumulatively wider impact on the general population than would have otherwise been known). The ability to make causal attributions within individuals and establish problem gambling incidence (i.e., rate of new cases) is strengthened with use of a longitudinal design that documents the temporal sequence of events in ‘real time’ within individuals.

Assess Impacts for Years Before and for Years After the Introduction of New Gambling Venues/Opportunities

The length of time it takes for all economic and social impacts of gambling to manifest themselves is unknown. Some of the economic impacts (e.g., revenues, employment, etc.) appear to be fairly immediate. On the other hand, it may take a few years for competing industries to fail or for increased utilization of roads, sewers, etc. to result in repairs. Some economic impacts will also reverse themselves in a resilient economy as industry repositions itself. Social impacts may take longer to appear than economic impacts. While some individuals experience rapid onset of gambling problems, others gamble safely for several years before problems develop (Committee on the Social and Economic Impact of Pathological Gambling, 1999). There is also evidence that rates of gambling and problem gambling may decline with extended exposure (LaPlante & Shaffer, 2007; Shaffer, LaBrie & LaPlante, 2004). It is also very important to realize that new gambling opportunities are always added to existing gambling opportunities (even if they are illegal). Thus, lag effects of these pre-existing opportunities can easily be mistaken for immediate impacts of the new forms. It is important to document prior gambling opportunities and socioeconomic effects for several years before as well as for several years after the introduction of a new form of gambling.

Report the Limitations and Parameters of these Results

The final principle is to clearly recognize and report that the results obtained are very much a function of the context in which the study was conducted. More specifically:
Impacts are Dependent on the Magnitude of the Change in Gambling that has Occurred for the Population
Adding a large casino to a small community without prior gambling opportunities will usually have a much larger impact than adding an additional casino to a large city that already has existing casinos and other gambling opportunities.

Impacts are Somewhat Specific to the Type of Gambling Studied
Different types of gambling have different profiles of impacts in terms of their potential for contributing to problem gambling (e.g., EGMs vs. lotteries), the number of jobs they produce (horse racing vs. EGMs), and their likelihood of cannibalization of other industries, etc. Hence, it is necessary to qualify results as being specific to the type of gambling studied.

Impacts are Somewhat Specific to the Jurisdiction Studied
Jurisdictions differ widely in how gambling revenue is distributed, pre-existing availability of gambling, the strength of policy and educational initiatives to prevent problem gambling, baseline levels of poverty and unemployment, and the vulnerability of the population to addiction. Hence, it is important to recognize that the results will be somewhat dependent on the conditions that exist in the particular jurisdiction being studied.

Impacts are Somewhat Specific to the Time Period Studied
The time period that impacts are studied is critical, as gambling availability and gambling policy can change rapidly within a jurisdiction. Furthermore, there is evidence that populations with extended exposure to gambling may have different rates of problems compared to places with more recent introduction of gambling (LaPlante & Shaffer, 2007; Shaffer et al. 2004). Hence, it is also important to qualify results as being specific to the time period studied.
BASELINE STUDY

Purpose

The primary goal of the Baseline Study phase is to establish comprehensive baseline levels of all social and economic variables that have the potential to be impacted by the opening of new gambling venues. As part of this process there will also be a particular focus on baseline measures of gambling and problem gambling and the existing programs to prevent and treat this condition, and b) the creation of a baseline econometric model of the inter-relationships between the different economic variables. An econometric model will be created for the Commonwealth of Massachusetts as well as for each of the three casino regions. Details of how this model will be created are contained in Overview of Approach for Economic Research. Our Baseline economic model and our baseline levels of social and economic variables will serve as benchmarks against which changes will be measured during the Operational Study Phase.

There are several research questions that the present study will endeavor to address specific to the Baseline Study:

1. What are the current levels of all social and economic variables that have the potential to be impacted by the introduction of expanded gambling in Massachusetts?
2. What econometric model best captures the inter-relationships between the economic variables at baseline?
3. What is the current prevalence of gambling in Massachusetts?
4. What is the demographic, game type, and geospatial pattern of gambling in Massachusetts?
5. What is the current prevalence of problem gambling in Massachusetts (as well as the actual number of problem gamblers)?
6. What is the geospatial and demographic pattern of problem gambling in Massachusetts?
7. Which particular forms of gambling (including Internet gambling) are most strongly related to problem gambling in Massachusetts?
8. What are the social, health, and economic consequences of problem gambling to individuals in Massachusetts with this condition?
9. How many problem gamblers in Massachusetts desire treatment and how many seek treatment?
10. Where do problem gamblers go to receive treatment in Massachusetts?
11. What barriers exist to treatment seeking?
12. What problem gambling prevention and treatment services currently exist in Massachusetts?
13. How aware is the general public of existing problem gambling prevention initiatives?
14. What is known about the effectiveness of existing problem gambling treatment and prevention services in Massachusetts?
15. How well do current problem gambling prevention and treatment services in Massachusetts match up to best practices in problem gambling prevention?

The answers to the questions pertaining to problem gambling will be fundamentally important in understanding the a) nature and magnitude of problem gambling in Massachusetts prior to the introduction of casino gambling, and b) methods to enhance and improve existing problem gambling prevention and treatment services in the commonwealth.
Socioeconomic Indices

The specific social and economic indices to be measured at Baseline include all of the variables listed below:

<table>
<thead>
<tr>
<th>SOCIAL INDICES (i.e., primarily ‘nonmonetary’)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROBLEM GAMBLING and RELATED INDICES</td>
</tr>
<tr>
<td>• Past year prevalence of problem gambling</td>
</tr>
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<td>• Treatment provision (# of people treated, # help-line calls, # Gamblers Anonymous meetings/chapters, annual treatment costs)</td>
</tr>
<tr>
<td>• Prevention costs</td>
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<td>• Personal bankruptcy rates</td>
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<td>• Suicide rates</td>
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<tr>
<td>• Divorce rates</td>
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<tr>
<td>• Child welfare involvement rate</td>
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<tr>
<td>CRIME</td>
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<tr>
<td>• Crime rates (with a particular focus on gambling-related crimes)</td>
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<tr>
<td>• Costs of gambling-related crime to police, judiciary and businesses</td>
</tr>
<tr>
<td>LEISURE ACTIVITY</td>
</tr>
<tr>
<td>• Percentage of populace who gamble</td>
</tr>
<tr>
<td>• Demographic characteristics of gamblers</td>
</tr>
<tr>
<td>HOUSING</td>
</tr>
<tr>
<td>• Ratio of owner-occupied vs. rental units</td>
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<tr>
<td>• Number of multi-unit housing and mobile homes</td>
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<tr>
<td>EDUCATION</td>
</tr>
<tr>
<td>• School enrollments</td>
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<tr>
<td>• Demand for specific services, e.g., English as a Second Language (ESL)</td>
</tr>
<tr>
<td>SOCIOECONOMIC INEQUALITY</td>
</tr>
<tr>
<td>• Participation and expenditure on gambling as a function of income levels</td>
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<tr>
<td>ATTITUDES</td>
</tr>
<tr>
<td>• General populace attitudes concerning the future introduction of casinos/racinos in their region</td>
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<tr>
<td>• General populace attitudes concerning gambling generally (including extent to which people report they value this new entertainment option)</td>
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<tr>
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<td>• Overall level of happiness and life satisfaction</td>
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<td>• Perceived social capital</td>
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<tr>
<td>• Personal values</td>
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<tr>
<td>ENVIRONMENTAL</td>
</tr>
<tr>
<td>• Current environment attributes (e.g., noise, traffic congestion, etc.)</td>
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</tbody>
</table>
### ECONOMIC INDICES (i.e., primarily ‘monetary’)

**GOVERNMENT REVENUE**
- Current levels of revenue derived directly from gambling (i.e., lottery products)
- Current levels of revenue indirectly received from gambling (taxes and licensing fees on businesses providing gambling)

**PUBLIC SERVICES**
- Government expenditure on public services
- Public utilization of public services
- Current levels of Charity Gambling revenue

**REGULATORY COSTS**
- Current cost of government services related to regulation of legal gambling

**BUSINESS STARTS AND FAILURES**
- Annual number of businesses in sectors most typically affected by the introduction of gambling

**BUSINESS REVENUE**
- Private business revenue from gambling operations (both gambling & nongambling revenue)
- Revenue levels in industries most typically affected by the introduction of gambling

**TOURISM**
- Specific focus on businesses starts/failures and revenue related to tourism

**EMPLOYMENT**
- Employment and unemployment rates (with a particular focus on industries most typically affected by the introduction of gambling)
- Number of people directly employed by the gambling industry

**PERSONAL INCOME**
- Average personal and household income
- Poverty rates

**HOUSING**
- Average property values
- Housing starts
- Average rental costs

### Data Sources

The majority of the above variables are routinely collected on a regular basis by various government or government-funded agencies. Thus, **secondary data collection** will comprise one of the main methodological elements of the Baseline Study. The specific data sources we intend to access in this secondary data collection are listed in **Overview of Proposed Data Sources**.

### Prevention and Treatment Evaluation

In the process of collecting data pertaining to problem gambling indicators (i.e., treatment provision numbers, helpline calls), we will also endeavour to collaboratively work with the various problem gambling treatment and prevention agencies to a) comprehensively document existing prevention and treatment services for problem gambling in the state of Massachusetts; and b) assess the adequacy of these services in addressing and mitigating the impacts of problem gambling.
The main agency currently providing prevention, treatment referral, and training services is the Massachusetts Council on Compulsive Gambling. In terms of treatment, the Department of Public Health, Bureau of Substance Abuse Services, currently supports 13 gambling treatment centers. Gamblers Anonymous also has support groups operating in several Massachusetts communities. All of these agencies will be contacted in the context of collecting ongoing data pertaining their treatment numbers as well as calls to the Massachusetts Council’s helpline (particularly during the baseline and post-opening periods). It is also our intent to work with these agencies to conduct an objective evaluation of their services as part of our Baseline efforts.

One aspect of this evaluation will involve comparing how existing services provided by these agencies match up to what is known about best practices in problem gambling prevention (e.g., Williams, West & Simpson, 2012) and treatment (e.g., Goody & Tarrier, 2009; Grant & Potenza, 2007; Oakley-Browne et al., 2004; Stea & Hodgins, 2011). The population surveys (described below) will also contain questions that address the awareness of these services; desire for these services; and perceived effectiveness of these services.

The second aspect of this evaluation will involve a formal evaluation of the effectiveness of problem gambling treatment services in Massachusetts. This involves contacting a random selection of several hundred people who have received services from one of the 13 different treatment agencies and/or Gamblers Anonymous and assessing their problem gambling symptomatology 1 year post-treatment. The specific details of this evaluation are still being determined.

In addition to secondary data sources, and information provided directly from treatment and prevention agencies, the final major element of our Baseline Study will be a large scale General Population Survey. Population surveys provide several additional unique sources of information relevant to the impact of gambling. One of these is public attitudes. An argument can be made that the general public’s current support or non-support of gambling (and specific forms of gambling) is as important as its objective beneficial or detrimental effects. Current gambling behavior of the general public is another important piece of information that can only be determined through population surveys. To understand the impacts of gambling we need to know baseline levels of gambling participation. More specifically, we need to know the demographic characteristics of Massachusetts gamblers; how these demographics relate to specific forms of gambling; how frequently people gamble; how much they spend; and their out-of-state expenditures. Finally, population surveys are the only way to establish the overall population prevalence of problem gambling, a particularly important impact of gambling.

Population surveys also serve an important triangulating function for other methodological elements in the area of social impacts. One of the main methodological limitations in the secondary analysis of

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7 The Massachusetts Council on Compulsive Gambling lists a somewhat different group of 14 centers in its Fall 2012 Newsletter.

8 These evaluations will take into account what these agencies are mandated to do and any logistical constraints they have.

9 Population prevalence is a better measure of problem gambling than the aggregate number of people presenting to treatment, helpline calls, self-exclusion agreements, etc., in that only a small fraction of problem gamblers ever seek help or access treatment and these numbers are strongly influenced by availability of treatment, affordability of treatment, perceived effectiveness of treatment, and media promotion.
existing data sets is the difficulty making causal attributions. Covariation of an index (e.g., bankruptcy rates) with changes in problem gambling rates provides no information concerning whether problem gambling caused the bankruptcies, the bankruptcies caused the problem gambling, or whether they were independent events. Even if one event precedes the other (e.g., problem gambling increase in year 1 followed by bankruptcy increase in year 2), causal attributions are weak unless it can be established that increased bankruptcies occurred primarily among problem gamblers. A second problem with the secondary data analysis approach is that certain indices are under-reported in these data sets. Crime is a good example of this, as only a portion of gambling-related crime is ever detected and only a portion of detected gambling-related crime results in charges and prosecution.

Both of these methodological problems are rectified with the population survey design that we intend to employ (and which we have successfully employed in previous socioeconomic impact studies). Whenever a gambler reports financial problems deriving from their gambling, they receive several additional questions about gambling-related bankruptcy, amount of money borrowed, etc. Similarly, if they report committing illegal acts because of their gambling, they receive several additional questions asking about type of crime, conviction, incarceration, etc. If they report mental health problems deriving from their gambling, they are asked additional questions about suicide attempts. If they identify relationship problems deriving from gambling, they are asked additional questions about domestic violence, separation and divorce, and child neglect. The data obtained in this matter allows for much stronger causal inferences, as the person is making a direct attribution that the behavior occurred because of his/her gambling. This data is also not limited by the need to detect the behavior (i.e., crime). Assuming that the sample is large enough and representative of the population, the figures obtained can be projected to the entire population to obtain an estimated state-wide rate for each index.

There are two over-riding concerns with the population surveys. The first is that it is essential that the sample be representative of the population. Our specific sampling approach and the justification for this approach is contained in the Methodology Justification section. The second over-riding concern is that the population survey must contain a sufficient sample size for the purposes of determining a) the true prevalence of problem gambling in Massachusetts with some degree of confidence; b) the levels of gambling-related harm associated with problem gambling (as described above); c) whether there are statistically significant changes from one survey to the next; and d) regionally and community-specific impacts. Further to this last objective, we will collect a sample size of 15,000 individuals (age 18 and older) randomly selected from the Massachusetts population (10,000 from an Address Based Sampling method and 5,000 from an Online Panel sample). Our Methodology Justification describes in greater detail why a sample size of this magnitude is necessary for the present study.

Geographic and Temporal Parameters

Geographically, all social and economic indices will be collected and analyzed at a state level; a regional level; and a local level. Whenever possible, data will be defined that allows linking to lower level geographic units, such as block group, census track, community, zip code, county, or other geographic areas. An assessment will be made as to the lowest level data possible from each source, anticipating possible linking of the benchmark data to casino sites. In the Operational Study Phase of the project, this will facilitate development of appropriate weighting for combining data sources and integrating disparate geographic systems.
In terms of time frames, Baseline Study data will be summarized by year, as this is how the large majority of variables are naturally reported. The first year in our Baseline Study will be 2012 (although when collecting our secondary data it will be a relatively simple matter to also collect data as far back as 2006 so as to extend this baseline and to better test our tentative economic model). Yearly summaries will also occur for 2013, 2014, 2015, 2016, 2017, and 2018. It is our expectation that with Gaming Licenses being awarded between Dec 2013 – Nov 2014, and venues taking between 12 months (slot parlor) and 24 - 30 months (destination casinos) to construct, that the years: 2012, 2013, 2014 will constitute the Baseline Study Phase.
OPERATIONAL STUDY

Purpose

The purpose of the Operational Study Phase is to determine a) the impacts that the introduction of the four new gambling venues have had on the social and economic indices that were measured at Baseline as well as b) the effectiveness of problem gambling prevention and treatment strategies to mitigate the negative social impacts of gambling expansion. In analyzing the impact of the new gambling venues on economic indices, an attempt will be made to integrate casino gambling into the original econometric model. The value of this approach is that it may allow predictions about the economic impacts of further casino expansion or contraction. Additional details about our economic modelling strategy are again contained in Overview of Approach for Economic Research, later in this document.

There are several research questions that the present research plan will endeavor to address specific to the socioeconomic impacts of expanded gambling in Massachusetts:

1. What are the nature, characteristics and magnitude of the social and economic impacts of legalized casino and slot parlor gambling in Massachusetts?
2. What is the geospatial and demographic pattern of these impacts?
3. What is the relationship between casino and slot parlor availability and gambling impacts?
4. Do these social and economic impacts change over time?
5. Which individuals, groups, organizations and sectors in Massachusetts benefit most and least from legalized casino and slot parlor gambling?
6. What does the data suggest about potential future impacts of further gambling expansion?
7. What has been the effectiveness of strategies to mitigate the negative impacts of expanding gambling in Massachusetts (particularly problem gambling)?

The answers to these questions will be fundamentally important in a) informing the Massachusetts Gaming Commission about the overall benefits and costs of casino gambling, b) helping shape government policy decisions concerning the provision of gambling, and c) the development of effective strategies to maximize the benefits and to minimize the negative impacts of casino gambling in Massachusetts.

Socioeconomic Indices

The specific social and economic variables to be measured during the Operational Study Phase include all of the same variables captured in the original Baseline Study, as well as three additional variables of Infrastructure Value; Infrastructure Costs; and Origin and Costs of Gambling Supplies and Servicing. We are specifically interested in changes in the levels of these variables, as listed below:

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<td>Change in child welfare involvement rate</td>
</tr>
</tbody>
</table>

**CRIME**
- Change in crime rates (with a particular focus on gambling-related crimes)
- Change in costs of gambling-related crime to police, judiciary and businesses

**LEISURE ACTIVITY**
- Change in percentage of populace who gamble
- Change in demographic characteristics of gamblers

**HOUSING**
- Change in ratio of owner-occupied vs. rental units
- Change in number of multi-unit housing and mobile homes

**EDUCATION**
- Change in school enrollments
- Change in demand for specific services, such as ESL

**SOCIOECONOMIC INEQUALITY**
- Change in participation and expenditure on gambling as a function of income levels

**ATTITUDES**
- Change in general populace attitudes concerning the introduction of casinos/racinos in their region
- Change in general populace attitudes concerning gambling generally (including extent to which people report they value this new entertainment option)

**QUALITY OF LIFE/PUBLIC HEALTH/SOCIAL CAPITAL/VALUES**
- Change in overall level of happiness and life satisfaction
- Change in perceived social capital
- Change in personal values

**ENVIRONMENTAL**
- Change in current environment attributes (e.g., noise, traffic congestion, etc.)

**ECONOMIC INDICES (i.e., primarily ‘monetary’)**

**GOVERNMENT REVENUE**
- Change in current levels of revenue derived directly from gambling (i.e., lottery products)
- Change in current levels of revenue indirectly received from gambling (taxes and licensing fees on businesses providing gambling)

**PUBLIC SERVICES**
- Change in government expenditure on public services
- Change in public utilization of public services
- Change in current levels of Charity Gambling revenue

**REGULATORY COSTS**
- Change in current cost of government services related to regulation of legal gambling

**BUSINESS STARTS AND FAILURES**
- Change in annual number of businesses in sectors most typically affected by the introduction of gambling

**BUSINESS REVENUE**
- Change in private business revenue from gambling operations (gambling & nongambling)
- Change in revenue levels in industries most typically affected by the introduction of gambling
TOURISM
- Change in businesses starts/failures and revenue specifically related to tourism

PERSONAL INCOME
- Change in average personal and household income
- Change in poverty rates

EMPLOYMENT
- Change in employment and unemployment rates (with a particular focus on industries most typically affected by the introduction of gambling)
- Change in number of people directly employed by the gambling industry

HOUSING
- Change in average property values in areas adjacent to new casinos
- Change in housing starts in areas adjacent to new casinos
- Change in average rental costs in areas adjacent to new casinos

INFRASTRUCTURE VALUE
- Infrastructure investment by gambling operators (e.g., new buildings, roads, and infrastructure upgrades) which add to the capital wealth of the community

INFRASTRUCTURE COSTS
- Infrastructure costs of gambling facilities (road development & maintenance; utilities; fire services; police services)

ORIGIN AND COSTS OF GAMBLING SUPPLIES AND SERVICING
- Origin (within or out-of-state) and cost of gambling equipment (e.g., EGMs)
- Origin (within or out-of-state) and cost of other operational supplies (food, alcohol)

Data Sources

Similar to the Baseline Study, secondary data collection will comprise one of the main methodological elements of the Operational Study (with the specific data sources we intend to access in this secondary data collection again being listed in Overview of Proposed Data Sources).

There will also be a continued focus on problem gambling indicators as well as the effectiveness of problem gambling treatment and prevention services in mitigating the negative impacts of expanded gambling.

Finally, there will also be several additional population surveys. In late 2017 or early 2018, after all the new venues have been opened for at least one year, a General Population Survey of 15,000 individuals (age 18 and older) will again be collected, so that changes in gambling attitudes, behavior, and problem gambling can be compared to 2013. To ensure that community impacts can be detected, this will be supplemented by a Targeted Population survey of 4,000 individuals (age 18 and older) repeated at two different time periods. More specifically, depending on population density, the General Population Survey may not contain a sufficient sample of people in the specific communities that receive each of the new venues. To rectify this potential problem, once a casino or slot parlor license has been issued for a particular community (and at least one year prior to anticipated opening), there will be a survey conducted with a random sample of 1,000 people who live within 25 miles of the future venue (we anticipate the Baseline Targeted Survey for the Slot Parlour will occur in Dec 2013 – Feb 2014, and the Baseline Targeted Surveys for the 3 other communities will occur beginning in Apr 2015). This Target Survey will be repeated in late 2017 or early 2018 after the venue has opened and coincident with the General Population survey also slated for the same time period.
As described in greater detail in *Overview of Proposed Data Sources*, there are five additional data sources that will be utilized during the Operational Study Phase so as to measure change in the various socioeconomic indices.

The first is **gambling venue data**, which will provide information pertaining to employment numbers at the new venues, wages of these new employees, revenue derived from casino and/or slot parlor operation, disbursement of this revenue (i.e., to wages, shareholders, government, etc.), origin and cost of supplies and servicing, and infrastructure investment. **Government data** will provide information concerning the infrastructure costs of these new venues to municipal and/or state governments. A specific **employee survey** of these new gambling venues will be needed to ascertain the previous employment status of these individuals (to determine whether these are ‘new’ jobs or jobs that have been cannibalized from other industries) as well as their prior residency (to determine whether these individuals were hired from within or outside of Massachusetts). **Patron surveys** of the new venues as well as **license plate** count surveys will also be conducted once these venues have opened. These surveys provide critical data pertaining to the geographic origin of the revenue flowing to the new gaming venues, and thus, whether the revenue represents a genuine influx of new wealth to the community and/or state, or whether it simply represents money that has been diverted from other sectors of the local economy. Finally, we intend to supplement the above quantitative approaches with qualitative data obtained via **key informant interviews** and **focus groups** in 2018, once all the venues have been opened for at least one year. Individuals in each of the casino and slot parlor communities with particular knowledge and insight into the impacts of these new venues will be interviewed (e.g., mayor, police chief, economic development officer, district attorney, police chief, county sheriff, etc.). Focus groups will capture the qualitative sentiments concerning the impacts of these new venues on segments of society that are expected to have particularly strong patronage of these venues (e.g., elderly, college/university students, problem gamblers) and/or are expected to be disproportionately impacted, either positively or negatively.

**Geographic and Temporal Parameters**

Geographically, in a manner similar to the Baseline Study, all social and economic indices during the Operational Study Phase will be collected and analyzed at a state level; a regional level; and a local level (to the extent that the data permits this).

Also similar to the Baseline Study, in terms of time frames, Operational Study data will be summarized by year, as this is how the large majority of variables are naturally reported. It is our expectation that with Gaming Licenses being awarded between Sep 2013 – Dec 2014, that the Operational Study Phase will comprise the years 2015, 2016, 2017, 2018 (and potentially 2014). However, there will be two parts to the Operational Phase, with the earlier years being the ‘**construction part**’ of the Operational Phase, and the later years being the ‘**post-opening part**’ of the Operational Phase. These two parts of the Operational Phase have to be separately analyzed, as the construction part will likely entail significant economic benefits to Massachusetts with relatively little in the way of negative social consequences, whereas the post-opening part will likely entail more significant negative social impacts.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Sep 18, 2012</td>
<td>MGC Request for Information (RFI) for Formulation of Approach and Scope for Research Agenda</td>
</tr>
<tr>
<td>Oct 8, 2012</td>
<td>RFI Response from SEIGMA team</td>
</tr>
<tr>
<td>Nov 21, 2012</td>
<td>MGC Request for Responses (RFR) for Research Services</td>
</tr>
<tr>
<td>Jan 7, 2013</td>
<td>RFR Submission from SEIGMA team</td>
</tr>
<tr>
<td>Mar 28, 2013</td>
<td>MGC selection of UMass (Amherst) Team</td>
</tr>
<tr>
<td>Apr 22-23, 2013</td>
<td>Inaugural SEIGMA Team Meeting at UMass Amherst</td>
</tr>
<tr>
<td>Jun 15, 2013</td>
<td>Research Plan submitted to MGC</td>
</tr>
<tr>
<td>Jun 2013</td>
<td>Hiring a SEIGMA Project Manager</td>
</tr>
<tr>
<td>Jun/Jul 2013</td>
<td>Ethics Submission and Approval from UMass IRB</td>
</tr>
<tr>
<td>Jul 2013</td>
<td>Beginning of Ongoing Collection of Secondary Data on Social &amp; Economic Indices (continuing through to the end of the study)</td>
</tr>
<tr>
<td>Sep 30, 2013</td>
<td>Report to MGC</td>
</tr>
<tr>
<td>Dec 2013 – Feb 2014</td>
<td>Slot Parlour License Awarded</td>
</tr>
<tr>
<td>Mar 30, 2014</td>
<td>Report to MGC</td>
</tr>
<tr>
<td>Apr 2014?</td>
<td>Awarding of Boston area and Western Massachusetts casino licenses</td>
</tr>
<tr>
<td>Sep 30, 2014</td>
<td>Report to MGC</td>
</tr>
<tr>
<td>Oct-Nov 2014?</td>
<td>Awarding of Southeastern Massachusetts casino license</td>
</tr>
<tr>
<td>Dec 2014 – Feb 2015?</td>
<td>Slot Parlour Opened? (1250 slot machines) (1 yr after announcement)</td>
</tr>
<tr>
<td>Mar 30, 2015</td>
<td>Report to MGC</td>
</tr>
<tr>
<td>Apr 2015?</td>
<td>Baseline Targeted Population ABS Casino Community Surveys (all 3 communities) (Boston, Everett, Springfield, Palmer, Milford, Taunton) (minimum 1 year before anticipated opening)</td>
</tr>
<tr>
<td>May 2015</td>
<td>SEIGMA Team Meeting</td>
</tr>
<tr>
<td>Jun 2015?</td>
<td>Collection of Gambling Venue data from Slot Parlour and Govt data regarding the new Slot Parlour? (6 months after opening)</td>
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<tr>
<td>Jun 2015?</td>
<td>Gambling Employee Survey of Slot Parlour? (6 months after opening)</td>
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<tr>
<td>Jun 2015?</td>
<td>Patron Survey &amp; License Plate Survey of Slot Parlour? (6 months after opening)</td>
</tr>
<tr>
<td>Sep 30, 2015</td>
<td>Report to MGC</td>
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<tr>
<td>Mar 30, 2016</td>
<td>Baseline Report to MGC (and end of initial 3 year contract)</td>
</tr>
<tr>
<td>Apr 2016?</td>
<td>Boston ($1B) and Western Massachusetts ($800M) casinos opening? (2 years after announcement)</td>
</tr>
<tr>
<td>May 2016</td>
<td>SEIGMA Team Meeting</td>
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<tr>
<td>Sep 30, 2016</td>
<td>Report to MGC</td>
</tr>
<tr>
<td>Oct 2016?</td>
<td>Collection of Gambling Venue data from the 2 new casinos and Govt data regarding the 2 new casinos? (6 months after opening)</td>
</tr>
<tr>
<td>Oct 2016?</td>
<td>Gambling Employee Survey of the 2 new casinos? (6 months after opening)</td>
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<tr>
<td>Oct 2016?</td>
<td>Patron Survey &amp; License Plate Survey of the 2 new casinos? (6 months after opening)</td>
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<tr>
<td>Oct-Nov 2016?</td>
<td>Southeastern Massachusetts casino ($500M) opening? (2 years after announcement)</td>
</tr>
<tr>
<td>Mar 30, 2017</td>
<td>Report to MGC</td>
</tr>
<tr>
<td>May 2017</td>
<td>SEIGMA Team Meeting</td>
</tr>
<tr>
<td>May 2017?</td>
<td>Collection of Gambling Venue data from the Southeastern casino and Govt data regarding the new Southeastern casino? (6 months after opening)</td>
</tr>
<tr>
<td>May 2017?</td>
<td>Gambling Employee Survey of the new Southeastern casino? (6 months after opening)</td>
</tr>
<tr>
<td>May 2017?</td>
<td>Patron Survey &amp; License Plate Survey of the Southeastern casino? (6 months after opening)</td>
</tr>
<tr>
<td>May 2017?</td>
<td>Patron &amp; License Plate Survey of the Slot Parlour and 2 other casinos (done coincident with the Patron &amp; License Plate Survey of the Southeastern Casino)</td>
</tr>
<tr>
<td>Sep 30, 2017</td>
<td>Report to MGC</td>
</tr>
<tr>
<td>Nov 2017 - Apr 2018?</td>
<td>Follow-up Targeted Population ABS Surveys? (1 year after all casinos have opened)</td>
</tr>
<tr>
<td>Nov 2017 - Apr 2018?</td>
<td>Follow-up General Population ABS + Online Panel Survey? (1 year after all casinos have opened)</td>
</tr>
<tr>
<td>Nov 2017 - Apr 2018?</td>
<td>Follow-Up Evaluation of Existing PG Treatment and Prevention Programs? (1 year after all casinos have opened)</td>
</tr>
<tr>
<td>Nov 2017 - Jan 2018</td>
<td>Focus Groups and Key Informant Interviews? (1 year after all casinos have opened)</td>
</tr>
<tr>
<td>Mar 30, 2018</td>
<td>Report to MGC</td>
</tr>
<tr>
<td>May 2018</td>
<td>SEIGMA Team Meeting</td>
</tr>
<tr>
<td>Sep 30, 2018</td>
<td>Report to MGC</td>
</tr>
<tr>
<td>Mar 30, 2019</td>
<td>Report to MGC</td>
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</table>
SOCIAL RESEARCH

The specific social indices to be measured have already been identified. To briefly reiterate, they include: Problem Gambling and Related Indices; Crime; Housing; Education; Socioeconomic Inequality; Leisure Activity; Attitudes; Quality of Life/Public Health/Social Capital/Values; and Environment. Specific information about how each of these variables will be measured is described below.

Problem Gambling and Related Indices

The main negative social impact of casino gambling tends to be an increase in problem gambling (Williams, Rehm, & Stevens, 2011). Consequently, as described in the Baseline and Operational Phase sections, the present project will have a particular focus on Baseline and Post-Casino opening rates of problem gambling and the associated indices of personal bankruptcy rates, divorce rates, rates of domestic violence, suicide rates, and treatment numbers.

The baseline prevalence of problem gambling (both statewide and regionally) will be established by means of a large scale population survey of 15,000 adults (age 18 and older) in late 2013 to early 2014. Two assessment instruments will be used, the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001), and the Problem and Pathological Gambling Measure (PPGM) (Williams & Volberg, 2010, under review). Both of these instruments use a past-year time frame. The CPGI was developed in 2001 and has improved conceptual underpinnings and technical characteristics relative to older instruments (e.g., South Oaks Gambling Screen developed in 1987 and the 1994 Diagnostic and Statistical Manual of Mental Disorders – IV criteria for pathological gambling) (Govoni, et al., 2001; Stinchfield, et al., 2007; Williams & Volberg, 2010). The PPGM is a relatively new measure of problem gambling that has been shown to have superior classification accuracy relative to all other instruments, including the CPGI (Williams & Volberg, 2010, under review) (see also Methodology Justification). The CPGI is still included in the present study as it is currently the dominant instrument in the field and the prevalence rates obtained can be more directly compared to rates obtained in other jurisdictions (worldwide, the CPGI has been used in more prevalence studies than any other instrument since 2007, Williams, Volberg, & Stevens, 2012).

The obtained prevalence rate will also tell us about the actual number of problem gamblers that currently exist in Massachusetts. Although research would suggest that almost all of these people could benefit from formal treatment, the reality is that only a portion of these people desire treatment and an even small number seek treatment. Both of these additional questions will be asked of all problem gamblers in the survey in addition to a) the barriers that exist for people who wish treatment but have not sought it; b) what specific agencies people obtained treatment services from; c) people’s perceptions of the effectiveness of the treatment they received; and d) the general public’s awareness of the various prevention initiatives that exist.

We will attempt to triangulate many of these figures relative to the figures we collect on the number of help-line calls, # Gamblers Anonymous meetings/chapters, and number of people receiving treatment from the 13 gambling treatment centers, the Massachusetts Council on Compulsive Gambling, Gamblers Anonymous, and from the Center for Health Information and Analysis (problem gambling health insurance claims).
The population survey data will also provide other important information about problem gambling. For one, it will identify the geospatial, demographic and game play pattern of this condition in Massachusetts. This provides useful information concerning whether there are particular regions, demographic groups, and types of gambling with higher/lower rates. It will identify the percentage of gambling revenue accounted for by problem gamblers. Research in other jurisdictions has found that problem gamblers account for between 25% to 50% of all gambling revenue, with higher percentages specific to casino revenue (Australian Productivity Commission, 1999; Williams & Wood, 2004, 2007; Williams, Belanger, & Arthur, 2011).

The population surveys will also identify the substance abuse and mental health comorbidities of Massachusetts problem gamblers. The latest research shows that the conditions having the high comorbidity to problem gambling are: nicotine dependence (60.1%), substance use disorder (57.5%), mood disorder (37.9%), and anxiety disorders (37.4%) (Lorains, Cowlishaw, & Thomas, 2011). These comorbidities contribute to many of the negative social consequences associated with problem gambling such as suicide, health problems, illegal behavior, etc. While it is very difficult to determine the unique role that problem gambling has on these negative social consequences, a before-after comparison of changes in rates of problem gambling and related indices coincident with the introduction of a new form of gambling does reliably identify the unique impact that this new form of gambling has on increasing the rates of problem gambling and on exacerbating these associated problems.10

Finally, and as described in our Baseline Study approach, the population surveys will provide an estimate of the number of gambling-related: bankruptcies, crimes, incarcerations, suicide attempts, domestic violence, separation and divorce, child neglect, and child welfare involvement. Here again, we will triangulate these figures from figures obtained from secondary data sources such as the American Bankruptcy Institute, National Incident-Based Reporting System (NIBRS), Injury Surveillance Program at the Massachusetts Department of Public Health, and the Department of Children and Families Quarterly Reports.

These above-mentioned secondary data sources will collect problem gambling associated indices on an annual basis so as to examine any changes that are associated with the openings of the casinos and slot parlor. Similarly, another large scale (n = 15,000) population survey will occur once all of the venues have opened for at least 6 months so as to more directly examine changes in the numbers and rates of problem gambling that could be reasonably attributed to the introduction of casinos. To ensure that these changes can be seen on a regional and/or community-specific basis, we will also be administering a Targeted Population Survey, with this survey sampling 1,000 people within a 25 mile radius of the location of each of the four new venues. These targeted surveys will be administered as soon as each site has been chosen and building has begun, and again in 2018 (after all venues have been open for one year), coincident with the General Population Survey.

10 These comorbidities can be statistically controlled for to better understand the contribution that problem gambling uniquely makes to these associated negative social impacts. We will undertake this analysis as part of our investigation. However, the merit of this approach is somewhat questionable when considering that comorbidities are a normative part of problem gambling (i.e., it is unusual to encounter problem gambling in the absence of one or more comorbidities). It is also worth remembering that the adverse social consequences typically attributed to depression and substance abuse (e.g., suicide) have often not taken into account the comorbidity of these conditions with problem gambling.
Qualitative data in the form of key informant interviews and focus groups in 2018 (after all venues have been open for one year) will complement the above quantitative data. More specifically, key informant interviews will be conducted with treatment providers, police, and social services in each of the four communities. Each of these individuals will be asked about their impressions concerning the impacts of the new venue in their community on problem gambling (in addition to other social and economic indices). Similarly, two focus groups will be conducted in each of the four communities with social groups expected to have particularly strong patronage of these venues. At least one of these groups will constitute problem gamblers.

**Economic Costs of Problem Gambling and Related Indices**

Only a minority of problem gamblers seek or receive treatment and only a minority have police, child welfare, or employment involvement. Nonetheless, those that do, incur significant monetary costs. This includes the costs of:

a) Treatment and prevention;
b) Policing, prosecution, incarceration, and probation for gambling-related crime;
c) Child welfare involvement for gambling-related family problems; and
d) Unemployment and welfare payments and lost productivity because of gambling-related work problems.

It is important that all of these monetary costs are identified and quantified (and the aggregate amount added to costs identified from the ‘economic’ variables). For costs associated with increased demand for treatment services, we will calculate the number of new patients seeking treatment at the various treatment services and multiply this number by the average cost per visit as billed to the client’s health insurance provider. For prevention services, we will document the amount of money spent on media campaigns, and school-, college- and community-based gambling prevention programs. For the criminal justice system, we will determine an estimate of the number of additional crimes committed (from both the population surveys and the National Incident-Based Reporting System (NIBRS) data) and multiply that by the estimated costs for each step in the process. We will estimate the increased number of people with gambling problems that lead to bankruptcy, divorce and/or domestic violence from the population surveys and secondary data sources and determine the average costs for each outcome to determine an estimated cost for family welfare problems associated with gambling. Similarly, we will estimate the increased number of people with gambling problems that lead to unemployment, state unemployment insurance (SUI) and lost days of productivity from the population surveys and secondary data sources.

**Crime**

Due to a long-term collaboration between the University of Massachusetts and the Massachusetts State Police, our Research Team is in a unique position to access monthly crime reports on both a statewide and county basis, examine time trend data in the occurrence of a wide range of gambling-related crime, and assess the potential impact of casino gambling in Massachusetts on both criminal activities and public perceptions of crime.

The primary sources that we will use include monthly local police agency reports (National Incident Based Reporting System or NIBRS crime data) from the Massachusetts State Police, Massachusetts Crime Reporting Unit and local court arraignment counts from the Research Division, Office of the Commission of Probation. Both of these data sources can be aggregated to the county and regional
levels while the court data can also be aggregated to the district level. Monthly and annual crime counts will be acquired indexing a broad array of criminal activities including forgery, fraud and embezzlement, larceny, motor vehicle theft, burglary, robbery, domestic assault, child abuse, and driving under the influence. While charges of illegal gambling are relatively rare (i.e., currently at an overall statewide annual count in the low hundreds), we will look at whether there are changes in these counts within the Massachusetts criminal justice system over time.

Criminological research has established that in cash-rich sites, such as department stores (and casinos), a large portion of the dollar costs of “white-collar crime” are generated from within—by employees themselves. Via the auspices of a new Massachusetts State Police Casino Unit that will work closely with casino management teams, we will attempt to routinely acquire estimates of unreported employee crime incidents. This will be an important aspect of the introduction of casino gambling in Massachusetts to assess.

Wherever possible, data for the decade preliminary to the casinos openings (e.g., 2004 to 2014) will provide the primary baselines against which post-opening time trends in criminal activities will be compared and analyzed with appropriate adjustments for secular crime trends at the state and possibly New England area level. An additional comparative baseline will be targeted in choosing optimal matches of three non-Massachusetts sites that will constitute “counter-factual” locales with similar size, education and employment levels compared to the three Massachusetts casino sites.

The population surveys will be another important source of data used to gauge the impact of expanded gambling on crime. The population surveys will assess public perception about the extent of gambling-related crime both before and after opening of the venues. Also, (as mentioned in the Baseline Approach section), the population surveys provide even stronger causal inferences about gambling related crime as all problem gamblers are asked about whether they have committing illegal acts because of their gambling. If they indicate yes, then they receive several additional questions asking about type of crime, conviction, incarceration, etc. (i.e., the point being made that simple covariation of problem gambling rates with crime rates in the NIBRS and other secondary data does not guarantee they are connected). The other major advantage the population surveys have is that only a portion of crime is ever detected and documented in the NIBRS data, whereas the population surveys identify reported and detected crime.

The final data source pertaining to crime will be the key informant interviews conducted in each of the four communities. The perceptions of each police chief will be particularly important in this regard.

**Leisure Activity**

It is important to remember that gambling also provides entertainment value and an additional leisure option for the population and that only a small minority of people suffer significant adverse effects. Furthermore, it is a valued leisure option, as evidenced by the fact that the majority of people in most Western jurisdictions participate in some form of gambling (primarily lotteries) and most jurisdictions accrue billions of dollars in gambling revenue on an annual basis. This is also true in Massachusetts, where the majority of Massachusetts resident report gambling in 2011 (Center for Policy Analysis, 2011), and where an estimated $5.7 billion dollars is spent annually on gambling. Lotteries, instant win games, and keno accounting for $4.427 billion; out-of-state casino gambling accounting for $909 million; horse race wagering accounting for $244 million; and charity bingo, raffles, pull-tabs, and casino events
accounting for $76 million (Center for Policy Analysis, 2012; Massachusetts Lottery, 2012a,b; The Wagering Resource, 2013).

Both the Baseline and Post-Opening population surveys (both General and Targeted) will provide important information regarding participation rates and the pattern of gambling in Massachusetts and the extent to which the four new gambling venues change these patterns. More specifically, we will be assessing the past year:

a) Prevalence of gambling in Massachusetts.
b) Participation rate in each form of gambling (raffle tickets, lottery tickets, instant win tickets, bingo, slot machines, casino table games, poker, horse racing, dog racing, sports betting, Internet gambling, and involvement in high risk stocks, option, futures, or day trading).
c) Frequency of involvement in each form of gambling.
d) Expenditure on each form of gambling (particularly at it relates to in-state versus out-of-state expenditure, as these figures are critically important to the economic utility of in-state casinos in repatriating money that is being spent out-of-state).
e) Geospatial distribution of gambling participation and expenditure (particularly in relationship to casino distance).
f) Demographic pattern of gambling participation and expenditure.

The population surveys will also examine the extent to which casino gambling:

a) Is reported to be an ‘important’ leisure activity.
b) Has replaced other forms of leisure activity (and what specifically these activities are).

Patron surveys of the new venues as well as license plate count surveys will also be conducted once these venues have opened for at least 6 months. These surveys provide critical data pertaining to the geographic origin of the revenue flowing to the new gaming venues, and thus, whether the revenue represents a genuine influx of new wealth to the community and/or state, or whether it simply represents money that has been diverted from other sectors of the local economy.

The final source of data pertaining to the leisure impacts of gambling will be the focus groups conducted in 2018 on segments of society in each of the four communities that are expected to have particularly strong patronage of these venues (i.e., the elderly, and college/university students). These focus groups will help establish the extent to which casino gambling is perceived to have leisure benefits (e.g., Loroz, 2004) or alternatively, negative impacts on leisure.

**Employment**

Employment can be construed as either a social or economic variable. It has been arbitrarily put in the Economic Impacts category for the present study.

Increased employment is often touted as one of the important positive impacts of expanded gambling. While it is true that most studies on this issue have found evidence of employment gains, this is due to the circumscribed focus of these studies, in that they a) have only examined employment gains

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11 Two of the Principal Investigators (Williams & Volberg) were awarded a contract from the Canadian Consortium for Gambling Research in October 2012 to develop a standardized instrument for the assessment of gambling (in terms of which specific formats to ask about, as well as how to best capture frequency, time, and expenditure). This instrument will be finalized in the next 3 months and available for use in the present study.
associated with the new form of gambling without examining the loss of employment in other economic sectors, and/or b) only examined changes in employment in the local area without examining loss of employment in the surrounding areas (Williams, Rehm, & Stevens, 2011). Studies with a larger industry and/or geographic scope have generally not found net employment gains (Williams, Rehm, & Stevens, 2011). In other words, employment increases in gambling venues, gambling-related businesses, or any geographic area usually occurs at the expense of other geographic areas and/or business sectors, although there may be some potential for a new industry such as gambling to stimulate monetary flow and increase overall economic activity (and thereby overall employment) in its first few years of introduction (Walker & Jackson, 2007).

Thus, it is fairly apparent that a larger economic and geographic scope is needed to evaluate whether these new venues result in net additional employment (to the community, region, and state). In the present study, each new gambling venue will be asked to provide data concerning the number of employees they have hired and their average wages (Gambling Venue Operator Data). These figures will serve as the starting point for the net number of jobs that are created.

An Employee Survey of each new venue will ascertain the prior employment status of each new employee (a small monetary incentive is allocated for survey completion to ensure a good response rate). Of particular interest is their a) prior residency, that will speak to whether new employment has been created in the local community/region/state or whether it has been imported from other areas; b) prior employment status, that will speak to whether this represents a ‘new’ job (i.e., person was previously unemployed or underemployed), or whether the employment has just been cannibalized or shifted from another industry.

Our final approach will be to track overall employment and unemployment levels and trends over time (from secondary data sources) in the local area, region, and state as a function of gambling venue opening. There will be a particular focus on employment levels in industry sectors that are typically impacted by the introduction of casino gambling: i.e., other forms of gambling; the hospitality and tourism industry; pawnshops; etc.

**Housing**

We will assess whether there are any changes in the value of housing stock in the cities with the new casinos and in the neighborhoods adjacent to the casinos. We will evaluate whether there are any changes in the ratio of owner-occupied vs. rental units, and whether there is any disproportionate introduction of multi-unit housing and mobile homes. This will be done by performing secondary analyses of census data, making comparisons over time and between jurisdictions. Interviews with key informants in each of the four communities will supplement the information derived from secondary sources.

**Education**

We will track changes in enrollment in local schools (either increases or decreases) and examine these for correlations with the demographic characteristics of casino employees and affiliated industries (e.g., hotel workforce, new restaurants, etc.). If we find significant changes in patterns of school enrollment, we will follow-up to evaluate whether these changes result in increased demand for specific services such as ESL. These assessments will be completed by examining the annual reports of the local school committees both over time and in comparison with other cities with a similar demographic profile.
Interviews with key informants in each of the four communities will supplement the information derived from secondary sources.

**Socioeconomic Inequality**

An important social issue concerns whether gambling acts as a form of regressive taxation, where poorer people contribute disproportionately more to gambling revenue than people with higher incomes. Almost all studies that have examined this issue have found that gambling was indeed economically regressive (Williams, Rehm, & Stevens, 2011). However, although it is clear that lower income people contribute proportionally more of their income to gambling than do middle and high income groups, in most of these studies average annual expenditure on gambling still tends to increase as a function of income class. Thus, total gambling revenue is still primarily contributed by middle and higher income groups.

Both of these issues will be re-examined in the present study. The data for this analysis will derive from the population surveys as well as the patron surveys (both of which will assess income and gambling expenditure).

**Attitudes**

Gambling is a value-laden activity. Some people consider it immoral and to have a negative impact on society. Other people believe it is a legitimate form of ‘voluntary taxation’ and that the economic benefits outweigh any negative social costs. In either case, an argument can be made that the general public’s support or non-support of gambling is as important as gambling’s objective beneficial or detrimental effects. Thus, the actual impact of gambling introduction on attitudes toward gambling is an important issue.

The population surveys and the focus groups will be used to address the following questions:

a) General populace attitudes concerning the future introduction of casinos/slot parlors in their region.
b) General populace attitudes concerning gambling generally and casino gambling more specifically.
c) General populace beliefs about the future positive and negative impacts of these new venues.
d) General populace beliefs about the actual positive and negative impacts of the venues once they have been established.

**Quality of Life/Public Health/Social Capital/Values**

Some people have suggested that legalized gambling promotes capitalism and materialism, which are not necessarily conducive to social and societal harmony. Other people acknowledge that this is true, but argue that gambling and a capitalistic orientation also promotes risk-taking, individualism, and entrepreneurship, which is fundamental to economic success and societal well-being.

The impacts on these indices are very difficult to measure. As a rough proxy we will examine whether overall level of life satisfaction and happiness in the population survey is positively or negatively associated with gambling status. Focus groups and key informant interviews will be used to investigate the issues of whether gambling has had impacts on social capital and/or personal values.
Environmental impacts are also difficult to quantitatively assess. In the present study key informant interviews with representatives in each of the four communities will be asked about the impacts of the new venues on environmental quality (e.g., traffic congestion, noise, etc.). In addition, the population surveys will be asked to provide open-ended responses concerning perceived positive or negative impacts of the new venues (and some of these answers may speak to environmental quality).

In summary, the following table provides a list of the social impacts that will be investigated in this study, as well as the information sources that will be used to assess these impacts.

<table>
<thead>
<tr>
<th>SOCIAL IMPACTS</th>
<th>INFORMATION SOURCES</th>
</tr>
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</table>
| PROBLEM GAMBLING and RELATED INDICES | • Population Surveys  
                                 | • Problem Gambling Treatment & Prevention Providers  
                                 | • Secondary Data  
                                 | • Key Informants  
                                 | • Focus Groups |
| CRIME                           | • Secondary Data  
                                 | • Population Surveys  
                                 | • Key Informants |
| LEISURE ACTIVITY                | • Population Surveys  
                                 | • Patron Surveys  
                                 | • License Plate Surveys  
                                 | • Focus Groups |
| HOUSING                         | • Secondary Data  
                                 | • Key Informants |
| EDUCATION                       | • Secondary Data  
                                 | • Key Informants |
| SOCIOECONOMIC INEQUALITY        | • Population Surveys  
                                 | • Patron Surveys |
| ATTITUDES                       | • Population Surveys  
                                 | • Focus Groups |
| QUALITY OF LIFE/PUBLIC HEALTH/SOCIAL CAPITAL/VALUES | • Population Surveys  
                                 | • Focus Groups  
                                 | • Key Informants |
| ENVIRONMENTAL                   | • Population Surveys  
                                 | • Key Informants |
ECONOMIC RESEARCH

Comprehensive economic analysis of major resort casinos is complex and requires an organized framework and accounting of various economic benefits and costs. Unlike many casino economic analyses that are based on forecasts of predicted economic impacts, the research agenda in Massachusetts allows the opportunity to measure the actual economic outcomes of the planned casino facilities. The economic research evaluation thus needs to recognize the following dimensions:

- **Time** – as described in the RFR, we will first develop a baseline of economic conditions prior to casino construction and operations, followed by a construction phase of up to three facilities with at least $500 million investment and operations (casino resort) and one facility with at least $126 million investment (slot facility).
- **Geography** – casino-related impacts will be measured and estimated at multiple levels of geography from the casino facility itself to the local community (municipality), region or county, and ultimately statewide.
- **Impact Concepts** – as defined in the RFR, economic impacts are primarily monetary but need to be carefully considered in terms of defining net impacts. We are therefore grouping them into economic impacts (to the economy); fiscal impacts (government revenues and expenditures); and non-pecuniary impacts (other effects that may not be “priced” in the market but have economic value).
- **Direct and Secondary Impacts** – some impact concepts are measured directly from the casino-related operations such as employees, wages, construction investment, and expenditures back to the local/regional economy. Other impacts are less direct (or secondary) such as the state’s unemployment rate, average personal income, property values.
- **Net Impacts and Sources of Spending** – one of the most fundamental determinants of the net economic impacts of casinos is the amount and geographic distribution of spending by visitors to casino facilities. In other words, new visitor trips to Massachusetts or the recapture of casino trips from MA residents (e.g., going to a MA casino instead of visiting Foxwoods) represent new economic activity for the state. Changing the spending pattern of MA residents from one activity (e.g., movies, sports) to a casino or from one area of the state to a casino reflect redistribution of economic activity within the state.

Other potential impacts or market dynamics will also be considered and monitored such as environmental impacts, spillover effects to local property values, and the extent to which a casino facility can be a catalyst for economic development. For example, the two casino proposals in Springfield are both in the long-struggling downtown of the city with extensive efforts to integrate into the central business district and related initiatives (Union Station redevelopment, existing concert venues). Depending on what proposals are selected for implementation, this research proposed here will help determine the extent to which these facilities encourage additional visitation and spending in local areas (thus benefiting a range of businesses) versus diverting spending to the casino and away from existing local businesses.

To be more specific, our data collection and analysis of economic impacts will occur in three major areas of interest:

1. Economic impacts (e.g. business revenues, personal income and employment, indirect economic impacts);
2. Fiscal impacts, (e.g. government revenues, infrastructure costs and benefits, regulatory costs); and
3. Non-pecuniary impacts (e.g. business starts and failures, new housing permits).

Assessing impacts in these three areas will provide a comprehensive view of the economic impacts of gaming in Massachusetts, along with understanding of the effects on government, private industry, and individual citizens. This approach is consistent with rigorous frameworks for economic and cost-benefit analyses that must analyze a broad range of impacts and recognize that like social impacts, not all impacts related to economic well-being – for instance, rental or owner status – can be readily valued.

Due to the complexity and long timeframe of the analysis, data will be collected and analyzed in a multi-pronged and multi-phased approach. Data collection and analysis will benefit from the significant economic data collections systems already in use by the UMass Donahue Institute’s Economic and Public Policy Research (EPPR) group under their State Data Center program (which provides demographic and economic data services in affiliation with the U.S. Census) and Due Diligence program (a quarterly compilation of demographic and economic data to inform purchasers of Massachusetts state bonds). As the home to these two programs, the EPPR group has at its disposal sophisticated and streamlined data acquisition and storage systems, including compilations of many of the data sets needed for this study. We plan to quickly customize and enhance our existing databases for use in the Baseline Study with metrics to be tracked throughout the project. Similarly, EPPR’s wide variety of well-respected industry and economic studies showcase our significant expertise in the Massachusetts economy based on economic modeling, including input-output analysis, projections, and related modeling using econometric methods and data.

The use of primary, in addition to secondary data sources, while labor-intensive, will allow the team to examine what effects are most directly tied to the presence of gambling facilities. Secondary data sources will be invaluable for tracking local and regional economic conditions and setting the baseline, but do not (in isolation) allow us to determine that the presence of a casino, for example, caused the observed changes. The collection of primary data, and the use of key informants, will provide additional data and context to estimate the role of casinos in local economic developments.

**Phases of Research for Economic Data Collection and Analysis**

UMDI will conduct a variety of data collection activities, descriptive analyses of data, and economic modeling in order to assess the range economic impacts associated with the development and operation of the three proposed casino gambling facilities to be located in Massachusetts.

Organized into the three areas of interest (economic, fiscal, and non-pecuniary), the economic research will be conducted over time from (1) baseline to (2) development/construction to (3) operations. The initial research phase (Baseline Analysis), will take place in the first one or two years, and will be focused on an analysis of baseline conditions within the Massachusetts economy and its regions. Once the gambling facilities have been selected, a period of pre-development, development and construction (Development Analysis) will take place. Finally, in the later years of the analysis, gambling facilities will be fully operational, and data will be available to assess current and ongoing economic impacts made by gambling facilities (Operational Analysis).

**Baseline Study Phase**
Data collection and assessment activities during the Baseline study phase will focus on secondary data sources to assess baseline economic conditions in the Commonwealth and in the three target regions. Data collection will build on systems already in place for existing projects, with enhancement to ensure that all economic variables of interest are tracked at the state and sub-state level (since we won’t yet know the location of gambling facilities).

**Development Study Phase**

In addition to tracking secondary data sources from the baseline, new data collection and assessment will focus on primary data sources, with a focus on venue operators, to determine costs of development to both operators and local and regional communities and governments and costs or benefits to regional economies. Contingent on receiving detailed construction-related investment data, we propose to use the Regional Economic Models, Inc. (REMI) model to help estimate total economic impacts to the Commonwealth during this phase.

**Operational Study Phase**

The operational phase will combine data collection and analysis of both secondary and primary data from casino facility operations. Using the same data collection system developed during the baseline phase, secondary data will be collected, consistent with public data release schedules, and these data will be used to assess changes to baseline conditions concurrent with the development of the three casino gambling facilities. In addition, primary data will be collected and analyzed using information from the project surveys on casino facility expenditures and visitors/spending at the gambling facilities. Additional primary data will be collected through key informant interviews and other forms of direct communication with casino operators. Descriptive analysis and economic modeling using these data will provide an ongoing assessment of how conditions change during the early years of casino operations.

**Data and Sources**

The Research Team will rely on both publicly available and proprietary secondary data sources to provide a measure of baseline economic conditions, as well as measures to assess impacts during developmental and operational phases. The team will also rely on primary data collected from survey respondents to General and Targeted Population Surveys, Patron Surveys and Employee Surveys. The team will provide input and review of the surveys to ensure that the data collected is consistent with the analytical needs to help determine the full-range of impacts. Furthermore, as facilities come on line, we expect that a variety of primary data will be collected directly from casino venue operators, which will require a series of direct contacts and key informant interviews with facility operators, and could be greatly facilitated if provision of relevant information for the purpose of study is made a condition of the facilities’ establishment in the Commonwealth. This process is anticipated to require communication and collaboration with gambling facility management on several fronts (with top executives to obtain permission and direction; with fiscal executives and staff to provide primary data). The team will develop additional primary data collection processes (key informant interviews) in order to qualitatively assess economic conditions through interviews with executives and fiscal staff at the municipal level.

**Primary Data**

Primary data to be used to inform the economic assessment of facility impacts will be collected on an ongoing basis during the operational study phases using the surveys described in other sections of this Research Plan, namely the Population and Targeted Surveys, the Patron Surveys, and the Employee
Surveys. Additionally, primary data will be collected from venue operators related to their revenues, expenditures and employment, in order to inform the economic impact and REMI analysis (described further below).

**Secondary Data**

Secondary data collected and analyzed during the baseline data collection process will be used to assess baseline economic conditions in the Commonwealth, in the three target regions, and for sub-state economic regions throughout the Commonwealth. Secondary data collection, as allowed by public data release schedules, will be used to first establish baseline economic conditions prior to development of the three casino gambling facilities and then measure impacts of casino development. Isolating the effects of casinos is a complex topic as discussed in more detail below. Secondary data sources do provide a wealth of information about local and regional economic conditions, and are available on varying schedules (typically monthly, quarterly or annually, though sometimes less often), and for varying geographies (city/ town, county, or state). By using a variety of sources, we expect to achieve good coverage of conditions both in the casinos’ local communities and in the broader region or state. Secondary sources may include, but are not limited to:

- Massachusetts Executive Office of Labor and Workforce Development
  - Current Employment Statistics
  - Employment and Wages
  - Labor Force and Unemployment Rates
  - Occupational Employment and Wage Statistics
- Massachusetts Department of Revenue/ Division of Local Services
- Municipal-level tax assessor databases to obtain pre- and post-casino property values
- U.S. Census:
  - County Business Patterns
  - American Community Survey
  - Business Dynamics Statistics
  - Economic Census
  - Statistics of U.S. Businesses
  - Building Permit Estimates
- U.S. Department of Labor/ Bureau of Labor Statistics
  - Quarterly Census of Employment and Wages
- REMI PI+ Modeling System and data (proprietary)
- Massachusetts Housing Partnership Foreclosure Monitor
- American Bankruptcy Institute
  - Business Bankruptcy Filings

**Data System Development**

The first task will be the development of a data system specific to this project. Development of the system will involve the use of existing software developed and applied by the UMass Donahue Institute to develop archives to house Massachusetts economic data sets. Technology equipment, software and server systems will be utilized and refined to ensure secure storage for data used in the project.
Secondary Data Collection

Detailed parameters for data collection; statistical analyses; the creation of linking variables among data sets; documentation; security and confidentiality; storage; and the sharing and dissemination of files will be established by the Research Manager for this project. The economic research team will interact with the Research Manager as he/she develops the various parameters to make sure that these parameters can be adequately followed given the realities of the primary and secondary sources to be analyzed. The economic research team will follow the established parameters in conducting their work.

Primary Data Collection

The economic research team will interface and collaborate with the Survey development teams as they finalize the Population and Targeted Surveys; Patron Surveys; and Employment Surveys to ensure that survey instruments adequately capture the economic and fiscal data necessary to conduct the economic assessment. This collaboration will most likely take the form of reviews and the provision of feedback on the draft survey instruments.

Descriptive Data Analysis (Primary and Secondary Sources)

The economic research team will follow the parameters established by the Research Manager to ensure that economic data analysis and social impacts analyses are conducted in a parallel manner to allow the integration of data across primary and secondary sources. Analysis will be carefully planned for consistency across data sets, especially in terms of frequency; time frame (for time series analysis); and geography. Statistical analysis to attempt to isolate the impacts of the casinos will also be employed. Based on the team’s experience with similar projects in other parts of the world, we plan to conduct a variety of statistical tests to determine the extent to which changes to broader economic indicators (income, unemployment rates, and total employment growth) can be attributed to casino facilities. Tests will likely include differences-in-differences metrics, comparisons of directly impacted communities/regions to non-directly impacted parts of Massachusetts, and business cycle comparisons to US macroeconomic conditions. Findings from the Survey analysis will provide additional data points for economic analysis. Data collected through the surveys will also enable the research team to establish a variety of assumptions about economic and employment patterns which will inform the development of economic models for further analysis.

REMI Modeling

In addition to using descriptive statistics to analyze baseline and ongoing economic conditions, the team proposes to use regional economic modeling techniques to assess the economic and fiscal impacts occurring as a result of the development and ongoing operation of the new gambling facilities. UMDI is highly experienced in building complex economic impact models and has used economic modeling software to complete impact analyses and assess the economic contributions of many different types of facilities and industries throughout the state.

For this project, the economic research team proposes to include a customized REMI PI+ model for the state with appropriate sub-state regions to capture the (up to) three casino facility regions and the rest of the state. The REMI PI+ software generates realistic year-by-year estimates of the total regional effects of specific initiatives. Model simulations using PI+ allow users to estimate comprehensive
economic and demographic effects created by economic events such as the development and operation of a casino within a region. PI+ allows economists to assess a variety of effects including economic impact analysis; policies and infrastructure; and state and local tax changes.\footnote{More information on PI+ can be found on the Regional Economic Models, Inc. web page at: \url{http://www.remi.com/products/pi}}

Although the REMI model is more expensive than other regularly used input-output based economic impact models (e.g., IMPLAN, RIMS II), REMI allows for dynamic, multi-year modeling as compared to other, more simplistic modeling systems. REMI thus has significant advantages for major complex initiatives that: a) have time-series based impacts that are likely to vary over time; b) require the use and interpretation of multiple economic variables; and c) emphasize economic interactions between regions within the state that add up to a true state-level impact.

A further strength of this analysis is that it will be based on real data from the casino operators and patrons reflecting actual conditions, measuring impacts as they occur over time. This approach is unique as most gambling facility studies are done in advance of the development and operation meaning that actual data are not yet available and the resulting estimates are based on prospective assumptions. Obtaining the REMI model actually provides a unique opportunity to measure the \textit{predicted} economic impacts once the casino locations are selected and then compare these economic impact predictions with actual outcomes measured in the study proposed here. Although not specifically requested in the RFR, our team is poised to discuss this as an optional analysis should the MGC express interest in this approach.

One key output of the REMI PI+ model will be an input-output analysis to estimate the total contribution of the gambling facilities’ various economic activities within the regional and state economy. The basic premise is that an initial investment in one sector of an economy (i.e., through the operation of a gambling facility) spurs additional economic activity in other sectors as the money is re-spent within the region or state. The total economic contribution of the investment is estimated by tracing the flow of money between industries and households until all of the initial investment eventually leaves the region or state through foreign or domestic trade, or is collected as a tax.

However, to measure statewide net economic impacts requires an even more rigorous analysis that accounts for economic activity that is net new to the state versus re-distributive. In particular, as noted above, we will use information from the various patron and spending surveys to determine what visitor expenditures are from out-of-state trips, re-captured trips (money kept in state rather than leaving to be spent elsewhere), and re-distributed (money diverted from other uses in the state). This kind of careful accounting, combined with data on the location of casino facility expenditures and the residential location of employees is necessary to credibly isolate the effects of casino impacts on the broader regional and state economies.

Fiscal impacts and non-pecuniary impacts will primarily be evaluated outside the REMI model (unless they have a direct impact on the economy). Fiscal impacts, largely measured through various government budget data systems and directly from the casino operators, are an equally critical component of the economic research given the high percentage of casino revenue expected to be designated for local and state revenue. And even though directly impacted infrastructure (and environmental) systems are supposed to be mitigated by casino developers, it is critical to track the investments in physical infrastructure along with other public services that will be expanded to address casino-related issues.
The following table provides a list of the economic impacts that will be investigated in this study, as well as the information sources that will be used to assess these impacts.

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<td>ORIGIN AND COSTS OF GAMING SUPPLIES AND SERVICING</td>
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DATA SOURCES

As indicated in the previous sections, we plan to use multiple secondary data sources and collect primary data to meet the goals of this research. Our plan for organization of these data sources is given in detail in response to the next section, and includes a data coordination center and web site to support the project. The triangulation of different data sources is a powerful approach to understanding the social and economic impacts of new forms of gambling.

In Section 2.7 of the RFR, bidders are reminded that any successful party will be expected to work with and protect the privacy of the data collected or generated in the course of the project and to assign all data ownership rights to the Commonwealth. As one of the Commonwealth’s public institutions of higher education, the University of Massachusetts is in fact an agent of the Commonwealth; the University is experienced in developing structures to protect the privacy of data and is able to assign data ownership rights to the Commonwealth. Both UMass Amherst and the Donahue Institute have sponsored research that required these entities to receive, house and analyze confidential data from the Commonwealth as well as provide data and analysis back to the Commonwealth. Agencies engaged with the University in research requiring access to confidential data have included the Executive Offices of Education, Human Services, and Labor and Workforce Development. The University’s ability to protect the privacy of data and assign ownership rights is enhanced by the recent creation of the UMass Amherst Innovation Institute by the UMass Board of Trustees to provide “reliable security, confidentiality and regulatory compliance” in efficiently translating research findings into effective real-world applications.

Ethics Review

All primary data collection efforts proposed here will be subject to approval by the UMass Amherst School of Public Health Institutional Review Board. Members of the Research Team have extensive experience preparing submissions and obtaining ethics approval for large scale projects such as this.

Secondary Data Analysis

The general strategy will be to conduct extensive secondary statistical analyses of the nature and magnitude of changes in broad economic and social indicators in Massachusetts before, during, and after the opening of the four new gambling opportunities. The data necessary for these analyses are available primarily from different government agencies. Rather than an exhaustive study of the universe of economic and social variables, the present research will focus on pre and post changes in areas that have been identified in previous research as having the potential of being impacted by gambling, as well as industries with the highest potential for either being negatively or positively affected (Williams, Rehm & Stevens, 2011). Primary industries include tourism (e.g., car rental, sightseeing, etc.); hospitality (e.g., hotels, restaurants, lounges); entertainment (e.g., concert venues); other forms of gambling (e.g., bingo, horse racing); the construction industry; pawnshops; and check cashing stores. The specific domains that will be investigated have been identified in previous sections.

There are a variety of available databases, both nationally and specific to Massachusetts, that can provide data specific to these variables. These include the following:
• American Bankruptcy Institute
• Centers for Disease Control and Prevention
  o Behavioral Risk Factor Surveillance System
    • Health risk behaviors, preventive health practices, health care access
• Center for Health Information and Analysis
  o Health insurance claims for problem gambling
• Gamblers Anonymous
  o # Chapters & Number of Members per Chapter
• Massachusetts Council on Compulsive Gambling
  o Help Line calls
• Massachusetts Department of Children and Families
  o Quarterly Reports (child neglect, maltreatment)
• Massachusetts Department of Public Health
  o Injury Surveillance Program (suicides)
• Massachusetts Department of Revenue/ Division of Local Services
• Massachusetts Executive Office of Education
  o MCAS Passage Rate
  o Graduation and Dropout Rates
• Massachusetts Executive Office of Housing and Economic Development
  o Housing Creation and Foreclosure
  o Business Attraction and Creation
  o Business Assistance
• Massachusetts Executive Office of Labor and Workforce Development
  o Job Creation
  o Current Employment Statistics
  o Employment and Wages
  o Labor Force and Unemployment Rates
  o Occupational Employment and Wage Statistics
• Massachusetts Housing Partnership Foreclosure Monitor
• REMI PI+ Modeling System and data (proprietary)
• National Incident-Based Reporting System (NIBRS)
• Problem Gambling Treatment Centres
  o Treatment Numbers & Treatment Costs
• U.S. Census (Note: UMass Donahue Institute is the Massachusetts home for the U.S. Census):
  o County Business Patterns
  o American Community Survey
    • Demographics, housing, income, employment
  o Business Dynamics Statistics
  o Economic Census
  o Statistics of U.S. Businesses
  o Building Permit Estimates
• U.S. Department of Labor/ Bureau of Labor Statistics
  o Quarterly Census of Employment and Wages

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13 Although this data does not contain any variables that would be direct indices of the negative social impact of gambling, they do contain variables that might predict susceptibility to the negative social impacts.
While scrutiny of secondary databases has much utility, it also has some limitations. For one, localized impacts are often missed when examining changes in the larger regional-wide indices typically available from some of these databases. The presence or absence of change at larger regional levels is an important result, but does not negate the need to understand whether there are more localized effects. Fortunately, establishing the geographic origin of the patrons of the major gambling venues (see Population Surveys and Patron Surveys below) provides a mechanism to identify the specific geographic range in which to expect impacts, which we can then use to make customized geographic data requests from these databases.

**Gambling Venue and Government Data**

The secondary analysis of existing databases investigates potential impacts of gambling as reflected in general socioeconomic indicators. However, another strategy that we propose to employ will be to directly examine and document the immediate and known impacts of gambling, much of which is available from casino owners and/or operators. Specifically:

- **Direct Employment** as a result of the new gambling facilities (i.e., # of new employees; wages; residency; comparison to previous employment status, wages and residency to determine extent to which these jobs are ‘new’ rather than just shifted from other industries);
- **Direct Revenue** as a result of this venue or particular form of gambling;
- **Disbursement of Direct Revenue** (% and amount to: wages, shareholders, government, etc.);
- **Origin and Cost of Supplies & Servicing;**
- **Infrastructure Investment** (i.e., the extent to which venue operators have contributed to the capital wealth of the community with new buildings as well as any financial contributions they have made to upgrading the local infrastructure to support these venues);
- **Infrastructure Costs** to municipal and state governments (i.e., road development and maintenance, utilities (power, water, sewage), fire services, police services).

These data provide another layer of useful information concerning the impacts of gambling. Furthermore, these data are not beset to the same degree as secondary data with the issues of causal attribution and disentanglement. The main problem with this approach concerns access to data. Some of this information may be contained in publicly available documents (e.g., annual company reports and/or financial statements; annual reports of municipal and state governments). However, some of this information will not be public and/or has not been collected and will have to be supplied by the casino companies, municipal and/or state government officials, and gambling industry employees (the latter through a comprehensive ‘Employee Survey’).

**Population Surveys (General and Targeted)**

Population surveys provide several additional unique sources of information relevant to the impact of gambling. One of these is public attitudes. An argument can be made that the general public’s current support or non-support of gambling (and specific forms of gambling) is as important as its objective beneficial or detrimental effects. Current gambling behavior of the general public is another critical piece of information that can be determined through population surveys. To understand the impacts of gambling we need to know who patronizes the various forms of gambling; where they live; what specific games they spend their money on; how much they spend; how frequently they gamble; and whether they have developed problems as a result of their gambling. This data is directly relevant to the nature
and magnitude of gambling impacts; the demographic features of these impacts (age, gender, ethnicity, socioeconomic class); their geospatial distribution; and how impacts vary as a function of game type. Finally, population surveys are the only way to establish the overall population prevalence of problem gambling, a particularly important impact of gambling. Finally, and as explained in the Baseline Study section, population surveys can also serve an important triangulating function for other methodological elements in the area of social impacts (in allowing for stronger causal inferences).

There are two over-riding methodological concerns with the population surveys. The first is that it is essential that the sample be representative of the population. This can only occur if everyone in the population has an equal chance of being sampled. The second important consideration is that they contain a sufficient sample size for the purposes of determining a) the true prevalence of problem gambling in Massachusetts with some degree of confidence; b) the levels of gambling-related harm associated with problem gambling (as described above); c) whether there are statistically significant changes from one survey to the next; and d) regionally specific impacts.

Further to this last objective, we propose to conduct a General Population survey in the Baseline phase, with a sample of 10,000 people sampled via Address Based Sampling (ABS), supplemented by another 5,000 sampled via Online Panel. These surveys will be repeated in 2018 once all the venues have opened. (The 4 counties in Western Massachusetts will be oversampled to ensure they are 25% of the sample rather than the 12% that they constitute). To ensure a sufficient sample of people in the immediate vicinity of each venue, we will also administer a Target Population survey of 1,000 people in each of the four communities (total sample = 4,000) once each specific location has been chosen. This targeted survey will be repeated in late 2017 or early 2018 coincident with the General Population Survey. The Boston office of the National Opinion Research Center (NORC) will administer the ABS surveys and Ipsos will administer the Online Panel survey. Further details of this methodology and these sample sizes is provided in Methodology Justification.

**Patron and License Plate Surveys**

Knowing the patronage of the new gambling venues proposed for Massachusetts is critical to understanding their overall economic impacts, as the patronage identifies the geographic origin of the revenue, and therefore whether the revenue represents a genuine influx of new wealth to the community and/or state, or whether it simply represents money that has been diverted from other sectors of the local economy. These geospatial origins also identify the specific geographic range to look for impacts within our other methodological elements. Thirdly, patron surveys can answer the important economic question of whether casino expenditure that was previously being spent at out-of-state casinos is being repatriated back to the Massachusetts economy.

Patronage also directly speaks to the social impacts of gambling, as it identifies which demographic segments of the population (in terms of age, gender, ethnicity, socioeconomic class) are accessing and utilizing this new form of entertainment as well as which segments will be disproportionately negatively affected (due to the development of problem gambling).

While the proposed population surveys will be able to establish the patronage patterns and expenditures of Massachusetts residents, only patron intercept surveys at the new venues can identify the nature and extent of out-of-state patronage. Also useful in this endeavor will be ongoing data from the New England Gaming Research Project. This project has been tracking the patron origin of New
England casinos since 1995 using license plate counts. These surveys will continue throughout the time frame of the present project and will help triangulate the data obtained from patron intercepts done at the new gambling venues.

Key Informant Interviews

As we have indicated, a focused examination of changes occurring in communities receiving new casinos is both an important methodological strategy by which to measure impacts as well as one of the more important results within our larger mandate. While much of this data will be available from the above mentioned methodological strategies, there is value in supplementing these quantitative approaches with qualitative information obtained through key informant interviews.

We anticipate that many useful anecdotes and commentary will be collected in the course of approaching communities and venue operators to provide information pertaining to the direct impacts (described under our second listed method—Gambling Venue & Government Data method). However, it is also our intent to meet with up to eight representatives of each of the four communities where a new gambling venue will be established (municipal council; police; social services; economic development) to solicit and record their general thoughts about the nature and magnitude of any impacts they have observed. At the end of each interview, key informants will be asked to identify other key people in the community whose knowledge and perceptions of the impacts of the casino would be important to include in the study.

Market Street Research, a state-certified woman-owned business based in Western Massachusetts, has been contracted for this service. The interviews will be recorded and transcribed for analysis purposes.

Focus Groups

Our final methodological element will involve the use of focus groups to investigate the impacts of these new venues on segments of society that are expected to have particularly strong patronage of these venues (elderly, college/university students, problem gamblers) and/or are expected to be disproportionately impacted, either positively or negatively (this may include members of the Mashpee Wampanoag tribe if they hold one of the new casino licenses). We anticipate conducting at least two focus groups in each of the four communities where a large new gambling venue will be established. Market Street Research has been contracted for this service.

After the key informant interviews and focus groups have been completed and the recordings transcribed, Market Street Research will conduct a thematic analysis of the results. MSR has developed proprietary techniques for analyzing qualitative data which elucidates the key themes arising from the conversations as well as similarities and differences in those themes across major groups, such as people from different host communities and key informants vs. community residents.
RESEARCH COORDINATION AND INTEGRATION

In Section 2.8 of the original RFR, the research team is asked to indicate how they would integrate research activities undertaken by their own members as well as other researchers into a single holistic and on-going study. Within our team, integration of the many research activities undertaken by the consortium is addressed through a strong management structure whereby data collection and analysis is closely supervised by a small team of experienced researchers with ultimate responsibility for producing a holistic and integrated series of reports on the social and economic impacts of casino gambling in Massachusetts. Beyond our team, the requirement to integrate studies undertaken by other researchers is addressed by our ability to provide a central repository for data and reports from other studies and by our ability to manage a competitive grants program through which other research activities commissioned by the MGC could be prosecuted, and finally through the interests and expertise of our larger Ancillary Faculty Group which the Commission may find useful in fulfilling unanticipated future research needs.

Only a handful of researchers or research teams have experience successfully conducting large-scale studies of the social and economic impacts of legalized gambling. The team assembled for the current Research Plan represents a single entity that will provide the MGC with a high level of expertise across the full scope of the research agenda. The team includes three researchers with extensive experience conducting such studies (i.e., Volberg, Williams, Nichols) as well as several Massachusetts-based researchers with experience conducting gambling studies more generally (i.e., Schull, Salame). Our team includes the Donahue Institute, whose staff bring economics and econometrics expertise as well as access to numerous state and national databases. Our team also includes two experts in crime statistics and criminology who will ensure that the project obtains timely and accurate data on the impacts of the introduction of casino gambling on crime in Massachusetts. Finally, our team includes survey research expertise as well as representatives of departments and centers at several University of Massachusetts campuses who will contribute to making the proposed study specific to Massachusetts.

Social and economic impact studies of gambling are complex and challenging. We have therefore organized our consortium under a single small management team that will provide oversight and coordination to the various data collection and analytic activities, pull disparate findings together and ensure that coherent results are obtained. A further advantage of this organizational approach is that we have capacity to access and bring in additional academic or intellectual resources quickly. This could be a critical advantage if the Commission is faced with unanticipated research needs going forward.

Executive Management Team: The strong administrative and scientific core of the project, represented by the management team of Volberg, Williams, Stanek, and Hodge will ensure that there is consistency in measuring a wide range of variables over significant periods of time. In addition to providing consistency, the team will ensure that there is comparability between the various data sources. Finally, the management team will ensure that there is continuity over the life of the project and consistency in reporting and disseminating the results. All three members of the management team have experience with overseeing other investigators and sub-contractors as well as experience overseeing the performance of other organizations within the framework of larger projects.

Data Management Center: Another element in our approach to ensure coordination and integration of the results of the study is the proposed central repository and coordination center for data and research reports generated by the Research Team’s activities. The Data Management Center will ensure that the
study results as well as most datasets are available to eligible interested parties including other researchers as well as state agencies. In addition to making data generated over the course of the study available to others, the structure proposed here could serve as a hub for research that originates from organizations external to our team since the Data Management Center provides the ability to receive, adjudicate, administer and store data from research studies originating from outside agencies.

External Scientific Review Capabilities: In addition to providing for independent scientific review of our own work, the Research Team is able to provide the Commission with the scientific and administrative structure to manage a competitive grants program, obtaining independent reviews of proposals submitted by researchers and research teams from within as well as outside the University of Massachusetts and supervising the progress of funded studies to ensure that they are completed in a timely manner, the results disseminated, and the data eventually made available to other, eligible researchers. Additional information about our team’s scientific review capabilities is presented in the next section of the Research Plan (see Overview of External Scientific Review Approach).

Ancillary Research Group: Our Research Team was originally organized as a larger collaborative group of interested academics, mostly with University of Massachusetts affiliations. This larger group, which we have constituted as an Ancillary Research Group in this Research Plan, includes psychologists, social scientists, economists and epidemiologists with strong interest in a range of topics related to the impacts of the introduction of casino gambling in Massachusetts. These include the role of stress in the development of problem gambling behaviors, the effects of media on problem gambling development and mitigation of problem gambling behavior, the role of gambling and problem gambling among college-age populations and questions about the effectiveness of prevention activities on the prevalence of problem gambling.

Members of the Ancillary Research Group have expressed interest in seeking funding from outside organizations as well as from the Massachusetts Gaming Commission to conduct research on these and other topics that fit within the Commission’s larger research mandate. The interest and engagement of the Ancillary Research Group in the social and economic impact study proposed here also ensures a high level of interest in the data that will be generated by this project. Given the publication imperative of most academic researchers, this interest and engagement also increases the likelihood of a large number of academic publications emerging from the study.

The following table identifies the current members of the Ancillary Research Group at UMass:

| Psychology, Stress & Addiction | Dr. Jerrold Meyer  
|                               | Dr. Matt Davidson  
|                               | Dr. Heather Richardson  
|                               | Dr. Sally Power  
| Management                    | Dr. William Diamond  
|                               | Dr. Kathleen Debevec  
|                               | Dr. Rodney Warnick  
|                               | Dr. Elizabeth Miller  
| Center for Public Policy & Administration | Dr. Lee Badgett  
|                                              | Dr. Susan Newton  
| Biostatistics Consulting Center | Dr. Elaine Puleo  
| Hospitality & Tourism Management | Dr. Haemoon Oh  
|                                            | Dr. Albert Assaf  

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EXTERNAL SCIENTIFIC REVIEW

Scientific Review of Baseline and Operational Studies

Along with others who responded to the Commission’s earlier RFI, our group argued that it would be important for the Commission to obtain independent scientific review of the project to ensure its scientific integrity. This approach is not commonly used in gambling studies but can be valuable in enhancing the confidence of the public as well as numerous stakeholders in the results of the study.

We have modeled our approach for providing independent scientific review of the MGC Research Agenda on the approach taken in the 2006 California problem gambling prevalence survey (Volberg, Nysse-Carris & Gerstein, 2006). In that study, the research team contracted with the Alcohol Research Group at the University of California Berkeley to review a series of project deliverables and provide feedback to the California Office of Problem Gambling. The scientific reviewers were paid by the study contract but reported to the Office of Problem Gambling rather than communicating directly with the research team.

At several key points in the study (initiation, completion of data collection, completion of statistical analyses, and completion of draft report), the research team provided draft deliverables as well as documents outlining their plans for the next step in the study to the scientific reviewers. The scientific reviewers prepared critiques of these documents that were submitted to the Office of Problem Gambling. Feedback from the scientific reviewers was shared with the research team which then prepared responses that were submitted to the scientific reviewers and to the Office of Problem Gambling. The scientific reviewers notified the Office of Problem Gambling once they were satisfied that the research team had addressed all of their concerns.

We have selected three individuals to provide scientific oversight of the project. Dr. David Korn is a Professor in the School of Public Health at the University of Toronto. Dr. Korn directs the Public Health Gambling Project at the University of Toronto and is the co-author of several of the seminal works on gambling and the health of the public (Korn, 2000; Korn & Shaffer, 1999; Korn, Gibbins & Azmier, 2003). Professor Michael O’Neil is the Executive Director of the Southern Australian Centre for Economic Studies at Adelaide University in South Australia. Professor O’Neil is the lead author of two of the gambling impact studies rated as “excellent” in the review by Williams and colleagues (O’Neil et al., 2005, 2008). The third proposed member of our Scientific Review Panel is Rev. Richard McGowan, Associate Professor in the Carroll School of Management at Boston College. Rev. McGowan has been involved in gambling research since the early 1990s and has written several books on issues of legalized gambling and governance (McGowan, 1994, 2001, 2007). Taken together, these three individuals represent both international and local perspectives as well as public health, economics and public policy expertise. All three have long experience conducting gambling research and stellar reputations in the field.

We intend to ask the Scientific Review Panel to review a series of project deliverables on behalf of the Commission. These deliverables include:

- The Research Plan;
- The sampling strategy and questionnaire for the Baseline Population Survey;
• The plan for evaluating existing prevention and treatment programs in Massachusetts;
• The baseline econometric model;
• The Baseline Report;
• The Final Report.

**Scientific Review of Independent Studies**

In addition to providing for independent scientific review of our own work, our Research Team is able to provide the Commission with the scientific and administrative structure to manage a competitive grants program, obtaining independent reviews of proposals submitted by researchers and research teams from within as well as outside the University of Massachusetts and supervising the progress of funded studies to ensure that they are completed in a timely manner, the results disseminated, and the data eventually made available to other, eligible researchers.

Three of the members of the Executive Management team (Volberg, Williams, Stanek) have experience reviewing research proposals for national and international funding agencies. Additionally, Dr. Williams has served for 12 years as a Research Coordinator for the Alberta Gambling Research Institute (AGRI) and has specific experience administering a scientific grants program. Like the National Center for Responsible Gaming and the Ontario Problem Gambling Research Centre, AGRI provides grant funding to support scientific-endorsed academic investigations.

If the MGC wishes to establish an independent research commissioning body, we are confident that we would be able to recruit numerous gambling researchers as well as specialists in other disciplines to review and adjudicate proposals generated in response to specific future Requests For Research. We recommend adopting methods similar to those employed by the Alberta Gambling Research Institute and the Ontario Problem Gambling Research Centre where proposals generated in response to open Requests For Proposals or to directed-research solicitations are sent out to international experts for review. Once submitted, the external reviews are adjudicated by an internal team that prioritizes the applications, selects proposals to be funded, and negotiates with successful bidders to adjust budgets, if necessary, to remain within the available funds.
METHODOLOGY JUSTIFICATION

In this section, we present our methodology and document where we will use existing tools and efforts and where we plan to use more novel instruments and formulations.

Multiple Methods Research Strategy

The approach we are proposing utilizes a multiple methods research strategy that employs an array of primary and secondary data collection/analysis, as well as both quantitative and qualitative research methods. Gambling is just one of many economic forces contributing to the dynamic social and economic landscape of Massachusetts, making the disentanglement of gambling’s unique contribution quite difficult. The use of multiple methods aids in this task, as it allows for triangulation of findings and improved convergent validity.

Population Survey Methodology

Administration Modality

The first essential element in a population survey is that the obtained sample is representative of the population. This can only occur if everyone in the population has an equal chance of being sampled. Traditional landline random digit dialling no longer accomplishes this due to the fact that an estimated 25% of Massachusetts households only have cell phones (Blumberg et al., 2012). A related concern is the decline in response rate to telephone surveys that has occurred in the past 10 years (Massey & Tourangeau, 2013; Peytchev, 2013; Volberg, 2007; Williams, Volberg, & Stevens, 2012).

Door-to-door interviews conducted in households that are randomly selected on the basis of geography is one approach that has been used to address these issues. For example, this was used in the U.S. National Comorbidity Survey in 2001-2002 and achieved a response rate of 70.9% (Kessler, et al., 2008). While door-to-door surveys do typically achieve higher response rates than telephone surveys, they have problems of their own. For one, they are several magnitudes more expensive. For another, their response rates have also declined significantly in the past 10 years. However, the most serious problem is that the methodology does not work well in jurisdictions where a significant portion of the population lives in multi-family dwellings (i.e., apartment or condominium complexes). These dwellings are often excluded or under-sampled in household surveys, as getting access to these buildings can be very difficult (especially for non-government agencies). Because residents of multi-family dwellings are much more likely to be in lower income groups, this can create a systematic sampling bias, as low income groups have significantly higher rates of pathology, including problem gambling (Williams, Volberg, & Stevens, 2011). In Massachusetts the most recent U.S. Census found that 41.8% of households lived in multi-unit structures, which is significantly higher than the U.S. average of 25.5%.

In the present study we will be using an ‘Address-Based Sampling (ABS)’ methodology, which typically achieves higher response rates than telephone sampling (reducing the potential for bias) but without the same degree of problems associated with a pure door-to-door methodology. ABS is a relatively new

14 Low income households (particularly in impoverished neighborhoods) also tend to have lower response rates with door-to-door surveys.
approach that has been made possible by the recent development of a comprehensive listing of most residential addresses in the United States by the U.S. Postal Service (Iannacchione, 2011). A random sample of addresses is first selected. These addresses are then matched with landline telephone numbers (as best as possible). The next step is to mail a letter with a $5 incentive that identifies a website that the survey can be taken online. People who do not respond are sent a copy of the questionnaire along with return postage. Everyone who fails to complete the survey via mail or online is then phoned and given the opportunity to do the survey over the phone or reminded of the online option. This overall approach is a web -> mail -> telephone approach.

Under this data collection approach, approximately 50% of interviews would be completed by web, 35% by mail, and 13% by phone (with an overall response rate ~45%).

One advantage of the ABS approach is that all households have a known probability of selection regardless of whether they have a landline, only a cell phone or no telephone at all (Iannacchione, 2011; Link et al., 2008). Another advantage is that post-stratification weighting is simplified since all of the interviews are obtained from the same sampling frame. The main disadvantage of the ABS approach is its high cost relative to random digit dialling approaches and the fact that there are some small but systematic differences in responses to gambling surveys as a function of modality (i.e., phone, online, or in-person; Williams & Volberg, 2009). The Boston office of the National Opinion Research Center (NORC) is the survey firm that will administer the ABS methodology.

**Sample Size**

The second important consideration with population surveys is that they contain a sufficient sample size for the purposes of determining a) the true prevalence of problem gambling in Massachusetts as well as regionally and community-specific differences in the rate of problem gambling; b) the levels of gambling-related harm associated with problem gambling (as described below); and c) whether there are statistically significant changes from one survey to the next.

There have been no recent prevalence studies of problem gambling in Massachusetts so as to estimate current rates. In fact, the only prevalence study of problem gambling that has ever been conducted in Massachusetts was completed in 1989 as part of a larger study funded by the National Institute of Mental Health (Volberg, 1994). In this survey, 750 randomly selected adults (18+) were asked about their participation in gambling as well as lifetime history of gambling-related problems. The latter was assessed with the South Oaks Gambling Screen (SOGS), a 20-item scale derived from the DSM-III criteria for pathological gambling (Lesieur & Blume, 1987). Approximately 2.1% of respondents were identified as having a lifetime history of “probable pathological gambling” and an additional 2.3% were deemed to have a lifetime history of “problem gambling.” These rates were slightly higher than rates in other East Coast states at the time and significantly higher than rates in the Midwest. Adjusting for methodological artifacts, and applying conversion rates to estimate rates with a past-year time frame¹⁶, Williams,  

¹⁵ There is comprehensive coverage of urban residences, but less comprehensive coverage of rural addresses and people living in group quarters (dormitories, army barracks, etc.) (Iannacchione, 2011).

¹⁶ Historically, problem gambling was believed to be an unremitting chronic condition, which is why older instruments such as the SOGS and DSM-IV used a lifetime time frame (or no specific time frame at all in the case of the DSM). However, more recent longitudinal research in several countries has demonstrated that problem gambling is a much more unstable entity for many people. Hence, modern instruments such as the CPGI and PPGM use a past-year time frame.
Volberg, & Stevens (2012) have estimated the past-year prevalence of problem gambling in Massachusetts in 1989 to be approximately 2.2%.

However, projecting rates in 1989 to rates in 2013 is very problematic, as problem gambling in most North America jurisdictions increased significantly beginning in the late 1980s prior to achieving a peak in the late 1990s/early 2000s (Williams, Volberg, & Stevens, 2012). There is also no recent prevalence study of problem gambling in the United States to help in estimating current Massachusetts rates. The Kessler et al. (2008) study was the latest, but it was conducted over 10 years ago and its small sample size (only 3,435 people were administered the DSM-IV criteria for pathological gambling) precluded the estimation of state-specific rates. In any case, this study was methodologically flawed due to overly stringent screening criteria to administer the DSM, resulting in artifactualy low numbers of problem gamblers (Williams, Volberg, & Stevens, 2012, p. 130).17

After comprehensive analysis of the rates in 202 studies that have ever assessed problem gambling prevalence, with particular attention to rates in recent provincial and state surveys, we estimate that the current past year prevalence rate of problem gambling in Massachusetts is likely in the 1% to 2% range (which will likely increase to some extent after the new gambling venues open).

Such a low prevalence rate makes it very difficult to detect statistically significant changes from Baseline to Post-Opening. As illustrated in the table below, a doubling of rates can be detected with as few as 1,826 people. However, based on prior research (Williams, Rehm, & Stevens, 2011), the state-wide increase in problem gambling rates is more likely to be in the 25% to 50% range, which could require up to 22,006 people in order to statistically detect. (Although the increase in the specific communities that receive new venues is likely to be higher). Furthermore, if we wanted to detect changes in each of the three regions, then the total sample size would have to be three times higher.

<p>| Sample Size Required at each Time Period to Detect Significant Changes in Problem Gambling Prevalence |</p>
<table>
<thead>
<tr>
<th></th>
<th>25% change</th>
<th>50% change</th>
<th>100% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0% to 1.25%</td>
<td>22,006</td>
<td>6,104</td>
<td>1,826</td>
</tr>
<tr>
<td>1.5% to 1.875%</td>
<td>14,587</td>
<td>4,043</td>
<td>1,208</td>
</tr>
<tr>
<td>2.0% to 2.5%</td>
<td>10,877</td>
<td>3,013</td>
<td>899</td>
</tr>
</tbody>
</table>

One-sided test, with alpha = .05 and power = .80

A sufficient sample size of problem gamblers in the population studies is also needed to conduct some other important analyses. One analysis, mentioned earlier in the Baseline Study, is that we wish to identify the social impacts profile of problem gamblers in terms of the proportion who report bankruptcy, report committing gambling-related crimes, attempt suicide, divorce/separate, etc. These proportions, if statically reliable, could then be used to extrapolate to the Massachusetts population of problem gamblers as a whole. A second planned analysis is to conduct logistic regressions to identify the demographic, game play, and comorbidity variables that maximally differentiate problem gamblers.

17 To be administered the full DSM criteria in this study the person had to report spending $100 or more on some form of gambling plus had to endorse at least one out of four questions indicative of significant gambling-related problems. Research shows that both of these screening criteria will reliably exclude a significant portion of clinically assessed problem gamblers (Williams & Volberg, 2010; Williams, Volberg, & Stevens, 2012).
from nonproblem gamblers in Massachusetts. Both of these endeavours will require at least a few hundred problem gamblers.

If we assume a mid-range prevalence rate of 1.5% at Baseline, then it would require a sample size of 13,333 people to identify 200 problem gamblers. If we assume a mid-range change (1.5% to 2.25%) in region-wide problem gambling from Baseline to Post-Opening, then we would need a sample size of 4,043 x 3 regions = 12,129.

To address these sample needs, in our low and medium budgets we have three separate samples administered at different times as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>General Population ABS</th>
<th>General Population Online Panel</th>
<th>Targeted Population ABS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just Prior to Venue Opening</td>
<td></td>
<td></td>
<td></td>
<td>4,000</td>
</tr>
<tr>
<td>2018</td>
<td>10,000</td>
<td>5000</td>
<td>4,000</td>
<td>19,000</td>
</tr>
<tr>
<td>2013</td>
<td>10,000</td>
<td>5000</td>
<td></td>
<td>15,000</td>
</tr>
</tbody>
</table>

As indicated earlier in this Research Plan, during the Baseline Phase of this study we will administer a **General Population ABS** sample of 10,000 people. This will be supplemented by a **General Population Online Panel** sample of 5000 people.

The General Population survey will include 10,000 people randomly sampled via ABS supplemented by another 5,000 sampled via an Online Panel. Online Panels, in which people are recruited and then asked to respond to a number of survey requests regularly, are gaining prominence and are now commonly used in market research, and increasingly in academic studies (Göritz, 2007; Göritz et al., 2002).18 Online panels are composed of tens of thousands (sometimes 100s of thousands) of individuals who have agreed to receive email solicitations to participate in various online surveys in return for compensation (usually a collection of points that have some cash value). Sociodemographic and behavioral information is collected from participants so that the panel can be stratified to match the sociodemographic characteristics of the particular jurisdiction.

The advantages of online panel surveys are that a) the validity of answers to ‘sensitive questions’ (e.g., gambling) tends to be higher in self-administered formats (Tourangeau & Smith, 1996; van der Heijden et al., 2000); b) everyone has agreed to be and expects to be contacted (unlike telephone surveys); c) the results can be obtained in a much shorter period of time; and d) they are roughly one-third the cost of telephone surveys.

However, online panels have some problems. The main issue is the nonrepresentative nature of the online panel population. A nonrandom minority of people still do not use the Internet, and thus, are not

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18 The Massachusetts Council on Compulsive Gambling administered an Online Panel survey in Oct/Nov 2012 (n = 1,000) to assess attitudes toward problem gambling and problem gambling services in Massachusetts. A lifetime SOGS S+ prevalence rate of 5.0% was obtained.
eligible to be part of an online panel. Furthermore, although online panelists are structured to be carefully demographically representative in terms of age, gender, and geographic residence (and sometimes education, income, and other basic demographic variables), other important differences have been found to exist (as might be expected considering that only a very small minority of people invited to be part of an online panel agree to participate; Sparrow, 2006). One of the Principal Investigators (Williams) has conducted three separate research investigations that have compared data obtained from a random sample of online panelists within the jurisdiction to a comparable random sample of people contacted via random digit dialing. In all three investigations, the overall rates of substance use, mental health problems, and addictions were significantly higher in the online panel, which also produced significantly higher rates of problem gambling (4.6% versus 2.1% in Alberta in 2008; 5.6% versus 3.1% in Alberta in 2009; 11.4% versus 1.0% in South Korea in 2011; 8.3% versus 1.0% in Ontario in 2011).

Hence, because of their imperfect representativeness, online panels cannot be used to establish precise estimates of population prevalence (we will use the telephone surveys for this purpose). However, the much higher ‘yield’ of people with problem gambling in online panels does provide larger samples to investigate the issues specific to problem gamblers that were mentioned earlier (i.e., social impacts profile of problem gamblers; and characteristics differentiating problem gamblers versus nonproblem gamblers). This is how they the online panel sample will be used in the present study (i.e., if we assume a problem gambling prevalence rate of 6.0%, then a sample of 5,000 individuals should yield 300 problem gamblers). Depending on their similarity or dissimilarity to the problem gamblers identified in the telephone surveys, these problem gamblers may be analyzed separately (to replicate the telephone sample results) or potentially combined with the telephone sample.

The third and final sample consists of a Targeted Population Telephone survey of 1,000 people within a 25 mile radius of each of the four localities where the new venues will be located. These surveys will be administered approximately one year to the projected opening of the venue (2013 – 2015 depending on the site). These ‘baselines’ will be compared to an identical targeted survey of 1,000 people in each of these communities at least one year after all four venues have opened, and coincident with the general population telephone and the general population online panel surveys (anticipated to be in 2018). The purpose of the Targeted Population Telephone survey is to try and ensure there is a sufficient sample size in the community hosting the new venue to be able to potentially identify community specific impacts. A 25 mile radius was chosen for two reasons. The first was to decrease the likelihood that the boundary of each 25 mile radius area did not overlap the boundary of any other 25 mile radius area (which could happen for venues in the Greater Boston versus Southeastern regions respectively). The second reason is that the most recent research on the socioeconomic impacts of casinos shows that the bulk of the impacts now tend to occur with a 5 or 10 mile distance of new venues (Williams, Belanger, & Arthur, 2011; Williams, Rehm, & Stevens, 2011). Of final note, the content of all three surveys (Targeted Population Telephone; General Population Telephone; General Population Online Panel) will be virtually identical. Additional questions will be added in 2018 specific to assessing the perceived impacts of the new venues.

19 Research in the 1980s, 1990s, and early 2000s tended to find larger regional impacts due to the fact that many fewer casinos/racinos existed at that time compared to currently.
**Problem and Pathological Gambling Measure**

One of the main indices that is important to capture in relation to the impacts of new gambling is problem gambling. Many instruments exist for the population assessment of problem gambling. Worldwide, the most commonly used instruments are the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987), the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001), and various operationalizations of the DSM-IV diagnostic criteria for pathological gambling (e.g., Fisher, 2000; Gerstein et al., 1999; Kessler et al., 2008). One or more of these three instruments have been used in 95% of adult problem gambling prevalence surveys carried out internationally since 1975 (Williams, Volberg, & Stevens, 2012). The reliability of these instruments is well-established by their consistent evidence of internal consistency and test-retest reliability. However, there has been some criticism of their conceptual underpinnings and validity (Govoni, et al., 2001; Stinchfield, et al., 2007; Williams & Volberg, 2010).

Most importantly, there is only fair to weak correspondence between problem gamblers identified in population surveys and the subsequent classification of these same individuals in clinical interviews (Abbott, 2001; Abbott & Volberg, 1992; Ferris & Wynne, 2001; Ladouceur, Bouchard et al., 2000; Ladouceur, Jacques, et al., 2005; Murray et al., 2005). In a large scale study of 7,272 gamblers (including 977 clinically assessed problem gamblers) Williams & Volberg (2010; under review) demonstrated that classification accuracy of the DSM-IV, SOGS, and CPGI was better than previous research had shown, suggesting that methodological problems were partly responsible for this previously identified weak relationship. Nonetheless, the overall classification accuracy of these three instruments was still only modest, and furthermore, there was significant variation in classification accuracy as a function of gender, age, and ethnicity. By comparison, a new instrument, the Problem and Pathological Gambling Measure (Williams & Volberg, 2010; under review) had significantly better sensitivity, positive predictive power, diagnostic efficiency, and kappa compared to all three traditional instruments. Furthermore, classification accuracy indices did not vary as a function of age, gender, or ethnicity.

The superior performance of the PPGM is likely due to several factors. One is that any pattern of item endorsement that results in a score above a certain threshold is sufficient to be designated as a problem gambler in the CPGI, SOGS and DSM-IV (i.e., despite the fact that some items are more serious and/or diagnostic than others). Consequently, it is possible to be classified as a problem/pathological gambler without actually endorsing any significant problems or harm deriving from one’s gambling. Similarly, it is possible to indicate the presence of significant problems deriving from one’s gambling without being classified as a problem gambler. Most people would agree that for someone to be a problem gambler there needs to be evidence of a) significant negative consequences, and b) impaired control (Neal, Delfabbro & O’Neil, 2005). This is explicitly required in the PPGM.

A second reason is that the PPGM assesses all potential harms deriving from gambling, whereas only a subset of potential problems are assessed with the traditional instruments. Mental health problems are not assessed in the DSM and only indirectly in the SOGS (i.e., presence of guilt). Physical health problems are not addressed in either the DSM or SOGS. School and work problems are not covered in the CPGI. Engagement in illegal activities to support gambling is not addressed in the CPGI and only partially addressed in the SOGS (i.e., passing bad checks). Financial problems are not well addressed in the DSM (i.e., relies on others to provide money). Similarly, not all the signs and symptoms of impaired

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20 Furthermore, this “illegal acts to support gambling” will likely be dropped as a criterion in the DSM-V.
control are covered. For example, the CPGI does not assess whether the person has experienced any problems in cutting back or stopping gambling.

A final reason is that the PPGM endeavors to minimize false positives and false negatives. The former is accomplished by requiring the person to report gambling at least once a month in the past year to be classified as a problem gambler (no corroborating gambling behavior is required in the CPGI, SOGS or DSM-IV). The latter is accomplished by allowing for problem gambling designation of individuals reporting sub-threshold levels of symptomatology if their gambling expenditure and frequency are equal to those of unambiguously identified problem gamblers.

Consequently, in the present study, the PPGM will be our primary instrument to assess problem gambling. However, for comparison purposes to other jurisdictions, we will also include the Canadian Problem Gambling Index, which, as mentioned earlier in the Research Plan, has been the dominant instrument worldwide since 2007 (Williams, Volberg, & Stevens, 2012).

**Regional Economic Models, Inc (REMI)**

For this project, the economic analysis team proposes to include a customized Regional Economic Models, Inc. (REMI) PI+ model for the state with appropriate sub-state regions to capture the (up to) three casino facility regions and the rest of the state. The REMI model, originally developed by Dr. George Treyz, Professor Emeritus in Economics at UMass, is the nation’s leading economic impact simulation model with headquarters in Amherst, MA. The REMI model has been used by multiple Massachusetts state, regional and local agencies including the Massachusetts Department of Revenue, the Boston Redevelopment Authority, and the Merrimack Valley and Berkshire Regional Planning Commissions. The REMI model will meet and exceed the requirements described in the RFR as:

> “Estimation of an econometric model for the Commonwealth and for each of the three designated casino regions that calculates Gross State Product (GSP) and Gross Regional Product (GRP); that demonstrates the current interrelationships between industrial sectors; and that shows how changes in output by sector affect employment by sector, controlling for other relevant factors as initially indicated in Attachment B.”

Leading the economic impact modeling of casinos will be Dan Hodge, Director of Economic and Public Policy Research at the UMass Donahue Institute. Mr. Hodge worked at REMI for three years in the mid-1990s, and among many other client projects, he was the lead REMI analyst for casino gambling evaluations in Michigan and Indiana. Since then, he has worked on numerous economic impact projects, using a range of models including IMPLAN, RIMS II, and TREDIS (Transportation Economic Development Impact System). Based on this experience and a desire to use the appropriate model for each project and client, we strongly recommend using REMI (rather than simpler, less expensive input-output models) for the following reasons:

- The REMI model is a time-series based economic impact model meaning that the model includes annual forecast years to the year 2050 and impacts in one year can lead to changes in the economy in future years (e.g., changes in prices/costs, population migration). Given the timing of the planned casinos, with three distinct phases (Baseline, Construction, Operations) and the likely long-run impacts of casinos, it is critical to have a model that explicitly models impacts over time (something that static I-O models do not do).
The REMI model is dynamic in the sense that changes in economic conditions lead to dynamic impacts on the rest of the economy. Key examples of dynamic estimation include equations that estimate how increasing employment opportunities (more jobs), leads to in-migration to regions and the state. Also, increased wages and spending can bid up some prices and labor costs which impacts a broader set of industries.

The REMI model was updated in the late 1990s to early 2000s to feature enhanced “economic geography” equations that improved the model’s estimation of trade flows between regions, better reflecting distance and available suppliers/vendors for inter-regional impacts. This is key to estimating how direct impacts of a casino in one part of the state will impact other parts of the state.

Major casino resorts result in a large number of direct economic and fiscal impacts including jobs, revenue, consumer spending, business spending, etc. REMI is particularly adept at handling multiple different types of direct impacts and they have significantly enhanced the model’s abilities to estimate fiscal impacts.

The model has an enormous database of economic variables for each region that is specified, including employment, wages and output by industry, gross regional and state product, and other metrics such as labor productivity, housing costs, fuel costs, etc. Some of this data may be appropriate for baseline analysis in addition to the impact modeling capabilities.

Finally, given REMI’s presence in Massachusetts and the large number of projects that the model has been used for in Massachusetts means that the REMI model and its staff are particularly sensitive and accomplished about using the model in the state.

Therefore, even though the REMI model is more expensive than other regularly used input-output based economic impact models (e.g., IMPLAN, RIMS II), we propose using REMI because it allows for dynamic, multi-year modeling; something not offered by more simplistic modeling systems. The REMI PI+ software is specifically customized to generate realistic year-by-year estimates of the total regional effects of specific initiatives, such as casinos. In addition, PI+ allows economists to assess a variety of effects including economic impact analysis; policies and infrastructure; and state and local tax changes. A further strength of this analysis is that it will be based on real data from the casino operators and patrons reflecting actual conditions, measuring impacts as they occur over time. This approach is unique as most gambling facility studies are done in advance of the development and operation meaning that actual data are not yet available and the resulting estimates are based on prospective assumptions. Obtaining the REMI model actually allows for a unique opportunity to measure the predicted economic impacts once the casino locations are selected and then compare these economic impact predictions with actual outcomes measured in this research and evaluation project. Although not specifically requested in the RFR, our team is poised to discuss this as an optional analysis to the extent of interest by the MGC.

More information on PI+ can be found on the Regional Economic Models, Inc. web page at: http://www.remi.com/products/pi
DATA COLLECTION FREQUENCY

Most of the secondary data that will be collected for this project will primarily be aggregated on a yearly basis, as this is how most of these variables are naturally reported. For example, data from local, state and national government agencies and from the gambling venues (once these are operational) will be collected annually.

Some variables (e.g., helpline calls) are available on a monthly basis, and will potentially provide a finer-grained relationship to the availability of gambling. Other variables (i.e., bankruptcies, child neglect) are available on a quarterly basis and can again potentially provide a finer-grained temporal analysis. Similarly, we have partnered with Professor Anthony Harris and his colleague, Daniel Bibel of the MA State Police Department, to obtain information on crime reports on a monthly basis rather than having to wait the usual two years before these data are made publicly available.

We plan to collect a variety of primary data at less-than-annual frequency. For example, we plan to conduct large, General Population Surveys during the Baseline phase (in 2013) and again after all the venues have opened (in late 2017 or early 2018). We plan to conduct smaller, Targeted Population Surveys among residents of the four host communities where large new gambling venues are located in 2014, 2015, and 2018. Two other surveys—of gambling venue patrons and of license plate counts—are planned annually starting after the new gambling venues become operational.

We have proposed conducting a survey of employees of the new gambling venues once, 6 months after each venue has become operational. Finally, we have proposed conducting key informant interviews and focus groups of residents of the host communities in the final year of the project, when the social and economic impacts of the introduction of casino gambling in Massachusetts are expected to be evident.
RESEARCH INTEGRATION

The administrative structure and team membership were constructed to facilitate the integration, administration, and coordination of gambling-related research originating from different agencies and individuals. More specifically, our administrative structure and team membership has the capability of:

1. Identifying priority research topics in all areas of gambling, but particularly the etiology, prevention, and treatment of problem gambling.
2. Adjudicating research proposals in these areas (several members of the team, as well as members of our Scientific Advisory Panel, have experience submitting and reviewing research proposals within the gambling studies field as well as in the larger disciplines of health and social sciences). If additional expertise is required, our team is acquainted with or aware of all the major researchers in all the different areas of gambling that could be contacted).
3. Administering research grants that have been awarded.
4. Serving as a central repository and coordination center for data and research reports deriving from these endeavours. Specific to this goal, we will have a website, as well as a Data Management Center, with staff assigned to running this center. This data will be publicly available to all researchers as well as all state agencies.

Within such a center, the different investigative and scholarly domains function with some independence and can be undertaken by other institutions via subcontract or by the overseeing organization. These domains are integrated by an overarching theme (in this case, the assessment of gambling expansion impacts) but cover very different topics (e.g., public health, economics, and social effects) and use varying methodologies (e.g., primary data collection or secondary data analysis).

In addition to providing for independent scientific review of our own work, our Research Team is able to provide the Commission with the scientific and administrative structure to manage a competitive grants program, obtaining independent reviews of proposals submitted by researchers and research teams from within as well as outside the University of Massachusetts and supervising the progress of funded studies to ensure that they are completed in a timely manner, the results disseminated, and the data eventually made available to other, eligible researchers.

If the MGC wishes to establish an independent research commissioning body, we would be able to recruit numerous gambling researchers as well as specialists in other disciplines to review and adjudicate proposals generated in response to specific future Requests For Research. We recommend adopting methods employed by the Alberta Gambling Research Institute and the Ontario Problem Gambling Research Centre where proposals generated in response to open Requests For Proposals or to directed-research solicitations are sent out to international experts for review. Once submitted, the external reviews are adjudicated by an internal team that prioritizes the applications, selects proposals to be funded, and negotiates with successful bidders to adjust budgets, if necessary, to remain within the available funds.
CONTRACT MANAGEMENT

Subcontract Management

Immediately upon initiation of the contract and upon MGC approval, UMass Amherst Office of Contracts and Grants Administration will initiate or confirm letters of intent to be followed by completed subcontracts with each of the proposed team members. A member of the UMass Amherst Office of Contracts and Grants Administration will develop the bulk of the subcontracts modeled on usual practices. However, specific statements of work will be developed by the Executive Management team and will include specific schedules and allocation of responsibility for tasks including interim and draft results, progress reports and final deliverables. Individual task managers will have principal responsibility for relationships with the subcontractor staff, authorizing direct communications at other levels as appropriate.

Financial Management

Dr. Volberg and Dr. Stanek will use UMass Amherst’s established project cost accounting system, which provides close monitoring and forecasting of costs and deviations from budget, and emphasizes accountability. This cost accounting system will be implemented project-wide. From the fiscal point of view, a task is a unique component of the work plan that warrants independent technical and fiscal management. Upon contract award, the management team will associate contract budget lines with each task and subtask as part of the process of breaking down the task structure into smaller subunits. A leader designated for each task will be responsible for reviewing charges made against the task and for estimating future task costs. Although task leaders have first-line responsibility for fiscal management of their tasks, ultimate responsibility resides with senior project management. Accordingly, the Research Director and task managers will carefully review the monthly cost analysis reports for tasks under their purview, and as a group will meet weekly with the financial specialist. Fiscal management of their areas will always be one item on the agenda for weekly staff meetings.

Staff Communications

Internal staff meetings. Dr. Volberg will chair a biweekly meeting of the Executive Management team, including lead subcontract staff when appropriate, to coordinate efforts and review progress. These meetings will follow a written agenda enumerating the active tasks, pre-circulated via email with progress elements to be filled out in advance to focus and conserve meeting time; and later completed by a designated recorder as permanent documentation of decisions and assignments, distributed to the task team through e-mail within 48 hours after each meeting. MGC staff may wish to review these weekly summaries; they are, at any rate, the main source of accurate detail for monthly progress reports. Each task manager will also specify a schedule for staff meetings of staff working within his or her area. Task teams will meet as frequently (or infrequently) as needed to share information, coordinate schedules, and revise plans.

Routine communication between MGC and the Research Team. The Research Team is committed to working closely and responsively with MGC to ensure satisfaction with the study. We believe the proposed communication design will satisfactorily meet MGC’s needs for timely and appropriate communication during the development and implementation phases of the project, will keep MGC
updated on project status, and ensure rapid communication on critical project decisions as well as project responsiveness to MGC’s requirements.

At the outset of the project, the Principal Investigators will schedule meetings with MGC and standardize specified teleconference meetings (some routine, some special purpose) to ensure that all of MGC’s informational and oversight needs are met. To keep meetings brief and focused, agendas will be prepared and distributed beforehand. Minutes will be produced afterward as documentation of action items and decisions, and will be distributed via email.

Our general approach as a contractor to MGC is to tailor our pattern of reporting and interaction to two features: 1) the rhythm of project tasks and 2) the needs and preferences of the Commission. At this point, our vision of how things will proceed is based on our understanding of MGC’s requirements (as conveyed in the RFR) and our experience with projects of similar scale and magnitude. We are not rigidly committed to any particular reporting and communication strategy (except, of course, contractually required elements), but we are firmly committed to adapting rapidly and carefully to MGC’s expressed needs. We also recognize that during the course of a project, there will be occasional peak periods when communication levels need to be more intense and—rarely—lulls when they may be somewhat reduced.
CHALLENGES AND POTENTIAL BARRIERS

There are several challenges and potential barriers involved in this research study. They are listed below along with suggested remedies (when available):

Cooperation of Key Players

Without the active cooperation of casino and slot parlor owners and operators, certain forms of data collection cannot occur (i.e., Patron Surveys; License Plate Surveys; Gambling Employee Surveys), and certain types of data will not be provided (i.e., # new employees, gambling revenue, how gambling revenue is disbursed, origin and cost of supplies and servicing, infrastructure investment).

Without the active cooperation of treatment agencies, it will be more difficult to obtain treatment numbers and treatment costs which would make it impossible to potentially conduct a formal evaluation of the effectiveness of the treatment provided. Even with the cooperation of the agencies, there is no guarantee that people who have received treatment services will agree to participate in an evaluation of these services.

➢ It has been our experience that gambling venue operators almost never voluntarily cooperate with socioeconomic impact studies. This is true even when they are provided with opportunities to help shape the methodology; when the results provide useful information to the venue operators themselves; and/or when they are urged to cooperate by government regulators. Thus, the only remedy is to require this cooperation as a condition of being granted a Gambling License by the MGC. Access to Player Card data—as mandated in the statute (Section 97)—would also be useful.

➢ We anticipate much more cooperation from treatment agencies. We assume that treatment statistics are routinely collected on an annual basis and it would be a simple matter to provide us with these statistics. It is also not essential that every agency provide us with these statistics as we can create a reasonable estimate of the total number of people treated based on a sample of the population of treatment providers; from the health insurance claim data; and from the population survey reports of treatment seeking. Treatment agencies will have more concerns with granting us access to their clientele; a step that would allow us to conduct a formal treatment evaluation. This would minimally require the introduction of a new consent form for all new clientele to sign that would give permission to the Research Team to contact these individuals for the purposes of treatment evaluation. It would also require a good portion of new clientele to voluntary sign this form. To better facilitate both of these steps, we have budgeted for the likely costs associated with this increased administrative requirement as well as compensation ($50 per person) for any client who participates in a post-evaluation of their treatment.

The New Casinos and Slot Parlors will not Open at the Same Time

The staggered opening dates of the different venues could result in the four new venues being ‘introduced’ over a period of 2 to 3 years. The problem this creates is that to evaluate the full impact of expanded gambling in Massachusetts it is necessary to conduct the post-evaluation after all four venues
have opened (and have been opened for at least a year)\textsuperscript{22}. This challenge creates two additional problems. First, because the negative social impacts of gambling tend to decline with time (LaPlante & Shaffer, 2007; Williams, Volberg, & Stevens, 2012), a 2-3 year delay in assessing the rates of problem gambling in an area that received their venue 2-3 years earlier could underestimate the true impact of that particular casino/slot parlor. Second, it means that the post-opening impact assessment could occur as late as 2018, which is close to the end of the study period of this research (see next point).

**Full Effects of the New Gambling Venues will not be Captured during the Study Period**

The length of time it takes for all economic and social impacts of gambling to manifest themselves is unknown (Williams, Rehm, & Stevens, 2011). Some of the economic impacts (e.g., revenues, employment, etc.) appear to be fairly immediate. On the other hand, it may take some years for competing industries to fail or for increased utilization of roads, sewers, etc. to result in repairs. Some economic impacts will also reverse themselves in a resilient economy as industries reposition themselves. Social impacts may take longer to appear than economic impacts. While some individuals experience rapid onset of gambling problems, others gamble safely for several years before problems develop (National Research Council, 1999). Thus, it is clear that a post-opening assessment in 2018 (or even late 2017) will not capture all of the effects of these venues.

- There will be value in extending the study period beyond the original 6 years so as to facilitate this evaluation. This could be accommodated within the Commission’s general mandate to create an ‘annual research agenda’.

**Limited Controlled Comparisons**

The before-after comparison used in the present study would be stronger if the social and economic changes observed in Massachusetts could be compared to a geographically and demographically similar state or region that did not introduce casinos during the study period (as any changes observed in Massachusetts could simply be due to the passage of time or a multitude of other social and economic forces at work within the jurisdiction).

Unfortunately, there are very few potential comparators available. The comparators should be located in the northeastern United States, due to the reasonably similar demographic make-up of the Northeast as well as the similarity and interconnectedness of the economies. However, with the exception of New Hampshire and Vermont, all Northeastern states already have casinos and/or slot parlors. Furthermore, there is current discussion in both New Hampshire and Vermont that may result in casinos being introduced in these states.

- If Vermont and New Hampshire do not introduce casinos in the next 6 years they may be able to serve as comparators (although their smaller and more rural economies relative to Massachusetts could limit their usefulness).

\textsuperscript{22} This is because problem gambling does not typically develop immediately and also because virtually all problem gambling instruments have a past-year time frame.
At the community level, there may be comparable communities within Massachusetts that can provide a controlled comparison to changes that occur in communities that receive a new gambling venue. If not, the state of Massachusetts can be used as the primary control region.

Also, the direct attributions that problem gamblers make about casinos and/or slot parlors being the basis of their problems in our population surveys, as well as by the key informants and in the focus groups, will strengthen our causal inferences.

Judgment of the Overall Impacts may be Somewhat Subjective

The judgement about whether the overall impacts of expanded gambling are positive or negative (and the degree to which they are positive or negative), requires a joint qualitative assessment of a) the profile of social impacts, and b) the judged overall positive or negative economic value of the economic impacts. When these things are in alignment, then this assessment is straightforward (i.e., mostly positive social impacts and positive economic value; mostly negative social impacts and negative/no economic value).

However, the assessment is subjective when these things are not in alignment (e.g., net economic gains but mostly negative social impacts). In this situation, the overall assessment will depend on the importance one assigns to the economic versus social impacts. In particular, this will depend on whether one believes that the net economic value of the activity adequately offsets any negative social impacts.23

One potential way of reducing the individual subjectivity of this determination is simply to present the results and let the reader decide whether he/she considers the positives to outweigh the negatives. Another solution is to present the profile of results to a representative group of individuals from Massachusetts and seek their opinion about whether they judge the overall impacts to be positive or negative.

Results may have Limited Generalizability

One of the original objectives of the RFR was to create world-class research on the socioeconomic impacts of casino gambling. An underlying assumption of this aspiration is that the present results could be potentially generalized to other jurisdictions, other time periods, and additional expansions or contractions of gambling in Massachusetts. However, as pointed out by Williams, Rehm & Stevens (2011), the results of socioeconomic impact analyses are very much a function of the context in which the study was conducted. More specifically:

Impacts are Dependent on the Magnitude of the Change in Gambling that has Occurred for the Population
Adding a large casino to a small community without prior gambling opportunities will usually have a much larger impact than adding an additional casino to a large city that already has existing casinos and other gambling opportunities.

23 Other areas of subjectivity also exist; for example, how some of the ambiguous impact categories are construed (e.g., is increased government revenue a positive or negative thing). Another example concerns whether you consider the micro (community-level) benefits more important than the macro (regional-level) benefits.
Impacts are Somewhat Specific to the Type of Gambling Studied
Different types of gambling have different profiles of impacts in terms of their potential for contributing to problem gambling (e.g., slot machines vs. lotteries), the number of jobs they produce (horse racing vs. slot machines), and their likelihood of cannibalization of other industries, etc. Hence, it is necessary to qualify results as being specific to the type of gambling studied.

Impacts are Somewhat Specific to the Jurisdiction Studied
Jurisdictions differ widely in how gambling revenue is distributed, pre-existing availability of gambling, the strength of policy and educational initiatives to prevent problem gambling, baseline levels of poverty and unemployment, and the vulnerability of the population to addiction. Hence, it is important to recognize that the results will be somewhat dependent on the conditions that exist in the particular jurisdiction being studied.

Impacts are Somewhat Specific to the Time Period Studied
The time period that impacts are studied is critical, as gambling availability and gambling policy can change rapidly within a jurisdiction. Furthermore, there is evidence that populations with extended exposure to gambling may have different rates of problems compared to places with more recent introduction of gambling (LaPlante & Shaffer, 2007; Shaffer et al. 2004; Williams, Rehm, & Stevens, 2011). Hence, it is also important to qualify results as being specific to the time period studied.
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