



2023 Economic Impact Study
of the MARYLAND HORSE INDUSTRY





Photo Credit: Katherine Rizzo



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When the streets of American cities teemed with horses and horse-drawn carriages, and horse-drawn plows tilled America's farmland, the equine population stood at 25 million (in 1920). By 1960 that number had dropped to just 3 million.

At least two breeds, however, went in the opposite direction. Thoroughbred breeding began a steady increase in the 1920s that lasted for more than half of a century, from just 2,000 foal registrations per year to more than 50,000 by the late 1980s. Likewise, the American Quarter Horse — a favorite for recreational riding, in 1941, to 2.6 million by 2010.

Entertainment, in the form of horse racing and competition, became a primary way that horses contributed to the economy. This development dovetailed with the emergence of the consumerbased economy, as the assembly line and other Industrial Revolution innovations solved the problem of production.

The decline of utilitarian uses and the rise in aesthetic pursuits — entertainment, sport, and recreation — can be seen in the contrast between the donkey and mule population on the one hand and Thoroughbred breeding on the other.



WHO WE ARE

The American Horse Council is the only national association exclusively representing every segment of the horse industry. We are "The unified voice of the equine industry" on federal legislative and regulatory issues in Washington DC. We serve as the "stewards", keeping our fingers on the pulse of matters that may affect the equine and equestrian ecosystem.

Our mission is to "protect and strengthen the US Equine Industry".

The American Horse Council Foundation is a 501C3 non-profit foundation which supports charitable, scientific, and educational projects and research that benefit the US horse industry. This includes:

- The National Economic Impact Study
- The United Horse Coalition, which provides resources to help horse owners and horses at-risk. The Equine Welfare Data Collective which monitors equine rescue and sanctuary capacity.
- The AHC Foundation also supports industry initiatives ranging from the Equine Disease Communication Center, Equine Microchip lookup website, as well as numerous research projects.

We are committed to a thriving equine industry, DEI, Safe Sport, Youth Engagement, Equine Welfare, and Environmental Sustainability.

The Equine Community

Participants in the industry are as socio and culturally diverse, as are the roles they play!



Rancher | Polo Player | Rescue Founder | Equine Professor | Veterinarian | Show jumper



Photo Credit: US Eventing Association

ECONOMIC IMPACT SUMMARY

While horses still perform traditional chores on American ranches and farms, and still transport people in Amish communities, people today use horses mostly for sporting, recreational or therapeutic purposes. No other domesticated livestock has bridged the gap from a production-based to a consumer-based role in the economy. This success, due in no small part to how horses tug at the human heart, has made the horse industry an enduring force in the U.S. economy a century after its utilitarian roles became mostly obsolete.

The economic activity involved in caring for Maryland's estimated 94 thousand horses, along with the spending by horse enthusiasts in their pursuit of horse events and recreation, directly contributes over \$1 billion to the state's Gross Domestic Product.

Direct Contribution to GDP: \$1.05 billion.
Direct Employment Impact: 21,841 Jobs.

From those direct effects, the horse industry's contribution ripples out into other sectors of the economy. Adding these ripple effects—termed indirect and induced effects in economic jargon—results in an estimate of the total contribution of the horse industry to the Maryland economy of nearly \$1.8 billion.

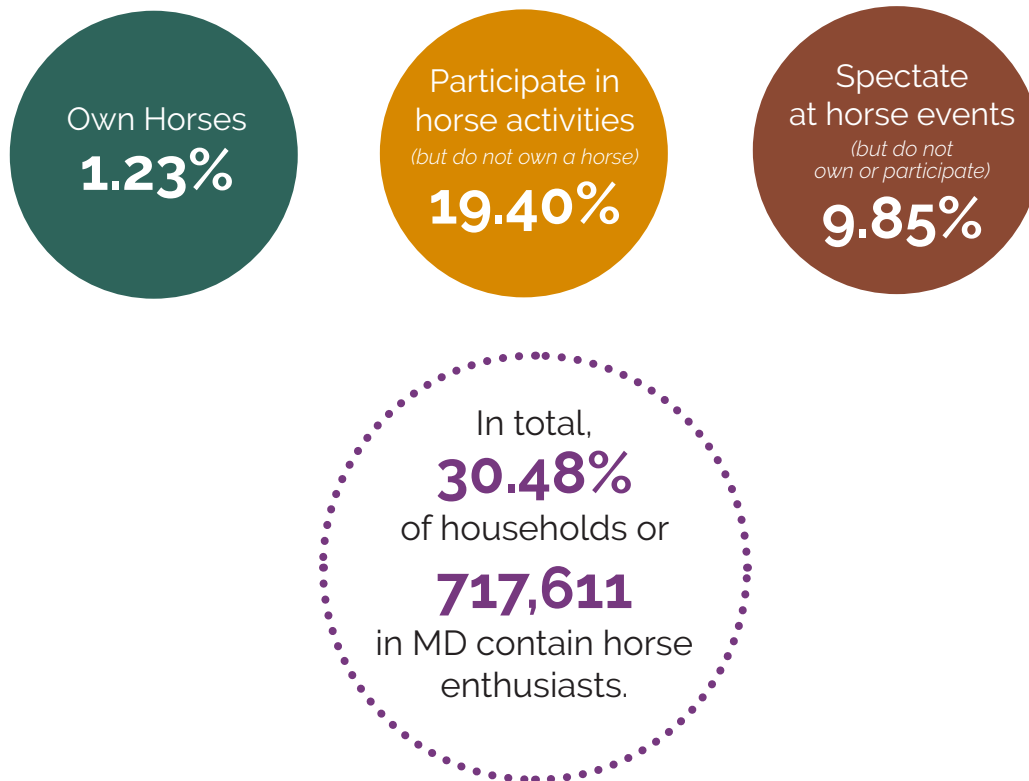
Total Value Added to the Maryland economy: \$1.77 billion.
Employment impact: 28,434 jobs
Total Economic impact in Maryland: \$2.9 billion

HORSE ENTHUSIASTS TODAY

Only a small percentage of Americans own horses. Owning such a large animal that can live 25 years or more requires commitment and resources.

However, based on our balanced start survey, for every horse-owning household there are 24 other households that contain horse enthusiasts: people who participate in horse activities or attend horse events as a spectator.

Percentage of MD households that:



MD Horse Enthusiast Breakdown by Type 2022		
Type	MD Households	Percent
None	1,637,114	69.52%
Owner	28,957	1.23%
Participant	456,769	19.40%
Spectator	231,885	9.85%
Total Horse Enthusiast HH	717,611	30.48%

Source: The Innovation Group; *ESRI

Good news for the future: 38% of US horse participants are under the age of 18, whereas the under-18 age cohort represents only 22% of the U.S. population.

Horse Enthusiast Age Breakdown by Type 2022				
Age	Owner	Participant	Spectator	U.S. Census*
<18	16%	33%	30%	22%
18 - 24	6%	15%	14%	9%
25 - 34	25%	18%	18%	14%
35 - 44	15%	15%	14%	13%
45 - 59	30%	15%	16%	18%
60 - 74	9%	5%	7%	17%
75 +	0%	0%	1%	7%
Total	100%	100%	100%	100%
Median Age	38	25	27	39

Source: The Innovation Group; *ESRI



Photo Credit: Kim Harmon

Similarly, while horse ownership tends to be concentrated in higher income groups, participation or interest in horse activities is more evenly distributed among income groups, with the largest percentages of horse enthusiasts falling within the \$25,000 to \$149,999 income brackets. Of note is that Maryland has a higher average household income than the national average.

Horse Ownership (AHC) and Enthusiasts (Balanced Start) Distribution by Income Bracket			
Household Income Category	US Census*	AHC Owners	Balanced Start Horse Enthusiasts
\$0 - \$24,999	17%	4%	9%
\$25,000 - \$49,999	18%	11%	18%
\$50,000 - \$74,999	17%	15%	21%
\$75,000 - \$99,999	13%	15%	19%
\$100,000 - \$149,999	17%	22%	17%
\$150,000+	19%	33%	15%
Total	100%	100%	100%

Source: The Innovation Group; *ESRI





Photo Credit: Lauren Nation

HORSES BY THE NUMBERS

Population Estimates

The American Horse Council commissioned The Innovation Group to conduct a series of surveys to estimate:

- The number of horses in Maryland
- The owner expenses involved in caring for and training horses
- The owner expenses related to using horses for racing, competition, and recreation
- The spending by non-owners on horse activities, such as riding lessons, trail riding, and going to the races

The first three items formed the core inputs into the direct impacts of Maryland horse ownership. First, a “balanced start” survey representative of the demographic composition of the U.S. population was undertaken to derive statistically valid inferences on horse ownership, participation in horse activities, and spending by spectators at horse-related events. Secondly, a survey of horse owners was distributed through equine associations and the American Horse Council asking respondents about expenses related to horse ownership and horse-related activities.

These two surveys—conducted on the Survey Monkey platform—are referred to as Balanced Start Survey and AHC Association Survey, respectively, in this report. The result of the surveys, along with analysis of recent breed registration trends, was an estimate of the horse population for two groups of owners: Association Members and Non-Members. The AHC survey was weighted by the results of the Balanced Start survey and adjusted in line with foal registration trends, resulting in an estimate of 92,749 horses in Maryland as shown in the adjacent table.

Nationally, Quarter Horses dominate the Competition, Recreation, and Traditional Work (such as farming and ranching) sectors, while Thoroughbreds dominate the racing sector.

Not accounted for by the household surveys are horses owned by rescues and sanctuaries, EAS operations, and academic programs. Moreover, horses owned by Amish households are not considered to have been captured in the household surveys, and an estimate for ownership was derived by third-party studies and Amish and Mennonite population estimates.

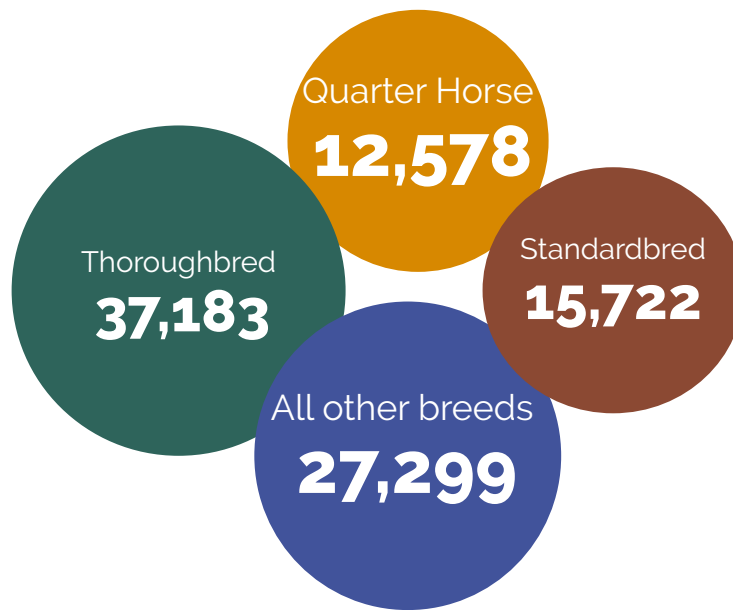
The total Maryland horse population in 2022 is estimated to be over 94,000.⁽¹⁾

1. **It should be noted this is not a census**, but rather a population estimate for the purpose of estimating the economic impact of the industry. The National Agricultural Statistics Service (NASS), an agency under USDA, conducts quinquennial equine censuses, with data released 2 years later. The NASS census only counts the U.S. equine population on agricultural operations (working farms) and is not intended to represent the total equine population. The definition of working farms excludes boarding, training, and riding facilities, as well as any other operation that fails to generate a minimum of \$1,000 in sales of equine products, defined as “breeding fees, stud fees, semen or other.”

MD Horse Population Estimates 2022: Household Surveys						
Horses Owned by:	Racing	Competition	Recreation	Traditional Working Horse	Other	Total
Association Members	21,190	8,800	19,476	150	6,016	55,632
Non-Members	2,369	5,557	23,573	2,984	2,635	37,117
Total	23,559	14,357	43,049	3,133	8,651	92,749

Source: Tthe Innovation Group

MD Horse Population Estimate by Breed: Household Surveys:



Total MD Horse Population Estimate, Including Institution Owned	
Horse Ownership Household Surveys	92,749
Institutionally Owned and Amish Owned Horses	1,499
Total Utilized for Economic Impacts	94,248

Source: Tthe Innovation Group

	National Breed Registrations				
	2001	2006	2011	2016	2021
Quarter Horse (US)	125,293	137,045	75,225	63,497	60,000
Thoroughbred (US)	34,721	34,905	22,655	21,119	20,000
Paint*	56,869	39,357	15,630	10,964	10,000
Standardbred (US)	11,261	12,452	8,059	7,210	6,000
Tennessee Walking*	15,245	13,366	4,206	2,462	2,000
Arabian*	9,266	7,033	3,936	3,001	3,000
Appaloosa*	9,322	6,749	3,487	2,188	2,000
Saddlebred*	3,055	2,859	1,859	1,316	1,000
Morgan Horse*	3,475	3,461	1,481	1,334	1,000
Pinto*	4,709	4,262	1,911	1,629	1,000
Anglo & Half Arabian*	3,944	3,309	1,162	911	1,000
Total	277,160	264,798	139,611	115,631	110,000

Source: Individual Breed Registries. Notes: *Compiled by Debbie F.

The Great Recession affected the horse industry, with foal registrations reaching a low of 104 thousand in 2009. Since the previous national AHC study was conducted, which was based on 2016 data, **breed registrations** have declined significantly, as well as Standardbreds and Morgans. However, compared to 2001, registrations are down by 55%.

Based on historical registration data from the American Quarter Horse Association and the Jockey Club, using 2001 as a baseline, the Thoroughbred population by 11.1%. For example, from 1992-1997 (the first six years of the 25-year period th

Registration Trends 2001-2022							
2017	2018	2019	2020	2021	2022	% Change 2022/16	% Change over 2001
10,893	57,753	57,245	67,653	61,623	74,728	17.7%	-40%
20,671	19,760	19,106	18,454	17,850**	17,300**	-18.1%	-50%
10,225	10,149	9,145	9,706	9,881	9,934	-9.4%	-83%
15,885	6,970	6,860	8,332	8,628	8,631	19.7%	-23%
2,375	2,501	2,461	3,145	3,098	2,918	18.5%	-81%
3,153	2,917	2,631	2,459	2,189	2,149	-28.4%	-77%
2,193	1,949	1,931	1,825	2,144	2,208	0.9%	-76%
1,561	1,374	1,396	1,232	1,286	1,249	-5.1%	-59%
1,436	1,797	1,739	1,866	2,110	2,616	96.1%	-25%
1,597	1,614	1,586	1,567	1,806	1,884	15.7%	-60%
915	763	842	859	731	786	-13.7%	-80%
11,904	107,547	104,942	117,098	111,346	124,403	7.6%	-55%

Sources: American Horse Council Foundation. **Jockey Club Estimate.

2019 after averaging 280 thousand in the first half of the 2000s. However, registration trends have improved. Registrations **have increased by 7.6%**, as shown in the following table, driven largely by a jump in Quarter Horses, as

During consistent 25-year periods, the population of Quarter Horses has declined by 5.7% since 2016 and the (through 2016), Thoroughbred registrations averaged 32,873 per year, compared to 18,857 during 2017-2022.

Spending Estimates

Of the 21,341 responses in the AHC horse owner survey, 10,535 provided detailed data for operating expenses and capital investments. To derive detailed per horse information from the dataset, we calculated sector-specific per-horse expenditures. Using ordinary lease squares regression, we estimated a model of total expenditures as a function of each household's count of horses in each of the five sectors. The association survey results showed statistically significant differences in per-horse expenses among the sectors and between association members and non-members. These different average expenses were applied to the horse counts by sector to form the main core of direct effects. These expenses were input into the appropriate economic sector as discussed in the appendix below.

Expenses and Investments 2022 per Horse: Owners with Association Membership						
	Racing TB	Racing Other	Competition	Recreation	Traditional Working Horse	Other
Operating Expenses	\$27,626	\$19,113	\$19,081	\$10,040	\$6,101	\$7,887
Event Travel	\$912	\$1,166	\$1,915	\$265	\$1,229	\$334
Capital Investments	\$11,918	\$3,894	\$11,109	\$8,805	\$5,609	\$3,565
Total per Horse	\$40,456	\$24,173	\$32,105	\$19,110	\$12,939	\$11,786

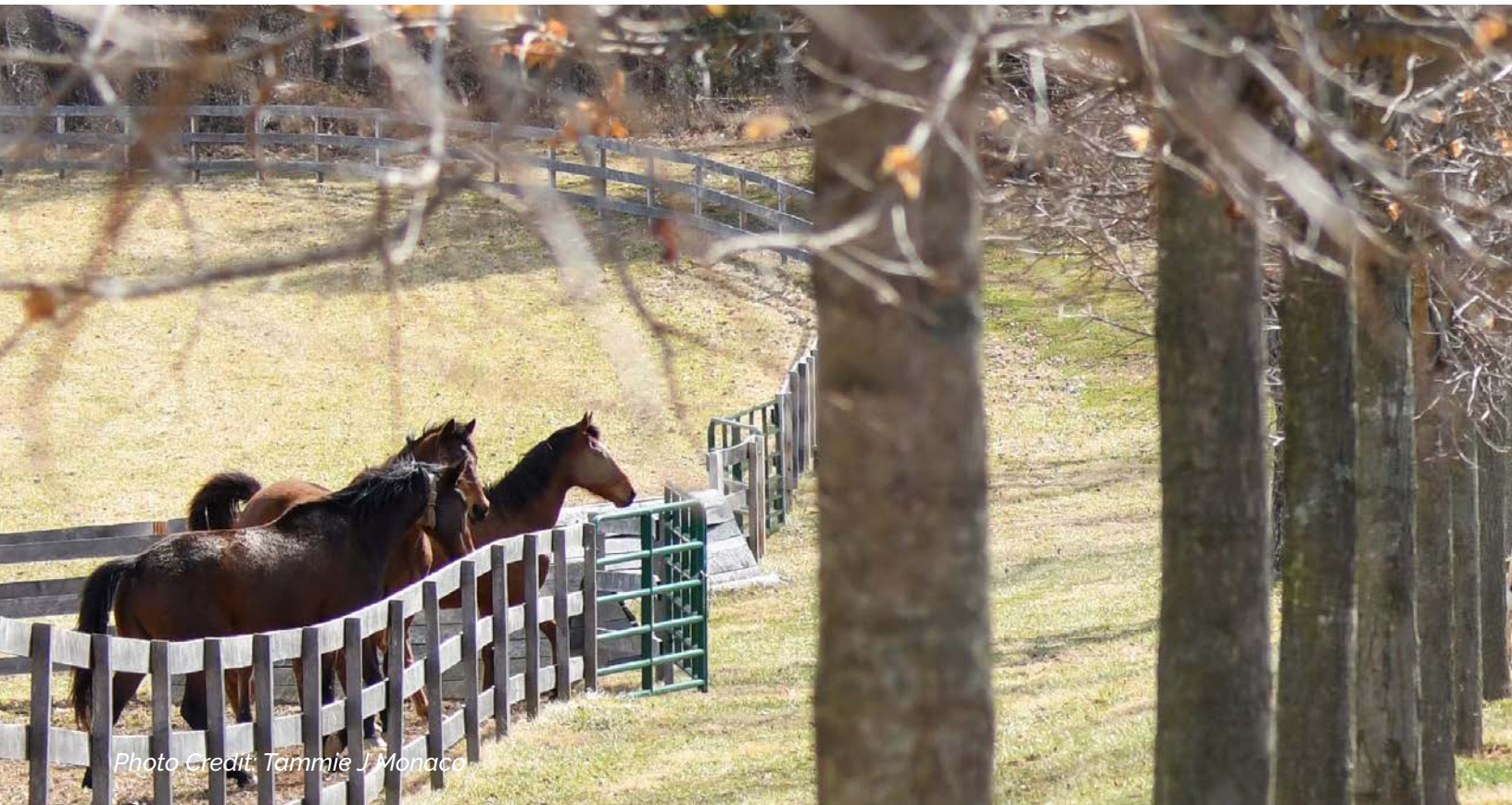


Photo Credit: Tammie J Monaco

Expenses and Investments 2022 per Horse: Owners without Association Membership					
	Racing	Competition	Recreation	Working Horse	Other
Operating Expenses	\$2,633	\$3,143	\$1,654	\$2,334	\$5,314
Event Travel	\$161	\$316	\$44	\$470	\$225
Capital Investments	\$536	\$1,830	\$1,451	\$2,146	\$2,402
Total per Horse	\$3,330	\$5,289	\$3,148	\$4,950	\$7,940

Additionally, the non-owner participants and spectators estimated from the national Balanced Start survey are estimated to have spent **\$723 million in Maryland** on travel, dining and lodging while participating in and attending events.



INDUSTRY SEGMENTS

The operation of major industry segments also contributes to the economy, including racetracks, competition events, rescues and sanctuaries, equine-assisted services (EAS), equine associations, public horse sales, and equine academic programs. Data for these segments were collected through a combination of public reporting (such as state racing commission reports, horse auctions, and IRS forms 990) and customized surveys distributed through equine associations and the American Horse Council. Tourism spending is based on the Balanced Start survey as discussed in the Horse Enthusiasts Today section previously. Major equine events in Maryland include the Capital Challenge, the Washington International Horse Show, the Maryland 5 Star, and the Preakness. The Washington International Horse Show venue runs horse events all year round.

These direct effects were input into the appropriate economic sector as discussed later in the Other Equine Activity section later in the report and in the appendix. For most segments only one data point was available for input.

MARYLAND INDUSTRY CHANGE DIRECT INPUTS BY SEGMENT

	Revenues (MMs)	Employment	Salaries (MMs)
Competition Organizers	-	-	\$3.1
Racetrack Operators	\$140.7	766	\$29.0
Steeplechase	\$2.2	-	-
Racing Commissions	-	-	\$0.4
EAS	-	-	\$4.2
Academics	-	10	-
Associations	-	-	\$4.2
Rescues & Sanctuaries	-	-	\$0.94
Public Horse Sales	\$50.8	-	-
Tourism Travel	\$271.1	-	-
Tourism Dining	\$208.3	-	-
Tourism Lodging	\$243.6	-	-

IMPACT DETAILS

Total Horse Industry

The direct effects identified above were used as inputs in the 2022 IMPLAN modeling software to generate the indirect, induced and total effects of the horse industry on the US economy in 2022. The results of each component detail the impact on employment, labor income, value-added and output.

Employment is measured in IMPLAN and by the U.S. Census as headcount, in other words the number of full and part-time workers supported by an economic activity.

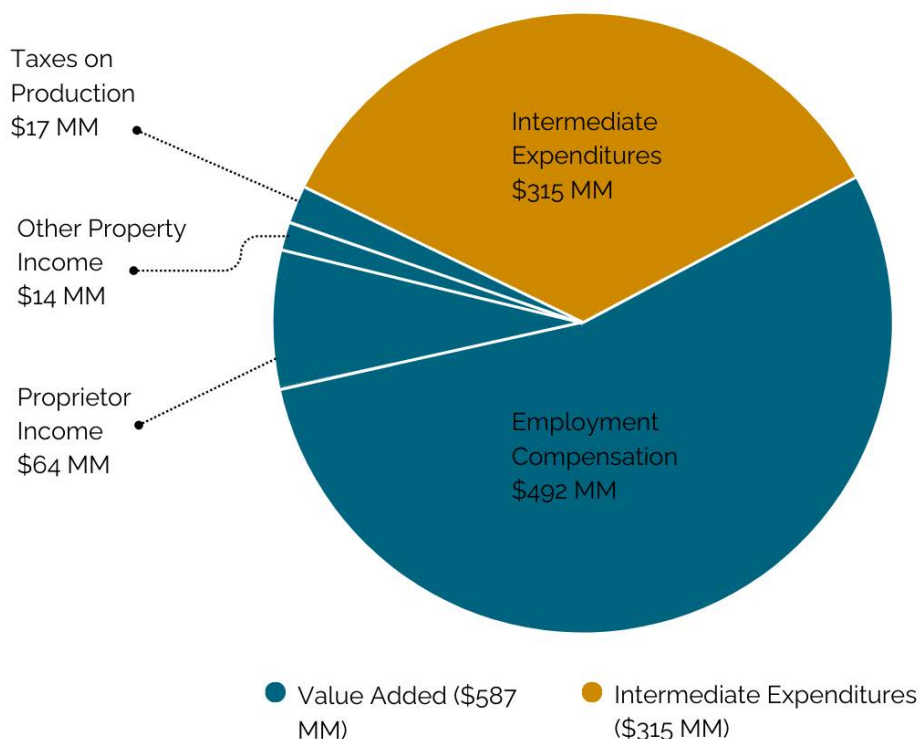
Labor Income is compensation to all workers both employees and owners in terms of wages and salaries as well as benefits and payroll taxes. Profits from self-employed businesses can also be included in this category as compensation to the owner. These are known as employment compensation and proprietor income in IMPLAN.

Value-Added measures the industry or event's contribution to Gross Domestic Product (GDP). It consists of labor income (as described above), taxes on production, and other property income (such as corporate profits, rent payments, and royalties). It is the difference between a business or industry's total sales and the cost of all input materials or intermediate expenditures.

Output is the total value of industry production; it consists of value-added plus intermediate expenditures. Output is frequently the total price paid by consumers for a good or service.

The following chart shows the distribution of direct effects for the Horse Ownership results; output represents the entire pie.

Maryland Horse Ownership Total Direct Results



Value-Added is the most appropriate measure of economic impact because it excludes intermediate inputs, which are the goods and services (including energy, raw materials, semi-finished goods, and services purchased from all sources) used in the production process to produce other goods or services rather than for final consumption. For example, the paper stock used in a magazine publication is an intermediate input whereas paper stock sold in an office-supply store is the final product sold to the consumer. The value of producing the magazine's paper stock is accounted for in measures of GDP within the Paper Manufacturing sector, not in the Publishing sector.

As detailed in the following table, the horse industry supports nearly **22,000 direct jobs** and adds **\$1.05 million in direct value** to the state economy. These direct impacts drive a further **\$713 million in added value** to the economy and nearly **6,600 jobs from indirect and induced effects**.

Maryland Total Economic Impact Summary (\$MMs)

	Direct	Indirect and Induced	Total
Employment	21,841	6,593	28,434
Labor Income	\$841	\$407	\$1,248
Value Added	\$1,055	\$713	\$1,768
Output	\$1,689	\$1,216	\$2,905



Photo Credit: MHBA

The following tables detail results by segment and IMPLAN component, as well as by breed:

MD Employment Impacts (# of Jobs)			
Segment	Direct	Indirect & Induced	Total
Horse Ownership	15,841	3,447	19,288
Institutions and Profit-Making Operations	1,325	965	2,291
Tourism Spending by Participants and Spectators	4,675	2,181	6,856
Total	21,841	6,593	28,434

MD Labor Income (MMs)			
Segment	Direct	Indirect & Induced	Total
Horse Ownership	\$557	\$219	\$776
Institutions and Profit-Making Operations	\$56	\$44	\$100
Tourism Spending by Participants and Spectators	\$229	\$143	\$372
Total	\$841	\$407	\$1,248

MD Value Added (GDP) Impacts (MMs)			
Segment	Direct	Indirect & Induced	Total
Horse Ownership	\$588	\$387	\$975
Institutions and Profit-Making Operations	\$124	\$85	\$210
Tourism Spending by Participants and Spectators	\$343	\$241	\$584
Total	\$1,055	\$713	\$1,768

MD Total Output (MMs)			
Segment	Direct	Indirect & Induced	Total
Horse Ownership	\$903	\$663	\$1,567
Institutions and Profit-Making Operations	\$214	\$142	\$356
Tourism Spending by Participants and Spectators	\$572	\$410	\$982
Total	\$1,689	\$1,216	\$2,905

MD Employment Direct Effect (# of Jobs)							
	Competition	Racing	Recreation	Working Horse	Other	Non assignable	Total
Quarter Horse	1,079	35	1,128	47	255		2,543
Thoroughbred	297	5,937	261	9	49		6,554
Standardbred	19	2,862	92	0	84		3,057
All Others	1,705	8	2,064	130	537		4,444
Non-assignable	200	17				5,027	5,243
Total	3,300	8,859	3,544	186	924	5,027	21,841

MD Employment Total Effect (# of Jobs)							
	Competition	Racing	Recreation	Working Horse	Other	Non assignable	Total
Quarter Horse	1,343	43	1,451	57	312		3,207
Thoroughbred	370	7,336	336	11	60		8,113
Standardbred	23	3,536	118	0	103		3,781
All Others	2,122	10	2,655	160	658		5,606
Non-assignable	295	26				7,407	7,728
Total	4,154	10,951	4,560	229	1,133	7,407	28,434

MD Value Added Direct Effect (MMs)							
	Competition	Racing	Recreation	Working Horse	Other	Non assignable	Total
Quarter Horse	\$42.6	\$1.3	\$50.9	\$1.7	\$9.4		\$105.9
Thoroughbred	\$11.7	\$227.9	\$11.8	\$0.3	\$1.8		\$253.6
Standardbred	\$0.7	\$109.9	\$4.1	\$0.003	\$3.1		\$117.8
All Others	\$67.3	\$0.3	\$93.1	\$4.7	\$19.8		\$185.3
Non-assignable	\$6.3	\$1.9				\$384.6	\$392.7
Total	\$128.7	\$341.3	\$159.8	\$6.8	\$34.1	\$384.6	\$1,055.3



Photo Credit: Patrick Michaels

MD Value Added Total Effect (MMs)							
	Competition	Racing	Recreation	Working Horse	Other	Non assignable	Total
Quarter Horse	\$72.4	\$2.2	\$87.1	\$2.9	\$15.8		\$180.4
Thoroughbred	\$19.9	\$371.8	\$20.2	\$0.6	\$3.0		\$415.5
Standardbred	\$1.3	\$179.2	\$7.1	\$0.004	\$5.2		\$192.8
All Others	\$114.4	\$0.5	\$159.4	\$8.1	\$33.4		\$315.7
Non-assignable	\$13.6	\$2.9				\$646.9	\$663.4
Total	\$221.6	\$556.7	\$273.8	\$11.6	\$57.5	\$646.9	\$1,767.9

MD Output Direct Effect (MMs)							
	Competition	Racing	Recreation	Working Horse	Other	Non assignable	Total
Quarter Horse	\$68.0	\$2.0	\$84.7	\$2.8	\$14.8		\$172.3
Thoroughbred	\$18.7	\$346.7	\$19.6	\$0.6	\$2.9		\$388.4
Standardbred	\$1.2	\$167.1	\$6.9	\$0.004	\$4.9		\$180.1
All Others	\$107.4	\$0.5	\$155.0	\$7.8	\$31.2		\$301.9
Non-assignable	\$14.6	\$2.7				\$629.2	\$1,689.3
Total	\$209.9	\$519.1	\$266.2	\$11.1	\$53.8	\$629.2	\$1,689.3

MD Output Total Effect (MMs)							
	Competition	Racing	Recreation	Working Horse	Other	Non assignable	Total
Quarter Horse	\$119.5	\$3.5	\$146.7	\$4.8	\$25.8		\$300.3
Thoroughbred	\$32.9	\$591.0	\$34.0	\$1.0	\$5.0		\$663.7
Standardbred	\$2.1	\$284.9	\$11.9	\$0.01	\$8.5		\$307.4
All Others	\$188.8	\$0.8	\$268.5	\$13.5	\$54.4		\$525.9
Non-assignable	\$27.7	\$4.4				\$1,075.3	\$1,107.5
Total	\$370.9	\$884.6	\$461.1	\$19.3	\$93.6	\$1,075.3	\$2,904.8

MD Quarter Horse Impact Summary (\$MMs)				
	# of Jobs	Labor Income	Value Added	Output
Direct	2,543	\$98	\$106	\$172
Indirect and Induced	664	\$42	\$75	\$128
Total	3,207	\$140	\$180	\$300

MD Thoroughbred Impact Summary (\$MMs)				
	# of Jobs	Labor Income	Value Added	Output
Direct	6,554	\$216	\$254	\$388
Indirect and Induced	1,559	\$88	\$162	\$275
Total	8,113	\$304	\$416	\$664

MD Standardbred Impact Summary (\$MMs)				
	# of Jobs	Labor Income	Value Added	Output
Direct	3,057	\$100	\$118	\$180
Indirect and Induced	724	\$41	\$75	\$127
Total	3,781	\$141	\$193	\$307



Photo Credit: Patrick Michaels

THE RECREATION SECTOR

Background

In number of horses and participants, recreation is the largest sector of the horse industry. With more than 2.9 million horses being used nationally, the economic impact of the recreational equine industry has several components.

As with competition and racing, recreational riding provides income for stables, farriers, veterinarians, trainers and other industry providers. Economic activity from recreational riding can be recognized through participant spending on riding lessons, trail guides, travel expenditures, riding equipment, and more. Lesson and instruction providers and their horses comprise a significant part of the recreation sector, as horseback riding remains a highly popular sport.

Organizations such as the American Riding Instructors Association (ARIA) have provided paths for certification in different equestrian disciplines, including Recreational Riding Instruction.

Trail riding is a main equine recreational activity that allows people to experience public lands and parks on horseback. There are associations across the country dedicated to preserving trails and public lands and often providing environmental conservation work through their members.

- Back Country Horsemen of America members volunteered over 340,000 hours maintaining trails on public lands.
- American Paint Horse Association (APHA) hosts a series of trail rides across the country and teaches members how to plan, map, and register their own horseback trail rides.
- American Endurance Ride Conference (AERC) promotes the safe use of endurance horses and advocates for the protection and development of equestrian trails.

Percentage of MD households in 2022 that participated in:

Trail riding: 9.8%, or 230,763 households in Maryland.

The vast majority of trail riders—87%—utilize public lands.

Lessons: 6.0%, or 141,283 households in Maryland.





Economic Impact

The recreation sector supports more than **3,500 direct jobs** and adds **\$160 million in direct value** to the Maryland economy. These direct impacts drive a further **\$114 million in added value** to the economy and more than **1,000 jobs from indirect and induced effects**.

Maryland Recreation Sector Economic Impact Summary (\$MMs)

	Direct	Indirect and Induced	Total
Employment	3,544	1,016	4,560
Labor Income	\$145	\$65	\$209
Value Added	\$160	\$114	\$274
Output	\$266	\$195	\$461



Photo Credit: Shawn Paley

THE COMPETITION SECTOR

Background

Equine competition involves extensive economic activity. The wide variety of disciplines and tiers—from local competitions that take place each weekend throughout the country to high-level national and international competitions— allows for participation by owners and riders at all levels, from beginner to professional. Further, the tiered structure of sanctioned competitions creates incentives for owners and riders to expand their participation and work toward qualifying for higher level competitions.

Higher-level competitions require increasing expenditures. Competition horses require the services of experienced trainers, grooms, veterinarians, and farriers, as well as specialized feed, supplements, care, and conditioning. Moreover, specialized equipment is needed to maintain, train, transport, and travel with equine athletes and competitions require fees for entries, housing, and other services. Riders also require teaching and coaching, specialized equipment and clothing, and support from drivers, grooms and others while competing. Professional competitors also incur advertising costs from promoting their horse in a breed magazine or show program to highlight previous accomplishments for prospective judges.

Major Sanctioning Bodies

The following eight organizations alone sanction nearly **7,000 U.S. events** annually, generating substantial economic impact and opportunities for show organizers, vendors, host facilities and stables, and surrounding businesses like hotels, restaurants and convenience stores.

- U.S. Equestrian Federation (USEF): 11 breeds² and 18 broad competitive disciplines, including the three equestrian disciplines held at the Olympic Games.
- The American Quarter Horse Association (AQHA): 22 additional disciplines such as barrel racing, cutting, and a variety of roping events.
- National Reining Horse Association (NRHA) involve the execution of precise movements related to cattle ranching, such as 360-degree spins done in place and hallmark sliding stops.
- United Professional Horsemen's Association (UPHA) also hosts competitions focusing predominantly on American Saddlebred, the Morgan Horse, the Hackney Pony and the National Show Horse.
- United States Eventing Association (USEA) involves what is best described as an equestrian triathlon: dressage, cross-country, and show jumping.
- The Professional Rodeo Cowboys Association (PRCA) sanctions rodeos in 44 states.
- The Interscholastic Equestrian Association (IEA) offers youth in grades 4-12 the opportunity to compete in three disciplines—hunt seat, western, and dressage—without the financial burden of owning a horse.
- The Arabian Horse Association offers competitions from grassroots schooling shows to national championships and distance rides.

Competitions Licensed by Major National Organizations

	USEF	AQHA	NRHA	UPHA	USEA	Arabians	IEA
# of Events	2,124	1,927	975	200*	250*	771	103
# of Entries	340,881	853,749	73,000		42,000*	494,700**	21,328
# of Competitors	78,000	17,741	8,660	NA	NA	6,064	

**Non-USEF events only; UPHA is also involved with USEF shows.*

At Intercollegiate Horse Shows Association (IHSA) events, horses are furnished by host colleges, eliminating the expense of horse ownership. More than **400 colleges in 45 states participate**. Events include hunter and Western disciplines.

Other breed registries and equestrian associations have additional types of competitions unique to their breeds or interests, for example, rodeo and associated timed events, trail obstacle courses, mounted shooting competitions, team penning, equine driving, and team roping. There are also several state and regional associations that sponsor competitions, and an untold number of non-sanctioned events throughout the country.

Maryland has **36 sanctioned USEF horse trials** as well as **several international competitions** sanctioned by the International Equestrian Federation, including the Maryland 5 Star at Fair Hill, the Washington International 5* Horse Show at PG equestrian, The Maryland International 4/3/2* at Loch Moy Farm, and the Fair Hill International 3/2/1* Horse Trials. The AQHA hosted 10 events in Maryland in 2022 with an average of 285 entries.

Other breed registries and equestrian associations have additional types of competitions unique to their breeds or interests, for example, rodeo and associated timed events, trail obstacle courses, mounted shooting competitions, team penning, equine driving, and team roping. There are also several state and regional associations that sponsor competitions, and an untold number of non-sanctioned events throughout the country.

Maryland has several polo teams competing in US Polo, and three polocrosse teams that regularly send competitors to the Polocrosse World Cup. Maryland also has a championship jousting circuit.

2. Andalusian/Lusitano, Arabian, Connemara, Friesian, Hackney, Morgan, National Show Horse, Paso Fino, American Saddlebred, Shetland, and Welsh Pony/Cob.

Economic Impact

The competition sector supports **3,300 direct jobs** and adds **\$129 million in direct value** to the Maryland economy. These direct impacts drive a further **\$93 million in added value** to the economy and more than **850 jobs from indirect and induced effects**.

Maryland Competition Sector Economic Impact Summary (\$MMs)			
	Direct	Indirect and In-duced	Total
Employment	3,300	854	4,154
Labor Income	\$119	\$53	\$172
Value Added	\$129	\$93	\$222
Output	\$210	\$161	\$371

Not included in the economic impact is volunteer labor, which the Maryland competition scene is heavily and in some disciplines almost entirely dependent upon.



Photo Credit: Katherine Rizzo



THE RACING SECTOR

Background

Racehorses require substantial expenditures on breeding, maintenance and training. Training fees for racehorses are substantial and usually comprise a day-rate plus a percentage of prize money won. Additional fees while a horse is in training include the costs of insurance, veterinarians, farriers and jockey fees. Jockeys are independent contractors who earn a fixed mount fee plus a percentage of the prize money won. There are transportation fees between racetracks and farms and boarding fees when the horse is not in training. Horses competing at the top level in stakes races also have additional entry fees. Racehorses also require specialized feed and supplies.

The horseracing sector also involves large indirect expenditures to specialized service providers. Totalizator companies provide wagering technology, machines and infrastructure. Broadcasting and television companies provide satellite services, broadcasting infrastructure, photo finish and timing equipment. Other vendors provide food and beverage concessions, track maintenance (turf and rail), and security technologies.

Besides commercial racetracks, racing occurs at state and county fairs and steeplechase events. Fair racing occurs primarily in the eastern US, including in Maryland at the Frederick Fairgrounds and at the Great Pocomoke Fair where there were four race days and 20 races at fairs in 2022. Steeplechase events occur primarily in Atlantic coast states and are typically organized by non-profit associations or charitable trusts. The National Steeplechase Association reports that four locations in Maryland hosted a total of four race days in 2022 including at the Fair Hill Steeplechase.

The major racing breeds are Thoroughbred, Quarter Horse and Standardbred (harness racing). Arabians and Appaloosas also participate in a small number of races typically at

The Maryland racing numbers for 2022:

Number of commercial racetracks: 5 tracks—3 Thoroughbred and 2 harness tracks. Also 1 track hosting Arabian races.

Number of race days: 276 live race days.

Purses: of \$82 million.

Handle: \$632 million.

Thoroughbred or Quarter Horse tracks. Standardbred or harness racing is predominantly limited to the Northeast, Midwest, and Mid-Atlantic states, while Quarter Horse racing is predominantly a Great Plains and Western sport.

The prospect of purse earnings underlies the value of racehorses and allows for the specialized care, training and breeding they receive. Traditionally, the size of purses was determined by the level of wagering on races. Today, purses benefit from casino-style gaming at many racetracks, including Maryland.

Maryland is a significant horse racing hub of the United States and hosts the Preakness Stakes, the second race of the Triple Crown. There are three commercial Thoroughbred tracks: Laurel Park, Timonium, and Pimlico Race Course, home of the Preakness. Pimlico also hosts an occasional Arabian race. There are two commercial harness tracks: Ocean Downs and Rosecroft Raceway.

Economic Impact

The racing sector supports nearly **8,900 direct jobs** and adds **\$341 million in direct value** to the Maryland economy. These direct impacts drive a further **\$215 million in added value** to the economy and nearly **2,100 jobs from indirect and induced effects**.

MD Racing Sector Economic Impact Summary (\$MMs)			
	Direct	Indirect and Induced	Total
Employment	8,859	2,092	10,951
Labor Income	\$288	\$171	\$459
Value Added	\$341	\$215	\$557
Output	\$519	\$366	\$885

The Innovation Group also performed an economic study of harness racing on behalf of the United States Trotting Association (USTA). The following table summarizes the results for Maryland. Harness racing supports nearly **2,950 direct jobs** and adds **\$107 million in direct value** to the Maryland economy. These direct impacts drive a further **\$70 million in added value** to the economy and nearly **700 jobs from indirect and induced effects**.

MD Harness Racing Sector Economic Impact Summary (\$MMs)			
	Direct	Indirect and Induced	Total
Employment	2,948	668	3,616
Labor Income	\$98	\$39	\$136
Value Added	\$107	\$70	\$177
Output	\$160	\$119	\$278

Source: IMPLAN Group, LLC, IMPLAN System (data and software); The Innovation Group.



Photo Credit: MHBA



Photo Credit: Jeff Cagliano



OTHER EQUINE ACTIVITY

Traditional Working Horses

Traditional working horses remain an important part of the industry and account for approximately 8% of the US horse population. Quarter Horses and UPHA breeds make up the vast majority of working horses. The Maryland Draft Horse and Mule Association promotes interest in Draft Horse breeds and governs draft horse competitions.

The working horse sector supports nearly **186 direct jobs** and adds **\$7 million in direct value** to the Maryland economy. These direct impacts drive a further **\$5 million in added value** to the economy and **43 jobs from indirect and induced effects**.

MD Traditional Working Horse Sector Economic Impact Summary (\$MMs)

	Direct	Indirect and In-duced	Total
Employment	186	43	229
Labor Income	\$7	\$3	\$9
Value Added	\$7	\$5	\$12
Output	\$11	\$8	\$19

Equine-Assisted Services (EAS)

Equine-Assisted Services (EAS)³ provides opportunities for individuals with physical, cognitive, and emotional special needs to have rewarding interaction with horses. There are many benefits for individuals who participate in EAS depending on their personal needs. Horses can learn and respond to their environment, making them more than just an animal, but rather a partner to assist in overcoming challenges.

Organizations involved in EAS include:

- The American Hippotherapy Association (AHA) provides educational resources and continuing education courses for occupational therapy, physical therapy and speech language pathology professionals who incorporate equines, equine movement and the equine environment in treatment.
- Equine Assisted Growth and Learning Association (EAGALA) is an international association for professionals providing equine assisted psychotherapy and personal development.
- Federation of Horses in Education and Therapy International (HETI) facilitates the worldwide collaboration between organizations and individuals whose EAS objectives are philanthropic, scientific and educational.
- Horses and Humans Research Foundation (HHRF) is a research organization that also provides educational and instructional materials.
- The Professional Association of Therapeutic Horsemanship International (PATH) promotes safety and optimal outcomes in EAS. In addition to certifying professionals and accrediting facilities, the organization helps to set rules and guidelines, provide resources, and advocate for EAS programs. PATH helps ensure safe practices are maintained for both clients and horses alike.

PATH Intl. is a large organization and as of 2020 had certified over 5,424 instructors in 813 certified facilities. In turn these instructors and an extensive volunteer core served 53,400 children and adults in 2020, including 5,900 veterans⁴.

Maryland stables are required to be licensed; **67 of Maryland's 793 licensed stables report offering EAS** as one part of their operation. Total employment compensation nationally for service-related employees at 813 certified operations and approximately 780 non-certified facilities is estimated at \$185.7 million. The portion attributable to Maryland based on horse population estimates is **\$4.2 million in employment compensation**. Additionally, expenses for **332 horses owned or leased** by EAS operations were estimated using the Association Other expense category.

3. Previously called Equine-Assisted Activities and Therapy (EAAT)

4. 2020 PATH Intl. Factsheet.

MD EAS Economic Impact Summary

	Direct	Indirect and In-duced	Total
Employment	187	76	263
Labor Income	\$11,411,426	\$4,762,357	\$16,173,783
Value Added	\$19,221,033	\$8,475,064	\$27,696,097
Output	\$22,745,374	\$14,093,672	\$36,839,046



Rescues and Sanctuaries

There are an estimated 1,100 organizations involved in animal welfare in the United States that include horses. Equine Rescues are shelters where horses go for safekeeping, potentially rehabilitated, and eventually put up for adoption to a new home. An Equine Sanctuary is a place where equines go to live out the remainder of their lives. The AHC has estimated that on average over the last 5 years, 80% of horses leaving shelters are adopted, meaning approximately 25,000 horses are adopted from shelters each year.

Financial data from IRS tax form 990 was available for over 700 organizations, including income, expenses, employment and employee compensation, and horse capacity. Our analysis of that data resulted in an estimate of 27,202 horses being sheltered nationally in 2022, resulting in horse-related operating expenses of \$92 million and capital expenses of \$78 million in addition to employment compensation of \$65.8 million. The portion attributable to Maryland's **29 animal welfare organizations** that are represented in the list of 1,100 non-profit organizations includes horse-related operating **expenses of \$1.6 million** and **employment compensation of \$945 thousand**. Not included are all licensed Maryland stables that report offering rescue or sanctuary services as one part of their operation; boarding expenses are included in the horse ownership surveys. There are **58 licensed Maryland stables** that report offering rescue or sanctuary services.

MD Rescues and Sanctuaries Economic Impact Summary

	Direct	Indirect and Induced	Total
Employment	45	7	52
Labor Income	\$1,365,844	\$435,079	\$1,800,922
Value Added	\$1,280,156	\$777,949	\$2,058,106
Output	\$1,861,739	\$1,304,168	\$3,165,907



Equine Associations

The American Horse Council directory lists approximately 260 equine-related associations active in the U.S., including State Horse Councils, breed registries, non-academic educational organizations, activity-based associations, libraries and museums. These non-profit organizations submit detailed financial information to the IRS on tax form 990, some of which are publicly available documents. In total, we collected employment and salary data from 105 organizations. After removing extreme outliers from the dataset, averages were used to estimate the unknown population. In Maryland there are approximately 200 organizations such as pony clubs, 4-H clubs, and various breed and sector associations. Not included in the economic impact calculations are for-profit enterprises (which are accounted for elsewhere in the analysis) or small associations without employees or public reporting. The major associations include the National Steeplechase Foundation, Maryland Horse Breeders Association, the Maryland Horse Council, and the Maryland Thoroughbred Horsemen's Association. The direct effect input from **12 equine-related associations** in Maryland includes **57 employees** earning **\$4.2 million in compensation**.

MD Equine Associations Economic Impact Summary			
	Direct	Indirect and Induced	Total
Employment	57	51	108
Labor Income	\$4,218,893	\$3,430,155	\$7,649,048
Value Added	\$11,174,955	\$5,340,040	\$16,514,995
Output	\$15,839,464	\$9,055,669	\$24,895,134

Equine Academic Institutions

There are 179 colleges and universities in the United States and **3 in Maryland** that are recognized as having equine-related programs and degrees. These programs vary in size and scope depending on their location and level of education. Students can obtain various degrees and/or certificates depending on their interests. Most commonly, equine related degrees stem from the schools of business, animal sciences, or agricultural sciences. After receiving valid responses from 66 institutions, we were able to estimate a total of 1,253 employees nationally and **10 in Maryland within the Equine Academic Industry**. Additionally, expenses for **55 horses owned or leased** by academic programs in Maryland were estimated using the Association Other category.

MD Equine Academics Economic Impact Summary			
	Direct	Indirect and Induced	Total
Employment	13	4	18
Labor Income	\$750,965	\$271,150	\$1,022,115
Value Added	\$931,272	\$485,512	\$1,416,784
Output	\$1,235,109	\$836,628	\$2,071,737

Results are combined academic program operations and horse care. MM - millions

Public Horse Sales

Sales data was collected through archival records of major horse public sales throughout the U.S. (including Maryland) from sale company’s websites or online databases such as Blood Horse and Harness Racing. In addition to the major companies and sales, such as Fasig-Tipton, Keeneland and Harrisburg, we collected data from smaller state and local sales throughout the country. In total, **949 horses sold** in Maryland during 2022 resulted in annual sales of **\$51 million**. Not included are private sales or livestock auctions that occur in nearly every state. Equine data for public livestock auctions is not consistently available.

For this segment, only the marginal effect is considered. The sales margin as estimated by IMPLAN under sector 395 (Wholesale trade) reflects the staffing and expenses required to host the sales events and the commissions accruing to the hosting enterprises.

MD Public Horse Sales Economic Impact Summary			
	Direct	Indirect and Induced	Total
Employment	41	55	96
Labor Income	\$4,082,289	\$3,707,317	\$7,789,606
Value Added	\$8,345,595	\$5,992,692	\$14,338,288
Output	\$14,070,963	\$10,062,326	\$24,133,289



Photo Credit: MHBA

OTHER INDUSTRY ACTIVITY

Land Preservation

The Horse industry plays a significant role in preserving agricultural land. We estimate that the reported acreage in the AHC association survey represents approximately 12.5 million acres nationally of land owned or leased for horse-related uses, or approximately one acre for every two horses nationally.

Of the Maryland horse-owning respondents in the AHC association survey, approximately **62% reported owning or leasing a farm**, barn, or stable. In Maryland, the land owned or leased for horse-related uses is estimated at **220,000 acres**, or approximately 2.3 horses per acre.

Volunteerism

Horse owning respondents to the AHC survey reported a high incidence of volunteerism. Approximately 13.1% of households in the AHC association survey reported using volunteers as part of their horse care, management, or activities. On average, these households reported using 10 volunteers in the past year. This implies nearly **38,000 volunteers** in Maryland. Competition organizers in Maryland report using **900 volunteers in 2022** (only from those Maryland organizers who reported, not scaled up).



APPENDIX: METHODOLOGY

A note on comparing the results in this 2022 report with our 2016 results: there is natural variation in estimates using a sample, and one should expect a different outcome given different people responding to the survey. With that said, the Innovation Group employed the same methodology in this study as in our analysis for 2016, with the following exceptions:

- In the Racing sector, expenses for Thoroughbreds were calculated separate from other racing breeds.
- For EAS and academic programs, horse-related expenses were added to reflect the impacts from taking care of the horses utilized in these segments.

Per-horse expenses were generally consistent with our estimates for 2016 except for Recreation. We believe this to be a result of variation in recreation respondents, not an actual increase in expenses since the other sectors tend to be consistent with inflation. The value of the dollar rose by 18% between 2016 and 2022 (\$1 dollar in 2022 is 82 cents in 2016 real value). We also note that the new Recreation estimates are generally consistent with the other sectors—although lower than Racing and Competition, which would be expected.

One other major difference in results compared to the 2016 results involves lower estimates for land preservation. We believe this to be a result of variation in recreation respondents, not an actual decrease in land attributable to horse ownership. We believe the results in this report are more credible relative to the entire acreage of the state.

Employment related to the horse owner survey is an output from IMPLAN resulting from horse-related expenses input into the sectors as discussed below. We are not certain why Direct employment has increased despite a reduction in horse population, but it could be a re-categorization from Indirect and Induced employment, which has declined in some case, combined with larger estimates for per-horse expenses in the Recreation sector.

Economic Impact Modeling

Economic impact analyses are commonly used tools to quantify the benefits that result from the opening or closure of a business or industry to an area. The Innovation Group performed the horse industry analysis utilizing IMPLAN data and software. The economic impact of an industry consists of three layers of impacts:

1. Direct effects
2. Indirect effects
3. Induced effects

The direct effect is the economic activity that occurs within the industry itself: for example, the people employed on horse farms and at racetracks and the spending by horse owners on feed and veterinarians and farriers. For the horse industry, direct effects are defined as employees of or direct expenditures by front-line industry entities or customers of front-line entities. Direct expenditures include operating expenses and average annual capital expenditures.

Indirect impacts are the effects of the direct expenditures on other business sectors: for example, the farmer who grows the alfalfa and grain as well as the mill that processes the grain. Indirect effects reflect the economic spin-off that is made possible by the direct

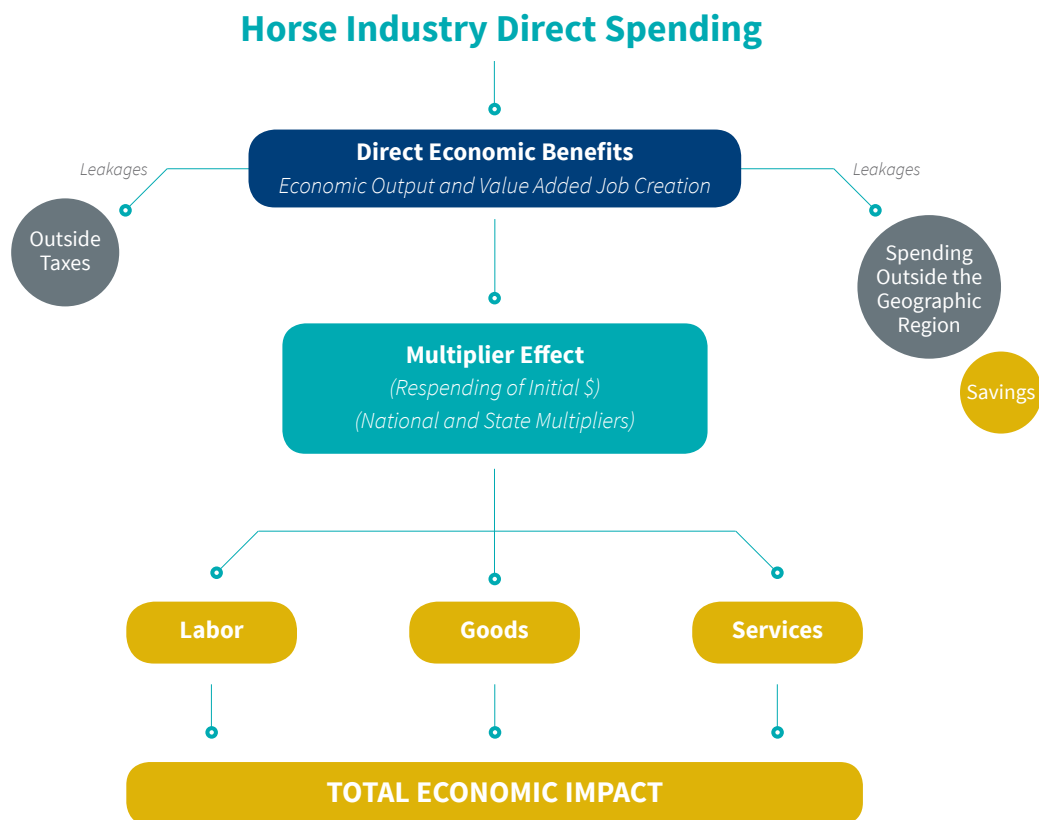
purchases of the facility. Firms providing goods and services to equine operations have incomes partially attributable to the horse industry.

Examples of suppliers include Equine Divisions at corporations like Purina Animal Nutrition (175 employees), Zoetis Animal Health (41 employees), and W.F. Young (40 employees), which supplies supplements and OTC topical horse care products for fly control, grooming, hoof care, first aid, muscle & joint, and leather care, and companies like Equine Network Publishing (142 employees).

Finally, the induced impacts result from the spending of labor income: for example, racetrack employees or feed mill employees using their income to purchase consumer goods locally. As household incomes are affected by direct employment and spending, this money is recirculated through the household spending patterns causing further local economic activity.

Indirect and induced effects are calculated using multipliers derived from an input-output⁶ model of the economy. The IMPLAN input-output model identifies the relationships between various industries—for example, which industries are involved in producing \$1,000 worth of feed and by how much is each industry affected? The model is then used to estimate the effects of expenditures by one industry on other industries so that the total impact can be determined. Industry multipliers are developed based on U.S. Census data. IMPLAN accounts closely follow the accounting conventions used in the "Input-Output Study of the U.S. Economy" by the Bureau of Economic Analysis.

The following flow-chart shows how the economic impact model operates.



6. IMPLAN software and data were utilized for this study.

Determining the direct economic impact is a critical first step in conducting a valid economic impact analysis. The horse industry is unique because of its multiple segments and the dispersed nature of industry participants and activities. The racing industry alone involves a complex web of participants and activity, with scattered registries that do not capture all participants.

The IMPLAN tools utilized to model the direct effects varied according to the type of data collected for each input segment. There are five types of economic activity changes that IMPLAN is designed to model for: industry, commodity, labor income, household income, and institution (government) spending. The most commonly used activity is an industry change, as the business generating a change in revenue, labor, or employment is often known and attributable to a specific industry sector.

The commodity change function was most appropriate for modeling the horse ownership expense data and tourism spending by horse participants and spectators. Goods and services can be produced by more than one industry, and the survey instruments did not specify where or from whom the good was purchased. A commodity change distributes the total demand or sales for the good or service across all producing industries or institutions based on their regional market share distribution of that commodity. For example, 97% of the entire U.S. supply of grain is produced by the Grain Farming Sector while the other 3% is produced by the Federal Government.

All horse ownership expenses other than employment compensation were entered into the IMPLAN commodity sector that corresponds to the most appropriate NAICS code⁷ for each individual expense line item. Employment compensation was modeled as an industry change through IMPLAN sector 19 (Support activities for agriculture and forestry). The following table shows the expense line items collected in the ownership survey as classified in the IMPLAN sector scheme:

7. The IMPLAN sectoring scheme is based on the North American Industry Classification System (NAICS), developed under the auspices of the Office of Management and Budget (OMB), which classifies business establishments based on the activities they are primarily engaged in or the commodities they create.



Direct Effects, IMPLAN Categories

IMPLAN Code	Commodity Sector Description	Direct Effect Input (Expense & Capital Investments)
3002	Grains	Feed & Bedding
3010	All other crops	Hay
3019	Support activities for agriculture and forestry	Boarding, Training, Stud Fees, Blacksmith/Farrier, Other Medical & Wellness Services, All Other Horse-Related Goods & Services
3047	Electricity transmission and distribution	Facilities Maintenance
3049	Water, sewage and other systems	Facilities Maintenance
3055	Newly constructed commercial structures, including farm structures	Farm/ Barn Structures
3056	Newly constructed nonresidential structures	Farm Land/ Land Improvements
3060	Maintenance and repair construction of nonresidential structures	Facilities Maintenance
3064	Other animal food	Feed & Bedding, Supplements & Medications
3172	Pharmaceuticals	Supplements & Medications
3260	Farm machinery and equipment	Farm Equipment
3395	Wholesale services - Machinery, equipment, and supplies	Other capital expense
3402	Retail services- Motor vehicle and parts dealers	Horse Trailers
3408	Retail services- Gasoline stores	Owner Travel
3410	Retail services- Sporting goods, hobby, musical instrument and book stores	Tack & Grooming Supplies, Rider Gear, All Other Horse-Related Goods/Services
3414	Air transportation services	Owner Travel
3417	Truck transportation services	Horse Transportation & Lodging
3445	Insurance carriers	Horse & Other Insurance
3447	Other real estate services	Farm Land/ Land Improvements
3457	Advertising, public relations, and related services	Advertising
3467	Veterinary services	Veterinary Services
3473	Business support services	All Other Business Expenses
3482	Other educational services	Lesson/Instruction
3489	Commercial Sports Except Racing	Boarding, Training, Stud Fees, Blacksmith/Farrier, Other Medical & Wellness Services, All Other Horse-Related Goods & Services
3500	Promotional services for performing arts and sports and public figures	Entry & Stall Fees
3493	Museums, historical sites, zoos, and parks	Permits
3504	Other amusement and recreation services	Guides/Outfitters
3507	Hotels and motel services, including casino hotels	Owner Lodging
3508	Other accommodations services	Horse Transportation & Lodging
3509	Full-service restaurants services	Dining

This tool was also used to model expenses for horses owned by Sanctuary & Rescue operations, EAS operations, Academic programs, and Amish households.

For other data, the Industry Change function under IMPLAN is the more appropriate tool. For racetrack operations, for example, estimates of racetrack revenue are entered into IMPLAN under sector 498 (Racing and Track Operation), and IMPLAN calculates the spin-off effects resulting from that direct revenue. For public horse sales, only the marginal effect is considered. The sales margin as estimated by IMPLAN under sector 395 (Wholesale trade) reflects the staffing and expenses required to host the sales events and the commissions accruing to the hosting enterprises.

For some of our data segments, only employment or employment compensation data was available. In these cases, the IMPLAN software estimated other aspects of an operation based on how many people are employed in a given business sector using its employment multiplier.

The following table shows the sectors and inputs utilized for Industry Change activities:

Industry Change Direct Inputs by Segment	
Horse Industry Segment	IMPLAN Sector
Competition Organizers	500 Promoters of sports and agents for public figures
Racetrack Operators	498 Racing and Track Operation
ADW/OTBs	498 Racing and Track Operation
Fair Races	498 Racing and Track Operation
Steeplechase	523 Business and professional associations
Racing Commissions	541 Employment and payroll of state govt, non-education
EAS	485 Offices of other health practitioners
Academics	481 Junior colleges, colleges, universities, and professional schools
Associations	522 Grantmaking, giving, and social advocacy organizations
Rescues & Sanctuaries	19 Support activities for agriculture and forestry
Public Horse Sales	395 Wholesale trade
Tourism Travel	408 Retail - Gasoline stores & 414 Air transportation
Tourism Dining	509 Full-service restaurants
Tourism Lodging	507 Hotels and motels, including casino hotels

Horse Owner Survey Methodology

A balanced-start methodology starts with a sample representative of the demographic breakdown of the overall U.S. population and records the demographics of everyone who responded to the screener question to understand the demographic profile of the people in the target population. Balancing the sample on those people who start the survey rather than those who complete it effectively allows use of the population of people who completed the screener to identify a true incidence and profile.

The difference between a balanced-start methodology and the more commonly used method of balancing on completed interviews can be illustrated as follows. Imagine we are conducting a survey on a skincare item:

- Using a balanced-start methodology, we would send 50% male and 50% females into the study.
- The screener question may reveal that 20% of males use the product, and 80% of females use it. Therefore, the gender profile of completed interviews will be 20% male and 80% female.
- Compare this with a balanced-completes methodology where we may require 50% of the completes from males, 50% from females, or where we might “guess” people's usage and ask for 60% of the completed interviews from females and 40% from males.

The balanced-start survey was designed to determine incidence rates for horse ownership, participation in horse activities, and spectating at horse events. Using SurveyMonkey's targeting platform, we received 2,691 responses yielding 837 observations that had at least one spectator, participant, or owner in the household. These three categories combined represent what could be termed “horse enthusiasts.”

The AHC Association Survey yielded 21,341 started responses of which 10,086 were completed. A completion is defined as someone who answered all required questions and clicked “Done” at the end of the survey. However, incomplete responses were utilized for questions that were answered. This survey was intended to characterize the population of association members and horse ownership in greater detail. The sample frame consisted of the membership lists of the participating associations with notification of eligibility largely by email for an internet-based survey. The membership lists were not sampled, but rather the full membership was invited to respond to the survey.

The constituent associations were responsible for notifying their members of the survey and promoting response. We expected and observed different response rates due to the heterogeneous dissemination methods of the survey instrument amongst the numerous organizations. For this reason, and because email lists were not available to remove duplicates and identify simultaneous membership among multiple associations, we asked respondents to self-identify their membership in the relevant organizations as part of the survey. We used this data point in tandem with the associations' membership tallies to correct for nonresponse among and between the various associations.

Of the completed surveys, 8,782 confirmed their membership in at least one equine association. While we could use the incomplete and non-member responses to inform our inquiries during analysis, without knowledge of the population that they described from

association membership tallies, we could not use them for the purposes of extrapolating to the population of equine association members. Further we would not be able to calculate appropriate nonresponse weights to produce estimates and make inferences with these observations.

Customized surveys were also distributed to competition organizers and other industry suppliers, equine-assisted services operations (EAS), and equine academic programs. The AHC survey distributed to event organizers yielded responses representing 2,551 events, which were scaled up to the known and estimated universe of events totaling 7,920, resulting in a salary and compensation estimate of \$68.4 million dollars. The EAS survey included usable observations from 146 or nearly 10% of U.S. operations reporting \$19.5 million in employee compensation, 769 employees, and 1,524 horses. Total employment compensation at 813 certified operations and approximately 780 non-certified facilities is estimated at \$185.7 million, supporting a workforce of 7,355 service-related employees. We received valid responses from 66 of 179 academic institutions, resulting in an estimate of 1,253 total employees (not including horse care).



Photo Credit: Destini Benson

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