

2021 SENATE FINANCE AND TAXATION

SB 2314

2021 SENATE STANDING COMMITTEE MINUTES

Finance and Taxation Committee Fort Totten Room, State Capitol

SB 2314
2/2/2021

A BILL for an Act to create and enact section 54-58-04 of the North Dakota Century Code, relating to tribal-state gaming compacts and authorization of online gaming and online sports betting exclusively by tribes.

Chair Bell calls the meeting to order. Chair Bell, Vice Chair Kannianen, Senators Meyer, J. Roers, Patten, Piepkorn, Weber are present. [9:30]

Discussion Topics:

- Legalizing online gaming and sports betting for tribes
- Diversification of gaming laws

Senator Joan Heckaman [9:30] introduces the bill and submits testimony #4899.

Senator Marcellais [9:31], testifies in favor and submits testimony #4356.

Jamie Azure [9:33], Tribal Chairman for the Turtle Mountain Band of Chippewa Indians, testifies in favor and submits testimonies #4859, 4860, 4861, 4862, 4863.

Mark Levitan [9:47], outside counsel for the Turtle Mountain Band of Chippewa Indians, offers oral testimony in favor.

Collette Brown [10:04], Gaming Commission Executive Director at Spirit Lake Casino & Report, testifies in favor and submits testimony #4918.

Cynthia Monteau [10:09], Executive Director for the United Tribes Gaming Association, testifies in favor and submits testimony #4917.

Don Santer [10:11], Vice President of CGAND and CEO of NDAD, testifies in opposition and submits testimony #4792.

Additional written testimony:

Ken Karls, lobbyist with the Cystic Fibrosis Association of North Dakota, submits testimony #4738 in opposition.

Mike Motschenbacher, Executive Director for the ND Gaming Alliance, submits testimony #4771 in opposition.

Rick Stenseth, Gaming Manager with Kelsch Law Firm/Northern Prairie Performing Arts aka Fargo Moorhead Community Theatre, submits testimony #4857 in opposition.

Chair Bell adjourns the meeting. [10:14]

Senate Finance and Taxation Committee

SB 2314

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Joel Crane, Committee Clerk

#4899

SB 2314

Senator Joan Heckaman

Chairman and Members of the Committee:

The bill before you today creates a new section of the Century Code to address Tribal-state gaming compacts for online gaming or online sports betting. I would like to say I know everything there is to know about this bill, but I don't. So, I will defer to the fine Senator from District 9 and others present today to help you understand the basis for this bill and what it will codify.

Thank you for your time, Chairman and Committee Members.

Sixty-seventh
Legislative Assembly
of North Dakota

SENATE BILL NO. 2314

Introduced by

Senators Heckaman, Marcellais

Representative Boschee

1 A BILL for an Act to create and enact section 54-58-04 of the North Dakota Century Code,
2 relating to tribal-state gaming compacts and authorization of online gaming and online sports
3 betting exclusively by tribes.

4 **BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

5 **SECTION 1.** Section 54-58-04 of the North Dakota Century Code is created and enacted as
6 follows:

7 **Tribal-state gaming compact involving online gaming or online sports betting.**

8 1. The governor may negotiate and execute a tribal-state gaming compact, subject to
9 section 54-58-03, for the conduct of online gaming and online sports betting by a
10 federally recognized Indian tribe.

11 2. For purposes of section 25 of article XI of the Constitution of North Dakota regarding
12 gaming activity authorized by this section:

13 a. Federally recognized Indian tribes are public-spirited organizations.

14 b. Federally recognized Indian tribes are not subject to chapter 53-06.1 or rules
15 applicable to eligible organizations conducting gaming, except as agreed to in a
16 tribal-state gaming compact.

17 3. Online gaming and online sports betting may be conducted and operated within the
18 state exclusively by federally recognized Indian tribes, utilizing servers located on a
19 tribal reservation within the state, and pursuant to a compact duly entered by the state
20 and the tribe.

21 4. Persons of age may participate in online gaming and online sports betting gaming
22 activities from any location within the state, provided the gaming activities are
23 conducted by a federally recognized Indian tribe, utilize servers located on a tribal
24 reservation within the state, and are operated pursuant to a compact entered by the

- 1 state and the tribe. A person may not be required to register for online gaming or
2 online sports betting accounts in person.
- 3 5. Any tribal-state gaming compact for online gaming, and any compact for online sports
4 betting, must address the following:
- 5 a. The scope of permitted gaming activities;
6 b. Geolocation;
7 c. Account encryption;
8 d. Age verification; and
9 e. Measures to prevent and mitigate online gaming addiction.

#4859

Exhibit 1 to
SB 2314 Letter
Jamie Azure, Tribal Chairman
Turtle Mountain Band of Chippewa
February 2, 2021



OXFORD
ECONOMICS

ECONOMIC IMPACT OF LEGALIZED SPORTS BETTING

MAY 2017

Oxford Economics

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May 2017

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EXECUTIVE SUMMARY

INTRODUCTION

The American Gaming Association (AGA) commissioned Oxford Economics (Oxford) to analyze the potential economic impacts of legalized sports betting in the US. The analysis is based on available data, interviews with industry participants, customized economic impact models, and our professional judgment. Our research consisted of three primary steps.

- **Gaming revenue estimates:** We considered research on illegal sports betting already occurring in the US, and the performance of legal sports betting markets in the US (Nevada and Delaware) and Europe. We prepared national sports betting revenue estimates for three availability scenarios that reflect the types of locations assumed to offer sports betting as well as the potential for online (mobile) betting. For each of these scenarios we also prepared estimates for three different tax rate scenarios. We did not separately estimate an increase or decrease in other forms of gaming, such as at casinos or lotteries, or other forms of spending, with the legalization of sports betting. We expect the primary effect of sports betting would be to shift existing sports betting activity from illegal to legal markets, and that very little sports betting revenue would represent a shift from other forms of legal betting.
- **Economic impacts:** We estimated the total economic impacts in each sports betting scenario, including jobs, income, and tax revenue. In these estimates, the direct effects, which include the jobs and incomes at sports betting operations, are primarily the result of a shift of spending from illegal to legal markets, and are therefore a net gain to the legal, measured economy. The indirect and induced effects represent the downstream effects of sports betting activities. A portion of these indirect and indirect effects already occur as a result of illegal sports betting, but a portion would represent a net gain as illegal betting shifts to legal onshore markets from illegal offshore markets.
- **State-level impacts:** We estimated state-level gaming revenues, taxes, and other economic impacts for each scenario.

SCENARIOS

We studied three potential scenarios of sports betting accessibility:

- **Limited availability:** For example, sports betting offered only on-site at casinos, with no online (mobile) betting. In this scenario, it is assumed that all brick and mortar casinos, whether in commercial or Native American jurisdictions, would be permitted to offer sports betting. Offerings could range from basic (e.g. betting kiosk or window) to spaces outfitted as more traditional sportsbooks. It is assumed that in-play betting would be permitted.

- **Moderate availability:** For example, on-site at casinos plus retail locations, but no online (mobile) betting. These retail locations could range from dedicated sports betting venues to betting facilities co-located with other retail, lottery, or age-controlled locations. It is assumed that in-play betting would be permitted.
- **Convenient availability:** For example, on-site at casinos, plus retail locations, plus online (mobile) betting, including in-play betting.

In the limited availability scenario, we assumed sports betting would only be offered in the 40 states that had casino gaming (commercial or Native American) in operation as of 2016. In the moderate and convenient availability scenarios, we assumed sports betting would be offered in all 50 states.

For each availability scenario, we analyzed three potential tax rate scenarios. In each case, the gaming tax is calculated as a percentage of gross gaming revenue (gross gaming revenue, or GGR, or net win, is the amount retained by the sports betting operation after payment of prizes) and the current federal handle tax of 0.25% is maintained (handle is the amount bet).

The gaming tax rates we assumed are as follows:

- **Base Tax Rate Scenario:** 10% of GGR, plus federal handle tax
- **Low Tax Rate Scenario:** 6.75% of GGR, plus federal handle tax
- **High Tax Rate Scenario:** 15% of GGR, plus federal handle tax

These tax rates represent the assumed average of state tax rates. Some states may be assumed to ultimately set higher or lower gaming tax rates.

We prepared our estimates for a future stabilized year of operations, in 2015 dollars. We assumed that individual states would establish legal and regulatory frameworks for sports betting with sufficient lead-time to reach this stabilized year of operations. Actual timing may differ from this assumption. Additionally, it is possible that certain states may not legalize sports betting as assumed, resulting in conditions that differ from our assumptions.

KEY FINDINGS

Our national estimates for the nine scenarios are summarized in the table on the following page. Using the Convenient Availability-Base Tax Rate Scenario as an example, the impacts may be summarized as follows:

- Total economic output, representing sales of businesses in the US, associated with the initial spending by sports betting patrons and the downstream impacts of that spending, is expected to total \$41.2 billion.
- Sports betting operations are expected to support \$4.0 billion of direct labor income (e.g. wages, salaries, benefits and tips), and \$7.0 billion of indirect labor income, representing \$11.0 billion of total labor income.
- The direct employment impact, representing employment in sports betting operations, is expected to total 86,819 jobs. Additionally, 129,852 indirect

and induced jobs are expected to be supported, resulting in a total employment impact of 216,671 jobs.

- Sports betting is expected to contribute \$22.4 billion to US GDP.
- Fiscal impacts, consisting of state, local and federal tax impacts, are expected to total \$8.4 billion. This represents \$5.5 billion of direct fiscal impacts, which represent a net gain relative to a situation without legal sports betting, and \$2.8 billion of indirect impacts. Tax impacts can also be separated between a state and local share (\$3.4 billion) and federal (\$4.9 billion).

Considering the impacts across the availability scenarios, the largest impacts are associated with the Convenient Availability Scenarios, in which gaming revenue is the highest. Considering the impacts across the tax scenarios, the largest employment and income impacts are associated with the Low Tax Rate Scenarios, while the direct fiscal impacts are largely consistent across the different tax rate scenarios. While combined gaming taxes tend to be lower in the Low Tax Rate Scenario, as a lower gaming tax rate is only partly offset by increased betting activity, and higher in the High Tax Rate Scenario, the overall direct tax impacts are similar across scenarios. This occurs as some of the other effects of changes in betting activity are incorporated (e.g. with increased betting activity in the Low Tax Rate Scenario, federal income tax payments by sports bettors are expected to be higher).

ES-1 Summary of Economic Impacts: US

Stabilized year impacts, monetary amounts in millions of 2015 dollars except per capita amounts

Availability scenario:	Base tax rate			Low tax rate			High tax rate		
	Limited	Moderate	Convenient	Limited	Moderate	Convenient	Limited	Moderate	Convenient
Tax rate assumptions									
Tax rate on GGR	10.00%	10.00%	10.00%	6.75%	6.75%	6.75%	15.00%	15.00%	15.00%
Tax rate on handle	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Selected measures									
Handle (amount bet)	\$83,212	\$169,395	\$287,355	\$96,677	\$205,438	\$332,960	\$65,289	\$128,538	\$237,530
Hold percentage	6.0%	6.6%	6.5%	5.5%	5.8%	5.9%	6.5%	7.4%	7.1%
Gaming revenue	4,993	11,234	18,723	5,317	11,964	19,615	4,244	9,549	16,913
Gaming revenue per capita	\$20.00	\$45.00	\$75.00	\$21.30	\$47.93	\$78.58	\$17.00	\$38.25	\$67.75
Combined gaming tax revenue (in millions)	\$707	\$1,547	\$2,591	\$601	\$1,321	\$2,156	\$800	\$1,754	\$3,131
Gaming tax	499	1,123	1,872	359	808	1,324	637	1,432	2,537
Handle tax	208	423	718	242	514	832	163	321	594
Direct jobs	29,911	64,843	86,819	30,582	68,109	90,327	25,424	55,117	77,429
Economic Impact									
(Direct, indirect, and induced)									
Total economic impact (output)	\$12,819	\$26,560	\$41,172	\$13,566	\$28,411	\$43,716	\$10,580	\$21,887	\$36,157
Total labor income	3,734	7,457	11,017	3,892	7,940	11,696	3,071	6,114	9,593
Total jobs	73,513	151,606	216,671	76,496	161,232	229,720	60,626	124,809	188,818
Total GDP	\$6,689	\$14,240	\$22,365	\$7,230	\$15,486	\$24,068	\$5,439	\$11,560	\$19,208
Total fiscal (tax) impacts	2,602	5,341	8,377	2,627	5,488	8,441	2,342	4,812	8,104

Source: Oxford Economics

1. INTRODUCTION

1.1 ENGAGEMENT OVERVIEW

The American Gaming Association (AGA) commissioned Oxford Economics (Oxford) to analyze the potential economic impacts of legalized sports betting in the US. Key steps in our research included the following:

- **Interview industry participants:** Conduct interviews to gain background understanding.
- **Describe assumed scenarios for analysis:** Develop scenarios in collaboration with AGA, including location parameters and gaming tax rate.
- **Estimate national sports betting revenue in various scenarios:** Including sports betting gaming revenue in a stabilized year under various tax rates.
- **Allocate national estimates to states:** Based on factors such as population and income.
- **Quantify economic impacts:** Including gaming tax revenue, employment, income, and fiscal impacts based on a customized IMPLAN economic impact model.
- **Prepare report:** National report with league-tables presenting state-level estimates.

Following this introduction, this report is organized in three sections, first a summary of the gaming revenue analysis, then the economic impact analysis, and lastly the state-level estimates.

1.2 DEFINITIONS

These terms, as well as terms specific to the economic impact analysis, are also summarized in the Appendix.

- **Handle:** The amount wagered, or amount bet.
- **Gaming revenue:** Also referred to as gross gaming revenue, net win, or GGR, refers to the amount retained by the sports betting operation after payment of prizes. Unless otherwise noted, gaming revenue or GGR in this report refers to revenue specifically generated by sports betting.
- **Gaming taxes:** Taxes calculated as a percentage of gaming revenue are referred to as gaming taxes in this report, and taxes calculated as a percentage of handle are referred to as handle taxes. The combined total of gaming and handle taxes is referred to as combined gaming taxes.
- **Hold percentage:** Ratio of gaming revenue to handle, also referred to as win percentage.
- **Online (mobile) gaming:** Gaming conducted electronically. Unless otherwise specified, this does not restrict users to a particular type of device (i.e. conducted with a personal computer or mobile phone).
- **In-play betting:** Betting on a sporting event that is already underway.

2. GAMING REVENUE ANALYSIS

This section summarizes the gaming revenue estimates used in this analysis. It is arranged in three parts:

- Method
- Illegal sports betting activity
- Legal sports betting activity
- National sports betting gaming revenue estimates

2.1 METHOD

In the US, sports betting is currently offered in a legal, regulated format in only two states (Nevada and Delaware), but is prevalent on an illegal basis.¹ The extent of this illegal market is important, because it is anticipated that the primary effect of legalization would be to cause gamblers to shift from betting in illegal markets to legal markets. However, the size of the illegal market is difficult to assess. As a result, in developing our estimates of potential legal gaming revenue, we not only considered estimates of the size of the illegal gaming market, but also looked at existing markets with legal sports betting as benchmarks, or comparables.

Based on this research, we prepared baseline estimates of national sports betting gaming revenue under three availability scenarios. We then prepared national estimates under two alternative tax rate scenarios. Lastly, as presented in the section of this report on state-level analysis, we estimated state-level gaming revenue in each scenario.

2.2 ILLEGAL SPORTS BETTING ACTIVITY

The scope of illegal sports betting activity in the US is inherently difficult to measure. Such gaming occurs in a variety of formats, including, for example, betting with bookies, online betting with offshore operators, and through casual forms, such as office pools. Unlike regulated gaming, which is tracked in detail at the state level, statistics for illegal gaming are not gathered.

Several organizations have estimated illegal gaming activity in the US. We accessed a summary of such research that had previously been prepared for AGA (EY, 2016) and noted the following.

¹ Four states had pre-existing statutes providing for sports betting and were unaffected by the Professional and Amateur Sports Protection Act of 1992 (PASPA) that prohibited sports betting in all other states. Of these four states, only Nevada and Delaware currently offer sports betting, while Montana and Oregon are inactive.

- **EY:** EY conducted an online consumer survey in 2015 (EY, 2016). The research found approximately 28% of US adults currently bet on sports, wagering an average of \$1,554 over the past 12 months. Applying these values to the total US adult population yields an estimate of \$107 billion of sports betting handle. Additionally, EY noted survey respondents indicated that they would significantly increase their sports betting activity if sports betting was more widely legalized.
- **National Gaming Impact Study Commission:** As summarized by EY, the 1999 report of this federally appointed commission reported a range of estimated illegal sports betting handle between \$80 billion to \$380 billion, with GGR of \$4.8 to \$22.8 billion.

Though these estimates of illegal sports betting cover a wide range, they help show the scope of current illegal activity, and give a broad indication of the potential opportunity for legal sports betting. It is anticipated that the primary result of sports betting legalization will be to shift sports betting activity from illegal to legal markets. It is anticipated that some additional sports betting activity would also be generated, either by those who already bet on sports and would bet more in a legal market, or by those who do not currently bet on sports.

2.3 LEGAL SPORTS BETTING ACTIVITY

We considered secondary research on potential US sports betting revenue in a future, legalized market, as well as the performance of the two legal markets in the US and several in Europe.

2.3.1 Third-party sports betting revenue estimates

We noted several estimates of the potential US market for legalized sports betting:

- **Gambling Compliance:** This industry research firm has published several estimates of the potential US market. Most recently it estimated potential US GGR of:
 - \$1.6 billion in a scenario with casino locations,
 - plus an additional \$5.1 billion in a scenario with retail locations;
 - plus an additional \$5.2 in a scenario with online betting, yielding a total estimate GGR of \$11.9 billion in a future legal scenario with all three gaming formats (Gambling Compliance, 2016).
- **EY:** In its research for AGA, EY estimated the current (mostly) illegal handle of \$107 billion (implies approximately \$5.7 billion of GGR at a 6% hold) could increase to \$148 billion in a legalized scenario (implies approximately \$8.9 billion of GGR at the same 6% hold) (EY, 2016).

2.3.2 Sports betting revenue comparables

We researched regulated sports betting in the two legal markets in the US (Nevada and Delaware) (Fig. 1) and noted the following.

- **Nevada:** Nevada offers the widest availability of sports betting in the US. This includes sportsbooks at casinos that accept in-person bets, as well as online (mobile) gaming. Online (mobile) gaming can be conducted on mobile devices in the state, once the bettor has set up an account in person at a casino. Nevada sports betting covers a wide range of sports and includes in-play betting opportunities. Results estimated for Las Vegas locals, which removes the effects of the Strip-area casinos that cater to out-of-state residents, shows GGR of approximately **\$42 per adult**. Mobile sports betting in Nevada is still ramping up, as more customers become familiar with the options and sign up at casino locations.
- **Delaware:** Sports betting in Delaware is legally limited to a pro football sports lottery (no single-game wagers, only parlays and selected off-the-board wagers). There is no online (mobile) gaming, and in-play betting is limited to half-time wagers. Sports lottery bets may be placed in-person at any of the state's three casinos, or at more than 80 sports lottery retailers. The gaming is subjected to a high effective tax rate, reducing the attractiveness of the odds offered to bettors, the profitability to operators, and the accompanying marketing used to attract players. Nevertheless, GGR on a single season of pro football, offered at casino and sports lottery locations, averages approximately **\$11 per adult**.

We also considered selected European markets (Fig. 2 and Fig. 3) and noted the following:

- **UK:** The UK represents a particularly relevant comparable, with both retail and online gaming, and a tax rate of 15% on GGR. UK sports betting GGR approximates **\$45 per adult**.
- **Other European countries:** Several other European countries also provide relevant comparisons. However, in some cases, such as France and Spain, the gaming tax rates are relatively high, limiting interest in the legal market. Italy appears to be the next closest comparable after the UK, and is generating GGR of approximately **\$22 per adult**, while Denmark generates **\$77 per adult**.

Fig. 1 US sports betting revenue comparables

State	Sports betting description	Format measured	Geography measured	Gaming revenue (in millions)	Adult population (21+, in thousands, 2015)	GDP (nominal, 2015, in millions)	Gaming revenue	
							Per capita (adults)	As ratio to GDP
Delaware	Limited to pro football sports lottery (no single-game wagers, only parlays and selected off-the-board wagers). No online (mobile) gaming. In-play limited to half-time wagers.	Sports betting at sportsbooks or sports lottery retailers	Statewide	\$7.9	702.7	\$66,890	\$11.19	0.012%
		Sportsbooks (3 locations)	Statewide	4.1	702.7	66,890	5.89	0.006%
		Sports lottery retailers (83 locations)	Statewide	3.7	702.7	66,890	5.30	0.006%
Nevada	Nevada-style sports books at casinos, plus online (mobile) gaming (including in-play betting) while in Nevada on accounts initially set up in person.	Sports betting	Statewide	\$219.2	2,119.6	\$140,541	\$103.40	0.156%
			Clark County	194.0	1,541.5	NA	125.83	NA
			Washoe County	14.3	330.8	NA	43.19	NA
			Nevada, excluding Clark County	25.2	578.1	NA	43.61	NA
			Las Vegas locals	65.1	1,541.5	NA	\$42.26	NA

Note:

Delaware sports betting refers to sports lottery offerings at the state's three casinos, plus sports lottery retailers. Gaming revenue is net proceeds, fiscal year ending January 1, 2016.

Nevada gaming revenue data is sports pool win amount, twelve-month period through December 31, 2016. Las Vegas locals refers to gaming revenue at North Las Vegas, Boulder City and Balance of Clark County casinos, and total Clark County population.

Source: Delaware Lottery; Nevada Gaming Control Board; Oxford Economics

Fig. 2 European sports betting revenue comparables

Country	Sports betting description	Format measured	Gaming revenue (in millions, local currency)	Gaming revenue (in millions, USD)	Adult population (21+, in millions, 2015)	GDP (per capita, USD, nominal, 2015)	Gaming revenue		
							Per capita (adults)	As ratio to consumer spending	As ratio to GDP
Denmark	Sports betting on a variety of sports. In-person and online (mobile). In-play bets allowed.	Total betting (sports and other types, such as horse and dog racing)	2,205.0	\$328.6	4.2	\$45,597	\$77.39	0.231%	0.109%
		In-person (sports and other types, such as horse and dog racing)	783.8	116.8			\$27.51	0.082%	0.039%
		Online (mobile) (sports and other types, such as horse and dog racing)	1,421.2	211.8			\$49.88	0.149%	0.070%
UK	Sports betting on a variety of sports. In-person and online (mobile). In-play bets allowed.	Combined in-person and online (mobile) betting on football and other sports	1,451.5	\$2,188.4	48.9	\$41,452	\$44.73	0.125%	0.078%
		In-person betting (football and other, excluding dogs, horses and numbers)	417.1	628.8			\$12.85	0.036%	0.022%
		Online (mobile) betting (football, cricket, golf, tennis)	1,034.4	1,559.6			\$31.88	0.089%	0.055%

Note:

UK results include remote betting within Great Britain only. In-person refers to "off-course". UK gaming revenue reflects twelve-month period ending March 2016.

Denmark results reflect the twelve-month period ending September 2016.

Source: UK Gambling Commission; Spillemyndigheden (Danish Gambling Authority); Oxford Economics

Fig. 3 European sports betting revenue comparables (continued)

Country	Sports betting description	Format measured	Gaming revenue	Gaming revenue	Adult population	GDP	Gaming revenue		
			(in millions, local currency)	(in millions, USD)	(21+, in millions, 2015)	(per capita, USD, nominal, 2015)	Per capita (adults)	As ratio to consumer spending	As ratio to GDP
Italy	Sports betting on a variety of sports. In-person and online (mobile). In-play bets allowed.	Total sports betting (fixed odds)	965.0	1,067.9	48.6	\$35,723	\$21.96	0.096%	0.059%
		In-person sports betting (fixed odds)	606.0	670.7			\$13.79	0.060%	0.037%
		Online (mobile) sports betting (fixed odds)	359.0	397.3			\$8.17	0.036%	0.022%
Spain	Sports betting on a variety of sports. In-person and online (mobile). In-play bets allowed.	Total selected betting (online (mobile) sports, and in-person betting)	458.9	507.9	36.9	\$34,882	\$13.78	0.073%	0.043%
		In-person (nationally regulated, SELAE)	120.5	133.4			\$3.62	0.019%	0.011%
		Online (mobile) (nationally regulated and autonomous regions)	338.4	374.5			\$10.16	0.054%	0.031%
France	Sports betting on a variety of sports. In-person and online (mobile). In-play bets allowed.	Online betting	306.0	338.6	49.3	\$40,023	\$6.87	0.025%	0.014%

Note:

Italy results reflect estimates of 2016 results by industry participants.

Spain results reflect 2015 data for in-person and autonomous regions online betting, and twelve-month results through September 2016 for nationally regulated online betting.

France results reflect the average of results for 2015 and the twelve-month period through September 2016.

Source: Autorite de regulation des jeux en ligne (ARJEL, France); Direccion General de Ordenacion del Juego (Directorate General for the Regulation of Gambling, Spain); industry participants; Oxford Economics

We considered the tax rates in each of the comparable markets as part of the context that is relevant to understanding the gaming revenue generated in each market. For example, one of the reasons Delaware generates a lower level of gaming revenue per adult than many of the markets is that it has a very high effective tax rate (Fig. 4). Nevada has lower rate, with more widely available betting, and tends to generate higher revenue per adult. Meanwhile, the tax rates in the most comparable European markets ranged from 15% of GGR in the UK to 22% of GGR for online (mobile) betting in Italy (Fig. 5). Both Spain and France have higher tax rates. Indeed, in France, the tax rate of 9.3% of handle results in a very high effective tax rate on GGR².

Fig. 4 US sports betting tax comparables

State	Format measured	Tax
Delaware	Sportsbooks	Effective rate equivalent to 50.5% of gross gaming revenue (state share and purse increases), plus 0.25% federal handle tax
	Sports lottery retailers	Effective rate equivalent to 56.4% of gross gaming revenue (state share and purse increases), plus 0.25% federal handle tax
Nevada	In-person and online (mobile) sports betting	6.75% of gross gaming revenue (above \$134,000 per month, lower tax rate on initial revenue), plus 0.25% federal handle tax

Note: At Delaware sportsbooks, based on the fiscal year ending 1/31/2016, distributions imply the following effective shares of GGR: state share 42.2%, purse increases 8.3%, vendor fees (central computer system, terminal equipment and risk management) 15.6%, and track commission 33.9%. At Delaware sports lottery retailers, during the same period, distributions imply the following effective shares of GGR: state share 50.9%, purse increases 5.5%, vendor fees (central computer system, terminal equipment and risk management) 25.0%, retailer commission 16.6%. Source: Delaware Lottery; Nevada Gaming Control Board; Gambling Compliance; Practical Law; Oxford Economics

Fig. 5 European sports betting tax comparables

Country	Format measured	Tax
Denmark	In-person and online (mobile)	20% of gross gaming revenue
UK	In-person and online (mobile)	15% of gross gaming revenue
Italy	In-person	18% of gross gaming revenue
	Online (mobile)	22% of gross gaming revenue
Spain	Online (mobile)	25% of gross gaming revenue, plus 0.075% of prior year handle (turnover) for regulatory costs
France	Online (mobile)	9.3% of handle (turnover), plus negotiated payments to sports organizers

Source: Regulatory authorities; Gambling Compliance; Practical Law

² In other words, assuming \$100 wagered with a 15% hold percentage. GGR would be \$15. A handle tax of 9.3% would be equivalent to \$9.30, or more than half the GGR, implying an effective tax rate on GGR over 60%.

2.3.1 NATIONAL SPORTS BETTING GAMING REVENUE ESTIMATES

The potential sports betting revenue in the US in a future legalization scenario is dependent on several regulatory factors. We note the following as examples:

- **Availability of places to bet:** Also referred to as convenience, this relates to the number of locations that offer sports betting, as well as whether online (mobile) betting is allowed. Greater convenience is anticipated to result in higher legal GGR.
- **Gaming tax rate:** At higher tax rates, sports betting is anticipated to be offered at less attractive odds, and operators are expected to spend less on marketing and other aspects of the customer experience, including technology, content (e.g. broadcast video and game stats), and customer service, thereby encouraging more bettors to bet in illegal markets. As a result, lower tax rates are expected to result in higher legal GGR.
- **Sports included:** Ability to wager on a greater number of sports is expected to result in higher legal GGR.
- **Types of wagers offered:** Similar to sports, the ability to place a variety of wagers – such as single game, proposition bets and in-play bets – is expected to result in higher legal GGR.
- **Market scope:** Regulations that allow sports betting operators to achieve economies of scale are expected to result in offerings that are more attractive to bettors, and result in higher legal GGR. For example, common technology standards, ability to operate certain sportsbook functions on a pooled basis across multiple states, and ability to develop national, or multistate, marketing and customer relationships, can help support such economies of scale and higher legal GGR.

These represent some of the factors that can affect the legal revenue potential of a market. In general, factors that result in higher legal GGR are anticipated to cause a greater shift of sports betting activity from illegal to legal markets.

2.3.2 Assumptions

We made the following assumptions:

- The availability, or convenience, of sports betting will be as described in the three scenarios presented below.
- The tax rates applicable to sports betting will be as described in the three tax rate scenarios presented below.
- There would be no unusual restrictions on the types of sports on which wagers could be placed, or the types of wagers. Betting will be similar to the current offerings in Nevada. For example, betting on all major sports and in-play betting would be allowed.
- The scope of the market will be sufficient to allow operators to reach reasonable economies of scale, for example, by offering and marketing generally consistent products across many states.
- Online (mobile) sports betting operators would be required to be based in the US.

- We prepared our estimates for a future stabilized year of operations. This refers to a representative year in which operators have had time to attract customers and normalize operations, and gamers have had time to adapt to the new offerings. We have used population and demographic statistics for 2021 as a representative year.
- We assumed that individual states would establish legal and regulatory frameworks for sports betting with sufficient lead-time to reach this stabilized year of operations. Actual timing may differ from this assumption. Additionally, it is possible that certain states will not legalize sports betting as assumed, resulting in conditions that differ from our assumptions.
- We prepared our estimates in 2015 dollars. Thus, we did not add an additional factor to account for general price inflation in future years.

2.3.3 Availability scenarios

We studied three potential scenarios of sports betting accessibility.

- **Limited availability:** For example, sports betting offered only on-site at casinos, with no online (mobile) betting. In this scenario, it is assumed that all brick and mortar casinos (including racetrack casinos, as well as racetrack and off-track betting operations), whether in commercial or Native American jurisdictions, would be permitted to offer sports betting. Offerings could range from basic (e.g. betting kiosk or window) to spaces outfitted as more traditional sportsbooks. It is assumed that in-play betting would be permitted.
- **Moderate availability:** For example, on-site at casinos plus retail locations, but no online (mobile) betting. These retail locations could range from dedicated sports betting venues to betting facilities co-located with other retail, lottery, or age-controlled locations. It is assumed that in-play betting would be permitted.
- **Convenient availability:** For example, on-site at casinos, plus retail locations, plus online (mobile) betting, including in-play betting.

In the limited availability scenario, we assumed sports betting would only be offered in the 40 states that had casino gaming (commercial or Native American) in operation as of 2016. In the moderate and convenient availability scenarios, we assumed sports betting would be offered in all 50 states.

2.3.4 Tax rate scenarios

We analyzed three potential tax rate scenarios. In each case, the gaming tax rate is calculated as a percentage of GGR and the current federal handle tax of 0.25% is maintained.

The gaming tax rates we assumed are as follows:

- **Base Tax Rate Scenario:** 10% of GGR, plus federal handle tax
- **Low Tax Rate Scenario:** 6.75% of GGR, plus federal handle tax
- **High Tax Rate Scenario:** 15% of GGR, plus federal handle tax

These tax rates represent the assumed average tax rates across individual states. In other words, some states may be assumed to set higher or lower tax rates. We did not quantify tax revenues related to licensing, such as for operators or employees. We have assumed that sports betting conducted by Native American tribal operators would support compact payments to state governments equivalent to the assumed gaming tax. We have also made the simplifying assumption that the federal handle tax would be collected on such tribal operations, though instead this could more precisely be labeled as an assumed federal/state handle tax, with tribal operations making payments to states as is more consistent with state-level gaming compacts.

2.3.5 Gaming revenue estimates: Base tax rate, across availability scenarios

We have estimated sports betting gaming revenue in the Base Tax Rate scenario as follows:

- **Convenient Availability Scenario:** GGR of \$75.00 per adult, resulting in total GGR of \$18.7 billion. On a per adult basis, this estimate is higher than the sports betting GGR per adult of \$42 estimated for Las Vegas locals, a market that is still ramping up its mobile offering, and higher than the GGR per adult of \$45 in the UK. As a ratio to GDP, at 0.094%, this estimate is slightly higher than the recent UK sports betting average (0.078%), and higher than that of Italy (0.059%), but lower than Denmark (0.109%). The higher ratios assumed in the Convenient Availability Scenario reflect the expectation that wide availability of in-person and online (mobile) legal sports betting in the US, after several years of ramp-up, would result in gaming activity that substantially exceeds the current comparables in Nevada, the UK, and Italy. Assuming a hold percentage of 6.5%, representing a blended rate across gaming formats, implies total US handle (amount bet) of \$287.4 billion.
- **Moderate Availability Scenario:** GGR of \$45.00 per adult, resulting in total GGR of \$11.2 billion. This estimate of GGR per adult is higher than the GGR per adult that is generated at in-person betting venues in the UK (\$13), Italy (\$14) and Las Vegas locals (\$21 per adult in-person, assuming half of activity is in-person and half is mobile). However, it also considers that Delaware is generating GGR of \$11 per adult on a single sport (pro football), in restricted gaming format (parlay cards), with a very high effective tax rate. We assumed that wide availability of in-person legal sports betting in the US, after several years of ramp-up, would result in gaming activity that exceeds the current comparables in Nevada, the UK, and Italy, in part due to higher income levels in the US. Assuming a hold percentage of 6.6%, representing a blended rate across gaming formats, implies total US handle (amount bet) of \$169.4 billion.

- Limited Availability Scenario:** GGR of \$20.00 per adult, resulting in total GGR of \$5.0 billion. In this scenario, sports betting is limited to sportsbooks on-site at casinos, and the revenue potential is further reduced. For the 40 states with some form of casino gaming (Native American or commercial), this is equivalent to a median GGR per adult of \$26. The total sports betting GGR of \$5.0 billion in this scenario is equivalent to approximately 7.5% of gaming revenues at US casinos. This compares to the recent historical ratio of sports betting revenue to total casino win in Nevada of 1.9%. Assuming a hold percentage of 6.0%, implies total US handle (amount bet) of \$83.2 billion.

These estimates are summarized in the following table (Fig. 6).

Our estimates are moderately higher than the third-party estimates summarized previously in this document. We are comfortable with our estimates on the basis of the available comparables, and the expectation that legal sports betting in the US has the potential to divert significant volumes of illegal activity to legal markets and attract moderate additional betting activity.

We did not separately estimate an increase or decrease in other forms of gaming, such as at casinos or lotteries, or other forms of spending, with the legalization of sports betting. We expect the primary effect of sports betting would be to shift existing sports betting activity from illegal markets to legal markets, and that very little sports betting revenue would represent a shift from other forms of legal betting. Additionally, based on our understanding of industry dynamics, we expect it is likely that the availability of sports betting onsite at casinos – and potentially onsite at retail locations – would help attract additional players to visit casinos, or encourage existing patrons to stay longer. We expect this would tend to result in an increase in casino revenue and associated gaming taxes, rather than cannibalization of existing gaming.

Fig. 6 Gaming revenue estimates in Base Tax Rate Scenario

Stabilized year estimates, in 2015 dollars

Availability scenarios Scenario description	Base Tax Rate		
	Limited	Moderate	Convenient
	On-site at casinos	Retail locations; plus on-site at casinos	Online (mobile); plus retail locations; plus on- site at casinos
Tax rate assumptions			
Tax rate on GGR	10.00%	10.00%	10.00%
Tax rate on handle	0.25%	0.25%	0.25%
Selected measures			
Handle (amount bet, in millions)	\$83,212	\$169,395	\$287,355
Hold percentage	6.0%	6.6%	6.5%
Gaming revenue (in millions)	\$4,993	\$11,234	\$18,723
Combined gaming tax revenue (in millions)	707	1,547	2,591
Adult population (21+, in millions, 2021)	249.6	249.6	249.6
GDP (per capita, real, 2021)	\$59,399	\$59,399	\$59,399
Gaming revenue per capita	\$20.00	\$45.00	\$75.00
Gaming revenue as ratio to GDP	0.025%	0.056%	0.094%

Source: Oxford Economics

2.3.1 Gaming revenue estimates: Tax rate and availability scenarios

In addition to analyzing potential revenue across the three availability scenarios, we also considered the impact of alternative tax rates. In the Low Tax Rate Scenarios, we assumed a 6.75% tax on GGR, and in the High Tax Rate Scenarios, we assumed a 15.0% tax on GGR. In all scenarios, we assumed a 0.25% federal handle tax.

The magnitude of impacts associated with such tax rate changes are uncertain. In the Low Tax Rate Scenario, we assumed that sports betting operators would tend to set odds that were more attractive to bettors, would invest more in technology, content and infrastructure, and would spend more on marketing and customer service. Overall, in the Convenient Availability-Low Tax Rate Scenario, we anticipate this would result in a 15.9% increase in handle, and a 4.8% increase in gaming revenue. The limited impact on gaming revenue is anticipated as the changes in operations, such as increased marketing, would be marginal relative to the Base Tax Rate Scenario. Overall, gaming tax revenue is expected to decrease relative to the Base Tax Rate Scenarios, as the lower tax rate more than offsets the increase in gaming revenue.

In contrast, in the High Tax Rate Scenario, we anticipate operators would tend to set less attractive odds, invest less in technology, content and infrastructure, and reduce marketing and customer service. These changes would be expected to make legal sports betting less attractive to some gamers relative to illegal alternatives, thereby reducing legal market activity relative to the Base Tax Rate Scenario. Relative to the Convenient-Base Tax Rate Scenario, in the Convenient-

High Tax Rate Scenario, we anticipate handle would be 17.3% lower and gaming revenue would be 9.7% lower. Meanwhile, in the Limited Availability-High Tax Rate Scenario, we anticipate handle would be 21.5% lower and gaming revenue would be 15.0% less than in the Limited Availability-Base Tax Rate Scenario. This greater percentage decline in the Limited Availability Scenario, and a similar 15.0% decline in gaming revenue in the Moderate Availability Scenario, is assumed due to the cost structures associated with in-person betting. At a higher tax rate, certain marginal marketing activities and capital investments are expected to be less profitable, or unprofitable, and would be cut back, resulting in a decline in gaming revenue. Overall, in the Higher Tax Rate Scenarios, gaming tax revenue is expected to increase relative to the Base Tax Rate Scenarios, as the higher tax rate more than offsets the decrease in gaming revenue.

Estimates for the nine scenarios are summarized in the following table (Fig. 7).

Fig. 7 Gaming revenue estimates: US

Stabilized year impacts, monetary amounts in millions of 2015 dollars except per capita amounts

Availability scenario:	Base tax rate			Low tax rate			High tax rate		
	Limited	Moderate	Convenient	Limited	Moderate	Convenient	Limited	Moderate	Convenient
Tax rate assumptions									
Tax rate on GGR	10.00%	10.00%	10.00%	6.75%	6.75%	6.75%	15.00%	15.00%	15.00%
Tax rate on handle	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Selected measures									
Handle (amount bet)	\$83,212	\$169,395	\$287,355	\$96,677	\$205,438	\$332,960	\$65,289	\$128,538	\$237,530
Hold percentage	6.0%	6.6%	6.5%	5.5%	5.8%	5.9%	6.5%	7.4%	7.1%
Gaming revenue	4,993	11,234	18,723	5,317	11,964	19,615	4,244	9,549	16,913
Gaming revenue per capita	\$20.00	\$45.00	\$75.00	\$21.30	\$47.93	\$78.58	\$17.00	\$38.25	\$67.75
Combined gaming tax revenue (in millions)	\$707	\$1,547	\$2,591	\$601	\$1,321	\$2,156	\$800	\$1,754	\$3,131
Gaming tax	499	1,123	1,872	359	808	1,324	637	1,432	2,537
Handle tax	208	423	718	242	514	832	163	321	594

Source: Oxford Economics

3. ECONOMIC IMPACTS

3.1 METHOD

Oxford's economic impact analysis included the following steps:

- (1) Development of a financial model of sports betting operations in each scenario.
- (2) Consideration of substitution effects, representing shifts in spending.
- (2) Application of a customized economic impact model, and drivers from the financial model, to estimate national and state-level economic impacts.

The following sections provide additional background on these methods.

3.1.1 Financial model

Oxford developed a financial model for this analysis to assess sports betting operations in each scenario using a consistent framework of drivers. The key financial model drivers are summarized as follows.

- **Non-gaming revenue:** Estimated in proportion to gaming revenue.
- **Payroll expenses and average compensation per employee:** Estimated in proportion to total net revenue.
- **Marketing expenses:** Estimated in proportion to total net revenue.
- **Other operating expenses:** Estimated in proportion to total net revenue.
- **Gaming taxes:** Estimated based on fixed percentage of GGR.
- **Handle tax:** Estimated based on fixed percentage of handle.

In estimating each of these lines, we considered benchmarks we gathered on sports betting operations from public company filings and interviews with industry participants, as well as our understanding of the gaming industry. When estimating average compensation per employee we considered the following examples of departments and roles within sports betting operations:

- **Operations:**
 - Frontline ticket writers and other customer relationship staff
 - On-site managers and supervisors
 - Regional managers (e.g. area and district managers)
 - Head of operations
 - Security
 - Customer support and call center operations
 - Content management system team (e.g. coordinating content displayed on screens)
- **IT:**
 - Betting and ticket terminal technicians
 - Desktop support
 - Mobile development

- System engineers
- Security
- **Finance and audit**
- **Trading/book-making**
- **Marketing**
- **Human resources**
- **Legal and compliance**
- **Corporate overhead and business development**

Based on these departments, and consideration of average compensation levels for selected occupations and sectors, including the high skill and income levels anticipated in the IT and trading/book-making functions in particular, we estimated average compensation per employee, and the corresponding number of direct employees, for each scenario.

We conducted the analysis in constant 2015 dollars.

3.1.2 Substitution effects and other impacts

As stated in Section 2, we did not separately estimate an increase or decrease in other forms of gaming, such as at casinos or lotteries, or other forms of spending, with the legalization of sports betting. We expect the primary effect of sports betting would be to shift existing sports betting activity to legal markets from illegal markets – i.e. substitute legal betting for illegal betting, and that very little sports betting revenue would represent a substitute for other forms of legal betting. There may be some shifts from other types of spending, such as by new participants in sports betting, but these are secondary effects and are not directly quantified as substitution effects in this analysis.

Additionally, based on our understanding of industry dynamics, we expect it is likely that the availability of sports betting onsite at casinos – and potentially onsite at retail locations – would help attract additional players to visit casinos, or encourage existing patrons to stay longer. We expect this would tend to result in an increase in casino gaming revenue and associated gaming taxes, rather than a cannibalization of existing gaming.

As a result, the primary direct effects covered by the analysis represent a shift, or substitution, to legal sports betting from illegal betting. Thus, the direct output, jobs, income, GDP, and taxes are impacts that would represent a net gain in economic activity that is legal, reported and measured as part of the US economy. Meanwhile, the indirect and induced effects, which measure downstream impacts as discussed further below, are a mix of gross and net impacts. For example, employees in illegal sports betting operations currently spend a portion of their earnings in legal markets, supporting many of the same downstream impacts that legal sports betting would, so there would not be a net gain in legal economic activity. However, illegal sports betting by US customers that takes place offshore is assumed to generate very little domestic downstream impacts. Converting such activity to occur in legal, domestic markets would generate a net gain of indirect and induced effects (as well as direct). In summary, it is appropriate to consider the

direct effects estimated in this analysis as a net gain in legal economic activity, and the indirect and induced effects as a mix of gross and net impacts.

We anticipate that there will be certain other impacts that are not quantified in the economic impact analysis outlined below. In particular, we anticipate that the legalization of sports betting will result in law enforcement cost savings. With a significant reduction in the demand for illegal sports betting, as bettors shift to a legal alternative, the costs associated with investigation and prosecution of illegal sports betting are expected to decrease. Additionally, we assume that legal sports betting will be accompanied by greater availability and accessibility of resources to address problem gaming, such as could be supported by dedicating a portion of gaming taxes. In addition, regulated sports betting operators are assumed to provide certain protections, such as against underage gambling, compulsive gambling, money laundering, sports integrity, and fraud.

3.1.3 Economic impacts

Direct spending on sports betting is anticipated to generate broader economic impacts through downstream demand for goods and services and as employees spend their wages. In Oxford's approach, the estimated direct effects based on the financial model are inputs to an economic impact model used to quantify the broader economic benefits. In this approach, there are three main components of the sector's expected economic impact:

- **Direct impacts** include the direct spending on sports betting and related non-gaming spending, such as on-site at a casino or other ancillary purchase.
- **Indirect impacts** include downstream supplier industry impacts. Sports betting operations typically purchase a range of third-party goods and services, including for example, food, beverages, and utilities; maintenance, repair or cleaning services; and legal, marketing and other professional and financial services. In addition, sports betting operations are anticipated to purchase sports and media content, and make capital investments.
- **Induced impacts** arise as employees spend their wages in the local economy. For example, as sports betting employees spend income on rent, transportation, food and beverage, and entertainment.

To conduct the economic impact analysis, Oxford used a customized model based on the IMPLAN modeling system, a well-respected economic impact analysis tool, to quantify key economic relationships. The IMPLAN model traces the flow of direct expenditures through the local economy and their effects on employment, wages, and taxes. IMPLAN also quantifies the indirect (supplier) and induced (income) impacts. For example, a portion of the inputs purchased by sports betting operations supports wages in the supplier sectors (e.g. wages and salaries at advertising firms). The IMPLAN model captures these types of relationships based on a structured analysis of economic statistics. Additionally, the IMPLAN model reflects the typical levels of federal, state and local taxes generated by specific types of economic activity.

In this analysis, Oxford applied an analysis-by-parts approach. In this approach, Oxford estimated the direct impacts of sports betting operations in terms of output, employment, and labor income. We also estimated purchases from vendors. We then used the IMPLAN model to estimate the indirect and induced effects associated with sports employment, and purchases from vendors.

The direct fiscal impacts quantified in our analysis include:

- Assumed state gaming tax on GGR and federal handle tax;
- Payroll and income tax payments supported by sports betting employees (including those paid by the employer as well as by employees);
- Federal income tax payments by bettors based on reported net winnings; and,
- Corporate income tax, property tax, and other business taxes supported by sports betting operations.

We did not include estimates of gaming licensing taxes, either on sports betting operations or employees.

Our estimate of federal income tax payments by bettors reflects substantial tax revenue expected to be generated on net winnings reported by individuals on income tax filings. Legal sports betting operations would be anticipated to provide reporting of winnings above certain thresholds to federal and state authorities. Individuals would be assumed to be permitted to deduct losses from winnings during the year. For the purpose of this analysis, we assumed such individual income tax payments with legal sports betting would be equivalent to 0.5% of handle (amount bet). This is consistent with a previous study that examined the potential impact of legal online gaming (PwC, 2008), as well as independent calculations we performed. We have referred to this amount in the detailed tax estimates as: "Federal taxes, personal income (bettors)".

3.2 SCENARIO RESULTS

Estimated economic impacts in each of the scenarios are summarized in the following table (Fig. 8). Using the Convenient Availability-Base Tax Rate Scenario as an example, the impacts may be summarized as follows:

- Total economic output, representing sales of businesses in the US, associated with the initial spending by sports betting patrons and the downstream impacts of that spending, is expected to total \$41.2 billion.

Fig. 8 Economic impacts: US

Stabilized year impacts, monetary amounts in millions of 2015 dollars

Availability scenario:	Base tax rate			Low tax rate			High tax rate		
	Limited	Moderate	Convenient	Limited	Moderate	Convenient	Limited	Moderate	Convenient
Gaming summary									
Gaming revenue	\$4,993	\$11,234	\$18,723	\$5,317	\$11,964	\$19,615	\$4,244	\$9,549	\$16,913
Combined gaming tax revenue	707	1,547	2,591	601	1,321	2,156	800	1,754	3,131
Economic Impact									
Total Economic Output	\$12,819	\$26,560	\$41,172	\$13,566	\$28,411	\$43,716	\$10,580	\$21,887	\$36,157
Direct expenditures (output)	5,492	11,982	19,347	5,849	12,761	20,280	4,668	10,185	17,443
Indirect and induced output	7,327	14,578	21,825	7,717	15,650	23,436	5,912	11,702	18,714
Total Labor Income	\$3,734	\$7,457	\$11,017	\$3,892	\$7,940	\$11,696	\$3,071	\$6,114	\$9,593
Direct labor income	1,373	2,760	3,980	1,404	2,895	4,137	1,167	2,346	3,563
Indirect and induced labor income	2,361	4,697	7,036	2,488	5,045	7,559	1,904	3,768	6,030
Total Employment	73,513	151,606	216,671	76,496	161,232	229,720	60,626	124,809	188,818
Direct employment	29,911	64,843	86,819	30,582	68,109	90,327	25,424	55,117	77,429
Indirect and induced employment	43,602	86,763	129,852	45,914	93,123	139,394	35,202	69,692	111,388
GDP	6,689	14,240	22,365	7,230	15,486	24,068	5,439	11,560	19,208
Direct GDP	2,423	5,755	9,650	2,733	6,372	10,404	2,001	4,758	8,317
Indirect and induced GDP	4,265	8,485	12,715	4,496	9,114	13,664	3,437	6,802	10,891
Total Fiscal (Tax) Impacts	\$2,602	\$5,341	\$8,377	\$2,627	\$5,488	\$8,441	\$2,342	\$4,812	\$8,104
By concept									
Direct fiscal (tax) impacts	1,649	3,446	5,539	1,624	3,454	5,394	1,573	3,291	5,671
Indirect and induced taxes	952	1,895	2,838	1,003	2,035	3,048	768	1,521	2,433
By level									
State and local taxes	1,035	2,189	3,440	920	1,943	2,990	1,077	2,306	3,901
Federal taxes	1,567	3,152	4,937	1,708	3,545	5,451	1,264	2,506	4,202

Source: Oxford Economics

- Sports betting operations are expected to support \$4.0 billion of direct labor income (e.g. wages, salaries, benefits and tips), and \$7.0 billion of indirect labor income, representing \$11.0 billion of total labor income.
- The direct employment impact, representing employment in sports betting operations, is expected to total 86,819 jobs. Additionally, 129,852 indirect and induced jobs are expected to be supported, resulting in a total employment impact of 216,671 jobs.
- Sports betting is expected to contribute \$22.4 billion to US GDP.
- Fiscal impacts, consisting of state, local and federal tax impacts, are expected to total \$8.4 billion. This represents \$5.5 billion of direct fiscal impacts (including \$2.6 billion of gaming taxes and \$1.4 billion of personal income tax payments by bettors, both of which represent a net gain relative to a situation without legal sports betting), and \$2.8 billion of indirect impacts. Tax impacts of \$8.4 billion can also be separated between a state and local share (\$3.4 billion) and federal (\$4.9 billion).

Considering the impacts across the availability scenarios, the largest impacts are associated with the Convenient Availability Scenarios, which have the highest gaming revenues. Considering the impacts across the tax scenarios, the largest employment and income impacts are associated with the Low Tax Rate Scenarios, which have the highest gaming revenues; however, the direct fiscal impacts similar across the scenarios. While combined gaming taxes tend to be lower in the Low Tax Rate Scenario, as a lower gaming tax rate is only partly offset by increased betting activity, and higher in the High Tax Rate Scenario, the overall direct tax impacts are similar across scenarios. This occurs as some of the other effects of changes in betting activity are incorporated (e.g. with increased betting activity in the Low Tax Rate Scenario, federal income tax payments by sports bettors are expected to be higher).

Additional detail on the fiscal impacts is summarized in the following table (Fig. 9).

Fig. 9 Fiscal impacts: US

Stabilized year impacts, monetary amounts in millions of 2015 dollars

Availability scenario:	Base tax rate			Low tax rate			High tax rate		
	Limited	Moderate	Convenient	Limited	Moderate	Convenient	Limited	Moderate	Convenient
Gaming summary									
Gaming revenue	\$4,993	\$11,234	\$18,723	\$5,317	\$11,964	\$19,615	\$4,244	\$9,549	\$16,913
Combined gaming tax revenue	707	1,547	2,591	601	1,321	2,156	800	1,754	3,131
Fiscal (Tax) Impacts									
Total Fiscal (Tax) Impacts	\$2,602	\$5,341	\$8,377	\$2,627	\$5,488	\$8,441	\$2,342	\$4,812	\$8,104
Direct taxes	1,649	3,446	5,539	1,624	3,454	5,394	1,573	3,291	5,671
State and local taxes	684	1,489	2,394	549	1,193	1,867	793	1,743	3,003
Sales	18	27	23	20	29	24	16	23	19
Gaming	499	1,123	1,872	359	808	1,324	637	1,432	2,537
Personal income	27	55	79	28	58	82	23	47	71
Corporate	9	19	27	9	20	28	8	16	24
Unemp. ins. and other social	2	5	7	2	5	7	2	4	6
Excise taxes and fees	24	47	68	24	50	71	20	40	61
Property taxes	104	213	317	107	224	331	88	181	285
Federal taxes	966	1,957	3,145	1,074	2,261	3,526	780	1,548	2,668
Gaming (handle tax)	208	423	718	242	514	832	163	321	594
Personal income (bettors)	416	847	1,437	483	1,027	1,665	326	643	1,188
Personal income	109	219	316	112	230	329	93	186	283
Corporate	62	125	181	64	132	188	53	107	162
Indirect business taxes	25	49	71	25	52	74	21	42	64
Social security	146	292	422	149	307	438	124	249	378
Indirect taxes	952	1,895	2,838	1,003	2,035	3,048	768	1,521	2,433
State and local taxes	352	700	1,047	370	751	1,123	284	562	898
Federal taxes	601	1,195	1,791	633	1,284	1,925	484	958	1,534

Source: Oxford Economics

We have combined the gaming revenue estimates and the economic impact results in the following summary table (Fig. 10).

Fig. 10 Summary of economic impacts: US

Stabilized year impacts, monetary amounts in millions of 2015 dollars except per capita amounts

Availability scenario:	Base tax rate			Low tax rate			High tax rate		
	Limited	Moderate	Convenient	Limited	Moderate	Convenient	Limited	Moderate	Convenient
Tax rate assumptions									
Tax rate on GGR	10.00%	10.00%	10.00%	6.75%	6.75%	6.75%	15.00%	15.00%	15.00%
Tax rate on handle	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Selected measures									
Handle (amount bet)	\$83,212	\$169,395	\$287,355	\$96,677	\$205,438	\$332,960	\$65,289	\$128,538	\$237,530
Hold percentage	6.0%	6.6%	6.5%	5.5%	5.8%	5.9%	6.5%	7.4%	7.1%
Gaming revenue	4,993	11,234	18,723	5,317	11,964	19,615	4,244	9,549	16,913
Gaming revenue per capita	\$20.00	\$45.00	\$75.00	\$21.30	\$47.93	\$78.58	\$17.00	\$38.25	\$67.75
Combined gaming tax revenue (in millions)	\$707	\$1,547	\$2,591	\$601	\$1,321	\$2,156	\$800	\$1,754	\$3,131
Gaming tax	499	1,123	1,872	359	808	1,324	637	1,432	2,537
Handle tax	208	423	718	242	514	832	163	321	594
Direct jobs	29,911	64,843	86,819	30,582	68,109	90,327	25,424	55,117	77,429
Economic Impact (Direct, indirect, and induced)									
Total economic impact (output)	\$12,819	\$26,560	\$41,172	\$13,566	\$28,411	\$43,716	\$10,580	\$21,887	\$36,157
Total labor income	3,734	7,457	11,017	3,892	7,940	11,696	3,071	6,114	9,593
Total jobs	73,513	151,606	216,671	76,496	161,232	229,720	60,626	124,809	188,818
Total GDP	\$6,689	\$14,240	\$22,365	\$7,230	\$15,486	\$24,068	\$5,439	\$11,560	\$19,208
Total fiscal (tax) impacts	2,602	5,341	8,377	2,627	5,488	8,441	2,342	4,812	8,104

Source: Oxford Economics

4. STATE-LEVEL ESTIMATES

State-level estimates in each of the scenarios are summarized in tables on the following pages. For the Base Tax Rate Scenario, we have provided the following tables for each of the Availability Scenarios:

- Total impacts
- Direct impacts
- Gaming revenue and tax impacts

The sub-sections below provide background on our approach.

4.1 GAMING REVENUE ESTIMATES

We prepared state-level sports betting gaming revenue estimates for each of the nine scenarios based on the national estimates. In the limited availability scenario, we assumed sports betting would only be offered in the 40 states that had casino gaming (commercial or Native American) in operation as of 2016. In the moderate and convenient availability scenarios, we assumed sports betting would be offered in all 50 states.

We primarily modeled the state estimates based on Oxford's estimates of adult population in 2021. We also made the following adjustments:

- In the Limited Availability Scenario, we adjusted for the availability of casino gaming in each state to reflect the expectation that states with wider availability of casino gaming would offer greater convenience of sports betting.
- In the Moderate and Convenient Availability Scenarios, we adjusted based on Oxford's estimate of per capita personal disposable income in each state relative to the national average to reflect the expectation that states with greater per capita incomes would tend to generate more gaming revenue.

4.2 ECONOMIC IMPACTS

We developed state-specific economic impact estimates based on gaming revenue, associated direct impacts including employment and wages, as well as estimated purchases by sports betting operations in each state. The analysis is based on state-specific IMPLAN models of industry, employment and tax relationships. Indirect and induced impacts were assessed first based on state-specific IMPLAN models, and then adjusted to reflect the tendency for such impacts to accrue across state lines. As a result, though a state such as Virginia is assumed to have no sports betting revenue in the Limited Availability Scenarios, it is still assumed to accrue some indirect and induced benefits, for example as sports betting operations in the region, and nationally, purchase inputs from Virginia-based businesses, and as employees spend a portion of their wages and salaries on outputs from Virginia-based businesses.

4.3 STATE TABLES: BASE TAX RATE SCENARIOS

Scenario: Limited availability, Base tax rate
Total impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$97.6	\$28.1	636	\$51.6	\$19.2	\$8.0	\$11.2	\$4.5	\$3.2	\$1.3
Alaska	10.9	3.3	47	6.6	1.5	0.5	1.0	0.1	0.0	0.0
Arizona	345.7	100.0	2,171	175.7	72.3	29.2	43.1	21.3	15.0	6.3
Arkansas	23.3	7.1	146	14.2	0.0	0.0	0.0	0.0	0.0	0.0
California	1,619.8	485.8	8,108	866.1	339.0	138.6	200.5	82.8	58.5	24.4
Colorado	207.4	60.6	1,174	109.2	40.7	15.7	25.0	10.5	7.4	3.1
Connecticut	290.1	86.4	1,435	152.2	67.9	27.3	40.6	18.5	13.1	5.5
Delaware	71.3	21.1	403	36.8	15.4	6.3	9.1	4.7	3.3	1.4
District of Columbia	31.2	9.5	82	19.0	0.0	0.0	0.0	0.0	0.0	0.0
Florida	626.2	179.2	3,877	325.7	126.9	49.8	77.1	32.0	22.6	9.4
Georgia	99.5	30.5	540	60.8	0.0	0.0	0.0	0.0	0.0	0.0
Hawaii	16.1	4.9	83	9.9	0.0	0.0	0.0	0.0	0.0	0.0
Idaho	49.1	13.6	337	24.3	9.8	3.9	5.9	2.9	2.0	0.8
Illinois	382.8	113.4	1,967	207.5	75.9	31.1	44.8	16.6	11.7	4.9
Indiana	394.7	110.1	2,565	195.2	82.6	33.1	49.5	25.6	18.0	7.5
Iowa	265.7	74.2	1,742	128.6	57.6	23.8	33.8	18.3	13.0	5.4
Kansas	129.6	36.2	821	65.3	26.7	10.7	15.9	7.6	5.4	2.2
Kentucky	38.9	11.9	224	23.8	0.0	0.0	0.0	0.0	0.0	0.0
Louisiana	508.7	140.2	3,220	247.4	108.8	44.2	64.6	35.7	25.2	10.5
Maine	32.0	9.2	209	16.9	6.3	2.7	3.6	1.5	1.1	0.4
Maryland	237.7	70.0	1,225	126.1	49.7	20.5	29.1	12.7	8.9	3.7
Massachusetts	328.5	100.0	1,573	175.0	65.4	24.3	41.1	16.9	11.9	5.0
Michigan	539.8	154.2	3,299	271.8	116.5	48.1	68.4	33.0	23.3	9.7
Minnesota	295.6	87.2	1,727	152.2	62.2	25.6	36.6	16.4	11.5	4.8
Mississippi	372.6	98.6	2,543	173.5	83.7	35.9	47.8	27.9	19.7	8.2
Missouri	324.7	93.0	2,040	164.6	65.3	25.7	39.6	19.6	13.9	5.8
Montana	23.2	6.6	161	11.9	4.5	1.8	2.7	1.1	0.8	0.3
Nebraska	26.5	8.0	159	15.4	4.0	1.5	2.5	0.5	0.3	0.1
Nevada	454.9	127.8	2,777	224.6	108.3	44.2	64.1	35.0	24.7	10.3
New Hampshire	15.5	4.7	80	9.5	0.0	0.0	0.0	0.0	0.0	0.0
New Jersey	488.1	147.5	2,473	259.3	112.3	46.0	66.3	29.6	20.9	8.7
New Mexico	157.3	42.3	1,057	75.9	35.4	14.9	20.5	11.6	8.2	3.4
New York	844.1	252.6	3,907	455.2	190.7	81.8	108.8	47.8	33.7	14.1
North Carolina	176.1	52.2	1,065	97.6	30.7	11.8	18.9	6.0	4.3	1.8
North Dakota	44.0	12.4	268	22.2	9.1	3.4	5.6	2.7	1.9	0.8
Ohio	383.4	111.6	2,338	203.3	74.1	29.9	44.2	19.0	13.4	5.6
Oklahoma	568.6	158.2	3,760	273.4	121.0	47.7	73.3	40.6	28.7	11.9
Oregon	120.5	35.4	748	63.7	23.4	9.0	14.5	6.0	4.3	1.8
Pennsylvania	691.2	211.5	4,082	366.0	140.7	56.5	84.2	36.6	25.9	10.8
Rhode Island	96.9	28.3	574	49.6	22.9	9.4	13.4	7.1	5.0	2.1
South Carolina	40.8	12.5	244	24.9	0.0	0.0	0.0	0.0	0.0	0.0
South Dakota	47.9	13.5	325	23.7	9.8	3.7	6.0	3.1	2.2	0.9
Tennessee	60.8	18.6	354	37.2	0.0	0.0	0.0	0.0	0.0	0.0
Texas	317.8	96.7	1,669	190.8	48.5	18.8	29.6	2.0	1.4	0.6
Utah	29.2	8.9	172	17.8	0.0	0.0	0.0	0.0	0.0	0.0
Vermont	6.4	2.0	40	3.9	0.0	0.0	0.0	0.0	0.0	0.0
Virginia	101.4	31.0	468	61.9	0.0	0.0	0.0	0.0	0.0	0.0
Washington	414.6	118.2	2,206	212.6	91.5	36.0	55.5	26.4	18.6	7.8
West Virginia	104.6	29.4	705	51.4	24.1	10.2	13.8	7.9	5.6	2.3
Wisconsin	244.0	70.0	1,557	126.0	51.1	21.4	29.8	13.6	9.6	4.0
Wyoming	21.2	5.9	129	10.8	4.7	1.9	2.9	1.3	0.9	0.4
United States	\$12,819	\$3,734	73,513	\$6,689	\$2,602	\$1,035	\$1,567	\$707	\$499	\$208

Source: Oxford Economics

Scenario: Limited availability, Base tax rate
Direct impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employ- ment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$35.3	\$8.8	221	\$15.6	\$10.4	\$4.3	\$6.2	\$4.5	\$3.2	\$1.3
Alaska	0.5	0.1	2	0.2	0.1	0.1	0.1	0.1	0.0	0.0
Arizona	165.3	41.3	949	72.9	48.4	19.8	28.6	21.3	15.0	6.3
Arkansas	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
California	643.0	160.7	2,909	283.7	196.4	82.4	113.9	82.8	58.5	24.4
Colorado	81.8	20.4	435	36.1	24.4	10.0	14.4	10.5	7.4	3.1
Connecticut	143.9	36.0	652	63.5	44.8	18.6	26.2	18.5	13.1	5.5
Delaware	36.8	9.2	198	16.2	11.1	4.7	6.4	4.7	3.3	1.4
District of Columbia	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Florida	248.6	62.2	1,447	109.7	74.4	29.8	44.6	32.0	22.6	9.4
Georgia	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hawaii	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Idaho	22.1	5.5	138	9.8	6.5	2.7	3.8	2.9	2.0	0.8
Illinois	128.9	32.2	633	56.9	39.4	16.7	22.7	16.6	11.7	4.9
Indiana	198.5	49.6	1,241	87.6	58.3	23.7	34.6	25.6	18.0	7.5
Iowa	142.5	35.6	890	62.9	42.6	17.8	24.7	18.3	13.0	5.4
Kansas	59.3	14.8	370	26.2	17.7	7.3	10.4	7.6	5.4	2.2
Kentucky	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Louisiana	277.5	69.4	1,644	122.5	80.8	32.9	47.9	35.7	25.2	10.5
Maine	11.6	2.9	73	5.1	3.5	1.5	2.0	1.5	1.1	0.4
Maryland	98.4	24.6	471	43.4	29.9	12.6	17.3	12.7	8.9	3.7
Massachusetts	130.9	32.7	584	57.7	38.9	16.1	22.8	16.9	11.9	5.0
Michigan	256.4	64.1	1,478	113.1	77.5	32.4	45.1	33.0	23.3	9.7
Minnesota	127.0	31.8	713	56.0	38.3	16.0	22.2	16.4	11.5	4.8
Mississippi	217.0	54.2	1,356	95.7	64.9	27.4	37.5	27.9	19.7	8.2
Missouri	152.5	38.1	927	67.3	44.7	18.3	26.4	19.6	13.9	5.8
Montana	8.7	2.2	55	3.9	2.6	1.1	1.5	1.1	0.8	0.3
Nebraska	3.7	0.9	23	1.6	1.1	0.5	0.6	0.5	0.3	0.1
Nevada	271.8	67.9	1,483	119.9	81.6	32.9	48.7	35.0	24.7	10.3
New Hampshire	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Jersey	229.7	57.4	1,044	101.3	71.5	30.3	41.2	29.6	20.9	8.7
New Mexico	89.8	22.4	561	39.6	26.8	11.1	15.7	11.6	8.2	3.4
New York	371.2	92.8	1,657	163.8	115.5	50.1	65.4	47.8	33.7	14.1
North Carolina	46.9	11.7	283	20.7	13.8	5.6	8.2	6.0	4.3	1.8
North Dakota	21.1	5.3	125	9.3	6.3	2.6	3.7	2.7	1.9	0.8
Ohio	147.3	36.8	883	65.0	43.6	18.0	25.6	19.0	13.4	5.6
Oklahoma	315.2	78.8	1,970	139.1	91.7	37.0	54.6	40.6	28.7	11.9
Oregon	46.9	11.7	274	20.7	14.0	5.8	8.2	6.0	4.3	1.8
Pennsylvania	284.4	71.1	1,554	125.5	84.3	35.0	49.3	36.6	25.9	10.8
Rhode Island	55.2	13.8	300	24.3	16.8	7.1	9.7	7.1	5.0	2.1
South Carolina	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Dakota	24.3	6.1	152	10.7	7.0	2.8	4.2	3.1	2.2	0.9
Tennessee	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Texas	15.8	4.0	86	7.0	4.7	1.9	2.8	2.0	1.4	0.6
Utah	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vermont	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Virginia	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Washington	204.7	51.2	1,032	90.3	61.2	24.2	37.0	26.4	18.6	7.8
West Virginia	61.5	15.4	385	27.1	18.3	7.7	10.6	7.9	5.6	2.3
Wisconsin	105.8	26.5	656	46.7	32.2	13.6	18.6	13.6	9.6	4.0
Wyoming	9.9	2.5	57	4.4	3.1	1.3	1.9	1.3	0.9	0.4
United States	\$5,492	\$1,373	29,911	\$2,423	\$1,649	\$684	\$966	\$707	\$499	\$208

Source: Oxford Economics

Scenario: Limited availability, Base tax rate
Gaming revenue and tax

Amounts in millions of dollars, except population

	Population	Gaming		Gaming tax impacts		
	Population, adult (thousands, stabilized year)	Handle	Gaming revenue	Total	Gaming revenue tax	Federal handle tax
Alabama	3,732.4	\$534.6	\$32.1	\$4.5	\$3.2	\$1.3
Alaska	555.2	7.1	0.4	0.1	0.0	0.0
Arizona	5,455.7	2,504.7	150.3	21.3	15.0	6.3
Arkansas	2,264.9	0.0	0.0	0.0	0.0	0.0
California	30,475.3	9,742.0	584.5	82.8	58.5	24.4
Colorado	4,302.6	1,239.3	74.4	10.5	7.4	3.1
Connecticut	2,799.7	2,181.1	130.9	18.5	13.1	5.5
Delaware	769.3	557.4	33.4	4.7	3.3	1.4
District of Columbia	564.1	0.0	0.0	0.0	0.0	0.0
Florida	16,772.9	3,767.4	226.0	32.0	22.6	9.4
Georgia	7,775.2	0.0	0.0	0.0	0.0	0.0
Hawaii	1,145.4	0.0	0.0	0.0	0.0	0.0
Idaho	1,260.7	335.5	20.1	2.9	2.0	0.8
Illinois	9,776.6	1,952.5	117.2	16.6	11.7	4.9
Indiana	5,023.0	3,008.3	180.5	25.6	18.0	7.5
Iowa	2,357.3	2,158.4	129.5	18.3	13.0	5.4
Kansas	2,151.7	898.0	53.9	7.6	5.4	2.2
Kentucky	3,347.3	0.0	0.0	0.0	0.0	0.0
Louisiana	3,526.7	4,205.1	252.3	35.7	25.2	10.5
Maine	1,068.6	176.2	10.6	1.5	1.1	0.4
Maryland	4,699.4	1,491.4	89.5	12.7	8.9	3.7
Massachusetts	5,408.3	1,983.0	119.0	16.9	11.9	5.0
Michigan	7,630.4	3,885.4	233.1	33.0	23.3	9.7
Minnesota	4,233.3	1,924.7	115.5	16.4	11.5	4.8
Mississippi	2,244.4	3,287.4	197.2	27.9	19.7	8.2
Missouri	4,707.0	2,310.8	138.6	19.6	13.9	5.8
Montana	821.9	132.4	7.9	1.1	0.8	0.3
Nebraska	1,408.7	55.9	3.4	0.5	0.3	0.1
Nevada	2,325.5	4,117.8	247.1	35.0	24.7	10.3
New Hampshire	1,081.8	0.0	0.0	0.0	0.0	0.0
New Jersey	6,933.5	3,480.1	208.8	29.6	20.9	8.7
New Mexico	1,583.2	1,360.5	81.6	11.6	8.2	3.4
New York	15,339.4	5,624.4	337.5	47.8	33.7	14.1
North Carolina	7,940.5	710.5	42.6	6.0	4.3	1.8
North Dakota	584.7	320.4	19.2	2.7	1.9	0.8
Ohio	8,755.1	2,231.7	133.9	19.0	13.4	5.6
Oklahoma	2,949.3	4,776.5	286.6	40.6	28.7	11.9
Oregon	3,240.2	711.2	42.7	6.0	4.3	1.8
Pennsylvania	9,962.0	4,309.3	258.6	36.6	25.9	10.8
Rhode Island	820.5	836.1	50.2	7.1	5.0	2.1
South Carolina	3,913.0	0.0	0.0	0.0	0.0	0.0
South Dakota	652.4	368.4	22.1	3.1	2.2	0.9
Tennessee	5,176.5	0.0	0.0	0.0	0.0	0.0
Texas	20,856.0	239.4	14.4	2.0	1.4	0.6
Utah	2,135.9	0.0	0.0	0.0	0.0	0.0
Vermont	499.5	0.0	0.0	0.0	0.0	0.0
Virginia	6,585.5	0.0	0.0	0.0	0.0	0.0
Washington	5,695.7	3,101.4	186.1	26.4	18.6	7.8
West Virginia	1,414.5	932.2	55.9	7.9	5.6	2.3
Wisconsin	4,457.7	1,603.1	96.2	13.6	9.6	4.0
Wyoming	454.5	150.2	9.0	1.3	0.9	0.4
United States	249,635	\$83,212	\$4,993	\$707	\$499	\$208

Source: Oxford Economics

Scenario: Limited availability, Base tax rate
Selected impacts in comparison to gaming revenue

Amounts in millions of dollars, except jobs

	Gaming	Employment			Income		
	Gaming revenue	Total	Direct	Indirect and induced	Total	Direct	Indirect and induced
Alabama	\$32.1	636	221	416	\$28.1	\$8.8	\$19.3
Alaska	0.4	47	2	45	3.3	0.1	3.2
Arizona	150.3	2,171	949	1,221	100.0	41.3	58.6
Arkansas	0.0	146	0	146	7.1	0.0	7.1
California	584.5	8,108	2,909	5,198	485.8	160.7	325.0
Colorado	74.4	1,174	435	739	60.6	20.4	40.2
Connecticut	130.9	1,435	652	784	86.4	36.0	50.4
Delaware	33.4	403	198	206	21.1	9.2	11.9
District of Columbia	0.0	82	0	82	9.5	0.0	9.5
Florida	226.0	3,877	1,447	2,430	179.2	62.2	117.0
Georgia	0.0	540	0	540	30.5	0.0	30.5
Hawaii	0.0	83	0	83	4.9	0.0	4.9
Idaho	20.1	337	138	199	13.6	5.5	8.1
Illinois	117.2	1,967	633	1,334	113.4	32.2	81.2
Indiana	180.5	2,565	1,241	1,324	110.1	49.6	60.5
Iowa	129.5	1,742	890	851	74.2	35.6	38.5
Kansas	53.9	821	370	451	36.2	14.8	21.4
Kentucky	0.0	224	0	224	11.9	0.0	11.9
Louisiana	252.3	3,220	1,644	1,576	140.2	69.4	70.8
Maine	10.6	209	73	136	9.2	2.9	6.2
Maryland	89.5	1,225	471	754	70.0	24.6	45.4
Massachusetts	119.0	1,573	584	988	100.0	32.7	67.3
Michigan	233.1	3,299	1,478	1,822	154.2	64.1	90.0
Minnesota	115.5	1,727	713	1,014	87.2	31.8	55.4
Mississippi	197.2	2,543	1,356	1,187	98.6	54.2	44.4
Missouri	138.6	2,040	927	1,113	93.0	38.1	54.9
Montana	7.9	161	55	107	6.6	2.2	4.4
Nebraska	3.4	159	23	136	8.0	0.9	7.0
Nevada	247.1	2,777	1,483	1,295	127.8	67.9	59.9
New Hampshire	0.0	80	0	80	4.7	0.0	4.7
New Jersey	208.8	2,473	1,044	1,429	147.5	57.4	90.0
New Mexico	81.6	1,057	561	496	42.3	22.4	19.9
New York	337.5	3,907	1,657	2,250	252.6	92.8	159.8
North Carolina	42.6	1,065	283	782	52.2	11.7	40.5
North Dakota	19.2	268	125	143	12.4	5.3	7.1
Ohio	133.9	2,338	883	1,454	111.6	36.8	74.8
Oklahoma	286.6	3,760	1,970	1,790	158.2	78.8	79.4
Oregon	42.7	748	274	474	35.4	11.7	23.7
Pennsylvania	258.6	4,082	1,554	2,528	211.5	71.1	140.4
Rhode Island	50.2	574	300	274	28.3	13.8	14.5
South Carolina	0.0	244	0	244	12.5	0.0	12.5
South Dakota	22.1	325	152	173	13.5	6.1	7.4
Tennessee	0.0	354	0	354	18.6	0.0	18.6
Texas	14.4	1,669	86	1,584	96.7	4.0	92.8
Utah	0.0	172	0	172	8.9	0.0	8.9
Vermont	0.0	40	0	40	2.0	0.0	2.0
Virginia	0.0	468	0	468	31.0	0.0	31.0
Washington	186.1	2,206	1,032	1,173	118.2	51.2	67.0
West Virginia	55.9	705	385	321	29.4	15.4	14.0
Wisconsin	96.2	1,557	656	901	70.0	26.5	43.6
Wyoming	9.0	129	57	71	5.9	2.5	3.4
United States	\$4,993	73,513	29,911	43,602	\$3,734	\$1,373	\$2,361

Source: Oxford Economics

Scenario: Moderate availability, Base tax rate
Total impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$290.5	\$78.5	1,902	\$154.0	\$57.7	\$24.4	\$33.3	\$17.5	\$12.8	\$4.7
Alaska	49.7	13.8	237	27.7	9.3	3.7	5.6	2.5	1.9	0.7
Arizona	584.8	163.7	3,662	307.5	116.9	47.6	69.3	36.1	26.1	10.0
Arkansas	148.8	39.6	971	80.7	28.8	12.1	16.7	8.6	6.3	2.3
California	3,454.6	996.5	17,239	1,887.8	702.9	290.8	412.1	190.8	138.7	52.1
Colorado	463.1	129.8	2,617	248.9	89.3	35.2	54.1	25.9	18.9	7.1
Connecticut	437.4	126.5	2,157	236.9	97.0	39.1	57.9	27.0	19.5	7.5
Delaware	104.1	29.9	588	55.6	21.4	8.9	12.5	6.7	4.8	1.9
District of Columbia	90.9	26.8	297	53.0	13.8	5.8	8.1	2.8	2.1	0.7
Florida	1,547.7	422.1	9,545	820.4	308.2	123.1	185.1	89.9	65.5	24.4
Georgia	575.1	158.6	3,347	314.8	104.5	41.9	62.6	29.7	21.9	7.8
Hawaii	84.2	22.8	448	46.4	16.7	7.3	9.5	4.8	3.5	1.3
Idaho	107.8	28.5	736	54.8	21.0	8.6	12.4	6.8	4.9	1.8
Illinois	989.8	279.9	5,119	541.1	196.7	82.0	114.7	52.6	38.4	14.2
Indiana	603.1	163.8	3,919	310.0	120.2	48.6	71.7	38.1	27.5	10.6
Iowa	348.1	95.2	2,297	175.4	71.6	29.7	41.9	23.0	16.5	6.5
Kansas	239.1	64.5	1,513	124.5	47.3	19.2	28.1	14.3	10.4	3.9
Kentucky	230.1	62.5	1,441	124.1	42.4	17.6	24.8	12.7	9.4	3.3
Louisiana	597.5	162.0	3,827	300.9	121.8	49.5	72.2	40.2	28.8	11.4
Maine	90.2	24.3	588	47.8	17.8	7.7	10.1	5.3	3.8	1.4
Maryland	516.3	145.9	2,655	280.1	105.3	44.2	61.2	29.9	21.8	8.2
Massachusetts	682.3	200.1	3,261	371.6	132.7	50.6	82.1	37.4	27.2	10.2
Michigan	892.5	247.2	5,443	465.4	183.5	76.4	107.1	54.3	39.2	15.0
Minnesota	531.2	151.6	3,093	282.0	107.0	44.4	62.6	29.7	21.5	8.2
Mississippi	396.3	103.6	2,767	191.0	85.5	36.8	48.7	28.7	20.5	8.2
Missouri	545.8	151.6	3,424	286.2	105.2	41.8	63.4	32.9	23.8	9.1
Montana	65.8	17.6	454	34.1	12.9	5.3	7.6	4.0	2.9	1.1
Nebraska	116.9	32.2	740	63.9	21.5	8.7	12.8	6.2	4.6	1.6
Nevada	514.0	144.5	3,250	257.3	117.8	47.5	70.3	37.8	26.7	11.1
New Hampshire	87.0	24.5	497	48.4	16.8	6.8	10.1	4.9	3.6	1.3
New Jersey	875.4	255.0	4,410	479.0	192.0	79.4	112.6	53.4	38.7	14.7
New Mexico	205.3	54.1	1,388	103.2	44.0	18.6	25.4	14.5	10.4	4.1
New York	1,725.4	496.0	7,976	953.5	377.3	163.9	213.5	103.1	74.9	28.2
North Carolina	626.8	173.8	3,903	340.7	118.0	47.4	70.7	34.8	25.5	9.3
North Dakota	74.3	20.4	451	38.9	14.7	5.7	9.0	4.5	3.3	1.3
Ohio	880.6	245.5	5,382	475.8	167.5	68.5	99.0	48.7	35.4	13.2
Oklahoma	605.7	166.2	4,076	300.5	123.6	48.8	74.8	41.6	29.7	11.9
Oregon	295.1	82.8	1,837	158.5	57.4	22.8	34.6	17.1	12.4	4.6
Pennsylvania	1,264.0	373.9	7,428	686.8	247.2	100.3	146.9	68.6	49.7	18.9
Rhode Island	124.9	35.6	742	66.1	27.8	11.5	16.3	8.7	6.2	2.4
South Carolina	251.4	67.9	1,618	136.3	49.7	21.2	28.5	14.7	10.8	3.9
South Dakota	76.7	21.0	522	39.5	14.9	5.8	9.2	4.9	3.6	1.4
Tennessee	370.8	104.1	2,315	203.2	68.3	27.5	40.8	20.4	15.1	5.4
Texas	1,679.6	467.0	9,344	926.3	317.5	128.0	189.4	86.6	63.8	22.8
Utah	162.0	43.8	1,010	88.1	29.1	11.7	17.5	8.0	5.9	2.1
Vermont	36.6	9.9	234	19.9	7.4	3.2	4.1	2.1	1.5	0.6
Virginia	544.4	152.6	2,873	303.4	104.6	42.4	62.2	28.3	20.9	7.4
Washington	698.9	193.0	3,703	371.0	146.4	57.8	88.5	43.9	31.8	12.2
West Virginia	150.6	41.1	1,019	77.2	32.9	14.2	18.7	11.0	7.9	3.1
Wisconsin	481.9	133.2	3,068	255.9	97.4	41.1	56.3	28.1	20.4	7.7
Wyoming	44.8	11.8	272	23.5	9.7	3.9	5.8	2.9	2.1	0.8
United States	\$26,560	\$7,457	151,606	\$14,240	\$5,341	\$2,189	\$3,152	\$1,547	\$1,123	\$423

Source: Oxford Economics

Scenario: Moderate availability, Base tax rate
Direct impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$135.3	\$30.5	829	\$66.2	\$38.0	\$16.4	\$21.6	\$17.5	\$12.8	\$4.7
Alaska	19.6	4.3	87	9.8	5.6	2.5	3.1	2.5	1.9	0.7
Arizona	279.6	65.2	1,624	132.8	79.0	33.5	45.4	36.1	26.1	10.0
Arkansas	66.6	14.7	397	33.4	18.5	8.0	10.5	8.6	6.3	2.3
California	1,477.7	339.3	6,662	711.9	431.1	188.7	242.4	190.8	138.7	52.1
Colorado	200.8	46.0	1,062	97.0	57.2	24.5	32.7	25.9	18.9	7.1
Connecticut	209.2	49.2	966	98.5	63.0	26.9	36.1	27.0	19.5	7.5
Delaware	51.6	12.2	284	24.2	15.1	6.7	8.5	6.7	4.8	1.9
District of Columbia	21.8	4.8	93	10.9	5.8	2.7	3.1	2.8	2.1	0.7
Florida	696.3	158.7	4,006	337.8	198.5	83.6	114.9	89.9	65.5	24.4
Georgia	229.4	50.5	1,253	114.9	63.5	27.9	35.6	29.7	21.9	7.8
Hawaii	36.9	8.1	177	18.5	10.1	4.4	5.7	4.8	3.5	1.3
Idaho	52.3	12.0	325	25.2	14.7	6.4	8.4	6.8	4.9	1.8
Illinois	407.0	92.4	1,969	198.2	118.1	52.3	65.8	52.6	38.4	14.2
Indiana	295.6	69.4	1,882	139.3	84.1	35.4	48.7	38.1	27.5	10.6
Iowa	178.2	42.3	1,148	83.0	51.8	22.2	29.6	23.0	16.5	6.5
Kansas	111.0	25.7	698	53.0	31.9	13.7	18.2	14.3	10.4	3.9
Kentucky	98.3	21.6	587	49.2	26.8	11.9	15.0	12.7	9.4	3.3
Louisiana	311.6	74.7	1,919	143.9	88.7	37.0	51.7	40.2	28.8	11.4
Maine	40.7	9.2	250	19.9	11.7	5.2	6.4	5.3	3.8	1.4
Maryland	231.9	53.2	1,104	111.8	67.4	29.7	37.7	29.9	21.8	8.2
Massachusetts	289.9	66.7	1,293	139.3	82.6	35.7	46.9	37.4	27.2	10.2
Michigan	420.5	98.1	2,455	199.3	122.5	53.0	69.6	54.3	39.2	15.0
Minnesota	230.5	53.5	1,304	109.9	66.7	29.0	37.8	29.7	21.5	8.2
Mississippi	222.6	53.7	1,458	102.0	65.3	28.0	37.3	28.7	20.5	8.2
Missouri	254.8	59.4	1,567	120.9	72.1	30.7	41.4	32.9	23.8	9.1
Montana	30.8	7.0	189	15.0	8.8	3.9	4.9	4.0	2.9	1.1
Nebraska	48.0	10.7	289	23.9	13.4	5.9	7.5	6.2	4.6	1.6
Nevada	293.1	72.9	1,725	130.1	87.8	35.5	52.3	37.8	26.7	11.1
New Hampshire	37.6	8.3	201	18.8	10.5	4.7	5.8	4.9	3.6	1.3
New Jersey	413.6	96.0	1,895	197.1	123.7	54.2	69.4	53.4	38.7	14.7
New Mexico	112.4	26.7	724	52.4	32.7	13.9	18.8	14.5	10.4	4.1
New York	798.8	184.1	3,567	383.4	237.8	107.0	130.8	103.1	74.9	28.2
North Carolina	269.2	60.2	1,579	132.7	75.0	32.5	42.5	34.8	25.5	9.3
North Dakota	35.0	8.2	210	16.6	10.1	4.3	5.8	4.5	3.3	1.3
Ohio	377.0	86.2	2,244	182.4	106.5	46.1	60.4	48.7	35.4	13.2
Oklahoma	322.6	77.9	2,113	147.8	92.1	38.0	54.2	41.6	29.7	11.9
Oregon	132.1	30.1	762	64.1	37.8	16.6	21.2	17.1	12.4	4.6
Pennsylvania	531.8	123.3	2,923	253.9	151.6	65.4	86.2	68.6	49.7	18.9
Rhode Island	67.4	16.0	379	31.4	20.0	8.6	11.4	8.7	6.2	2.4
South Carolina	113.4	25.0	677	56.8	32.1	14.4	17.7	14.7	10.8	3.9
South Dakota	38.3	9.0	243	18.1	10.7	4.4	6.3	4.9	3.6	1.4
Tennessee	158.2	34.8	935	79.2	42.4	18.4	24.0	20.4	15.1	5.4
Texas	670.4	147.8	3,477	335.0	186.2	80.5	105.7	86.6	63.8	22.8
Utah	62.2	13.7	367	31.1	17.3	7.6	9.8	8.0	5.9	2.1
Vermont	16.2	3.6	97	8.1	4.6	2.1	2.5	2.1	1.5	0.6
Virginia	219.0	48.2	1,086	109.7	62.3	27.6	34.7	28.3	20.9	7.4
Washington	340.4	79.4	1,738	161.5	98.1	40.3	57.8	43.9	31.8	12.2
West Virginia	85.5	20.2	547	40.1	24.7	10.7	13.9	11.0	7.9	3.1
Wisconsin	217.5	50.2	1,351	104.3	63.5	28.0	35.5	28.1	20.4	7.7
Wyoming	22.4	5.1	129	10.8	6.8	2.9	3.9	2.9	2.1	0.8
United States	\$11,982	\$2,760	64,843	\$5,755	\$3,446	\$1,489	\$1,957	\$1,547	\$1,123	\$423

Source: Oxford Economics

Scenario: Moderate availability, Base tax rate
Gaming revenue and tax

Amounts in millions of dollars, except population

	Population	Gaming		Gaming tax impacts		
	Population, adult (thousands, stabilized year)	Handle	Gaming revenue	Total	Gaming revenue tax	Federal handle tax
Alabama	3,732.4	\$1,881.2	\$127.8	\$17.5	\$12.8	\$4.7
Alaska	555.2	267.3	18.7	2.5	1.9	0.7
Arizona	5,455.7	3,991.7	261.0	36.1	26.1	10.0
Arkansas	2,264.9	906.1	63.4	8.6	6.3	2.3
California	30,475.3	20,834.9	1,386.9	190.8	138.7	52.1
Colorado	4,302.6	2,824.4	188.6	25.9	18.9	7.1
Connecticut	2,799.7	3,009.9	194.7	27.0	19.5	7.5
Delaware	769.3	744.2	48.0	6.7	4.8	1.9
District of Columbia	564.1	296.6	20.8	2.8	2.1	0.7
Florida	16,772.9	9,755.9	655.3	89.9	65.5	24.4
Georgia	7,775.2	3,121.7	218.5	29.7	21.9	7.8
Hawaii	1,145.4	501.8	35.1	4.8	3.5	1.3
Idaho	1,260.7	736.7	49.1	6.8	4.9	1.8
Illinois	9,776.6	5,683.4	383.5	52.6	38.4	14.2
Indiana	5,023.0	4,246.5	275.2	38.1	27.5	10.6
Iowa	2,357.3	2,586.0	165.2	23.0	16.5	6.5
Kansas	2,151.7	1,577.7	103.8	14.3	10.4	3.9
Kentucky	3,347.3	1,337.6	93.6	12.7	9.4	3.3
Louisiana	3,526.7	4,553.8	287.9	40.2	28.8	11.4
Maine	1,068.6	566.8	38.4	5.3	3.8	1.4
Maryland	4,699.4	3,266.4	217.7	29.9	21.8	8.2
Massachusetts	5,408.3	4,096.1	271.9	37.4	27.2	10.2
Michigan	7,630.4	6,011.4	392.3	54.3	39.2	15.0
Minnesota	4,233.3	3,279.7	215.5	29.7	21.5	8.2
Mississippi	2,244.4	3,274.3	205.1	28.7	20.5	8.2
Missouri	4,707.0	3,640.1	237.8	32.9	23.8	9.1
Montana	821.9	428.6	29.0	4.0	2.9	1.1
Nebraska	1,408.7	657.9	45.6	6.2	4.6	1.6
Nevada	2,325.5	4,420.6	267.1	37.8	26.7	11.1
New Hampshire	1,081.8	512.1	35.8	4.9	3.6	1.3
New Jersey	6,933.5	5,887.6	386.6	53.4	38.7	14.7
New Mexico	1,583.2	1,631.0	104.2	14.5	10.4	4.1
New York	15,339.4	11,298.4	748.7	103.1	74.9	28.2
North Carolina	7,940.5	3,715.3	254.9	34.8	25.5	9.3
North Dakota	584.7	500.2	32.7	4.5	3.3	1.3
Ohio	8,755.1	5,296.6	354.4	48.7	35.4	13.2
Oklahoma	2,949.3	4,746.6	297.2	41.6	29.7	11.9
Oregon	3,240.2	1,850.5	124.3	17.1	12.4	4.6
Pennsylvania	9,962.0	7,558.6	497.5	68.6	49.7	18.9
Rhode Island	820.5	979.9	62.5	8.7	6.2	2.4
South Carolina	3,913.0	1,543.4	108.0	14.7	10.8	3.9
South Dakota	652.4	548.4	35.7	4.9	3.6	1.4
Tennessee	5,176.5	2,152.5	150.7	20.4	15.1	5.4
Texas	20,856.0	9,138.7	638.0	86.6	63.8	22.8
Utah	2,135.9	846.1	59.2	8.0	5.9	2.1
Vermont	499.5	220.6	15.4	2.1	1.5	0.6
Virginia	6,585.5	2,979.2	208.5	28.3	20.9	7.4
Washington	5,695.7	4,863.1	317.7	43.9	31.8	12.2
West Virginia	1,414.5	1,232.9	79.5	11.0	7.9	3.1
Wisconsin	4,457.7	3,078.7	203.7	28.1	20.4	7.7
Wyoming	454.5	315.4	21.0	2.9	2.1	0.8
United States	249,635	\$169,395	\$11,234	\$1,547	\$1,123	\$423

Source: Oxford Economics

Scenario: Moderate availability, Base tax rate
Selected impacts in comparison to gaming revenue

Amounts in millions of dollars, except jobs

	Gaming	Employment			Income		
	Gaming revenue	Total	Direct	Indirect and induced	Total	Direct	Indirect and induced
Alabama	\$127.8	1,902	829	1,073	\$78.5	\$30.5	\$48.0
Alaska	18.7	237	87	150	13.8	4.3	9.5
Arizona	261.0	3,662	1,624	2,038	163.7	65.2	98.5
Arkansas	63.4	971	397	573	39.6	14.7	24.9
California	1,386.9	17,239	6,662	10,577	996.5	339.3	657.2
Colorado	188.6	2,617	1,062	1,555	129.8	46.0	83.8
Connecticut	194.7	2,157	966	1,191	126.5	49.2	77.3
Delaware	48.0	588	284	304	29.9	12.2	17.7
District of Columbia	20.8	297	93	205	26.8	4.8	22.0
Florida	655.3	9,545	4,006	5,539	422.1	158.7	263.4
Georgia	218.5	3,347	1,253	2,094	158.6	50.5	108.1
Hawaii	35.1	448	177	272	22.8	8.1	14.7
Idaho	49.1	736	325	411	28.5	12.0	16.5
Illinois	383.5	5,119	1,969	3,150	279.9	92.4	187.6
Indiana	275.2	3,919	1,882	2,036	163.8	69.4	94.4
Iowa	165.2	2,297	1,148	1,148	95.2	42.3	52.8
Kansas	103.8	1,513	698	816	64.5	25.7	38.8
Kentucky	93.6	1,441	587	854	62.5	21.6	40.8
Louisiana	287.9	3,827	1,919	1,908	162.0	74.7	87.4
Maine	38.4	588	250	338	24.3	9.2	15.1
Maryland	217.7	2,655	1,104	1,551	145.9	53.2	92.7
Massachusetts	271.9	3,261	1,293	1,968	200.1	66.7	133.4
Michigan	392.3	5,443	2,455	2,988	247.2	98.1	149.1
Minnesota	215.5	3,093	1,304	1,789	151.6	53.5	98.1
Mississippi	205.1	2,767	1,458	1,310	103.6	53.7	49.9
Missouri	237.8	3,424	1,567	1,857	151.6	59.4	92.1
Montana	29.0	454	189	265	17.6	7.0	10.7
Nebraska	45.6	740	289	451	32.2	10.7	21.5
Nevada	267.1	3,250	1,725	1,524	144.5	72.9	71.6
New Hampshire	35.8	497	201	296	24.5	8.3	16.2
New Jersey	386.6	4,410	1,895	2,516	255.0	96.0	159.0
New Mexico	104.2	1,388	724	663	54.1	26.7	27.4
New York	748.7	7,976	3,567	4,410	496.0	184.1	311.9
North Carolina	254.9	3,903	1,579	2,324	173.8	60.2	113.6
North Dakota	32.7	451	210	241	20.4	8.2	12.2
Ohio	354.4	5,382	2,244	3,138	245.5	86.2	159.3
Oklahoma	297.2	4,076	2,113	1,963	166.2	77.9	88.3
Oregon	124.3	1,837	762	1,075	82.8	30.1	52.7
Pennsylvania	497.5	7,428	2,923	4,505	373.9	123.3	250.7
Rhode Island	62.5	742	379	363	35.6	16.0	19.6
South Carolina	108.0	1,618	677	941	67.9	25.0	43.0
South Dakota	35.7	522	243	279	21.0	9.0	12.0
Tennessee	150.7	2,315	935	1,380	104.1	34.8	69.2
Texas	638.0	9,344	3,477	5,868	467.0	147.8	319.1
Utah	59.2	1,010	367	643	43.8	13.7	30.2
Vermont	15.4	234	97	138	9.9	3.6	6.4
Virginia	208.5	2,873	1,086	1,787	152.6	48.2	104.4
Washington	317.7	3,703	1,738	1,965	193.0	79.4	113.6
West Virginia	79.5	1,019	547	472	41.1	20.2	21.0
Wisconsin	203.7	3,068	1,351	1,717	133.2	50.2	83.0
Wyoming	21.0	272	129	143	11.8	5.1	6.7
United States	\$11,234	151,606	64,843	86,763	\$7,457	\$2,760	\$4,697

Source: Oxford Economics

Scenario: Convenient availability, Base tax rate
Total impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$479.1	\$122.3	2,880	\$256.4	\$97.4	\$41.1	\$56.3	\$31.9	\$23.1	\$8.8
Alaska	85.2	22.3	377	47.6	16.6	6.7	9.9	5.1	3.7	1.4
Arizona	874.6	233.7	5,054	466.8	176.4	72.1	104.3	57.4	41.4	16.0
Arkansas	261.4	65.3	1,565	142.2	52.4	21.9	30.5	17.3	12.6	4.7
California	5,405.6	1,489.6	25,054	2,985.5	1,113.4	461.0	652.5	324.8	234.8	90.0
Colorado	730.7	195.2	3,821	397.1	143.3	56.7	86.6	44.6	32.3	12.4
Connecticut	635.1	176.2	2,897	348.8	140.8	56.9	83.9	41.1	29.6	11.5
Delaware	150.0	41.2	780	81.4	31.0	12.9	18.1	10.0	7.2	2.8
District of Columbia	147.5	42.1	465	86.0	23.6	9.8	13.8	5.7	4.1	1.5
Florida	2,485.1	643.4	14,123	1,332.1	503.6	202.0	301.6	158.1	114.4	43.7
Georgia	1,000.6	261.0	5,395	549.0	189.0	76.0	113.1	59.7	43.4	16.3
Hawaii	145.9	37.0	714	80.6	30.1	13.0	17.1	9.6	7.0	2.6
Idaho	170.2	42.7	1,067	87.8	33.8	13.9	19.9	11.6	8.4	3.2
Illinois	1,595.7	430.1	7,660	879.7	323.0	134.7	188.3	93.9	68.0	25.9
Indiana	879.6	228.7	5,262	460.0	176.4	71.5	104.9	58.5	42.1	16.4
Iowa	485.4	127.7	2,956	249.4	99.9	41.5	58.4	33.2	23.8	9.3
Kansas	364.4	93.8	2,123	192.7	72.8	29.7	43.1	23.4	16.9	6.5
Kentucky	401.9	102.7	2,319	217.3	77.0	32.0	45.0	25.6	18.6	7.0
Louisiana	802.2	210.1	4,762	411.6	163.3	66.6	96.6	55.3	39.7	15.7
Maine	147.5	37.7	884	79.0	29.8	12.9	16.9	9.5	6.9	2.6
Maryland	811.7	218.4	3,856	445.3	167.9	70.4	97.4	51.2	37.0	14.2
Massachusetts	1,052.4	295.1	4,664	579.8	207.4	79.6	127.8	62.5	45.2	17.3
Michigan	1,327.1	351.6	7,469	702.9	274.7	114.6	160.1	85.6	61.7	23.9
Minnesota	803.5	219.7	4,335	432.3	163.3	67.9	95.4	48.2	34.8	13.4
Mississippi	511.9	129.7	3,324	251.8	110.1	47.5	62.6	37.8	27.0	10.8
Missouri	814.6	216.3	4,712	433.6	158.5	63.2	95.3	52.2	37.6	14.6
Montana	107.9	27.3	685	56.6	21.7	8.9	12.7	7.2	5.2	2.0
Nebraska	199.9	52.1	1,172	109.8	38.1	15.5	22.7	12.2	8.8	3.3
Nevada	493.9	130.0	2,776	259.4	110.2	45.2	65.0	36.5	26.1	10.4
New Hampshire	151.5	40.2	797	84.5	30.5	12.3	18.2	9.8	7.1	2.7
New Jersey	1,326.0	368.8	6,169	734.8	292.3	121.0	171.3	86.3	62.3	24.0
New Mexico	286.4	72.4	1,778	146.9	61.4	26.0	35.3	20.9	15.0	5.9
New York	2,656.9	727.1	11,294	1,486.1	585.2	253.7	331.5	171.2	123.7	47.5
North Carolina	1,051.9	276.3	6,053	575.7	204.1	82.2	121.9	65.7	47.6	18.0
North Dakota	111.0	29.2	621	59.0	22.1	8.6	13.5	7.1	5.2	2.0
Ohio	1,395.8	370.9	7,890	762.0	270.5	110.8	159.6	84.4	61.1	23.3
Oklahoma	782.1	208.2	4,893	395.1	159.1	63.0	96.1	54.7	39.1	15.6
Oregon	473.2	126.3	2,721	256.9	94.1	37.6	56.4	30.0	21.7	8.3
Pennsylvania	1,920.6	545.0	10,500	1,055.8	379.6	154.4	225.1	112.0	80.8	31.2
Rhode Island	173.3	47.4	947	93.3	38.4	16.0	22.5	12.4	8.9	3.5
South Carolina	440.6	111.8	2,603	239.8	90.2	38.4	51.8	29.5	21.5	8.1
South Dakota	113.4	29.6	711	59.3	22.3	8.7	13.6	7.7	5.6	2.2
Tennessee	648.4	171.8	3,729	356.5	124.1	50.1	74.0	41.1	29.9	11.2
Texas	2,906.2	765.1	14,992	1,607.8	568.5	229.7	338.8	172.9	125.7	47.2
Utah	280.9	71.9	1,626	153.1	52.5	21.1	31.4	16.2	11.8	4.4
Vermont	63.8	16.2	375	34.9	13.3	5.8	7.5	4.2	3.1	1.2
Virginia	943.7	250.3	4,629	527.3	188.1	76.4	111.7	57.0	41.4	15.5
Washington	1,044.1	275.3	5,088	562.7	220.0	87.4	132.6	69.6	50.2	19.4
West Virginia	216.7	56.4	1,339	113.2	47.4	20.5	27.0	16.5	11.9	4.6
Wisconsin	744.3	196.2	4,373	400.4	152.2	64.3	87.9	46.8	33.8	13.0
Wyoming	70.3	17.6	390	37.5	15.4	6.2	9.2	4.9	3.5	1.4
United States	\$41,172	\$11,017	216,671	\$22,365	\$8,377	\$3,440	\$4,937	\$2,591	\$1,872	\$718

Source: Oxford Economics

Scenario: Convenient availability, Base tax rate
Direct impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$237.4	\$47.5	1,198	\$120.1	\$66.6	\$28.6	\$38.0	\$31.9	\$23.1	\$8.8
Alaska	37.4	7.3	136	19.2	10.8	4.8	6.0	5.1	3.7	1.4
Arizona	430.6	90.6	2,097	212.2	121.2	51.6	69.6	57.4	41.4	16.0
Arkansas	128.1	24.8	626	65.9	35.7	15.3	20.4	17.3	12.6	4.7
California	2,425.0	497.7	9,080	1,211.3	703.5	307.1	396.5	324.8	234.8	90.0
Colorado	333.1	68.1	1,461	166.7	94.7	40.6	54.1	44.6	32.3	12.4
Connecticut	309.1	66.1	1,206	150.9	92.2	39.5	52.7	41.1	29.6	11.5
Delaware	75.4	16.2	351	36.8	22.0	9.8	12.3	10.0	7.2	2.8
District of Columbia	41.9	8.1	146	21.6	11.3	5.1	6.2	5.7	4.1	1.5
Florida	1,177.8	239.0	5,607	591.9	335.3	141.3	194.0	158.1	114.4	43.7
Georgia	441.2	85.5	1,972	226.9	123.0	53.5	69.5	59.7	43.4	16.3
Hawaii	70.9	13.7	278	36.5	19.7	8.5	11.2	9.6	7.0	2.6
Idaho	86.2	17.7	445	43.1	24.3	10.5	13.8	11.6	8.4	3.2
Illinois	699.1	141.1	2,793	352.4	202.1	88.9	113.1	93.9	68.0	25.9
Indiana	439.7	93.8	2,363	215.1	124.5	52.6	71.9	58.5	42.1	16.4
Iowa	250.4	54.6	1,377	120.8	72.3	31.1	41.2	33.2	23.8	9.3
Kansas	175.1	36.5	919	86.7	50.0	21.4	28.6	23.4	16.9	6.5
Kentucky	189.0	36.6	924	97.2	52.1	22.8	29.3	25.6	18.6	7.0
Louisiana	419.3	93.2	2,225	200.2	118.7	49.7	69.0	55.3	39.7	15.7
Maine	70.7	14.2	358	35.7	20.2	9.0	11.2	9.5	6.9	2.6
Maryland	382.1	78.3	1,511	191.0	110.6	48.6	62.0	51.2	37.0	14.2
Massachusetts	466.8	96.0	1,728	232.9	132.6	57.3	75.3	62.5	45.2	17.3
Michigan	642.4	135.5	3,149	316.1	186.1	80.6	105.5	85.6	61.7	23.9
Minnesota	360.9	75.4	1,707	178.5	103.9	45.1	58.8	48.2	34.8	13.4
Mississippi	287.4	65.0	1,639	135.7	83.8	36.1	47.7	37.8	27.0	10.8
Missouri	391.2	82.4	2,018	192.7	110.3	47.0	63.3	52.2	37.6	14.6
Montana	53.5	10.7	271	27.0	15.3	6.8	8.5	7.2	5.2	2.0
Nebraska	90.0	17.6	444	46.1	25.2	11.1	14.2	12.2	8.8	3.3
Nevada	273.7	59.3	1,305	131.4	79.9	33.1	46.8	36.5	26.1	10.4
New Hampshire	72.4	14.0	316	37.2	20.4	9.0	11.4	9.8	7.1	2.7
New Jersey	646.5	135.2	2,477	319.7	191.7	84.0	107.7	86.3	62.3	24.0
New Mexico	157.9	34.5	869	76.2	45.6	19.5	26.1	20.9	15.0	5.9
New York	1,279.0	263.6	4,745	637.5	377.5	169.1	208.5	171.2	123.7	47.5
North Carolina	487.2	96.5	2,349	247.9	136.3	58.7	77.5	65.7	47.6	18.0
North Dakota	53.6	11.3	270	26.4	15.4	6.6	8.8	7.1	5.2	2.0
Ohio	629.5	128.4	3,104	315.6	177.6	76.8	100.8	84.4	61.1	23.3
Oklahoma	416.1	94.2	2,374	196.4	118.2	49.0	69.2	54.7	39.1	15.6
Oregon	223.6	45.4	1,067	112.4	64.0	28.1	35.9	30.0	21.7	8.3
Pennsylvania	838.4	174.7	3,849	415.3	238.2	102.9	135.3	112.0	80.8	31.2
Rhode Island	93.9	20.6	451	45.2	27.7	11.9	15.7	12.4	8.9	3.5
South Carolina	218.1	42.3	1,066	112.2	62.0	27.5	34.6	29.5	21.5	8.1
South Dakota	57.9	12.3	309	28.4	16.1	6.7	9.4	7.7	5.6	2.2
Tennessee	304.2	59.0	1,472	156.5	82.3	35.4	46.9	41.1	29.9	11.2
Texas	1,278.7	248.6	5,432	656.8	357.4	153.2	204.2	172.9	125.7	47.2
Utah	119.6	23.2	577	61.5	33.6	14.5	19.0	16.2	11.8	4.4
Vermont	31.2	6.0	152	16.0	8.9	4.0	4.9	4.2	3.1	1.2
Virginia	421.0	81.6	1,709	216.5	120.3	52.8	67.5	57.0	41.4	15.5
Washington	521.9	110.0	2,236	257.0	149.6	61.7	87.8	69.6	50.2	19.4
West Virginia	124.5	26.8	675	60.6	35.7	15.6	20.1	16.5	11.9	4.6
Wisconsin	349.6	72.3	1,809	173.9	101.5	44.7	56.9	46.8	33.8	13.0
Wyoming	36.6	7.5	176	18.3	11.0	4.7	6.3	4.9	3.5	1.4
United States	\$19,347	\$3,980	86,819	\$9,650	\$5,539	\$2,394	\$3,145	\$2,591	\$1,872	\$718

Source: Oxford Economics

Scenario: Convenient availability, Base tax rate
Gaming revenue and tax

Amounts in millions of dollars, except population

	Population	Gaming		Gaming tax impacts		
	Population, adult (thousands, stabilized year)	Handle	Gaming revenue	Total	Gaming revenue tax	Federal handle tax
Alabama	3,732.4	\$3,515.4	\$231.4	\$31.9	\$23.1	\$8.8
Alaska	555.2	552.4	36.8	5.1	3.7	1.4
Arizona	5,455.7	6,406.7	414.1	57.4	41.4	16.0
Arkansas	2,264.9	1,891.1	125.9	17.3	12.6	4.7
California	30,475.3	35,999.2	2,348.4	324.8	234.8	90.0
Colorado	4,302.6	4,942.6	322.9	44.6	32.3	12.4
Connecticut	2,799.7	4,606.4	295.8	41.1	29.6	11.5
Delaware	769.3	1,124.9	72.1	10.0	7.2	2.8
District of Columbia	564.1	618.9	41.2	5.7	4.1	1.5
Florida	16,772.9	17,466.7	1,144.3	158.1	114.4	43.7
Georgia	7,775.2	6,515.0	433.9	59.7	43.4	16.3
Hawaii	1,145.4	1,047.3	69.7	9.6	7.0	2.6
Idaho	1,260.7	1,279.9	83.5	11.6	8.4	3.2
Illinois	9,776.6	10,361.4	680.2	93.9	68.0	25.9
Indiana	5,023.0	6,551.8	421.2	58.5	42.1	16.4
Iowa	2,357.3	3,739.0	238.1	33.2	23.8	9.3
Kansas	2,151.7	2,602.8	168.8	23.4	16.9	6.5
Kentucky	3,347.3	2,791.5	185.9	25.6	18.6	7.0
Louisiana	3,526.7	6,273.7	396.6	55.3	39.7	15.7
Maine	1,068.6	1,047.5	68.9	9.5	6.9	2.6
Maryland	4,699.4	5,671.3	370.2	51.2	37.0	14.2
Massachusetts	5,408.3	6,931.8	451.8	62.5	45.2	17.3
Michigan	7,630.4	9,561.3	617.2	85.6	61.7	23.9
Minnesota	4,233.3	5,366.2	347.7	48.2	34.8	13.4
Mississippi	2,244.4	4,308.4	270.4	37.8	27.0	10.8
Missouri	4,707.0	5,821.9	376.1	52.2	37.6	14.6
Montana	821.9	792.8	52.1	7.2	5.2	2.0
Nebraska	1,408.7	1,330.1	88.3	12.2	8.8	3.3
Nevada	2,325.5	4,166.7	260.7	36.5	26.1	10.4
New Hampshire	1,081.8	1,068.7	71.2	9.8	7.1	2.7
New Jersey	6,933.5	9,614.2	622.8	86.3	62.3	24.0
New Mexico	1,583.2	2,358.8	150.2	20.9	15.0	5.9
New York	15,339.4	18,994.2	1,237.1	171.2	123.7	47.5
North Carolina	7,940.5	7,208.1	476.5	65.7	47.6	18.0
North Dakota	584.7	797.9	51.5	7.1	5.2	2.0
Ohio	8,755.1	9,339.8	610.8	84.4	61.1	23.3
Oklahoma	2,949.3	6,237.2	391.3	54.7	39.1	15.6
Oregon	3,240.2	3,315.7	217.2	30.0	21.7	8.3
Pennsylvania	9,962.0	12,464.8	808.4	112.0	80.8	31.2
Rhode Island	820.5	1,402.9	89.2	12.4	8.9	3.5
South Carolina	3,913.0	3,221.1	214.5	29.5	21.5	8.1
South Dakota	652.4	861.5	55.5	7.7	5.6	2.2
Tennessee	5,176.5	4,492.3	299.2	41.1	29.9	11.2
Texas	20,856.0	18,888.4	1,256.7	172.9	125.7	47.2
Utah	2,135.9	1,765.8	117.6	16.2	11.8	4.4
Vermont	499.5	460.3	30.7	4.2	3.1	1.2
Virginia	6,585.5	6,217.5	414.1	57.0	41.4	15.5
Washington	5,695.7	7,767.0	501.6	69.6	50.2	19.4
West Virginia	1,414.5	1,857.1	119.0	16.5	11.9	4.6
Wisconsin	4,457.7	5,193.9	337.8	46.8	33.8	13.0
Wyoming	454.5	542.8	35.4	4.9	3.5	1.4
United States	249,635	\$287,355	\$18,723	\$2,591	\$1,872	\$718

Source: Oxford Economics

Scenario: Convenient availability, Base tax rate
Selected impacts in comparison to gaming revenue

Amounts in millions of dollars, except jobs

	Gaming	Employment			Income		
	Gaming revenue	Total	Direct	Indirect and induced	Total	Direct	Indirect and induced
Alabama	\$231.4	2,880	1,198	1,682	\$122.3	\$47.5	\$74.8
Alaska	36.8	377	136	242	22.3	7.3	15.1
Arizona	414.1	5,054	2,097	2,957	233.7	90.6	143.2
Arkansas	125.9	1,565	626	939	65.3	24.8	40.4
California	2,348.4	25,054	9,080	15,974	1,489.6	497.7	991.9
Colorado	322.9	3,821	1,461	2,360	195.2	68.1	127.1
Connecticut	295.8	2,897	1,206	1,690	176.2	66.1	110.1
Delaware	72.1	780	351	429	41.2	16.2	25.0
District of Columbia	41.2	465	146	319	42.1	8.1	33.9
Florida	1,144.3	14,123	5,607	8,515	643.4	239.0	404.4
Georgia	433.9	5,395	1,972	3,423	261.0	85.5	175.5
Hawaii	69.7	714	278	436	37.0	13.7	23.3
Idaho	83.5	1,067	445	621	42.7	17.7	25.0
Illinois	680.2	7,660	2,793	4,867	430.1	141.1	289.0
Indiana	421.2	5,262	2,363	2,899	228.7	93.8	135.0
Iowa	238.1	2,956	1,377	1,579	127.7	54.6	73.0
Kansas	168.8	2,123	919	1,204	93.8	36.5	57.3
Kentucky	185.9	2,319	924	1,395	102.7	36.6	66.1
Louisiana	396.6	4,762	2,225	2,537	210.1	93.2	116.9
Maine	68.9	884	358	526	37.7	14.2	23.5
Maryland	370.2	3,856	1,511	2,345	218.4	78.3	140.1
Massachusetts	451.8	4,664	1,728	2,936	295.1	96.0	199.0
Michigan	617.2	7,469	3,149	4,320	351.6	135.5	216.0
Minnesota	347.7	4,335	1,707	2,628	219.7	75.4	144.3
Mississippi	270.4	3,324	1,639	1,685	129.7	65.0	64.6
Missouri	376.1	4,712	2,018	2,694	216.3	82.4	133.9
Montana	52.1	685	271	414	27.3	10.7	16.6
Nebraska	88.3	1,172	444	728	52.1	17.6	34.5
Nevada	260.7	2,776	1,305	1,471	130.0	59.3	70.6
New Hampshire	71.2	797	316	481	40.2	14.0	26.2
New Jersey	622.8	6,169	2,477	3,692	368.8	135.2	233.6
New Mexico	150.2	1,778	869	910	72.4	34.5	38.0
New York	1,237.1	11,294	4,745	6,550	727.1	263.6	463.5
North Carolina	476.5	6,053	2,349	3,704	276.3	96.5	179.8
North Dakota	51.5	621	270	351	29.2	11.3	17.9
Ohio	610.8	7,890	3,104	4,786	370.9	128.4	242.6
Oklahoma	391.3	4,893	2,374	2,519	208.2	94.2	114.0
Oregon	217.2	2,721	1,067	1,654	126.3	45.4	80.9
Pennsylvania	808.4	10,500	3,849	6,651	545.0	174.7	370.3
Rhode Island	89.2	947	451	496	47.4	20.6	26.9
South Carolina	214.5	2,603	1,066	1,537	111.8	42.3	69.5
South Dakota	55.5	711	309	402	29.6	12.3	17.3
Tennessee	299.2	3,729	1,472	2,257	171.8	59.0	112.8
Texas	1,256.7	14,992	5,432	9,560	765.1	248.6	516.5
Utah	117.6	1,626	577	1,049	71.9	23.2	48.7
Vermont	30.7	375	152	222	16.2	6.0	10.2
Virginia	414.1	4,629	1,709	2,920	250.3	81.6	168.7
Washington	501.6	5,088	2,236	2,852	275.3	110.0	165.4
West Virginia	119.0	1,339	675	664	56.4	26.8	29.6
Wisconsin	337.8	4,373	1,809	2,563	196.2	72.3	123.9
Wyoming	35.4	390	176	215	17.6	7.5	10.1
United States	\$18,723	216,671	86,819	129,852	\$11,017	\$3,980	\$7,036

Source: Oxford Economics

4.1 STATE TABLES: LOW TAX RATE SCENARIOS

Scenario: Limited availability, Low tax rate
Total impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employ- ment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$103.3	\$29.4	664	\$55.6	\$19.5	\$7.3	\$12.2	\$3.9	\$2.3	\$1.6
Alaska	11.5	3.5	50	7.0	1.6	0.5	1.1	0.1	0.0	0.0
Arizona	366.1	104.1	2,258	190.6	72.8	25.7	47.2	18.1	10.8	7.3
Arkansas	24.5	7.5	154	15.0	0.0	0.0	0.0	0.0	0.0	0.0
California	1,715.0	507.3	8,456	934.7	344.1	126.0	218.1	70.4	42.1	28.3
Colorado	219.6	63.3	1,224	117.8	41.2	14.0	27.2	9.0	5.4	3.6
Connecticut	307.6	90.0	1,493	165.3	68.6	24.3	44.3	15.8	9.4	6.3
Delaware	75.6	21.9	419	40.1	15.5	5.5	10.0	4.0	2.4	1.6
District of Columbia	32.8	10.1	86	20.1	0.0	0.0	0.0	0.0	0.0	0.0
Florida	662.8	186.9	4,040	351.6	128.6	44.8	83.9	27.2	16.3	11.0
Georgia	104.8	32.1	569	64.2	0.0	0.0	0.0	0.0	0.0	0.0
Hawaii	17.0	5.2	87	10.4	0.0	0.0	0.0	0.0	0.0	0.0
Idaho	52.0	14.2	351	26.3	9.9	3.5	6.4	2.4	1.4	1.0
Illinois	405.0	118.6	2,053	223.2	77.4	28.8	48.6	14.1	8.4	5.7
Indiana	418.4	114.5	2,665	212.3	83.0	28.7	54.3	21.7	13.0	8.7
Iowa	281.8	77.1	1,808	140.3	57.8	20.6	37.2	15.6	9.3	6.3
Kansas	137.3	37.7	854	70.8	26.9	9.5	17.4	6.5	3.9	2.6
Kentucky	41.0	12.6	236	25.1	0.0	0.0	0.0	0.0	0.0	0.0
Louisiana	539.7	145.7	3,343	270.0	109.0	38.0	71.0	30.4	18.2	12.2
Maine	33.9	9.6	218	18.2	6.4	2.5	3.9	1.3	0.8	0.5
Maryland	251.8	73.1	1,277	136.3	50.4	18.6	31.8	10.8	6.4	4.3
Massachusetts	347.6	104.4	1,638	188.8	66.2	21.6	44.7	14.3	8.6	5.8
Michigan	572.0	160.5	3,431	295.0	117.5	42.7	74.7	28.1	16.8	11.3
Minnesota	313.0	90.9	1,799	164.7	63.0	23.0	40.0	13.9	8.3	5.6
Mississippi	395.4	102.3	2,639	190.1	83.8	31.1	52.7	23.8	14.2	9.6
Missouri	344.0	96.9	2,121	178.5	65.8	22.3	43.4	16.7	10.0	6.7
Montana	24.5	6.9	168	12.9	4.5	1.6	2.9	1.0	0.6	0.4
Nebraska	28.0	8.4	167	16.4	4.2	1.5	2.7	0.4	0.2	0.2
Nevada	473.1	130.1	2,824	240.9	106.4	37.4	68.9	29.1	17.4	11.7
New Hampshire	16.3	5.0	84	10.0	0.0	0.0	0.0	0.0	0.0	0.0
New Jersey	517.1	153.7	2,574	281.0	113.5	41.3	72.3	25.1	15.0	10.1
New Mexico	166.8	43.9	1,097	82.9	35.5	12.9	22.6	9.8	5.9	4.0
New York	893.1	263.2	4,061	491.9	193.1	74.5	118.5	40.6	24.3	16.3
North Carolina	186.2	54.7	1,114	104.6	31.4	11.0	20.4	5.1	3.1	2.1
North Dakota	46.6	13.0	279	24.1	9.1	3.0	6.1	2.3	1.4	0.9
Ohio	405.9	116.5	2,437	219.3	75.1	27.0	48.2	16.1	9.6	6.5
Oklahoma	603.3	164.4	3,904	298.7	121.1	40.5	80.6	34.5	20.6	13.9
Oregon	127.6	37.0	780	68.7	23.8	8.0	15.7	5.1	3.1	2.1
Pennsylvania	732.7	221.0	4,259	395.7	142.6	50.7	91.8	31.1	18.6	12.5
Rhode Island	102.7	29.4	595	54.0	22.9	8.2	14.7	6.0	3.6	2.4
South Carolina	43.0	13.2	257	26.3	0.0	0.0	0.0	0.0	0.0	0.0
South Dakota	50.8	14.0	338	25.8	9.8	3.2	6.6	2.7	1.6	1.1
Tennessee	64.1	19.6	373	39.2	0.0	0.0	0.0	0.0	0.0	0.0
Texas	335.2	101.9	1,757	201.9	50.8	19.4	31.5	1.7	1.0	0.7
Utah	30.8	9.4	182	18.8	0.0	0.0	0.0	0.0	0.0	0.0
Vermont	6.8	2.1	42	4.1	0.0	0.0	0.0	0.0	0.0	0.0
Virginia	106.9	32.7	493	65.4	0.0	0.0	0.0	0.0	0.0	0.0
Washington	439.3	123.0	2,292	230.8	92.2	31.6	60.7	22.4	13.4	9.0
West Virginia	110.9	30.5	731	56.2	24.1	8.9	15.2	6.7	4.0	2.7
Wisconsin	258.5	73.0	1,622	136.3	51.7	19.2	32.5	11.6	6.9	4.7
Wyoming	22.4	6.1	134	11.7	4.8	1.6	3.1	1.1	0.6	0.4
United States	\$13,566	\$3,892	76,496	\$7,230	\$2,627	\$920	\$1,708	\$601	\$359	\$242

Source: Oxford Economics

Scenario: Limited availability, Low tax rate
Direct impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$37.6	\$9.0	226	\$17.6	\$10.3	\$3.4	\$6.9	\$3.9	\$2.3	\$1.6
Alaska	0.5	0.1	2	0.2	0.1	0.0	0.1	0.1	0.0	0.0
Arizona	176.3	42.3	972	82.4	47.7	15.8	31.9	18.1	10.8	7.3
Arkansas	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
California	685.5	164.5	2,978	320.4	193.7	66.9	126.8	70.4	42.1	28.3
Colorado	87.2	20.9	445	40.8	24.0	8.0	16.0	9.0	5.4	3.6
Connecticut	153.5	36.8	667	71.7	44.2	15.1	29.1	15.8	9.4	6.3
Delaware	39.2	9.4	202	18.3	10.9	3.8	7.1	4.0	2.4	1.6
District of Columbia	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Florida	265.1	63.6	1,481	123.9	73.3	23.7	49.6	27.2	16.3	11.0
Georgia	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hawaii	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Idaho	23.6	5.7	142	11.0	6.4	2.2	4.3	2.4	1.4	1.0
Illinois	137.4	33.0	648	64.2	38.8	13.5	25.3	14.1	8.4	5.7
Indiana	211.7	50.8	1,270	98.9	57.4	18.9	38.6	21.7	13.0	8.7
Iowa	151.9	36.5	911	71.0	41.9	14.3	27.6	15.6	9.3	6.3
Kansas	63.2	15.2	379	29.5	17.5	5.9	11.6	6.5	3.9	2.6
Kentucky	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Louisiana	295.9	71.0	1,682	138.3	79.5	26.1	53.4	30.4	18.2	12.2
Maine	12.4	3.0	74	5.8	3.5	1.2	2.2	1.3	0.8	0.5
Maryland	104.9	25.2	482	49.0	29.5	10.2	19.3	10.8	6.4	4.3
Massachusetts	139.4	33.5	597	65.1	38.3	12.9	25.4	14.3	8.6	5.8
Michigan	273.4	65.6	1,513	127.8	76.4	26.1	50.3	28.1	16.8	11.3
Minnesota	135.4	32.5	730	63.3	37.7	12.9	24.8	13.9	8.3	5.6
Mississippi	231.3	55.5	1,388	108.1	63.9	22.1	41.8	23.8	14.2	9.6
Missouri	162.6	39.0	948	76.0	44.0	14.6	29.4	16.7	10.0	6.7
Montana	9.3	2.2	56	4.4	2.6	0.9	1.7	1.0	0.6	0.4
Nebraska	3.9	0.9	24	1.8	1.1	0.4	0.7	0.4	0.2	0.2
Nevada	283.8	68.1	1,486	132.6	78.8	25.7	53.1	29.1	17.4	11.7
New Hampshire	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Jersey	244.9	58.8	1,069	114.4	70.6	24.7	45.8	25.1	15.0	10.1
New Mexico	95.7	23.0	574	44.7	26.4	8.9	17.5	9.8	5.9	4.0
New York	395.3	94.9	1,694	184.7	113.9	41.1	72.8	40.6	24.3	16.3
North Carolina	50.0	12.0	290	23.4	13.6	4.5	9.1	5.1	3.1	2.1
North Dakota	22.5	5.4	128	10.5	6.2	2.1	4.1	2.3	1.4	0.9
Ohio	157.0	37.7	904	73.4	42.9	14.4	28.5	16.1	9.6	6.5
Oklahoma	336.1	80.7	2,017	157.1	90.2	29.3	60.9	34.5	20.6	13.9
Oregon	50.0	12.0	280	23.4	13.8	4.7	9.1	5.1	3.1	2.1
Pennsylvania	303.2	72.8	1,590	141.7	83.1	28.0	55.0	31.1	18.6	12.5
Rhode Island	58.8	14.1	307	27.5	16.6	5.7	10.9	6.0	3.6	2.4
South Carolina	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Dakota	25.9	6.2	156	12.1	6.9	2.2	4.7	2.7	1.6	1.1
Tennessee	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Texas	16.8	4.0	88	7.9	4.6	1.5	3.1	1.7	1.0	0.7
Utah	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vermont	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Virginia	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Washington	218.2	52.4	1,057	102.0	60.4	19.2	41.2	22.4	13.4	9.0
West Virginia	65.6	15.7	394	30.7	18.0	6.2	11.8	6.7	4.0	2.7
Wisconsin	112.8	27.1	672	52.7	31.8	11.1	20.7	11.6	6.9	4.7
Wyoming	10.6	2.5	59	4.9	3.1	1.0	2.1	1.1	0.6	0.4
United States	\$5,849	\$1,404	30,582	\$2,733	\$1,624	\$549	\$1,074	\$601	\$359	\$242

Source: Oxford Economics

Scenario: Limited availability, Low tax rate
Gaming revenue and tax

Amounts in millions of dollars, except population

	Population	Gaming		Gaming tax impacts		
	Population, adult (thousands, stabilized year)	Handle	Gaming revenue	Total	Gaming revenue tax	Federal handle tax
Alabama	3,732.4	\$621.8	\$34.2	\$3.9	\$2.3	\$1.6
Alaska	555.2	8.2	0.5	0.1	0.0	0.0
Arizona	5,455.7	2,913.3	160.2	18.1	10.8	7.3
Arkansas	2,264.9	0.0	0.0	0.0	0.0	0.0
California	30,475.3	11,331.2	623.2	70.4	42.1	28.3
Colorado	4,302.6	1,441.4	79.3	9.0	5.4	3.6
Connecticut	2,799.7	2,536.8	139.5	15.8	9.4	6.3
Delaware	769.3	648.3	35.7	4.0	2.4	1.6
District of Columbia	564.1	0.0	0.0	0.0	0.0	0.0
Florida	16,772.9	4,381.9	241.0	27.2	16.3	11.0
Georgia	7,775.2	0.0	0.0	0.0	0.0	0.0
Hawaii	1,145.4	0.0	0.0	0.0	0.0	0.0
Idaho	1,260.7	390.2	21.5	2.4	1.4	1.0
Illinois	9,776.6	2,271.0	124.9	14.1	8.4	5.7
Indiana	5,023.0	3,499.0	192.4	21.7	13.0	8.7
Iowa	2,357.3	2,510.5	138.1	15.6	9.3	6.3
Kansas	2,151.7	1,044.5	57.4	6.5	3.9	2.6
Kentucky	3,347.3	0.0	0.0	0.0	0.0	0.0
Louisiana	3,526.7	4,891.0	269.0	30.4	18.2	12.2
Maine	1,068.6	205.0	11.3	1.3	0.8	0.5
Maryland	4,699.4	1,734.7	95.4	10.8	6.4	4.3
Massachusetts	5,408.3	2,303.9	126.7	14.3	8.6	5.8
Michigan	7,630.4	4,519.2	248.6	28.1	16.8	11.3
Minnesota	4,233.3	2,238.7	123.1	13.9	8.3	5.6
Mississippi	2,244.4	3,823.6	210.3	23.8	14.2	9.6
Missouri	4,707.0	2,687.7	147.8	16.7	10.0	6.7
Montana	821.9	154.0	8.5	1.0	0.6	0.4
Nebraska	1,408.7	65.1	3.6	0.4	0.2	0.2
Nevada	2,325.5	4,690.4	258.0	29.1	17.4	11.7
New Hampshire	1,081.8	0.0	0.0	0.0	0.0	0.0
New Jersey	6,933.5	4,047.8	222.6	25.1	15.0	10.1
New Mexico	1,583.2	1,582.5	87.0	9.8	5.9	4.0
New York	15,339.4	6,534.6	359.4	40.6	24.3	16.3
North Carolina	7,940.5	826.4	45.5	5.1	3.1	2.1
North Dakota	584.7	372.6	20.5	2.3	1.4	0.9
Ohio	8,755.1	2,595.8	142.8	16.1	9.6	6.5
Oklahoma	2,949.3	5,555.7	305.6	34.5	20.6	13.9
Oregon	3,240.2	827.2	45.5	5.1	3.1	2.1
Pennsylvania	9,962.0	5,012.3	275.7	31.1	18.6	12.5
Rhode Island	820.5	972.5	53.5	6.0	3.6	2.4
South Carolina	3,913.0	0.0	0.0	0.0	0.0	0.0
South Dakota	652.4	428.5	23.6	2.7	1.6	1.1
Tennessee	5,176.5	0.0	0.0	0.0	0.0	0.0
Texas	20,856.0	278.5	15.3	1.7	1.0	0.7
Utah	2,135.9	0.0	0.0	0.0	0.0	0.0
Vermont	499.5	0.0	0.0	0.0	0.0	0.0
Virginia	6,585.5	0.0	0.0	0.0	0.0	0.0
Washington	5,695.7	3,607.3	198.4	22.4	13.4	9.0
West Virginia	1,414.5	1,084.3	59.6	6.7	4.0	2.7
Wisconsin	4,457.7	1,864.6	102.6	11.6	6.9	4.7
Wyoming	454.5	174.7	9.6	1.1	0.6	0.4
United States	249,635	\$96,677	\$5,317	\$601	\$359	\$242

Source: Oxford Economics

Scenario: Limited availability, Low tax rate
Selected impacts in comparison to gaming revenue

Amounts in millions of dollars, except jobs

	Gaming	Employment			Income		
	Gaming revenue	Total	Direct	Indirect and induced	Total	Direct	Indirect and induced
Alabama	\$34.2	664	226	438	\$29.4	\$9.0	\$20.3
Alaska	0.5	50	2	48	3.5	0.1	3.4
Arizona	160.2	2,258	972	1,286	104.1	42.3	61.8
Arkansas	0.0	154	0	154	7.5	0.0	7.5
California	623.2	8,456	2,978	5,479	507.3	164.5	342.8
Colorado	79.3	1,224	445	778	63.3	20.9	42.3
Connecticut	139.5	1,493	667	826	90.0	36.8	53.2
Delaware	35.7	419	202	217	21.9	9.4	12.5
District of Columbia	0.0	86	0	86	10.1	0.0	10.1
Florida	241.0	4,040	1,481	2,559	186.9	63.6	123.3
Georgia	0.0	569	0	569	32.1	0.0	32.1
Hawaii	0.0	87	0	87	5.2	0.0	5.2
Idaho	21.5	351	142	210	14.2	5.7	8.5
Illinois	124.9	2,053	648	1,405	118.6	33.0	85.6
Indiana	192.4	2,665	1,270	1,395	114.5	50.8	63.7
Iowa	138.1	1,808	911	897	77.1	36.5	40.7
Kansas	57.4	854	379	475	37.7	15.2	22.5
Kentucky	0.0	236	0	236	12.6	0.0	12.6
Louisiana	269.0	3,343	1,682	1,661	145.7	71.0	74.7
Maine	11.3	218	74	144	9.6	3.0	6.6
Maryland	95.4	1,277	482	795	73.1	25.2	47.9
Massachusetts	126.7	1,638	597	1,041	104.4	33.5	71.0
Michigan	248.6	3,431	1,513	1,918	160.5	65.6	94.9
Minnesota	123.1	1,799	730	1,069	90.9	32.5	58.4
Mississippi	210.3	2,639	1,388	1,251	102.3	55.5	46.8
Missouri	147.8	2,121	948	1,172	96.9	39.0	57.8
Montana	8.5	168	56	112	6.9	2.2	4.7
Nebraska	3.6	167	24	144	8.4	0.9	7.4
Nevada	258.0	2,824	1,486	1,338	130.1	68.1	61.9
New Hampshire	0.0	84	0	84	5.0	0.0	5.0
New Jersey	222.6	2,574	1,069	1,505	153.7	58.8	94.9
New Mexico	87.0	1,097	574	522	43.9	23.0	20.9
New York	359.4	4,061	1,694	2,367	263.2	94.9	168.3
North Carolina	45.5	1,114	290	824	54.7	12.0	42.7
North Dakota	20.5	279	128	151	13.0	5.4	7.5
Ohio	142.8	2,437	904	1,533	116.5	37.7	78.8
Oklahoma	305.6	3,904	2,017	1,887	164.4	80.7	83.7
Oregon	45.5	780	280	500	37.0	12.0	25.0
Pennsylvania	275.7	4,259	1,590	2,669	221.0	72.8	148.3
Rhode Island	53.5	595	307	288	29.4	14.1	15.3
South Carolina	0.0	257	0	257	13.2	0.0	13.2
South Dakota	23.6	338	156	183	14.0	6.2	7.8
Tennessee	0.0	373	0	373	19.6	0.0	19.6
Texas	15.3	1,757	88	1,669	101.9	4.0	97.8
Utah	0.0	182	0	182	9.4	0.0	9.4
Vermont	0.0	42	0	42	2.1	0.0	2.1
Virginia	0.0	493	0	493	32.7	0.0	32.7
Washington	198.4	2,292	1,057	1,235	123.0	52.4	70.6
West Virginia	59.6	731	394	338	30.5	15.7	14.8
Wisconsin	102.6	1,622	672	950	73.0	27.1	45.9
Wyoming	9.6	134	59	75	6.1	2.5	3.6
United States	\$5,317	76,496	30,582	45,914	\$3,892	\$1,404	\$2,488

Source: Oxford Economics

Scenario: Moderate availability, Low tax rate
Total impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$311.1	\$83.9	2,032	\$167.5	\$59.5	\$21.6	\$37.8	\$14.9	\$9.2	\$5.8
Alaska	53.4	14.8	254	30.1	9.7	3.3	6.3	2.2	1.3	0.8
Arizona	624.6	173.6	3,881	334.5	119.5	41.7	77.8	30.8	18.8	12.0
Arkansas	159.6	42.5	1,043	87.7	29.8	10.7	19.1	7.4	4.6	2.8
California	3,696.8	1,062.4	18,364	2,051.2	724.6	261.9	462.7	163.0	99.7	63.3
Colorado	495.6	138.4	2,787	270.5	91.9	30.9	60.9	22.1	13.6	8.6
Connecticut	467.1	134.1	2,282	257.7	99.3	34.8	64.5	23.0	14.0	9.0
Delaware	111.2	31.6	621	60.6	21.9	7.8	14.0	5.7	3.5	2.2
District of Columbia	97.6	28.8	319	57.3	14.5	5.4	9.1	2.4	1.5	0.9
Florida	1,656.7	450.2	10,175	892.0	317.3	108.6	208.7	76.9	47.1	29.7
Georgia	617.2	170.5	3,596	341.9	108.4	37.2	71.2	25.4	15.7	9.7
Hawaii	90.2	24.4	481	50.3	17.4	6.6	10.8	4.1	2.5	1.6
Idaho	115.3	30.4	783	59.7	21.5	7.5	14.0	5.8	3.5	2.2
Illinois	1,060.1	299.1	5,464	587.7	203.4	74.3	129.1	44.9	27.6	17.4
Indiana	643.9	173.4	4,143	337.6	122.5	42.1	80.4	32.5	19.8	12.7
Iowa	371.3	100.5	2,421	191.3	72.7	25.8	46.9	19.6	11.9	7.7
Kansas	255.6	68.5	1,606	135.6	48.4	16.9	31.5	12.2	7.5	4.8
Kentucky	246.9	67.1	1,548	134.8	43.9	15.6	28.3	10.9	6.7	4.2
Louisiana	636.8	170.5	4,024	328.2	123.3	42.6	80.7	34.2	20.7	13.5
Maine	96.6	26.0	628	52.0	18.4	6.9	11.4	4.5	2.8	1.7
Maryland	552.5	155.5	2,827	304.6	108.4	39.5	68.9	25.6	15.6	9.9
Massachusetts	730.1	213.3	3,471	403.8	136.6	44.5	92.1	32.0	19.5	12.4
Michigan	953.4	262.2	5,766	506.5	187.8	67.7	120.1	46.3	28.2	18.1
Minnesota	567.9	161.2	3,283	306.5	110.0	39.8	70.1	25.4	15.5	9.9
Mississippi	422.0	108.7	2,902	208.9	86.2	31.9	54.3	24.4	14.7	9.7
Missouri	583.1	160.8	3,628	311.4	107.4	36.2	71.2	28.1	17.1	11.0
Montana	70.5	18.8	485	37.1	13.3	4.6	8.6	3.4	2.1	1.3
Nebraska	125.4	34.5	794	69.4	22.3	7.7	14.6	5.3	3.3	2.0
Nevada	545.8	150.4	3,380	281.2	118.3	41.0	77.3	32.1	19.2	12.9
New Hampshire	93.3	26.3	533	52.5	17.4	6.0	11.5	4.2	2.6	1.6
New Jersey	935.6	271.0	4,681	520.9	197.2	71.1	126.1	45.6	27.8	17.8
New Mexico	218.9	57.0	1,461	112.6	44.6	16.2	28.4	12.4	7.5	4.9
New York	1,844.9	527.8	8,475	1,036.6	388.4	148.6	239.8	88.1	53.8	34.2
North Carolina	671.8	186.2	4,179	370.3	121.9	41.8	80.1	29.8	18.3	11.4
North Dakota	79.4	21.7	478	42.3	15.0	4.9	10.1	3.9	2.3	1.5
Ohio	942.6	261.9	5,734	517.1	172.4	60.8	111.6	41.6	25.5	16.1
Oklahoma	645.0	174.5	4,275	327.9	124.7	41.4	83.3	35.4	21.4	14.0
Oregon	315.9	88.4	1,959	172.4	59.1	20.0	39.0	14.6	8.9	5.6
Pennsylvania	1,352.5	398.3	7,900	746.4	254.3	89.6	164.6	58.6	35.8	22.8
Rhode Island	133.2	37.5	781	72.1	28.2	10.1	18.2	7.4	4.5	2.9
South Carolina	269.5	73.0	1,737	148.1	51.4	18.9	32.5	12.6	7.8	4.8
South Dakota	81.9	22.2	553	43.0	15.2	4.9	10.3	4.2	2.6	1.6
Tennessee	397.8	111.8	2,487	220.8	70.7	24.2	46.5	17.5	10.8	6.7
Texas	1,802.5	501.7	10,037	1,006.0	329.9	114.9	215.0	74.2	45.9	28.4
Utah	173.9	47.1	1,085	95.7	30.3	10.4	19.8	6.9	4.3	2.6
Vermont	39.2	10.6	252	21.7	7.6	2.9	4.7	1.8	1.1	0.7
Virginia	584.2	164.0	3,087	329.5	108.7	38.1	70.6	24.2	15.0	9.3
Washington	746.5	204.7	3,922	403.8	149.7	50.6	99.1	37.5	22.8	14.6
West Virginia	160.6	43.4	1,074	84.2	33.4	12.3	21.1	9.4	5.7	3.7
Wisconsin	515.4	141.7	3,262	278.3	100.1	36.8	63.3	24.0	14.6	9.3
Wyoming	47.9	12.6	289	25.6	10.0	3.4	6.5	2.5	1.5	1.0
United States	\$28,411	\$7,940	161,232	\$15,486	\$5,488	\$1,943	\$3,545	\$1,321	\$808	\$514

Source: Oxford Economics

Scenario: Moderate availability, Low tax rate
Direct impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$144.1	\$32.3	876	\$73.0	\$38.2	\$13.0	\$25.2	\$14.9	\$9.2	\$5.8
Alaska	20.9	4.6	93	10.8	5.7	2.0	3.7	2.2	1.3	0.8
Arizona	297.8	68.1	1,700	147.4	78.9	26.6	52.3	30.8	18.8	12.0
Arkansas	70.9	15.6	424	36.6	18.7	6.3	12.3	7.4	4.6	2.8
California	1,573.8	356.3	7,006	787.6	432.7	152.4	280.3	163.0	99.7	63.3
Colorado	213.8	48.3	1,117	107.2	57.4	19.5	37.9	22.1	13.6	8.6
Connecticut	222.8	51.3	1,008	109.5	63.0	21.8	41.1	23.0	14.0	9.0
Delaware	55.0	12.7	296	27.0	15.1	5.4	9.7	5.7	3.5	2.2
District of Columbia	23.2	5.1	99	12.0	5.9	2.1	3.7	2.4	1.5	0.9
Florida	741.6	167.0	4,223	373.2	199.4	66.2	133.2	76.9	47.1	29.7
Georgia	244.4	53.8	1,336	126.1	64.2	22.2	42.1	25.4	15.7	9.7
Hawaii	39.3	8.6	188	20.3	10.2	3.5	6.8	4.1	2.5	1.6
Idaho	55.7	12.6	342	27.9	14.8	5.1	9.7	5.8	3.5	2.2
Illinois	433.4	97.4	2,078	218.8	118.8	42.3	76.5	44.9	27.6	17.4
Indiana	314.8	72.4	1,965	154.9	83.8	28.0	55.8	32.5	19.8	12.7
Iowa	189.8	44.0	1,194	92.5	51.6	17.9	33.7	19.6	11.9	7.7
Kansas	118.2	26.9	732	58.8	31.9	10.9	21.0	12.2	7.5	4.8
Kentucky	104.7	23.0	626	54.0	27.1	9.4	17.7	10.9	6.7	4.2
Louisiana	331.8	77.3	1,990	160.7	88.0	29.3	58.8	34.2	20.7	13.5
Maine	43.3	9.7	264	21.9	11.7	4.2	7.5	4.5	2.8	1.7
Maryland	246.9	55.9	1,162	123.7	67.6	24.0	43.7	25.6	15.6	9.9
Massachusetts	308.8	70.0	1,358	154.2	82.8	28.5	54.3	32.0	19.5	12.4
Michigan	447.8	102.5	2,567	221.3	122.5	42.6	79.9	46.3	28.2	18.1
Minnesota	245.4	56.0	1,366	121.8	66.8	23.3	43.5	25.4	15.5	9.9
Mississippi	237.0	55.5	1,508	114.1	64.8	22.6	42.2	24.4	14.7	9.7
Missouri	271.4	62.1	1,639	134.2	72.0	24.3	47.7	28.1	17.1	11.0
Montana	32.8	7.3	200	16.6	8.8	3.1	5.7	3.4	2.1	1.3
Nebraska	51.2	11.3	307	26.3	13.5	4.7	8.8	5.3	3.3	2.0
Nevada	312.2	74.6	1,769	146.6	86.5	28.3	58.2	32.1	19.2	12.9
New Hampshire	40.1	8.8	214	20.7	10.7	3.8	6.9	4.2	2.6	1.6
New Jersey	440.5	100.5	1,985	218.5	123.9	44.1	79.8	45.6	27.8	17.8
New Mexico	119.7	27.7	753	58.3	32.5	11.1	21.4	12.4	7.5	4.9
New York	850.7	193.1	3,746	424.6	238.7	87.6	151.1	88.1	53.8	34.2
North Carolina	286.7	63.8	1,675	146.1	75.6	25.8	49.8	29.8	18.3	11.4
North Dakota	37.3	8.5	220	18.4	10.1	3.4	6.6	3.9	2.3	1.5
Ohio	401.5	90.6	2,362	201.6	106.9	36.8	70.1	41.6	25.5	16.1
Oklahoma	343.5	80.5	2,187	165.3	91.3	30.0	61.3	35.4	21.4	14.0
Oregon	140.7	31.7	803	70.8	37.9	13.3	24.6	14.6	8.9	5.6
Pennsylvania	566.4	129.1	3,064	281.5	151.7	52.3	99.4	58.6	35.8	22.8
Rhode Island	71.8	16.7	394	35.0	19.9	7.0	13.0	7.4	4.5	2.9
South Carolina	120.8	26.6	722	62.3	32.5	11.6	20.9	12.6	7.8	4.8
South Dakota	40.8	9.3	254	20.1	10.6	3.4	7.2	4.2	2.6	1.6
Tennessee	168.5	37.1	997	86.9	42.8	14.4	28.4	17.5	10.8	6.7
Texas	714.0	157.3	3,705	367.8	188.2	63.6	124.6	74.2	45.9	28.4
Utah	66.2	14.6	391	34.2	17.5	6.0	11.5	6.9	4.3	2.6
Vermont	17.3	3.8	103	8.9	4.7	1.7	3.0	1.8	1.1	0.7
Virginia	233.2	51.3	1,158	120.3	63.1	22.2	40.9	24.2	15.0	9.3
Washington	362.5	82.9	1,818	179.3	98.0	31.8	66.3	37.5	22.8	14.6
West Virginia	91.0	21.0	570	44.6	24.6	8.6	15.9	9.4	5.7	3.7
Wisconsin	231.6	52.6	1,418	115.5	63.6	22.6	41.0	24.0	14.6	9.3
Wyoming	23.8	5.4	136	11.9	6.8	2.3	4.4	2.5	1.5	1.0
United States	\$12,761	\$2,895	68,109	\$6,372	\$3,454	\$1,193	\$2,261	\$1,321	\$808	\$514

Source: Oxford Economics

Scenario: Moderate availability, Low tax rate
Gaming revenue and tax

Amounts in millions of dollars, except population

	Population	Gaming		Gaming tax impacts		
	Population, adult (thousands, stabilized year)	Handle	Gaming revenue	Total	Gaming revenue tax	Federal handle tax
Alabama	3,732.4	\$2,305.7	\$136.1	\$14.9	\$9.2	\$5.8
Alaska	555.2	331.7	19.9	2.2	1.3	0.8
Arizona	5,455.7	4,811.3	278.0	30.8	18.8	12.0
Arkansas	2,264.9	1,125.9	67.6	7.4	4.6	2.8
California	30,475.3	25,310.5	1,477.1	163.0	99.7	63.3
Colorado	4,302.6	3,435.9	200.9	22.1	13.6	8.6
Connecticut	2,799.7	3,610.7	207.3	23.0	14.0	9.0
Delaware	769.3	891.6	51.1	5.7	3.5	2.2
District of Columbia	564.1	368.5	22.1	2.4	1.5	0.9
Florida	16,772.9	11,898.6	697.9	76.9	47.1	29.7
Georgia	7,775.2	3,878.7	232.7	25.4	15.7	9.7
Hawaii	1,145.4	623.5	37.4	4.1	2.5	1.6
Idaho	1,260.7	895.5	52.3	5.8	3.5	2.2
Illinois	9,776.6	6,946.0	408.4	44.9	27.6	17.4
Indiana	5,023.0	5,098.2	293.1	32.5	19.8	12.7
Iowa	2,357.3	3,085.3	175.9	19.6	11.9	7.7
Kansas	2,151.7	1,907.1	110.6	12.2	7.5	4.8
Kentucky	3,347.3	1,661.9	99.7	10.9	6.7	4.2
Louisiana	3,526.7	5,409.1	306.6	34.2	20.7	13.5
Maine	1,068.6	693.8	40.9	4.5	2.8	1.7
Maryland	4,699.4	3,970.1	231.9	25.6	15.6	9.9
Massachusetts	5,408.3	4,969.4	289.5	32.0	19.5	12.4
Michigan	7,630.4	7,239.1	417.8	46.3	28.2	18.1
Minnesota	4,233.3	3,961.0	229.5	25.4	15.5	9.9
Mississippi	2,244.4	3,873.7	218.4	24.4	14.7	9.7
Missouri	4,707.0	4,386.0	253.3	28.1	17.1	11.0
Montana	821.9	524.7	30.9	3.4	2.1	1.3
Nebraska	1,408.7	814.1	48.6	5.3	3.3	2.0
Nevada	2,325.5	5,150.6	284.4	32.1	19.2	12.9
New Hampshire	1,081.8	636.3	38.2	4.2	2.6	1.6
New Jersey	6,933.5	7,109.3	411.7	45.6	27.8	17.8
New Mexico	1,583.2	1,945.9	111.0	12.4	7.5	4.9
New York	15,339.4	13,697.9	797.4	88.1	53.8	34.2
North Carolina	7,940.5	4,574.2	271.4	29.8	18.3	11.4
North Dakota	584.7	602.5	34.8	3.9	2.3	1.5
Ohio	8,755.1	6,448.9	377.4	41.6	25.5	16.1
Oklahoma	2,949.3	5,614.8	316.5	35.4	21.4	14.0
Oregon	3,240.2	2,257.1	132.4	14.6	8.9	5.6
Pennsylvania	9,962.0	9,136.4	529.8	58.6	35.8	22.8
Rhode Island	820.5	1,168.1	66.5	7.4	4.5	2.9
South Carolina	3,913.0	1,917.7	115.1	12.6	7.8	4.8
South Dakota	652.4	659.6	38.0	4.2	2.6	1.6
Tennessee	5,176.5	2,674.5	160.5	17.5	10.8	6.7
Texas	20,856.0	11,340.7	679.4	74.2	45.9	28.4
Utah	2,135.9	1,051.3	63.1	6.9	4.3	2.6
Vermont	499.5	274.0	16.4	1.8	1.1	0.7
Virginia	6,585.5	3,701.7	222.1	24.2	15.0	9.3
Washington	5,695.7	5,858.8	338.3	37.5	22.8	14.6
West Virginia	1,414.5	1,476.7	84.6	9.4	5.7	3.7
Wisconsin	4,457.7	3,730.4	217.0	24.0	14.6	9.3
Wyoming	454.5	383.0	22.3	2.5	1.5	1.0
United States	249,635	\$205,438	\$11,964	\$1,321	\$808	\$514

Source: Oxford Economics

Scenario: Moderate availability, Low tax rate
Selected impacts in comparison to gaming revenue

Amounts in millions of dollars, except jobs

	Gaming	Employment			Income		
	Gaming revenue	Total	Direct	Indirect and induced	Total	Direct	Indirect and induced
Alabama	\$136.1	2,032	876	1,156	\$83.9	\$32.3	\$51.6
Alaska	19.9	254	93	162	14.8	4.6	10.2
Arizona	278.0	3,881	1,700	2,182	173.6	68.1	105.5
Arkansas	67.6	1,043	424	619	42.5	15.6	26.9
California	1,477.1	18,364	7,006	11,359	1,062.4	356.3	706.1
Colorado	200.9	2,787	1,117	1,670	138.4	48.3	90.1
Connecticut	207.3	2,282	1,008	1,274	134.1	51.3	82.8
Delaware	51.1	621	296	325	31.6	12.7	18.9
District of Columbia	22.1	319	99	220	28.8	5.1	23.7
Florida	697.9	10,175	4,223	5,951	450.2	167.0	283.2
Georgia	232.7	3,596	1,336	2,260	170.5	53.8	116.7
Hawaii	37.4	481	188	293	24.4	8.6	15.8
Idaho	52.3	783	342	441	30.4	12.6	17.8
Illinois	408.4	5,464	2,078	3,386	299.1	97.4	201.7
Indiana	293.1	4,143	1,965	2,178	173.4	72.4	101.1
Iowa	175.9	2,421	1,194	1,226	100.5	44.0	56.5
Kansas	110.6	1,606	732	875	68.5	26.9	41.6
Kentucky	99.7	1,548	626	922	67.1	23.0	44.1
Louisiana	306.6	4,024	1,990	2,033	170.5	77.3	93.2
Maine	40.9	628	264	364	26.0	9.7	16.3
Maryland	231.9	2,827	1,162	1,666	155.5	55.9	99.6
Massachusetts	289.5	3,471	1,358	2,113	213.3	70.0	143.3
Michigan	417.8	5,766	2,567	3,199	262.2	102.5	159.7
Minnesota	229.5	3,283	1,366	1,918	161.2	56.0	105.3
Mississippi	218.4	2,902	1,508	1,393	108.7	55.5	53.1
Missouri	253.3	3,628	1,639	1,988	160.8	62.1	98.7
Montana	30.9	485	200	286	18.8	7.3	11.5
Nebraska	48.6	794	307	487	34.5	11.3	23.2
Nevada	284.4	3,380	1,769	1,611	150.4	74.6	75.7
New Hampshire	38.2	533	214	319	26.3	8.8	17.5
New Jersey	411.7	4,681	1,985	2,696	271.0	100.5	170.5
New Mexico	111.0	1,461	753	708	57.0	27.7	29.3
New York	797.4	8,475	3,746	4,729	527.8	193.1	334.7
North Carolina	271.4	4,179	1,675	2,504	186.2	63.8	122.4
North Dakota	34.8	478	220	258	21.7	8.5	13.1
Ohio	377.4	5,734	2,362	3,372	261.9	90.6	171.3
Oklahoma	316.5	4,275	2,187	2,088	174.5	80.5	94.0
Oregon	132.4	1,959	803	1,156	88.4	31.7	56.7
Pennsylvania	529.8	7,900	3,064	4,836	398.3	129.1	269.2
Rhode Island	66.5	781	394	387	37.5	16.7	20.9
South Carolina	115.1	1,737	722	1,015	73.0	26.6	46.4
South Dakota	38.0	553	254	299	22.2	9.3	12.9
Tennessee	160.5	2,487	997	1,490	111.8	37.1	74.7
Texas	679.4	10,037	3,705	6,333	501.7	157.3	344.4
Utah	63.1	1,085	391	694	47.1	14.6	32.6
Vermont	16.4	252	103	148	10.6	3.8	6.9
Virginia	222.1	3,087	1,158	1,929	164.0	51.3	112.7
Washington	338.3	3,922	1,818	2,104	204.7	82.9	121.7
West Virginia	84.6	1,074	570	504	43.4	21.0	22.4
Wisconsin	217.0	3,262	1,418	1,843	141.7	52.6	89.1
Wyoming	22.3	289	136	153	12.6	5.4	7.2
United States	\$11,964	161,232	68,109	93,123	\$7,940	\$2,895	\$5,045

Source: Oxford Economics

Scenario: Convenient availability, Low tax rate
Total impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$508.3	\$130.0	3,059	\$275.5	\$97.8	\$35.5	\$62.3	\$26.5	\$16.3	\$10.2
Alaska	90.5	23.8	402	51.1	16.8	5.8	11.0	4.2	2.6	1.6
Arizona	927.5	247.3	5,344	502.6	177.1	61.9	115.2	47.9	29.3	18.6
Arkansas	277.3	69.5	1,667	152.6	52.6	18.8	33.8	14.3	8.9	5.5
California	5,741.8	1,583.2	26,602	3,211.9	1,125.9	406.4	719.4	270.3	166.0	104.3
Colorado	776.0	207.4	4,054	427.0	144.3	48.7	95.6	37.1	22.8	14.3
Connecticut	674.3	186.4	3,060	376.1	142.2	49.9	92.3	34.3	21.0	13.4
Delaware	159.2	43.6	823	87.8	31.1	11.2	20.0	8.4	5.1	3.3
District of Columbia	157.4	45.1	497	92.4	24.2	9.0	15.1	4.7	2.9	1.8
Florida	2,637.4	683.2	14,983	1,431.8	507.0	174.1	332.9	131.4	80.8	50.6
Georgia	1,062.8	278.5	5,749	589.0	190.3	65.3	125.1	49.4	30.6	18.9
Hawaii	154.5	39.4	759	86.3	30.3	11.4	18.9	7.9	4.9	3.0
Idaho	180.6	45.2	1,131	94.5	33.8	11.8	22.0	9.6	5.9	3.7
Illinois	1,695.2	457.6	8,139	945.6	326.8	119.0	207.8	78.0	48.0	30.0
Indiana	933.3	241.8	5,554	496.0	176.9	61.0	115.9	48.8	29.9	19.0
Iowa	515.2	134.7	3,113	269.5	100.1	35.6	64.5	27.8	16.9	10.8
Kansas	386.8	99.4	2,247	207.5	73.2	25.6	47.7	19.5	11.9	7.5
Kentucky	426.6	109.5	2,470	233.1	77.3	27.3	49.9	21.2	13.1	8.1
Louisiana	851.1	221.1	5,007	445.3	163.5	56.7	106.8	46.4	28.2	18.2
Maine	156.6	40.0	939	84.9	29.9	11.3	18.7	7.9	4.9	3.0
Maryland	861.8	231.9	4,090	479.1	169.3	61.7	107.6	42.6	26.2	16.4
Massachusetts	1,118.4	313.6	4,950	624.0	209.4	68.5	140.9	52.0	31.9	20.1
Michigan	1,408.4	372.1	7,895	757.2	276.5	99.7	176.7	71.4	43.7	27.7
Minnesota	853.5	233.1	4,591	465.4	165.0	59.8	105.2	40.2	24.6	15.5
Mississippi	543.0	136.0	3,487	273.1	110.0	40.8	69.2	31.8	19.3	12.5
Missouri	864.6	229.1	4,981	467.1	159.0	53.7	105.3	43.5	26.6	16.9
Montana	114.5	29.0	727	60.8	21.7	7.6	14.1	6.0	3.7	2.3
Nebraska	212.4	55.5	1,248	117.9	38.4	13.3	25.1	10.1	6.2	3.9
Nevada	528.2	137.7	2,940	282.9	111.1	39.1	71.9	30.8	18.7	12.1
New Hampshire	160.6	42.9	849	90.6	30.7	10.6	20.1	8.1	5.0	3.1
New Jersey	1,407.0	390.9	6,531	791.2	295.1	106.3	188.8	71.9	44.1	27.9
New Mexico	303.7	76.2	1,871	158.7	61.4	22.3	39.1	17.5	10.7	6.8
New York	2,819.2	771.5	11,959	1,599.0	591.3	225.5	365.8	142.5	87.5	55.0
North Carolina	1,116.7	294.2	6,439	618.3	205.2	70.4	134.8	54.5	33.6	20.9
North Dakota	117.9	30.9	657	63.6	22.2	7.3	14.9	6.0	3.6	2.3
Ohio	1,482.5	394.2	8,373	819.6	272.5	96.1	176.4	70.2	43.2	27.1
Oklahoma	829.7	218.7	5,134	428.1	159.2	53.1	106.1	46.0	27.9	18.1
Oregon	502.4	134.2	2,889	276.3	94.6	32.2	62.3	24.9	15.3	9.6
Pennsylvania	2,042.2	579.4	11,144	1,137.4	383.8	135.6	248.3	93.3	57.2	36.1
Rhode Island	183.7	49.9	996	100.7	38.5	13.8	24.8	10.4	6.3	4.1
South Carolina	467.1	119.1	2,771	257.1	90.6	33.1	57.4	24.4	15.1	9.3
South Dakota	120.3	31.3	752	64.0	22.3	7.2	15.1	6.4	3.9	2.5
Tennessee	687.9	183.1	3,971	382.3	124.6	42.6	82.0	34.1	21.1	13.0
Texas	3,087.2	816.3	15,978	1,725.7	574.0	199.6	374.4	143.2	88.5	54.7
Utah	298.6	76.7	1,734	164.3	53.0	18.3	34.7	13.4	8.3	5.1
Vermont	67.6	17.3	398	37.4	13.4	5.1	8.3	3.5	2.2	1.3
Virginia	1,002.4	267.2	4,935	566.0	189.9	66.5	123.5	47.2	29.2	18.0
Washington	1,107.6	291.3	5,376	606.2	221.3	75.0	146.2	58.0	35.5	22.5
West Virginia	229.6	59.4	1,409	122.2	47.4	17.5	29.9	13.8	8.4	5.4
Wisconsin	790.3	208.2	4,633	430.9	153.4	56.3	97.1	38.9	23.9	15.0
Wyoming	74.6	18.6	414	40.3	15.5	5.4	10.2	4.1	2.5	1.6
United States	\$43,716	\$11,696	229,720	\$24,068	\$8,441	\$2,990	\$5,451	\$2,156	\$1,324	\$832

Source: Oxford Economics

Scenario: Convenient availability, Low tax rate
Direct impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$248.3	\$49.5	1,249	\$128.8	\$64.7	\$22.1	\$42.7	\$26.5	\$16.3	\$10.2
Alaska	39.0	7.6	142	20.5	10.5	3.7	6.7	4.2	2.6	1.6
Arizona	452.0	93.9	2,177	229.7	118.0	39.9	78.1	47.9	29.3	18.6
Arkansas	133.6	25.9	655	70.2	34.6	11.7	22.9	14.3	8.9	5.5
California	2,541.0	517.3	9,449	1,305.1	685.6	241.3	444.3	270.3	166.0	104.3
Colorado	348.9	70.8	1,520	179.5	92.1	31.4	60.7	37.1	22.8	14.3
Connecticut	324.9	68.4	1,251	163.9	90.2	31.3	58.8	34.3	21.0	13.4
Delaware	79.3	16.8	364	40.0	21.5	7.8	13.8	8.4	5.1	3.3
District of Columbia	43.7	8.5	153	23.0	10.9	3.9	7.0	4.7	2.9	1.8
Florida	1,233.2	248.7	5,841	636.4	326.2	108.9	217.3	131.4	80.8	50.6
Georgia	460.4	89.4	2,064	242.0	119.3	41.1	78.2	49.4	30.6	18.9
Hawaii	74.0	14.4	291	38.9	19.1	6.5	12.6	7.9	4.9	3.0
Idaho	90.3	18.4	463	46.4	23.6	8.1	15.5	9.6	5.9	3.7
Illinois	731.6	146.9	2,911	378.4	196.7	69.9	126.9	78.0	48.0	30.0
Indiana	462.1	97.1	2,450	233.5	121.3	40.8	80.5	48.8	29.9	19.0
Iowa	263.6	56.5	1,425	131.8	70.6	24.5	46.1	27.8	16.9	10.8
Kansas	183.7	37.9	955	93.7	48.7	16.7	32.0	19.5	11.9	7.5
Kentucky	197.3	38.3	966	103.7	50.5	17.5	33.0	21.2	13.1	8.1
Louisiana	442.1	96.2	2,299	219.2	115.9	38.7	77.2	46.4	28.2	18.2
Maine	74.0	14.8	373	38.3	19.7	7.1	12.6	7.9	4.9	3.0
Maryland	400.3	81.4	1,572	205.7	107.7	38.2	69.5	42.6	26.2	16.4
Massachusetts	489.3	99.8	1,798	251.1	129.1	44.5	84.5	52.0	31.9	20.1
Michigan	674.5	140.5	3,269	342.4	181.5	63.3	118.2	71.4	43.7	27.7
Minnesota	378.6	78.3	1,773	193.0	101.3	35.4	65.9	40.2	24.6	15.5
Mississippi	303.5	67.0	1,691	149.2	82.0	28.7	53.4	31.8	19.3	12.5
Missouri	410.7	85.4	2,095	208.7	107.4	36.4	70.9	43.5	26.6	16.9
Montana	56.0	11.2	282	29.0	14.9	5.3	9.6	6.0	3.7	2.3
Nebraska	94.0	18.4	464	49.2	24.5	8.6	15.9	10.1	6.2	3.9
Nevada	291.5	61.7	1,359	145.2	78.5	26.1	52.4	30.8	18.7	12.1
New Hampshire	75.5	14.7	331	39.7	19.8	7.0	12.8	8.1	5.0	3.1
New Jersey	678.4	140.3	2,574	345.7	187.2	66.7	120.5	71.9	44.1	27.9
New Mexico	166.3	35.6	899	83.1	44.5	15.3	29.3	17.5	10.7	6.8
New York	1,340.6	273.9	4,936	687.3	368.4	134.7	233.6	142.5	87.5	55.0
North Carolina	509.1	100.6	2,453	265.4	132.3	45.1	87.1	54.5	33.6	20.9
North Dakota	56.3	11.7	280	28.6	15.0	5.1	9.9	6.0	3.6	2.3
Ohio	659.3	133.5	3,232	339.6	172.7	59.6	113.2	70.2	43.2	27.1
Oklahoma	439.4	97.1	2,449	216.0	115.5	38.1	77.4	46.0	27.9	18.1
Oregon	234.1	47.2	1,111	120.8	62.3	21.9	40.3	24.9	15.3	9.6
Pennsylvania	879.6	181.4	4,000	448.8	231.9	80.2	151.8	93.3	57.2	36.1
Rhode Island	98.9	21.3	467	49.4	27.0	9.5	17.6	10.4	6.3	4.1
South Carolina	227.6	44.2	1,115	119.6	60.2	21.4	38.8	24.4	15.1	9.3
South Dakota	60.8	12.7	321	30.8	15.7	5.1	10.6	6.4	3.9	2.5
Tennessee	317.4	61.6	1,540	166.8	79.6	26.8	52.8	34.1	21.1	13.0
Texas	1,334.6	259.7	5,681	700.7	346.6	117.2	229.4	143.2	88.5	54.7
Utah	124.8	24.2	604	65.6	32.5	11.2	21.4	13.4	8.3	5.1
Vermont	32.5	6.3	159	17.1	8.6	3.1	5.5	3.5	2.2	1.3
Virginia	439.3	85.3	1,788	230.9	116.9	41.1	75.8	47.2	29.2	18.0
Washington	548.0	114.0	2,322	278.3	145.8	47.6	98.2	58.0	35.5	22.5
West Virginia	131.0	27.7	699	65.9	34.9	12.3	22.6	13.8	8.4	5.4
Wisconsin	366.6	75.1	1,881	187.6	99.0	35.2	63.8	38.9	23.9	15.0
Wyoming	38.3	7.8	183	19.7	10.7	3.7	7.0	4.1	2.5	1.6
United States	\$20,280	\$4,137	90,327	\$10,404	\$5,394	\$1,867	\$3,526	\$2,156	\$1,324	\$832

Source: Oxford Economics

Scenario: Convenient availability, Low tax rate
Gaming revenue and tax

Amounts in millions of dollars, except population

	Population	Gaming		Gaming tax impacts		
	Population, adult (thousands, stabilized year)	Handle	Gaming revenue	Total	Gaming revenue tax	Federal handle tax
Alabama	3,732.4	\$4,071.9	\$241.9	\$26.5	\$16.3	\$10.2
Alaska	555.2	639.6	38.3	4.2	2.6	1.6
Arizona	5,455.7	7,425.5	434.4	47.9	29.3	18.6
Arkansas	2,264.9	2,189.6	131.4	14.3	8.9	5.5
California	30,475.3	41,711.1	2,459.5	270.3	166.0	104.3
Colorado	4,302.6	5,726.5	338.1	37.1	22.8	14.3
Connecticut	2,799.7	5,340.1	310.7	34.3	21.0	13.4
Delaware	769.3	1,304.2	75.8	8.4	5.1	3.3
District of Columbia	564.1	716.6	43.0	4.7	2.9	1.8
Florida	16,772.9	20,235.1	1,197.4	131.4	80.8	50.6
Georgia	7,775.2	7,543.3	452.6	49.4	30.6	18.9
Hawaii	1,145.4	1,212.6	72.8	7.9	4.9	3.0
Idaho	1,260.7	1,482.9	87.5	9.6	5.9	3.7
Illinois	9,776.6	12,002.9	711.5	78.0	48.0	30.0
Indiana	5,023.0	7,595.1	442.4	48.8	29.9	19.0
Iowa	2,357.3	4,335.8	250.6	27.8	16.9	10.8
Kansas	2,151.7	3,016.3	177.0	19.5	11.9	7.5
Kentucky	3,347.3	3,232.1	193.9	21.2	13.1	8.1
Louisiana	3,526.7	7,276.8	418.0	46.4	28.2	18.2
Maine	1,068.6	1,213.4	72.0	7.9	4.9	3.0
Maryland	4,699.4	6,571.0	387.6	42.6	26.2	16.4
Massachusetts	5,408.3	8,031.8	473.3	52.0	31.9	20.1
Michigan	7,630.4	11,082.3	647.7	71.4	43.7	27.7
Minnesota	4,233.3	6,219.1	364.6	40.2	24.6	15.5
Mississippi	2,244.4	4,998.4	285.3	31.8	19.3	12.5
Missouri	4,707.0	6,747.9	394.6	43.5	26.6	16.9
Montana	821.9	918.4	54.5	6.0	3.7	2.3
Nebraska	1,408.7	1,540.2	92.2	10.1	6.2	3.9
Nevada	2,325.5	4,832.5	277.6	30.8	18.7	12.1
New Hampshire	1,081.8	1,237.4	74.2	8.1	5.0	3.1
New Jersey	6,933.5	11,142.4	653.1	71.9	44.1	27.9
New Mexico	1,583.2	2,735.3	158.1	17.5	10.7	6.8
New York	15,339.4	22,009.1	1,296.0	142.5	87.5	55.0
North Carolina	7,940.5	8,348.0	497.7	54.5	33.6	20.9
North Dakota	584.7	924.8	54.1	6.0	3.6	2.3
Ohio	8,755.1	10,820.8	639.3	70.2	43.2	27.1
Oklahoma	2,949.3	7,236.2	413.0	46.0	27.9	18.1
Oregon	3,240.2	3,841.2	227.3	24.9	15.3	9.6
Pennsylvania	9,962.0	14,445.4	847.6	93.3	57.2	36.1
Rhode Island	820.5	1,626.9	93.9	10.4	6.3	4.1
South Carolina	3,913.0	3,729.5	223.8	24.4	15.1	9.3
South Dakota	652.4	998.6	58.3	6.4	3.9	2.5
Tennessee	5,176.5	5,201.4	312.1	34.1	21.1	13.0
Texas	20,856.0	21,870.6	1,311.2	143.2	88.5	54.7
Utah	2,135.9	2,044.6	122.7	13.4	8.3	5.1
Vermont	499.5	533.0	32.0	3.5	2.2	1.3
Virginia	6,585.5	7,199.0	431.9	47.2	29.2	18.0
Washington	5,695.7	9,002.4	526.4	58.0	35.5	22.5
West Virginia	1,414.5	2,153.1	125.1	13.8	8.4	5.4
Wisconsin	4,457.7	6,018.6	354.0	38.9	23.9	15.0
Wyoming	454.5	628.9	37.1	4.1	2.5	1.6
United States	249,635	\$332,960	\$19,615	\$2,156	\$1,324	\$832

Source: Oxford Economics

Scenario: Convenient availability, Low tax rate
Selected impacts in comparison to gaming revenue

Amounts in millions of dollars, except jobs

	Gaming	Employment			Income		
	Gaming revenue	Total	Direct	Indirect and induced	Total	Direct	Indirect and induced
Alabama	\$241.9	3,059	1,249	1,810	\$130.0	\$49.5	\$80.4
Alaska	38.3	402	142	260	23.8	7.6	16.2
Arizona	434.4	5,344	2,177	3,166	247.3	93.9	153.4
Arkansas	131.4	1,667	655	1,012	69.5	25.9	43.6
California	2,459.5	26,602	9,449	17,153	1,583.2	517.3	1,065.8
Colorado	338.1	4,054	1,520	2,533	207.4	70.8	136.6
Connecticut	310.7	3,060	1,251	1,810	186.4	68.4	118.0
Delaware	75.8	823	364	459	43.6	16.8	26.8
District of Columbia	43.0	497	153	344	45.1	8.5	36.6
Florida	1,197.4	14,983	5,841	9,142	683.2	248.7	434.5
Georgia	452.6	5,749	2,064	3,686	278.5	89.4	189.1
Hawaii	72.8	759	291	469	39.4	14.4	25.0
Idaho	87.5	1,131	463	667	45.2	18.4	26.9
Illinois	711.5	8,139	2,911	5,228	457.6	146.9	310.8
Indiana	442.4	5,554	2,450	3,103	241.8	97.1	144.6
Iowa	250.6	3,113	1,425	1,688	134.7	56.5	78.2
Kansas	177.0	2,247	955	1,292	99.4	37.9	61.5
Kentucky	193.9	2,470	966	1,503	109.5	38.3	71.2
Louisiana	418.0	5,007	2,299	2,707	221.1	96.2	124.9
Maine	72.0	939	373	565	40.0	14.8	25.2
Maryland	387.6	4,090	1,572	2,518	231.9	81.4	150.5
Massachusetts	473.3	4,950	1,798	3,152	313.6	99.8	213.8
Michigan	647.7	7,895	3,269	4,626	372.1	140.5	231.6
Minnesota	364.6	4,591	1,773	2,818	233.1	78.3	154.9
Mississippi	285.3	3,487	1,691	1,796	136.0	67.0	68.9
Missouri	394.6	4,981	2,095	2,886	229.1	85.4	143.6
Montana	54.5	727	282	445	29.0	11.2	17.8
Nebraska	92.2	1,248	464	785	55.5	18.4	37.1
Nevada	277.6	2,940	1,359	1,582	137.7	61.7	76.0
New Hampshire	74.2	849	331	518	42.9	14.7	28.2
New Jersey	653.1	6,531	2,574	3,957	390.9	140.3	250.6
New Mexico	158.1	1,871	899	972	76.2	35.6	40.6
New York	1,296.0	11,959	4,936	7,023	771.5	273.9	497.6
North Carolina	497.7	6,439	2,453	3,986	294.2	100.6	193.6
North Dakota	54.1	657	280	377	30.9	11.7	19.2
Ohio	639.3	8,373	3,232	5,140	394.2	133.5	260.7
Oklahoma	413.0	5,134	2,449	2,686	218.7	97.1	121.6
Oregon	227.3	2,889	1,111	1,778	134.2	47.2	87.0
Pennsylvania	847.6	11,144	4,000	7,144	579.4	181.4	398.0
Rhode Island	93.9	996	467	529	49.9	21.3	28.7
South Carolina	223.8	2,771	1,115	1,656	119.1	44.2	74.9
South Dakota	58.3	752	321	431	31.3	12.7	18.6
Tennessee	312.1	3,971	1,540	2,431	183.1	61.6	121.5
Texas	1,311.2	15,978	5,681	10,297	816.3	259.7	556.5
Utah	122.7	1,734	604	1,130	76.7	24.2	52.5
Vermont	32.0	398	159	239	17.3	6.3	11.0
Virginia	431.9	4,935	1,788	3,146	267.2	85.3	181.9
Washington	526.4	5,376	2,322	3,054	291.3	114.0	177.3
West Virginia	125.1	1,409	699	710	59.4	27.7	31.7
Wisconsin	354.0	4,633	1,881	2,752	208.2	75.1	133.1
Wyoming	37.1	414	183	231	18.6	7.8	10.8
United States	\$19,615	229,720	90,327	139,394	\$11,696	\$4,137	\$7,559

Source: Oxford Economics

4.1 STATE TABLES: HIGH TAX RATE SCENARIOS

Scenario: Limited availability, High tax rate
Total impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$80.2	\$23.0	522	\$41.8	\$17.0	\$8.0	\$9.0	\$5.1	\$4.1	\$1.0
Alaska	8.8	2.7	38	5.3	1.2	0.4	0.8	0.1	0.1	0.0
Arizona	285.9	82.4	1,792	143.1	65.5	30.8	34.7	24.0	19.1	4.9
Arkansas	18.8	5.7	118	11.4	0.0	0.0	0.0	0.0	0.0	0.0
California	1,332.8	398.0	6,658	702.6	301.4	140.0	161.5	93.4	74.4	19.1
Colorado	170.6	49.7	965	88.6	36.4	16.2	20.1	11.9	9.5	2.4
Connecticut	239.9	71.2	1,185	123.8	61.1	28.4	32.7	20.9	16.6	4.3
Delaware	59.0	17.3	334	30.0	14.0	6.7	7.3	5.3	4.3	1.1
District of Columbia	25.1	7.7	66	15.3	0.0	0.0	0.0	0.0	0.0	0.0
Florida	515.4	147.1	3,188	264.4	113.1	51.0	62.2	36.1	28.8	7.4
Georgia	80.2	24.5	435	48.8	0.0	0.0	0.0	0.0	0.0	0.0
Hawaii	13.0	4.0	67	7.9	0.0	0.0	0.0	0.0	0.0	0.0
Idaho	40.5	11.2	278	19.7	8.9	4.1	4.7	3.2	2.6	0.7
Illinois	314.1	92.8	1,613	168.1	66.8	30.7	36.1	18.7	14.9	3.8
Indiana	326.5	90.8	2,121	158.9	75.2	35.4	39.9	28.9	23.0	5.9
Iowa	220.0	61.2	1,441	104.8	52.7	25.4	27.2	20.7	16.5	4.2
Kansas	106.9	29.8	677	53.1	24.1	11.3	12.8	8.6	6.9	1.8
Kentucky	31.4	9.6	180	19.1	0.0	0.0	0.0	0.0	0.0	0.0
Louisiana	421.6	115.9	2,665	201.6	99.7	47.7	52.0	40.3	32.1	8.2
Maine	26.3	7.5	172	13.7	5.6	2.7	2.9	1.7	1.3	0.3
Maryland	195.7	57.5	1,008	102.3	44.4	20.9	23.5	14.3	11.4	2.9
Massachusetts	270.6	82.1	1,295	142.1	58.5	25.4	33.1	19.1	15.2	3.9
Michigan	446.0	126.9	2,724	221.1	105.1	50.0	55.1	37.3	29.7	7.6
Minnesota	243.6	71.6	1,423	123.6	55.7	26.2	29.5	18.5	14.7	3.8
Mississippi	309.3	81.7	2,106	141.6	77.0	38.5	38.5	31.5	25.1	6.4
Missouri	268.2	76.6	1,684	133.8	59.3	27.4	31.9	22.2	17.6	4.5
Montana	19.0	5.4	132	9.7	4.0	1.8	2.2	1.3	1.0	0.3
Nebraska	21.5	6.4	129	12.4	3.4	1.4	2.0	0.5	0.4	0.1
Nevada	392.7	109.9	2,391	190.2	103.1	49.4	53.7	41.1	32.7	8.4
New Hampshire	12.5	3.8	64	7.6	0.0	0.0	0.0	0.0	0.0	0.0
New Jersey	403.3	121.3	2,039	210.8	100.7	47.2	53.4	33.4	26.6	6.8
New Mexico	130.6	35.1	876	61.9	32.5	15.9	16.6	13.0	10.4	2.7
New York	697.5	207.9	3,228	370.3	170.4	82.6	87.8	54.1	43.0	11.0
North Carolina	144.0	42.5	870	78.9	26.8	11.6	15.2	6.8	5.4	1.4
North Dakota	36.3	10.2	221	18.0	8.2	3.7	4.5	3.1	2.4	0.6
Ohio	315.3	91.5	1,922	164.9	66.1	30.6	35.6	21.4	17.0	4.4
Oklahoma	471.4	130.7	3,113	222.8	111.2	52.2	59.0	45.8	36.5	9.3
Oregon	99.1	29.0	614	51.6	20.9	9.3	11.6	6.8	5.4	1.4
Pennsylvania	568.3	173.0	3,350	296.5	125.6	57.9	67.7	41.3	32.9	8.4
Rhode Island	80.6	23.4	476	40.5	20.9	10.1	10.8	8.0	6.4	1.6
South Carolina	32.9	10.1	196	20.0	0.0	0.0	0.0	0.0	0.0	0.0
South Dakota	39.6	11.1	269	19.3	8.9	4.1	4.9	3.5	2.8	0.7
Tennessee	49.1	15.0	285	29.9	0.0	0.0	0.0	0.0	0.0	0.0
Texas	256.9	78.1	1,349	153.5	39.7	15.8	23.8	2.3	1.8	0.5
Utah	23.5	7.2	139	14.3	0.0	0.0	0.0	0.0	0.0	0.0
Vermont	5.2	1.6	32	3.2	0.0	0.0	0.0	0.0	0.0	0.0
Virginia	81.8	25.0	377	49.8	0.0	0.0	0.0	0.0	0.0	0.0
Washington	343.0	97.5	1,823	173.0	82.7	37.9	44.8	29.7	23.7	6.1
West Virginia	87.0	24.4	586	42.0	22.1	11.0	11.1	8.9	7.1	1.8
Wisconsin	201.1	57.5	1,283	102.3	45.8	21.9	24.0	15.4	12.2	3.1
Wyoming	17.5	4.8	106	8.8	4.2	1.9	2.3	1.4	1.1	0.3
United States	\$10,580	\$3,071	60,626	\$5,439	\$2,342	\$1,077	\$1,264	\$800	\$637	\$163

Source: Oxford Economics

Scenario: Limited availability, High tax rate
Direct impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$29.9	\$7.5	187	\$12.8	\$10.0	\$5.0	\$5.0	\$5.1	\$4.1	\$1.0
Alaska	0.4	0.1	2	0.2	0.1	0.1	0.1	0.1	0.1	0.0
Arizona	140.2	35.1	805	60.1	46.2	23.2	23.0	24.0	19.1	4.9
Arkansas	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
California	545.3	136.3	2,467	233.8	186.6	94.7	91.8	93.4	74.4	19.1
Colorado	69.4	17.3	369	29.7	23.2	11.6	11.6	11.9	9.5	2.4
Connecticut	122.1	30.5	553	52.3	42.5	21.3	21.2	20.9	16.6	4.3
Delaware	31.2	7.8	168	13.4	10.6	5.4	5.1	5.3	4.3	1.1
District of Columbia	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Florida	210.9	52.7	1,227	90.4	70.9	34.8	36.0	36.1	28.8	7.4
Georgia	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hawaii	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Idaho	18.8	4.7	117	8.1	6.2	3.1	3.1	3.2	2.6	0.7
Illinois	109.3	27.3	537	46.9	37.4	19.1	18.3	18.7	14.9	3.8
Indiana	168.4	42.1	1,052	72.2	55.7	27.8	27.9	28.9	23.0	5.9
Iowa	120.8	30.2	755	51.8	40.5	20.6	19.9	20.7	16.5	4.2
Kansas	50.3	12.6	314	21.5	16.9	8.5	8.4	8.6	6.9	1.8
Kentucky	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Louisiana	235.4	58.8	1,394	100.9	77.2	38.6	38.5	40.3	32.1	8.2
Maine	9.9	2.5	62	4.2	3.3	1.7	1.6	1.7	1.3	0.3
Maryland	83.5	20.9	399	35.8	28.4	14.5	13.9	14.3	11.4	2.9
Massachusetts	111.2	27.8	497	47.7	37.2	18.7	18.4	19.1	15.2	3.9
Michigan	217.5	54.4	1,253	93.2	73.7	37.3	36.4	37.3	29.7	7.6
Minnesota	107.7	26.9	605	46.2	36.4	18.5	17.9	18.5	14.7	3.8
Mississippi	184.0	46.0	1,150	78.9	61.8	31.6	30.2	31.5	25.1	6.4
Missouri	129.4	32.3	786	55.4	42.7	21.4	21.3	22.2	17.6	4.5
Montana	7.4	1.9	46	3.2	2.5	1.3	1.2	1.3	1.0	0.3
Nebraska	3.1	0.8	20	1.3	1.0	0.5	0.5	0.5	0.4	0.1
Nevada	239.8	60.0	1,308	102.8	80.8	39.9	40.9	41.1	32.7	8.4
New Hampshire	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Jersey	194.8	48.7	885	83.5	67.8	34.6	33.3	33.4	26.6	6.8
New Mexico	76.2	19.0	476	32.6	25.5	12.9	12.7	13.0	10.4	2.7
New York	315.5	78.9	1,409	135.3	109.8	56.9	52.9	54.1	43.0	11.0
North Carolina	39.8	9.9	240	17.0	13.2	6.6	6.6	6.8	5.4	1.4
North Dakota	17.9	4.5	106	7.7	6.0	3.0	3.0	3.1	2.4	0.6
Ohio	124.9	31.2	749	53.6	41.6	21.0	20.6	21.4	17.0	4.4
Oklahoma	267.4	66.8	1,671	114.6	87.6	43.6	44.0	45.8	36.5	9.3
Oregon	39.8	10.0	232	17.1	13.4	6.8	6.6	6.8	5.4	1.4
Pennsylvania	241.2	60.3	1,318	103.4	80.4	40.6	39.7	41.3	32.9	8.4
Rhode Island	46.8	11.7	255	20.1	16.0	8.1	7.9	8.0	6.4	1.6
South Carolina	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Dakota	20.6	5.2	129	8.8	6.7	3.3	3.4	3.5	2.8	0.7
Tennessee	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Texas	13.4	3.4	73	5.7	4.5	2.2	2.2	2.3	1.8	0.5
Utah	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vermont	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Virginia	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Washington	173.6	43.4	876	74.4	58.3	28.4	29.9	29.7	23.7	6.1
West Virginia	52.2	13.0	326	22.4	17.4	8.9	8.5	8.9	7.1	1.8
Wisconsin	89.7	22.4	557	38.5	30.6	15.7	15.0	15.4	12.2	3.1
Wyoming	8.4	2.1	49	3.6	3.0	1.5	1.5	1.4	1.1	0.3
United States	\$4,668	\$1,167	25,424	\$2,001	\$1,573	\$793	\$780	\$800	\$637	\$163

Source: Oxford Economics

Scenario: Limited availability, High tax rate
Gaming revenue and tax

Amounts in millions of dollars, except population

	Population	Gaming		Gaming tax impacts		
	Population, adult (thousands, stabilized year)	Handle	Gaming revenue	Total	Gaming revenue tax	Federal handle tax
Alabama	3,732.4	\$418.5	\$27.2	\$5.1	\$4.1	\$1.0
Alaska	555.2	5.5	0.4	0.1	0.1	0.0
Arizona	5,455.7	1,960.9	127.5	24.0	19.1	4.9
Arkansas	2,264.9	0.0	0.0	0.0	0.0	0.0
California	30,475.3	7,627.0	495.8	93.4	74.4	19.1
Colorado	4,302.6	970.2	63.1	11.9	9.5	2.4
Connecticut	2,799.7	1,707.5	111.0	20.9	16.6	4.3
Delaware	769.3	436.3	28.4	5.3	4.3	1.1
District of Columbia	564.1	0.0	0.0	0.0	0.0	0.0
Florida	16,772.9	2,949.4	191.7	36.1	28.8	7.4
Georgia	7,775.2	0.0	0.0	0.0	0.0	0.0
Hawaii	1,145.4	0.0	0.0	0.0	0.0	0.0
Idaho	1,260.7	262.6	17.1	3.2	2.6	0.7
Illinois	9,776.6	1,528.6	99.4	18.7	14.9	3.8
Indiana	5,023.0	2,355.2	153.1	28.9	23.0	5.9
Iowa	2,357.3	1,689.8	109.8	20.7	16.5	4.2
Kansas	2,151.7	703.1	45.7	8.6	6.9	1.8
Kentucky	3,347.3	0.0	0.0	0.0	0.0	0.0
Louisiana	3,526.7	3,292.1	214.0	40.3	32.1	8.2
Maine	1,068.6	138.0	9.0	1.7	1.3	0.3
Maryland	4,699.4	1,167.6	75.9	14.3	11.4	2.9
Massachusetts	5,408.3	1,555.9	101.1	19.1	15.2	3.9
Michigan	7,630.4	3,041.9	197.7	37.3	29.7	7.6
Minnesota	4,233.3	1,506.8	97.9	18.5	14.7	3.8
Mississippi	2,244.4	2,573.7	167.3	31.5	25.1	6.4
Missouri	4,707.0	1,809.1	117.6	22.2	17.6	4.5
Montana	821.9	103.7	6.7	1.3	1.0	0.3
Nebraska	1,408.7	43.8	2.8	0.5	0.4	0.1
Nevada	2,325.5	3,353.9	218.0	41.1	32.7	8.4
New Hampshire	1,081.8	0.0	0.0	0.0	0.0	0.0
New Jersey	6,933.5	2,724.6	177.1	33.4	26.6	6.8
New Mexico	1,583.2	1,065.1	69.2	13.0	10.4	2.7
New York	15,339.4	4,413.0	286.8	54.1	43.0	11.0
North Carolina	7,940.5	556.2	36.2	6.8	5.4	1.4
North Dakota	584.7	250.8	16.3	3.1	2.4	0.6
Ohio	8,755.1	1,747.2	113.6	21.4	17.0	4.4
Oklahoma	2,949.3	3,739.5	243.1	45.8	36.5	9.3
Oregon	3,240.2	556.8	36.2	6.8	5.4	1.4
Pennsylvania	9,962.0	3,373.7	219.3	41.3	32.9	8.4
Rhode Island	820.5	654.6	42.5	8.0	6.4	1.6
South Carolina	3,913.0	0.0	0.0	0.0	0.0	0.0
South Dakota	652.4	288.4	18.7	3.5	2.8	0.7
Tennessee	5,176.5	0.0	0.0	0.0	0.0	0.0
Texas	20,856.0	187.4	12.2	2.3	1.8	0.5
Utah	2,135.9	0.0	0.0	0.0	0.0	0.0
Vermont	499.5	0.0	0.0	0.0	0.0	0.0
Virginia	6,585.5	0.0	0.0	0.0	0.0	0.0
Washington	5,695.7	2,428.1	157.8	29.7	23.7	6.1
West Virginia	1,414.5	729.8	47.4	8.9	7.1	1.8
Wisconsin	4,457.7	1,255.0	81.6	15.4	12.2	3.1
Wyoming	454.5	117.6	7.6	1.4	1.1	0.3
United States	249,635	\$65,289	\$4,244	\$800	\$637	\$163

Source: Oxford Economics

Scenario: Limited availability, High tax rate
Selected impacts in comparison to gaming revenue

Amounts in millions of dollars, except jobs

	Gaming	Employment			Income		
	Gaming revenue	Total	Direct	Indirect and induced	Total	Direct	Indirect and induced
Alabama	\$27.2	522	187	335	\$23.0	\$7.5	\$15.5
Alaska	0.4	38	2	36	2.7	0.1	2.6
Arizona	127.5	1,792	805	986	82.4	35.1	47.3
Arkansas	0.0	118	0	118	5.7	0.0	5.7
California	495.8	6,658	2,467	4,190	398.0	136.3	261.7
Colorado	63.1	965	369	596	49.7	17.3	32.4
Connecticut	111.0	1,185	553	632	71.2	30.5	40.6
Delaware	28.4	334	168	166	17.3	7.8	9.5
District of Columbia	0.0	66	0	66	7.7	0.0	7.7
Florida	191.7	3,188	1,227	1,962	147.1	52.7	94.3
Georgia	0.0	435	0	435	24.5	0.0	24.5
Hawaii	0.0	67	0	67	4.0	0.0	4.0
Idaho	17.1	278	117	160	11.2	4.7	6.5
Illinois	99.4	1,613	537	1,076	92.8	27.3	65.4
Indiana	153.1	2,121	1,052	1,069	90.8	42.1	48.7
Iowa	109.8	1,441	755	686	61.2	30.2	31.0
Kansas	45.7	677	314	363	29.8	12.6	17.2
Kentucky	0.0	180	0	180	9.6	0.0	9.6
Louisiana	214.0	2,665	1,394	1,271	115.9	58.8	57.1
Maine	9.0	172	62	110	7.5	2.5	5.0
Maryland	75.9	1,008	399	608	57.5	20.9	36.6
Massachusetts	101.1	1,295	497	798	82.1	27.8	54.3
Michigan	197.7	2,724	1,253	1,471	126.9	54.4	72.6
Minnesota	97.9	1,423	605	818	71.6	26.9	44.6
Mississippi	167.3	2,106	1,150	956	81.7	46.0	35.7
Missouri	117.6	1,684	786	899	76.6	32.3	44.2
Montana	6.7	132	46	86	5.4	1.9	3.6
Nebraska	2.8	129	20	110	6.4	0.8	5.7
Nevada	218.0	2,391	1,308	1,083	109.9	60.0	50.0
New Hampshire	0.0	64	0	64	3.8	0.0	3.8
New Jersey	177.1	2,039	885	1,153	121.3	48.7	72.6
New Mexico	69.2	876	476	400	35.1	19.0	16.0
New York	286.8	3,228	1,409	1,820	207.9	78.9	129.0
North Carolina	36.2	870	240	630	42.5	9.9	32.6
North Dakota	16.3	221	106	115	10.2	4.5	5.8
Ohio	113.6	1,922	749	1,173	91.5	31.2	60.2
Oklahoma	243.1	3,113	1,671	1,442	130.7	66.8	63.9
Oregon	36.2	614	232	382	29.0	10.0	19.1
Pennsylvania	219.3	3,350	1,318	2,032	173.0	60.3	112.7
Rhode Island	42.5	476	255	222	23.4	11.7	11.7
South Carolina	0.0	196	0	196	10.1	0.0	10.1
South Dakota	18.7	269	129	140	11.1	5.2	6.0
Tennessee	0.0	285	0	285	15.0	0.0	15.0
Texas	12.2	1,349	73	1,276	78.1	3.4	74.7
Utah	0.0	139	0	139	7.2	0.0	7.2
Vermont	0.0	32	0	32	1.6	0.0	1.6
Virginia	0.0	377	0	377	25.0	0.0	25.0
Washington	157.8	1,823	876	948	97.5	43.4	54.1
West Virginia	47.4	586	326	259	24.4	13.0	11.3
Wisconsin	81.6	1,283	557	726	57.5	22.4	35.1
Wyoming	7.6	106	49	57	4.8	2.1	2.7
United States	\$4,244	60,626	25,424	35,202	\$3,071	\$1,167	\$1,904

Source: Oxford Economics

Scenario: Moderate availability, High tax rate
Total impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employ- ment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$239.5	\$64.4	1,565	\$125.0	\$52.2	\$25.8	\$26.4	\$19.8	\$16.3	\$3.5
Alaska	40.8	11.2	194	22.4	8.3	3.9	4.4	2.9	2.4	0.5
Arizona	483.3	134.6	3,021	250.2	106.1	51.0	55.2	40.9	33.3	7.6
Arkansas	122.4	32.4	797	65.4	25.9	12.8	13.2	9.8	8.1	1.7
California	2,842.8	815.2	14,154	1,531.0	629.0	301.4	327.6	216.3	176.8	39.5
Colorado	381.3	106.3	2,152	202.0	80.4	37.4	43.0	29.4	24.0	5.3
Connecticut	361.1	103.9	1,779	192.4	87.2	41.0	46.3	30.6	24.8	5.8
Delaware	86.0	24.5	486	45.2	19.5	9.5	10.0	7.5	6.1	1.4
District of Columbia	73.8	21.7	242	42.6	12.0	5.6	6.4	3.2	2.6	0.6
Florida	1,275.6	346.4	7,858	666.5	277.8	130.6	147.1	102.0	83.5	18.4
Georgia	472.1	129.5	2,745	255.1	93.6	44.2	49.4	33.7	27.9	5.8
Hawaii	69.4	18.7	369	37.7	15.0	7.5	7.5	5.4	4.5	0.9
Idaho	89.0	23.5	606	44.6	19.1	9.3	9.8	7.7	6.3	1.4
Illinois	813.7	228.9	4,204	438.6	175.7	84.6	91.0	59.6	48.9	10.7
Indiana	498.4	134.8	3,238	252.2	109.5	52.4	57.1	43.2	35.1	8.1
Iowa	287.9	78.4	1,900	142.8	65.4	31.9	33.5	26.0	21.1	5.0
Kansas	197.1	53.0	1,248	101.2	42.8	20.5	22.3	16.2	13.2	3.0
Kentucky	189.2	51.1	1,183	100.6	38.2	18.7	19.5	14.4	11.9	2.5
Louisiana	494.7	133.7	3,167	245.1	111.5	53.8	57.8	45.5	36.7	8.8
Maine	74.3	20.0	484	38.8	16.1	8.1	8.0	6.0	4.9	1.1
Maryland	425.3	119.5	2,184	227.3	94.7	46.1	48.6	33.9	27.8	6.2
Massachusetts	561.1	163.7	2,679	301.3	119.2	53.9	65.3	42.4	34.7	7.8
Michigan	736.7	203.2	4,491	378.4	165.9	80.5	85.4	61.5	50.0	11.5
Minnesota	437.4	124.2	2,546	228.9	96.0	46.2	49.9	33.7	27.5	6.2
Mississippi	328.9	85.8	2,293	155.9	78.6	39.6	39.0	32.5	26.1	6.3
Missouri	450.4	124.5	2,826	232.6	95.6	45.1	50.5	37.3	30.3	6.9
Montana	54.2	14.5	373	27.7	11.7	5.7	6.0	4.5	3.7	0.8
Nebraska	96.0	26.3	607	51.8	19.3	9.2	10.1	7.0	5.8	1.2
Nevada	427.5	119.7	2,698	210.1	108.0	51.3	56.8	42.7	34.0	8.7
New Hampshire	71.6	20.1	408	39.3	15.1	7.2	7.9	5.5	4.6	1.0
New Jersey	722.7	209.3	3,633	389.1	172.5	82.8	89.8	60.5	49.3	11.2
New Mexico	170.3	44.8	1,150	84.1	40.3	20.0	20.3	16.4	13.3	3.1
New York	1,423.6	406.9	6,580	774.2	338.3	168.5	169.8	116.9	95.5	21.4
North Carolina	515.6	142.2	3,206	276.3	106.3	50.4	55.9	39.5	32.5	7.0
North Dakota	61.2	16.7	372	31.5	13.3	6.1	7.2	5.1	4.2	1.0
Ohio	724.6	201.0	4,427	385.9	150.8	72.2	78.6	55.2	45.2	10.0
Oklahoma	501.9	137.2	3,376	244.9	113.5	53.6	59.9	47.1	37.9	9.2
Oregon	243.0	67.8	1,510	128.6	51.8	24.4	27.4	19.3	15.9	3.5
Pennsylvania	1,038.4	305.3	6,092	556.1	221.5	104.7	116.8	77.8	63.4	14.4
Rhode Island	103.7	29.4	615	53.9	25.4	12.3	13.0	9.8	8.0	1.9
South Carolina	207.1	55.7	1,330	110.6	44.7	22.3	22.4	16.6	13.8	2.9
South Dakota	63.4	17.2	431	32.1	13.7	6.4	7.3	5.6	4.5	1.0
Tennessee	305.0	85.1	1,902	164.9	61.5	29.4	32.1	23.2	19.2	4.0
Texas	1,378.8	381.2	7,659	750.2	283.3	133.7	149.6	98.3	81.3	17.0
Utah	132.8	35.8	827	71.3	26.0	12.2	13.8	9.1	7.6	1.6
Vermont	30.1	8.1	193	16.2	6.6	3.4	3.2	2.4	2.0	0.4
Virginia	446.8	124.5	2,354	245.6	93.3	44.2	49.1	32.1	26.6	5.5
Washington	577.6	158.8	3,059	301.7	132.5	61.9	70.6	49.8	40.5	9.3
West Virginia	125.1	34.0	845	63.0	30.2	15.3	14.9	12.5	10.1	2.4
Wisconsin	397.1	109.2	2,527	207.7	87.8	43.0	44.8	31.8	26.0	5.8
Wyoming	37.0	9.7	224	19.1	8.8	4.2	4.6	3.3	2.7	0.6
United States	\$21,887	\$6,114	124,809	\$11,560	\$4,812	\$2,306	\$2,506	\$1,754	\$1,432	\$321

Source: Oxford Economics

Scenario: Moderate availability, High tax rate
Direct impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$115.0	\$26.0	704	\$54.8	\$36.3	\$19.4	\$17.0	\$19.8	\$16.3	\$3.5
Alaska	16.7	3.7	74	8.1	5.4	2.9	2.4	2.9	2.4	0.5
Arizona	237.7	55.4	1,380	109.8	75.6	39.6	36.0	40.9	33.3	7.6
Arkansas	56.6	12.5	338	27.6	17.7	9.5	8.2	9.8	8.1	1.7
California	1,256.1	288.4	5,663	588.6	411.0	219.3	191.7	216.3	176.8	39.5
Colorado	170.7	39.1	902	80.2	54.7	28.9	25.8	29.4	24.0	5.3
Connecticut	177.8	41.8	822	81.4	59.9	31.2	28.8	30.6	24.8	5.8
Delaware	43.9	10.3	241	20.0	14.4	7.7	6.7	7.5	6.1	1.4
District of Columbia	18.5	4.1	79	9.0	5.6	3.2	2.4	3.2	2.6	0.6
Florida	591.9	134.9	3,405	279.4	189.7	98.9	90.8	102.0	83.5	18.4
Georgia	195.0	42.9	1,065	95.1	60.8	33.0	27.8	33.7	27.9	5.8
Hawaii	31.4	6.9	150	15.3	9.7	5.2	4.5	5.4	4.5	0.9
Idaho	44.5	10.2	277	20.9	14.1	7.5	6.6	7.7	6.3	1.4
Illinois	345.9	78.5	1,674	163.9	112.6	60.7	51.8	59.6	48.9	10.7
Indiana	251.2	59.0	1,600	115.2	80.4	41.8	38.7	43.2	35.1	8.1
Iowa	151.5	36.0	976	68.6	49.5	25.9	23.6	26.0	21.1	5.0
Kansas	94.4	21.9	593	43.8	30.5	16.0	14.4	16.2	13.2	3.0
Kentucky	83.6	18.4	499	40.7	25.7	14.1	11.7	14.4	11.9	2.5
Louisiana	264.8	63.5	1,631	118.9	85.0	43.7	41.3	45.5	36.7	8.8
Maine	34.6	7.8	212	16.4	11.1	6.1	5.1	6.0	4.9	1.1
Maryland	197.1	45.2	939	92.5	64.3	34.5	29.8	33.9	27.8	6.2
Massachusetts	246.4	56.7	1,099	115.2	79.0	41.9	37.1	42.4	34.7	7.8
Michigan	357.4	83.4	2,086	164.8	116.9	61.7	55.2	61.5	50.0	11.5
Minnesota	195.9	45.5	1,108	90.8	63.7	33.8	29.9	33.7	27.5	6.2
Mississippi	189.2	45.7	1,239	84.3	62.4	32.6	29.8	32.5	26.1	6.3
Missouri	216.6	50.5	1,332	100.0	69.0	36.2	32.8	37.3	30.3	6.9
Montana	26.2	5.9	161	12.4	8.4	4.5	3.9	4.5	3.7	0.8
Nebraska	40.8	9.1	246	19.8	12.8	7.0	5.8	7.0	5.8	1.2
Nevada	249.2	61.9	1,467	107.5	83.7	41.5	42.2	42.7	34.0	8.7
New Hampshire	32.0	7.0	171	15.6	10.1	5.5	4.6	5.5	4.6	1.0
New Jersey	351.5	81.6	1,610	162.9	117.6	62.5	55.1	60.5	49.3	11.2
New Mexico	95.5	22.7	616	43.3	31.2	16.2	15.0	16.4	13.3	3.1
New York	679.0	156.5	3,032	317.0	226.3	122.8	103.5	116.9	95.5	21.4
North Carolina	228.8	51.2	1,342	109.8	71.8	38.4	33.3	39.5	32.5	7.0
North Dakota	29.8	6.9	179	13.7	9.6	5.0	4.6	5.1	4.2	1.0
Ohio	320.5	73.3	1,907	150.8	101.9	54.3	47.6	55.2	45.2	10.0
Oklahoma	274.2	66.2	1,796	122.1	88.2	44.9	43.3	47.1	37.9	9.2
Oregon	112.3	25.6	648	53.0	36.1	19.4	16.7	19.3	15.9	3.5
Pennsylvania	452.1	104.8	2,484	209.9	145.0	76.8	68.2	77.8	63.4	14.4
Rhode Island	57.3	13.6	322	25.9	19.1	10.0	9.1	9.8	8.0	1.9
South Carolina	96.4	21.2	575	47.0	30.6	16.8	13.8	16.6	13.8	2.9
South Dakota	32.5	7.6	207	15.0	10.2	5.2	5.0	5.6	4.5	1.0
Tennessee	134.5	29.6	795	65.5	40.7	22.1	18.6	23.2	19.2	4.0
Texas	569.8	125.7	2,955	277.1	178.1	95.5	82.6	98.3	81.3	17.0
Utah	52.9	11.6	312	25.8	16.6	8.9	7.6	9.1	7.6	1.6
Vermont	13.8	3.0	82	6.7	4.4	2.4	2.0	2.4	2.0	0.4
Virginia	186.1	40.9	923	90.7	59.4	32.4	27.1	32.1	26.6	5.5
Washington	289.3	67.5	1,477	133.5	93.7	47.7	46.0	49.8	40.5	9.3
West Virginia	72.7	17.1	465	33.2	23.6	12.5	11.1	12.5	10.1	2.4
Wisconsin	184.8	42.6	1,148	86.2	60.5	32.4	28.1	31.8	26.0	5.8
Wyoming	19.0	4.4	110	8.9	6.4	3.4	3.1	3.3	2.7	0.6
United States	\$10,185	\$2,346	55,117	\$4,758	\$3,291	\$1,743	\$1,548	\$1,754	\$1,432	\$321

Source: Oxford Economics

Scenario: Moderate availability, High tax rate
Gaming revenue and tax

Amounts in millions of dollars, except population

	Population	Gaming		Gaming tax impacts		
	Population, adult (thousands, stabilized year)	Handle	Gaming revenue	Total	Gaming revenue tax	Federal handle tax
Alabama	3,732.4	\$1,415.2	\$108.6	\$19.8	\$16.3	\$3.5
Alaska	555.2	199.0	15.9	2.9	2.4	0.5
Arizona	5,455.7	3,043.9	221.9	40.9	33.3	7.6
Arkansas	2,264.9	673.9	53.9	9.8	8.1	1.7
California	30,475.3	15,788.1	1,178.9	216.3	176.8	39.5
Colorado	4,302.6	2,137.8	160.3	29.4	24.0	5.3
Connecticut	2,799.7	2,304.0	165.5	30.6	24.8	5.8
Delaware	769.3	570.2	40.8	7.5	6.1	1.4
District of Columbia	564.1	220.6	17.6	3.2	2.6	0.6
Florida	16,772.9	7,368.9	557.0	102.0	83.5	18.4
Georgia	7,775.2	2,321.8	185.7	33.7	27.9	5.8
Hawaii	1,145.4	373.2	29.9	5.4	4.5	0.9
Idaho	1,260.7	558.0	41.7	7.7	6.3	1.4
Illinois	9,776.6	4,285.6	326.0	59.6	48.9	10.7
Indiana	5,023.0	3,248.6	233.9	43.2	35.1	8.1
Iowa	2,357.3	1,988.0	140.4	26.0	21.1	5.0
Kansas	2,151.7	1,200.3	88.3	16.2	13.2	3.0
Kentucky	3,347.3	994.8	79.6	14.4	11.9	2.5
Louisiana	3,526.7	3,513.0	244.7	45.5	36.7	8.8
Maine	1,068.6	426.8	32.6	6.0	4.9	1.1
Maryland	4,699.4	2,474.1	185.0	33.9	27.8	6.2
Massachusetts	5,408.3	3,107.2	231.1	42.4	34.7	7.8
Michigan	7,630.4	4,587.5	333.4	61.5	50.0	11.5
Minnesota	4,233.3	2,497.0	183.1	33.7	27.5	6.2
Mississippi	2,244.4	2,533.8	174.3	32.5	26.1	6.3
Missouri	4,707.0	2,776.6	202.2	37.3	30.3	6.9
Montana	821.9	322.8	24.7	4.5	3.7	0.8
Nebraska	1,408.7	491.0	38.8	7.0	5.8	1.2
Nevada	2,325.5	3,461.1	227.0	42.7	34.0	8.7
New Hampshire	1,081.8	380.9	30.5	5.5	4.6	1.0
New Jersey	6,933.5	4,483.3	328.6	60.5	49.3	11.2
New Mexico	1,583.2	1,253.9	88.6	16.4	13.3	3.1
New York	15,339.4	8,575.5	636.4	116.9	95.5	21.4
North Carolina	7,940.5	2,784.6	216.6	39.5	32.5	7.0
North Dakota	584.7	381.6	27.8	5.1	4.2	1.0
Ohio	8,755.1	4,006.3	301.2	55.2	45.2	10.0
Oklahoma	2,949.3	3,673.5	252.6	47.1	37.9	9.2
Oregon	3,240.2	1,397.6	105.7	19.3	15.9	3.5
Pennsylvania	9,962.0	5,751.0	422.9	77.8	63.4	14.4
Rhode Island	820.5	753.9	53.1	9.8	8.0	1.9
South Carolina	3,913.0	1,147.9	91.8	16.6	13.8	2.9
South Dakota	652.4	418.9	30.3	5.6	4.5	1.0
Tennessee	5,176.5	1,600.9	128.1	23.2	19.2	4.0
Texas	20,856.0	6,804.1	542.3	98.3	81.3	17.0
Utah	2,135.9	629.3	50.3	9.1	7.6	1.6
Vermont	499.5	164.0	13.1	2.4	2.0	0.4
Virginia	6,585.5	2,215.8	177.3	32.1	26.6	5.5
Washington	5,695.7	3,710.0	270.0	49.8	40.5	9.3
West Virginia	1,414.5	945.0	67.5	12.5	10.1	2.4
Wisconsin	4,457.7	2,337.9	173.2	31.8	26.0	5.8
Wyoming	454.5	239.1	17.8	3.3	2.7	0.6
United States	249,635	\$128,538	\$9,549	\$1,754	\$1,432	\$321

Source: Oxford Economics

Scenario: Moderate availability, High tax rate
Selected impacts in comparison to gaming revenue

Amounts in millions of dollars, except jobs

	Gaming	Employment			Income		
	Gaming revenue	Total	Direct	Indirect and induced	Total	Direct	Indirect and induced
Alabama	\$108.6	1,565	704	860	\$64.4	\$26.0	\$38.4
Alaska	15.9	194	74	120	11.2	3.7	7.6
Arizona	221.9	3,021	1,380	1,641	134.6	55.4	79.3
Arkansas	53.9	797	338	459	32.4	12.5	19.9
California	1,178.9	14,154	5,663	8,491	815.2	288.4	526.8
Colorado	160.3	2,152	902	1,249	106.3	39.1	67.2
Connecticut	165.5	1,779	822	958	103.9	41.8	62.1
Delaware	40.8	486	241	245	24.5	10.3	14.2
District of Columbia	17.6	242	79	163	21.7	4.1	17.6
Florida	557.0	7,858	3,405	4,453	346.4	134.9	211.5
Georgia	185.7	2,745	1,065	1,680	129.5	42.9	86.6
Hawaii	29.9	369	150	218	18.7	6.9	11.8
Idaho	41.7	606	277	330	23.5	10.2	13.3
Illinois	326.0	4,204	1,674	2,531	228.9	78.5	150.4
Indiana	233.9	3,238	1,600	1,638	134.8	59.0	75.9
Iowa	140.4	1,900	976	924	78.4	36.0	42.4
Kansas	88.3	1,248	593	655	53.0	21.9	31.1
Kentucky	79.6	1,183	499	684	51.1	18.4	32.7
Louisiana	244.7	3,167	1,631	1,536	133.7	63.5	70.3
Maine	32.6	484	212	272	20.0	7.8	12.1
Maryland	185.0	2,184	939	1,246	119.5	45.2	74.3
Massachusetts	231.1	2,679	1,099	1,580	163.7	56.7	107.0
Michigan	333.4	4,491	2,086	2,404	203.2	83.4	119.7
Minnesota	183.1	2,546	1,108	1,438	124.2	45.5	78.7
Mississippi	174.3	2,293	1,239	1,054	85.8	45.7	40.1
Missouri	202.2	2,826	1,332	1,494	124.5	50.5	74.0
Montana	24.7	373	161	213	14.5	5.9	8.6
Nebraska	38.8	607	246	361	26.3	9.1	17.2
Nevada	227.0	2,698	1,467	1,231	119.7	61.9	57.7
New Hampshire	30.5	408	171	238	20.1	7.0	13.0
New Jersey	328.6	3,633	1,610	2,023	209.3	81.6	127.6
New Mexico	88.6	1,150	616	534	44.8	22.7	22.1
New York	636.4	6,580	3,032	3,548	406.9	156.5	250.4
North Carolina	216.6	3,206	1,342	1,863	142.2	51.2	91.0
North Dakota	27.8	372	179	193	16.7	6.9	9.8
Ohio	301.2	4,427	1,907	2,519	201.0	73.3	127.8
Oklahoma	252.6	3,376	1,796	1,579	137.2	66.2	71.0
Oregon	105.7	1,510	648	863	67.8	25.6	42.3
Pennsylvania	422.9	6,092	2,484	3,608	305.3	104.8	200.5
Rhode Island	53.1	615	322	293	29.4	13.6	15.8
South Carolina	91.8	1,330	575	754	55.7	21.2	34.4
South Dakota	30.3	431	207	224	17.2	7.6	9.6
Tennessee	128.1	1,902	795	1,107	85.1	29.6	55.5
Texas	542.3	7,659	2,955	4,703	381.2	125.7	255.6
Utah	50.3	827	312	515	35.8	11.6	24.2
Vermont	13.1	193	82	110	8.1	3.0	5.1
Virginia	177.3	2,354	923	1,431	124.5	40.9	83.5
Washington	270.0	3,059	1,477	1,582	158.8	67.5	91.3
West Virginia	67.5	845	465	380	34.0	17.1	16.9
Wisconsin	173.2	2,527	1,148	1,378	109.2	42.6	66.6
Wyoming	17.8	224	110	114	9.7	4.4	5.4
United States	\$9,549	124,809	55,117	69,692	\$6,114	\$2,346	\$3,768

Source: Oxford Economics

Scenario: Convenient availability, High tax rate
Total impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$423.9	\$107.2	2,527	\$221.3	\$95.5	\$47.3	\$48.2	\$38.9	\$31.6	\$7.3
Alaska	75.5	19.6	332	41.2	16.3	7.7	8.6	6.2	5.1	1.2
Arizona	765.8	202.9	4,388	399.8	170.8	82.4	88.4	69.0	55.8	13.2
Arkansas	232.7	57.6	1,382	123.3	51.8	25.5	26.2	21.3	17.3	4.0
California	4,746.1	1,296.2	21,817	2,565.2	1,071.6	515.5	556.1	393.1	318.6	74.5
Colorado	642.5	170.2	3,334	341.5	139.0	65.1	73.9	54.1	43.9	10.2
Connecticut	553.5	152.2	2,504	297.6	134.2	63.3	70.9	49.1	39.7	9.4
Delaware	130.6	35.6	674	69.4	29.8	14.6	15.2	12.0	9.7	2.3
District of Columbia	129.0	36.5	407	73.9	22.4	10.6	11.8	7.0	5.7	1.3
Florida	2,191.4	562.8	12,358	1,148.0	490.0	232.1	257.9	191.9	155.7	36.2
Georgia	888.4	229.8	4,760	475.9	185.8	88.4	97.4	73.4	59.7	13.7
Hawaii	129.8	32.7	630	69.8	29.6	14.9	14.7	11.8	9.6	2.2
Idaho	149.9	37.3	931	75.6	33.1	16.2	16.9	14.0	11.3	2.6
Illinois	1,405.3	375.6	6,700	758.0	312.0	150.9	161.1	114.2	92.7	21.5
Indiana	767.5	198.1	4,557	392.9	170.5	82.0	88.5	70.0	56.6	13.4
Iowa	421.3	109.9	2,546	212.1	96.0	47.0	49.0	39.4	31.8	7.6
Kansas	319.3	81.5	1,848	165.1	70.6	34.0	36.6	28.2	22.8	5.4
Kentucky	357.3	90.5	2,048	188.3	76.1	37.3	38.8	31.4	25.6	5.9
Louisiana	693.0	180.3	4,083	348.5	156.4	75.7	80.7	65.3	52.6	12.7
Maine	130.4	33.0	775	68.2	29.1	14.7	14.4	11.6	9.4	2.2
Maryland	713.5	190.3	3,363	382.7	162.4	79.4	83.0	62.0	50.2	11.7
Massachusetts	923.0	256.5	4,061	497.9	200.1	91.2	108.9	75.6	61.3	14.3
Michigan	1,160.1	304.8	6,480	601.4	264.6	129.0	135.6	102.8	83.1	19.6
Minnesota	702.7	190.6	3,765	370.3	156.6	75.6	81.0	58.0	46.9	11.1
Mississippi	440.6	110.9	2,837	212.4	105.2	53.2	52.0	44.4	35.7	8.7
Missouri	712.3	187.6	4,091	371.1	153.6	72.9	80.7	62.6	50.7	12.0
Montana	95.4	24.0	600	48.8	21.3	10.4	10.9	8.8	7.1	1.6
Nebraska	177.2	45.7	1,031	95.0	37.5	18.0	19.5	14.9	12.1	2.8
Nevada	415.1	108.8	2,320	213.2	102.1	49.3	52.8	41.4	33.2	8.2
New Hampshire	134.8	35.5	705	73.3	30.1	14.4	15.7	12.0	9.8	2.2
New Jersey	1,162.1	320.2	5,360	629.6	280.6	135.1	145.5	103.9	84.1	19.8
New Mexico	249.2	62.6	1,533	125.0	59.2	29.5	29.6	24.8	20.0	4.8
New York	2,335.4	633.3	9,857	1,276.5	563.1	280.9	282.2	206.9	167.7	39.3
North Carolina	931.4	242.5	5,320	497.7	200.1	95.5	104.6	80.3	65.2	15.0
North Dakota	97.0	25.3	539	50.5	21.4	9.9	11.4	8.6	6.9	1.6
Ohio	1,227.4	323.5	6,891	655.6	262.5	126.4	136.2	102.4	83.0	19.4
Oklahoma	672.3	177.7	4,174	333.1	151.9	72.0	79.9	64.2	51.6	12.6
Oregon	417.0	110.3	2,378	221.2	91.7	43.5	48.2	36.4	29.6	6.9
Pennsylvania	1,677.6	471.7	9,099	903.6	364.0	172.9	191.0	134.9	109.2	25.7
Rhode Island	150.7	40.9	817	79.4	36.8	18.0	18.9	14.7	11.9	2.9
South Carolina	392.4	98.7	2,301	207.9	89.1	44.4	44.7	36.3	29.5	6.8
South Dakota	99.1	25.6	616	50.7	21.7	10.2	11.5	9.2	7.5	1.8
Tennessee	576.8	151.5	3,294	309.2	122.6	58.9	63.7	50.6	41.2	9.4
Texas	2,578.8	673.1	13,211	1,392.9	556.0	264.0	292.0	212.4	172.8	39.6
Utah	249.2	63.3	1,433	132.6	51.5	24.4	27.1	19.9	16.2	3.7
Vermont	56.8	14.3	331	30.2	13.1	6.6	6.4	5.2	4.2	1.0
Virginia	837.5	220.2	4,082	456.7	184.0	87.8	96.3	70.0	57.0	13.0
Washington	914.2	239.0	4,420	481.8	212.3	99.8	112.5	83.6	67.6	16.0
West Virginia	189.6	48.9	1,160	96.7	46.1	23.4	22.7	19.7	15.9	3.8
Wisconsin	653.0	170.7	3,808	343.6	147.1	72.3	74.8	56.5	45.7	10.7
Wyoming	61.9	15.4	341	32.2	15.0	7.2	7.8	5.9	4.8	1.1
United States	\$36,157	\$9,593	188,818	\$19,208	\$8,104	\$3,901	\$4,202	\$3,131	\$2,537	\$594

Source: Oxford Economics

Scenario: Convenient availability, High tax rate
Direct impacts

Amounts in millions of dollars, except jobs

	Economic impacts				Fiscal (tax) impacts			Gaming tax impacts		
	Output (sales)	Labor income	Employment	GDP	Total	State and local	Federal	Total	Gaming revenue tax	Federal handle tax
Alabama	\$215.7	\$42.9	1,077	\$104.1	\$69.0	\$36.5	\$32.5	\$38.9	\$31.6	\$7.3
Alaska	34.2	6.6	123	16.7	11.2	6.1	5.2	6.2	5.1	1.2
Arizona	386.1	80.6	1,860	182.3	123.6	64.8	58.7	69.0	55.8	13.2
Arkansas	117.3	22.6	568	57.4	37.4	19.8	17.6	21.3	17.3	4.0
California	2,189.2	446.1	8,109	1,045.1	720.0	383.3	336.8	393.1	318.6	74.5
Colorado	301.0	61.1	1,306	144.0	97.3	51.3	46.0	54.1	43.9	10.2
Connecticut	275.9	58.5	1,065	129.2	92.9	48.5	44.4	49.1	39.7	9.4
Delaware	67.3	14.3	309	31.4	22.2	11.9	10.3	12.0	9.7	2.3
District of Columbia	38.4	7.4	133	18.8	11.9	6.6	5.3	7.0	5.7	1.3
Florida	1,066.5	214.9	5,024	511.7	345.2	179.9	165.3	191.9	155.7	36.2
Georgia	404.2	78.0	1,791	197.6	128.7	68.9	59.8	73.4	59.7	13.7
Hawaii	65.0	12.5	252	31.8	20.6	11.0	9.6	11.8	9.6	2.2
Idaho	77.9	15.8	398	37.2	25.0	13.3	11.7	14.0	11.3	2.6
Illinois	634.0	127.1	2,507	304.9	208.0	111.5	96.5	114.2	92.7	21.5
Indiana	392.8	83.1	2,087	184.3	126.3	65.9	60.5	70.0	56.6	13.4
Iowa	222.2	48.1	1,209	103.0	72.7	38.2	34.4	39.4	31.8	7.6
Kansas	157.4	32.6	818	74.6	51.1	26.9	24.2	28.2	22.8	5.4
Kentucky	173.2	33.4	839	84.7	54.6	29.4	25.2	31.4	25.6	5.9
Louisiana	370.1	81.7	1,943	170.1	118.8	61.5	57.4	65.3	52.6	12.7
Maine	64.2	12.8	322	30.9	20.9	11.3	9.6	11.6	9.4	2.2
Maryland	345.1	70.2	1,350	164.8	113.3	60.6	52.7	62.0	50.2	11.7
Massachusetts	421.2	86.0	1,543	200.9	136.0	72.1	63.9	75.6	61.3	14.3
Michigan	575.6	120.5	2,790	271.3	188.9	99.9	89.0	102.8	83.1	19.6
Minnesota	324.2	67.2	1,517	153.5	105.9	56.2	49.7	58.0	46.9	11.1
Mississippi	252.4	56.7	1,424	114.9	83.1	43.6	39.5	44.4	35.7	8.7
Missouri	350.7	73.3	1,789	165.5	112.4	59.0	53.4	62.6	50.7	12.0
Montana	48.6	9.7	243	23.4	15.8	8.5	7.3	8.8	7.1	1.6
Nebraska	82.3	16.0	402	40.1	26.3	14.2	12.2	14.9	12.1	2.8
Nevada	232.7	50.4	1,105	107.1	77.0	39.2	37.8	41.4	33.2	8.2
New Hampshire	66.3	12.8	287	32.4	21.3	11.5	9.8	12.0	9.8	2.2
New Jersey	580.7	120.5	2,201	274.9	194.5	103.4	91.1	103.9	84.1	19.8
New Mexico	140.2	30.4	762	65.0	45.8	23.9	21.9	24.8	20.0	4.8
New York	1,153.3	236.0	4,232	549.6	385.1	208.2	176.9	206.9	167.7	39.3
North Carolina	444.0	87.4	2,120	215.2	141.6	75.2	66.4	80.3	65.2	15.0
North Dakota	48.0	10.1	239	22.7	15.6	8.2	7.4	8.6	6.9	1.6
Ohio	569.3	115.3	2,778	272.6	182.8	97.1	85.7	102.4	83.0	19.4
Oklahoma	365.3	82.1	2,063	166.3	117.6	60.2	57.4	64.2	51.6	12.6
Oregon	202.5	40.8	956	97.1	65.8	35.3	30.6	36.4	29.6	6.9
Pennsylvania	753.8	155.9	3,422	357.4	243.3	128.9	114.4	134.9	109.2	25.7
Rhode Island	83.2	18.1	396	38.5	27.7	14.5	13.1	14.7	11.9	2.9
South Carolina	199.8	38.5	968	97.7	64.7	35.0	29.7	36.3	29.5	6.8
South Dakota	51.8	10.9	273	24.4	16.4	8.5	7.9	9.2	7.5	1.8
Tennessee	278.7	53.8	1,337	136.2	86.5	46.2	40.3	50.6	41.2	9.4
Texas	1,170.7	226.4	4,929	571.7	373.5	197.8	175.7	212.4	172.8	39.6
Utah	109.6	21.1	524	53.6	35.1	18.7	16.4	19.9	16.2	3.7
Vermont	28.6	5.5	138	14.0	9.3	5.1	4.2	5.2	4.2	1.0
Virginia	385.7	74.4	1,552	188.6	125.5	67.4	58.1	70.0	57.0	13.0
Washington	467.8	97.8	1,982	220.7	152.1	77.8	74.2	83.6	67.6	16.0
West Virginia	111.0	23.7	595	51.9	36.1	19.2	16.9	19.7	15.9	3.8
Wisconsin	315.0	64.7	1,612	149.8	103.7	55.5	48.2	56.5	45.7	10.7
Wyoming	33.0	6.7	157	15.7	11.2	5.8	5.3	5.9	4.8	1.1
United States	\$17,443	\$3,563	77,429	\$8,317	\$5,671	\$3,003	\$2,668	\$3,131	\$2,537	\$594

Source: Oxford Economics

Scenario: Convenient availability, High tax rate
Gaming revenue and tax

Amounts in millions of dollars, except population

	Population	Gaming		Gaming tax impacts		
	Population, adult (thousands, stabilized year)	Handle	Gaming revenue	Total	Gaming revenue tax	Federal handle tax
Alabama	3,732.4	\$2,926.4	\$210.6	\$38.9	\$31.6	\$7.3
Alaska	555.2	463.0	33.7	6.2	5.1	1.2
Arizona	5,455.7	5,270.0	372.1	69.0	55.8	13.2
Arkansas	2,264.9	1,586.1	115.5	21.3	17.3	4.0
California	30,475.3	29,791.1	2,124.1	393.1	318.6	74.5
Colorado	4,302.6	4,094.3	292.4	54.1	43.9	10.2
Connecticut	2,799.7	3,773.4	264.6	49.1	39.7	9.4
Delaware	769.3	920.5	64.4	12.0	9.7	2.3
District of Columbia	564.1	519.1	37.8	7.0	5.7	1.3
Florida	16,772.9	14,494.2	1,038.0	191.9	155.7	36.2
Georgia	7,775.2	5,464.3	398.0	73.4	59.7	13.7
Hawaii	1,145.4	878.4	64.0	11.8	9.6	2.2
Idaho	1,260.7	1,059.6	75.6	14.0	11.3	2.6
Illinois	9,776.6	8,609.8	617.9	114.2	92.7	21.5
Indiana	5,023.0	5,370.9	377.1	70.0	56.6	13.4
Iowa	2,357.3	3,046.9	211.8	39.4	31.8	7.6
Kansas	2,151.7	2,145.9	152.1	28.2	22.8	5.4
Kentucky	3,347.3	2,341.3	170.5	31.4	25.6	5.9
Louisiana	3,526.7	5,088.2	350.9	65.3	52.6	12.7
Maine	1,068.6	871.3	62.6	11.6	9.4	2.2
Maryland	4,699.4	4,695.0	335.0	62.0	50.2	11.7
Massachusetts	5,408.3	5,733.4	408.4	75.6	61.3	14.3
Michigan	7,630.4	7,858.8	554.2	102.8	83.1	19.6
Minnesota	4,233.3	4,421.3	313.0	58.0	46.9	11.1
Mississippi	2,244.4	3,477.7	237.9	44.4	35.7	8.7
Missouri	4,707.0	4,787.5	337.9	62.6	50.7	12.0
Montana	821.9	659.5	47.4	8.8	7.1	1.6
Nebraska	1,408.7	1,113.3	80.8	14.9	12.1	2.8
Nevada	2,325.5	3,274.7	221.6	41.4	33.2	8.2
New Hampshire	1,081.8	896.4	65.3	12.0	9.8	2.2
New Jersey	6,933.5	7,920.0	560.5	103.9	84.1	19.8
New Mexico	1,583.2	1,922.2	133.6	24.8	20.0	4.8
New York	15,339.4	15,702.7	1,117.8	206.9	167.7	39.3
North Carolina	7,940.5	6,016.3	434.9	80.3	65.2	15.0
North Dakota	584.7	656.0	46.3	8.6	6.9	1.6
Ohio	8,755.1	7,741.3	553.4	102.4	83.0	19.4
Oklahoma	2,949.3	5,034.0	344.2	64.2	51.6	12.6
Oregon	3,240.2	2,751.6	197.1	36.4	29.6	6.9
Pennsylvania	9,962.0	10,276.5	728.3	134.9	109.2	25.7
Rhode Island	820.5	1,142.1	79.3	14.7	11.9	2.9
South Carolina	3,913.0	2,701.6	196.8	36.3	29.5	6.8
South Dakota	652.4	707.4	49.8	9.2	7.5	1.8
Tennessee	5,176.5	3,767.8	274.4	50.6	41.2	9.4
Texas	20,856.0	15,832.4	1,152.0	212.4	172.8	39.6
Utah	2,135.9	1,481.1	107.9	19.9	16.2	3.7
Vermont	499.5	386.1	28.1	5.2	4.2	1.0
Virginia	6,585.5	5,214.8	379.8	70.0	57.0	13.0
Washington	5,695.7	6,386.3	450.6	83.6	67.6	16.0
West Virginia	1,414.5	1,519.1	106.3	19.7	15.9	3.8
Wisconsin	4,457.7	4,290.1	304.9	56.5	45.7	10.7
Wyoming	454.5	449.1	32.0	5.9	4.8	1.1
United States	249,635	\$237,530	\$16,913	\$3,131	\$2,537	\$594

Source: Oxford Economics

Scenario: Convenient availability, High tax rate
Selected impacts in comparison to gaming revenue

Amounts in millions of dollars, except jobs

	Gaming	Employment			Income		
	Gaming revenue	Total	Direct	Indirect and induced	Total	Direct	Indirect and induced
Alabama	\$210.6	2,527	1,077	1,449	\$107.2	\$42.9	\$64.3
Alaska	33.7	332	123	209	19.6	6.6	13.0
Arizona	372.1	4,388	1,860	2,528	202.9	80.6	122.3
Arkansas	115.5	1,382	568	814	57.6	22.6	35.0
California	2,124.1	21,817	8,109	13,708	1,296.2	446.1	850.1
Colorado	292.4	3,334	1,306	2,028	170.2	61.1	109.1
Connecticut	264.6	2,504	1,065	1,439	152.2	58.5	93.6
Delaware	64.4	674	309	365	35.6	14.3	21.3
District of Columbia	37.8	407	133	274	36.5	7.4	29.1
Florida	1,038.0	12,358	5,024	7,334	562.8	214.9	347.9
Georgia	398.0	4,760	1,791	2,968	229.8	78.0	151.9
Hawaii	64.0	630	252	378	32.7	12.5	20.1
Idaho	75.6	931	398	533	37.3	15.8	21.5
Illinois	617.9	6,700	2,507	4,193	375.6	127.1	248.6
Indiana	377.1	4,557	2,087	2,470	198.1	83.1	114.9
Iowa	211.8	2,546	1,209	1,338	109.9	48.1	61.8
Kansas	152.1	1,848	818	1,030	81.5	32.6	49.0
Kentucky	170.5	2,048	839	1,209	90.5	33.4	57.1
Louisiana	350.9	4,083	1,943	2,139	180.3	81.7	98.6
Maine	62.6	775	322	454	33.0	12.8	20.2
Maryland	335.0	3,363	1,350	2,014	190.3	70.2	120.1
Massachusetts	408.4	4,061	1,543	2,518	256.5	86.0	170.5
Michigan	554.2	6,480	2,790	3,689	304.8	120.5	184.3
Minnesota	313.0	3,765	1,517	2,248	190.6	67.2	123.3
Mississippi	237.9	2,837	1,424	1,413	110.9	56.7	54.2
Missouri	337.9	4,091	1,789	2,302	187.6	73.3	114.3
Montana	47.4	600	243	356	24.0	9.7	14.3
Nebraska	80.8	1,031	402	630	45.7	16.0	29.7
Nevada	221.6	2,320	1,105	1,214	108.8	50.4	58.4
New Hampshire	65.3	705	287	418	35.5	12.8	22.7
New Jersey	560.5	5,360	2,201	3,159	320.2	120.5	199.7
New Mexico	133.6	1,533	762	771	62.6	30.4	32.2
New York	1,117.8	9,857	4,232	5,624	633.3	236.0	397.4
North Carolina	434.9	5,320	2,120	3,200	242.5	87.4	155.1
North Dakota	46.3	539	239	299	25.3	10.1	15.2
Ohio	553.4	6,891	2,778	4,113	323.5	115.3	208.2
Oklahoma	344.2	4,174	2,063	2,111	177.7	82.1	95.5
Oregon	197.1	2,378	956	1,422	110.3	40.8	69.5
Pennsylvania	728.3	9,099	3,422	5,676	471.7	155.9	315.8
Rhode Island	79.3	817	396	421	40.9	18.1	22.8
South Carolina	196.8	2,301	968	1,333	98.7	38.5	60.2
South Dakota	49.8	616	273	343	25.6	10.9	14.8
Tennessee	274.4	3,294	1,337	1,957	151.5	53.8	97.7
Texas	1,152.0	13,211	4,929	8,282	673.1	226.4	446.8
Utah	107.9	1,433	524	908	63.3	21.1	42.1
Vermont	28.1	331	138	193	14.3	5.5	8.8
Virginia	379.8	4,082	1,552	2,530	220.2	74.4	145.8
Washington	450.6	4,420	1,982	2,438	239.0	97.8	141.2
West Virginia	106.3	1,160	595	565	48.9	23.7	25.2
Wisconsin	304.9	3,808	1,612	2,196	170.7	64.7	106.0
Wyoming	32.0	341	157	184	15.4	6.7	8.6
United States	\$16,913	188,818	77,429	111,388	\$9,593	\$3,563	\$6,030

Source: Oxford Economics

5. APPENDIX

5.1 DEFINITIONS

5.1.1 Sports betting definitions

- **Gaming revenue:** Also referred to as gross gaming revenue, net win, or GGR, refers to the amount held by the sports betting operation after payment of prizes. Unless otherwise noted, gaming revenue or GGR in this report refers specifically to revenue generated by sports betting.
- **Gaming taxes:** Taxes calculated as a percentage of gaming revenue are referred to as gaming taxes in this report. Taxes calculated as a percentage of handle are referred to as handle taxes in this report. The combined total of gaming taxes and handle taxes is referred to as combined gaming taxes in this report.
- **Handle:** The amount wagered, or amount bet.
- **Hold percentage:** Ratio of gaming revenue to handle, also referred to as win percentage.
- **In-play betting:** Betting on a sporting event that is already underway.
- **Online (mobile) gaming:** Gaming conducted electronically. Unless otherwise specified, this does not restrict users to a particular type of device (i.e. conducted with a personal computer or mobile phone).

5.1.2 Economic impact definitions

- **Direct impacts:** Also referred to as direct effects. Includes direct spending and revenues, in this case sports betting gaming revenue and associated non-gaming spend.
- **Fiscal impacts:** Tax revenue, including gaming taxes, as well as income tax and contributions to Social Security and unemployment insurance, as well as government revenue from various fees. This analysis does not include the income tax impacts related to reporting of sports betting winnings to tax authorities.
- **GDP:** Gross domestic product, or value added. Refers to the industry's contribution to GDP. Represents gross output of the sector, less the cost of its inputs. Can also be measured as the sum of compensation of employees, taxes on production and imports, and gross operating surplus (profit).
- **Indirect impacts:** Downstream supplier industry impacts, also referred to as supply chain impacts. For example, sports betting firms require inputs such as energy and food ingredients. Also can refer to indirect and induced impacts combined.
- **Induced impacts:** Arise as employees spend their wages in the broader economy. For example, as sports betting employees spend money on rent, transportation, food and beverage, and entertainment.

- **Jobs:** Also referred to as employment. Number of full- and part-time jobs, including proprietors.
- **Labor income:** Earnings of wage and salary employees and proprietors. The definition used is consistent with the Bureau of Economic Analysis (BEA) data for earnings in its regional program. It includes tips, commissions and bonuses.
- **Output:** Revenue, also referred to as business sales, plus certain taxes (e.g. sales).
- **Total impacts:** Direct, indirect and induced impacts combined.

5.2 WORKS CITED

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Gambling Compliance. (2016). *U.S. Sports Betting Special Report: Assessing the Obstacles and Opportunities*.

PwC. (2008). *Confidential analysis related to online gambling*.



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#4860

Exhibit 2 to
SB 2314 Letter
Jamie Azure, Tribal Chairman
Turtle Mountain Band of Chippewa
February 2, 2021



STANDARD SERIES

GLI-19:

Interactive Gaming Systems

Version: 2.0

Release Date: February 15, 2013



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ABOUT THIS STANDARD

This Standard has been produced by **Gaming Laboratories International, LLC** for the purpose of providing independent certifications to suppliers under this Standard and complies with the requirements set forth herein.

A supplier should submit equipment with a request that it be certified in accordance with this Standard. Upon certification, Gaming Laboratories International, LLC will provide a certificate of compliance evidencing the certification to this Standard.

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CHAPTER 1

1.0 STANDARD OVERVIEW

1.1 Introduction

1.1.1. General Statement. Gaming Laboratories International, LLC (GLI) has been testing gaming devices since 1989. Over the years, we have developed numerous standards for jurisdictions all over the world. In recent years, many jurisdictions have opted to ask for standards tests without creating their own standards documents. In addition, with technology changing almost monthly, new technology is not being incorporated quickly enough into existing standards due to the long process of administrative rulemaking. This document, *GLI Standard 19*, will set forth the technical Standards for Interactive Gaming Systems used in an Internet environment.

1.1.2 Document History. We have listed below, and give credit to, agencies whose documents we reviewed prior to writing this Standard. It is the policy of **Gaming Laboratories International, LLC** to update this document as often as possible to reflect changes in technology, testing methods, or cheating methods. This document will be distributed without charge to all those who request it. It may be obtained by downloading it from our website at www.gaminglabs.com or by writing to us at:

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1.2 Acknowledgment of Other Standards Reviewed

1.2.1 General Statement. These Standards have been developed by reviewing and using portions of the documents from the organizations listed below. We acknowledge the regulators who have assembled these documents and thank them:

- a) The Alderney Gambling Control Commission;
- b) The Gibraltar Gambling Commission;
- c) The Lottery and Gaming Authority, Malta;
- d) The Antigua & Barbuda Financial Services Regulatory Commission;
- e) The British Columbia Gaming Policy and Enforcement Branch;
- f) The Italy Autonomous Administration of State Monopolies;
- g) The Tasmanian Department of Treasury and Finance, Revenue and Gaming Division;
- h) The United Kingdom Gambling Commission;
- i) Nevada Gaming Commission and State Gaming Control Board
- j) Loto-Quebec Standards for Internet Gaming Systems
- k) The Danish Gambling Authority
- l) The National Gambling Commission of Spain

1.3 Purpose of Technical Standards

1.3.1 General Statement. The Purpose of this Technical Standard is as follows:

- a) To eliminate subjective criteria in analyzing and certifying Interactive Gaming System (IGS) operation.
- b) To only test those criteria which impact the credibility and integrity of Interactive Gaming Systems from both the revenue collection and player's point of view.
- c) To create a standard which will ensure that games made available via the Internet are fair, secure, and able to be audited and operated correctly.
- d) To distinguish between local public policy and laboratory criteria. At **Gaming**

Laboratories International, LLC we believe that it is up to each local jurisdiction to set its own public policy with respect to gaming.

- e) To recognize that the evaluation of internal control systems (such as Anti-Money Laundering, Financial and Business processes) employed by the operators of the Interactive Gaming System should not be incorporated into this standard but left to the regulatory body of each local jurisdiction to assess as part of the licensing process.
- f) To recognize that non-gaming testing (such as Electrical Testing) should not be incorporated into this standard but left to appropriate test laboratories which specialize in that type of testing. Except where specifically identified in the standard, testing is not directed at health or safety matters. These matters are the responsibility of the manufacturer, purchaser, and operator of the equipment.
- g) To construct a standard which can be easily changed or modified to allow for new technology.
- h) To construct a standard which does not specify any particular method or technology for any element or component of an Interactive Gaming System. The intent is to allow a wide range of methods to be used to conform to the standards, while at the same time encouraging new methods to be developed.

1.4 Interpretation of this Document

1.4.1 No Limitation of Technology. One should be cautioned that this document should not be read in such a way that limits the use of future technology. The document should not be interpreted that if the technology is not mentioned, then it is not allowed. Quite to the contrary, as new technology is developed, we will review this standard, make changes and incorporate new minimum standards for the new technology.

1.4.2 Software Suppliers and Operators. The components of an Interactive Gaming System, although they may be constructed in a modular fashion, are designed to work seamlessly together. In addition, Interactive Gaming System components may be developed to have configurable features, the final configuration of which will depend on the options chosen by the

end operator. From a testing perspective, it may not be possible to test all of the configurable features of an Interactive Gaming System component submitted by a software supplier in the absence of the final configuration chosen by the operator.

- a) Because of the integrated nature of an Interactive Gaming Systems there are a number of requirements in this document which may apply to both operators and suppliers (whether it is Game Suppliers, Platform Suppliers, Remote Game Server (RGS) Suppliers, etc). In these cases, where testing is requested for a “white-label” version of the component, a specific configuration will be tested and reported.
- b) This document is not intended to be arbitrary in defining which parties are responsible for meeting the requirements of this document. It is left to the stakeholders of each system to determine how best to meet the requirements laid out in this document.

1.5 Other Documents That May Apply

1.5.1 General Statement. This standard covers the actual requirements for single-player and multi-player games being played through the use of various devices such as personal computers and mobile devices via the Internet. Currently there are no other documents, which may apply.

CHAPTER 2

2.0 GAMING PLATFORM REQUIREMENTS

2.1 Introduction

2.1.1 General Statement. If the Interactive Gaming System is comprised of multiple computer systems at various sites, the Interactive Gaming System as a whole and all communication between its components must conform to these requirements.

2.2 Player Account Registration

2.2.1 General Statement. The Interactive Gaming System must employ a mechanism to collect (either online or via a manual procedure approved by the regulatory body) player information prior to the registration of a player account. The system must not allow a player to deposit more than a monetary limit, as specified in the terms and conditions or withdraw any funds until registration information is verified. The player must be fully registered and their player account must be activated prior to permitting game play using deposited funds.

2.2.2 Age and Identity Verification. A full identity check must be undertaken each time an individual attempts to register

- a) Only players of the legal gambling age for the jurisdiction may be registered. The Interactive Gaming System must deny registration to any person that enters a birth date that indicates they are under-aged.
- b) Player Identification must verify the legal name, physical address, age and nationality of the individual at a minimum.
- c) Details of player verification must be kept on-line in a secure manner.
- d) Third parties may be used to verify the age and/or identity of players as allowed by the

regulatory body.

- e) The Interactive Gaming System must be capable of maintaining information about any player's activity, such that if a player is ever found to be underage, the regulatory body has all of the necessary information to take whatever action they deem appropriate. The licensee should immediately suspend any account providing gambling services to minors and follow the documented public policy in place when an underage individual is identified.

2.2.3 Privacy. During the registration process, the player must agree to the applicable privacy policy. The privacy policy should state the minimum information that is required to be collected, the purpose for information collection, and the conditions under which information may be disclosed:

- a) Any information obtained in respect to player registration or account establishment must not breach the privacy policy;
- b) Any information about the current state of player accounts must be kept confidential, except where the release of that information is required by law;
- c) All player information must be securely erased (i.e. not just deleted) from hard disks, magnetic tapes, solid state memory and other devices before the device is decommissioned. If erasure is not possible, the storage device must be destroyed; and
- d) A privacy policy must be posted on the Gaming Platform and readily accessible to the player through the communication channel used to access the Gaming Platform.

2.2.4 Cookies. All cookies used shall contain no malicious code. Where cookies are used, the player must be informed of the usage during the registration. When cookies are required for game play, game play cannot occur if the Player Device does not accept them.

2.2.5 Terms and Conditions. During the registration process, the player must agree to the applicable terms and conditions of service.

-
- a) The terms and conditions must specify what will happen to bets placed but remaining undecided in incomplete games.
 - b) The terms and conditions of game play must clearly define the rules by which any unrecoverable malfunctions of gaming hardware / software are addressed including if this process results in the voiding of any pays or plays.
 - c) The terms and conditions must advise the player to keep their password and login ID secure; Requirements regarding forced password changes, password strength and other related items shall also be specified.
 - d) The terms and conditions must state that no underage individual is permitted to participate in remote gambling activities.
 - e) The terms and conditions must state that only players legally permitted by their respective jurisdiction can participate in gambling activities.
 - f) The terms and conditions must describe the method to which players will be notified of updates. Where applicable, updated terms and conditions must be specifically acknowledged by the player.

2.2.6 Establishment of Player Account. Once age and identity verification are successfully complete, the player is not on any exclusion lists, and the player has acknowledged all of the necessary privacy policies and terms and conditions, the player account registration is complete and the player account can become active.

- a) Each active player account must have a unique identifier to enable identification of the appropriate player and account details.
- b) A player must only be permitted to have one active account at a time unless specifically authorized by the regulatory body.

2.3 Player Account Controls

2.3.1 Player Session. A player session consists of all activities and communications performed by an authorized player and the Interactive Gaming System between the time the authorized

player logs into the Interactive Gaming System to the time the authorized player logs out or is logged out of the Interactive Gaming System. Game play which requires monetary payment can only occur during a player session. Where a system provides access to multiple games from a games lobby, players may play more than one game during a player session.

2.3.2 Player Session Start. A player session is started when a player logs in to the Interactive Gaming System.

- a) A player must be provided with (or have created) an electronic identifier such as a digital certificate or an account description and a password to start a session.
- b) The Interactive Gaming System must allow players to change their passwords, and should remind them on a regular basis.
- c) Where a player has forgotten their password/PIN, the Gaming Platform must provide a secure process for the re-authentication of the player and the retrieval and/or resetting of the password/PIN. Any and all processes for dealing with lost player user IDs or passwords must be clearly described to the player and sufficiently secure.
- d) When a player logs in to the Interactive Gaming System, the last time they logged in must be displayed.
- e) Each player session must have a unique identifier assigned by the Interactive Gaming System which distinguishes the current session from previous or future sessions.

2.3.3 Self-Imposed Player Session Inactivity. During a Peer to Peer game, the software must allow for a user to set an “Away from computer” status which could be utilized if the player needs to step away for a moment. This functionality must be fully described in the help screens or applicable terms and conditions.

- a) The “Away from computer” status must disallow all play, and also cause the player’s turn to be automatically skipped during any round of play which takes place while this status is active.
- b) If a player sets an “Away” status during the middle of a round of play, they will automatically forfeit their play for that round (e.g. for a round of poker, the software shall

automatically fold the player's hand during the next round of betting) assuming that additional wagers or player decisions are needed to complete the game.

- c) If a player performs any game sensitive action within the game window while in an "Away" state (i.e. selecting an amount to bet, etc...), the state shall be removed and the player will be enrolled into the next round of play. Non-game sensitive actions, such as accessing the help menu from the game window do not require this status to be removed.
- d) If no action has been taken by the player within the time period specified in the help screens and/or the terms and conditions, they shall be automatically placed into the "Away from computer" state.
- e) If a player has been in "Away" status for over 30 minutes or a period of time specified by the regulatory body, the player must be automatically removed from the table they are currently enrolled in.

2.3.4 Automatically Detected Player Session Inactivity. Interactive Gaming Systems must employ a mechanism that detects session-inactivity and terminate a player session when applicable.

- a) If the Gaming Platform fails to receive a response from the Player Device within 30 minutes or a period of time determined by the regulatory body, it must implement a user inactivity timeout and terminate the session.
- b) If a session is terminated due to a user inactivity timeout, the Player Device must display to the player the server session termination (i.e.: the user inactivity timeout) upon the player's next attempted action on the Gaming Platform.
- c) No further game play is permitted until the Gaming Platform and the Player Device establish a new session.

2.3.5 Player Session End. A player session finishes when:

- a) The player notifies the Gaming Platform that the session is finished (e.g. "logs out").
- b) A session inactivity timeout is reached.
- c) The Gaming Platform terminates the session.

- i) Where the Gaming Platform terminates a session, a record must be written to an audit file that includes the termination reason; and
- ii) The Gaming Platform must attempt to send a session finished message to the Player Device each time a session is terminated by the Gaming Platform.

2.3.6 Responsible Gaming. A responsible gaming page must be readily accessible from any screen where game play may occur. The responsible gaming page must contain at a minimum:

- a) Information about potential risks associated with gambling, and where to get help for a gambling problem;
- b) A list of the responsible gaming measures that can be invoked by the player, such as player session time limits and bet limits, and an option to enable the player to invoke those measures;
- c) Mechanisms in place which detect unauthorised use of their account, such as observing the Last Log in Time Display, the IP address of the last log in and reviewing credit card statements against known deposits;
- d) A link to the terms and conditions that player agreed to be bound to by entering and playing on the site;
- e) A link to the applicable privacy policy; and
- f) A link to the home website of the regulatory body.

All links to problem gambling services provided by third parties are to be regularly tested by the operator. No game play may occur where the links used to supply information on player protection or responsible gambling are not displayed or are not operational. Where the link is no longer available or not available for a significant period of time, the operator must provide an alternative support service.

2.3.7 Self -Imposed Limits. Players must be provided with an easy and obvious mechanism to impose self-limitations for gaming parameters including, but not limited to, deposits, wagers, losses, and player session durations, as required by the regulatory body. The self-limitation mechanism must provide the following functionality:

- a) Upon receiving any self-limitation order, the Interactive Gaming System must ensure that all specified limits are correctly implemented immediately or at the point in time (i.e. next login, next day, etc.) that was clearly indicated to the player.
- b) The self limitations set by a player must not override any system imposed limitations or contradict information within the game rules.
- c) Once established by a player and implemented by the Interactive Gaming System, it must only be possible to reduce the severity of self-limitations upon 24 hours notice.
- d) Self-limitations must not be compromised by internal status events, such as self-exclusion orders and self-exclusion revocations.

2.3.8 System Imposed Limits. The Interactive Gaming System must be capable of applying player limits as required by the regulatory body. Players must be notified in advance of any system-imposed limits and their effective dates. Once updated, system-imposed limits must be consistent with what is disclosed to the player.

- a) Upon receiving any system-limitation order, the Interactive Gaming System must ensure that all specified limits are correctly implemented immediately or at the point in time (i.e. next login, next day, etc.) that was clearly indicated to the player.
- b) In cases where system-imposed limitation values (e.g. deposit, wager, loss, player session duration) are greater than self-imposed player limit values, the self-imposed limitations must take priority.
- c) System imposed limitations must not be compromised by internal status events, such as self-exclusion orders and self-exclusion revocations.

2.3.9 Self-Imposed Exclusion. Players must be provided with an easy and obvious mechanism to self-exclude from game play, and this self-exclusion mechanism must provide the following functionality:

- a) The player must be provided with the option to self-exclude temporarily for a specified period of time as defined in the terms and conditions, or indefinitely.
- b) In the case of temporary self-exclusion, the Interactive Gaming System must ensure that:

-
- i) Immediately upon receiving the self-exclusion order, no new bets or deposits are accepted from that player, until such time as the temporary self-exclusion has expired, and
 - ii) During the temporary self-exclusion period, the player is not prevented from withdrawing any or all of their account balance through the account management console, provided that the Interactive Gaming System acknowledges that the funds have cleared.
- c) In the case of indefinite self-exclusion, the Interactive Gaming System must ensure that:
- i) Immediately upon receiving the self-exclusion order, no new bets or deposits are accepted from that player, until such time as the indefinite self-exclusion has been revoked;
 - ii) The player is paid in full for their account balance, provided that the Interactive Gaming System acknowledges that the funds have cleared;
 - iii) If wagers have been placed on pending real-life events the terms and conditions must clearly define what happens to the wagers if the self-imposed exclusion is to remain and the corresponding real-life event is completed, and the Interactive Gaming System must be capable of returning all bets to the players, or settling all bets, as appropriate; and
 - iv) It is recommended that players be provided with a mechanism to request cancellation of the self-exclusion order.

2.3.10 System-Imposed Exclusion. The Interactive Gaming System must provide a mechanism by which a player may be excluded from game play according to the terms and conditions agreed to by the player upon registration. This mechanism must:

- a) Provide a player notification containing exclusion status and general instructions for resolution;
- b) Ensure that immediately upon activating the exclusion, no new bets or deposits are to be accepted from that player, until such time as the exclusion has been revoked;
- c) If wagers have been placed on pending real-life events the terms and conditions must clearly define what happens to the wagers if the exclusion is to remain and the

- corresponding real-life event is completed, and the Interactive Gaming System must be capable of returning all bets to the players, or settling all bets, as appropriate; and
- d) During the exclusion period, the player must not be prevented from withdrawing any or all of their account balance, provided that the Interactive Gaming System acknowledges that the funds have cleared, and that the reason(s) for exclusion would not prohibit a withdraw.

2.3.11 Disputes. The Interactive Gaming System must provide an easy and obvious mechanism to advise the player of the right to make a complaint against the operator or another player (i.e. when collusion is suspected or when a player is disruptive or abusive), and to enable the player to notify the regulatory body of such a complaint.

- a) Contact information for complaints and dispute resolution should be readily accessible within the Player Interface.
- b) Players should be able to log complaints and disputes on a 24/7 basis.
- c) Records of all correspondence relating to a complaint and dispute shall be maintained online for an appropriate period of time as determined by the regulatory body.
- d) It is recommended that a privately documented process exist between the Interactive Gaming System operator and the regulatory body on the dispute reporting and resolution process.

2.3.12 Inactive Accounts. An account is considered to be inactive if the player has not logged into the account for a time period to be specified by the regulatory body and in the documented and published Terms & Conditions for the Interactive Gaming System.

- a) Interactive Gaming Systems must employ a mechanism to protect inactive interactive gaming accounts that contain funds from unauthorized changes or removal.
- b) It is recommended that a privately documented process be put in place to deal with unclaimed funds from inactive accounts.

2.3.13 Player Funds Maintenance. The following principles must apply to the maintenance of player funds:

- a) Player accounts on the Interactive Gaming System must be secured against invalid access or update other than by approved methods;
- b) All deposit, withdrawal, transfer or adjustment transactions are to be maintained in a Interactive Gaming System audit log;
- c) A deposit into a player’s account made via a credit card transaction or other methods which can produce a sufficient audit trail must not be available for betting until such time as the funds are received from the issuer or the issuer provides an authorization number indicating that the funds are authorized. The authorization number is to be maintained in an Interactive Gaming System audit log;
- d) Positive player identification, including any Personal Identification Number (PIN) entry or other approved secure methods, must be completed before the withdrawal of any monies held by the Interactive Gaming System can be made;
- e) Inactive accounts holding monies in the Interactive Gaming System must be protected against illicit access or removal;
- f) All transactions involving monies are to be treated as vital information to be recovered by the Interactive Gaming System in the event of a failure;
- g) Payments from an account are to be paid (including funds transfer) directly to an account with a financial institution in the name of the player or made payable to the player and forwarded to the player’s address or through another mechanism authorized by the regulatory body. The name and address are to be the name as held in player registration details;
- h) Account statements must be sent to the registered address (e-mail or mailing) of the player upon request for the time period specified. Statements must include sufficient information to allow the player to reconcile the statement against their own records; and
- i) Any adjustments to player accounts on the Interactive Gaming System must be subject to strict security control and audit trail.
- j) It shall not be possible to transfer credits which represent a monetary value between two user accounts.

2.3.14 Taxation. The Interactive Gaming System must support a mechanism that is capable of identifying all wins that are subject to taxation and providing the necessary information in accordance with each jurisdiction’s taxation requirements.

2.4 Control Program

2.4.1 Control Program Verification. Interactive Gaming Systems must be capable of verifying that all control program components contained on the Interactive Gaming System are authentic copies of approved components of the Interactive Gaming System automatically, upon installation and at least once every 24 hours, and on demand using a method approved by the regulatory body.

- a) The authentication mechanism must employ a hashing algorithm which produces a message digest of at least 128 bits.
- c) A system log or report must be retained and be accessible for a period of 90 days, which details the verification results for each control component authentication.
- d) The control program authentication must include all control program components which may affect game outcome or required system operations. Control program components include, but are not limited to, executables, libraries, game or system configurations, operating system files, components that control required system reporting, and database elements that affect game outcome or required system operations.
- e) If any control program component is determined to be invalid the Interactive Gaming System must prevent the execution of or deactivate the control program component, and must automatically stop any gaming related functions related to that control program component.
- f) Each control program component of the Interactive Gaming System must also have a method to be verified via an independent third-party verification procedure. The third-party verification process shall not include any process or security software within the Interactive Gaming System. The test laboratory, prior to system approval, shall approve the integrity check method.

2.4.2 Data Alteration. The Interactive Gaming System shall not permit the alteration of any accounting, reporting or significant event data without supervised access controls. In the event any data is changed, the following information shall be documented or logged:

- a) Data element altered;
- b) Data element value prior to alteration;
- c) Data element value after alteration;
- d) Time and date of alteration; and
- e) Personnel that performed alteration (user login).

2.4.3 System Clock. The Interactive Gaming System must maintain an internal clock that reflects the current date and time that shall be used to provide for the following:

- a) Time stamping of significant events;
- b) Reference clock for reporting;
- c) Time stamping of all sales and draw events; and
- d) A clearly visible clock should be available for use by the player at all times.

If multiple clocks are supported the system shall have a facility to synchronize clocks within all system components.

2.5 Client Software

2.5.1 General Statement. The Client Software is any software downloaded to or installed on a Player Device.

2.5.2 Client Requirements. The Client Software and Player Device must:

- a) Not contain the logic used to generate the result of any game;
- b) Not be capable of conducting gaming activity if disconnected from the Interactive

- Gaming System; and
- c) Not be used to store sensitive data or required Interactive Gaming System information.

2.5.3 Client-Server Interactions. The following requirements apply to Client Software and the client-server interactions during gaming:

- a) The Client Software must not automatically alter any client-specified firewall rules to open ports that are blocked by either a hardware or software firewall;
- b) The Client Software must not access any ports (either automatically or by prompting the user to manually access) which are not necessary for the communication between the client and the server;
- c) Players must not be able to use the Client Software to transfer data to one another, other than chat functions (e.g.: text, voice, video, etc...) and approved files (e.g.: user profile pictures, photos, etc...); and
- d) If the Client Software includes additional non-game related functionality, this additional functionality must not alter the game's integrity in any way.

2.5.4 Software Verification. Interactive Gaming Systems must employ a mechanism that ensures any critical components contained in any Client Software present on the Player Device and used in conjunction with an Interactive Gaming System is verified upon initiation of any player session using a method approved by the regulatory body. It is recommended that Client Software be verified at pre-defined time intervals, as agreed upon by the regulatory body, during an active player session. Client Software critical components may include, but are not limited to, game rules, pay table information, elements that control the communications with the Interactive Gaming System, or other components that are needed to ensure proper operation of the Client Software. The system shall have the ability to disable the Client Software upon any unsuccessful verification.

2.5.5 Compatibility Verification. During any installation or initialization and prior to establishing a player session, the Client Software used in conjunction with the Interactive Gaming System must detect any incompatibilities or resource limitations with the player system

that would prevent proper operation of the Client Software. If any incompatibilities or resource limitations are detected the Interactive Gaming System must:

- a) Notify the player of any incompatibility and/or resource limitation preventing operation (e.g. browser type, browser version, plug-in version, etc.); and
- b) Prevent gaming activity while any incompatibility and/or resource limitation exists.

2.5.6 Content. Client Software used in conjunction with the Interactive Gaming System must not contain any functionality deemed to be malicious in nature by the regulatory body. This includes, but is not limited to unauthorized file extraction/transfers, unauthorized player system modifications, and malware.

2.5.7 Communications. Communications between any Interactive Gaming System components, player systems and Client Software which takes place over public networks must be secure by a means approved by the regulatory body. Personally identifiable information, sensitive account data, wagers, results, financial information, and player session information must always be protected over any public network.

2.6 Gaming Disable/Enable

2.6.1 General Statement. The following requirements apply to the disabling and re-enabling of gambling on the Interactive Gaming System:

- a) The Interactive Gaming System must be able to disable or enable all gambling on command;
- b) The Interactive Gaming System must be able to disable or enable individual games on command;
- c) The Interactive Gaming System must be able to disable or enable individual player sessions on command; and
- d) When any gambling is disabled or enabled on the Interactive Gaming System an entry

must be made in an audit log that includes the reason for any disable or enable.

2.6.2 Current Game. When a game or gaming activity is disabled:

- a) The game is not to be accessible to a player once the player's game has fully concluded.
- b) The player should be permitted to conclude the game in play (i.e. bonus rounds, double up/gamble and other game features related to the initial game wager should be fully concluded).
- c) If wagers have been placed on pending real-life events:
 - i) The terms and conditions must clearly define what happens to the wagers if the gaming activity is to remain disabled and the corresponding real-life event is completed, and the Interactive Gaming System must be capable of returning all bets to the players, or settling all bets, as appropriate.
 - ii) The terms and conditions must clearly define what happens to the wagers if the gaming activity is to re-enable before the corresponding real-life event is completed, and the Interactive Gaming System must be capable of returning all bets to the players, or leaving all bets active, as appropriate.

2.7 Incomplete Games

2.7.1 Incomplete Games. A game is incomplete when the game outcome remains unresolved or the outcome cannot be properly seen by the player. Incomplete games may result from:

- a) Loss of communications between the Gaming Platform and the Player Device;
- b) A Gaming Platform restart;
- c) A Player Device restart or malfunction;
- d) Abnormal termination of the Client Software; or
- e) A game-disable command by the Gaming Platform during play.

2.7.2 Completion of Incomplete Games. The Interactive Gaming System may provide a mechanism for a player to complete an incomplete game. An incomplete game must be resolved before a player is permitted to participate in another instance of the same game.

- a) If the player has an incomplete game, the Interactive Gaming System is to present the incomplete game for completion upon reconnection or whenever a new player session is established.
 - i) Where no player input is required to complete the game, the game must display the final outcome as determined by the Interactive Gaming System and game rules, and the player's account must be updated accordingly;
 - ii) For single-player, multi-stage games, where player input is required to complete the game, the game must return the player to the game state immediately prior to the interruption and allow the player to complete the game; and
Note: The addition of an optional bonus or feature, such as double-up or gamble would not make a game multi-stage.
 - iii) For multi-player games, the game must display the final outcome as determined according to the game rules and/or terms and conditions, and the player's account must be updated accordingly.
- b) Wagers associated with an incomplete game that can be continued must be held by the Interactive Gaming System until the game completes. Player accounts must reflect any funds held in incomplete games.

2.7.3 Cancellation of Incomplete Games. Wagers associated with an incomplete game that can be continued, but remaining undecided for a time period to be specified by the regulatory body can be voided and the wagers forfeited or returned to the player provided that:

- a) The game rules and/or the terms and conditions must clearly define how wagers will be handled when they remain undecided beyond the specified time period and the Interactive Gaming System must be capable of returning or forfeiting the wagers, as appropriate.
- b) In the event that a game cannot be continued due to an Interactive Gaming System action, all wagers must be returned to the players of that game.

2.8 Shutdown and Recovery

2.8.1 General Statement. The Interactive Gaming System must have the following shutdown and recovery capabilities:

- a) The Gaming Platform must be able to perform a graceful shut down, and only allow automatic restart on power up after the following procedures have been performed as a minimum requirement:
 - i) Program resumption routine(s), including self tests, complete successfully;
 - ii) All critical control program components of the Gaming Platform have been authenticated using an approved method (ex. CRC, MD5, SHA-1, etc); and
 - iii) Communication with all components necessary for Gaming Platform operation have been established and similarly authenticated.
- b) The Interactive Gaming System must be able to identify and properly handle the situation where master resets have occurred on other remote gaming components which affect game outcome, win amount or reporting.
- c) The Interactive Gaming System must have the ability to restore the system from the last backup.
- d) The Interactive Gaming System must be able to recover all critical information from the time of the last backup to the point in time at which the Interactive Gaming System failure or reset occurred.

2.9 Malfunction

2.9.1 General Statement. The Gaming Platform must:

- a) Not be affected by the malfunction of Player Devices other than to institute the incomplete games procedures in accordance with these requirements; and
- b) Include a mechanism to void bets and pays in the event of a malfunction of the Gaming Platform itself if a full recovery is not possible.

2.10 Geolocation

2.10.1 General Statement. The Interactive Gaming System and/or the player system must be able to reasonably detect the physical location of an authorized player attempting to access the service from, and must not permit wagering capabilities while the player is in an area where this type of gaming is disallowed. Third parties may be used to verify the location of players as allowed by the regulatory body.

2.11 Advertising

2.11.1 General Statement. All advertising or marketing material within the Interactive Gaming System that is displayed or otherwise conveyed to the player must not:

- a) Consist of indecent or offensive graphics and/or audio as determined by the regulatory body;
- b) Obscure the game play area or obstruct a game in progress;
- c) Contain content that contradicts the game rules or terms and conditions of the site; and
- d) Specifically target players which have been excluded from play.

2.12 Player Loyalty Programs

2.12.1 General Statement. If player loyalty programs are supported by the Interactive Gaming System, the following principles must apply:

- a) Use of the player tracking data must not breach the privacy policy;
- b) Redemption of player loyalty points earned must be a secure transaction that automatically debits the points balance for the value of the prize redeemed;
- c) All player loyalty database transactions are to be recorded by the Interactive Gaming System; and

- d) If the player loyalty program is provided by an external service provider the Interactive Gaming System must be capable of securely communicating with that service.

2.12.2 Disclosure of Player Loyalty Promotions and Bonuses. To avoid unnecessary disputes and confusion, the following disclosures must be made to the player for any player loyalty promotions and/or bonuses:

- a) The Interactive Gaming System must make readily-accessible to the player all terms and conditions governing each available promotional or bonus feature.
- b) The terms and conditions must be clear and unambiguous, especially where bonuses or promotions are limited to certain tables or non-tournament play, or when other specific conditions apply.
- c) All bonuses and promotions must adhere to current legislation and regulation.

2.13 Reporting

2.13.1 General Reporting Requirements. Documentation generated by the Interactive Gaming System shall be available on demand and for the interval defined for each required report. All required reports must be generated by the system, even if the period specified contains no data to be presented. The report generated shall indicate all required information and contain an indication of “No Activity” or similar message if no data appears for the period specified. Interactive Gaming Systems must provide a mechanism to export the data generated for any report to an acceptable format (i.e. PDF, CSV, etc.) as specified by the regulatory body for the purposes of data analysis and auditing/verification. The system must be capable of retaining the report data for a period of time as specified by the regulatory body. . The Interactive Gaming System Clock must be used for all time stamping.

2.13.2 Player Session Report. Interactive Gaming Systems must be able to provide a *Player Session Report* (or similarly named report) on demand. The report must contain the following information at a minimum:

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- a) Unique player session ID;
 - b) Unique player ID;
 - c) Session start time;
 - d) Session end time;
 - e) Relevant geolocation information, if available;
 - f) Amount wagered during session (Total and by transaction);
 - g) Amount won during session (Total and by transaction);
 - h) Promotional credits received during session (Total and by transaction);
 - i) Promotional credits wagered during session (Total and by transaction);
 - j) Funds deposited to the authorized player's account during session (Total and by transaction);
 - k) Funds withdrawn from the authorized player's account during session (Total and by transaction);
 - l) Reason for session termination;
 - m) Interactive gaming account balance at the start of the session;
 - n) Interactive gaming account balance at the end of the session; and
 - o) Funds remaining in incomplete games (Total and by transaction).

2.13.3 Gaming Performance Report. Interactive Gaming Systems must be able to provide an *Interactive Gaming Performance Report* (or similarly named report) on demand over the specified period of the report and at a minimum for the specific intervals of month to date (MTD), year to date (YTD), and life to date (LTD) for each individual game (e.g. payable). The report must contain the following information at a minimum:

- a) Interval selected;
- b) Unique game identifier;
- c) Total wagered;
- d) Total amount won;
- e) Total amount contributed to the progressive pool, if applicable;
- f) Total amount refunded; and
- g) Total funds remaining in incomplete games.

2.13.4 Gaming Revenue Report. Interactive Gaming Systems must be able to provide an *Interactive Gaming Revenue Report* (or similarly named report) on demand over the specified period of the report and at a minimum for the specific intervals of month to date (MTD), year to date (YTD), and life to date (LTD). The report must contain the following information at a minimum:

- a) Total amount of non-promotional deposits to site maintained player accounts;
- b) Total amount of non-promotional withdrawals from site maintained player accounts; and
- c) Total amount of all non-promotional funds currently held in site maintained player accounts.

2.13.5 Progressive Jackpot Configuration Report. Interactive Gaming Systems must be able to provide a *Progressive Jackpot Configuration Report* (or similarly named report) on demand for each progressive pool on the site during the specified time period of the report. The report must contain the following information at a minimum:

- a) Name of progressive pool;
- b) Date and time progressive pool placed into play;
- c) Contribution parameters (amount per day, percentage of pot, etc.) for all primary and secondary pools (includes any diverted amounts);
- d) Unique payable identifier of each participating game;
- e) Total amount of wagers eligible for the progressive jackpot(s);
- f) Total amount of progressive jackpots won;
- g) Total jackpot contributions won;
- h) Jackpot start-up or other seeds which are not funded from contribution;
- i) Current amount for each jackpot prize offered in this jackpot pool;
- j) Current value of Jackpot contributions diverted;
- k) Date and time of jackpot retired;
- l) Progressive jackpot limit value, if applicable; and
- m) Amount exceeding limit, if applicable.

2.13.6 Progressive Jackpot Won Report. Interactive Gaming Systems must be able to provide a *Progressive Jackpot Won Report* (or similarly named report) on demand for each progressive pool on the site during the specified time period of the report. The report must contain the following information at a minimum:

- a) Name of progressive pool;
- b) Unique payable identifier of the game;
- c) Unique player session ID;
- d) Unique player ID;
- e) Game cycle ID;
- f) Date and time of progressive jackpot award;
- g) Progressive jackpot level hit;
- h) Amount of progressive jackpot;
- i) User ID and name of employee processing the win if applicable; and
- j) User ID and name of supervisor confirming the win, if applicable;

2.13.7 Significant Event Report. Interactive Gaming Systems must be able to provide a *Significant Event Report* (or similarly named report). The report must contain the following information at a minimum:

- a) Failed system side login attempts;
- b) Significant periods of unavailability of the Interactive Gaming System or any critical component of the Interactive Gaming System (e.g., when a transaction cannot be performed);
- c) Large wins in excess of the value specified by the licensing jurisdiction;
- d) Large transfers of funds (single and aggregate over defined time period) in excess of the value specified by the licensing jurisdiction;
- e) System voids, overrides, and corrections;
- f) Mandatory deactivation of an authorized player;
- g) Any other activity requiring employee intervention and occurring outside of the normal scope of system operation; and

- h) Other significant or unusual events.

2.13.8 Change Notification Report. Interactive Gaming Systems must be able to provide a *Change Notification Report* (or similarly named report) for all changes to system, game or event configurations or parameters. Licensees must provide a comparison report between the previous settings and the new settings relating to the game or event. The report must contain the following information at a minimum:

- a) Audit trail of information changed/modified by administrator accounts;
- b) Changes to date/time on master time server;
- c) Changes made to game parameters; and
- d) Identification of the employee that made changes to game parameters (e.g., game rules, payout schedules, rake percentage, etc.).

2.13.9 Exclusions Report. Interactive Gaming Systems must be able to provide a *Player Exclusions Report* (or similarly named report) for all players excluded from play and/or registration by themselves, the Licensee, or the regulatory body. The report must contain the following information at a minimum:

- a) Unique Player ID;
- b) Type of exclusion (Permanent, self-excluded, etc);
- c) Date exclusion commenced;
- d) Date exclusion ended, if applicable;
- e) Reason for exclusion; and
- f) Number of times player has been excluded (at the time of the report).

2.13.10 Account Balance Adjustment Report. Interactive Gaming Systems must be able to provide an *Interactive Gaming Account Balance Adjustment Report* (or similarly named report) on demand for each day's adjustments per authorized player ID. The report must contain the following information at a minimum:

- a) Authorized player's name and account number;
- b) Date and time of account balance adjustment;
- c) Unique transaction number;
- d) User ID and name of employee handling the account balance adjustment transaction, if applicable;
- e) User ID and name of supervisor authorizing an adjustment to account balance;
- f) Amount of account balance adjustment;
- g) Account balance prior to adjustment;
- h) Account balance after adjustment;
- i) Type of account adjustment; and
- j) Reason/description of adjustment to account balance.

2.13.11 Promotional Account Summary Report. Interactive Gaming System must be able to provide a *Promotional Account Summary Report* (or similarly named report) on demand for any player loyalty promotions and/or bonuses that are redeemable for cash, monetary game play credits, or merchandise. The report must contain the following information at a minimum:

- a) Beginning balance for promotion type;
- b) Total amount of awards by promotion type;
- c) Total amount used by promotion type;
- d) Total amount expired by promotion type;
- e) Total adjustment amount by promotion type; and
- f) Ending balance by promotion type.

CHAPTER 3

3.0 *GAME REQUIREMENTS*

3.1 Introduction

3.1.1 General Statement. This section of the document shall set forth the technical requirements for the rules of play of the game and related Player Interfaces.

3.2 Player Interface

3.2.1 General Statement. The Player Interface is defined as the interface within the Client Software in which the player interacts often referred to as the “gaming window.” The Player Interface shall meet the following:

- a) Any resizing or overlay of the Player Interface must be mapped accurately to reflect the revised display and touch/click points.
- b) The functions of all touch/click points represented on the Player Interface must be clearly indicated within the area of the touch/click point and/or within the game rules. No touch/click points or keyboard inputs shall be hidden or undocumented anywhere on the Player Interface.

3.2.2 Game Cycle. A game cycle consists of all activities and communications over the duration of a game. Where multiple games are accessible from a games lobby, players may play more than one game cycle at a time in separate gaming window instances.

- a) Game cycle start:
 - i) After the player account balance has adequate funds;
 - ii) After the player has nominated the number of credits to bet on that game; and

- iii) After the player presses a "play" button (or similar input).
- b) The following game elements are all considered to be part of a single game cycle:
 - i) Games that trigger a free game feature and any subsequent free games;
 - ii) “Second screen” bonus feature(s);
 - iii) Games with player choice (e.g., Draw Poker or Blackjack);
 - iv) Games where the rules permit wagering of additional credits (e.g., Blackjack insurance or the second part of a two-part Keno game); and
 - v) Secondary game features (e.g., Double-up/Gamble).
- c) A game cycle is considered complete when the final transfer to the player’s credit meter takes place or when all credits wagered are lost.

3.3 General Game Requirements

3.3.1 Game Information. The following requirements apply to the game information, artwork, paytables and help screens which include all written, graphical and auditory information provided to the player either directly from the game interface or from a page accessible to the player from the game interface via a hyperlink located in a conspicuous location.

- a) Game play and device usage instructions shall be stated unambiguously and shall not be misleading or unfair to the player.
- b) All statements and graphics within the game information, artwork, paytables and help screens shall be accurate and not misleading.
- c) All game rules and payable information must be available to the player directly on the Player Interface or accessible from the Player Interface via a hyperlink without the need for funds deposits or funds staked.
- d) All game rules and payable information must be sufficient to explain all of the applicable rules and how to participate in all stages of the game.
- e) Paytable information must include all possible winning outcomes, patterns, rankings and combinations and their corresponding payouts with a designated denomination/currency. All displayed pays must be theoretically possible.

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- f) There shall be sufficient information regarding any award payout adjustments such as fees, rakes, commissions, etc. taken by the house.
 - g) If the artwork contains game instructions specifying a maximum win then it shall be possible to win this amount from a single game (including features or other game options).
 - h) The artwork must contain the theoretical percentage return to player (%RTP) and it must be fully explained how this %RTP was determined (i.e. minimum, maximum, average, etc.) and thus how the patron may realize it (i.e. bet requirements,). For games of skill, the %RTP displayed must be theoretical and must be based on a strategy specifically advertised in the game rules or an optimal strategy that is derivable from the game rules. For games that offer bonus bets that require a base game bet, the minimum theoretical %RTP of the bonus bet must take into account that a base game bet must be placed.
 - i) If the artwork advertises the actual %RTP, the number of game plays associated with that calculation must be advertised along with the period with which the game plays took place.
 - j) If random/mystery prizes are offered, the maximum value obtainable from the random/mystery prize shall be indicated. If the value of the random/mystery prize depends on credits wagered or any other factors, this shall be stated.
 - k) Multiple Wins. The artwork should clearly state the rules for payments of prizes where multiple wins are possible.
 - i) A description of what patterns will be paid when a pay line may be interpreted to have more than one individual winning pattern.
 - ii) Where the game supports multiple pay lines, the artwork should display a message indicating wins on different pay lines are added, or the equivalent.
 - iii) Where the game supports scatters, the artwork should display a message indicating that scattered wins are added to pay line wins, or equivalent, if this is the rule of the game.
 - iv) The artwork should clearly communicate the treatment of coinciding scattered wins with respect to other possible scattered wins. For example, the artwork should state whether combinations of scattered symbols pay all possible prizes or only the highest prize.

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- v) The artwork should clearly communicate the treatment of coinciding game outcomes (i.e. straight flush can be a flush and a straight, three red 7's can be any three 7's).
 - l) Extra Lines. If it is possible to bet on multiple lines and it is not clearly obvious which reel positions are part of each of the possible lines, then the additional lines shall be clearly displayed on the artwork, and appropriately labeled. The additional lines shall either be shown on the displayed artwork or be available for display on a help screen or permanently displayed on all game-play screens in a location separate from the actual reels.
 - m) Multipliers. Where multiplier instructions are displayed on artwork, there shall be no confusion possible as to whether the multiplier applies.
 - n) Symbols/Objects. All Game Symbols/Objects are to be clearly displayed to the player and not be misleading in any way. Game symbols and objects should retain their shape throughout all artwork, except while animation is in progress.
 - o) Substitutes/Wilds. The artwork should clearly state which symbols/objects may act as a substitute or wild and in which winning combinations the substitute/wild may be applied.
 - p) Scatters. The artwork should clearly state which symbols/objects may act as a scatter and in which winning combinations the scatter may be applied.
 - q) Upcoming Wins. The game shall not advertise „upcoming wins,“ for example “three (3) times pay coming soon” unless the advertisement is accurate and mathematically demonstrable or if the player has directly advertised current progress to that win (i.e. they have 2 of 4 tokens collected).
 - r) Card Games. The requirements for games depicting cards being drawn from a deck are the following:
 - i) Any games which utilize multiple decks of cards, must clearly indicate the number of cards and card decks in play;
 - ii) Cards once removed from the deck shall not be returned to the deck except as provided by the rules of the game depicted; and
 - iii) The deck shall not be reshuffled except as provided by the rules of the game depicted.
 - s) Multi-Wager Games. The following requirements shall apply to multi-wager games:
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- i) Each individual wager to be played shall be clearly indicated so that the player is in no doubt as to which wagers have been made and the credits bet per wager.
- ii) Each winning prize obtained shall be displayed to the player in a way that clearly associates the prize to the appropriate wager. Where there are wins associated with multiple wagers, each winning wager may be indicated in turn.
- t) Game information, artwork, paytables and help screens should not be indecent or offensive in any way or form as determined by the regulatory body.

3.3.2 Information to Be Displayed. The following game information shall be visible or easily accessible to the player at all times during a player session:

- a) The name of the game being played;
- b) Restrictions on play or betting such as any play duration limits, maximum win values, etc;
- c) The player's current session balance;
- d) The current bet amount. This is only during the phase of a game where the player can add to or place additional bets for that phase;
- e) Current placement of all bets (i.e. Roulette numbers, Blackjack insurance, etc.);
- f) The denomination of the bet;
- g) The amount won for the last completed game (until the next game starts or betting options are modified);
- h) The player options selected (e.g., bet amount, lines played) for the last completed game (until the next game starts or a new selection is made);
- i) Initial player selection options are to be described (e.g. selection of a runner in a horse race should identify name, number and expected payout). Player selection options once the game has commenced should be clearly shown on the screen (cards held, hit, split, keno numbers etc.); and
- j) The winning amount for each separate wager and total winning amount are to be displayed on the screen.

3.3.3 Forced Game Play.

- a) The player must not be forced to play a game just by selecting that game.
- b) It must not be possible to start a new game in the same Player Interface instance before all relevant meters have been updated on the Interactive Gaming System and all other relevant connections and player session balance, or if applicable, player's total funds balance, has been updated.
- c) If an auto play mode is incorporated, it shall be possible to turn this mode off at any time during game play.

3.3.4 Game Fairness. A game shall not be designed to give the player a false expectation of better odds by misrepresenting any occurrence or event;

- a) Games that are designed to give the player the perception that they have control over the game due to player skill, when they actually do not (i.e.: the game outcome is fully random) must fully address this behavior in the game help screens.
- b) The final outcome of each game must be displayed for a sufficient length of time that permits a player to verify the outcome of the game.

3.3.5 Return to Player. It is expected that regulatory bodies will establish policy regarding theoretical return percentage limits. In addition it is expected that requirements will be established which detail how those percentages must be calculated. An evaluation in accordance with those requirements and policies will be independently conducted by the testing laboratory.

3.3.6 Odds. It is expected that regulatory bodies will establish policy regarding award odds. An evaluation in accordance with those policies will be independently conducted by the testing laboratory.

3.3.7 Game Outcome. All critical functions including the generation of the result of any game (and the return to the player) must be generated by the Gaming Platform and be independent of the Player Device.

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- a) Game outcome must not be affected by the effective bandwidth, link utilization, bit error rate or other characteristic of the communications channel between the Gaming Platform and the Player Device.
 - b) Determination of events of chance that result in a monetary award must not be influenced, affected, or controlled by anything other than numerical values derived in an approved manner from the certified Random Number Generator (RNG) where applicable and in conjunction with the rules of the game;
 - c) Each possible permutation or combination of game elements that produces winning or losing game outcomes shall be available for random selection at the initiation of each play, unless otherwise denoted by the game.
 - d) As game symbols are selected / game outcomes are determined, they must be immediately used as directed by the rules of the game (i.e.: they are not to be discarded due to adaptive behavior by the game).
 - e) Where the game requires a sequence or mapping of symbols or outcomes to be set up in advance (e.g. the position of hidden objects within a maze), the symbols or outcomes should not be re-sequenced or remapped, except as provided for in the rules of the game.
 - f) After selection of the game outcome, the game shall not make a variable secondary decision, which affects the result shown to the player. For instance, the random number generator chooses an outcome that the game will be a loser. The game shall not substitute a particular type of loser to show to the player. This would eliminate the possibility of simulating a „Near Miss“ scenario where the odds of the top award symbol landing on the payline are limited but frequently appear above or below the payline.
 - g) Except as provided by the rules of the game, events of chance within games should be independent and not correlated with any other events within the game or events within previous games.
 - h) For game types (such as spinning reel games), unless otherwise disclosed to the player, the mathematical probability of a symbol appearing in a position for any game outcome shall be constant.

3.3.8 Simulation of Physical Devices. Where a game is represented or implied to include a simulation of a real-life physical device (e.g. the spinning of wheels, the rolling of dice, the

tossing of coins, the dealing of cards, etc.), the behavior of the simulation must follow the expected behavior of the real-life physical device unless otherwise denoted on the game rules. That is:

- a) For games that intend real-life physical simulation, the visual representation of the simulation must correspond to the features of the real-life physical device.
- b) The probability of any event occurring in the simulation that affects the outcome of the game must be equivalent to the real-life physical device. For example, the odds of getting any particular number in Roulette where there is a single zero (0) and a double zero (00) on the wheel, shall be 1 in 38; the odds of drawing a specific card or cards in Poker shall be the same as in the live game.
- c) Where the game simulates multiple real-life physical devices that would normally be expected to be independent of one another, each simulation must be independent of the other simulations.
- d) Where the game simulates real-life physical devices that have no memory of previous events, the behavior of the simulations must be independent of (i.e.: not correlated with) their previous behavior, so as to be non-adaptive and non-predictable in practice.

3.3.9 Games of Mental Skill

- a) The player return for an optimal strategy, based upon the information available to the player in the game rules, shall not be less than the %RTP calculated and displayed to the player.
- b) Any strategy advice or automatic holds shall be fair, not misleading, not represent a poor choice, and ensure the minimum %RTP is met when followed.
- c) The player shall be able to override the automatic hold or strategy.

3.3.10 Games of Physical Skill

- a) Game results can be determined by physical skill if allowed by the regulatory body.
- b) For games where the %RTP is dependent on a player's physical skill, the game information must clearly inform that player that there is physical skill based advantage and identify the applicable game feature.
- c) Information explaining the physical skill based functionality must be prominently displayed and include that there is a physical skill based advantage.

3.3.11 Games with Time Dependencies

- a) For games where the result is affected by the time to respond to a game event, the Gaming Platform must only offer the game after informing the player of any handicap associated with the communication channel. Games that are inherently unfair will not be approved.
- b) The rules must clearly describe the procedure in case of player disconnection from the network server during a game (e.g. internet connection outage, PC crash, etc.) of this nature.

3.4 Game/Bonus Features

3.4.1 Game/Bonus Features. This section refers to games where one or more features/bonus prizes may be paid to the player. Generally, bonus prizes are awarded as a result of some second (or subsequent) screen animation and unless otherwise advertised to the player, the bonus game should be part of the overall payable theoretical RTP. For games that support bonus features, the artwork should address the following topics:

- a) The game shall display clearly to the player which game rules apply to the current game state. These rules shall be made available to the player prior to the start of the bonus game versus during the bonus game.

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- b) The game shall clearly display to the player possible win amount ranges, multiplier ranges, etc. that can be obtained from bonus play.
 - c) For bonus features which do not occur randomly during a single game play, sufficient information shall be displayed to the player to indicate the current status towards triggering the next bonus feature.
 - d) If the game requires obtaining several events/symbols toward a feature, the number of events/symbols needed to trigger the bonus shall be indicated along with the number of events/symbols collected at any point.
 - e) If applicable, the game shall display rules for when further events/symbols needed to trigger the bonus are not accumulated during the feature sequence for events that normally would qualify to earn events/symbols needed to trigger the bonus (such as when a max token limit is reached).
 - f) If the accumulation of tokens may lead to free games, the number of possible lines and credits per line that are to be wagered during the free games.
 - g) If the bonus sequence consists of more than one feature game, the number of games in the bonus sequence that are remaining shall be displayed.
 - h) The game shall not adjust the likelihood of a bonus occurring, based on the history of prizes obtained in previous games (i.e. games shall not adapt their theoretical return to player based on past payouts).
 - i) If a game's bonus is triggered after accruing a certain number of events/symbols or combination of events/symbols of a different kind over multiple games, the probability of obtaining like events/symbols shall not deteriorate as the game progresses (e.g., for identical events/symbols it is not permitted that the last few events/symbols needed are more difficult to obtain than the previous events/symbols of that kind).
 - j) If a game allows the player to hold one or more reels/cards/symbols for one or more respins/draws, held and non-held reels/cards/symbols must be clearly marked on the screen, and the method for changing holds clearly displayed to the player.
 - k) If a bonus feature is provided in which a player has to wager additional credits, the player shall be given a choice whether to enter the bonus feature or not. A player who elects not to enter the bonus feature shall be positioned at the conclusion of the base game which

led to the bonus feature. A player who elects to enter the bonus feature but has insufficient credit balance to continue may:

- i) Utilize temporary winnings from the base game or previous stages to complete the feature if allowed by the rules of the game;
- ii) Authorize more funds be transferred to their player account; and
- iii) Perform a combination of points i and ii above if allowed by the rules of the game.

3.4.2 GambleFeature. The following requirements apply to games which offer some form of gamble feature (these games may also use terms such as Double-Up, Triple-Up or Take-or-Risk.). The player must have a choice as to whether or not they want to participate. Unless otherwise advertised to the player, the gamble feature should have a theoretical RTP of 100% and should not affect the overall payable theoretical RTP. For such games the artwork must address the following:

- a) The prize limit (if applicable) and the maximum number of gambles available;
- b) When the gamble feature is discontinued automatically before reaching the maximum number of gambles available, the reason must be clearly stated;
- c) Any unusual game conditions during which the gamble feature is not available must be specified;
- d) If a gamble feature offers a choice of multipliers, it must be clear to the player what the range of choices and payouts is; and
- e) Once the player has selected a multiplier, it must be clearly stated on the screen which multiplier has been selected.

3.5 Peer to Peer Requirements

3.5.1 Peer to Peer (P2P). P2P game rooms are those environments which offer players the opportunity to gamble with and against each other. In these environments, the operator usually does not engage in the gambling event as a party (e.g. house banked gaming), but usually

provides the gambling service or environment for use by its players, and takes a rake, fee, or percentage for the service. Systems that offer P2P games shall do the following, unless otherwise specified, in addition to the above applicable game rules:

- a) Provide a mechanism to reasonably detect and prevent player collusion, artificial player software, unfair advantages, and ability to influence the outcome of a game or tournament;
- b) Provide warnings about how bots can affect play, so that players can make an informed decision whether to participate and provide steps to report suspected player-bot usage;
- c) Prevent authorized players from occupying more than one seat at any individual table;
- d) Provide authorized players with the option to join a table where all authorized players have been selected at random;
- e) Inform authorized players of the length of time each player has been seated at a particular table;
- f) Clearly indicate to all authorized players at the table whether any players are playing with house money (shills) or are proposition players; and
- g) Must not employ artificial player software to act as an authorized player, except in free play or training modes.

3.5.2 Computerized Players. The following requirements apply to use of computerized players in free play or training modes:

- a) The software may employ the use of Artificial Intelligence (AI) in order to facilitate game play for demo, free games, or training modes.
- b) The use of AI software must be clearly explained in the help menus.
- c) All computerized players must be clearly marked at the tables so that players are aware of which players are not human.

3.5.3 Contests/Tournaments. An organized event that permits a player to either purchase or be awarded the opportunity to engage in competitive play against other players may be permitted providing the following rules are met.

- a) While enabled for tournament play, no game may accept real money from any source, nor pay out real money in anyway, but shall utilize tournament specific credits, points or chips which shall have no cash value.
- b) Interactive gaming contest/tournament rules are available to a registered player on the website where the interactive gaming contest/tournament is being conducted. The rules must include at a minimum:
 - i) All conditions registered players must meet to qualify for entry into, and advancement through, the contest/tournament.
 - ii) Any conditions concerning late arrivals or complete tournament no-shows and how auto-blind posting and/or initial entry purchase is handled.
 - iii) Specific information pertaining to any single contest/tournament, including the amount of money placed in the prize pool.
 - iv) The distribution of funds based on specific outcomes.
 - v) The name of the organization (or persons) that conducted the contest/tournament on behalf of, or in conjunction with, the operator if applicable.
- c) The results of each contest/tournament, shall be made available on the interactive gaming website for the participants to review. Subsequent to being posted on the website, the results of each contest/tournament are available upon request. The recording includes the following:
 - i) Name of the event;
 - ii) Date(s) of event;
 - iii) Total number of entries;
 - iv) Amount of entry fees;
 - v) Total prize pool; and
 - vi) Amount paid for each winning category.

Note: For free contests/tournaments (i.e., registered player does not pay an entry fee), the information required by the above must be recorded except for the number of entries, amount of entry fees and total prize pool.

3.6 Game Recall

3.6.1 Player Facing History. A „replay last game“ facility must be provided, either as a re-enactment or by description. The replay must clearly indicate that it is a replay of the entire previous game cycle, and must provide the following information (at a minimum):

- a) The date and time the game started and/or ended;
- b) The display associated with the final outcome of the game, either graphically or via a clear text message;
- c) Total player cash / credits at start and/or end of play;
- d) Total amount bet ;
- e) Total cash / credits won for the prize (including Progressive Jackpots);
- f) The results of any player choices involved in the game outcome;
- g) Results of any intermediate game phases, such as gambles or feature games; and
- h) Amount of any promotional awards received (if applicable).

3.6.2 Back-end History. For each individual game played, the following information, in addition to the above required elements within section 3.6.1, is to be recorded, maintained and easily demonstrable by the Interactive Gaming System:

- a) Unique player ID;
- b) Contributions to Progressive Jackpot pools (if applicable);
- c) Game status (in progress, complete, etc);
- d) The table number (if applicable) at which the game was played;
- e) The payable used; and
- f) Game identifier and version.

CHAPTER 4

4.0 *RANDOM NUMBER GENERATOR (RNG) REQUIREMENTS*

4.1 Introduction

4.1.1 General Statement. The random number generator must be cryptographically strong at the time of submission. Where more than one instance of a random number generator is used in an Interactive Gaming System, each instance must be separately evaluated and certified. Where each instance is identical, but involves a different implementation within game(s) / application(s), each implementation must also be separately evaluated and certified. Any outcomes from the random number generator used for game symbol selection / game outcome determination must be shown, via data analysis and a source code read, to:

- a) Be statistically independent;
- b) Be fairly distributed (within statistically expected bounds) over their range;
- c) Pass various recognized statistical tests; and
- d) Be cryptographically strong.

4.1.2 Applied Tests. The test laboratory may employ the use of various recognized tests to determine whether or not the random values produced by the random number generator pass the desired confidence level of 99%. These tests may include, but are not limited to:

- a) Chi-square test;
- b) Equi-distribution (frequency) test;
- c) Gap test;
- d) Overlaps test;
- e) Poker test;
- f) Coupon collector's test;

- g) Permutation test;
- h) Kolmogorov-Smirnov test;
- i) Adjacency criterion tests;
- j) Order statistic test;
- k) Runs tests (patterns of occurrences should not be recurrent);
- l) Interplay correlation test;
- m) Serial correlation test potency and degree of serial correlation (outcomes should be independent of the previous game);
- n) Tests on subsequences; and
- o) Poisson distribution.

NOTE: *The independent test lab will choose the appropriate tests on a case by case basis depending on the RNG under review.*

4.2 Scaling

4.2.1 General Statement. The scaling method shall not compromise the cryptographic strength of the random number generator. Additionally, the scaling method shall preserve the distribution of the scaled values. For example, if a 32-bit random number generator with a range of the set of integers in the closed interval $[0, 2^{32}-1]$ were to be scaled to the range of set the of integers in the closed interval $[1,6]$ so that the scaled values can be used to simulate the roll of a standard six-sided die, then each integer in the scaled range should theoretically appear with equal frequency. In the example given, if the theoretical frequency for each value is not equal, then the scaling method is considered to have a bias. Thus, a compliant scaling method shall have bias equal to zero.

4.3 Hardware-Based RNG

4.3.1 General Statement. Owing to their physical nature, the performance of hardware-based RNGs can deteriorate over time. The failure of a hardware-based RNG could have serious consequences for the game(s) / application(s), as games may become predictable or exhibit non-fair distribution. Accordingly, if a hardware-based RNG is used, there must be dynamic / active, real-time monitoring of the output with a sample size large enough to allow for reasonably high statistically powerful testing, such that game play is disabled when an output testing failure is detected.

4.4 Software-Based RNG

4.4.1 General Statement. The following requirements apply only to software-based RNGs.

4.4.2 Period. The period of the RNG, in conjunction with the methods of implementing the RNG outcomes, must be sufficiently large to ensure that all game independent outcome combinations / permutations are possible for the given game(s) / application(s).

4.4.3 Seeding/Re-Seeding. The methods of seeding / re-seeding must ensure that all seed values are determined in a manner that does not compromise the cryptographic security of the random number generator.

4.4.4 Background Cycling/Activity. In order to ensure that RNG outcomes cannot be predicted, adequate background cycling / activity must be implemented in between games. Wherever a game outcome is made up of multiple mapped RNG values, background cycling / activity must be implemented during the game (i.e.: in between the selection of each mapped RNG value) in order to ensure that the game outcome is not comprised of sequential mapped RNG outcomes. The rate of background cycling / activity must be sufficiently random in and of itself to prevent prediction.

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CHAPTER 5

5.0 INFORMATION SECURITY SYSTEM (ISS) REQUIREMENTS

5.1 General Statement

5.1.1 General Statement. To ensure players are not exposed to unnecessary security risks by choosing to participate in interactive gaming. These security requirements will apply to the following critical components of the Interactive Gaming System:

- a) Interactive Gaming System components which record, store, process, share, transmit or retrieve sensitive player information, e.g. credit/debit card details, authentication information, player account balances;
- b) Interactive Gaming System components which generate, transmit, or process random numbers used to determine the outcome of games or virtual events;
- c) Interactive Gaming System components which store results or the current state of a player's wager;
- d) Points of entry to and exit from the above systems (other systems which are able to communicate directly with core critical systems); and
- e) Communication networks which transmit sensitive player information.

5.2 Information Security Policy

5.2.1 General Statement. An information security policy document shall be in effect to describe the operator's approach to managing information security and its implementation. The information security policy shall:

- a) Have a provision requiring review when changes occur to the Interactive Gaming System

- or the operator's processes which alter the risk profile of the Interactive Gaming System;
- b) Be approved by management;
- c) Be communicated to all employees and relevant external parties;
- d) Undergo review at planned intervals; and
- e) Delineate the responsibilities of the operator's staff and the staff of any third parties for the operation, service and maintenance of the Interactive Gaming System and/or its components.

5.3 Administrative Controls

5.3.1 Human Resource Security. The security roles and responsibilities of employees should be defined and documented in accordance with the information security policy.

- a) All employees of the organization shall receive appropriate security awareness training and regular updates in organizational policies and procedures as needed for their job function.
- b) An access control policy shall be established, documented, and reviewed based on business and security requirements for physical and logical access to the Interactive Gaming System and / or its components.
- c) Employees shall only be provided with access to the services or facilities that they have been specifically authorized to use.
- d) Management shall review users' access rights at regular intervals using a formal process.
- e) The access rights of all employees to the Interactive Gaming System and / or its components shall be removed upon termination of their employment, contract or agreement, or adjusted upon change.

5.3.2 Third Party Services. The security roles and responsibilities of third party service providers should be defined and documented in accordance with the information security policy.

- a) Agreements with third party service providers involving accessing, processing,

communicating or managing the Interactive Gaming System and / or its components, or adding products or services to the Interactive Gaming System and / or its components shall cover all relevant security requirements.

- b) The services, reports and records provided by the third party shall be monitored and reviewed by management at least once a year.
- c) Changes to the provision of services, including maintaining and improving existing information security policies, procedures and controls, shall be managed, taking account of the criticality of business systems and processes involved and re-assessment of risks.
- d) The access rights of third party service providers to the Interactive Gaming System and / or its components shall be removed upon termination of their contract or agreement, or adjusted upon change.

5.3.3 Asset Management. All assets housing, processing or communicating controlled information, including those comprising the operating environment of the Interactive Gaming System and/or its components, should be accounted for and have a nominated owner in accordance with the information security policy.

- a) An inventory shall be drawn up and maintained of all assets holding controlled items.
- b) Assets shall be classified in terms of their criticality, sensitivity, and value.
- c) Each asset shall have a designated “owner” responsible for ensuring that information and assets are appropriately classified, and defining and periodically reviewing access restrictions and classifications.
- d) A policy shall be included on the acceptable use of assets associated with the Interactive Gaming System and its operating environment.
- e) A procedure shall exist for removing assets from service and adding new assets.
- f) De-commissioned equipment shall have storage media removed and disposed of securely using documented procedures.
- g) Removable storage media should be disposed of securely when no longer required, using documented procedures.

5.3.4 Encryption Key Management. The management of encryption keys shall follow defined processes in accordance with the information security policy.

- a) There must be a documented process for obtaining or generating encryption keys.
- b) If encryption keys expire there must be a documented process for managing the expiry of encryption keys.
- c) There must be a documented process to revoke encryption keys.
- d) There must be a documented process for securely changing the current encryption keyset.
- e) There must be a documented process in place for the storage of any encryption keys.
- f) There must be a method to recover data encrypted with a revoked or expired encryption key for a defined period of time after the encryption key becomes invalid.

5.3.5 Software Development Life Cycle. The acquisition and development of new software shall follow defined processes in accordance with the information security policy.

- a) The production environment shall be logically and physically separated from the development and test environments.
- b) Development staff shall be precluded from having access to promote code changes into the production environment.
- c) There must be a documented method to verify that test software is not deployed to the production environment.
- d) To prevent leakage of personally identifiable information, there must be a documented method to ensure that raw production data is not used in testing.
- e) All documentation relating to software and application development should be available and retained for the duration of its lifecycle.

5.3.6 Change Control. The implementation of changes to the hardware and software of the Interactive Gaming System shall be managed by the use of formal change control procedures in accordance with the information security policy.

- a) Program change control procedures must be adequate to ensure that only properly

approved and tested versions of programs are implemented on the production Gaming Platform. Production change controls must include:

- i) An appropriate software version control or mechanism for all software components;
 - ii) Details of the reason for the change;
 - iii) Details of the person making the change;
 - iv) Complete backups of previous versions of software;
 - v) A policy addressing emergency change procedures;
 - vi) Procedures for testing and migration of changes;
 - vii) Segregation of duties between the developers, quality assurance team, the migration team and users; and
 - viii) Procedures to ensure that technical and user documentation is updated as a result of a change.
- b) All patches should be tested whenever possible on a Gaming Platform configured identically to the target Gaming Platform. Under circumstances where patch testing cannot be thoroughly conducted in time to meet the timelines for the severity level of the alert, then patch testing should be risk managed, either by isolating or removing the untested Gaming Platform from the network or applying the patch and testing after the fact.

5.3.7 Incident Management. A process for reporting information security incidents and the management response shall be documented in accordance with the information security policy.

- a) The incident management process must include a definition of what constitutes an information security incident.
- b) The incident management process must document how information security incidents are reported through appropriate management channels.
- c) The incident management process must address management responsibilities and procedures to ensure a rapid, effective and orderly response to information security incidents, including:
 - i) Procedures to handle different types of information security incident;

- ii) Procedures for the analysis and identification of the cause of the incident;
- iii) Communication with those affected by the incident;
- iv) Reporting of the incident to the appropriate authority;
- v) Forensic evidence collection; and
- vi) Controlled recovery from information security incidents.

5.3.8 Business Continuity and Disaster Recovery. A plan shall be in place to recover gaming operations in the event that the production gaming system is rendered inoperable.

- a) The disaster recovery plan must address the method of storing player account information and gaming data to minimize loss in the event the production gaming system is rendered inoperable. If asynchronous replication is used, the method for recovering data should be described or the potential loss of data should be documented.
- b) The disaster recovery plan must delineate the circumstances under which it will be invoked.
- c) The disaster recovery plan must address the establishment of a recovery site physically separated from the production site.
- d) The disaster recovery plan must contain recovery guides detailing the technical steps required to re-establish gaming functionality at the recovery site.
- e) The business continuity plan must address the processes required to resume administrative operations of gaming activities after the activation of the recovered platform for a range of scenarios appropriate for the operational context of the Interactive Gaming System.

5.4 Technical Controls

5.4.1 Self Monitoring

- a) The Interactive Gaming System must implement the self-monitoring of critical components (e.g. central hosts, network devices, firewalls, links to third parties, etc.).

- b) A critical component which fails self-monitoring tests must be taken out of service immediately. The component must not be returned to service until there is reasonable evidence that the fault has been rectified.

5.4.2 Domain Name Service (DNS) Requirements

- a) The primary server used to resolve DNS queries used in association with the Interactive Gaming System must be physically located in a secure data center;
- b) Logical and physical access to the primary DNS server must be restricted to authorized personnel;
- c) There must be at least one secondary server that is able to resolve DNS queries. The secondary servers must be located at a separate premises to the primary server;
- d) Zone transfers between the primary server and the secondary servers must occur at least every 24 hours; and
- e) Zone transfers to arbitrary hosts should be disallowed.

5.4.3 Monitoring

- a) The clocks of all components of the Interactive Gaming System shall be synchronized with an agreed accurate time source to ensure consistent logging. Time skew shall be checked periodically.
- b) Audit logs recording user activities, exceptions, and information security events shall be produced and kept for an appropriate period to assist in future investigations and access control monitoring.
- c) System Administrator and System Operator activities shall be logged.
- d) Logging facilities and log information shall be protected against tampering and unauthorized access.
- e) Any modification, attempted modification, read access or other change or access to any Gaming Platform record, audit or log must be detectable by the Interactive Gaming System. It must be possible to see who has viewed or altered a log and when.
- f) Logs generated by monitoring activities shall be reviewed periodically using a

documented process. A record of each review must be maintained.

- g) Interactive Gaming System faults shall be logged, analyzed, and appropriate action taken.
- h) Network appliances with limited onboard storage shall disable all communication if the audit log becomes full or offload logs to a dedicated log server.

5.4.4 Cryptographic Controls. A policy on the use of cryptographic controls for protection of information should be developed and implemented.

- a) Any sensitive or personally identifiable information should be encrypted if it traverses a network with a lower level of trust.
- b) Data that is not required to be hidden but must be authenticated must use some form of message authentication technique.
- c) Authentication must use a security certificate from an approved organization.
- d) The grade of encryption used should be appropriate to the sensitivity of the data.
- e) The use of encryption algorithms must be reviewed periodically by qualified Management staff to verify that the current encryption algorithms are secure.
- f) Changes to encryption algorithms to correct weaknesses must be implemented as soon as practical. If no such changes are available, the algorithm must be replaced.
- g) Encryption keys must not be stored without being encrypted themselves through a different encryption method and/or by using a different encryption key.

5.4.5 Access Controls. The allocation of access privileges shall be restricted and controlled based on business requirements and the principle of least privilege.

- a) A formal user registration and de-registration procedure must be in place for granting and revoking access to all information systems and services.
- b) All users shall have a unique identifier (user ID) for their personal use only, and a suitable authentication technique shall be chosen to substantiate the claimed identity of a user.
- c) The use of generic accounts shall be limited, and where used the reasons for their use shall be formally documented.

- d) Password provision must be controlled through a formal management process.
- e) Passwords must meet business requirements for length, complexity and lifespan.
- f) Access to Interactive Gaming System applications and operating systems shall be controlled by a secure log-on procedure.
- g) Appropriate authentication methods, in addition to passwords, shall be used to control access by remote users.
- h) Any physical access to areas housing Interactive Gaming System components, and any logical access to the Interactive Gaming System applications or operating system must be recorded.
- i) The use of automated equipment identification to authenticate connections from specific locations and equipment shall be formally documented and must be included in the regular review of access rights by Management.
- j) Restrictions on connection times shall be used to provide additional security for high-risk applications.
- k) The use of utility programs that might be capable of overriding system and application controls shall be restricted and tightly controlled.
- l) A formal policy shall be in place, and appropriate security measures shall be adopted to protect against the risks of using mobile computing and communication facilities.
- m) Telecommuting shall not be permitted except under circumstances where the security of the endpoint can be guaranteed.

5.4.6 Network Security Management. Networks should be logically separated such that there should be no network traffic on a network link which cannot be serviced by hosts on that link.

- a) The failure of any single item should not result in a denial of service.
- b) An Intrusion Detection System / Intrusion Prevention System must be installed on the network which can:
 - i) Listen to both internal and external communications
 - ii) Detect or prevent Distributed Denial of Service (DDOS) attacks
 - iii) Detect or prevent shellcode from traversing the network
 - iv) Detect or prevent Address Resolution Protocol (ARP) spoofing

- v) Detect other Man-in-the-Middle indicators and sever communications immediately if detected
- c) Each server instance in cloud and virtualized environments should perform only one function. Alternative equivalently secure mechanisms will be considered as technology advances.
- d) In virtualized environments, redundant server instances cannot run under the same hypervisor.
- e) Stateless protocols (e.g. UDP) should not be used for sensitive data without stateful transport.
***NOTE:** Although HTTP is technically stateless, if it runs on TCP which is stateful, this is allowed.*
- f) All changes to network infrastructure (e.g. network device configuration) must be logged.
- g) Virus scanners and/or detection programs should be installed on all pertinent information systems. These programs should be updated regularly to scan for new strains of viruses.
- h) Network security should be tested by a qualified and experienced individual on a regular basis.
- i) Testing should include testing of the external (public) interfaces and the internal network.
- j) Testing of each security domain on the internal network should be undertaken separately.

5.4.7 Firewalls.

- a) A firewall should be located at the boundary of any two dissimilar security domains.
- b) All connections to Interactive Gaming System hosts in the secure data center must pass through at least one application-level firewall. This includes connections to and from any non- Interactive Gaming System hosts used by the operator.
- c) The firewall must be a separate hardware device with the following characteristics:
 - i) Only firewall-related applications may reside on the firewall; and
 - ii) Only a limited number of accounts may be present on the firewall (e.g. system administrators only).
- d) The firewall must reject all connections except those that have been specifically approved.

- e) The firewall must reject all connections from destinations which cannot reside on the network from which the message originated (e.g. RFC1918 addresses on the public side of an internet firewall.)
- f) The firewall must maintain an audit log of all changes to parameters which control the connections permitted through the firewall.
- g) The firewall must maintain an audit log of all successful and unsuccessful connection attempts. Logs should be kept for 90 days and a sample reviewed monthly for unexpected traffic.
- h) The firewall must disable all communication if the audit log becomes full.

5.4.8 Remote Access. Remote access is defined as any access from outside the system or system network including any access from other networks within the same establishment. Remote access shall only be allowed if authorized by the regulatory body and shall have the option to be disabled. Where allowed, remote access shall accept only the remote connections permissible by the firewall application and Interactive Gaming System settings. Remote access security will be reviewed on a case-by-case basis, in conjunction with the implementation of the current technology and approval from the local regulatory body. In addition, there shall be:

- a) No unauthorized remote user administration functionality (adding users, changing permissions, etc.);
- b) No unauthorized access to any database other than information retrieval using existing functions;
- c) No unauthorized access to the operating system; and
- d) The Interactive Gaming System must maintain an activity log which updates automatically depicting all remote access information.

5.4.9 Backup. Backup copies of information and software shall be taken and tested regularly in accordance with the backup policy.

5.5 Physical and Environmental Controls

5.5.1 Secure Areas. Gaming Platforms and the associated communications systems must be located in facilities which provide physical protection against damage from fire, flood, hurricane, earthquake and other forms of natural or man-made disaster.

- a) Security perimeters (barriers such as walls, card controlled entry gates or manned reception desks) must be used to protect areas which contain Interactive Gaming System components.
- b) Secure areas must be protected by appropriate entry controls to ensure that access is restricted to only authorized personnel.
- c) All access must be recorded in a secure log.
- d) Secure areas must include an intrusion detection system, and attempts at unauthorized access must be logged.

5.5.2 Gaming Equipment Security

- a) Interactive Gaming System servers shall be located in server rooms which restrict unauthorized access.
- b) Interactive Gaming System servers shall be housed in racks located within a secure area.

5.5.3 Supporting Utilities

- a) All Interactive Gaming System components shall be provided with adequate primary power.
- b) All Interactive Gaming System components shall have uninterruptible power supply (UPS) equipment to support operations in the event of a power failure.
- c) There shall be adequate cooling for the equipment housed in the server room.
- c) Power and telecommunications cabling carrying data or supporting information services shall be protected from interception or damage.
- d) There shall be adequate fire protection for the Interactive Gaming System components housed in the server room.

CHAPTER 6

6.0 *PROGRESSIVE JACKPOT REQUIREMENTS*

6.1 Introduction

6.1.1 General Statement. A Progressive Jackpot (the terms are used interchangeably) is an increasing prize based on a function of credits that are bet or won. This includes prizes that are awarded based on criteria other than obtaining winning outcomes in the game, such as „Mystery Jackpots.“ However, this does not include non-configurable, increasing prizes that result from bonus features, which are part of the game payable (Theoretical %RTP).

6.2 Progressive Jackpot Design and Operation

6.2.1 Progressive Jackpot Fairness. In order to have a progressive jackpot that is fair to players the following principles must apply:

- a) All players that play progressive jackpot games must be made aware of actions which would make them eligible to win the progressive jackpot.
- b) Where progressive jackpot contributions are part of the %RTP calculation, the contributions must not be assimilated into revenue. If a cap is established on any progressive jackpot all additional contributions once that cap is reached are to be credited to a diversion pool. The minimum return to player must be achieved regardless of the number of betting units calculated.
- c) The rules of the game must incorporate how the progressive jackpot is funded and determined.
- d) If a minimum bet amount exists in order for a player to win a progressive jackpot, then the base game (excluding the progressive jackpot) must meet the minimum player return.

- e) The current progressive jackpot amount should be displayed on all Player Devices participating in the progressive jackpot. This display should be updated on all participating Player Devices at least every 30 seconds.

***NOTE:** It is accepted that, depending upon the medium, communication delays are variable and beyond the knowledge or control of the operator. Server-to-client delays will vary from player to player and from message to message.*

- f) The rules of the game must inform the players of the imperfections of the communications medium for the game, and how this affects them.
- g) The rules of the game must inform the players of any maximum awards and/or time limits which may exist for each progressive jackpot.
- h) For progressive jackpots offering multiple levels of awards, the player must always be paid the higher amount, if a particular combination is won that should trigger the higher paying award. This may occur when a winning combination may be evaluated as more than one of the available payable combinations (i.e., a Flush is a form of a Straight Flush and a Straight Flush is a form of a Royal Flush). Therefore, there may be situations where the progressive jackpot levels shall be swapped to ensure the player is being awarded the highest possible value based on all combinations the outcome may be defined as.
- i) If multiple progressive jackpots occur at approximately the same time and there is no definitive way of knowing which jackpot occurred first, the regulatory body and/or operator shall adopt procedures for resolution. The rules of the game must include information which addresses the resolution of this possibility.

6.2.2 Slave Progressive Jackpot Controllers. Where a “Master Controller” employs “Slave Controllers” to control a Progressive Jackpot the following requirements apply:

- a) All Slave Controllers must be time synchronized with the Master Controller.
- b) The Master Controller must be time synchronized with the Interactive Gaming System.
- c) Progressive Jackpot win events must be time-stamped and the Progressive Jackpot Controller must ensure that hits registered within a minimum time increment are considered as simultaneous wins. Prize payout for simultaneous wins is to be made in accordance with the rules of the game.

- d) The minimum time window (Progressive Jackpot Reset Period) is not less than the longest time taken to:
 - i) Register that a progressive jackpot has been won,
 - ii) Announce the win on the displays of all participating Player Devices with an active session, and
 - iii) Reset the progressive jackpot meters.
- e) If supporting a progressive jackpot that is determined by increments of individual player's wagers, the processing of receipt of increments from all Player Devices, whether attached to Master or Slave controllers, must be fair.

6.2.3 Progressive Jackpot Win Notification. The following requirements must be met when there is a jackpot win:

- a) A winning player must be notified of a progressive jackpot win by the end of the game in play;
- b) The notification of the progressive jackpot being won must be provided to all Player Devices participating in the progressive jackpot at the time of the jackpot win; and
- c) The progressive jackpot amount must be displayed on all Player Devices participating in the jackpot at the time of the progressive jackpot win.

6.2.4 Progressive Jackpot Parameter Changes. The following requirements apply to configuring progressive jackpots:

- a) Once a progressive jackpot has commenced, parameter changes must not take effect immediately - rather they should be saved to apply after the current progressive jackpot is won. These are „pending“ parameters.
- b) A mystery progressive jackpot which uses a hidden progressive jackpot amount to determine the progressive jackpot win must not change the hidden progressive jackpot amount when the parameters are changed if the progressive jackpot is active (i.e. had any progressive jackpot contributions added to it).

- c) The Interactive Gaming System must provide a means of displaying current and pending progressive jackpot parameters.
- d) The Interactive Gaming System must record the values of all progressive jackpot meters, as well as all of the “Current” and “Pending” progressive jackpot parameters.

6.2.5 Partial Progressive Jackpot Redirection. Diversion Pool schemes, where a portion of the progressive jackpot contributions are redirected to another pool so that when the progressive jackpot is won, the diversion pool is added to the seed of the next progressive jackpot, are acceptable.

6.2.6 Progressive Jackpot Shutdown. In instances where a progressive jackpot should be shut down (e.g. malfunction, loss of connectivity, unexpected termination), the following requirements shall apply:

- a) Clear indication must be given to players that the progressive jackpot is not operating (e.g. by displaying “Jackpot Closed” on Player Devices).
- b) It must not be possible for the progressive jackpot to be won while in the shutdown state.
- c) If the progressive jackpot operates in conjunction with another game (e.g. base game) and the player return requirement is only met when progressive jackpot contributions are included the other game may only be offered when the progressive jackpot is available.
- d) Activation of the progressive jackpot from the shutdown state must return the progressive jackpot with the identical parameters including progressive jackpot value, and hidden win amount for mystery progressive jackpot, as before the shutdown.

6.2.7 Progressive/Jackpot Recovery. To enable recovery of the current value of the progressive jackpot amount(s) in the case of an Interactive Gaming System or progressive jackpot controller failure, either:

- a) The current value of the progressive jackpot amount must be stored in at least two physically separate devices, or

- b) The current value of the progressive jackpot amount must be able to be accurately calculated from other available metering information, which is not stored in the same Interactive Gaming System as the progressive/jackpot amount.

In either case, all eligible progressive jackpot winners must be paid as soon as the value is recovered.

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Appendix A

A.0 EVENT WAGERING

A.1 Introduction

A.1.1 General Statement. The following requirements apply only to wagering on sports, contests, and matches where the player places wagers on events or markets which are to occur in the future and whose outcomes are determined by occurrences independent of the system. The requirements in this section are general in nature and do not refer to specific types of sports, contests, matches, or wagers. The intent is to cover sports, contests, matches, and wager types currently known and permitted by law and to provide the framework for future types. All applicable requirements from all sections within GLI-19 apply in addition to the below requirements.

A.2 Wagering Requirements

A.2.1 Wagering Information. The following sections describe the information which must be made available to the player regarding the events / markets (and associated wager types) available on the Interactive Gaming System, and the methods for placing a wager on the Interactive Gaming System:

- a) A list, or equivalent representation, of all available wager types must be made available to the player.
- b) The player must be able to view descriptions of those wager types prior to placing a wager (e.g.: via a hotlink to a help / rules screen).
- c) The description of each wager type must include all available betting options for that wager type.

- d) A list, or equivalent representation, of all active events / markets must be made available to the player.

A.2.2 Placing Wagers.

- a) No wager amount may be greater than the current balance of the player's account.
- b) The method of placing a wager is to be straightforward, with all selections (including their order, if relevant) being clearly obvious to a typical player.
- c) When the wager involves combining events / markets (e.g.: Doubles / Trebles bets), such groupings must be clearly obvious to the player, given the combination of information on the betting page and help / rules screen.
- d) There must be a clear notification that the wager has been accepted by the system and details of the actual wager accepted must be provided to the player once the wager is accepted (e.g. displayed as a betting ticket with wager details, in combination with generic wager information presented in the help / rules screen)
- e) If the wager attempt is rejected (in full or in part) by the Gaming Platform, the player is to be informed of the reason(s) for the rejection.
- f) The player's account balance is to be debited by the amount of the wager when notification of acceptance of the wager by the system is received.
- g) Wager confirmation should include the amount of the wager actually accepted by the Interactive Gaming System.

A.2.3 Bulk Placement of Wagers. This section refers to wagers that may be placed in bulk (e.g. via FTP to the central system).

- a) Notification of acceptance or rejection of a wager may be via a log file which the player can read later.
- b) If the stream of wagers is interrupted for any reason, there must be a means available to the player to determine where in the stream that the interruption occurred.
- c) The account balance is to be debited by the amount of the wager when notification of acceptance for each wager by the system is received.

- d) No wager in the stream may be greater than the current (remaining) balance of the account. If such a bet is attempted, the entire stream is to be halted.

A.2.4 Cancellations.

- a) The ability to attempt to cancel any of the active wagers is to be provided.
- b) The method of performing the cancellation is to be straightforward.
- c) Cancellation via the search mechanism is to be provided.
- d) Successful cancels are to immediately update the Player's account balance by the amount of the wager that is canceled.
- e) Cancellation is not to be permitted once the first part of the result of the event is known.
- f) The player must be able to access any other rules relative to prohibition of cancellations e.g. after a fixed time period

A.2.5 Event/Market Close.

- a) The system must implement an automatic close of event or market wagering when the scheduled time for the event or market is reached. Note that this does not preclude the implementation of in-running betting.
- b) There may be a manual override to the automatic close time.
- c) Players in a player session must be able to view when an event or market is closed (upon the player's next interaction with the website, which causes the on-screen information to be refreshed).
- d) It shall not be possible to place wagers on the event or market once it has closed. This requirement does not preclude the implementation of in-running betting.
- e) A cancellation grace period may be offered to allow players to cancel wagers incorrectly placed. However, it must be short in duration and must end before the result of the event is known or can be deduced.
- f) It is possible to re-open an event or market when the circumstances permit. Players must be able to view when an event or market re-opens (upon the player's next interaction with the website, which causes the on-screen information to be refreshed).

A.2.6 In-Running Betting. The help rules screen and / or terms & conditions for the website must contain an explanation to the player that system delays are implemented to mitigate the impact of players who have more up-to-date information or faster Internet connections.

A.3 Results

A.3.1 Posting Results

- a) The Interactive Gaming System must inform the player of how reliable official results for the sports / contests / matches are obtained and published.
- b) The Interactive Gaming System must clearly inform the player of the means by which a winning wager will be determined.
- c) The rules available to the player must clearly state what is to occur when there is potential for multiple events / markets to share the same winning outcome (e.g.: a dead heat).
- d) The rules available to the player must describe the situation of winning results being entered for sport / contest / match outcomes that were not offered for wagering.
- e) The rules available to the player must clearly state what is to occur when only a portion of a sport / contest / match is withdrawn, covering subjects such as:
 - i) Circumstances when all wagers on that portion of the sport / contest / match are lost when withdrawn,
 - ii) Circumstances when all wagers on that portion of the sport / contest / match are refunded when withdrawn, and
 - iii) Handling of the withdrawn portion of the sport / contest / match for wagers involving multiple events / markets (e.g.: parlays).
- f) If a sport / contest / market is abandoned for any reason, all wagers involving solely events / markets associated with that sport / contest / market are to be refunded in full.
- g) Wager types that involve multiple events / markets (e.g.: parlays) are to be treated as if every selection for that leg of the abandoned event / market is a winning wager (in order to allow the parlay wager to remain active) but with a 1.00 payout (i.e.: no profit to the

player), which in turn causes the potential payout for the overall parlay wager to be adjusted accordingly.

A.3.2 Entering Results

- a) Results cannot be entered for an event / market unless the event / market is closed. This does not preclude the settling of events / markets within any given sport / contest / match before that sport / contest / match is concluded.
- b) Results entry must include the entry of all information which may affect the outcome of all wager types offered for that event / market, whether any such wagers were actually placed or not.
- c) Results may be altered but not after they are confirmed, except in the case of resettlement.

A.3.3 Displaying Results

- a) It is accepted that the system will unavoidably be subject to a certain degree of results confirmation and synchronization delay for updates to the information as displayed on the player's screen, and it is possible that information may only be updated at the player's next interaction with the website, which causes the on-screen information to be refreshed.
- b) Players in a player session must be able to view the results when an event / market is closed.
- c) The player must be able to view the results of any decided event / market, once they have been confirmed.
- d) Players must be able to view any change of results.
- e) Where individual wager amounts are gathered into pools, the player must be able to view the dividends of all decided wagers, once they have been confirmed.

A.4 Winnings

A.4.1 Payment of Winnings. Winning wagers are to be directly credited to the player's account when the results of the event / market are entered, confirmed and settled. If the player is not in an active player session when the results are entered and confirmed, it is acceptable to transfer the winnings the next time the account is accessed e.g. next player session or account withdrawal request.

A.4.2 Rounding. Where the calculation of payouts may involve rounding, information on how the system handles these circumstances must be provided to the player through the help / rules screen, which must clearly specify what is to occur:

- a) Rounding to what level (e.g.: 5 cents) must be discussed;
- b) Rounding up, down (truncation), true rounding, must be discussed; and
- c) Metering of rounding amounts must be discussed.

A.4.3 Withdrawn Selections. The rules available to the player must clearly state what is to occur when only a portion of a sport / contest / match is withdrawn, covering subjects such as:

- a) Circumstances when all wagers on that portion of the sport / contest / match are lost when withdrawn;
- b) Circumstances when all wagers on that portion of the sport / contest / match are refunded when withdrawn;
- c) Handling of the withdrawn portion of the sport / contest / match for wagers involving multiple events / markets (e.g.: parlays); and
- d) Handling of reinstated selections - especially if "Field" selections are offered.

A.4.4 Abandoned Events.

- a) If a sport / contest / market is abandoned for any reason, all wagers involving solely events / markets associated with that sport / contest / market are to be refunded in full.
- b) Wager types that involve multiple events / markets (e.g.: parlays) are to be treated as if every selection for that leg of the abandoned event / market is a winning wager (in order to allow the parlay wager to remain active).

A.5 Fixed Odds Wagers

A.5.1 General Statement. This section refers to specific requirements for bet types where the payout is to be fixed at the time the wager is placed. Players must be able to access all current odds / payouts for all available events / markets at all times. In addition to the general requirements the following requirements apply:

A.5.2 Wagers

- a) If the wager could have involved more than one prize table, the system must store and the confirmation must indicate which prize table to which it applies.
- b) If the wager involves bet types where the prize table may change dynamically, the system must store and the confirmation must indicate the prize table payout(s) (e.g. odds) that will apply to this wager should it be a winner.

A.5.3 Limitation of Liability. The rules available to the player must clearly state circumstances where potential liability may be reduced for future events / markets by any means such as:

- a) Prorating – abatement of large winners in an event / market when the overall payout liability is large;
- b) Liability limits – wagers are automatically rejected if the liability for an event / market would exceed a predefined limit; and

- c) Partial wager acceptance / wager rejection – any circumstances where a wager is partially or completely rejected. This is commonly followed by a change of the odds / payouts.

A.5.4 Prize Payout Modification

- a) The rules made available to the player must clearly state circumstances when it is permitted to dynamically modify the odds / payouts on an event / market.
- b) Players must be able to view when odds / payouts are changed.
- c) Subsequent access to odds / payouts, e.g.: via a hotlink, must show the current values.
- d) It is accepted that the system will unavoidably be subject to a certain degree of synchronization delay for updates to this information as displayed on the player's screen, and information may only be updated at the player's next interaction with the website, which causes the on-screen information to be refreshed. In order to ensure player fairness, the system must identify situations where the player has placed a wager for which the associated odds / payouts have actually changed (but not yet refreshed on the player's screen), and notify the player accordingly and ask for confirmation of the wager given the new odds / payouts.

A.5.5 Adjustments to Fixed Prize Payouts. The rules made available to the player must clearly state circumstances when the odds / payouts are to be adjusted, such as:

- a) Multiple winning outcomes (e.g. dead heats);
- b) Withdrawn selections for which wagers are refunded;
- c) Abandoned legs of parlays; and
- d) Prorating.

A.6 Pari-Mutuel Wagers

A.6.1 General Statement. This section refers to specific requirements for bet types where individual wagers are gathered into pools. When the results of the event each pool is divided up by the total bet of winning selections to form a unit payout amount for that bet type.

A.6.2. Commission. The level of commission for each bet type must be fully displayed in the artwork.

A.6.3 Dividends. The rules for dividend calculation must be approved by the Jurisdiction. Issues to be resolved are:

- a) Dividend formula.
- b) Handling of withdrawn selections.
- c) Handling of multiple winners of a bet type through dead heats, abandoned events etc.
- d) Handling of postponed events.
- e) Handling of circumstances where there are no winners of a pool is to be approved by the Jurisdiction. Subjects that may need to be covered are:
 - i) Countback levels
 - ii) Progressive Jackpots
 - iii) Pool refunds (with or without commission subtracted)
- f) The treatment of minimum prize payouts, calculation of other dividends and possible pool subsidies.
- g) The treatment of Field wagers where changes of the state of selections“ withdrawn status can occur e.g. selection reinstatement.

A.6.4 Wagers

- a) The player must be able to view reasonably up-to-date prospective odds / payouts information for simple wagering pools.

- b) The player must be able to view reasonably up-to-date values of total investments for all wagering pools.
- c) It is accepted that the system will unavoidably be subject to a certain degree of synchronization delay for updates to this information as displayed on the player's screen, and information may only be updated at the player's next interaction with the website, which causes the on-screen information to be refreshed. In order to ensure player fairness, the system must identify situations where the player has placed a wager for which the associated odds / payouts have actually changed (but not yet refreshed on the player's screen), and notify the player accordingly and ask for confirmation of the wager given the new odds / payouts, and
- d) For complex wagering pools, it is accepted that there may be reasonable limitations to the real-time accuracy of the pool estimates displayed to the player.
- e) The player must be able to view the results of all decided events including those which have not been confirmed.
- f) The player must be able to view the dividends of all decided bet types including those which have not been confirmed.
- g) The player must be able to view withdrawn selections for all events.

A.7 External Wagering Systems

A.7.1 General Statement. This section refers to requirements for event types where wagers placed through the Interactive Gaming System are forwarded to an external wagering system which controls the wagering, processes results and determines winning wagers. An example might be the Interactive Gaming System interfacing to a totalisator system.

A.7.2 Communications. Communications with an external wagering system must meet the requirements of Section 5.4, Technical Controls.

- a) The intending operator must justify the security associated with all communications by means of a formal risk analysis.

- b) All communication shall be recorded in a log as per the requirements of the transaction logs.

A.7.3 Information

- a) If the external wagering system provides pari-mutuel wagering facilities for the Interactive Gaming System, it must periodically pass the current dividends estimates for active pools to the Interactive Gaming System .Cautionary notes must accompany such estimates.
- b) If the external wagering system provides progressive jackpot facilities for the Interactive Gaming System, it must periodically pass the current progressive jackpot amounts to the Interactive Gaming System. Cautionary notes must accompany such projections (especially if cancellations are permitted).
- c) If the external wagering system provides fixed price wagering facilities for the Interactive Gaming System where the odds/prize table can be dynamically changed, it must pass the current odds to the Interactive Gaming System whenever any odds are changed.
- d) The external wagering system must pass change of event status information to the Interactive Gaming System whenever any change occurs including:
 - i) Withdrawn/reinstated selections;
 - ii) Altered event starting time;
 - iii) Event closed/open;
 - iv) Results entered/ modified;
 - v) Results confirmed; and
 - vi) Event abandoned.

A.7.4 Wagers

- a) Wagers placed on the Interactive Gaming System must receive clear acknowledgment of acceptance, partial acceptance (and details) or rejection by the external wagering system.
- b) If the cost of the wager is determined by the external system, there must be a positive confirmation sequence in place to enable the player to accept the bet cost and the

Interactive Gaming System to determine that there are enough funds in the player's account to meet the wager cost. This activity shall be performed by the Interactive Gaming System prior to making an offer to an external wagering system.

- c) The account balance shall be debited an amount equaling the offer (and cost) to the external wagering system. The funds shall remain as a pending transaction with details of the offer to the external wagering system logged (in accordance with transaction logging requirements). On receipt of acknowledgment (which shall be logged) from the external wagering system the appropriate adjustments shall be made to the "pending" account and the player account (if a refund is required due to partial acceptance or rejection of offer).
- d) Cancellation requests from the Interactive Gaming System must receive clear acknowledgment of acceptance or rejection by the external wagering system.
- e) The account balance is not to be credited by the Interactive Gaming System until final confirmation is received from the external wagering system including the amount of the cancel.

A.7.5 Results. When results are entered and confirmed on the external wagering system, each winning wager placed from the Interactive Gaming System must be transferred to the Interactive Gaming System with the amount of the win. Player's accounts are to be updated with the winning amounts.

A.7.6 Restart and Recovery. The process of all wagering activities between the two systems is not to be adversely affected by restart/recovery of either system (e.g. wagering transactions are not to be lost or duplicated because of recovery of one system or the other).

A.8 Wager History and Logs

A.8.1 Wager History. For games that involve wagering on a future event, such as with sports wagering or a periodic lottery drawing, a „Wager History“ must instead be provided. The history

must clearly indicate that it is a history of the previous wager(s), and must provide the following information (at a minimum):

- a) The date and time the wager was placed;
- b) The description of the final outcome of the game upon which the wager was made, either graphically or via a clear text message;
- c) Total player cash / credits upon placing the wager;
- d) Total player cash / credits upon settlement of the wager;
- e) Amount wagered including any multipliers;
- f) Total cash / credits won for the wager (including Progressive Jackpots);
- g) Any player choices involved in the wager; and
- h) Results of any intermediate wager phases.

A.8.2 Logs. All event wagering transactions of significance must be logged on the Interactive Gaming System. The decision as to what consists of transactions of significance will be made on a case by case basis and, as a minimum, shall include:

- a) All communications including offers to place, amend or cancel a wager made by the player and before the offer is accepted;
- b) Wagering acceptance (sells), rejections (including reason) and cancels;
- c) Wins added to player accounts;
- d) Change of odds / payouts, commissions, percentages, or other payout selections (not including dynamic odds / payouts setting); and
- e) Change of event / market status:
 - i) Start / stop wagering;
 - ii) Results entry / modifications / confirmation;
 - iii) Withdrawal / reinstatement of wager types within the event / market;
 - iv) Abandoned events / markets; and
 - v) Alteration / override or start times.

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Appendix B

B.0 LIVE DEALER/PROXY PLAYER REQUIREMENTS

B.1 Introduction

B.1.1 General Statement. The following requirements apply where betting takes place through an internet interface and/or a human proxy on behalf of one or more actual players residing in a separate location from the gaming environment. The entire process is viewed by all remote players through real-time remote audio and video feed. All applicable requirements from all sections within GLI-19 apply in addition to the below requirements.

B.2 General Requirements

B.2.1 Definition. Live Dealer games utilizing internet interfaces or proxy players are limited to table games conducted by a real dealer using real gaming equipment with video and audio sent to all remote players and instructions received from each player using streaming, narrowcast, broadcast or other technology.

NOTE: Unless otherwise noted references to “player” will mean the remote player. The present (proximate) player will be denoted as the “proxy player”.

B.2.2 Information to be Displayed. Information shall be provided to the remote player in real time and shall include all game play information that would normally be available from the online table game equivalent. Such information shall include:

- a) Date and time;
- b) Table number and location;
- c) Table minimum and maximum wagers;
- d) Number of decks used, if applicable;

- e) Amount wagered;
- f) Game outcome;
- g) Vigorish amount, if applicable;
- h) Payout odds, where applicable; and
- i) Amount won or lost.

B.2.3 Incomplete Games. In the event that a remote player cannot or does not complete an action required of them to allow a game to continue within the allotted time:

- a) The system or proxy must complete the game on behalf of the player.
- b) The game must be completed using an optimum strategy for that particular game.
- c) The player must not rejoin the particular instance of a game where the system or proxy has begun to complete the game on behalf of that player.
- d) Any winnings arising from the game must be credited to the player's account.
- e) Any losses arising from the game are retained in accordance with the rules of the game.
- f) The results of the game must be available to the player and must indicate which decisions were made by the system or proxy on behalf of the player.
- g) Other players in the game instance must be able to complete their own games (unless they cannot or do not take their turn).

B.2.4 Win Notification. Where the winning player is one using the Internet interface / gateway, they must be notified of the win directly through their player account, including the amount won, in due course after the completion of the game.

B.2.5 Player Application Requirements. Player applications shall have sufficient resources to meet the minimum system requirements as set forth by the live dealer system and as advertised to the remote player.

B.3 Betting by Internet Interface

B.3.1 General Statement. The following requirements apply only to Live Dealer games via an internet interface or to games that effectively constitute an internet interface or gateway to an existing traditional / land-based game already operating in a live environment.

B.3.2 Game Fairness. The following information shall be readily available through the internet interface or gateway throughout a player session where applicable:

- a) Sufficient information to identify the specific game selected.
- b) Game play and payout rules which shall not rely on sound to convey their meaning.
- c) All charges imposed on the player such as fees, and vigorish.
- d) Rules which describe procedures in place to deal with game interruptions caused by the discontinuity of data flow, video and voice from the network server during a game (e.g. internet connection outage or wagering terminal malfunction).
- e) Players must be informed in any betting opportunity relying on „live“ monitoring of an event (e.g. betting in play) that „live“ transmissions may be subject to delay or interruption. Where a delay is apparent or created by the system, the scale of the delay should be disclosed to the player.
- f) The rules, artwork and functionality of the game, as made available to the player using the Internet interface / gateway, must include no less information than that which is made available to the player using the traditional / land-based method where applicable.
- g) All players playing the game (or placing a wager, in the case of wagering on a future event) using the Internet interface / gateway must be no more or no less eligible to win the game than players using the traditional / land-based method.

NOTE: *Nothing herein shall preclude the possibility of implementing promotions on the Internet interface / gateway or the traditional / land-based method alone.*

B.4 Betting By Proxy Player

B.4.1 General Statement. The proxy shall ensure that players' cards can remain private. This can be achieved by the proper placement of "hole-camera" or "pocket-camera" video equipment. Chips and winning wagers are to be maintained by the proxy player until such time as the remote player determines to terminate the player session.

B.4.2 Proxy Agents. Jurisdictions may prefer to license "proxy agents" who themselves guarantee any credit used to purchase betting chips used in proxy betting.

B.4.3 Junket Operators. Another mechanism would be the utilization of licensed "junket" operators who organize remote group gaming events and purchase in advance the wagering chips for use in proxy betting. *Junket operators may not provide proxy players, relying rather on Agency or Studio proxy players.* For Junkets either the Agency or the Studio shall provide a mechanism for the accounting for proxy player chips.

B.4.4 Studio Provided Proxy Players. Studio provided proxy players shall be licensed by the regulatory body and bonded by the studio. *Studio should provide a mechanism where the player can select a proxy player.* For studio provided proxy players the studio shall provide a mechanism for the accounting of proxy player chips

B.4.5 Agency Provided Proxy Players. *Agencies may provide proxy players.* Agency provided proxy players shall be licensed by the regulatory body and bonded by the Agency. For Agency provided players the agency or the studio shall provide a mechanism for the accounting of proxy player chips.

B.4.6 Proxy Player Chips. Chips used will be distinctly different than those used for conventional betting. These chips shall have no value unless used in a proxy betting environment.

- a) The proxy shall declare the value of chips beginning from when the proxy bettor first establishes connection with the player and at any other time as requested by the player including prior to connection termination by the player.
- b) The chips used must be unique for each denomination they are representing and the denomination must be clearly visible on any chip.
- c) If chips are used, chips of all possible denominations must be shown (as per the game denomination) so that unavailability of chips of smaller denominations will not force players to bet more.

B.4.7 Placing Wagers. The content of the player's wager should be communicated back and acknowledged by the remote player before the wager is confirmed. There must be a clear notification that the wager has been accepted by the dealer. If the wager attempt is rejected (in full or in part) by the dealer, the player is to be informed of the reason(s) for the rejection.

B.4.8 Proxy Player Winnings. Winning wagers are to be maintained by the proxy player until such time as the remote player determines to terminate the player session.

B.4.9 End of Player Session Disposition of Chips.

- a) For studio provided proxy players the studio shall provide a mechanism for the accounting of the remaining proxy player chips.
- b) For agency provided players the agency or the studio shall provide a mechanism for the accounting of the remaining proxy player chips.
- c) For junkets either the agency or the studio shall provide a mechanism for the accounting for the remaining proxy player chips.

B.5 Automated Recognition Devices

B.5.1 General Statement. Game symbols applied in live dealer games may be automatically registered by automated recognition devices. Game symbols applied in live dealer games shall be reported to the gambling system. Game rules for live dealer games shall be programmed into the gambling system. Any equipment that is used to scan or otherwise detect cards must be tested for reliability and all consumables that will be subjected to this hardware must be checked against it for defects prior to processing, in order to prevent play being disrupted. Logs of all tests must be maintained.

B.5.2 Manual Override. Automated recognition devices used recognition and registration must be equipped with a manual operation mode that allows corrections of an erroneous result (where the detection equipment misreads a card, the position of the ball, etc). The participant must be informed that the manual mode is active. Each time that the manual operation mode is activated, tracking should be enabled to allow for further review.

B.6 Simulcast Control Server

B.6.1 General Information. Games for remote players shall utilize a simulcast control server for the purpose of recording all wagering activity and game results. The simulcast control server shall:

- a) Provide the remote player with real time visual access to the live game being played;
- b) Prevent anyone from accessing the wagering outcome prior to finalizing a wager;
- c) Record dealer verified game results before posting; and
- d) Be equipped with a mechanism to void game results if necessary.

B.6.2 Information Recording. Game logs must be maintained and game events collated into statistics which can be analyzed for trends relating to game performance, staff and/or locations in the gaming area. The live dealer studio may use their own surveillance camera and split live fee

to video transmission server, or there may be a separate network of video involved. A continuous recording must be made of all the games played so that:

- a) The date and time of each game can be determined to an accuracy of one second relative to the clock used by the system.
- b) The sequence of games relative to each other can be determined.
- c) Each bet, win, loss, player decision and dealer action can be determined.
- d) All game events are clearly identifiable and distinguishable.
- e) The sequence of events within each game instance can be determined.
- f) All cards and game results must be clearly visible, together with a separate icon depicting a matching outcome on the player's screen.
- g) The recording shall be sufficient to prove whether the game rules are being complied with and identify discrepancies.
- h) The recording can be reviewed by the operator in the event of a dispute between a dealer and a player.
- i) The recording can be reviewed by the Regulator Body in the event that the player is not satisfied with the review by the operator.
- j) The recording must be kept for at least 48 hours or as required by the Regulator Body.

B.7 Operational Requirements

B.7.1 Equivalency of Signal

- a) Each player shall have equivalent quality video/audio feed from the live dealer system. Procedures should be in place to measure and verify this equivalence whenever communications are initiated, including reconnection due to signal interruptions or re-initiation when the signal was severed.
- b) Player Devices shall have sufficient resources to meet the minimum system requirements as set forth by the live dealer system.

- c) .A minimum signal connection requirement for the player’s application connection must be established, enforced and disclosed to the player.

B.7.2 Reporting. Internal statistical results reviews must be regularly conducted to monitor game performance and payout percentages, and to detect irregularities and variances. Policies and procedures for conducting results reviews, and investigation procedures to be undertaken in the event that material variances are identified, must be documented. Procedures for the completion of gaming operations reports should be implemented. Gaming operations reports should include:

- a) Procedure violation report;
- b) Incident report; and
- c) Pit boss report.

B.8 Live Dealer Studio Requirements

B.8.1 Live Dealer Studio Environment. Live dealer games must meet all of the applicable game requirements delineated elsewhere in this standard. To maintain the integrity of the game outcome determination process, live dealing providers are subject to an additional verification audit of the live dealer studio. The following requirements apply to live dealer studios:

- a) The physical security policy and procedures should be reviewed periodically to ensure that risks are identified, mitigated and underwritten by contingency plans.
- b) Security perimeters (barriers such as walls, card controlled entry gates or manned reception desks) shall be used to protect the live dealing premises and operations.
- c) Physical protection against damage from fire, flood, earthquake, typhoon, and other natural or man-made disaster shall be designed and applied.
- d) Secure areas shall be protected by appropriate entry controls to ensure that only authorised personnel are allowed access.

- e) Access points such as delivery and loading areas and other points where unauthorised persons may enter the premises shall be controlled and, if possible, isolated from operations areas to avoid unauthorised access.
- f) The actual gaming area must be defined and have appropriate physical security controls.
- g) Gaming servers and communications equipment shall be sited or protected to reduce the risks from environmental threats and hazards, and opportunities for unauthorised access.
- h) Gaming servers and communications equipment shall be protected from power failures and other disruptions caused by failures in supporting utilities.
- i) Computer and communications equipment shall be correctly maintained to ensure its continued availability and integrity.
- j) All items of equipment containing storage media shall be checked to ensure that any sensitive data and licensed software has been removed prior to disposal.
- k) Policies and procedures must be in place to enable a suitable response to any computer or communications security issue.

B.8.2 Fixed Gaming Equipment.

- a) Gaming equipment used in the live dealer gaming operations must meet minimum standards as determined by the regulatory body.
- b) Gaming equipment should be installed according to a defined plan and records maintained of all installed equipment.
- c) Gaming equipment should be inspected and cleaned at regular intervals to ensure that it is free from defects or mechanisms that could interfere with fair play.
- d) Obsolescent gaming equipment should be destroyed in a manner which ensures that the device, and any data stored in the device, cannot be used.

B.8.3 Consumable Gaming Equipment.

- a) Consumables used in the live dealer gaming operations should meet minimum standards as determined by the regulatory body.

- b) Procedures must be implemented for tracking the inventory of consumables from receipt, through storage, installation, use, retirement, and destruction. All consumables must have an associated audit trail which shows which staff had access to the consumables at any given time for any given operation.
- c) Periodic random inspections should be performed on the consumables in use, from disbursement to retirement.
- d) Used consumables must be destroyed in a manner which prevents their accidental re-use in games and which puts them permanently beyond use.

B.8.4 Staffing.

- a) Procedures should be in place to perform background checks on newly recruited staff.
- b) Staff must undergo adequate training in the gaming procedures they will be using.
- c) Staff must be trained in, and regularly reminded of, any physical behaviour which is prohibited or mandated.
- d) Policies and procedures concerning rotas and shift patterns and allocation must be documented.
- e) The retention of documentation must be robust, allowing staff records to be audited and investigations to be performed where staff members are either involved directly or where their presence in a particular place and/or time, is crucial to understanding a chain of events.
- f) Procedures for the termination of staff shall be documented.
- g) A supervisory member of staff should always be present when gaming is taking place.
- h) Staffing logs must be maintained for each table.

B.8.5 Gaming Operations.

- a) Separate procedures must exist for each game and new games must have their procedures in place before being offered to players.

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- b) Clear procedures regarding anomalous events which may occur during live dealing operations must be documented and understood by staff. Documented procedures should cover, at a minimum:
 - i) Incorrect card detection by automated equipment;
 - ii) Dropped cards;
 - iii) Misdeals;
 - iv) Re-spins;
 - v) Aborted games; and
 - vi) Table closure.
 - c) Consistent card shuffling procedures must be in place and the shuffling of cards must be logged. Card shuffling procedures should include a verification of the card count.
 - d) Any equipment that is used to scan or otherwise detect cards must be tested for reliability and all consumables that will be subjected to this hardware must be checked against it for defects prior to processing, in order to prevent play being disrupted. Logs of all tests must be maintained.
 - e) Policies and procedures must be in place to identify and replace automated scanning equipment which shows an unacceptable level of errors.
 - f) Procedures should be in place to describe the operations of the pit station.
 - g) Procedures must be in place to demonstrate that one person would not be able to undertake all duties concerning card management and that there is segregation of responsibilities prior to play, during play and after play.
 - h) Game logs must be maintained and game events collated into statistics which can be analysed for trends relating to game performance, staff and/or locations in the gaming area.
 - i) Procedures should be in place to deal with any video, voice, or data stream disruptions during a game.
 - j) Procedures should be in place regarding additional surveillance systems used to supplement pit boss observations.
 - k) Where players are able to chat to dealers, a defined procedure must exist for the use of chat features.
 - l) Procedures should be in place to deal with player disconnection during a game.

- m) Procedures should be in place to ensure that CCTV footage is captured in such a way that precludes interference or deletion.
- n) Gaming operations reports must be maintained.
- o) The game reports and records procedures should be reviewed periodically to ensure that risks are identified, mitigated and underwritten by contingency plans.
- p) Equipment and procedures should have a level of randomness consistent with that seen in live casinos to ensure their fairness and integrity.
- q) Card shoes and similar devices must be tamper-proof once they have been loaded to preclude interference prior to play.

Glossary

Artwork - Artwork is any graphical and auditory information that is sent to the Player Device for presentation to the player.

Background Cycling / Background Activity - A process or set of processes which make requests for values from the random number generator for no other purpose than to discard those values. The discarded values are not used by the application for any purpose. If the software-based RNG is cycling in the background, it means that there is a constant string of random numbers being generated by the RNG, even if they are not actually required by the game at that time. Without background cycling / activity, one could predict the result of the next iteration of the function used to produce the random numbers if the current values and the algorithm were known.

Client Software – The software installed on a Player Device that facilitates communication between the Player Interface to the Gaming Platform. Examples of Client Software include proprietary download software packages, html, flash, etc.

Contributions - The financial method by which progressive jackpot pools are funded.

Critical Component - Any sub-system whose failure or compromise can lead to loss of player entitlements, government revenue or unauthorized access to data used for generating reports for the jurisdiction.

Digital Certificate - A set of data which can be used to verify the identity of an entity by reference to a trusted third party (the Certification Authority). Digital certificates are often used to authenticate messages for non-repudiation purposes. One of the attributes of a digital certificate is that it cannot be modified without compromising its internal consistency. X.509 certificates are an example of a digital certificate.

Domain Name System - The globally distributed Internet database which (amongst other things) maps machine names to IP numbers and vice-versa.

Effective bandwidth - The amount of data that actually can be transferred across a network per unit of time. The effective bandwidth through the Internet is usually considerably lower than the bandwidth of any of the constituent links.

Gaming Platform - The Interactive Gaming System hardware and software which drives the features common to all games offered, and which forms the primary interface to the gaming system for both the

player and the operator. The Gaming Platform provides the player with the means to register an account, log in to / out of their account, modify their account information, deposit and withdraw funds to / from their account, request account activity statements / reports, and close their account. In addition, any web pages displayed to the player that relate to gaming offered on the IGS, but are not an actual game screen, are considered to be part of the Gaming Platform. The Gaming Platform provides the operator with the means to review player accounts, enable / disable games, generate various gaming / financial transaction and account reports, input game outcomes for sports betting events, enable / disable player accounts, and set any configurable parameters.

Hotlink - A word or graphic on a web page which, if clicked, causes a different information page to be displayed.

Increment Rate - The portion of the progressive jackpot contributions that are incrementing the progressive jackpot (as compared to funding the startup value).

Interactive Gaming System (IGS) - The hardware, software, firmware, communications technology and other equipment which allows a player to remotely bet or wager through the Internet or a similarly distributed networking environment, and the corresponding equipment related to game outcome determination, the display of the game and game outcomes, and other similar information necessary to facilitate play of the game. The term does not include computer equipment or communications technology used by a player to access the Interactive Gaming System.

Link utilization - The percentage time that a communications link is engaged in transmitting data.

Mapping - The process by which a scaled number is given a symbol or value that is usable and applicable to the current game (e.g.: the scaled number 51 might be mapped to an ACE OF SPADES).

Multi-stage Game - A game having one or more intermediate steps that require player input in order to proceed. Poker and Blackjack are two examples of multi-stage games.

Percentage Return to Player (%RTP) - The expected percentage of wagers that a specific game will return to the player in the long run. The %RTP can be calculated via either a theoretical or simulated approach. The method used for calculation depends on the game type.

Period - The minimum number of values required such that there exists a sequence of values that will forever repeat. For example, if a random number generator were to produce the following sequence of values ad infinitum, {1,3,1,3,1,3, ...}, the period of that sequence of values would be considered to be two since every time a 1 is produced it is succeeded by a 3 which is succeeded by a 1 which is succeeded by a 3, etc.

Player Device - The device that converts communications from the Gaming Platform into a human interpretable form, and converts human decisions into communication format understood by the Gaming Platform. Examples of Player Devices include personal computers, mobile phones, tablets, etc.

Player System – The Player Device, Client Software and all other items that make up the entire piece that communicates to the Gaming Platform. This includes personal computer cache, cookies, etc.

Pool - An accumulated reservoir of jackpot monitory contributions.

Progressive Jackpot - An increasing prize based on a function of all credits that are bet or won. This includes prizes that are awarded based on criteria other than obtaining winning outcomes in the game, such as „Mystery Jackpots.“ However, this does not include non-configurable, increasing prizes that result from bonus features, which are part of the game payable (Theoretical %RTP).

Proposition Player - A player that has been hired to participate in a game and wagers personal funds.

Protocol - Used to refer to the hardware interface, line discipline and message formats of the communications.

Random Number Generator (RNG) - A random number generator is defined to be one or a combination of the following processes that produces a random sequence of values (or symbols that can be mapped to values): software-based hardware-based, or mechanical-based. A cryptographically strong random number generator is a random number generator such that for a given n-bit sequence, the (n+1)st bit cannot be predicted (statistically) with a success probability of greater than 0.5. Additionally, should a cryptographically strong random number generator’s state be compromised, in part or in whole, the bit-stream produced up until the compromise should not be reproducible.

Range - The set of values that can be produced by the random number generator. For example, a 32-bit random number generator, can have a range of 2^{32} comprised of the integers in the closed interval of $[0, 2^{32}-1]$. This range may be mapped to a different range via a scaling algorithm or scaling method.

Remote Game Server (RGS) – Interactive Gaming System hardware and software separate from that which comprises the Gaming Platform, which may drive the features common to game offerings, game configurations, random number generators, reporting, etc. The authorized player initially communicates directly with the Gaming Platform which can be integrated with one or more Remote Gaming Servers.

Scaling - Raw output from an RNG will normally have a range far in excess of that required for its intended use (e.g.: 32-bit RNG’s have over two billion possible outcomes, but (for example) we have only to determine which of 52 cards to draw). Scaling is required to divide the raw output into smaller and usable numbers. These „scaled“ numbers can then be mapped to particular card numbers, record numbers,

symbols, etc. Consequently, raw output from an RNG will sometimes have a range far smaller than that required for its intended use (e.g.: $0 < \text{raw output} < 1$). In these cases, scaling is required to expand the RAW output into larger usable numbers.

Seed - The seed of a random number generator is understood to be a set of values required to initialize the random number generator. A seed is typically required for software-based random number generators.

Sensitive data - Data which, if obtained by a third party, may be used to affect game outcome/s or player/s accounts.

Shill - A player that has been hired to participate in a game and wagers funds on behalf of the house.

Startup value - The initial jackpot value (does not include values from overflow meters).

Timestamp - A record of the current value of the Gaming Platform date and time which is added to a message at the time the message is created.

Version Control - The method by which an evolving approved Gaming Platform is verified to be operating in an approved state.

#4861

Exhibit 3 to
SB 2314 Letter
Jamie Azure, Tribal Chairman
Turtle Mountain Band of Chippewa
February 2, 2021

GLI STANDARD SERIES

GLI-33:

STANDARDS FOR EVENT WAGERING SYSTEMS

VERSION: 1.1

REVISION DATE: MAY 14, 2019



About This Standard

This technical standard has been produced by **Gaming Laboratories International, LLC (GLI)** for the purpose of providing independent technical analysis and/or certifications to wagering industry stakeholders indicating the state of compliance for wagering operations and systems with the requirements set forth herein.

This document is intended to be used by regulatory bodies, operators, and industry suppliers as a compliance guideline for technologies and procedures pertaining to event wagering. This standard is not intended to represent a set of prescriptive requirements that every Event Wagering System and operator shall comply with; however, it does establish a standard regarding the technologies and procedures used to facilitate these operations.

Operators and suppliers are expected to provide internal control documentation, credentials and associated access to a production equivalent test environment with a request that it be evaluated in accordance with this technical standard. Upon completion of testing, GLI will provide a certificate of compliance evidencing the certification to this Standard.

GLI-33 should be viewed as a living document that provides a level of guidance that will be tailored periodically to align with this developing industry over time as wagering implementations and operations evolve.



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Chapter 1: Introduction to Event Wagering Systems

1.1 Introduction

1.1.1 General Statement

Gaming Laboratories International, LLC (GLI) has been testing gaming equipment since 1989. Over the years, GLI has developed numerous technical standards utilized by jurisdictions all over the world. This document, *GLI-33*, sets forth the technical standards for Event Wagering Systems.

1.1.2 Document History

This document is a compilation based upon many standards documents from around the world. Some were written by GLI; others were written by industry regulators with input from independent test laboratories and Event Wagering System operators, developers, and suppliers. GLI has taken each of the standards documents and merged the unique rules, eliminated some rules and updated others, to reflect both the change in technology and the purpose of maintaining an objective standard that achieves common regulatory objectives without unnecessarily impeding technological innovation. GLI lists below, and gives credit to, agencies whose documents were reviewed prior to writing this Standard. It is the policy of GLI to update this document as often as warranted to reflect changes in technology and/or testing methods. This document will be distributed without charge and may be obtained by downloading it from the GLI website at www.gaminglabs.com or by contacting GLI at:

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1.2 Acknowledgment of Other Standards Reviewed

1.2.1 General Statement

This technical standard has been developed by reviewing and using portions of documents from the following organizations. GLI acknowledges and thanks the regulators and other industry participants who have assembled these documents:

- a) Nevada Gaming Commission and Gaming Control Board.
- b) British Columbia Gaming Policy and Enforcement Branch (GPEB).
- c) Association of Racing Commissioners International (ARCI).
- d) Tasmanian Liquor and Gaming Commission.
- e) Northern Territory Racing Commission.
- f) Victorian Commission for Gambling and Liquor Regulation.
- g) Danish Gambling Authority.
- h) Spanish Directorate General for the Regulation of Gambling (DGOJ).

- i) South African Bureau of Standards (SABS).

1.3 Purpose of Technical Standards

1.3.1 General Statement

The purpose of this technical standard is as follows:

- a) To eliminate subjective criteria in analyzing and certifying Event Wagering Systems.
- b) To test the criteria that impact the credibility and integrity of Event Wagering Systems from both the revenue collection and player's perspective.
- c) To create a standard that will ensure wagers on events are fair, secure, and able to be audited and operated correctly.
- d) To distinguish between local public policy and Independent Test Laboratory criteria. It is up to each local jurisdiction to set its own public policy with respect to wagering.
- e) To recognize that the evaluation of internal control systems (such as Anti-Money Laundering, Financial and Business processes) employed by the operators of the Event Wagering System should not be incorporated into the laboratory testing of the standard but instead be included within the operational audit performed for local jurisdictions.
- f) To construct a standard that can be easily revised to allow for new technology.
- g) To construct a standard that does not specify any particular design, method, or algorithm. The intent is to allow a wide range of methods to be used to conform to the standards, while at the same time encourage new methods to be developed.

1.3.2 No Limitation of Technology

One should be cautioned that this document shall not be read in such a way that limits the use of future technology. This document should not be interpreted to mean that if the technology is not mentioned, then it is not allowed. To the contrary, GLI will review this standard and make changes to incorporate minimum standards for any new and related technology.

1.3.3 Adoption and Observance

This technical standard can be adopted in whole or in part by any regulatory body that wishes to implement a comprehensive set of requirements for Event Wagering Systems.

1.4 Other Documents That May Apply

1.4.1 Other GLI Standards

This technical standard covers the requirements for Event Wagering Systems. Depending on the technology utilized by a system, additional GLI technical standards may also apply.

NOTE: The entire family of GLI Standards is available free of charge at www.gaminglabs.com.

1.4.2 Operator's Minimum Internal Control Standards (MICS)

The implementation of an Event Wagering System is a complex task, and as such will require the development of internal processes and procedures to ensure that the system is configured and operated with the necessary level of security and control. To that end, it is expected that the operator will establish a set of Minimum Internal Control Specifications (MICS) to define the internal processes for the creation, management, and handling of wagering transactions as well as the requirements for internal control of any system or component software and hardware, and their associated accounts.

1.5 Interpretation of this Document

1.5.1 General Statement

This technical standard applies to systems that support wagering on sports, competitions, matches, and other event types approved by the regulatory body. The requirements in this technical standard apply to wagering on events in a way that is general in nature and does not limit or authorize specific events, markets or types of wagers. The intent is to provide a framework to cover those currently known and permitted by law. This document is not intended to define which parties are responsible for meeting the requirements of this technical standard. It is the responsibility of the stakeholders of each operator to determine how to best meet the requirements laid out in this document.

1.5.2 Software Suppliers and Operators

The components of an Event Wagering System, although they may be constructed in a modular fashion, are designed to work seamlessly together. In addition, Event Wagering Systems may be developed to have configurable features; the final configuration of which depends on the options chosen by the operator. From a testing perspective, it might not be possible to test all of the configurable features of an Event Wagering System submitted by a software supplier in the absence of the final configuration chosen by the operator; however, the configuration that will be utilized in the production environment shall be communicated to the independent test laboratory to facilitate creating a functionally equivalent test environment. Because of the integrated nature of an Event Wagering System, there are several requirements in this document which may apply to both operators and suppliers. In these cases, where testing is requested for a “white-label” version of the system, a specific configuration will be tested and reported.

1.6 Testing and Auditing

1.6.1 Laboratory Testing

The independent test laboratory will test and certify the components of the Event Wagering System in accordance with the chapters of this technical standard within a controlled test environment, as applicable. Any of these requirements which necessitate additional operational procedures to meet the intent of the requirement shall be documented within the evaluation report and used to supplement the scope of the operational audit.

1.6.2 Operational Audit

The integrity and accuracy of the operation of an Event Wagering System is highly dependent upon operational procedures, configurations, and the production environment's network infrastructure. As such, an operational audit is an essential addition to the testing and certification of an Event Wagering System. The operational audit, outlined within the following appendices of this technical standard, shall be performed at a frequency specified by the regulatory body:

- a) Appendix A: Operational Audit of Event Wagering Procedures and Practices. This includes, but is not limited to, review of the MICS, procedures and practices for wagering operations, including, but not limited to establishing wagering rules, suspending events, handling various wagering and financial transactions, creating markets, settling wagers, closing markets, cancellations of events, voiding or cancelling wagers, player account management, fundamental practices relevant to the limitation of risks, and any other objectives established by the regulatory body.
- b) Appendix B: Operational Audit of Technical Security Controls. This includes, but is not limited to, an information security system (ISS) assessment, review of the operational processes that are critical to compliance, penetration testing focused on the external and internal infrastructure as well as the applications transferring, storing and/or processing of player data and/or sensitive information, and any other objectives established by the regulatory body.

Chapter 2: System Requirements

2.1 Introduction

2.1.1 General Statement

If the Event Wagering System is comprised of multiple computer systems at various sites, the system as a whole and all communication between its components shall conform to the applicable technical requirements within this document.

2.2 System Clock Requirements

2.2.1 System Clock

The Event Wagering System shall maintain an internal clock that reflects the current date and time that shall be used to provide for the following:

- a) Time stamping of all transactions and events;
- b) Time stamping of significant events; and
- c) Reference clock for reporting.

2.2.2 Time Synchronization

The Event Wagering System shall be equipped with a mechanism to ensure the time and dates between all components that comprise the system are synchronized.

2.3 Control Program Requirements

2.3.1 General Statement

In addition to the requirements contained within this section, the auditing procedures indicated in the “Verification Procedures” section of this document shall also be met.

2.3.2 Control Program Self-Verification

The Event Wagering System shall be capable of verifying that all critical control program components contained on the system are authentic copies of the approved components of the system, upon installation, at least once every 24 hours, and on demand using a method approved by the regulatory body. The critical control program authentication mechanism shall:

- a) Employ a hash algorithm which produces a message digest of at least 128 bits;
- b) Include all critical control program components which may affect wagering operations, including but not limited to: executables, libraries, wagering or system configurations, operating system files, components that control required system reporting, and database elements that affect system operations; and

- c) Provide an indication of the authentication failure if any critical control program component is determined to be invalid.

2.3.3 Control Program Independent Verification

Each critical control program component of the Event Wagering System shall have a method to be verified via an independent third-party verification procedure. The third-party verification process shall operate independently of any process or security software within the system. The independent test laboratory, prior to system approval, shall approve the integrity check method.

2.3.4 Shutdown and Recovery

The Event Wagering System shall be able to perform a graceful shut down, and only allow automatic restart on power up after the following procedures have been performed at a minimum:

- a) Program resumption routine(s), including self-tests, complete successfully;
- b) All critical control program components of the system have been authenticated using a method approved by the regulatory body; and
- c) Communication with all components necessary for system operation have been established and similarly authenticated.

2.4 Wagering Management

2.4.1 Wagering Management

The Event Wagering System shall be able to suspend the following on demand:

- a) All wagering activity;
- b) Individual events;
- c) Individual markets;
- d) Individual Wagering Devices (if applicable); and
- e) Individual player logins (if applicable).

2.5 Player Account Management

2.5.1 General Statement

The requirements of this section apply to player accounts where supported by the Event Wagering System. In addition to the requirements contained within this section, the “Player Account Controls” section of this document shall also be met.

NOTE: Player account registration and verification are required by the Event Wagering System for a player to participate in remote wagering.

2.5.2 Registration and Verification

There shall be a method to collect player information prior to the registration of a player account. Where player account registration and verification are supported by the Event Wagering System either directly by the system or in conjunction with a third-party service provider's software, the following requirements shall be met:

- a) Only players of the legal wagering age for the jurisdiction may register for a player account. Any person that submits a birth date that indicates they are underage shall be denied the ability to register for a player account.
- b) Identity verification shall be undertaken before a player is allowed to place a wager. Third-party service providers may be used for identity verification as allowed by the regulatory body.
 - i. Identity verification shall authenticate the legal name, physical address and age of the individual at a minimum as required by the regulatory body.
 - ii. Identity verification shall also confirm that the player is not on any exclusion lists held by the operator or the regulatory body or prohibited from establishing or maintaining an account for any other reason.
 - iii. Details of identity verification shall be kept in a secure manner.
- c) The player account can only become active once age and identity verification are successfully completed, the player is determined to not be on any exclusion lists or prohibited from establishing or maintaining an account for any other reason, the player has acknowledged the necessary privacy policies and terms and conditions, and the player account registration is complete.
- d) A player shall only be permitted to have one active player account at a time unless specifically authorized by the regulatory body.
- e) The system shall allow the ability to update passwords, registration information and the account used for financial transactions for each player. A multi-factor authentication process shall be employed for these purposes.

2.5.3 Player Access

A player accesses their player account using a username (or similar) and a password or a secure alternative means for the player to perform authentication to log in to the Event Wagering System. Authentication methods are subject to the discretion of the regulatory body as necessary. The requirement does not prohibit the option for more than one method of authentication being available for a player to access their account.

- a) If the system does not recognize the username and/or password when entered, an explanatory message shall be displayed to the player which prompts the player to re-enter the information.
- b) Where a player has forgotten their username and/or password, a multi-factor authentication process shall be employed for the retrieval of the username/resetting of the password.
- c) Current account balance information and transaction options shall be available to the player once authenticated.
- d) The system shall support a mechanism that allows for an account to be locked in the event that suspicious activity is detected (e.g., too many failed attempts for login). A multi-factor authentication process shall be employed for the account to be unlocked.

2.5.4 Player Inactivity

For player accounts accessed remotely for wagering or account management, after 30 minutes of inactivity on that device, or a period determined by the regulatory body, the player shall be required to re-authenticate to access their player account.

- a) No further wagering or financial transactions on that device are permitted until the player has been re-authenticated.
- b) A simpler means may be offered for a player to re-authenticate on that device, such as operating system-level authentication (e.g., biometrics) or a Personal Identification Number (PIN). Each means for re-authentication will be evaluated on a case-by-case basis by the independent test laboratory.
 - i. This functionality may be disabled based on preference of the player and/or regulatory body.
 - ii. Once every 30 days, or a period specified by the regulatory body, the player will be required to provide full authentication on that device.

2.5.5 Limitations and Exclusions

The Event Wagering System shall be able to correctly implement any limitations and/or exclusions put in place by the player and/or operator as required by the regulatory body:

- a) Where the system provides the ability to directly manage limitations and/or exclusions, the applicable requirements within the “Limitations” and “Exclusions” sections of this document shall be evaluated;
- b) The self-imposed limitations set by a player shall not override more restrictive operator-imposed limitations. The more restrictive limitations shall take priority; and
- c) Limitations shall not be compromised by internal status events, such as self-imposed exclusion orders and revocations.

2.5.6 Player Funds Maintenance

Where financial transactions can be performed automatically by the Event Wagering System the following requirements shall be met:

- a) The system shall provide confirmation/denial of every financial transaction initiated.
- b) A deposit into a player account may be made via a credit card transaction or other methods which can produce a sufficient audit trail.
- c) Funds shall not be available for wagering until they are received from the issuer or the issuer provides an authorization number indicating that the funds are authorized. The authorization number is to be maintained in an audit log.
- d) Payments from an account are to be paid (including funds transfer) directly to an account with a financial institution in the name of the player or made payable to the player and forwarded to the player’s address using a secure delivery service or through another method that is not prohibited by the regulatory body. The name and address are to be the same as held in player registration details.
- e) If a player initiates a player account transaction and that transaction would exceed limits put in

place by the operator and/or regulatory body, this transaction may only be processed provided that the player is clearly notified that they have withdrawn or deposited less than requested.

- f) It shall not be possible to transfer funds between two player accounts.

2.5.7 Transaction Log or Account Statement

The Event Wagering System shall be able to provide a transaction log or account statement history to a player upon request. The information provided shall include sufficient information to allow the player to reconcile the statement or log against their own financial records. Information to be provided shall include at a minimum, details on the following types of transactions:

- a) Financial Transactions (time stamped with a unique transaction ID):
 - i. Deposits to the player account;
 - ii. Withdrawals from the player account;
 - iii. Promotional or bonus credits added to/removed from the player account (outside of credits won in wagering);
 - iv. Manual adjustments or modifications to the player account (e.g., due to refunds);
- b) Wagering Transactions:
 - i. Unique identification number of the wager;
 - ii. The date and time the wager was placed;
 - iii. The date and time the event started and ended or is expected to occur for future events (if known);
 - iv. The date and time the results were confirmed (blank until confirmed);
 - v. Any player choices involved in the wager, including market and line postings, wager selection, and any special condition(s) applying to the wager;
 - vi. The results of the wager (blank until confirmed);
 - vii. Total amount wagered, including any promotional/bonus credits (if applicable);
 - viii. Total amount won, including any promotional/bonus credits (if applicable);
 - ix. Commission or fees collected (if applicable); and
 - x. The date and time the winning wager was paid to the player.

2.5.8 Player Loyalty Programs

Player loyalty programs are any programs that provide incentives for players, typically based on the volume of play or revenue received from a player. If player loyalty programs are supported by the Event Wagering System, the following principles shall apply:

- a) All awards shall be equally available to all players who achieve the defined level of qualification for player loyalty points;
- b) Redemption of player loyalty points earned shall be a secure transaction that automatically debits the points balance for the value of the prize redeemed; and
- c) All player loyalty points transactions shall be recorded by the system.

2.6 Wagering Instrument Functionality

2.6.1 General Statement

Event Wagering Systems which support the issuance and/or redemption of wagering instruments (vouchers and coupons) shall meet the applicable requirements established within the “Machine Vouchers” section of the *GLI-11 Standards for Gaming Devices* and the “Validation System Requirements” of the *GLI-13 Standards for On-Line Monitoring and Control Systems (MCS) and Validation Systems* and other applicable jurisdictional requirements observed by the regulatory body.

2.7 Location Requirements for Remote Wagering

2.7.1 General Statement

Where required by the regulatory body, the requirements within this section shall apply when the Event Wagering System supports remote wagering.

NOTE: The operator or third-party service provider maintaining these components, services and/or applications shall meet the auditing procedures indicated in the “Location Service Provider” section of this document.

2.7.2 Location Fraud Prevention

The Event Wagering System shall incorporate a mechanism to detect the use of remote desktop software, rootkits, virtualization, and/or any other programs identified as having the ability to circumvent location detection. This shall follow best practice security measures to:

- a) Detect and block location data fraud (e.g., fake location apps, virtual machines, remote desktop programs, etc.) prior to completing each wager;
- b) Examine the IP address upon each Remote Wagering Device connection to a network to ensure a known Virtual Private Network (VPN) or proxy service is not in use;
- c) Detect and block devices which indicate system-level tampering (e.g., rooting, jailbreaking, etc.);
- d) Stop "Man-In-The-Middle" attacks or similar hacking techniques and prevent code manipulation;
- e) Utilize detection and blocking mechanisms verifiable to an application level; and
- f) Monitor and prevent wagers placed by a single player account from geographically inconsistent locations (e.g., wager placement locations were identified that would be impossible to travel between in the time reported).

2.7.3 Location Detection for Remote Wagering on a WLAN

Where remote wagering occurs over a Wireless Local Area Network (WLAN), the Event Wagering System shall incorporate one of the following methods that can track the locations of all players connected to the WLAN:

- a) A location detection service or application in which each player shall pass a location check prior to completing each wager. This service or application shall meet the requirements specified in the next section for “Location Detection for Remote Wagering Over the Internet”; or

- b) A location detection component that detects in real-time when any players are no longer in the permitted area and prevent further wagers from being placed. This can be accomplished with the use of specific IT hardware such as directional antennas, Bluetooth sensors or other methods to be evaluated on a case-by-case basis by the independent test laboratory.

2.7.4 Location Detection for Remote Wagering Over the Internet

Where remote wagering occurs over the internet, the Event Wagering System shall incorporate a location detection service or application to reasonably detect and dynamically monitor the location of a player attempting to place a wager; and to monitor and enable the blocking of unauthorized attempts to place a wager.

- a) Each player shall pass a location check prior to completing the first wager after logging in on a specific Remote Wagering Device. Subsequent location checks on that device shall occur prior to completing wagers after a period of 30 minutes since the previous location check, or as otherwise specified by the regulatory body:
 - i. If the location check indicates the player is outside the permitted boundary or cannot successfully locate the player, the wager shall be rejected, and the player shall be notified of this.
 - ii. An entry shall be recorded in a time stamped log any time a location violation is detected, including the unique player ID and the detected location.
- b) A geolocation method shall be used to provide a player's physical location and an associated confidence radius. The confidence radius shall be entirely located within the permitted boundary.
- c) Accurate location data sources (Wi-Fi, GSM, GPS, etc.) shall be utilized by the geolocation method to confirm the player's location. If a Remote Wagering Device's only available location data source is an IP Address, the location data of a mobile device registered to the player account may be used as a supporting location data source under the following conditions:
 - i. The Remote Wagering Device (where the wager is being placed) and the mobile device shall be determined to be near one another.
 - ii. If allowed by the regulatory body, carrier-based location data of a mobile device may be used if no other location data sources other than IP Addresses are available.
- d) The geolocation method shall possess the ability to control whether the accuracy radius of the location data source is permitted to overlap or exceed defined buffer zones or the permitted boundary; and
- e) To mitigate and account for discrepancies between mapping sources and variances in geospatial data, boundary polygons based on audited maps approved by the regulatory body as well as overlay location data onto these boundary polygons shall be utilized.

2.8 Information to be Maintained

2.8.1 Data Retention and Time Stamping

The Event Wagering System shall be capable of maintaining and backing up all recorded data as discussed within this section:

- a) The system clock shall be used for all time stamping.

- b) The system shall provide a mechanism to export the data for the purposes of data analysis and auditing/verification (e.g., CSV, XLS).

2.8.2 Wager Record Information

For each individual wager placed by the player, the information to be maintained and backed up by the Event Wagering System shall include:

- a) The date and time the wager was placed;
- b) Any player choices involved in the wager:
 - i. Market and line postings (e.g., money line bet, point spreads, over/under amounts, win/place/show);
 - ii. Wager selection (e.g., athlete or team name and number);
 - iii. Any special condition(s) applying to the wager;
- c) The results of the wager (blank until confirmed);
- d) Total amount wagered, including any promotional/bonus credits (if applicable);
- e) Total amount won, including any promotional/bonus credits (if applicable);
- f) Commission or fees collected (if applicable);
- g) The date and time the winning wager was paid to the player;
- h) Unique identification number of the wager;
- i) User identification or unique Wagering Device ID which issued the wager record (if applicable);
- j) Relevant location information;
- k) Event and market identifiers;
- l) Current wager status (active, cancelled, unredeemed, pending, void, invalid, redemption in progress, redeemed, etc.);
- m) Unique player ID, for wagers conducted using a player account;
- n) Redemption period (if applicable); and
- o) Open text field for attendant input of player description or picture file (if applicable);

2.8.3 Market Information

For each individual market available for wagering, the information to be maintained and backed up by the Event Wagering System shall include:

- a) The date and time the wagering period started and ended;
- b) The date and time the event started and ended or is expected to occur for future events (if known);
- c) The date and time the results were confirmed (blank until confirmed);
- d) Total amount of wagers collected, including any promotional/bonus credits (if applicable);
- e) The line postings that were available throughout the duration of a market (time stamped) and the confirmed result (win/loss/push);
- f) Total amount of winnings paid to players, including any promotional/bonus credits (if applicable);
- g) Total amount of wagers voided or cancelled, including any promotional/bonus credits (if applicable);
- h) Commission or fees collected (if applicable);

- i) Event status (in progress, complete, confirmed, etc.); and
- j) Event and market identifiers.

2.8.4 Contest/Tournament Information

For Event Wagering Systems which support contests/tournaments, the information to be maintained and backed up by the Event Wagering System shall include for each contest/tournament:

- a) Name of the contest/tournament;
- b) The date and time the contest/tournament occurred or will occur (if known);
- c) Unique player ID and name of each registered player, amount of entry fee paid, and the date paid;
- d) Unique player ID and name of each winning player, amount paid, and the date paid;
- e) Total amount of entry fees collected, including any promotional/bonus credits (if applicable);
- f) Total amount of winnings paid to players, including any promotional/bonus credits (if applicable);
- g) Commission or fees collected (if applicable); and
- h) Contest/tournament status (in progress, complete, etc.).

2.8.5 Player Account Information

For Event Wagering Systems which support player account management, the information to be maintained and backed up by the Event Wagering System shall include for each player account:

- a) Unique player ID and player name;
- b) Player data (including verification method);
- c) The date of player agreement to the operator's terms and conditions and privacy policy;
- d) Account details and current balance;
- e) Open text field for attendant input of player description or picture file (if applicable);
- f) Previous accounts, if any, and reason for de-activation;
- g) The date and method from which the account was registered (e.g., remote vs. on-site);
- h) The date and time of last log in;
- i) Exclusions/limitations information as required by the regulatory body:
 - i. The date and time of the request (if applicable);
 - ii. Description and reason of exclusion/limitation;
 - iii. Type of exclusion/restriction (e.g., operator-imposed exclusion, self-imposed limitation);
 - iv. The date exclusion/limitation commenced;
 - v. The date exclusion/limitation ended (if applicable);
- j) Financial Transaction information:
 - i. Type of transaction (e.g., deposit, withdrawal, adjustment);
 - ii. The date and time of the transaction;
 - iii. Unique transaction ID;
 - iv. Amount of transaction;
 - v. Total account balance before/after transaction;
 - vi. Total amount of fees paid for transaction (if applicable);
 - vii. User identification or unique Wagering Device ID which handled the transaction (if applicable);

- viii. Transaction status (pending, complete, etc.);
- ix. Method of deposit/withdrawal (e.g., cash, debit or credit card, personal check, cashier's check, wire transfer, money order);
- x. Deposit authorization number; and
- xi. Relevant location information.

2.8.6 Promotion/Bonus Information

For Event Wagering Systems which support promotions and/or bonuses that are redeemable for cash, wagering credits, or merchandise, the information to be maintained and backed up by the Event Wagering System shall include for each promotion/bonus:

- a) The date and time the promotion/bonus period started and ended or will end (if known);
- b) Current balance for promotion/bonus;
- c) Total amount of promotions/bonuses issued;
- d) Total amount of promotions/bonuses redeemed;
- e) Total amount of promotions/bonuses expired;
- f) Total amount of promotion/bonus adjustments; and
- g) Unique ID for the promotion/bonus.

2.8.7 Wagering Device Information

For each individual Self-Service Wagering Device or POS Wagering Device, the information to be maintained and backed up by the Event Wagering System shall include, as applicable:

- a) Unique Wagering Device ID;
- b) Wager record purchases;
- c) Winning wager record redemptions, if supported;
- d) Wager record voids and cancellations; and
- e) User identification and session information, for POS Wagering Devices;

2.8.8 Significant Event Information

Significant event information to be maintained and backed up by the Event Wagering System shall include:

- a) Failed login attempts;
- b) Program error or authentication mismatch;
- c) Significant periods of unavailability of any critical component of the system;
- d) Large wins (single and aggregate over defined time period) in excess of a value specified by the regulatory body, including wager record information;
- e) Large wagers (single and aggregate over defined time period) in excess of a value specified by the regulatory body, including wager record information;
- f) System voids, overrides, and corrections;
- g) Changes to live data files occurring outside of normal program and operating system execution;

- h) Changes that are made to the download data library, including the addition, changing or deletion of software, where supported;
- i) Changes to operating system, database, network, and application policies and parameters;
- j) Changes to date/time on master time server;
- k) Changes to previously established criteria for an event or market (not including line posting changes for active markets);
- l) Changes to the results of an event or market;
- m) Changes to promotion and/or bonus parameters;
- n) Player Account Management:
 - i. Adjustments to a player account balance;
 - ii. Changes made to player data and sensitive information recorded in a player account;
 - iii. Deactivation of a player account;
 - iv. Large financial transactions (single and aggregate over defined time period) in excess of a value specified by the regulatory body, including transaction information;
- o) Irrecoverable loss of sensitive information;
- p) Any other activity requiring user intervention and occurring outside of the normal scope of system operation; and
- q) Other significant or unusual events as deemed applicable by the regulatory body.

2.8.9 User Access Information

For each user account, the information to be maintained and backed up by the Event Wagering System shall include:

- a) Employee name and title or position;
- b) User identification;
- c) Full list and description of functions that each group or user account may execute;
- d) The date and time the account was created;
- e) The date and time of last log in;
- f) The date and time of last password change;
- g) The date and time the account was disabled/deactivated; and
- h) Group membership of user account (if applicable).

2.9 Reporting Requirements

2.9.1 General Reporting Requirements

The Event Wagering System shall be capable of generating the information needed to compile reports as required by the regulatory body. In addition to meeting the requirements in the section above for “Data Retention and Time Stamping”, the following requirements shall apply for required reports:

- a) The system shall be able to provide the reporting information on demand and for intervals required by the regulatory body including, but not limited to, daily, month-to-date (MTD), year-to-date (YTD), and life-to-date (LTD).
- b) Each required report shall contain:
 - i. The operator, the selected interval and the date/time the report was generated; and

- ii. An indication of “No Activity” or similar message if no information appears for the period specified.

NOTE: In addition to the reports outlined in this section, the regulatory body may also require other reports utilizing the information stored under the “Information to be Maintained” section of this document.

2.9.2 Operator Revenue Reports

The Event Wagering System shall be able to provide the following information needed to compile one or more reports on operator revenue for each event as a whole and for each individual market within that event which may be used for operator taxation information:

- a) The date and time each event started and ended;
- b) Total amount of wagers collected;
- c) Total amount of winnings paid to players;
- d) Total amount of wagers voided or cancelled;
- e) Commission and fees collected (if applicable);
- f) Event and market identifiers; and
- g) Event status (in progress, complete, confirmed, etc.).

2.9.3 Operator Liability Reports

The Event Wagering System shall be able to provide the following information needed to compile one or more reports on operator liability:

- a) Total amount held by the operator for the player accounts (if applicable);
- b) Total amount of wagers placed on future events; and
- c) Total amount of winnings owed but unpaid by the operator on winning wagers.

2.9.4 Future Events Reports

The Event Wagering System shall be able to provide the following information needed to compile one or more reports on future events for the gaming day:

- a) Wagers placed prior to the gaming day for future events (total and by wager);
- b) Wagers placed on the gaming day for future events (total and by wager);
- c) Wagers placed prior to the gaming day for events occurring on that same day (total and by wager);
- d) Wagers placed on the gaming day for events occurring on that same day (total and by wager);
- e) Wagers voided or cancelled on the gaming day (total and by wager); and
- f) Event and market identifiers.

2.9.5 Significant Events and Alterations Reports

The Event Wagering System shall be able to provide the following information needed to compile one or more reports for each significant event or alteration as applicable:

- a) The date and time of the significant event or alteration;
- b) Event/component identification (if applicable);
- c) Identification of user(s) who performed and/or authorized the significant event or alteration;
- d) Reason/description of the significant event or alteration, including data or parameter altered;
- e) Data or parameter value before alteration; and
- f) Data or parameter value after alteration.

Chapter 3: Wagering Device Requirements

3.1 Introduction

3.1.1 General Statement

A wager may be placed using one of the following types of Wagering Devices as allowed by the regulatory body. Any other types of Wagering Devices will be reviewed on a case-by-case basis, as allowed by the regulatory body.

- a) Point-of-Sale (POS) Wagering Device: An attendant station that at a minimum will be used by an attendant for the execution or formalization of wagers placed on behalf of a player.
- b) Self-Service Wagering Device: A kiosk that at a minimum will be used for the execution or formalization of wagers placed by a player directly and, if supported, may be used for redemption of winning wager records.
- c) Remote Wagering Device: A player-owned device operated either on an in-venue wireless network or over the internet that at a minimum will be used for the execution or formalization of wagers placed by a player directly. Examples of a Remote Wagering Device include a personal computer, mobile phone, tablet, etc.

3.2 Wagering Software

3.2.1 General Statement

Wagering Software is used to take part in wagering and financial transactions with the Event Wagering System which, based on design, is downloaded to or installed on the Wagering Device, run from the Event Wagering System which is accessed by the Wagering Device, or a combination of the two.

3.2.2 Software Identification

Wagering Software shall contain sufficient information to identify the software and its version.

3.2.3 Software Validation

For Wagering Software installed locally on the Wagering Device, it shall be possible to authenticate that all critical components contained in the software are valid each time the software is loaded for use, and where supported by the system, on demand as required by the regulatory body. Critical components may include, but are not limited to, wagering rules, elements that control the communications between the Wagering Device and the Event Wagering System, or other components that are needed to ensure proper operation of the software. In the event of a failed authentication (i.e., program mismatch or authentication failure), the software shall prevent wagering operations and display an appropriate error message.

NOTE: Program verification mechanisms will be evaluated on a case-by-case basis and approved by the regulatory body and the independent test laboratory based on industry-standard security practices.

3.2.4 User Interface Requirements

The user interface is defined as an interface application or program through which the user views and/or interacts with the Wagering Software. The user interface shall meet the following requirements:

- a) The functions of all buttons, touch or click points shall be clearly indicated within the area of the button, or touch/click point or within the help menu. There shall be no functionality available through any buttons or touch/click points on the user interface that are undocumented.
- b) Any resizing or overlay of the user interface shall be mapped accurately to reflect the revised display and touch/click points.
- c) User interface instructions, as well as information on the functions and services provided by the software, shall be clearly communicated to the user and shall not be misleading or inaccurate.
- d) The display of the instructions and information shall be adapted to the user interface. For example, where a Wagering Device uses technologies with a smaller display screen, it is permissible to present an abridged version of the wagering rules accessible directly from within the wagering screen and make available the full/complete version of the wagering rules via another method, such as a secondary screen, help menu, or other interface that is easily identified on the visual wagering screen.

3.2.5 Simultaneous Inputs

Wagering Software shall not be adversely affected by the simultaneous or sequential activation of the various inputs and outputs which might, whether intentionally or not, cause malfunctions or invalid results.

3.2.6 Wager Record Printers

If the Wagering Device uses a printer to issue printed wager records to the player, the printed wager record shall include information as indicated in “Wager Record” section of this document. It may be permissible for some of this information to be contained on the ticket stock itself.

3.2.7 Communications

Wagering Software shall be designed or programmed such that it may only communicate with authorized components through secure communications. If communication between the Event Wagering System and the Wagering Device is lost, the software shall prevent further wagering operations and display an appropriate error message. It is permissible for the software to detect this error when the device tries to communicate with the system.

3.3 Self-Service Wagering Devices

3.3.1 General Statement

A player places a wager at a Self-Service Wagering Device by using funds from their player account or by using peripheral devices as authorized by the regulatory body. In addition to the requirements for “Wagering Software”, the applicable requirements established within the *GLI-20 Standards for Kiosks* and other applicable jurisdictional requirements observed by the regulatory body shall be met for all proprietary components of the Self-Service Wagering Device.

3.4 POS Wagering Devices

3.4.1 General Statement

A player places a wager at POS Wagering Device by using funds from their player account or by providing payment for the wager(s) directly to the attendant. In addition to the requirements for “Wagering Software”, the requirements established in this section shall be met for POS Wagering Devices.

3.4.2 Touch Screen Displays

Touch screen displays, if in use by the Wagering Software, shall be accurate, and if required by their design, shall support a calibration method to maintain that accuracy; alternatively, the display hardware may support automatic self-calibration.

3.4.3 Printing Wager Records

If the POS Wagering Device connects to a printer to produce printed wager records and/or wagering instruments (vouchers and coupons), the printer and/or Wagering Software shall be able to detect and indicate the following error conditions, where supported. It is permissible for the error condition to be detected when it tries to print:

- a) Low battery (where power is external to the POS Wagering Device);
- b) Out of paper/paper low; and
- c) Printer disconnected.

3.4.4 Wireless POS Wagering Devices

For wireless POS Wagering Devices, the applicable requirements for “Client-Server Interactions” of the next section shall also be met. Additionally, communication shall only occur between the wireless POS Wagering Device and the Event Wagering System via authorized access points within the venue.

3.5 Remote Wagering Devices

3.5.1 General Statement

A player may only place a wager on a Remote Wagering Device by using funds from their player account (i.e. anonymous wagering transactions are prohibited). Depending on the implementation(s)

authorized by the regulatory body, Remote Wagering Devices may be used on an in-venue Wireless Local Area Network (WLAN) or over the internet. In addition to the requirements for “Wagering Software”, the requirements established in this section shall be met for Remote Wagering Devices.

3.5.2 Client-Server Interactions

The player may obtain/download an application or software package containing the Wagering Software or access the software via a browser to take part in wagering and financial transactions with the Event Wagering System.

- a) Players shall not be able to use the software to transfer data to one another, other than chat functions (e.g., text, voice, video, etc.) and approved files (e.g., user profile pictures, photos, etc.);
- b) The software shall not automatically alter any device-specified firewall rules to open ports that are blocked by either a hardware or software firewall;
- c) The software shall not access any ports (either automatically or by prompting the user to manually access) which are not necessary for the communication between the Remote Wagering Device and the server;
- d) If the software includes additional non-wagering related functionality, this additional functionality shall not alter the software’s integrity in any way;
- e) The software shall not possess the ability to override the volume settings of the Remote Wagering Device; and
- f) The software shall not be used to store sensitive information. It is recommended that auto complete, password caching, or other methods that will fill in the password field are disabled by default for the software.

3.5.3 Compatibility Verification

During any installation or initialization and prior to commencing wagering operations, the Wagering Software used in conjunction with the Event Wagering System shall detect any incompatibilities or resource limitations with the Remote Wagering Device that would prevent proper operation of the software (e.g., software version, minimum specifications not met, browser type, browser version, plug-in version, etc.). If any incompatibilities or resource limitations are detected the software shall prevent wagering operations and display an appropriate error message.

3.5.4 Software Content

Wagering Software shall not contain any malicious code or functionality deemed to be malicious in nature by the regulatory body. This includes, but is not limited to, unauthorized file extraction/transfers, unauthorized device modifications, unauthorized access to any locally stored personal information (e.g., contacts, calendar, etc.) and malware.

3.5.5 Cookies

Where cookies are used, players shall be informed of the cookie use upon Wagering Software installation or during player registration. When cookies are required for wagering, wagering cannot occur if they are not accepted by the Remote Wagering Device. All cookies used shall contain no

malicious code.

3.5.6 Information Access

The Wagering Software shall be able to display, either directly from the user interface or from a page accessible to the player, the items specified in the following sections of this document. For Remote Wagering Devices which only allow wagers within a venue, it is acceptable to disclose to the player the means of obtaining the information required by this section:

- a) “Wagering Rules and Content”;
- b) “Player Protection Information”;
- c) “Terms and Conditions”;
- d) “Privacy Policy”;
- e) “Wagering Displays and Information”; and
- f) “Results Display”.

NOTE: It is accepted that the system will unavoidably be subject to a certain degree of synchronization delay for updates to this information as displayed on the software, and it is possible that information may only be updated at the player’s next interaction with the software which causes the on-screen information to be refreshed.

Chapter 4: Event Wagering Requirements

4.1 Introduction

4.1.1 General Statement

This chapter sets forth technical requirements for wagering operations, including, but not limited to rules for wager placement and results for markets within an event.

4.2 Wagering Displays and Information

4.2.1 Posting of Wagering Rules

Comprehensive wagering rules shall be posted by an operator for the markets and event types currently offered. Where the Wagering Software includes these wagering rules directly, the software will be evaluated against the requirements within the “Wagering Rules” section of this document.

4.2.2 Dynamic Wagering Information

The following information shall be made available without the need for placing a wager. Within a venue this information may be displayed on a Wagering Device and/or an external display.

- a) Information regarding the events and markets available for wagering;
- b) Current odds/payouts and prices for available markets;
- c) For types of markets where individual wagers are gathered into pools:
 - i. Up-to-date odds/payouts information for simple market pools. For complex market pools, it is accepted that there may be reasonable limitations to the up-to-date accuracy of the pool estimates displayed to the player;
 - ii. Up-to-date values of total investments for all market pools; and
 - iii. The dividends of any decided market.

NOTE: This information shall be displayed as accurately as possible within the constraints of communication delays and latencies.

4.2.3 Player Resources/Features

Where allowed by the regulatory body, player resources/features may be provided such as one that offers advice, hints, or suggestions to a player, or a data stream that may be used to externally facilitate wager selection, if they conform to the following requirements:

- a) The player shall be made aware of each resource/feature that is available, the advantage it offers (if any), and the options that exist for selection.
- b) The method for obtaining each resource/feature shall be disclosed to the player. Any player resources/features that are offered to the player for purchase shall clearly disclose the cost.

- c) The availability and functionality of player resources/features shall remain consistent for all players.
- d) For peer-to-peer wagering, the player shall be provided with sufficient information to make an informed decision, prior to participation, as to whether to participate with player(s) who may possess such resources/features.

4.3 Wager Placement

4.3.1 General Statement

Wagers are placed in conjunction with a player account or by funds provided to a Wagering Device or an attendant. Depending on the type of Wagering Device, wagers may be placed directly by the player or on behalf of a player by an attendant.

NOTE: Wagers placed using a Remote Wagering Device may only be placed in conjunction with a player account.

4.3.2 Placement of a Wager

The following rules only apply to the placement of a paid wager directly by a player on the Wagering Device:

- a) The method of placing a wager shall be straightforward, with all selections (including their order, if relevant) identified. When the wager involves multiple events (e.g., parlays), such groupings shall be identified.
- b) Players shall have the ability to select the market they want to place a wager on.
- c) Wagers shall not be automatically placed on behalf of the player without the player's consent/authorization.
- d) Players shall have an opportunity to review and confirm their selections before the wager is submitted. This does not preclude the use of "single-click" wagering where permitted by the regulatory body and opted in by the player.
- e) Situations shall be identified where the player has placed a wager for which the associated odds/payouts or prices have changed, and unless the player has opted in to auto-accept changes as permitted by the regulatory body, provide a notification to confirm the wager given the new values.
- f) Clear indication shall be provided that a wager has been accepted or rejected (in full or in part). Each wager shall be acknowledged and clearly indicated separately so that there is no doubt as to which wagers have been accepted.
- g) For wagers conducted using a player account:
 - i. The account balance shall be readily accessible.
 - ii. A wager shall not be accepted that could cause the player to have a negative balance.
 - iii. The account balance is to be debited when the wager is accepted by the system.

4.3.3 Automatic Acceptance of Changes in Wagers

Where allowed by the regulatory body, an Event Wagering System may support a feature that allows a player while placing a wager to auto-accept changes in odds/payouts or price of the wager provided that it conforms to the following requirements:

- a) Any auto-accept options available (e.g., auto-accepting all wagers with higher price, auto-accepting all wagers with lower price, etc.) shall be explained to the player;
- b) The player shall manually opt in to use this functionality (i.e., it shall not be set by default); and
- c) The player shall be able to opt out at any time.

4.3.4 Wager Record

Upon completion of a wagering transaction, the player shall have access to a wager record which contains the following information:

- a) The date and time the wager was placed;
- b) The date and time the event is expected to occur (if known);
- c) Any player choices involved in the wager:
 - i. Market and line postings (e.g., money line bet, point spreads, over/under amounts, win/place/show, etc.);
 - ii. Wager selection (e.g., athlete or team name and number);
 - iii. Any special condition(s) applying to the wager;
- d) Total amount wagered, including any promotional/bonus credits (if applicable);
- e) Unique identification number and/or barcode of the wager;
- f) User identification or unique Wagering Device ID which issued the wager record (if applicable);
- g) Venue Name/Site Identifier (for printed wager record, it is permissible for this information to be contained on the ticket stock itself); and
- h) Redemption period (for printed wager records it is permissible for this information to be contained on the ticket stock itself).

NOTE: Some of the above-listed information may also be part of the unique identification number and/or barcode. Multiple barcodes are allowed and may represent more than just the unique identification number.

4.3.5 Wagering Period Close

It shall not be possible to place wagers once the wagering period has closed.

4.3.6 Free Play Mode

Where allowed by the regulatory body, the Event Wagering System may support free play mode, which allows a player to participate in wagering without paying. Free play mode shall not mislead the player about the odds/payouts available in the paid version.

4.4 Results and Payment

4.4.1 Results Display

Results entry shall include the entry of all information which may affect the outcome of all types of wagers offered for that event.

- a) It shall be possible for a player to obtain the results of their wagers on any decided market once the results have been confirmed.
- b) Any change of results (e.g., due to statistics/line corrections) shall be made available.

4.4.2 Payment of Winnings

Once the results of the event are entered and confirmed, the player may receive payment for their winning wagers. This does not preclude the ability for the player to perform a redemption for an adjusted payout before event conclusion where offered and allowed by the regulatory body.

4.4.3 Winning Wager Record Redemption

The following requirements apply to the redemption of a winning wager at a Wagering Device, as allowed by the regulatory body. This section does not apply to winning wagers tied to a player account which automatically updates the account balance.

- a) The Event Wagering System shall process winning wager record redemption according to the secure communication protocol implemented.
- b) No winnings are issued to the player prior to confirmation of winning wager record validity.
- c) The Event Wagering System shall have the ability to identify and provide a notification in the case of invalid or unredeemable wager records for the following conditions:
 - i. Wager record cannot be found on file;
 - ii. Wager record is not a winner;
 - iii. Winning wager record has already been paid; or
 - iv. Amount of winning wager record differs from amount on file (requirement can be met by display of winning wager amount for confirmation during the redemption process).
- d) The Event Wagering System shall update the wager record status on the database during each phase of the redemption process accordingly. In other words, whenever the wager record status changes, the system shall update the database.

4.5 Virtual Event Wagering

4.5.1 General Statement

Virtual event wagering allows for the placement of wagers on simulations of sporting events, contests, and races whose results are based solely on the output of an approved Random Number Generator (RNG) as allowed by the regulatory body. The following requirements are only applicable to cases that virtual event wagering is conducted in total by the Event Wagering System where a wager is placed at a Wagering Device or through interaction with an attendant and then the virtual event is displayed via a public or common display (e.g. external display, website, etc.). For virtual events conducted by a gaming device (e.g., player makes a wager and the event plays out before them on their machine or a shared display on a multi-player machine), please refer to the *GLI-11 Standards for Gaming Devices* or other jurisdictional requirements observed by the regulatory body.

4.5.2 Randomization and Virtual Events

A cryptographic RNG shall be utilized to determine virtual event outcomes and shall comply with the applicable jurisdictional requirements set out for RNGs. In the absence of specific jurisdictional standards, the “Random Number Generator (RNG) Requirements” chapter of the *GLI-11 Standards for Gaming Devices* shall be used as applicable. Additionally, the evaluation of virtual event outcomes using an RNG shall comply with the following rules:

- a) Where more than one RNG is used to determine different virtual event outcomes, each RNG shall be separately evaluated; and
- b) Where each instance of an RNG is identical, but involves a different implementation within the virtual event, each implementation shall be separately evaluated.

4.5.3 Virtual Event Selection Process

Determination of events of chance that result in a monetary award shall not be influenced, affected, or controlled by anything other than the values selected by an approved RNG, in accordance with the following requirements:

- a) It shall not be possible to ascertain the outcome of the virtual event prior to its commencement;
- b) When making calls to the RNG, the virtual event shall not limit the outcomes available for selection, except as provided for by design;
- c) The virtual event shall not modify or discard outcomes selected by the RNG due to adaptive behavior. Additionally, outcomes shall be used as described by the rules of the virtual event;
- d) After the commencement of a virtual event, no further actions or decisions may be made that change the behavior of any of the elements of chance within the virtual event, other than player decisions;
- e) Except as provided for by the rules of the virtual event, events of chance shall be independent and shall not correlate with any other events within the same virtual event, or events within previous virtual events;
- f) Any associated equipment used in conjunction with an Event Wagering System shall not influence or modify the behaviors of the system’s RNG and/or random selection process, except as authorized, or intended by design;
- g) Virtual event outcomes shall not be affected by the effective bandwidth, link utilization, bit error rate or other characteristics of the communications channel between the Event Wagering System and the Wagering Device; and
- h) Wagering Software shall not contain any logic utilized to generate the result of any virtual event. All critical functions including the generation of any virtual event shall be generated by the Event Wagering System and be independent of the Wagering Device.

4.5.4 Virtual Event Display

Displays for a virtual event shall conform to applicable display requirements of this standard. In addition, the following display requirements apply:

- a) Statistical data that is made available to the player pertaining to the virtual event shall not misrepresent the capabilities of any virtual participant. This does not prevent the use of an element of chance or randomness from impacting performance of the virtual participant during the virtual event.
- b) For scheduled virtual events, a countdown of the time remaining to place a wager in that event shall be displayed to the player. It shall not be possible to place wagers on the event once this time has passed; however, this requirement does not prohibit the implementation of in-play wagers.
- c) Each virtual participant shall be unique in appearance, where applicable to the wager. For instance, if the wager is on one team to beat another, the virtual participants themselves do not need to be unique in appearance, however the teams that they are on shall be visually distinct from each other.
- d) The result of a virtual event shall be clear, unambiguous, and displayed for a sufficient length of time to allow a player a reasonable opportunity to verify the virtual event's outcome.

4.5.5 Simulation of Physical Objects

Where a virtual event incorporates a graphical representation or simulation of a physical object that is used to determine virtual event outcome, the behaviors portrayed by the simulation shall be consistent with the real-world object, unless otherwise denoted by the virtual event rules. This requirement does not apply to graphical representations or simulations that are utilized for entertainment purposes only. The following shall apply to the simulation:

- a) The probability of any event occurring in the simulation that affects the outcome of the virtual event shall be analogous to the properties of the physical object;
- b) Where the virtual event simulates multiple physical objects that would normally be expected to be independent of one another based on the rules of the virtual event, each simulation shall be independent of any other simulation; and
- c) Where the virtual event simulates physical objects that have no memory of previous events, the behavior of the simulated objects shall be independent of their previous behavior, so as to be non-adaptive and non-predictable, unless otherwise disclosed to the player.

4.5.6 Physics Engine

Virtual events may utilize a “physics engine” which is specialized software that approximates or simulates a physical environment, including behaviors such as motion, gravity, speed, acceleration, inertia, trajectory, etc. A physics engine shall be designed to maintain consistent play behaviors and virtual event environment unless an indication is otherwise provided to the player by the virtual event rules. A physics engine may utilize the random properties of an RNG to impact virtual event outcome.

NOTE: Implementations of a physics engine in a virtual event will be evaluated on a case-by-case basis by the independent test laboratory.

4.6 External Wagering Systems

4.6.1 General Statement

This section contains requirements for the circumstances where the Event Wagering System communicates with an external wagering system in any of the following configurations:

- a) The Event Wagering System is acting as the “host wagering system” receiving, for its own markets, wagers from one or more external “guest wagering systems”; or
- b) The Event Wagering System is acting as a “guest wagering system” passing wagers to an external “host wagering system,” for that system’s markets.

NOTE: The requirements of this section apply to the interoperability of the Event Wagering System with the external wagering system and are not a complete evaluation of the external wagering system itself. The external wagering system may independently be subject to evaluation by the independent test laboratory per regulatory body discretion.

4.6.2 Information

The following requirements apply to information being conveyed between the host wagering system and the guest wagering system:

- a) If the host wagering system provides pari-mutuel wagering for the guest wagering system, the Event Wagering System shall be able to:
 - i. When acting as the guest wagering system, receive the current dividends for active pools sent from the host wagering system.
 - ii. When acting as the host wagering system, pass the current dividends for active pools to all receiving guest wagering systems.
- b) If the host wagering system provides fixed odds wagering for the guest wagering system where the odds/payouts and prices can be dynamically changed, the Event Wagering System shall be able to:
 - i. When acting as the guest wagering system, receive the current odds/payouts and prices sent from the host wagering system whenever any odds/payouts and prices are changed.
 - ii. When acting as the host wagering system, pass the current odds/payouts and prices to all receiving guest wagering systems whenever any odds/payouts and prices are changed.
- c) Change of event status information shall be passed from the host wagering system to the guest wagering system whenever any change occurs, including:
 - i. Withdrawn/reinstated selections;
 - ii. Altered event starting time;
 - iii. Individual markets opened/closed;
 - iv. Results entered/modified;
 - v. Results confirmed; and
 - vi. Event cancelled.

4.6.3 Wagers

The following requirements apply to wagers being placed between the host wagering system and the guest wagering system:

- a) Wagers placed on the guest wagering system shall receive clear acknowledgment of acceptance, partial acceptance (including details), or rejection sent by the host wagering system.
- b) If the cost of the wager is determined by the host wagering system, there shall be a positive confirmation sequence in place to enable the player to accept the wager cost and the guest wagering system to determine that there are enough funds in the account balance to meet the wager cost prior to making an offer to the host wagering system.
- c) Where wagers may be placed in bulk, the following requirements apply:
 - i. If the stream of wagers is interrupted for any reason, there shall be a means available to determine where in the stream that the interruption occurred.
 - ii. No wager in the stream may be greater than the account balance. If such a wager is attempted, the entire stream is to be halted.
- d) The account balance shall be debited an amount equaling the offer and cost to the host wagering system. The funds shall remain as a pending transaction with details of the offer to the host wagering system logged. On receipt of acknowledgment from the host wagering system, the appropriate adjustments shall be made to the "pending" account and the account balance on the guest wagering system.
- e) Cancellation requests from the guest wagering system shall receive clear acknowledgment of acceptance or rejection by the host wagering system. The player is not to be credited by the guest wagering system until final confirmation is received from the host wagering system including the amount of the voided or cancelled wager.

4.6.4 Results

When results are entered and confirmed on the host wagering system, each winning wager shall be transferred to the guest wagering system with the amount of the win. Confirmation of receipt of the winning wagers shall be acknowledged by the guest wagering system.

Appendix A: Operational Audit for Wagering Procedures and Practices

A.1 Introduction

A.1.1 General Statement

This appendix sets forth procedures and practices for wagering operations which will be reviewed in an operational audit as a part of the Event Wagering System evaluation, including, but not limited to establishing wagering rules, suspending events, handling various wagering and financial transactions, creating markets, settling wagers, closing markets, cancellations of events, voiding or cancelling wagers, player account management, fundamental practices relevant to the limitation of risks, and any other objectives established by the regulatory body.

NOTE: It is also recognized that additional procedures and practices which are not specifically included within this standard will be relevant and required for an operational audit as determined by the operator and/or regulatory body within their rules, regulations, and Minimum Internal Control Standards (MICS).

A.2 Internal Control Procedures

A.2.1 Internal Control Procedures

The operator shall establish, maintain, implement and comply with internal control procedures for wagering operations, including performing wagering and financial transactions.

A.2.2 Information Management

The operator's internal controls shall include the processes for maintaining the recorded information specified under the section entitled "Information to be Maintained" for a period of five years or as otherwise specified by the regulatory body.

A.2.3 Risk Management

The operator's internal controls shall contain details on its risk management framework, including but not limited to:

- a) Automated and manual risk management procedures;
- b) Employee management, including access controls and segregation of duties;
- c) Information regarding identifying and reporting fraud and suspicious conduct;
- d) Controls ensuring regulatory compliance;
- e) Description of Anti-Money Laundering (AML) compliance standards including procedures for detecting structuring to avoid reporting requirements;
- f) Description of all software applications that comprise the Event Wagering System;
- g) Description of all types of wagers available to be offered by the operator;

- h) Description of the method to prevent past-post wagers from being placed;
- i) Description of all integrated third-party service providers; and
- j) Any other information required by the regulatory body.

A.2.4 Restricted Players

The operator's internal controls shall describe the method to prevent players from wagering on events in which they might have insider information, including, but not limited to the following examples, as required by the regulatory body:

- a) Players identified as employees, subcontractors, directors, owners, and officers of an operator, as well as those within the same household, shall not place wagers on any event, except in private pools where their association with the operator is clearly disclosed.
- b) Players identified as professional or collegiate athletes, team employees and owners, coaches, managers, handlers, athletic trainers, league officials and employees, referees, umpires, sports agents, and employees of a player or referee union, as well as those within the same household, shall not place wagers on any event in the sport in which they participate, or in which the athlete they represent participates.

A.3 Player Account Controls

A.3.1 Registration and Verification

Where player account registration is done manually by the operator, procedures shall be in place to satisfy the requirements for "Registration and Verification" as indicated within this document.

A.3.2 Fraudulent Accounts

The operator shall have a documented public policy for the treatment of player accounts discovered to being used in a fraudulent manner, including but not limited to:

- a) The maintenance of information about any account's activity, such that if fraudulent activity is detected, the operator has the necessary information to take appropriate action;
- b) The suspension of any account discovered to be engaged in fraudulent activity, such as a player providing access to underage persons; and
- c) The handling of deposits, wagers, and wins associated with a fraudulent account.

A.3.3 Terms and Conditions

A set of terms and conditions shall be available to the player. During the registration process and when any terms and conditions are materially updated (i.e. beyond any grammatical or other minor changes), the player shall agree to the terms and conditions. The terms and conditions shall:

- a) State that only individuals legally permitted by their respective jurisdiction can participate in wagering;
- b) Advise the player to keep their authentication credentials (e.g., password and username) secure;

- c) Disclose all processes for dealing with lost authentication credentials, forced password changes, password strength and other related items;
- d) Specify the conditions under which an account is declared inactive and explain what actions will be undertaken on the account once this declaration is made; and
- e) Clearly define what happens to the player's pending wagers placed prior to any self-imposed or operator-imposed exclusion, including the return of all wagers, or settling all wagers, as appropriate.

A.3.4 Privacy Policy

A privacy policy shall be available to the player. During the registration process and when the privacy policy is materially updated (i.e. beyond any grammatical or other minor changes), the player shall agree to the privacy policy. The privacy policy shall state

- a) The player data required to be collected;
- b) The purpose for information collection;
- c) The period in which the information is stored;
- d) The conditions under which information may be disclosed; and
- e) An affirmation that measures are in place to prevent the unauthorized or unnecessary disclosure of the information.

A.3.5 Player Data Security

Any information obtained in respect to the player account, including player data, shall be done in compliance with the privacy policy and local privacy regulations and standards observed by the regulatory body. In addition:

- a) Any player data which is not subject to disclosure pursuant to the privacy policy shall be kept confidential, except where the release of that information is required by law.
- b) There shall be procedures in place for the security and sharing of player data, funds in a player account and other sensitive information as required by the regulatory body, including, but not limited to:
 - i. The designation and identification of one or more employees having primary responsibility for the design, implementation and ongoing evaluation of such procedures and practices;
 - ii. The procedures to be used to determine the nature and scope of all information collected, the locations in which such information is stored, and the storage devices on which such information may be recorded for purposes of storage or transfer;
 - iii. The measures to be utilized to protect information from unauthorized access; and
 - iv. The procedures to be used in the event the operator determines that a breach of data security has occurred, including required notification to the regulatory body.

A.3.6 Financial Transactions

Procedures shall be in place to ensure all financial transactions are conducted in accordance with local commerce regulations and requirements mandated by the regulatory body:

- a) Where financial transactions cannot be performed automatically by the Event Wagering System, procedures shall be in place to satisfy the requirements for “Player Funds Maintenance” as indicated within this document.
- b) Positive player identification or authentication shall be completed before the withdrawal of any funds can be made by the player.
- c) A player’s request for withdrawal of funds (i.e., deposited and cleared funds and wagers won) shall be completed by the operator within a reasonable amount of time, unless there is a pending unresolved player complaint/dispute or investigation. Such investigation shall be documented by the operator and available for review by the regulatory body.
- d) The operator shall have security or authorization procedures in place to ensure that only authorized adjustments can be made to player accounts, and these changes are auditable.

A.3.7 Limitations

Players shall be provided with a method to impose limitations for wagering parameters including, but not limited to deposits and wagers as required by the regulatory body. In addition, there shall be a method for the operator to impose any limitations for wagering parameters as required by the regulatory body.

- a) Once established by a player and implemented by the operator, it shall only be possible to reduce the severity of self-imposed limitations upon 24 hours’ notice, or as required by the regulatory body;
- b) Players shall be notified in advance of any operator-imposed limits and their effective dates. Once updated, operator-imposed limits shall be consistent with what is disclosed to the player; and
- c) Upon receiving any self-imposed or operator-imposed limitation order, the operator shall ensure that all specified limits are correctly implemented immediately or at the point in time (e.g., next login, next day) clearly indicated to the player.

A.3.8 Exclusions

Players shall be provided with a method to exclude themselves from wagering for a specified period or indefinitely, as required by the regulatory body. In addition, there shall be a method for the operator to exclude a player from wagering as required by the regulatory body.

- a) Players shall be given a notification containing exclusion status and general instructions for resolution where possible;
- b) Immediately upon receiving the exclusion order, no new wagers or deposits are accepted from that player, until the exclusion has been removed;
- c) While excluded, the player shall not be prevented from withdrawing any or all of their account balance, provided that the operator acknowledges that the funds have cleared, and that the reason(s) for exclusion would not prohibit a withdraw; and
- d) All advertising or marketing material shall not specifically target players that have been excluded from play.

A.3.9 Inactive Accounts

A player account is considered to be inactive under the conditions as specified in the terms and conditions. Procedures shall be in place to:

- a) Protect inactive player accounts that contain funds from unauthorized access, changes or removal; and
- b) Deal with unclaimed funds from inactive player accounts, including returning any remaining funds to the player where possible.

A.4 General Operating Procedures

A.4.1 Operator Reserves

The operator shall have processes in place for maintaining and protecting adequate cash reserves, as determined by the regulatory body, including segregated accounts of funds held for player accounts and operational funds such as those used to cover unclaimed winning wagers, potential winning wagers for the gaming day, etc.

A.4.2 Protection of Player Funds

The operator shall have processes in place to ensure funds in an operator account are either to be held in trust for the player in a special purpose segregated account that is maintained and controlled by a properly constituted corporate entity that is not the operator and whose governing board includes one or more corporate directors who are independent of the operator and of any corporation related to or controlled by the operator. In addition, the operator shall have procedures that are reasonably designed to:

- a) Ensure that funds generated from wagering are safeguarded and accounted for;
- b) Make clear that the funds in the segregated account do not belong to the operator and are not available to creditors other than the player whose funds are being held; and
- c) Prevent commingling of funds in the segregated account with other funds including, without limitation, funds of the operator.

A.4.3 Taxation

The operator shall have a process in place to identify all wins that are subject to taxation (single wins or aggregate wins over a defined period as required) and provide the necessary information in accordance with each regulatory body's taxation requirements.

NOTE: Amounts won that exceed any jurisdictional specified limit shall require the appropriate documentation to be completed before the winning player is paid.

A.4.4 Complaint/Dispute Process

The operator shall provide a method for a player to make a complaint/dispute, and to enable the player to notify the regulatory body if such complaint/dispute has not been or cannot be addressed by the operator, or under other circumstances as specified by the law of the regulatory body.

- a) Players shall be able to log complaints/disputes on a 24/7 basis.
- b) Records of all correspondence relating to a complaint/dispute shall be maintained for a period of five years or as otherwise specified by the regulatory body.
- c) A documented process shall exist between the operator and the regulatory body on the complaint/dispute reporting and resolution process.

A.4.5 Player Protection Information

Player protection information shall be available to the player. The player protection information shall contain at a minimum:

- a) Information about potential risks associated with excessive wagering, and where to get help for a gambling problem;
- b) A statement that no underage persons are permitted to participate in wagering;
- c) A list of the available player protection measures that can be invoked by the player, such as self-imposed exclusion, and information on how to invoke those measures;
- d) For player accounts, mechanisms in place which can be used to detect unauthorized use of their account, such as reviewing credit card statements against known deposits;
- e) Contact information or other means for reporting a complaint/dispute; and
- f) Contact information for the regulatory body and/or a link to their website.

A.5 Wagering Rules and Content

A.5.1 Wagering Rules

Wagering rules refers to any written, graphical, and auditory information provided to the public regarding event wagering operations. The operator shall adopt, and adhere to comprehensive wagering rules which shall be approved by the regulatory body:

- a) Wagering rules shall be complete, unambiguous, and not misleading or unfair to the player.
- b) Wagering rules that are presented aurally (via sound or voice) shall also be displayed in written form.
- c) Wagering rules shall be rendered in a color that contrasts with the background color to ensure that all information is clearly visible/readable.
- d) The operator shall keep a log of any changes to the wagering rules relating to placing wagers.
- e) Where wagering rules are altered for events or markets being offered, all rule changes shall be time and date stamped showing the rule applicable in each period. If multiple rules apply to an event or market, the operator shall apply the rules that were in place when the wager was accepted.

A.5.2 Wagering Rules Content

The following information shall be made available to the player. For wagers placed within a venue, it is acceptable for this information to be displayed by the Wagering Device directly or by external signage, forms, or brochures available:

- a) The methods of funding a wager or player account, including a clear and concise explanation of all fees (if applicable);
- b) As allowed by the regulatory body, any prizes that are offered in the form of merchandise, annuities, lump sum payments, or payment plans instead of cash payouts for each market that is offering such a prize;
- c) The procedures by which any unrecoverable malfunctions of hardware/software are addressed including if this process results in the voiding or cancelling of any wagers; and
- d) The procedures to deal with interruptions caused by the discontinuity of data flow from the network server during an event.
- e) Rules of participation, including all wagering eligibility and scoring criteria, available events and markets, types of wagers accepted, line postings, all advertised awards, and the effect of schedule changes;
- f) Payout information, including possible winning positions, rankings, and achievements, along with their corresponding payouts, for any available wager option;
- g) Any restrictive features of wagering, such as wager amounts or maximum win values;
- h) A description on restricted players, including any applicable limitations on wagering for them (e.g. athletes shall not wager on their sport);
- i) The procedures for handling incorrectly posted events, markets, odds/payouts, prices, wagers, or results;
- j) A wager cancellation policy which shall cater for wagers with multiple events (e.g., parlays) and indicate any prohibitions of voiding or cancelling wagers (e.g., after a fixed time period);
- k) Whether the odds/payouts are locked-in at the time of the wager, or if the odds/payouts may change dynamically prior to the commencement of the event and the method of noticing changes to the odds/payouts;
- l) For types of wagers where the odds/payouts are fixed at the time the wager is placed, any situations where the odds/payouts may be adjusted such as atypical winning outcomes (e.g., dead heats), cancelled legs of wagers with multiple events (e.g., parlays), and prorating;
- m) For types of wagers where individual wagers are gathered into pools, the rules for dividend calculation including the prevailing formula for pool allocations and the stipulations of the event being wagered upon as approved by the regulatory body;
- n) For in-play wagering, due to varying communication speeds or broadcast transmission latencies:
 - i. Updates of the displayed information may put a player at a disadvantage to others who may have more up-to-date information; and
 - ii. There may be delays incorporated in the registered time of an in-play wager to prevent past-post wagers and cancellations.
- o) A statement that the operator reserves the right to:
 - i. Refuse any wager or part of a wager or reject or limit selections prior to the acceptance of a wager for reasons indicated to the player in these rules;
 - ii. Accept a wager at other than posted terms; and
 - iii. Close wagering periods at their discretion;
- p) If prizes are to be paid for combinations involving participants other than solely the first-place finisher (e.g., in an Olympic competition), the order of the participants that can be involved with these prizes (e.g., result 8-4-7);
- q) The rules for any exotic wagering options (e.g., perfecta, trifecta, quinella, etc.) and the expected payouts;

- r) What is to occur when an event or market is cancelled or withdrawn, including the handling of selections wagers with multiple events (e.g., parlays) where one or more of these legs are cancelled or withdrawn;
- s) How a winning wager is determined and the handling of an award in any case where a tie is possible;
- t) The payment of winning wagers, including the redemption period and the method for calculation. Where the calculation of payouts may involve rounding, information on how these circumstances are handled shall clearly explain:
 - i. Rounding up, down (truncation), true rounding; and
 - ii. Rounding to what level (e.g., 5 cents).

A.5.3 Promotions and/or Bonuses

Players shall be able to access information in the wagering rules pertaining to any available promotions and/or bonuses, including how the player is notified when they have received a promotional award or bonus win and the terms of their withdrawal. This information shall be clear and unambiguous, especially where promotions or bonuses are limited to certain events, markets, or when other specific conditions apply.

A.5.4 Contests/Tournaments

A contest/tournament, which permits a player to either purchase or be awarded the opportunity to engage in competitive wagering against other players, may be permitted provided the following rules are met:

- a) Rules shall be made available to a player for review prior to contest/tournament registration. The rules shall include at a minimum:
 - i. All conditions registered players shall meet to qualify for entry and advancement through, the contest/tournament;
 - ii. Specific information pertaining to any single contest/tournament, including the available prizes or awards and distribution of funds based on specific outcomes; and
 - iii. The name of the organization (or persons) that conducted the contest/tournament on behalf of, or in conjunction with, the operator (if applicable).
- b) Procedures shall be in place to record the results of each contest/tournament and make publicly available for the registered players to review for a reasonable period of time. Subsequent to being posted publicly, the results of each contest/tournament shall be made available upon request. The results include the following:
 - i. Name of the contest/tournament;
 - ii. Date(s)/times(s) of the contest/tournament;
 - iii. Total number of entries;
 - iv. Amount of entry fees;
 - v. Total prize pool; and
 - vi. Amount paid for each winning category.

NOTE: For free contests/tournaments (i.e., registered player does not pay an entry fee), the information required by the above shall be recorded except for the number of entries, amount of entry fees and total prize pool.

A.6 Wagering Procedures and Controls

A.6.1 Odds/Payouts and Prices

There shall be established procedures for setting and updating the odds/payouts and prices including publicly providing the current odds/payouts and prices, changing odds/payouts and prices as necessary to handle exceptions, and properly logging and periodically logging the odds/payouts and prices.

A.6.2 Statistics/Line Data

The operator shall ensure that any statistics/line data that is made available to the player pertaining to an event uses a source allowed by the regulatory body and is kept reasonably accurate and updated. As required by the regulatory body, controls shall be implemented for the operator to:

- a) Review the accuracy and timeliness of any statistics/line services; and
- b) When an incident or error occurs that results in a loss of communication with statistics/line services, record the incident or error in a log along with the date and time of occurrence, its duration, nature, and a description of its impact on the system's performance. This information shall be maintained for a period of 90 days, or as otherwise specified by the regulatory body.

A.6.3 Suspending Markets or Events

There shall be established procedures for suspending markets or events (i.e. stop accepting wagers for that market or markets associated with that event). When wagering is suspended for an active event, an entry shall be made in an audit log that includes the date and time of suspension and its reason.

A.6.4 Wager Cancellations

Wagering transactions cannot be modified except to be voided or cancelled as provided for in the operator's published cancellation policy. A cancellation grace period may be offered to allow players to request a cancellation of wagers placed. The following requirements apply to wager cancellations:

- a) Player initiated cancellations may be authorized in accordance with the cancellation policy.
- b) Operator initiated cancellations shall provide a reason for cancellation to a player (e.g., past-post wager).
- c) An operator shall not void or cancel any wager without the prior approval of the regulatory body.

A.6.5 Wagering Periods

Documentation shall be in place to provide how the wagering period is controlled. This would include any cases where the wagering period is first opened, when it is closed, or any other time in between where a wager is unable to be placed (e.g., odds/payouts and prices are being updated).

A.6.6 Results

Before publicly announcing results and declaring winners, there shall be a policy for the confirmation of results based on qualified and approved sources, unless automated by an external feed. If an external feed is in use, there shall be procedures in place for cases where access to the external feed is unavailable. There shall also be a procedure in place to handle changes in results (e.g., due to statistics/line corrections).

A.6.7 Winning Wager Payment

In the event of a failure of the Event Wagering System's ability to pay winning wagers, the operator shall have controls detailing the method of paying these wagers.

A.6.8 Virtual Events

An operator who offers virtual event wagering shall maintain all information necessary to adequately reconstruct the virtual events, including the virtual event outcome and/or virtual participant actions, conducted within the past 90 days or as required by the regulatory body. This information may be recorded by the Event Wagering System or associated equipment, using some combination of text, logs, video, graphics, screen captures, or other means (e.g., "flight recorder" mechanism). Alternatively, procedures may be included to have the public display of the virtual event be recorded by the surveillance system.

A.7 Wagering Venue Specifications

A.7.1 Venue Verification Audit

The wagering venue will be required to meet the applicable aspects of the appropriate policy and/or procedure documents as determined by the operator in consultation with the regulatory body. To maintain the integrity of wagering operations, venues may be subject to an additional verification audit as required by the regulatory body. The following specifications apply to venues:

A.7.2 Wagering Equipment

The venue shall provide a secure location for the placement, operation, and usage of wagering equipment, including Wagering Devices, displays, and communications equipment. Security policies and procedures shall be in place and reviewed periodically to ensure that risks are identified, mitigated and underwritten by contingency plans. In addition:

- a) Wagering equipment shall be installed according to a defined plan and records of all installed wagering equipment shall be maintained.
- b) Wagering equipment shall be sited or protected to reduce the risks from:

- i. Environmental threats and hazards;
 - ii. Opportunities for unauthorized access;
 - iii. Power failures; and
 - iv. Other disruptions caused by failures in supporting utilities.
- c) Access to the wagering equipment by an employee shall be controlled by a secure logon procedure or other secure process approved by the regulatory body to ensure that only authorized employees are allowed access. It shall not be possible to modify the configuration settings of the wagering equipment without an authorized secure process.
- d) A user session, where supported by wagering equipment, is initiated by the employee logging in to their user account using their secure username and password or an alternative means for the employee to provide identification information as allowed by the regulatory body.
 - i. All available options presented to the employee shall be tied to their user account.
 - ii. If the wagering equipment does not receive input from the employee within 5 minutes, or a period specified by the regulatory body, the user session shall time out or lock up, requiring the employee to re-establish their login in order to continue.
- e) To ensure its continued availability and integrity, wagering equipment shall be correctly maintained, inspected and serviced at regular intervals to ensure that it is free from defects or mechanisms that could interfere with its operation.
- f) Prior to disposal or re-use, wagering equipment containing storage media shall be checked to ensure that any licensed software, player account information, and other sensitive information has been removed or securely overwritten (i.e., not just deleted).

A.7.3 Wagering Operations

The following procedures shall be in place for wagering operations within the venue:

- a) Procedures to enable a suitable response to any security issue within the venue.
- b) Procedures to prevent any person from tampering with or interfering with the operation of any wagering or wagering equipment;
- c) Procedures to describe the operations and the servicing of POS Wagering Devices and Self-Service Wagering Devices, including the handling of error conditions and performing reconciliations;
- d) Procedures to ensure accessibility requirements observed by the regulatory body are met for the installation of Self-Service Wagering Devices.
- e) Procedures for wager transactions using a POS Wagering Device, including:
 - i. Accepting wagers from players only during the wager period;
 - ii. Notifying players if their wager attempt is rejected;
 - iii. Requiring the recording of player data or player account registration if their wager exceeds a value specified by the regulatory body;
 - iv. Providing notification of any odds/payouts or price changes which occur while attempting to process a wager;
 - v. Providing a player access to a wager record once the wager is authorized;
- f) Procedures for handling cancelled events and withdrawn selections for wagers with multiple events (e.g., parlays), including providing refunds to players who were not refunded automatically by the system (e.g., wagers placed anonymously); and
- g) Procedures for redemption of winning wagers, including:

- i. Scanning the barcode of a wager record (via a barcode reader or equivalent); or
- ii. Manually inputting the wager identification number and performing a verification with the system.

A.7.4 Surveillance and Recording

The venue will be required to install, maintain, and operate a surveillance system that has the capability to monitor and record continuous unobstructed views of all wagering and financial transactions as well as any dynamic displays of wagering information. Procedures shall be in place to ensure that the recording:

- a) Covers the defined wagering areas with sufficient detail to identify any discrepancies;
- b) Is captured in such a way that precludes interference or deletion;
- c) Can be reviewed by the operator and/or regulatory body in the event of a player complaint/dispute; and
- d) Is kept for at least 90 days or as required by the regulatory body.

A.8 Monitoring Procedures

A.8.1 Monitoring for Collusion and Fraud

The operator shall take measures designed to reduce the risk of collusion or fraud, including having procedures for:

- a) Identifying and/or refusing to accept suspicious wagers which may indicate cheating, manipulation, interference with the regular conduct of an event, or violations of the integrity of any event on which wagers were made;
- b) Reasonably detecting irregular patterns or series of wagers to prevent player collusion or the unauthorized use of artificial player software; and
- c) Monitoring and detecting events and/or irregularities in volume or swings in odds/payouts and prices which could signal suspicious activities as well as all changes to odds/payouts and prices and/or suspensions throughout an event.

A.8.2 Anti-Money Laundering (AML) Monitoring

The operator shall have AML procedures and policies put in place, as required by the regulatory body, to ensure that:

- a) Employees are trained in AML, and this training is kept up to date;
- b) Player accounts are monitored for opening and closing in short time frames and for deposits and withdrawals without associated wagering transactions; and
- c) Aggregate transactions over a defined period may require further due diligence checks and may be reportable to the relevant organization if they exceed the threshold prescribed by the regulatory body.

A.8.3 Location Service Provider Monitoring

The operator, who offers remote wagering, or a third-party location service provider authorized by the regulatory body shall, where required by the regulatory body:

- a) Have procedures to maintain a real-time data feed of all location checks and an up-to-date list of potential location fraud risks (e.g., fake location apps, virtual machines, remote desktop programs, etc.);
- b) Offer an alert system to identify unauthorized or improper access;
- c) Allow periodic audits to assess and measure its continued ability to detect and mitigate existing and emerging location fraud risks;
- d) Ensure the location detection service or application used for location detection:
 - i. Utilizes closed-source databases (IP, proxy, VPN, etc.) that are frequently updated and periodically tested for accuracy and reliability; and
 - ii. Undergoes frequent updates to maintain cutting-edge data collection, device compatibility, and fraud prevention capabilities against location fraud risks.

Appendix B: Operational Audit for Technical Security Controls

B.1 Introduction

B.1.1 General Statement

This appendix sets forth technical security controls which will be reviewed in an operational audit as a part of the Event Wagering System evaluation, including, but not limited to, an information security system (ISS) assessment, review of the operational processes that are critical to compliance, penetration testing focused on the external and internal infrastructure as well as the applications transferring, storing and/or processing player data and/or sensitive information, and any other objectives established by the regulatory body. The security controls outlined in this appendix apply to the following critical components of the system:

- a) Components which record, store, process, share, transmit or retrieve sensitive information (e.g., validation numbers, PINs, player data);
- b) Components which generate, transmit, or process random numbers used to determine the outcome of virtual events (if applicable);
- c) Components which store results or the current state of a player's wager;
- d) Points of entry to and exit from the above components (other systems which are able to communicate directly with core critical systems); and
- e) Communication networks which transmit sensitive information.

NOTE: It is also recognized that additional technical security controls which are not specifically included within this standard will be relevant and required for an operational audit as determined by the operator and/or regulatory body within their rules, regulations, and Minimum Internal Control Standards (MICS).

B.2 System Operation & Security

B.2.1 System Procedures

The operator shall be responsible for documenting and following the relevant Event Wagering System procedures. These procedures shall at least include the following as required by the regulatory body:

- a) Procedures for monitoring the critical components and the transmission of data of the entire system, including communication, data packets, networks, as well as the components and data transmissions of any third-party services involved, with the objective of ensuring integrity, reliability and accessibility;
- b) Procedures and security standards for the maintenance of all aspects of security of the system to ensure secure and reliable communications, including protection from hacking or tampering;
- c) Procedures for defining, monitoring, documenting, and reporting, investigating, responding to, and resolving security incidents, including detected breaches and suspected or actual hacking or tampering with the system;

- d) Procedure for monitoring and adjusting resource consumption and maintaining a log of the system performance, including a function to compile performance reports;
- e) Procedures to investigate, document and resolve malfunctions, which address the following:
 - i. Determination of the cause of the malfunction;
 - ii. Review of relevant records, reports, logs, and surveillance records;
 - iii. Repair or replacement of the critical component;
 - iv. Verification of the integrity of the critical component before restoring it to operation;
 - v. Filing an incident report with the regulatory body and documenting the date, time and reason for the malfunction along with the date and time the system is restored; and
 - vi. Voiding or cancelling wagers and pays if a full recovery is not possible.

B.2.2 Physical Location of Servers

The Event Wagering System server(s) shall be housed in one or more secure location(s) which may be located locally, within a single venue, or may be remotely located outside of the venue as allowed by the regulatory body. In addition, secure location(s) shall:

- a) Have sufficient protection against alteration, tampering or unauthorized access;
- b) Be equipped with a surveillance system that shall meet the procedures put in place by the regulatory body;
- c) Be protected by security perimeters and appropriate entry controls to ensure that access is restricted to only authorized personnel and that any attempts at physical access are recorded in a secure log; and
- d) Be equipped with controls to provide physical protection against damage from fire, flood, hurricane, earthquake and other forms of natural or manmade disaster.

B.2.3 Logical Access Control

The Event Wagering System shall be logically secured against unauthorized access by authentication credentials allowed by the regulatory body, such as passwords, multi-factor authentication, digital certificates, PINs, biometrics, and other access methods (e.g., magnetic swipe, proximity cards, embedded chip cards).

- a) Each user shall have their own individual authentication credential whose provision shall be controlled through a formal process.
- b) Authentication credential records shall be maintained either manually or by systems that automatically record authentication changes and force authentication credential changes.
- c) The storage of authentication credentials shall be secure. If any authentication credentials are hard coded on a component of the system, they shall be encrypted.
- d) A fallback method for failed authentication (e.g., forgotten passwords) shall be at least as strong as the primary method.
- e) Lost or compromised authentication credentials and authentication credentials of terminated users shall be deactivated, secured or destroyed as soon as reasonably possible.
- f) The system shall have multiple security access levels to control and restrict different classes of access to the server, including viewing, changing or deleting critical files and directories.

Procedures shall be in place to assign, review, modify, and remove access rights and privileges to each user, including:

- i. Allowing the administration of user accounts to provide an adequate separation of duties;
 - ii. Limiting the users who have the requisite permissions to adjust critical system parameters;
 - iii. The enforcement of adequate authentication credential parameters such as minimum length, and expiration intervals; and
- g) Procedures shall be in place to identify and flag suspect accounts where authentication credentials may have been stolen.
 - h) Any logical access attempts to the system applications or operating systems shall be recorded in a secure log.
 - i) The use of utility programs which can override application or operating system controls shall be restricted and tightly controlled.

NOTE: Where passwords are used as an authentication credential, it is recommended that they are changed at least once every 90 days, are at least 8 characters in length and contain a combination of at least two of the following criteria: upper case letters, lower case letters, numeric and/or special characters.

B.2.4 User Authorization

The Event Wagering System shall implement the following user authorization requirements:

- a) A secure and controlled mechanism shall be employed that can verify that the system component is being operated by an authorized user on demand and on a regular basis as required by the regulatory body.
- b) The use of automated equipment identification to authenticate connections from specific locations and equipment shall be documented and shall be included in the review of access rights and privileges.
- c) Any authorization information communicated by the system for identification purposes shall be obtained at the time of the request from the system and not be stored on the system component.
- d) The system shall allow for system administrator notification and user lockout or audit trail entry, after a set number of unsuccessful authorization attempts.

B.2.5 Server Programming

The Event Wagering System shall be sufficiently secure to prevent any user-initiated programming capabilities on the server that may result in modifications to the database. However, it is acceptable for network or system administrators to perform authorized network infrastructure maintenance or application troubleshooting with sufficient access rights. The server shall also be protected from the unauthorized execution of mobile code.

B.2.6 Verification Procedures

There shall be procedures in place for verifying on demand that the critical control program components of the Event Wagering System in the production environment are identical to those approved by the regulatory body.

- a) Signatures of the critical control program components shall be gathered from the production environment through a process to be approved by the regulatory body.
- b) The process shall include one or more analytical steps to compare the current signatures of the critical control program components in the production environment with the signatures of the current approved versions of the critical control program components.
- c) The output of the process shall be stored in an unalterable format, which detail the verification results for each critical control program authentication and:
 - i. Be recorded in a system log or report which shall be retained for a period of 90 days or as otherwise specified by the regulatory body;
 - ii. Be accessible by the regulatory body in a format which will permit analysis of the verification records by the regulatory body; and
 - iii. Comprise part of the system records which shall be recovered in the event of a disaster or equipment or software failure.
- d) Any failure of verification of any component of the system shall require a notification of the authentication failure being communicated to the operator and regulatory body as required.
- e) There shall be a process in place for responding to authentication failures, including determining the cause of the failure and performing the associated corrections or reinstallations needed in a timely manner.

B.2.7 Electronic Document Retention System

Reports required by this standard and the regulatory body may be stored in an electronic document retention system provided that the system:

- a) Is properly configured to maintain the original version along with all subsequent versions reflecting all changes to the report;
- b) Maintains a unique signature for each version of the report, including the original;
- c) Retains and reports a complete log of changes to all reports including who (user identification) performed the changes and when (date and time);
- d) Provides a method of complete indexing for easily locating and identifying the report including at least the following (which may be input by the user):
 - i. Date and time report was generated;
 - ii. Application or system generating the report;
 - iii. Title and description of the report;
 - iv. User identification of who is generating the report; and
 - v. Any other information that may be useful in identifying the report and its purpose;
- e) Is configured to limit access to modify or add reports to the system through logical security of specific user accounts;
- f) Is configured to provide a complete audit trail of all administrative user account activity;
- g) Is properly secured through use of logical security measures (user accounts with appropriate access, proper levels of event logging, and document the version control, etc.);
- h) Is physically secured with all other critical components of the Event Wagering System; and
- i) Is equipped to prevent disruption of report availability and loss of data through hardware and software redundancy best practices, and backup processes.

B.2.8 Asset Management

All assets housing, processing or communicating sensitive information, including those comprising the operating environment of the Event Wagering System and/or its components, shall be accounted for and have a nominated owner.

- a) An inventory shall be drawn up and maintained of all assets holding controlled items.
- b) A procedure shall exist for adding new assets and removing assets from service.
- c) A policy shall be included on the acceptable use of assets associated with the system and its operating environment.
- d) Each asset shall have a designated “owner” responsible for:
 - i. Ensuring that information and assets are appropriately classified in terms of their criticality, sensitivity, and value; and
 - ii. Defining and periodically reviewing access restrictions and classifications.
- e) A procedure shall exist to ensure that recorded accountability for assets is compared with actual assets at intervals required by the regulatory body and appropriate action is taken with respect to discrepancies.
- f) Copy protection to prevent unauthorized duplication or modification of software may be implemented provided that:
 - i. The method of copy protection is fully documented and provided to the independent test laboratory, to verify that the protection works as described; or
 - ii. The program or component involved in enforcing the copy protection can be individually verified by the methodology approved by the regulatory body.

B.3 Backup and Recovery

B.3.1 Data Security

The Event Wagering System shall provide a logical means for securing the player data and wagering data, including accounting, reporting, significant event, or other sensitive information, against alteration, tampering, or unauthorized access.

- a) Appropriate data handling methods shall be implemented, including validation of input and rejection of corrupt data.
- b) The number of workstations where critical applications or associated databases may be accessed shall be limited.
- c) Encryption or password protection or equivalent security shall be used for files and directories containing data. If encryption is not used, the operator shall restrict users from viewing the contents of such files and directories, which at a minimum shall provide for the segregation of system duties and responsibilities as well as the monitoring and recording of access by any person to such files and directories.
- d) The normal operation of any equipment that holds data shall not have any options or mechanisms that may compromise the data.
- e) No equipment may have a mechanism whereby an error will cause the data to automatically clear.

- f) Any equipment that holds data in its memory shall not allow removal of the information unless it has first transferred that information to the database or other secured component(s) of the system.
- g) Data shall be stored in areas of the server that are encrypted and secured from unauthorized access, both external and internal.
- h) Production databases containing data shall reside on networks separated from the servers hosting any user interfaces.
- i) Data shall be maintained at all times regardless of whether the server is being supplied with power.
- j) Data shall be stored in such a way as to prevent the loss of the data when replacing parts or modules during normal maintenance.

B.3.2 Data Alteration

The alteration of any accounting, reporting or significant event data shall not be permitted without supervised access controls. In the event any data is changed, the following information shall be documented or logged:

- a) Unique ID number for the alteration;
- b) Data element altered;
- c) Data element value prior to alteration;
- d) Data element value after alteration;
- e) Time and date of alteration; and
- f) Personnel that performed alteration (user identification).

B.3.3 Backup Frequency

Backup scheme implementation shall occur at least once every day or as otherwise specified by the regulatory body, although all methods will be reviewed on a case-by-case basis.

B.3.4 Storage Medium Backup

Audit logs, system databases, and any other pertinent player data and wagering data shall be stored using reasonable protection methods. The Event Wagering System shall be designed to protect the integrity of this data in the event of a failure. Redundant copies of this data shall be kept on the system with open support for backups and restoration, so that no single failure of any portion of the system would cause the loss or corruption of data.

- a) The backup shall be contained on a non-volatile physical medium, or an equivalent architectural implementation, so that should the primary storage medium fail, the functions of the system and the process of auditing those functions can continue with no critical data loss.
- b) Where the regulatory body allows for the use of cloud platforms, if the backup is stored in a cloud platform, another copy may be stored in a different cloud platform.
- c) If hard disk drives are used as backup media, data integrity shall be assured in the event of a disk failure. Acceptable methods include, but are not limited to, multiple hard drives in an acceptable RAID configuration, or mirroring data over two or more hard drives.

- d) Upon completion of the backup process, the backup media is immediately transferred to a location physically separate from the location housing the servers and data being backed up (for temporary and permanent storage).
 - i. The storage location is secured to prevent unauthorized access and provides adequate protection to prevent the permanent loss of any data.
 - ii. Backup data files and data recovery components shall be managed with at least the same level of security and access controls as the system.

NOTE: The distance between the two locations should be determined based on potential environmental threats and hazards, power failures, and other disruptions but should also consider the potential difficulty of data replication as well as being able to access the recovery site within a reasonable time (Recovery Time Objective).

B.3.5 System Failure

The Event Wagering System shall have sufficient redundancy and modularity so that if any single component or part of a component fails, the functions of the system and the process of auditing those functions can continue with no critical data loss. When two or more components are linked:

- a) The process of all wagering operations between the components shall not be adversely affected by restart or recovery of either component (e.g., transactions are not to be lost or duplicated because of recovery of one component or the other); and
- b) Upon restart or recovery, the components shall immediately synchronize the status of all transactions, data, and configurations with one another.

B.3.6 Accounting of Master Resets

The operator shall be able to identify and properly handle the situation where a master reset has occurred on any component which affects wagering operations.

B.3.7 Recovery Requirements

In the event of a catastrophic failure when the Event Wagering System cannot be restarted in any other way, it shall be possible to restore the system from the last backup point and fully recover. The contents of that backup shall contain the following critical information including, but not limited to:

- a) The recorded information specified under the section entitled “Information to be Maintained”;
- b) Specific site or venue information such as configuration, security accounts, etc.;
- c) Current system encryption keys; and
- d) Any other system parameters, modifications, reconfiguration (including participating sites or venues), additions, merges, deletions, adjustments and parameter changes.

B.3.8 Uninterruptible Power Supply (UPS) Support

All system components shall be provided with adequate primary power. Where the server is a stand-alone application, it shall have an Uninterruptible Power Supply (UPS) connected and shall have sufficient capacity to permit a graceful shut-down and that retains all player data and wagering data during a power loss. It is acceptable that the system may be a component of a network that is supported by a network-wide UPS provided that the server is included as a device protected by the UPS. There shall be a surge protection system in use if not incorporated into the UPS itself.

B.3.9 Business Continuity and Disaster Recovery Plan

A business continuity and disaster recovery plan shall be in place to recover wagering operations if the Event Wagering System's production environment is rendered inoperable. The business continuity and disaster recovery plan shall:

- a) Address the method of storing player data and wagering data to minimize loss. If asynchronous replication is used, the method for recovering data shall be described or the potential loss of data shall be documented;
- b) Delineate the circumstances under which it will be invoked;
- c) Address the establishment of a recovery site physically separated from the production site;
- d) Contain recovery guides detailing the technical steps required to re-establish wagering functionality at the recovery site; and
- e) Address the processes required to resume administrative operations of wagering activities after the activation of the recovered system for a range of scenarios appropriate for the operational context of the system.

B.4 Communications

B.4.1 General Statement

This section will discuss the various wired and wireless communication methods, including communications performed across the internet or a public or third-party network, as allowed by the regulatory body.

B.4.2 Connectivity

Only authorized devices shall be permitted to establish communications between any system components. The Event Wagering System shall provide a method to:

- a) Enroll and un-enroll system components;
- b) Enable and disable specific system components;
- c) Ensure that only enrolled and enabled system components, including Wagering Devices, participate in wagering operations; and
- d) Ensure that the default condition for components shall be un-enrolled and disabled.

B.4.3 Communication Protocol

Each component of the Event Wagering System shall function as indicated by a documented secure communication protocol.

- a) All protocols shall use communication techniques that have proper error detection and recovery mechanisms, which are designed to prevent intrusion, interference, eavesdropping and tampering. Any alternative implementations will be reviewed on a case-by-case basis and approved by the regulatory body.
- b) All data communications critical to wagering or player account management shall employ encryption and authentication.
- c) Communication on the secure network shall only be possible between approved system components that have been enrolled and authenticated as valid on the network. No unauthorized communications to components and/or access points shall be allowed.

B.4.4 Communications Over Internet/Public Networks

Communications between any system components, including Wagering Devices, which takes place over internet/public networks, shall be secure by a means approved by the regulatory body. Player data, sensitive information, wagers, results, financial information, and player transaction information shall always be encrypted over the internet/public network and protected from incomplete transmissions, misrouting, unauthorized message modification, disclosure, duplication or replay.

B.4.5 Wireless Local Area Network (WLAN) Communications

Wireless Local Area Network (WLAN) communications, as allowed by the regulatory body, shall adhere to the applicable jurisdictional requirements specified for wireless devices and network security. In the absence of specific jurisdictional standards, the “Wireless Device Requirements” and “Wireless Network Security Requirements” of the *GLI-26 Standards for Wireless Systems* shall be used as applicable.

NOTE: It is imperative for operators to review and update internal control policies and procedures to ensure the network is secure and threats and vulnerabilities are addressed accordingly. Periodic inspection and verification of the integrity of the WLAN is recommended.

B.4.6 Network Security Management

Networks shall be logically separated such that there should be no network traffic on a network link which cannot be serviced by hosts on that link. The following requirements apply:

- a) All network management functions shall authenticate all users on the network and encrypt all network management communications.
- b) The failure of any single item shall not result in a denial of service.
- c) An Intrusion Detection System/Intrusion Prevention System (IDS/IPS) shall be installed on the network which can listen to both internal and external communications as well as detect or prevent:
 - i. Distributed Denial of Service (DDOS) attacks;
 - ii. Shellcode from traversing the network;

- iii. Address Resolution Protocol (ARP) spoofing; and
- iv. Other "Man-In-The-Middle" attack indicators and sever communications immediately if detected.
- d) In addition to the requirements in (c), an IDS/IPS installed on a WLAN shall be able to:
 - i. Scan the network for any unauthorized or rogue access points or devices connected to any access point on the network at least quarterly or as defined by the regulatory body;
 - ii. Automatically disable any unauthorized or rogue devices connected to the system; and
 - iii. Maintain a history log of all wireless access for at least the previous 90 days or as otherwise specified by the regulatory body. This log shall contain complete and comprehensive information about all wireless devices involved and shall be able to be reconciled with all other networking devices within the site or venue.
- e) Network Communication Equipment (NCE) shall meet the following requirements:
 - i. NCE shall be constructed in such a way as to be resistant to physical damage to the hardware or corruption of the contained firmware/software by normal usage.
 - ii. NCE shall be physically secured from unauthorized access.
 - iii. System communications via NCE shall be logically secured from unauthorized access.
 - iv. NCE with limited onboard storage shall, if the audit log becomes full, disable all communication or offload logs to a dedicated log server.
- f) All network hubs, services and connection ports shall be secured to prevent unauthorized access to the network. Unused services and non-essential ports shall be either physically blocked or software disabled whenever possible.
- g) In virtualized environments, redundant server instances shall not run under the same hypervisor.
- h) Stateless protocols, such as UDP (User Datagram Protocol), shall not be used for sensitive information without stateful transport. Note that although HTTP (Hypertext Transport Protocol) is technically stateless, if it runs on TCP (Transmission Control Protocol) which is stateful, this is allowed.
- i) All changes to network infrastructure (e.g., network communication equipment configuration) shall be logged.
- j) Virus scanners and/or detection programs shall be installed on all systems. These programs shall be updated regularly to scan for new strains of viruses.

B.5 Third-Party Service Providers

B.5.1 Third-Party Communications

Where communications with third-party service providers are implemented, such as player loyalty programs, financial services (banks, payment processors, etc.), location service providers, cloud service providers, statistics/line services, and identity verification services, the following requirements apply:

- a) The Event Wagering System shall be capable of securely communicating with third-party service providers using encryption and strong authentication.
- b) All login events involving third-party service providers shall be recorded to an audit file.
- c) Communication with third-party service providers shall not interfere or degrade normal Event Wagering System functions.

- i. Third-party service provider data shall not affect player communications.
 - ii. Connections to third-party service providers shall not use the same network infrastructure as player connections.
 - iii. Wagering shall be disabled on all network connections except for the player network;
 - iv. The system shall not route data packets from third-party service providers directly to the player network and vice-versa
 - v. The system shall not act as IP routers between player networks and third-party service providers.
- d) All financial transactions shall be reconciled with financial institutions and payment processors daily or as otherwise specified by the regulatory body.

B.5.2 Third-Party Services

The security roles and responsibilities of third-party service providers shall be defined and documented as required by the regulatory body. The operator shall have policies and procedures for managing them and monitoring their adherence to relevant security requirements:

- a) Agreements with third-party service providers involving accessing, processing, communicating or managing the system and/or its components, or adding products or services to the system and/or its components shall cover all relevant security requirements.
- b) The services, reports and records provided by the third-party service providers shall be monitored and reviewed annually or as required by the regulatory body.
- c) Changes to the provision of third-party service providers, including maintaining and improving existing security policies, procedures and controls, shall be managed, taking account of the criticality of systems and processes involved and re-assessment of risks.
- d) The access rights of third-party service providers to the system and/or its components shall be removed upon termination of their contract or agreement or adjusted upon change.

B.6 Technical Controls

B.6.1 Domain Name Service (DNS) Requirements

The following requirements apply to the servers used to resolve Domain Name Service (DNS) queries used in association with the Event Wagering System.

- a) The operator shall utilize a secure primary DNS server and a secure secondary DNS server which are logically and physically separate from one another.
- b) The primary DNS server shall be physically located in a secure data center or a virtualized host in an appropriately secured hypervisor or equivalent.
- c) Logical and physical access to the DNS server(s) shall be restricted to authorized personnel.
- d) Zone transfers to arbitrary hosts shall be disallowed.
- e) A method to prevent cache poisoning, such as DNS Security Extensions (DNSSEC), is required.
- f) Multi-factor authentication shall be in place.
- g) Registry lock shall be in place, so any request to change DNS server(s) will need to be verified manually.

B.6.2 Cryptographic Controls

A policy on the use of cryptographic controls for protection of information shall be developed and implemented.

- a) Any player data and/or sensitive information shall be encrypted if it traverses a network with a lower level of trust.
- b) Data that is not required to be hidden but shall be authenticated shall use some form of message authentication technique.
- c) Authentication shall use a security certificate from an approved organization.
- d) The grade of encryption used shall be appropriate to the sensitivity of the data.
- e) The use of encryption algorithms shall be reviewed periodically to verify that the current encryption algorithms are secure.
- f) Changes to encryption algorithms to correct weaknesses shall be implemented as soon as practical. If no such changes are available, the algorithm shall be replaced.
- g) Encryption keys shall be stored on a secure and redundant storage medium after being encrypted themselves through a different encryption method and/or by using a different encryption key.

B.6.3 Encryption Key Management

The management of encryption keys shall follow defined processes established by the operator and/or regulatory body. These defined processes shall cover the following:

- a) Obtaining or generating encryption keys and storing them;
- b) Managing the expiry of encryption keys, where applicable;
- c) Revoking encryption keys;
- d) Securely changing the current encryption keyset; and
- e) Recovering data encrypted with a revoked or expired encryption key for a defined period after the encryption key becomes invalid.

B.7 Remote Access and Firewalls

B.7.1 Remote Access Security

Remote access is defined as any access from outside the system or system network including any access from other networks within the same site or venue. Remote access shall only be allowed if authorized by the regulatory body and shall:

- a) Be performed via a secured method;
- b) Have the option to be disabled;
- c) Accept only the remote connections permissible by the firewall application and system settings;
- d) Be limited to only the application functions necessary for users to perform their job duties:
 - i. No unauthorized remote user administration functionality (adding users, changing permissions, etc.) is permitted; and
 - ii. Unauthorized access to the operating system or to any database other than information retrieval using existing functions is prohibited.

NOTE: Remote access security will be reviewed on a case-by-case basis, in conjunction with the implementation of the current technology and approval from the regulatory body.

B.7.2 Remote Access Procedures and Guest Accounts

A procedure for strictly controlled remote access shall be established. It is acknowledged that the supplier may, as needed, access the system and its associated components remotely for product and user support or updates/upgrades, as permitted by the regulatory body and the operator. This remote access shall use specific guest accounts which are:

- a) Continuously monitored by the operator;
- b) Disabled when not in use; and
- c) Restricted through logical security controls to access only the necessary application(s) and/or database(s) for the product and user support or providing updates/upgrades.

B.7.3 Remote Access Activity Log

The remote access application shall maintain an activity log which updates automatically depicting all remote access information, to include:

- a) Identification of user(s) who performed and/or authorized the remote access;
- b) Remote IP Addresses, Port Numbers, Protocols, and where possible, MAC Addresses;
- c) Time and date the connection was made and duration of connection; and
- d) Activity while logged in, including the specific areas accessed and changes made.

B.7.4 Firewalls

All communications, including remote access, shall pass through at least one approved application-level firewall. This includes connections to and from any non-system hosts used by the operator.

- a) The firewall shall be located at the boundary of any two dissimilar security domains.
- b) A device in the same broadcast domain as the system host shall not have a facility that allows an alternate network path to be established that bypasses the firewall.
- c) Any alternate network path existing for redundancy purposes shall also pass through at least one application-level firewall.
- d) Only firewall-related applications may reside on the firewall.
- e) Only a limited number of user accounts may be present on the firewall (e.g., network or system administrators only).
- f) The firewall shall reject all connections except those that have been specifically approved.
- g) The firewall shall reject all connections from destinations which cannot reside on the network from which the message originated (e.g., RFC1918 addresses on the public side of an internet firewall).
- h) The firewall shall only allow remote access over the most up to date encrypted protocols.

B.7.5 Firewall Audit Logs

The firewall application shall maintain an audit log and shall disable all communications and generate an error if the audit log becomes full. The audit log shall contain:

- a) All changes to configuration of the firewall;
- b) All successful and unsuccessful connection attempts through the firewall; and
- c) The source and destination IP Addresses, Port Numbers, Protocols, and where possible, MAC Addresses.

NOTE: A configurable parameter ‘unsuccessful connection attempts’ may be utilized to deny further connection requests should the predefined threshold be exceeded. The system administrator shall also be notified.

B.7.6 Firewall Rules Review

If required by the regulatory body, the firewall rules shall be periodically reviewed to verify the operating condition of the firewall and the effectiveness of its security configuration and rule sets and shall be performed on all the perimeter firewalls and the internal firewalls.

B.8 Change Management

B.8.1 General Statement

A change management policy is selected by the regulatory body for handling updates to the Event Wagering System and its components based on the propensity for frequent system upgrades and chosen risk tolerance. For systems that require frequent updates, a risk-based change management program may be utilized to afford greater efficiency in deploying updates. Risk-based change management programs typically include a categorization of proposed changes based on regulatory impact and define associated certification procedures for each category. The independent test laboratory will evaluate the system and future modifications in accordance with the change management policy selected by the regulatory body.

B.8.2 Program Change Control Procedures

Program change control procedures shall be adequate to ensure that only authorized versions of programs are implemented on the production environment. These change controls shall include:

- a) An appropriate software version control or mechanism for all software components and source code;
- b) Records kept of all new installations and/or modifications to the system, including:
 - i. The date of the installation or modification;
 - ii. Details of the reason or nature of the installation or change such as new software, server repair, significant configuration modifications;
 - iii. A description of procedures required to bring the new or modified component into service (conversion or input of data, installation procedures, etc.);
 - iv. The identity of the user(s) performing the installation or modification;

- c) A strategy for reverting back to the last implementation (rollback plan) if the install is unsuccessful, including complete backups of previous versions of software and a test of the rollback plan prior to implementation to the production environment;
- d) A policy addressing emergency change procedures;
- e) Procedures for testing and migration of changes;
- f) Segregation of duties between the developers, quality assurance team, the migration team and users; and
- g) Procedures to ensure that technical and user documentation is updated as a result of a change.

B.8.3 Software Development Life Cycle

The acquisition and development of new software shall follow defined processes established by the operator and/or regulatory body.

- a) The production environment shall be logically and physically separated from the development and test environments. When cloud platforms are used, no direct connection may exist between the production environment and any other environment.
- b) Development staff shall be precluded from having access to promote code changes into the production environment.
- c) There shall be a documented method to verify that test software is not deployed to the production environment.
- d) To prevent leakage of sensitive information, there shall be a documented method to ensure that raw production data is not used in testing.
- e) All documentation relating to software and application development shall be available and retained for the duration of its lifecycle.

B.8.4 Patches

All patches should be tested whenever possible on a development and test environment configured identically to the target production environment. Under circumstances where patch testing cannot be thoroughly conducted in time to meet the timelines for the severity level of the alert and if authorized by the regulatory body, then patch testing should be risk managed, either by isolating or removing the untested component from the network or applying the patch and testing after the fact.

B.9 Periodic Security Testing

B.9.1 Technical Security Testing

Periodic technical security tests on the production environment shall be performed as required by the regulatory body to guarantee that no vulnerabilities putting at risk the security and operation of the Event Wagering System exist. These tests shall consist of a method of evaluation of security by means of an attack simulation by a third-party following a known methodology, and the analysis of vulnerabilities will consist in the identification and passive quantification of the potential risks of the system. Unauthorized access attempts shall be carried out up to the highest level of access possible and shall be completed with and without available authentication credentials (white box/black box

type testing). These allow assessments to be made regarding operating systems and hardware configurations, including but not limited to:

- a) UDP/TCP port scanning;
- b) Stack fingerprinting and TCP sequence prediction to identify operating systems and services;
- c) Public Service Banner grabbing;
- d) Web scanning using HTTP and HTTPS vulnerability scanners; and
- e) Scanning routers using BGP (Border Gateway Protocol), BGMP (Border Gateway Multicast Protocol) and SNMP (Simple Network Management Protocol).

B.9.2 Vulnerability Assessment

The purpose of the vulnerability assessment is to identify vulnerabilities, which could be later exploited during penetration testing by making basic queries relating to services running on the systems concerned. The assessment shall include at least the following activities:

- a) External Vulnerability Assessment – The targets are the network devices and servers which are accessible by a third-party (both a person or a company), by means of a public IP (publicly exposed), related to the system from which is possible to access sensitive information.
- b) Internal Vulnerability Assessment – The targets are the internal facing servers (within the DMZ, or within the LAN if there is no DMZ) related to the system from which is possible to access sensitive information. Testing of each security domain on the internal network shall be undertaken separately.

B.9.3 Penetration Testing

The purpose of the penetration testing is to exploit any weaknesses uncovered during the vulnerability assessment on any publicly exposed applications or systems hosting applications processing, transmitting and/or storing sensitive information. The penetration testing shall include at least the following activities:

- a) Network Layer Penetration Test – The test mimics the actions of an actual attacker exploiting weaknesses in the network security examining systems for any weakness that could be used by an external attacker to disrupt the confidentiality, availability and/or integrity of the network.
- b) Application Layer Penetration Test – The test uses tools to identify weaknesses in the applications with both authenticated and unauthenticated scans, analysis of the results to remove false positives, and manual testing to confirm the results from the tools and to identify the impact of the weaknesses.

B.9.4 Information Security Management System (ISMS) Audit

The audit of the Information Security Management System (ISMS) is to be conducted, including all the locations where sensitive information are accessed, processed, transmitted and/or stored. The ISMS will be reviewed against common information security principles in relation to confidentiality, integrity and availability, such as the following sources or equivalent:

- a) ISO/IEC 27001 Information Security Management Systems (ISMS);
- b) Payment Card Industry Data Security Standards (PCI-DSS); and
- c) World Lottery Association Security Control Standards (WLA-SCS).

B.9.5 Cloud Service Audit

An operator making use of a cloud service provider (CSP), as allowed by the regulatory body, to store, transmit or process sensitive information shall undergo a specific audit as required by the regulatory body. The CSP will be reviewed against common information security principles in relation to the provision and use of cloud services, such as ISO/IEC 27017 and ISO/IEC 27018, or equivalent.

- a) If sensitive information is stored, processed or transmitted in a cloud environment, the applicable requirements will apply to that environment, and will typically involve validation of both the CSP's infrastructure and the operator's usage of that environment.
- b) The allocation of responsibility between the CSP and the operator for managing security controls does not exempt an operator from the responsibility of ensuring that sensitive information is properly secured according to the applicable requirements.
- c) Clear policies and procedures shall be agreed between the CSP and the operator for all security requirements, and responsibilities for operation, management and reporting shall be clearly defined and understood for each applicable requirement.

Glossary of Key Terms

Access Control – The process of granting or denying specific requests for obtaining and using sensitive information and related services specific to a system; and to enter specific physical facilities which houses critical network or system infrastructure.

Algorithm – A finite set of unambiguous instructions performed in a prescribed sequence to achieve a goal, especially a mathematical rule or procedure used to compute a desired result. Algorithms are the basis for most computer programming.

ARP, Address Resolution Protocol – The protocol used to translate IP addresses into MAC addresses to support communication on a wireless or wired local area network.

Audit Trail – A record showing who has accessed a system and what operations the user has performed during a given period.

Authentication – Verifying the identity of a user, process, software package, or device, often as a prerequisite to allowing access to resources in a system.

Backup – A copy of files and programs made to facilitate recovery if necessary.

Barcode – An optical machine-readable representation of data. An example is a barcode found on printed wager records.

Barcode Reader – A device that is capable of reading or interpreting a barcode. This may extend to some smartphones or other electronic devices that can execute an application to read a barcode.

Biometrics – A biological identification input, such as fingerprints or retina patterns.

Bluetooth – A low power, short-range wireless communications protocol utilized for the interconnection of cellular phones, computers, and other electronic devices, including Wagering Devices. Bluetooth connections typically operate over distances of 10 meters or less and rely upon short-wavelength radio waves to transmit data over the air.

Cache Poisoning – An attack where the attacker inserts corrupt data into the cache database of the Domain Name Service (DNS).

Commission – An amount retained and not distributed by the operator from the total amount wagered on an event.

Contingency Plan – Management policy and procedures designed to maintain or restore wagering operations, possibly at an alternate location, in the event of emergencies, system failures, or disaster.

Coupon – A wagering instrument that is used primarily for promotional purposes and which can be redeemed for restricted or unrestricted credits.

Critical Component – Any sub-system for which failure or compromise can lead to loss of player entitlements, government revenue or unauthorized access to data used for generating reports for the regulatory body.

Critical Control Program – A software program that controls behaviors relative to any applicable technical standard and/or regulatory requirement.

Cryptographic RNG – A Random Number Generator (RNG) which is resistant to attack or compromise by an intelligent attacker with modern computational resources who has knowledge of the source code of the RNG and/or its algorithm. Cryptographic RNGs cannot be feasibly ‘broken’ to predict future values.

Data Integrity – The property that data is both accurate and consistent and has not been altered in an unauthorized manner in storage, during processing, and while in transit.

DDOS, Distributed Denial of Service – A type of attack where multiple compromised systems, usually infected with a destructive software program, are used to target a single system. Victims of a DDOS attack consist of both the end targeted system and all systems maliciously used and controlled by the hacker in the distributed attack.

Dividend – The amount corresponding to the winner of a pari-mutuel wager.

DNS, Domain Name Service – The globally distributed internet database which (amongst other things) maps machine names to IP numbers and vice-versa.

Domain – A group of computers and devices on a network that are administered as a unit with common rules and procedures.

DRP, Disaster Recovery Plan – A plan for processing critical applications and preventing loss of data in the event of a major hardware or software failure or destruction of facilities.

Encryption – The conversion of data into a form, called a ciphertext, which cannot be easily understood by unauthorized people.

Encryption Key – A cryptographic key that has been encrypted in order to disguise the value of the underlying plaintext.

Event – Occurrence related to sports, competitions, matches, and other types of activities approved by the regulatory body on which wagers may be placed.

Event Wagering – The wagering on sports, competitions, matches, and other event types approved by the regulatory body where the player places wagers on markets within an event.

Event Wagering System – The hardware, software, firmware, communications technology, other equipment, as well as operator procedures implemented in order to allow player participation in wagering, and, if supported, the corresponding equipment related to the display of the wager

outcomes, and other similar information necessary to facilitate player participation. The system provides the player with the means to place and manage wagers. The system provides the operator with the means to review player accounts, if supported, suspend events, generate various wagering/financial transaction and account reports, input outcomes for events, and set any configurable parameters.

External Wagering System – System hardware and software separate from that which comprises the Event Wagering System, which may drive the features common to wager offerings, wager configurations, reporting, etc. The player initially communicates directly with the Event Wagering System which can be integrated with one or more External Wagering Systems.

Firewall – A component of a computer system or network that is designed to block unauthorized access or traffic while still permitting outward communication.

Fixed Odds Wagers – Wager types where the payout is to be fixed at the time the wager is placed. If the predictions are correct, the odds are first multiplied by each other and then by the amount of the wager.

Free Play Mode – A mode that allows a player to participate in wagering without placing any financial wager, principally for the purpose of learning or understanding wagering mechanics.

Geolocation – Identifying the real-world geographic location of an internet connected Remote Wagering Device.

Group Membership – A method of organizing user accounts into a single unit (by job position) whereby access to system functions may be modified at the unit level and the changes take effect for all user accounts assigned to the unit.

Hash Algorithm – A function that converts a data string into an alpha-numeric string output of fixed length.

HTTP, Hypertext Transfer Protocol – The underlying protocol used to define how messages are formatted and transmitted, and what actions servers and browsers shall take in response to various commands.

In-Play Wager – A wager that is placed while an event is in-progress or actually taking place.

Information Security – Protecting information and information systems from unauthorized access, use, disclosure, disruption, modification, or destruction in order to provide integrity, confidentiality, and availability

Internet – An interconnected system of networks that connects computers around the world via TCP/IP.

IDS/IPS, Intrusion Detection System/Intrusion Prevention System – A system that inspects all inbound and outbound network activity and identifies suspicious patterns that may indicate a

network or system attack from someone attempting to break into or compromise a system. Used in computer security, intrusion detection refers to the process of monitoring computer and network activities and analyzing those events to look for signs of intrusion in your system.

IP Address, Internet Protocol Address – A unique number for a computer that is used to determine where messages transmitted on the Internet should be delivered. The IP address is analogous to a house number for ordinary postal mail.

Jailbreaking – Modifying a smartphone or other electronic device to remove restrictions imposed by the manufacturer or operator to allow the installation of unauthorized software.

Key – A value used to control cryptographic operations, such as decryption, encryption, signature generation or signature verification.

Key Management – Activities involving the handling of cryptographic keys and other related security parameters (e.g., passwords) during the entire life cycle of the keys, including their generation, storage, establishment, entry and output, and zeroization.

Line Posting – A value that establishes a wager's potential payout (e.g., money line + 175) or the conditions for a wager to be considered a win or loss (e.g., point spread + 2.5).

MAC, Message Authentication Code – A cryptographic checksum on data that uses a symmetric key to detect both accidental and intentional modifications of the data.

Malware – A program that is inserted into a system, usually covertly, with the intent of compromising the confidentiality, integrity, or availability of the victim's data, applications, or operating system or of otherwise annoying or disrupting the victim.

"Man-In-The-Middle" Attack – An attack where the attacker secretly relays and possibly alters the communication between two parties who believe they are directly communicating with each other.

Market – A wager type (e.g., money line, spread, over/under) on which opportunities are built for wagering on one or more events.

Message Authentication – A security measure designed to establish the authenticity of a message by means of an authenticator within the transmission derived from certain predetermined elements of the message itself.

Mobile Code – Executable code that moves from computer to computer, including both legitimate code and malicious code such as computer viruses.

Multi-Factor Authentication – A type of authentication which uses two or more of the following to verify a user's identity: Information known only to the user (e.g., a password, pattern or answers to challenge questions); An item possessed by a user (e.g., an electronic token, physical token or an identification card); A user's biometric data (e.g., fingerprints, facial or voice recognition).

NCE, *Network Communication Equipment* – One or more devices that controls data communication in a system including, but not limited to, cables, switches, hubs, routers, wireless access points, and telephones

Operator – A person or entity that operates an Event Wagering System, using both the technological capabilities of the Event Wagering System as well as their own internal procedures.

Pari-Mutuel Wagers – Wager types where individual wagers are gathered into a pool. The winnings are calculated by sharing the pool among all winning bets.

Parlay – A single wager that links together two or more individual wagers and is dependent on all of those wagers winning together.

Participant – The athlete, team, or other entity that competes in an event.

Password – A string of characters (letters, numbers, and other symbols) used to authenticate an identity or to verify access authorization.

Past-Post Wager – A wager that was made after the result of an event is accepted or after the selected participant has gained a material advantage (e.g., a score).

Perfecta (aka “Exacta”) – A wager in which the player picks the first and second place finishers in a competition in the correct order.

Physics Engine – Specialized software that approximates the laws of physics, including behaviors such as motion, gravity, speed, acceleration, mass, etc. for a virtual event’s elements or objects. The physics engine is utilized to place virtual event elements/objects into the context of the physical world when rendering computer graphics or video simulations.

PIN, *Personal Identification Number* – A numerical code associated with an individual and which allows secure access to a domain, account, network, system, etc.

Player Account (aka “Wagering Account”) – An account maintained for a player where information relative to wagering and financial transactions are recorded on behalf of the player including, but not limited to, deposits, withdrawals, wagers, winnings, and balance adjustments. The term does not include an account used solely by an operator to track promotional points or credits or similar benefits issued by an operator to a player which may be redeemed for merchandise and/or services.

Player Data – Sensitive information regarding a player and which may include items such as full name, date of birth, place of birth, social security number, address, phone number, medical or employment history, or other personal information as defined by the regulatory body.

Player Loyalty Program – A program that provides incentives for players based on the volume of play or revenue received from a player.

POS Wagering Device, *Point-of-Sale Wagering Device* – An attendant station that at a minimum will be used by an attendant for the execution or formalization of wagers placed on behalf of a player.

Port – A physical entry or exit point of a module that provides access to the module for physical signals, represented by logical information flows (physically separated ports do not share the same physical pin or wire).

Printer – A Wagering Device peripheral that prints wager records and/or wagering instruments.

Proxy – A proxy is an application that “breaks” the connection between client and server. The proxy accepts certain types of traffic entering or leaving a network and processes it and forwards it. This effectively closes the straight path between the internal and external networks. Making it more difficult for an attacker to obtain internal addresses and other details of the internal network.

Protocol – A set of rules and conventions that specifies information exchange between devices, through a network or other media.

Quinella – A wager in which the first two places in a competition shall be predicted, but not necessarily in the finishing order.

Remote Access – Any access from outside the system or system network including any access from other networks within the same site or venue.

Remote Wagering – Wagering conducted using Remote Wagering Devices on an in-venue wireless network or over the internet, depending on the implementation(s) authorized by the regulatory body.

Remote Wagering Device – A player-owned device operated either on an in-venue wireless network or over the internet that at a minimum will be used for the execution or formalization of wagers placed by a player directly. Examples of a Remote Wagering Device include a personal computer, mobile phone, tablet, etc.

Risk – The likelihood of a threat being successful in its attack against a network or system.

RNG, *Random Number Generator* – A computational or physical device, algorithm, or system designed to produce numbers in a manner indistinguishable from random selection.

Rooting – Attaining root access to the operating system code to modify the software code on the mobile phone or other Remote Wagering Device or install software that the manufacturer would not allow to be installed.

Secure Communication Protocol – A communication protocol that provides the appropriate confidentiality, authentication and content integrity protection.

Security Certificate – Information, often stored as a text file that is used by the TSL (Transport Socket Layers) Protocol to establish a secure connection. A Security Certificate contains information

about whom it belongs to, who it was issued by, valid dates, a unique serial number or other unique identification that can be used to verify the contents of the certificate. In order for an TLS connection to be created, both sides shall have a valid Security Certificate, which is also called a Digital ID.

Security Policy – A document that delineates the security management structure and clearly assigns security responsibilities and lays the foundation necessary to reliably measure progress and compliance

Self-Service Wagering Device – A kiosk that at a minimum will be used for the execution or formalization of wagers placed by a player directly and, if supported, may be used for redemption of winning wager records.

Sensitive Information – Information such as player data, wagering data, validation numbers, PINs, passwords, secure seeds and keys, and other data that shall be handled in a secure manner.

Server – A running instance of software that is capable of accepting requests from clients, and the computer that executes such software. Servers operate within a Client-Server Architecture, in which “servers” are computer programs running to serve the requests of other programs (“clients”). In this case the “server” would be the Event Wagering System and the “clients” would be the Wagering Devices.

Shellcode – A small piece of code used as a payload in the exploitation of security. Shellcode exploits vulnerability and allows an attacker the ability to reduce a system’s information assurance.

Stateless Protocol – A communications scheme that treats each request as an independent transaction that is unrelated to any previous request so that the communication consists of independent pairs of requests and responses.

System Administrator – The individual(s) responsible for maintaining the stable operation of the Event Wagering System (including software and hardware infrastructure and application software).

TCP/IP, Transmission Control Protocol/Internet Protocol – The suite of communications protocols used to connect hosts on the Internet.

Threat – Any circumstance or event with the potential to adversely impact network operations (including mission, functions, image, or reputation), assets, or individuals through a system via unauthorized access, destruction, disclosure, modification of information, and/or denial of service. Also, the potential for a threat-source to successfully exploit a system vulnerability.

Time Stamp – A record of the current value of the Event Wagering System date and time which is added to a message at the time the message is created.

Touch Screen – A video display device that also acts as a user input device by using electrical touch point locations on the display screen.

Trifecta – A wager in which a player wins by selecting the first three finishers of a competition in the correct order of finish.

Unauthorized Access – A person gains logical or physical access without permission to a network, system, application, data, or other resource.

User Interface – An interface application or program through which the user views and/or interacts with the Wagering Software to communicate their actions to the Event Wagering System.

Version Control – The method by which an evolving approved Event Wagering System is verified to be operating in an approved state.

Virtual Event Wagering – A form of wagering that allows for the placement of wagers on sports, contests, and matches whose results are determined solely by an approved Random Number Generator (RNG).

Virtual Participant – The athlete or other entity that competes in a virtual event.

Virus – A self-replicating program, typically with malicious intent, that runs and spreads by modifying other programs or files.

Virus Scanner – Software used to prevent, detect and remove computer viruses, including malware, worms and Trojan horses.

Voucher – A wagering instrument which can be redeemed for cash or used to subsequently redeem for credits.

VPN, *Virtual Private Network* – A logical network that is established over an existing physical network and which typically does not include every node present on the physical network.

Vulnerability – Software, hardware, or other weaknesses in a network or system that can provide a “door” to introducing a threat.

Wager – Any commitment of credits or money by the player on the results of events.

Wager Record – A printed ticket or electronic message confirming the acceptance of one or more wagers.

Wagering Device – An electronic device that converts communications from the Event Wagering System into a human interpretable form and converts human decisions into communication format understood by the Event Wagering System.

Wagering Instrument – A printed or virtual representative of value, other than a chip or token and includes coupons and vouchers. A virtual wagering instrument is an electronic token exchanged between a player's mobile device and the wagering device which is used for credit insertion and redemption.

Wagering Rules – Any written, graphical, and auditory information provided to the public regarding event wagering operations.

Wagering Software – The software used to take part in wagering and financial transactions with the Event Wagering System which, based on design, is downloaded to or installed on the Wagering Device, run from the Event Wagering System which is accessed by the Wagering Device, or a combination of the two. Examples of Wagering Software include proprietary download software packages, html, flash, etc.

Wi-Fi – The standard wireless local area network (WLAN) technology for connecting computers and electronic devices to each other and/or to the internet.

#4862

Exhibit 4 to
SB 2314 Letter
Jamie Azure, Tribal Chairman
Turtle Mountain Band of Chippewa
February 2, 2021

North Dakota Sports Betting Estimates

Eilers and Krejcik – North Dakota Mature Market Estimates

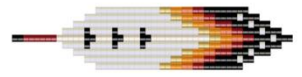
- Scenario 1 (Restricted Retail only):
 - \$210,710,877 Handle
 - \$13,696,207 GGR
- Scenario 2 (Liberal Supply Retail only):
 - \$247,737,723 Handle
 - \$16,102,952 GGR
- Scenario 3 (Online Access with In-Person Registration):
 - \$270,389,600 Handle
 - \$17,575,324 GGR
- Scenario 4 (Online Access with Remote Registration):
 - \$524,212,554 Handle
 - \$34,073,816 GGR

Retail Growth Rates (Scenario 1)

	Year 1	Year 2	Year 3	Year 4	Year 5
Handle	\$ 105,355,438	\$ 158,033,158	\$ 210,710,877	\$ 212,817,986	\$ 214,925,094
GGR	\$ 6,848,104	\$ 10,272,155	\$ 13,696,207	\$ 13,833,169	\$ 13,970,131
Win %	6.50%	6.50%	6.50%	6.50%	6.50%

Mobile Growth Rates (Scenario 4)

	Year 1	Year 2	Year 3	Year 4	Year 5
Handle	\$ 157,263,766	\$ 314,527,532	\$ 524,212,554	\$ 629,055,065	\$ 681,476,320
GGR	\$ 10,222,145	\$ 20,444,290	\$ 34,073,816	\$ 40,888,579	\$ 44,295,961
Win %	6.50%	6.50%	6.50%	6.50%	6.50%



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February 2, 2021

Senate Finance & Taxation Committee
North Dakota Legislature

Re: SB 2314

Dear Senate Finance and Taxation Committee:

Please accept this letter of support for SB 2314 submitted on behalf of the Turtle Mountain Band of Chippewa Indians (TMBCI). SB 2314 delegates authority to the governor to negotiate tribal-state gaming compacts which authorize online gaming and online sports betting exclusively by federally recognized tribes.

Tribal online sports betting permits patrons located in any part of the state to place bets on sporting events on websites hosted by tribal governments on servers located on a reservation. Tribal online gaming permits patrons in any part of the state to engage in gaming activities through websites that are based on casino games, such as slot machines, craps, roulette, etc., also utilizing servers located on the reservation. In both cases tribes would utilize geofencing and identity and age verification systems, similar to some systems currently employed by the North Dakota Lottery, to make sure that online purchasers are not located outside the state.

Tribal gaming has had positive impacts on several important dimensions of reservation life, resulting in social improvements for tribal and non-tribal communities alike. Despite these improvements, North Dakota's tribes are still suffering from a disproportionate amount of poverty—some of the most extreme poverty in the United States. This poverty has a rippling effect on tribal members' health, educational attainment, and the welfare of tribal children. North Dakota tribes remain dependent on government funding and state welfare systems to fill the overwhelming needs of their citizens. In order to continue an upward economic trend and fulfill the federal policies of tribal sovereignty, self-sufficiency, and government-to-government relations, North Dakota's tribal nations must continue to expand tribal gaming.

The continued spread of non-tribal gaming in North Dakota has impacted the ability of tribal communities to attain the pronounced social and economic benefits of tribal gaming. Tribal governments use—and must use—the net income from gaming to provide social services to members, further economic development, and fund government programs. Any decrease in gaming revenue results in a subsequent decrease in support for their communities. Tribal governments are facing incredible pressure to improve gaming performance and increase access in order to counteract the competition that tribal gaming operations face from other charitable interests in the state.

SB 2314 will allow tribes to provide cutting edge gaming technology to North Dakota citizens, improving access to gaming and generating desperately-needed revenue for tribal

communities. This technology is in use in many states across the U.S. As this letter will show, SB 2314 will have a profound impact on North Dakota tribes and the State. It will level the playing field and provide the poorest North Dakotans the opportunity to rebuild and strengthen their communities, while also contributing to the greater economic strength of North Dakota. These social and economic benefits are necessary to raise North Dakota tribes out of poverty and bring them on par with the rest of North Dakota's citizenry.

Background

Modern tribal gaming dates back to the 1970s when Indian tribes established bingo operations as a means of raising revenue to fund tribal governments and to aid in self-determination. The *Supreme Court in California v. Cabazon Band of Mission Indians* affirmed tribes' right to regulate gaming on tribal lands, as long as the tribe is in a state that permits such gaming for any purpose by any person. The Supreme Court also confirmed that tribes' interests in self-determination and economic self-sufficiency—and the federal interests promoting tribes' sovereignty—preempted the state interest in regulating gaming. The Court underscored tribal governments' critical need for economic development and employment, and promoted gaming operations as a major source of income for tribes to fund government and social services.

Soon after the Court's *Cabazon* decision, Congress passed the Indian Gaming Regulatory Act (IGRA) of 1988. IGRA codified the reasoning underlying the *Cabazon* decision: tribal gaming is necessary to promote economic development, self-sufficiency, and strong tribal governments. Pursuant to IGRA, tribal gaming has assumed a vital role in supporting jobs and creating opportunity for many tribal nations.

Tribal gaming has given North Dakota's five sovereign tribal nations a means to improve the lives of their people, foster economic development, and strengthen their governments. After centuries of economic deprivation, North Dakota tribes have asserted their rights and identities, have built and rebuilt political systems in order to implement self-rule, and are beginning to overcome what once seemed to be insurmountable problems of poverty and social disarray.¹ The foundation of this resurgence is the exercise of self-government or tribal sovereignty, which has proven to be the only policy that has shown "concrete success in breaking debilitating economic dependence on federal spending programs and replenishing the social and cultural fabric that can support vibrant and healthy communities and families."²

While North Dakota's tribal economies are not built entirely on gaming successes, gaming plays an integral part in spurring self-sufficiency, reducing poverty, and improving public

¹ Kalt and Singer, *Myths and Realities of Tribal Sovereignty: The Law and Economics of Indian Self-Rule*, Native Issues Research Symposium (March 2004) (citing Cornell and Kalt (1992, 1995, 1997a, 1997b, 1998, 2000); Jorgensen (1997, 2000a, 2000b); Krepps (1992); Krepps and Caves (1994); Adams (1999); Dixon, et al. (1998); Moore, et al. (1990); Costello, et al. (2003)), available at <http://ssrn.com/abstract=529084>. (Hyperlinks provided for sources. Please note that .pdfs can be provided on request.)

² *Id.*

safety and health care delivery. It has helped tribes provide health benefits and education to members, preserve cultural resources for current and future generations, and increase social services for their communities. Tribal gaming has improved the North Dakota economy as well—in 2014, tribal casinos created 4,451 jobs in North Dakota and provided \$73,149,032 in direct payments to federal, state, and local governments.³

The following evidence illustrates the unequivocal need for tribal mobile gaming exclusivity in North Dakota.

Economic Disparities

National

The economic development that has taken place in Indian Country, including tribal gaming, has been closing the gap between living conditions for Native Americans and the general public, but the starting point of that gap was vast, and poverty remains widespread. The latest available Census data indicate that, at just over \$57,600, the income of the median American household is still 45% higher than the that of the median Native household in the U.S. (at approximately \$39,700).⁴ In 2017, more than a quarter of the native population—26.8%—was living in poverty, while the national poverty rate was 14.6%.⁵ Data from 2000 shows that the poverty levels have slightly increased in the last two decades:

³ American Gaming Association, *The Economic Impact of Tribal Gaming: A State by State Analysis* (Sept. 2017), available at <https://www.americangaming.org/sites/default/files/Economic%20Impact%20of%20Indian%20Gaming%20in%20the%20U.S.%20September%202017.pdf>.

⁴ Correspondence from Harvard Project on American Indian Economic Development to Secretary Mnuchin (Apr. 10, 2020) at 3, available at https://ash.harvard.edu/files/ash/files/hpaied_covid_letter_to_treasury_04-10-20_vsignedvfinv02.pdf.

⁵ U.S. Census Bureau (2017) Table B17001C and B17001: Poverty Status in the Past 12 Months by Sex by Age, 2013-2017 American Community Survey 5-Year Estimates.

PERCENT OF FAMILIES BELOW POVERTY LEVEL⁶

	1969	1979	1989	1999
Total U.S.	10.7	9.6	10.0	9.3
White	8.6	7.0	7.0	7.3
Black	29.8	26.5	26.3	21.8
All American Indian/Alaska Native ⁷	33.3	23.7	27.0	23.4
American Indian/Alaska Native on Res	57	43	51	39

North Dakota

While on a national scale, Native American poverty rates are comparable to those of Black Americans, the North Dakota figures illustrate a significantly greater disparity. For example, 41-46% of Native American families with children under 18 years of age in North Dakota are living in poverty, depending on whether they are located in a rural or urban setting.⁸ And a shocking 49% of Native American individuals under the age of 18 living in an urban setting in North Dakota are living in poverty.⁹ That is a full 15% more than the national poverty rates for Native Americans, and nearly 30% higher than the national poverty rate for all groups. The median household income for Native American households in North Dakota is \$25,255, an amount which is about half of the median income of all households in the State.¹⁰

The reservation-specific data is consistent with the state-wide findings. On the Standing Rock Reservation, for example, the poverty rate is 43.2%, nearly triple the national poverty level

⁶ Source: Kalt and Singer, *Myths and Realities of Tribal Sovereignty: The Law and Economics of Indian Self-Rule*, supra n.1.

⁷ Data for 1999 are average of 1997-99, per U.S. Census Bureau (2000).

⁸ National Congress of American Indians Policy Research Center, Great Plains Regional Profile, p. 16, available at https://www.ncai.org/policy-research-center/research-data/prc-publications/Great_Plains_NCAI.pdf.

⁹ *Id.*

¹⁰ *Id.* at 9.

average.¹¹ Unemployment on the Turtle Mountain Reservation is estimated to be at 59.45% according to the 2016 Bureau of Indian Affairs (BIA) Labor Force Statistics. Over 40% of Turtle Mountain Tribal families were living below the poverty level in 2010, and 882 households were headed by single mothers struggling to raise 1,392 children under the age of 18.¹²

Educational Attainment

Nationally

Native Americans attend post-secondary education at a rate of 19%, in comparison to 41% among the total U.S. population.¹³ Forty-one percent of first-time, full-time Native American students attending four-year institutions beginning in 2012 graduated within six years, compared to 62% for all students. In 2019, 25% of Native Americans over the age of 25 had an associate degree or higher, compared to 42% of all those over the age of 25.

North Dakota

While 77.2% to 88.2% of Native Americans in North Dakota graduate high school (compared to 90.9% for North Dakota overall) only 9 to 19% completed a bachelor's degrees or higher, compared to 27.2 % in North Dakota.¹⁴ For 11% of the 17,185 Native American people over 25 in North Dakota, the highest level of education was a bachelor's degree; for 4 percent, a graduate or professional degree; and for 17 percent, less than a high school diploma or equivalent.¹⁵ Computer and Internet usage statistics show that 24% of Native Americans in North Dakota do not have a computer, while 61% of households had access to a computer and broadband and 15% had a computer but no internet.¹⁶

¹¹ Jens Manuel Krogstad, *One-in-four Native Americans and Alaska Natives are living in poverty* (Pew Research Center 2014), available at <https://www.pewresearch.org/fact-tank/2014/06/13/1-in-4-native-americans-and-alaska-natives-are-living-in-poverty/>.

¹² 2010 Census Bureau Dataset: ACS 5-year Estimate.

¹³ Postsecondary National Policy Institute, *Factsheets: Native American Students in Higher Education* (Nov. 2020), available at <https://pnpi.org/native-american-students/>.

¹⁴ N.D. Census Office, *Growing ND by the Numbers* (2015), available at <https://www.commerce.nd.gov/uploads/8/CensusNewsletterDec2015.pdf> (citing U.S. Census Bureau, 2009- 2013 5-Year American Community Survey, Demographic Profile DP02, DP03, Center for Economic Studies Local Employer-Household Dynamics (LEHD) 2014 3rd Quarter).

¹⁵ National Congress of American Indians Policy Research Center, Great Plains Regional Profile, *supra* n.8 at p.4.

¹⁶ *Id.* at 8.

Child Welfare

Nationally

According to the 2007 report titled “Time for Reform: A Matter of Justice for American Indian and Alaskan Native Children,” Native American children are overrepresented in the nation’s foster care system at more than 1.6 times the expected level. Native American children were reported to the state and found to be victims of child abuse and neglect at the rate of 16.5 per 1,000 children. This rate compares to 10.8 for White children. Native American children are also more likely than children of other races/ethnicities to be identified as victims of neglect (65.5%).¹⁷

North Dakota

“Disproportionality is the level at which groups of children are present in the child welfare system at higher or lower percentages or rates than in the general population. The National Council of Juvenile and Family Court Judges published a ‘disproportionality index,’ a measure of the degree a given jurisdiction is disproportionate.¹⁸ The index is calculated by dividing the proportion of children in foster care for a given race by the proportion of the same group in the child population. The resulting ratios that are under 1 indicate underrepresentation, ratios of 1.0 indicate no disproportionality, and scores of 1.1 and greater indicate overrepresentation. Disproportionality scores are calculated for the number of children ‘entering’ care, ‘exiting’ care, and ‘remaining’ in care at the end of the year.”¹⁹

In 2007, North Dakota was identified as one of ten states with the greatest disproportionality of Native American children in state foster care.²⁰ Native American children

¹⁷ National Indian Child Welfare Association, Time for Reform: A Matter of Justice for American Indian and Alaskan Native Children (2007), available at https://www.pewtrusts.org/-/media/legacy/uploadedfiles/wwwpewtrustsorg/reports/foster_care_reform/nicwareportpdf.pdf.

¹⁸ National Congress of American Indians Policy Research Center, Great Plains Regional Profile, *supra* n.8 (citing National Council of Juvenile and Family Court Judges (NCJFCJ), Disproportionality Rates for Children of Color in Foster Care, 2012).

¹⁹ These calculations require (1) the child population (by race) for any given state or jurisdiction, available from the 2010 census data; and (2) the number of children in the child welfare system (by race), available from the National Data Archive on Child Abuse and Neglect’s Adoption and Foster Care Analysis and Reporting System (AFCARS).

²⁰ PEW Charitable Trusts, American Indian Children Overrepresented in Nation’s Foster Care System, New Report Finds (Nov. 19, 2007), available at <https://www.pewtrusts.org/en/about/news-room/press-releases-and-statements/2007/11/19/american-indian-children-overrepresented-in-nations-foster-care-system-new-report-finds>.

represent 8.5 percent of the child population of North Dakota, but 28.4 percent of the foster care population. This results in a 3.3 disproportionality index in 2012 (the index was calculated by 28.4/8.5).²¹

Health and Suicide

Nationally

Native Americans are also more likely to suffer from chronic illness and suicide. When compared to all other U.S. races, Native Americans have a lower life expectancy by 5.5 years. This includes higher rates of death from chronic illness, including diabetes, chronic liver disease, cirrhosis, mellitus, and suicide.²² Native Americans die of heart disease at a rate 1.3 times higher than all other races; diabetes at a rate of 3.2 times higher; chronic liver disease and cirrhosis at a rate of 4.6 times higher; and intentional self-harm and suicide at a rate of 1.7 times higher.²³ Native youth commit suicide at a rate 2.5 times higher than the rest of the country. It is the highest youth suicide rate among all other races/ethnicities in the country.²⁴ “Inadequate education, disproportionate poverty, discrimination in the delivery of health services, and cultural differences all contribute to the lower life expectancy and disproportionate disease burden Native American families face. These are broad quality of life issues rooted in economic adversity and poor social conditions.”²⁵

²¹ National Congress of American Indians Policy Research Center, Great Plains Regional Profile, *supra* n.8.

²² Indian Health Service, Disparities, available at <https://www.ihs.gov/newsroom/factsheets/disparities/>.

²³ *Id.*

²⁴ National Indian Council on Aging, *American Indian Suicide Rate Increase* (Sept. 9, 2019), available at <https://www.nicoa.org/national-american-indian-and-alaska-native-hope-for-life-day/>.

²⁵ Indian Health Service, Disparities, *supra* n. 22.

North Dakota

According to the North Dakota Department of Health, the average age at death between 2010 and 2014 for Native Americans was 56.8 years compared to 76.6 years for the white population.²⁶ Native Americans generally have a higher incidence of cancer than the white population, and are five times as likely to die from diabetes than white North Dakotans.²⁷ Northern Plains American Indians are at a higher risk of developing certain diseases such as lung, cervical, colorectal, and liver cancers compared to white people in the same region.²⁸ American Indians living in North Dakota experience death due to cardiovascular disease at twice the rate of white people. According to the 2006-2010 BRFSS, 75.7% of Native Americans were overweight or obese, compared to 64.1 percent of total North Dakota adults. According to the BRFSS, tobacco use among Native Americans is more than twice as high as the state average, at more than 50%.²⁹

These statistics only provide a sample of the inequities facing the Native American population in North Dakota. Childhood disparities around poverty, malnutrition, welfare, and education are some of the worst in the nation. Individuals are at an increased risk for early deaths, and many women and children suffer violence at home. SB 2314 can help address these inequities, by providing tribal governments with the resources to fund government programs and social services.

SB 2314 Is Public Interest Legislation

SB 2314 is Consistent with North Dakota's Policy of Allowing Gaming Expansion When it Supports the Public Interest

North Dakota's legislative history highlights the state's policy of permitting gaming expansion when it serves the public interest. Charitable gaming, tribal gaming, and the state lottery all benefit the public. SB 2314 is no different.

Federally recognized tribes are devoted to the general welfare of their communities. Tribes that engage in self-governance or a high degree of self-determination tend to improve

²⁶ North Dakota Department of Health, Division of Vital Records (2014), <https://www.health.nd.gov/vital>.

²⁷ A Picture of Health: Chronic Disease in North Dakota (2012), available at http://www.nphic.org/Content/Awards/2013/Print/ANNR-OS-ND-2012_CD_Stat.pdf.

²⁸ A Picture of Health: Chronic Disease in North Dakota, *supra* n. 27.

²⁹ *Id.*

community employment and per capita income, and reduce poverty.³⁰ Tribal programs are the most efficacious when they are well-funded.

Tribal gaming revenue is statutorily required to go to public interest uses, and it is often used to fund tribal programs. IGRA requires that tribes use net revenues from gaming used to fund tribal government operations, provide for the general welfare of the tribe, promote tribal economic development, donate to charitable organizations, or to help fund operations of local government agencies. 25 U.S.C. § 2710(b)(2)(B). Tribes have historically used this income to:

- “Support tribal government operations;
- Develop tribal infrastructure;
- Support tribal social and economic programs and services, such as health care, education, housing assistance, public safety, vocational training, youth programs, elderly care, transportation, cultural, and environmental and natural resource services;
- Fund the development of other tribal enterprises;
- Help charitable causes; and
- Make payments to local governments and contract for government services (e.g., law enforcement, fire protection, and judicial services).”³¹

This is reflected in North Dakota’s tribal codes. For example, the Turtle Mountain Tribal Code states:

Net revenues from Class II and III gaming shall be used only for the following purposes: to fund tribal government operations and programs; provide for the general welfare of the Tribe and its members; promote tribal economic development; donate to charitable organizations; or help fund operations of local government agencies. The use of such net revenues may be further subject to the restrictions set forth in Section VII of the Tribal-State Gaming Compact.

³⁰ See, e.g., Jeff R. Keohane, the Rise of Tribal Self Determination and Economic Development (ABA 2006), available at https://www.americanbar.org/groups/crsj/publications/human_rights_magazine_home/human_rights_vol33_2006/spring2006/hr_spring06_keohane/.

³¹ American Gaming Association, *The Economic Impact of Tribal Gaming: A State by State Analysis* (Sept. 2017), available at <https://www.americangaming.org/sites/default/files/Economic%20Impact%20of%20Indian%20Gaming%20in%20the%20U.S.%20September%202017.pdf> (citing Alan Meister, 2017, Casino City’s Indian Gaming Industry Report, 2017 Edition, Newton: Casino City Press. IGRA sets forth that tribes may only use gaming profits to fund tribal government operations or programs, provide for the general welfare of their members, promote tribal economic development, donate to charitable organizations, and help fund operations of local government agencies).

Turtle Mountain Tribal Code § 25.0132.

Similarly, the Spirit Lake Nation dedicates all surplus gaming funds exclusively to charitable purposes:

Surplus funds paid into the General Fund of the Tribe pursuant to §§8-3-109(5) are hereby dedicated exclusively to charitable purposes. Such funds shall be allocated to those tribal programs which are of paramount importance to tribal self-determination and the improvement of the health and welfare of tribal members. Accordingly, 50% of such funds shall be used for the Tribe's land consolidation program and an additional 10% shall be used for the Tribe's alcohol rehabilitation program. The remaining 40% shall be used as the Tribal Council shall direct in conformity with the provisions of this chapter.

Spirit Lake Nation, Law & Order Code § 8-3-110.

Tribal gaming revenue supports the public interest by funding critical tribal programs and social services, and by funding government to advance tribal sovereignty and self-governance. This is consistent with the State's policy of promoting gaming to advance the public interest.

Electronic Pull Tabs Have Caused Tribal Nations to Lose Money While Non-Native Charities Benefit

Since the 2017 state Legislature legalized Electronic Pull Tabs (ETABS), tribes have been losing money, while state charities and the state itself are benefiting. From 2015 to 2017, licensed gaming brought in \$569 million, of which \$43.7 million went to charity and \$6.8 million went to the state general fund. From 2017 to 2019, licensed gaming brought in \$852 million, of which over \$51 million went to charity and \$11 million went to the state general fund. This amounts to a revenue increase of roughly 49%.³² In fact, in the fourth quarter of 2019 alone charitable gaming in North Dakota had gross proceeds (otherwise known as gross gaming revenues) of over \$243 million, with over \$192 million of that coming from ETAB machines. This means that with even a small amount of future growth, charitable gaming in North Dakota will soon exceed \$1 billion annual gross gaming revenues.

This rise in gaming revenue for charities has significantly impacted North Dakota's tribal nations. For example, Collette Brown, the Gaming Commission Executive Director for the Spirit Lake Tribe, reported to Inforum that the Spirit Lake Casino Resort, seven miles south of Devils Lake, saw a 42% decrease on its bottom line in one year after ETABS were introduced.³³ The

³² Natasha Rausch, *E-tabs spark 'dire concern' for North Dakota tribes relying on casino revenue, jobs*, Inforum (Feb. 3, 2020), available at <https://www.inforum.com/news/government-and-politics/4898113-E-tabs-spark-dire-concern-for-North-Dakota-tribes-relying-on-casino-revenue-jobs>.

³³ *Id.*

Spirit Lake Tribe's five casinos have an \$80 million a year payroll. The money from tribal casinos goes into surrounding markets.³⁴

When the tribal casinos lose significant chunks of income, tribal programs, social services, and tribal members, especially children, suffer. SB 2314 will modernize tribal gaming and remediate some of the financial losses suffered by the tribes. By investing tribal sovereignty—the life-blood of tribal nations—and promoting self-determination through self-governance by federally recognized tribes, SB 2314 helps to protect and promote tribal citizens' interests and well-being.³⁵ Tribal self-governance is the only policy that has worked to make significant progress in reversing otherwise distressed social, cultural, and economic conditions in Native communities.³⁶ Research has shown that sovereignty is the key lever that provides Native American communities with institutions and practices that can alleviate disparities.³⁷ Sovereignty cannot exist in a vacuum—in order to participate economically and culturally in today's society, sovereign tribal nations must have the funding. Social programs, infrastructure, cultural preservation, member health and safety, and government operations all require funding to be efficacious.

Increases in gaming revenues will also benefit North Dakota by stimulating the economy and promoting tribal self-sufficiency, reducing the burden on state welfare programs. The building up of North Dakota tribal economies over the last several decades has made tribes key supporters of not only their own citizens' jobs and livelihoods, but of the jobs and livelihoods of thousands of non-Native citizens as well. As stated above, in 2014 tribal casinos created 4,451 jobs in North Dakota and provided \$73,149,032 in direct payments to federal, state, and local governments.³⁸ With tribal online gaming and mobile sports betting, these numbers will rise.

³⁴ *Id.*

³⁵ Kalt and Singer, *Myths and Realities of Tribal Sovereignty: The Law and Economics of Indian Self-Rule*, *supra* n.1.

³⁶ Jeff R. Keohane, the Rise of Tribal Self Determination and Economic Development, *supra* n. 30; Cornell and Kalt, Two Approaches to Economic Development on American Indian Reservations: One Works, the Other Doesn't, JOPNA No. 2005-02 (2006), available at https://www.honigman.com/media/site_files/111_imgimgjopna_2005-02_Approaches.pdf.

³⁷ *Id.*

³⁸ American Gaming Association, *The Economic Impact of Tribal Gaming: A State by State Analysis* (Sept. 2017), available at <https://www.americangaming.org/sites/default/files/Economic%20Impact%20of%20Indian%20Gaming%20in%20the%20U.S.%20September%202017.pdf>.

It is common for nearby off-reservation communities to benefit from tribal gaming's "economic spillovers." "Reservation economic activity requires goods and services from off-reservation communities, which incur local and state taxes on sales and income."³⁹ Survey data from tribes in Washington state, for example, indicate that two-thirds of the 27,376 workers employed in tribal casinos, governments, and nongaming enterprises in 2010 were non-Indians. Four of those tribes provided detailed procurement information showing that at least 94 percent of all tribal goods and services in 2004 came from off-reservation suppliers.⁴⁰ "In 2016, the Fort Belknap Indian Community, home of the Gros Ventre and Assiniboine Tribes in Montana, 72 cents of every dollar that entered the reservation economy was spent off the reservation. In total, this spending meant that the community contributed \$158 million to the surrounding and broader economy."⁴¹ The Tribes' Island Mountain Development Group specializes in e-commerce, employs more than 200 people, and alone supports more than \$33 million in business sales in Blaine County, Montana."⁴²

Adequate funding of tribal programs through gaming revenues will relieve the pressure on state welfare programs and federal funding, leading North Dakota's tribes towards true independence. Gaming success has spurred self-sufficiency for tribes such as Oneida (New York) and Mille Lacs (Minnesota) to such a degree, that they have taken the step of eschewing federal funding. Self-sufficiency will improve tribal social services—as when Mississippi Choctaw plows the fruits of economic development into dramatic improvements in public safety and health care delivery—and encourage cultural preservation—Mille Lacs is able to invest in award-winning efforts to replenish Native language use.⁴³ North Dakota's tribes can attain similar successes and independence.

³⁹ Akee, et al., *The Indian Gaming Regulatory Act and Its Effects on American Indian Economic Development* (2015), available at https://www.researchgate.net/publication/282462768_The_Indian_Gaming_Regulatory_Act_and_Its_Effects_on_American_Indian_Economic_Development/link/5b2a33b3aca27209f3753b70/download.

⁴⁰ *Id.*

⁴¹ Correspondence from Harvard Project on American Indian Economic Development to Secretary Mnuchin, *supra* n. 4 (citing Michael Shuman, "Tribal Renewal through Self-Reliance: A New Economic Development Strategy for the Fort Belknap Reservation," Local Economy Programs for Neighborhood Associates Corporation (March 2020), p. 19).

⁴² Correspondence from Harvard Project on American Indian Economic Development to Secretary Mnuchin *supra* n. 4 (citing "The Economic Contribution of the Island Mountain Development Group," Bureau of Business and Economic Research, University of Montana, Missoula, Montana (Oct. 2019)).

⁴³ Kalt and Singer, *Myths and Realities of Tribal Sovereignty: The Law and Economics of Indian Self-Rule*, *supra* n.1.

North Dakota Can Anticipate Significant Revenue From Sports Betting and Online Gaming

SB 2314 allows players to participate in online gaming and online sports betting activities from any location within the state. It also allows players to register for online gaming or online sports betting accounts online, eliminating a trip to a brick and mortar casino. This will eliminate any inequities from requiring players to travel to a remote casino to register. This is known as the “New Jersey” model. Pursuant to the “New Jersey” model, a fully mature internet sport betting business in North Dakota is anticipated to yield \$681,476,320 in statewide revenues, a figure that is less than the current ETAB machine gross revenue in the State of North Dakota (\$768,000,000), not even taking into account how that revenue will likely grow. Online gaming is projected to generate gross revenue twice the sports betting projections. The expected statewide gross revenue of legal online gaming is therefore \$1,362,952,640 per year, which is probably similar to the annual gross revenue that the ETAB machines will generate in a few years given the current rate of growth.

TMBCI has provided statewide revenue projections from IGT, its sports betting partner, for the Committee’s review. (See Exhibit 4 submitted with this letter). Please note that SB 2314 is consistent with “Scenario 4 (online access with remote registration).”

A Comprehensive Look at Other States With Online Gaming

Online gaming is currently available in 13 states, all offering online sports betting, four offering online casinos, and five offering online poker.⁴⁴ Another four have legalized some form of online gaming, although as of late last year, these states were not yet operational.⁴⁵ The following section provides an overview of online gaming in the 13 operational states, including the cybersecurity measures used by each state. Senate Bill No. 2314 requires that a tribal-state compact address cybersecurity, specifically: geolocation, account encryption, and age verification. It also requires that the servers that are hosting the gaming transactions be located on tribal lands. As you will see, these provisions are common in the below states’ various statutory and regulatory schemes for online gaming.

Oregon

-
- ⁴⁴ Delaware - Online Poker and Online Casino gaming
Nevada - Online Poker
New Jersey - Online Poker, Online Casinos
Pennsylvania - Online Poker, Online Casinos
West Virginia - Online Poker, Online Casinos

⁴⁵ Washington, North Carolina, Virginia, Tennessee

Oregon allows online betting on professional sports through the Oregon Lottery. In October 2019, the lottery commission authorized mobile sports betting, with the state-run lottery overseeing the launch of a new website and application.⁴⁶

Oregon's sports betting program is showing an upward trend in revenue, although the numbers are underwhelming compared to other states. Sports betting analysts attribute this to Oregon's use of a single sports betting app. In Rhode Island, a state that also has only one sports betting app, similar results have occurred. Additionally, Oregon does not allow sports betting on college sports, which could be contributing to the low revenues.⁴⁷

The Oregon Lottery uses information security safeguards. The Oregon Lottery takes reasonable precautions to protect the personally identifiable information it collects from loss, unauthorized access, illegal use, or unauthorized disclosure. The Oregon Lottery uses encryption software to protect the security of individual's personal information during transmission of such information through the Oregon Lottery's website. The Oregon Lottery stores personally identifiable information in secure locations and has policies and procedures in place to protect such information from illegal access or inadvertent disclosure. Oregon Rule 177-010-0115 (Data Privacy and Security Policy).⁴⁸

Colorado

Colorado voters legalized sports betting in November 2019 and the program launched on May 1, 2020. The state issued sports betting regulations on August 14, 2020. 1 CCR 207-2.⁴⁹

⁴⁶ Personal communication with Matt Shelby, Community & Corporate Engagement Manager, Oregon Lottery.

⁴⁷ Legal Sports Betting, *Oregon Sports Betting Revenue in August, Dominated by Scoreboard* (Sept. 21, 2020), available at <https://www.legalsportsbetting.com/news/oregon-sports-betting-revenue-for-august-dominated-by-scoreboard/>.

⁴⁸ Oregon has a state-wide consumer protection law and privacy policy that covers all interactions that a person has with a business conducting online commerce, including the Oregon lottery. This law requires businesses involved in online commerce to keep personally identifiable information and confidential data secure and notify consumers about any breaches. When a player submits personally identifiable information, participates in a promotion, uses the Oregon Lottery app, or browses the lottery website, they consent to the collection and use of the information in accordance with this privacy policy.

⁴⁹ An online sports betting operation is one in which "wagers on sports events are made through personal computers, or mobile or interactive devices, and accepted through an online gaming system approved by the Division." An "Internet Sports Betting Operator" means a person contracted by a Master License that is licensed to operate an internet Sports Betting Operation in which customers place bets within the State of Colorado on authorized sports events through a customer's personal computer, mobile or interactive device and accepted through an online

Like many states, Colorado experienced a lull in sports betting due to the coronavirus pandemic and the suspension of sports. However, now that sports are back, Colorado's revenue is beginning to pick up. For example, the state Department of Revenue reported in late August 2020 that "more than \$59 million was wagered in July, just over a 55% increase from June and more than double May's relatively modest number. After payouts to winners, operators reported more than \$2.4 million in net sports betting proceeds and almost \$242,000 in taxes due to the state."⁵⁰

Colorado has extensive system integrity, security, and licensure requirements. All online sports betting systems authorized by the Division and the rules must be designed to ensure the integrity and confidentiality of all patron communications and ensure the proper identification of the sender and receiver of all communications. If communications are performed across a public or third-party network, the system shall either encrypt the data packets or utilize a secure communications protocol to ensure the integrity and confidentiality of the transmission.

If the sports betting system allows online betting, it must employ a method for verifying geolocation systems to establish patrons' geographic locations. 1 CCR 207-2 § 7.5(20). In order to prevent unauthorized use of the internet or a mobile device to place a sports wager when a patron is not within the state of Colorado, the Sports Betting Operation must utilize a geofence system to reasonably detect the physical location of a patron attempting to access the online sports betting system and place a wager; and to monitor and block unauthorized attempts to access the online sports betting system in order to place a wager. (The geofencing system must ensure that any patron is located within the permitted boundary when placing any wager, and shall be equipped to dynamically monitor the patron's location and block unauthorized attempts to access the online sports betting system in order to place a wager throughout the duration of the sports betting patron session.)

Patron accounts must be encrypted, and the following information protected: (i) Any portion of the patron's Social Security number or equivalent identification number for a noncitizen patron, such as a passport or taxpayer identification number; (ii) The patron's passwords and PINs; and (iii) The patron's personal financial information. 1 CCR 207-2 § 7.11(4)(b). A Sports Betting Operation must have internal controls in place to identify unusual betting activity and report such activity to the Division and an Independent Integrity Monitoring Association as directed by the Division Director. 1 CCR 207-2 § 8.1(2). The rules also provide for protection of confidential information, even as it relates to unusual betting activity. Age and identity are verified through user accounts. 1 CCR 207-2 § 7.11 (2).

gaming system approved by the Division. 1 CCR 207-2 § 1.4(13). An Internet Sports Betting Operator may provide only one individually branded website, which may have an accompanying mobile application that must bear the same unique brand as the website for an internet Sports Betting Operation. 1 CCR 207-2 § 1.4(10).

⁵⁰ The Colorado Sun, *With big sports back, Colorado's betting scene exploded with \$59 million in pent-up wagers* (Aug. 27, 2020), available at <https://coloradosun.com/2020/08/27/coronavirus-colorado-sports-betting/>.

Nevada

On December 22, 2011, the Nevada Gaming Commission established a regulatory framework for state regulation of interactive gaming (which is presently limited to only internet poker). These regulations address the system of granting licenses to operators, service providers and manufacturers of “interactive gaming systems” for internet poker.⁵¹

For internet poker, the Nevada Gaming Commission’s regulations also address matters related to:

- The registration of players.
- Player accounts.
- Problem gaming.
- Player disputes.
- Suspicious and criminal wagering activity.
- The minimum standards and controls necessary to offer internet poker.

Under these regulations, the core components of an interactive gaming system (including the servers and databases running the games on the interactive gaming system and storing game and interactive gaming account information) must be located in the state of Nevada unless otherwise permitted by the Chairman of the Gaming Control Board.

Interactive gaming on television is not currently permitted in Nevada. Mobile wagering is limited to the conduct of gaming games operated solely within a licensed gaming establishment, and specifically excludes interactive gaming. *NRS 463.0176*.

“Interactive gaming” does not include the operation of a race book or sports pool that uses communications technology. Instead, these are approved by the Gaming Control Board pursuant to regulations adopted by the Nevada Gaming Commission to accept wagers originating within this state for races, or sporting events or other events. *NRS 463.016425(1)*.

⁵¹ In Nevada, “interactive gaming” means the conduct of gaming games through the use of communications technology that allows a person, utilizing money, checks, electronic checks, electronic transfers of money, credit cards, debit cards or any other instrumentality, to transmit to a computer information to assist in the placing of a bet or wager and corresponding information related to the display of the game, game outcomes or other similar information. This includes (without limitation) internet poker.

Nevada is not faring as well as other states when it comes to online gaming, possibly because they do not offer online casinos, and also possibly because the gaming industry is attached to promoting its brick and mortar dynasty. “In April and May combined, when Nevada’s casinos were closed to slow the spread of COVID-19, statewide gaming revenues totaled \$9.44 million, a more than 99 percent decline over the same two months in 2019. Gaming wins came from mobile sports wagering on Belarusian soccer, Korean baseball, Chinese table tennis, other non-traditional games and gaming on WSOP.com – Nevada’s lone online poker site.”⁵²

The Nevada Gaming Commission has established minimum internal controls required for operators of interactive gaming, including controls for:

- Administration, accounting and audit
- System security
- Player identification, verification and registration
- Confidentiality of player accounts and player information
- System testing
- Responsible gaming⁵³

New Jersey

New Jersey allows online casinos, poker rooms, and sports betting. On February 26, 2013, the New Jersey Legislature legalized online gaming within its borders through the passage of bill A2578. Sen. Ray Lesniak pushed the bill as a way to stimulate Atlantic City’s ailing economy. The bill authorized online versions of **roulette, baccarat, blackjack, craps, big six wheel, slot machines, mini baccarat, red dog, pai gow and sic bo**; any variations or composites of such games, provided that such variations or composites are found by the [DGE] suitable for use after an appropriate [test period]; and any other game which is determined ... to be compatible with the public interest. Since June 2018, online sports betting has been legal in New Jersey for all players within the borders of New Jersey who are over 21 years old.

Online gaming is going strong in New Jersey. “Online gaming sites combined to bring in **\$87.8 million** for the month of August, which is a new record. It’s only the slightest of increases over July, however, when the total was **\$87.5 million**. Meanwhile, retail revenue climbed **35%**, so in that light, stable online revenue is a victory in its own right. Adding to this, sportsbooks in the state brought in an additional **\$39.5 million**, most of this from online

⁵² The Nevada Independent, *As online gaming expands in the U.S., experts worry Nevada could be left behind* (Aug. 24, 2020), available at <https://thenevadaindependent.com/article/as-online-gaming-expands-in-the-u-s-experts-worry-nevada-could-be-left-behind>.

⁵³ These are set out in Nevada Gaming Commission Regulation 5A.070.

channels. Total combined gaming revenue for the state was **\$326 million**, bringing the total for the year to date to more than **\$1.6 billion**.⁵⁴

In New Jersey, Bill A2578 outlined various security requirements for internet gaming. For example, a casino's primary equipment used by a licensee to conduct Internet gaming must be located, with the prior approval of the division, in a restricted area on the premises of the casino hotel within the territorial limits of Atlantic City, New Jersey. Any intermediate routing of electronic data in connection with a wager shall not affect the fact that the wager is placed in Atlantic City. No software, computer or other gaming equipment shall be used to conduct Internet gaming unless it has been specifically tested by the division. The division may, in its discretion, and for the purpose of expediting the approval process, refer testing to any testing laboratory with a plenary license as a casino service industry enterprise. The division shall give priority to the testing of software, computers or other gaming equipment which a casino licensee has certified it will use to conduct Internet gaming in this State.

The statute authorized the adoption of regulations to establish such technical standards for approval of software, computers, and other gaming equipment used to conduct Internet gaming, including mechanical, electrical or program reliability, security against tampering, the comprehensibility of wagering, and noise and light levels, as it may deem necessary to protect the player from fraud or deception and to insure the integrity of gaming.

The regulations contain provisions for security:

- General requirements for Internet and mobile gaming (13:69O-1.2)
- Internet or mobile gaming accounts (13:69O-1.3), including encryption of sensitive patron information (*Id.* at (b)(2))
- Internet or mobile gaming system standards and operational controls (13:69O-1.4)
- And server-based gaming systems (13:69O-1.5).

Michigan

Michigan approved both online sports betting and online casinos in 2019, although wagering has yet to commence.⁵⁵ In order for wagering to commence, Michigan must

⁵⁴ Online Poker Report, *New Jersey Beats its Online Casino Poker Revenue Record Yet Again in August* (Sept. 15, 2020), available at <https://www.onlinepokerreport.com/44451/nj-record-online-gambling-revenue/>.

⁵⁵ Michigan passed the Lawful Internet Gaming Act (Act 152) and Lawful Sports Betting Act (Act 149) (collectively, the Acts) in 2019. The Acts require licensure for persons to offer internet gaming or sports betting; impose requirements for internet gaming and sports betting; provide for the powers and duties of the Michigan gaming control board and other state and local officers and entities; imposes fees; impose tax and other payment obligations on the conduct of licensed internet gaming and sports betting; create internet gaming and sports betting funds; prohibit certain acts in relation to internet gaming and sports betting and to prescribe penalties for those violations; require the promulgation of rules; and provide remedies.

promulgate rules regarding internet gaming or sports betting. The Michigan Gaming Control Board estimates that rulemaking will be completed by early 2021. The administrative rules will address the types of games an internet gaming operator may offer. Authorized games may include, but are not limited to, poker, blackjack, cards, slots and other games typically offered at a casino. The agency has not yet determined the events that will be available for sports betting. Draft rules are available, and their relevant provisions are summarized below.

Michigan's statutes do not address cyber security or data privacy, but the draft regulations contain extensive controls and also require adherence to third party international standards.⁵⁶ In addition to the Gaming Laboratories International, LLC standards, the draft regulations also set out rules for geofence requirements (R 432.731 & R. 432.631), internet sports betting platform submissions and approvals (R 432.732 & R 432.632), location of servers, security, and cloud storage (R 432.734 & R 432.634), internet gaming data logging standards (R 432.736 & R 432.636), self-monitoring of internet gaming platform critical components (R 432.737 & R 432.637), technical security standards (R 432.739 & R 432.639), and test accounts (R 432.739a & R 432.639a). Michigan also requires internet gaming operators or internet gaming platform providers to comply with all provisions of the bank secrecy act of 1970, 31 USC 5311 to 5332, applicable to the internet gaming operator's or internet gaming platform provider's internet gaming operation.⁵⁷

⁵⁶ The board adopts and incorporates by reference, Gaming Laboratories International, LLC Standard GLI-33: Standards for Event Wagering Systems, version 1.1, released May 14, 2019, which is available at Gaming Laboratories International website at <https://gaminglabs.com> and does not include any later amendments or editions. GLI-33 standards are intended to supplement rather than supplant other technical standards and requirements under these rules. Internet gaming operators, internet gaming platform providers, and internet gaming suppliers must comply with, and the board adopts and incorporates by reference, Gaming Laboratories International, LLC Standard GLI-19: Standards for Interactive Gaming Systems, version 2.0, released February 15, 2013, which is available at the Gaming Laboratories International website at <https://gaminglabs.com> and does not include any later amendments or editions. GLI-19 standards are intended to supplement rather than supplant other technical standards and requirements under these rules.

⁵⁷ Michigan's statute specifically addresses compacts. It states that the "State, acting through the governor, at the request of any Indian tribe, is authorized to negotiate and conclude and execute any amendments to an Indian tribe's compact necessary to effectuate internet sports betting by the Indian tribe under this act and to ensure internet sports betting conducted by the Indian tribe is in compliance with this act. If the governor fails to enter into negotiations with the Indian tribe, or fails to negotiate in good faith with respect to any request, this state waives its sovereign immunity to permit the Indian tribe to initiate an action against the governor in his or her official capacity in either state court or in federal court and obtain those remedies as authorized in 25 USC 2710(d)(7)."

West Virginia

Online casinos have been legal in West Virginia since March 2019. By virtue of **House Bill 2934**, which is also known as the **West Virginia Lottery Interactive Wagering Act**, state law declared that *“the operation of West Virginia Lottery interactive wagering at racetracks...and at a historic resort hotel ... serves to protect, preserve, promote, and enhance the tourism industry of the state as well as the general fiscal wellbeing of the state and its subdivisions.”* West Virginia opened its online gaming market in mid-July when DraftKings launched the state’s first online casino. Swedish online casino games provider NetEnt is set to enter West Virginia’s recently regulated iGaming market through a partnership with BetMGM, news emerged September 18, 2020.⁵⁸

Online sports betting has been legal in West Virginia since August 2019. The code requires casinos to have controls in place to identify unusual and suspicious wagering activity and report such activity according to the integrity monitoring system procedures approved by the Commission. The integrity monitoring systems provide the Commission with remote access to provide, at a minimum, reports of unusual and suspicious activity. Sports pool operators must also have internal controls addressing user access, risk management procedures, procedures to prevent prohibited patrons from playing, compliance standards, and descriptions of all integrated third-party systems. 179CSR9 § 179-9-5. West Virginia also provides for system requirements. Prior to operating a sports pool or online sports pool pursuant to W.Va. Code §§29-22D-1 et seq., all equipment and software used in conjunction with its operation shall be submitted to an independent testing laboratory or a testing laboratory operated in an accredited jurisdiction approved by the Commission.

All wagers on sporting events authorized by W.Va. Code §§29-22D-1 et seq., shall be initiated, received, and otherwise made within this State unless otherwise permitted by the Commission in accordance with applicable federal and state laws. Consistent with the intent of the United States Congress as articulated in the Unlawful Internet Gambling Enforcement Act of 2006 (31 U.S.C. §§5361 et seq.) the intermediate routing of electronic data relating to a lawful intrastate wager authorized under this provision shall not determine the location or locations in which such wager is initiated, received, or otherwise made. A sports pool system submission to a testing laboratory shall contain a description of the risk management framework, maintain transactional wagering data, and record wager information. §179-9-6.

Pennsylvania

The Expanded Gaming Act (H.B. 271, 2017 Pa. Gen. Assemb. Reg. Sessions (Pa. 2017) (1) legalizes online poker, slots, and table games; (2) provides for the regulation of land based and online sports betting; (3) expressly legalizes and provides for the regulation of daily fantasy

⁵⁸ Casino News Daily, *NetEnt to Enter West Virginia Online Casino Space with BetMGM* (Sept. 18, 2020), available at <https://www.casinonewsdaily.com/2020/09/18/netent-to-enter-west-virginia-online-casino-space-with-betmgm/>.

sports; (4) authorizes video gaming at truck stops and table gaming at airports; (5) authorizes ten “satellite” casinos around the state; and (6) legalizes the online lottery.

The “satellite” casinos are a new Category 4 license under the Act. Category 4 licensed “facilities” cannot be located within 25 miles of any licensee in Category 1 to 3, nor can they be located in a municipality that has voted to bar satellite casinos from their jurisdiction. Category 4 licensees are allowed to have between 300 and 750 slot machines and 30 table games. In 2019, five satellite casinos bid on and received Category 4 licenses, these casinos were still in the development phase in late 2019. Online casino gaming as well as online sports betting began to operate in Pennsylvania in 2019. Recently, due to the pandemic, online gaming has been doing very well in Pennsylvania. “In July, the Pennsylvania Gaming Control Board reported a gross revenue of \$54 million in Internet gaming during that month at 10 Pennsylvania casinos, resulting in generated tax revenue of \$23.6 million. In that same period, Harrah’s Philadelphia, which had just started its online gaming endeavor four months earlier at the site which despite the name is actually in Chester, reported \$831,865 of total Internet games revenue.”⁵⁹

In Pennsylvania, the Expanded Gaming Act generally directs the Pennsylvania Gaming Control Board to put in place GPS and IP tracking controls to ensure only players physically located in an authorized location (i.e. within Pennsylvania or a state with which Pennsylvania has entered into an online gaming agreement) can play. The Pennsylvania Gaming Control Board has adopted regulations specific to online gaming dealing with system requirements such as geolocation and IP tracking controls, terms and conditions, and account security. These regulations are set forth in Title 58, Part VII Chapter 8.09.

Specifically, Chapter 8.09.6(a) requires that an online gaming system must be designed with a methodology approved by the Board to ensure secure communications between a player’s device and the online gaming system, and provides a list of considerations that the Board will use when reviewing a system’s methodology. Section 8.09(c) sets forth specific requirements for data logging. Chapter 8.07 provides specific geolocation requirements to ensure that players are engaging in online gaming activities within an authorized area.

To engage in online gaming, a player must establish an interactive gaming account. Chapter 812.2. Once a player creates an interactive gaming account, the operating platform must create an electronic player file. The Operating platform must ensure that the electronic player file is encrypted. The Operating platform must also ensure that the provided information is accurate and that the player is over the age of 21. Chapter 812.2. The Board requires an interactive gaming system to have specific security requirements (e.g. username, option for strong authentication login protection, password of sufficient length) in order to ensure player access is appropriately limited to the registered account holder. Chapter 812.3. The Board also requires

⁵⁹ Delaware County Daily Times, *Delaware County Sets Up Authority to Oversee Internet Gaming Funds* (Sept. 6, 2020), available at https://www.delcotimes.com/news/delaware-county-sets-up-authority-to-oversee-internet-gaming-funds/article_9f65d4c8-ef95-11ea-adaf-334c0bf37f4e.html.

that an interactive gaming system have specific security requirements to ensure that third-party access to player accounts is limited.

Delaware

The Delaware Gaming Competitiveness Act of 2012 legalizes online table games and video lottery offerings, including online poker and sports betting. All online gaming must be operated by the Delaware lottery. Delaware also launched online real money play in 2013 and online sports betting in 2018.

Currently, there is no mobile sports betting in Delaware, even though it is legal in the state. Sports betting has to take place in the three brick-and-mortar casinos — Delaware Park, Dover Downs and Harrington.⁶⁰ On the other hand, online gaming seems to be doing well. “Online gambling revenue in the state of Delaware totaled \$808,623 in August, up 263.4% year-on-year and also an improvement on July’s figures. Data from the Delaware Lottery showed igaming revenue was significantly up from \$222,504 in August 2019, while the total represented a 15.1% increase on the \$702,533 posted in July. Consumers wagered a total of \$19.8m on igaming with the state’s three licensed operators in August, up 58.4% on last year, but the lowest monthly amount since March. Online video lottery remained the most popular product vertical, with players spending \$11.4m and operators generating revenue of \$572,539. Table games revenue came to \$181,500 from \$8.4m in bets, while operators generated an additional \$54,584 in poker rake and fees.”⁶¹

The Delaware Gaming Competitiveness Act requires the Lottery Director to provide for the security and effective administration of internet gaming, including procedures for verifying the location and identify of players, mechanisms for maintaining account security, procedures to exclude minors or other excluded persons, limits on the amount which can be wagered, and advertisements for services for compulsive gamblers. Internet lottery games are offered solely to persons within the State of Delaware at the current time. These regulations can be found in Title 10: 206 - Internet Rules and Regulations. Section 13.9 requires a gaming platform to have an age verification system in place for those registering an account on the platform. Section 13.22 provides that an operator must have a geolocation system in place that verifies player’s location using the player’s computer or mobile device and blocks players who are in unauthorized locations.

New Hampshire

⁶⁰ Gambling.com, *Delaware July Sports Betting Hurt by Sports Book Being Closed* (Aug. 27, 2020), available at <https://www.gambling.com/news/us/delaware-july-sports-betting-hurt-by-sportsbooks-being-closed-2297200>.

⁶¹ iGamingbusiness.com, *Delaware igaming growth continues into August* (Sept. 17, 2020), available at <https://www.igamingbusiness.com/news/delaware-igaming-growth-continues-august>.

New Hampshire recently authorized online sports betting with HB 480, which was signed into law on December 30, 2019. HB 480 authorizes up to five online sports betting platforms to operate at a time, the state has since selected DraftKings to be the sole land based and online sports betting operator in the state. New Hampshire also allows online lottery games such as scratch offs and online horse race betting.

New Hampshire requires that an operator have mechanisms in place to verify the age of patrons, to ensure that wagers are initiated and received within the geographic borders of the state, and to maintain the security of confidential patron information. Section 287-I:7. Prior to beginning sports betting operations in the state, an operator must submit a security and internal control report that addresses all aspects of security (physical, personal, computer system) to the division of sports wagering for review and approval. Section 287-I:8.I-II.

Rhode Island

Rhode Island legalized online sports betting through authorized hosting facilities in 2019 by passing RI S 0037, which amends Chapter 42-61.2 of the State Code to include online sports wagering. Recently, the state authorized online registration for online sports betting, instead of requiring registration to be done in person at an authorized hosting facility. RI SB2919 and HB8097. There is no other legal online gaming activity in Rhode Island. Since Rhode Island lifted the in-person registration restriction, there has been a surge in online sports betting. In July Rhode Island sports betting generated \$351,425 in revenue, which represents a 246.8% increase in revenue from the \$101.328 generated in June.⁶² As of September 22, Rhode Island had 25,372 fully active online sports betting accounts.⁶³

Rhode Island requires that all online sports betting take place within the State of Rhode Island. Chapter 42-61.1-16(a). Additionally, Rhode Island's State Code specifically requires that the "server-based gaming system shall employ a mechanism to detect the physical location of a player when the player logs onto the system and as frequently as specified in any regulations promulgated by the state, through the division. If the system detects that the physical location of the patron is in an area outside the state of Rhode Island, the system shall not accept that patron's wagers until such time as the patron is in the state of Rhode Island." Chapter 42-61.1-16(b).

Rhode Island requires that an operator have mechanisms in place to verify the age of patrons, to ensure that wagers are initiated and received within the geographic borders of the state, and to maintain the security of confidential patron information. Prior to beginning sports betting operations in the state, a licensed operator must have all such mechanisms approved by

⁶² Compare.bet, *Rhode Island Sports Betting Revenue Continues to Grow in July* (Sept. 2, 2020), available at: <https://www.compare.bet/news/rhode-island-sports-betting-revenue-continues-to-grow-in-july>

⁶³ Legalsportsreport.com, *RI Sports Betting Data Shows its Never Too Late to Fix a Mistake*, (Sept. 25, 2020), available at (<https://www.legalsportsreport.com/44506/ri-sports-betting-remote-registration/>)

the Department of Lottery. Rhode Island Lottery Rules and Regulations, 20.20; RI Lottery Rules and Regs, 20.32 (geolocation requirements).

Washington D.C.

Washington D.C. passed the Sports Wagering Lottery Amendment Act of 2018 legalizing online sports betting, “provided, that any systems used for mobile or online transactions include age and location verification technology designed to prevent unauthorized access by individuals whose age and current location have not been verified.” D.C. Law 22-312, Sec. 311(a)(1). Online sports betting is regulated by the state Office of Lottery and Gaming. There are two types of sports betting licenses, Class A and Class B. A Class A Licensee may conduct online sports betting either within the confines of the licensed facility and/or within two blocks of the facility so long as the mobile app will not work within another licensed facility. A Class B Licensee may conduct online sports betting within the confines of the licensed facility. Title 30, Chapter 20, Sec. 2120. The Office must approve all online sports wagering systems. Section 2199.

The Washington D.C. Lottery regulations require a license applicant to provide a security plan as part of the application process. A Licensee that will offer online sports betting, must provide information on geolocation technology and age verification for players utilizing the online platform. Title 30, Chapter 20, Sec. 2120.

Iowa

Iowa has legalized online fantasy sports betting in August 2019. It took a bit of a hit from the pandemic, but is doing well now that sports have reopened.⁶⁴ In August online sports betting generated a majority of the state’s revenue in August, generating \$1.6 million.⁶⁵

Iowa does not have robust cybersecurity provisions for online fantasy sports betting. Iowa Code requires a licensed fantasy sports provider to use reasonable methods to verify the age of players. IAC Chapter 99.E.5(2)(b). Regulations require gaming commission to test and approve all sports betting systems, including online gaming platforms. IAC 491 Chapter 14.8(4). A Licensee must perform an annual security risk assessment. IAC 491 Chapter 14.8(4).

Illinois

⁶⁴ The Gazette, *Iowa Sports Betting Gains Yards, but Not Touchdown* (Aug.31, 2020), available at <https://www.thegazette.com/subject/news/government/first-year-of-iowa-sports-betting-gains-yards-but-not-touchdown-20200831>

⁶⁵ Compare.bet, *Iowa Sports Betting Revenue and Handle Continues to Grow in August* (Sept. 11, 2020), available at <https://www.compare.bet/news/iowa-sports-betting-revenue-and-handle-continues-to-grow-in-august3>

The Illinois Sports Wagering Act of 2019 legalized online sports betting. No other online gaming is allowed in Illinois. The Act allows the Illinois Gaming Board to issue up to three licenses to accept wagers by internet or mobile application only. 230 ILCS 45/25-45(a). An online only sports wagering licensee must pay a one-time fee of \$20 million. *Id.* The IGB may accept licenses for online only providers within 18 months within the issuance of the first sports wagering license and shall announce the winning bidders within 21 months of the issuance of the first sports wagering license. Sports wagers must be conducted in person until the IGB issues the first online sports wagering license. *Id.* at (b).

The Commission may issue up to seven master sports wagering licenses. A master sports wagering licensee may accept wagers online or through mobile app within a five block radius of their facility. 25-40 (f). A master licensee may offer internet gaming, so long as the online platforms is offered under the same brand of the holding company or the same brand as a holding company that owns at least an 80% interest in the organizational licensee. 230 ILCS 45/25-40(h). An individual must create a sports wagering account in person, until the IGC issues the first online only sports wagering license. 25-40(i).

Sports betting generated \$52.5 million in wagers during July, its first full month of activity, with 92% of all sports betting taking place online. This leads to about \$3.6 million in revenue for the sports book, and \$544,000 in state revenue (the state gets 15% of revenue generated by sportsbook in taxes). The beginning of football season and the recent launch of several online sports book expects to increase revenues.⁶⁶

Illinois regulations state “a master sports wagering licensee shall implement methods or systems in the internet wagering system to detect unauthorized access to sports wagering accounts, fraud, theft, suspicious wagering activity, or other prohibited activity. Those methods shall be documented in the internal control system.” 1900.1210 (c). A player must create a sports wagering account to participate in online gaming, all player account information must be held in an encrypted file. 1900.1220(2). Licensee must either verify the patron’s identity in person or through remote multi-sourced methodology. 1900.1220(3)(A)(ii).

The regulations have specific Internet wagering system requirements. 1900.1430. These requirements include: mechanisms to detect the physical location of the patron periodically through a play period; mechanisms to detect or prevent efforts to defeat or circumvent the location and detection mechanisms; data collection requirements and limitations to only use data collection for compliance with the act. 1900.1430(b)-(h). The regulations also require “[e]ach master sports wagering licensee shall maintain modern best practices to ensure the security and integrity of the internet wagering system, including but not limited to: network security; patron identity authentication; location detection; error detection; and data security. 1900.1430(i). Regulations have specific sports wagering system requirements, requirements to share real-time information with the Board, and information storage requirements. 1900.1450.

⁶⁶ Chicago Tribune, *Illinois sports bets top \$52 million in July; online wagering gains traction as NFL season kicks off* (Sept.15, 2020), available at: <https://www.chicagotribune.com/business/ct-biz-sports-betting-illinois-online-nfl-20200915-6izlzx1zwjexdel5vovgvgciu-story.html>

As can be seen, these thirteen states have varying levels of regulation and control over online gaming activities. SB 2314 will allow North Dakota and tribal governments to use regulatory examples from other states to provide effective and professional regulatory oversight of online gaming and online sports betting through the tribal-state gaming compacts. The federal courts have found that legalizing specific kinds of gaming within the state just for tribes is a legal mechanism for carrying out the intentions of the Indian Gaming Regulatory Act.⁶⁷ SB 2314, which allows mobile sports betting and online gaming to be legalized in North Dakota for tribes only, will help the North Dakota tribes offset the dramatic increase in ETAB machine revenue while allowing them to provide much needed social services to their members.

Conclusion

Tribal gaming is no longer in its infancy, and North Dakota's tribes are facing competition from ETAB revenues as gaming in the state continues to spread. Revenues from tribal gaming are declining, impacting tribal governments' ability to provide adequate social services to their members. SB 2314 will enhance gaming revenues, supporting the federal policies of tribal self-determination and government-to-government relations. Stronger tribal governments means less burden on the state social welfare safety net, and a better economy for all of North Dakota.

The Turtle Mountain Band of Chippewa Indians appreciates the government-to-government relationship with the State of North Dakota, and this opportunity to work together for the betterment of all our citizens. Thank you for the opportunity to provide this written testimony on SB 2314.

Sincerely,



Jamie Azure, Tribal Chairman

Turtle Mountain Band of Chippewa

⁶⁷ *Artichoke Joe's California Grand Casino v. Norton*, 353 F.3d 712 (9th Cir. 2003).

Good morning, Madam Chair Bell and the members of the Committee

My name is Collette Brown from Warwick, representing the Spirit Lake Tribe (where I am a tribal member). My professional title in the gaming industry is, Gaming Commission Executive Director of the Gaming Regulations and Compliance Department, our casino is located seven miles south of Devils Lake. Today I come to support SB 2314.

As some of you may know the Spirit Lake Tribe has expressed serious concerns about the electronic pull tabs since 2019 because the electronic pull tabs have a tendency to transform into slot machines. Right now, the etabs are far removed from actual pull tabs because there is no requirement to read the pull-tab, cash out prizes or actually play the game of pull-tabs.

With the large influx of etabs throughout North Dakota, reaching a billion dollars in gross gaming revenues, that has undermined Indian gaming, reducing our revenues substantially and undercutting our ability to provide jobs and generate essential government revenues.

Online gaming and online sports betting are already legal in jurisdictions with experienced, professional regulatory systems, like New Jersey. Tribes and the state would be able to use the regulatory examples set in other states to craft an effective regulatory regime in the amended tribal-state gaming compacts. With this exclusivity option for my Tribe, it will be a beneficial economic engine to regain some of the revenue we loss.

Now there are a myriad of technical and operational areas that must be considered to ensure the integrity of an online wagering operation and we have to protect the public because there are so many configurations, options, and decisions that take place. Our tribe understands the importance of effective and strong regulation, and how it plays a vital role in the protection of the honesty, integrity, and public image of gaming overall in the industry.

Background:

Indian gaming is the Native American success story. Indian gaming is working in rural areas of America. Indian tribes that faced 50, 60, and even 70 percent unemployment are now generating jobs not only for their own tribal members, but for neighboring non-Indians as well.

In North Dakota, Indian gaming has been a great success. In terms of direct hires, Indian gaming has created 2,500 jobs in our most rural cities and towns. Today, we have jobs where there were no jobs before. Welfare to work. 70% of Indian gaming jobs are held by tribal members. 30% are held by non-members, many of whom are rural agricultural families. What other program or economic activity has that kind of record and we have invested in resorts, restaurants and tourism and our Indian tribes created another 2,000 ancillary jobs through resort activities and our purchases of goods and services, which are local purchases made in North Dakota.

February 2, 2021
SB 2314-Exclusively by Tribes

And, we are good neighbors, with clean, well-regulated operations. Popular buffets, popular entertainment, and some of the best hunting and fishing in America. Spirit Lake is the premier destination in North Dakota. We are an Indian success story, but in fact, we are a true North Dakota success story. ~~In North Dakota, every morning, the Indian gaming industry~~

Regulation of Tribal Gaming

In the 1970s and '80s, Indian nations and tribes turned to Indian gaming to generate essential government revenue for tribal programs and services, including education, health care, police and fire protection, elder and child care, cultural revitalization, water, sewer and sanitation services. In Indian country there is manifest social and political acceptance of gambling as an essential source of governmental revenue, which Congress acknowledged recently with the enactment of State-Local-and-Tribal Government Coronavirus Relief Funding, when our Indian nations and tribes were forced to close and restrict our Resorts, Restaurants, Hotels, and Casinos due to the National COVID-19 Public Health Emergency.

In 1987, the Supreme Court decided the *Cabazon* case and clarified that tribes had the right to regulate gambling on their reservations, provided that the states wherein they were located did not criminally prohibit that activity. At that time, large-scale casino gaming operations existed only in Nevada and New Jersey. The Indian Gaming Regulatory Act was passed in 1988 and established the framework for the regulation of tribal gaming.

IGRA mandates that tribes may conduct Class III gaming in states where such activity is permissible under state law and where the tribes enter into compacts with states relating to this activity, which require approval of the Secretary of the Interior. Tribal-State Class III Compacts include specific regulatory structures and give regulatory responsibility to the tribe and the state to regulate Class III Indian gaming.

In addition, Indian nations and tribes are assisted by the Federal Government with Indian gaming regulation. The National Indian Gaming Commission oversees Tribal Gaming Regulatory Ordinances, Background Checks, Audits, and Gaming Player Station Compliance. The IRS provides oversight of prizes and reporting of income. The Treasury Financial Crimes Enforcement Network provides oversight of financial transactions to prevent money laundering at Indian casinos. The FBI and the U.S. Attorneys investigate and prosecute theft, cheating and other crimes at Indian casinos under the Indian Gaming Regulatory Act and other Federal laws. Indian gaming is strongly and thoroughly regulated by our Indian nations and the United States with the assistance and oversight of the North Dakota State Attorney General.

Tribal, State & Federal Regulation of Indian Gaming in North Dakota

Our Tribal nations are ready to regulate Online Internet Gaming and Sports Betting because we have an established strong, comprehensive regulatory system in place with:

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- Tribal Gaming Regulatory Agencies that conduct Day-to-Day Oversight;
- Management and Key Employee Criminal Background Checks, Fingerprinting through FBI;
- Vendor Background Checks;
- Facility Licensing, that requires approval from the national Indian gaming commission (NIGC);
- Monthly Attorney General state inspections
- Gaming Machines Independent Lab Tested;
- Environment, Public Health and Safety Reviews;
- Federal Regulation through the National Indian Gaming Commission;
- Annual Audits under Tribal and Federal Regulatory Oversight;
- ~~Unannounced Tribal and State Inspections~~
- ~~Tribal Gaming Regulatory Agencies that conduct Day-to-Day Oversight~~
- ~~Unannounced Tribal and State Inspections~~
- ~~Unannounced Tribal and State Inspections~~
- Know Your Customer (KYC) program
- Payment Processing regulations that will not allow for credit card payments
- A robust geo-comply program for geo fencing, and age verification
- Lastly a transparent Responsible Gambling Program

That was long list of regulations we must abide by and adhere too. Now I've been in Indian Gaming since 1996, I joined the regulations department in 2001. I have grown up in this industry. I am an expert and a leader in the Indian Gaming Industry. I am the Great Plains representative for the National Indian Gaming Association, I also represent the Great Plains Region on the National Tribal Gaming Commissioners and Regulator's board. I can truly assure you that our highly regulated gaming industry are prepared and market ready for our next evolution of Indian gaming. I hope the State is agreeable in joining us on this new adventure. My Tribe is in full support of SB2314, we want unity and need this exclusivity. Thank you for allowing me time to speak. I do strongly encourage a do pass on SB 2314.

SENATE BILL 2314
SENATE FINANCE AND TAXATION COMMITTEE
FEBURARY 2, 2021

TESTIMONY OF CYNTHIA C. MONTEAU, EXECUTIVE DIRECTOR

Madame Chair and members of the Committee, my name is Cynthia Monteau, I am the Executive Director of the United Tribes Gaming Association (UTGA). I come before you today as an Proponent of Senate Bill 2314, a bill that allows online gaming and online sports betting to be conducted and operated within the state exclusively by the Tribal Nations.

The five tribal nations established UTGA to promote, protect, and advocate for Indian gaming. Gaming in the state began after Congress passed the Indian Gaming Regulatory Act or IGRA, in 1988. IGRA was established to regulate gaming on tribal land. It brought integrity to gaming and opportunities for tribal nations. We built casinos to create jobs, establish an economy and promote economic development in our communities. In essence, it was our opportunity to provide for ourselves through programs and services beneficial to our people. In establishing our business operations we hired outside of our tribes, from management to slot attendants.

We currently employee over 3,000 full-time equivalent (FTEs). By creating jobs in our communities we dramatically impacted unemployment rates as our casinos are often among the top employers in our communities and communities surrounding our reservations.

Tribal casino operations generate over \$300 million to the state economy as we hire outside vendors and services in our operations.



We have a direct economic impact to the local markets. The state also receives the benefits of personal income taxes and business taxes that are not realized by our operations. Furthermore, our casinos generously donate about \$500,000 annually to local charities, non-profits, rodeo clubs and the like. We have contributed \$125,000 annually to Lutheran Social Services in response to gambling addiction.

Supporting tribal gaming exclusive to tribes is a win-win for both the tribal nations and the state, any impact to our revenue results in a loss of jobs, loss of business to local vendors who in many cases rely heavily on our operations, and an increase in unemployment costs to the state and other financial assistance programs.

We urge a do pass of Senate Bill 2314.

Thank you, Madame Chair.

SB 2314
Senate Finance & Taxation Committee
Submitted by Don Santer, CGAND
February 2nd, 2021

Chairperson Bell and Committee members, thank you for the opportunity to provide information regarding the charitable gaming industry of North Dakota. I am here in opposition of Senate Bill 2314.

My name is Don Santer, I represent the Charitable Gaming Association of North Dakota (CGAND), a trade association for charities operating gaming throughout ND. I also represent the North Dakota Association for the Disabled (NDAD). NDAD is a North Dakota charity that for over 45 years has been dedicated to improving the quality of life for persons with disabilities. NDAD pays for most of its services with charitable gaming funds.

Senate Bill 2314 allows for online gaming; games like Blackjack, Poker, Keno, and Video Slots as well as sports betting.

This bill creates a constitutional loophole to recognize Indian Tribes as “public-spirited organizations” allowing tribal gaming to operate gaming anywhere in the state.

However, it specifically states the tribes are not subject to chapter 53-06.1 rules. These are the regulations that govern charitable gaming in the state of North Dakota.

- Tribal gaming would not be subject to the same requirement to spend 40% of Adjusted Gross Proceeds for eligible uses as it is for charitable gaming operators. Currently the tribal gaming compact only requires 10% of Net Revenues be spent on economic development programs.
- Tribal gaming would not be required to follow the same betting limits as other “public-spirited organizations”. For example, wagers on Blackjack of up to \$250 are allowed by tribal compact but are limited to \$25 for charitable gaming.

- This bill would allow **ANY** “Federally recognized Indian Tribe” to operate online gaming and sports betting in North Dakota as long as the servers were on a tribal reservation within the state.
- This bill specifically states, “A person may not be required to register for online gaming or online sports betting accounts in person”. In essence, an easy loophole to allow for underage gambling. The bill vaguely lists “Age verification” but this is typically done once and nothing to maintain assurance that minors are not involved.

For the past 40 years North Dakota has developed a responsible and highly regulated system for charitable gaming to benefit charitable missions that serve your local communities. The intent of Article XI section 25 of our constitution was to allow for **charitable gaming** in the state of North Dakota; governed by Games of Chance Laws and administrative rules. The Tribal gaming compacts have different regulations and “Geographic Scope” that restricts tribal gaming to Tribal trust lands. This bill will open Pandora’s box by attempting to mix separate rules and governing principles. We ask you to consider a **Do Not Pass** recommendation on SB 2314.

Thank you, Chairperson Bell and members of the committee, for your time and thoughtful consideration I am happy to answer any additional questions you may have.

Respectfully,
Don Santer, NDAD
CGAND Vice President

TESTIMONY OF
KEN KARLS (#268)
CYSTIC FIBROSIS ASSOCIATION OF NORTH DAKOTA
SB 2314
FEBRUARY 2, 2021

Madam Chair Bell and members of the Senate Finance and Taxation Committee, my name is Ken Karls and I represent the Cystic Fibrosis Association of North Dakota (CFA).

CFA is a North Dakota charity that has been assisting North Dakota individuals and families for forty years dealing with cystic fibrosis, a terminal disease. CFA assists families with the cost of medications and nutritional support, with the extraordinary costs associated with medical appointments, with college scholarships, lung transplants and other hardship costs caused by fighting this relentless disease.

CFA opposes SB 2314 because this bill jeopardizes the welfare of the Association by creating a special class of eligible organizations not subject to the same laws, rules, regulations, rights, and responsibilities as CFA and all other eligible organizations. As “public spirited organizations,” under this bill, each of the tribes in North Dakota would become eligible to conduct gaming anywhere throughout the state. This appears to be in violation of NDCC 54-58-03.5 and would allow tribes to operate under a separate Tribal/State Gaming Compact for each tribe which may not include language contained within NDCC 53-06.1 (regulating charitable gaming) or gaming rules applicable to other eligible organizations. In addition, each tribe would continue to negotiate its own Gaming Compact which may not contain rights and/or responsibilities not applicable to other eligible organizations or other tribes.

Under the current NDCC 54-58-02, dealing with Tribal/State Gaming Compacts, “all tribal gaming records...are confidential and are not subject to public disclosure.” Given the reporting requirements present in and as part of the gaming tax return, there arises a substantial conflict with the rules and regulations governing other eligible organizations whose tax returns are a matter of public record.

Another bill to be heard in this committee this afternoon would affect this bill. It would change Tribal/State Gaming Compacts allowing off-reservation tribal gaming, while ignoring other conflicts between NDCC 53-06.1 which governs charitable gaming and NDCC 54-58 governing Tribal/State Gaming Compacts.

More than granting tribes the status of eligible organizations subject to all laws, rules, regulations, and responsibilities granted to other eligible organizations, SB 2314 would make of them a special class with their own set of rights, rules, privileges, and laws.

This bill attempts to meld two sections of the NDCC which have specifically and resolutely been created as separate and distinct because the subjects they address are separate and distinct. In so doing, the bill failed to recognize or address the many conflicts contained in these sections. We urge a Do Not Pass on SB 2314.

Thank you for your time and consideration.

Ken Karls

kkarls@cfand.org

701-471-5575

#4771

SB 2314

2-2-21

Senate Finance and Tax

Good morning Madam Chair Bell and members of the Finance and Tax committee. My name is Mike Motschenbacher and I'm testifying on behalf of the ND Gaming Alliance. We are kindly asking for a DO NOT PASS recommendation on SB 2314.

Although we are in favor of online sports betting, we are opposed to it being exclusive to federally recognized Indian tribes. Our organization believes that all forms of charitable gaming in the State of North Dakota should be available to all citizens, business owners, and charities and not limited to one facet of the population.

In speaking to several of our members, only a small portion of them even thought that they may get involved in the sports betting business, but all of them agreed that it may be something they are interested in sometime in the future. They all agreed they want to keep the door open for this possibility down the road even if they don't have an immediate interest. It is highly unlikely that by allowing all charities in the state of ND to have this ability that this will greatly affect the current sports betting that the federally recognized Indian tribes currently have the ability to do.

We strongly urge you to provide all citizens of North Dakota the same abilities that the tribes have, and ask for a DO NOT PASS recommendation on SB 2314. Thank you for your consideration and certainly feel free to contact me with any questions.

Mike Motschenbacher
Executive Director/Lobbyist
ND Gaming Association
701-471-9014
Ndgalliance@gmail.com

**Testimony in Opposition to
SENATE BILL NO. 2314
Senate Finance & Taxation Committee
February 2, 2021**

Madam Chair Jessica Bell, Senate Finance and Taxation Committee members, for the record my name is Rick Stenseth. I am a Gaming Manager for two local organizations in Fargo that both conduct charitable gaming (Northern Prairie Performing Arts (NPPA) aka Fargo-Moorhead Community Theatre & Team Makers Club). I am submitting this testimony through our NPPA lobbyist, Todd D. Kranda, an attorney with the Kelsch Ruff Kranda Nagle & Ludwig Law Firm in Mandan.

NPPA is a North Dakota non-profit entity that has a stated mission to provide live theatrical and education opportunities which enrich and engage the greater community. Programs supported by NPPA include theatre performances and children's instruction courses in live theatre, main stage productions, children's productions, senior adult theatre, and workshops. NPPA has been involved in charitable gaming activities since its inception and relies heavily on charitable gaming as a funding source for the various services provided.

NPPA is opposed to SB 2314 and would like to provide the following observations and comments on the specific provisions for consideration by the committee which would support a **Do Not Pass** recommendation:

1. The Governor can already negotiate and execute a gaming compact with the tribe as stated in Chapter 54-58, namely Section 54-58-03 NDCC, but it has to be for games that are allowed in statute.
2. SB 2314 appears to be an attempt to get the Legislature to approve online gaming and online sports betting to force the Governor to have no choice but to allow such game types when the Governor negotiates the compact in good faith as prescribed under the Indian Gaming Regulatory Act.

3. SB 2314 also attempts to define the tribes as public-spirited organizations, thereby allowing the tribes to operate the same as charitable organizations currently are allowed in the North Dakota Constitution. This has not been necessary for the tribes so far, so why is there an effort to do so now? The change would also allow the tribes to operate outside of any of the rules that govern other charitable organizations that are classified as public-spirited.

4. SB 2314 allows on-line wagering for all casino games along with sports betting. The tribe has already testified on bills in other hearings this session that they are in favor of expansion of gaming as long as it benefits only the tribal interest.

5. SB 2314 would allow the tribes to operate on-line wagering of any kind, from any place or any location in North Dakota. The casino gaming activity is not required to take place on tribal land and can be done without any face-to-face contact with those who wish to wager. All this will be allowed without any requirement to follow the ND Administrative Rules governing charitable gaming and the AG's Office, unless they are written into the next compact.

In summary, SB 2314 is a major expansion of tribal gaming activity in North Dakota, opening gaming up with no limits unless addressed in the compact which would occur outside the control and approval of the Legislature. All the games currently operated in tribal casinos would be available on-line, across North Dakota, 24 hours a day & 7 days a week. All this activity would have a significant impact and detriment to charitable gaming organizations and the charities that rely so heavily on the funding that is provided to these local communities and groups that otherwise may not exist.

SB 2314 is simply a bad bill with no benefit to anyone but those who conduct tribal gaming. SB 2314 is one of several attempts to derail the charitable gaming industry and increase the revenue directed to the tribe.

In conclusion, NPPA urges your opposition to **SB 2314** and respectfully requests a **Do Not Pass** recommendation.

2021 SENATE STANDING COMMITTEE MINUTES

Finance and Taxation Committee Fort Totten Room, State Capitol

SB 2314
2/9/2021

A BILL for an Act to create and enact section 54-58-04 of the North Dakota Century Code, relating to tribal-state gaming compacts and authorization of online gaming and online sports betting exclusively by tribes.

Chair Bell calls the meeting to order. Chair Bell, Vice Chair Kannianen, Senators Meyer, J. Roers, Patten, Piepkorn, Weber are present. [9:16]

Discussion Topics:

- Tribal sports betting and gaming

Senator J. Roers [9:17] moved DO NOT PASS
Senator Weber second

Senators	Vote
Senator Jessica Bell	Y
Senator Jordan Kannianen	Y
Senator Scott Meyer	Y
Senator Dale Patten	Y
Senator Merrill Piepkorn	Y
Senator Jim Roers	Y
Senator Mark Weber	Y

Motion carries 7-0-0

Senator Piepkorn carries

Chair Bell adjourns the meeting. [9:22]

Joel Crane, Committee Clerk

REPORT OF STANDING COMMITTEE

SB 2314: Finance and Taxation Committee (Sen. Bell, Chairman) recommends **DO NOT PASS** (7 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). SB 2314 was placed on the Eleventh order on the calendar.