

# The Economic Impact of a NFL Stadium Complex

## Summary of Research

In January 2015 the St. Louis NFL stadium task force released details for the construction of a new riverfront professional football stadium complex in downtown St. Louis. The stadium would be built north of the Arch, along the riverfront, in an older industrial area and is expected to be in operation by 2019. Total project cost is estimated at \$998 million and includes a 62,500 seat stadium.

This analysis estimates the general economic impact of the new stadium construction, as well as the expected operational impacts of the franchise through the year 2051, when the last state bond payments are made. The state fiscal benefit is also calculated to consider the cost of bond payments over a 36 year period, additional tax credit costs during construction, and the expected tax revenues that would be generated to the state general fund in that time. This research summary is based on preliminary data available from the task force and other figures outlined in the **Assumptions** section. The analysis only includes the state fiscal return and does not include local fiscal benefits or costs.

The construction of a new stadium and continued operations is expected to generate **\$233 million in net state general revenue** (see **Table 1**) over 36 years. Net general revenue deducts the annual bond payment of \$12 million along with an estimated \$94.5 million in anticipated brownfield and contribution credits during the construction period. Just over 2,754 jobs would be supported annually over the four year construction period to include construction, supplier, and indirect jobs created by the spending as well as ongoing NFL activities. The continued franchise operation is estimated to support an average of 635 jobs annually during the remaining years. The construction and continued operations would contribute \$3.59 billion to total state personal income and \$3.82 billion to gross domestic product over the 36 years. State bond payments of \$432 million and \$94.5 million in brownfield and contribution credits, over the 36 years, would result in an expected state fiscal benefit ratio of **1.59** ( $\$627\text{M}$  cumulative state general revenue /  $\$394\text{M}$  cumulative state cost in present value 2015 dollars resulting in  $\$233\text{M}$  in net state revenue).

This preliminary estimate seems reasonable given other stadium research reviewed in this analysis (see **Table 2**). An average annual state revenue impact of \$16.6 million during the operations phase compares to estimates between \$12 and \$21 million in other studies.

## Economic Impact Estimate

**Table 1. Economic Impact Estimate for the New NFL Stadium Complex in St. Louis**

*\*All Figures in Millions of 2015 Constant Dollars*

Phase	Year	Annual Avg. Emp.	Annual Personal Income	Annual Gross Domestic Product	Net State General Revenue*		
					Annual Net State GR	Cumulative Net State GR	State Fiscal Benefit Ratio
Construction Phase	2016	1,632	\$113.6	\$182.8	\$8.1	\$8.1	<b>1.68</b>
	2017	2,921	\$177.1	\$356.1	(\$15.4)	(\$7.3)	<b>0.86</b>
	2018	4,151	\$243.4	\$560.2	(\$11.7)	(\$19.1)	<b>0.80</b>
	2019	2,310	\$170.7	\$306.4	(\$19.6)	(\$38.6)	<b>0.71</b>
Operations Phase	2020	771	\$103.3	\$76.7	\$3.1	(\$35.6)	<b>0.76</b>
	2021	685	\$93.9	\$68.3	\$3.1	(\$32.4)	<b>0.79</b>
	2022	629	\$86.4	\$63.2	\$3.3	(\$29.2)	<b>0.83</b>
	2023	603	\$81.9	\$61.1	\$3.6	(\$25.6)	<b>0.86</b>
	2024	595	\$79.5	\$61.0	\$4.0	(\$21.6)	<b>0.88</b>
	2025	596	\$78.2	\$61.8	\$4.4	(\$17.2)	<b>0.91</b>
	2026	602	\$77.9	\$63.4	\$4.8	(\$12.4)	<b>0.94</b>
	2027	611	\$78.5	\$65.2	\$5.3	(\$7.1)	<b>0.97</b>
	2028	621	\$79.5	\$67.4	\$5.7	(\$1.4)	<b>0.99</b>
	2029	630	\$80.7	\$69.4	\$6.1	\$4.7	<b>1.02</b>
	2030	638	\$82.1	\$71.4	\$6.6	\$11.3	<b>1.05</b>
	2031	644	\$83.3	\$73.0	\$7.0	\$18.3	<b>1.07</b>
	2032	648	\$84.4	\$74.3	\$7.4	\$25.7	<b>1.10</b>
	2033	652	\$85.7	\$75.6	\$7.8	\$33.5	<b>1.12</b>
	2034	653	\$86.9	\$76.7	\$8.2	\$41.7	<b>1.15</b>
	2035	653	\$87.9	\$77.4	\$8.6	\$50.2	<b>1.18</b>
	2036	651	\$88.8	\$78.1	\$8.9	\$59.2	<b>1.20</b>
	2037	647	\$89.4	\$78.3	\$9.3	\$68.5	<b>1.23</b>
	2038	645	\$90.5	\$78.9	\$9.6	\$78.1	<b>1.25</b>
	2039	641	\$91.4	\$79.3	\$10.0	\$88.1	<b>1.28</b>
	2040	639	\$92.3	\$79.9	\$10.3	\$98.4	<b>1.30</b>
	2041	636	\$93.2	\$80.4	\$10.7	\$109.0	<b>1.33</b>
	2042	634	\$94.2	\$80.9	\$11.0	\$120.0	<b>1.36</b>
	2043	632	\$95.2	\$81.4	\$11.3	\$131.4	<b>1.38</b>
	2044	630	\$96.1	\$82.0	\$11.7	\$143.0	<b>1.41</b>
	2045	627	\$97.0	\$82.6	\$12.0	\$155.0	<b>1.43</b>
	2046	624	\$97.6	\$82.9	\$12.3	\$167.3	<b>1.46</b>
2047	622	\$98.8	\$83.5	\$12.6	\$179.9	<b>1.49</b>	
2048	620	\$99.9	\$84.1	\$12.9	\$192.8	<b>1.51</b>	
2049	619	\$101.3	\$84.8	\$13.2	\$206.0	<b>1.54</b>	
2050	618	\$103.0	\$85.7	\$13.5	\$219.5	<b>1.57</b>	
2051	619	\$104.6	\$86.5	\$13.6	\$233.1	<b>1.59</b>	

*\*Net GR deducts nominal annual bond payments of \$12 million through year 2051 along with \$50 million in Contribution credits and \$44.5 million in Brownfield credits during the construction period.*

## Other Related Research

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Numerous cities and several economists have conducted studies to determine the economic impact of NFL stadiums and franchises. Most stadium analyses include the impact of construction to the economy but only a few provide detail estimates of the annual impact that a state can expect in terms of sales and income taxes. This research analyzes Green Bay and Minneapolis' economic impact studies to determine the possible state tax revenues that could be obtained by hosting an NFL franchise. A study by the Kansas City Federal Reserve Bank, which covers a broader range of impact analyses and research, was also reviewed.

The Green Bay/Brown County Professional Football Stadium District (Green Bay, WI) and the Metropolitan Sports Facilities Commission (Minneapolis, MN) released economic impact studies discussing the economic benefits of each city's respective NFL franchises, the Green Bay Packers and Minnesota Vikings. The reports discussed state sales and income tax revenues produced in relation to the franchises. The table below shows the revenue and employment impacts for Green Bay and Minneapolis, along with Federal Reserve and Missouri Department of Economic Development (DED) estimates. The Packers annual impact to the state was estimated at over \$11.8 million and supported 760 jobs.<sup>1</sup> The Vikings report estimated over \$20.7 million in state tax revenue and 3,000 jobs supported.<sup>2</sup>

**Table 2. Annual state fiscal and job impact estimates of NFL Team operations**

<b>Annual Operational Impact</b>	<b>Green Bay Packers</b>	<b>Minnesota Vikings</b>	<b>Federal Reserve Estimate*</b>	<b>DED Estimate</b>
<b>Total State Tax Revenue</b>	<b>\$11,873,000</b>	<b>\$20,778,000</b>	<b>\$13,367,752</b>	<b>\$16,596,221</b>
<b>Number of Jobs Generated</b>	760	3,000	500	635

\* KC Federal Reserve estimates adjusted for inflation and St. Louis figures.

Several factors determined the calculations of state tax revenue. Consumer spending at the stadium (e.g. concessions, team store apparel and parking) drives much of the sales tax revenue calculation. Sales tax figures also include out-of-stadium spending such as restaurants,

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<sup>1</sup> "Economic Impact Study of the Green Bay Packers and the Redeveloped Lambeau Field," *AECOM Technical Services, Inc.* 22 September 2010: 18.

<sup>2</sup> "Economic and Jobs Impact of Metrodome Next Multipurpose Facility," *Conventions Sports & Leisure.* 23 February 2009: A-2

lodging, and transportation cost. Salaries of personnel from the NFL franchise, (e.g. players, coaches, front office staff, stadium and game day staff) figure into the state income tax revenue portion.

Economists have analyzed the impacts of NFL teams and stadiums in detailed studies over the past couple decades. The Kansas City Federal Reserve Bank released a report reviewing much of the research literature and analyzing several economic impact studies of proposed stadium plans dating back to 1994 across the four major sports leagues in the United States (MLB, NFL, NBA, and NHL).<sup>3</sup> The purpose of the Bank's research was to verify whether the economic benefits (e.g. economic impact and projected jobs) as predicted by local economic impact analyses were comparable to their findings.

Determining the possible tax revenues that a football team could bring to St. Louis, the Federal Reserve Bank figures were used as a framework to test the reasonableness of estimates contained in this brief. Adjusting Rappaport and Wilkerson's estimates to account for Missouri sales and income tax rates, St. Louis Rams payroll figures, and inflation, the state could receive nearly \$13.4 million in revenue yearly.<sup>4</sup> According to the authors, the midpoint of the number of net jobs generated is 500 for an average sports franchise.<sup>5</sup> The DED estimates, by comparison, showed average state general revenues slightly higher at \$16.6 million with 635 jobs supported annually during operations.

Rappaport and Wilkerson's study states that tax revenues, especially sales tax revenues, may be hard to measure due to several factors. Sales tax revenue can be affected by the number of visitors that attend games and how much they spend on average.<sup>6</sup> Additionally, the substitution effect could occur where money is spent at a football game or venues surrounding the stadium instead of other entertainment venues and events.<sup>7</sup> This could cause a shifting of sales tax revenues and jobs away from other entertainment venues.

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<sup>3</sup> Joseph Rappaport and Chad Wilkerson, "What Are the Benefits of Hosting a Major League Sports Franchise?" *Federal Reserve Bank of Kansas City Economic Review*. (1<sup>st</sup> Quarter 2001): 55.

<sup>4</sup> Rappaport and Wilkerson, 67.

<sup>5</sup> Rappaport and Wilkerson, 65.

<sup>6</sup> Rappaport and Wilkerson, 66.

<sup>7</sup> *Ibid*, 66

## Assumptions

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1. The construction phase begins in 2016 and is completed by 2019. Total cost of \$998 million is broken out as follows:
  - a. Land cost of \$60 million and relocation, remediation, and demolition of existing facilities of \$70 million in 2016.
  - b. Parking and infrastructure costs of \$90 million spread over years 2016-2018.
  - c. Stadium construction cost of \$778 million spread over years 2017-2019.
2. During the construction phase it is assumed that the state sales tax intake on building materials will be minimal if a public entity tax exemption status is in effect.
3. Due to the large salaries and additional 2% entertainer and athletes' tax, income taxes are calculated separately for the football players based on an estimated 2014 total wage bill of \$132 million which grows at an annual rate of 3 percent. The wage bill represents the median value of salary estimates from five commercial sites (Spottrac, OvertheCap, Forbes, CBS Sports, and ESPN). Only 25% of players are assumed to spend their income in the area, therefore spurring local business activity, as often professional players live part of the year away from the franchise city.
4. The Rams full-time operations staff is estimated at 133 based on the organization's website. A wage bill of \$14.8 million is assumed based on an average management occupation salary in the St. Louis workforce area. Although several staff members and owners will make much larger salaries than the average worker, and ownership income would likely grow with a newer stadium, it is not known how much of that income would accrue to the state general revenue given the more complex nature of this tax situation (for example, income earned in out-of-state games, from advertisements, etc.). According to Forbes the team had a 2013 operating income of \$16.2 million and this analysis assumes 80% would be subject to state income taxes. Wage and operating income is expected to grow at 3% per year.
5. A stadium operation collects sales taxes on an estimated \$45 million in total gate receipts based on a Forbes report (<http://www.forbes.com/teams/st-louis-rams/>). The majority of taxes are paid by area residents (65% based on Kansas City Federal Reserve report estimates) so it is assumed that only 35% would be net new to the area as local consumers would spend income on other entertainment if no NFL team existed. The analysis assumes that 3% of the non-local sales tax revenue would accrue to state general revenue which amounts to just under \$500,000 in 2015. From 2019 to 2021 attendance of 62,500 is

anticipated with the new stadium and 61,000 from year 2022 onward. An average ticket price of \$98 at the new stadium starting in 2019 is assumed with an annual growth rate of 3 percent.

6. Average home game attendance in 2014 was 57,000 based on ESPN figures (<http://espn.go.com/nfl/attendance>). It is assumed that 35% are non-local attendees and additional per person spending of \$45 outside the stadium and \$25 at the game on concessions can be expected (Kansas City Federal Reserve estimates adjusted for inflation). With 10 home games this results in just under \$14 million in spending by non-local attendees in areas of lodging, other food, retail and travel. In 2019 the estimated total attendees is assumed to increase to 62,500 for the first 3 years due to the draw of a new stadium then to settle back to 61,000 in years 2022-2051. Annual spending growth rate of 3% is assumed.
7. The impact analysis was developed using the REMI Policy Insight economic model (REMI) and the above assumptions about future events. Therefore the results of this brief should be considered an estimate that is subject to change, based on variations in the assumptions or economy, over the time period of study. REMI has been used by the Department of Economic Development for over fifteen years to analyze the economic and fiscal impacts to the state of new firms locating to Missouri or the contribution of existing companies in threat of departure. It is a long-term, dynamic model that considers changes in the economy over time, new fiscal costs due to migrating workers, and sales displacement when firms compete for local market share. Over one hundred and fifty organization, universities, and consulting firms use this model for impact analysis, including governmental agencies in thirty three states. The fiscal component of the model is updated annually with Missouri Office of Administration budget figures to produce better state tax estimates.

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