

# Costly versus Cost-Effective: How EQIP can be improved to serve more farmers and the climate

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# COSTLY VERSUS COST-EFFECTIVE: How EQIP can be improved to serve more farmers and the climate

#### SUMMARY

This report takes a close look at the Environmental Quality Incentives Program (EQIP), a farmer-focused conservation cost-share program run by the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture (USDA). In the report, we examine the agricultural practices that EQIP helps farmers finance, how much funding went toward these practices in Fiscal Year (FY) 2023, including additional funding through the Inflation Reduction Act, and the practices' relationships with NRCS' list of "climatesmart" agriculture and forestry practices, called the Climate Smart Agriculture and Forestry (CSAF) list. This report builds on previous IATP reports focused on EQIP spending: *Payments for Pollution* (2022) and *Waste and Water Woes* (2023).

We find that, despite nearly two-thirds of farmer applicants being turned away from EQIP, disproportionate shares of program dollars go toward high-cost practices that have little to no climate or conservation benefit. This report includes spending data on the first year farmers have received additional funding from the Inflation Reduction Act (IRA), which dedicated roughly \$250 million to EQIP in FY23, with a total of \$8.45 billion to be spent on the program by FY31.1 While EQIP is not, by nature, an agroecological program, it and other NRCS programs can be a gateway to agroecology for many U.S. farmers.2 We conclude that reforms are needed to promote costeffective and climate-effective agricultural strategies so that as many farmers as possible can build climate resilience and reduce emissions on their farm.

# WHAT IS EQIP?

EQIP is a conservation cost-share program that reimburses farmers and landholders for environmental practices they install on their farm. Created in the 1996 Farm Bill, the program is intended to provide a gateway for first-time conservationists to address resource concerns on their land.3 Resource concerns can include soil health and erosion, water quality and quantity, emissions, forage for livestock, energy efficiency, invasive pests and other environmental factors that affect a farm.4 Farmers and landholders can apply for multiple EQIP contracts, but if they wish to incorporate comprehensive conservation across their entire operation, they are encouraged to graduate from EQIP to the Conservation Stewardship Program (CSP). The average EQIP contract size in FY23 was \$7.852.5

# WHO IS GETTING THE MONEY?

Nationwide, 10 EQIP practices averaged over \$50,000 per contract. Many of these practices only make sense for large-scale farms, leaving less EQIP money for lower cost practices with greater conservation impact. Over \$182 million was spent on these 10 practices in FY23 alone, or about 11% of the total. While some of these practices have environmental benefits, others, such as waste storage facility, waste facility cover and anaerobic digester, have questionable environmental benefits and bolster the polluting concentrated animal feeding operation (CAFO) system of the largest livestock operations.



# HOW EXPENSIVE ARE DIGESTERS, REALLY?

Anaerobic digesters, otherwise known as methane digesters or, simply, digesters, are installed on operations with large amounts of liquid animal manure to "digest" methane emissions into other products, such as biogas and manure digestate. EQIP digester contracts are awarded almost solely to massive CAFOs. They make sense, according to the U.S. Environmental Protection Agency (EPA), for operations with at least 500 cows or 2,000 hogs,<sup>6</sup> which applies to fewer than 4% of farms with cattle<sup>7</sup> and fewer than 14% of farms with hogs.<sup>8</sup>

A recent study found that dairy operations that installed digesters grew their herd sizes by 3.7% each year, or 24 times the growth rate of dairies without digesters.9 Methane emissions from livestock do not come from manure alone, but also from the animals themselves. According to the Intergovernmental Panel on Climate Change, less than 10% of the methane emissions from cattle come from manure storage, with the rest coming from enteric fermentation, or the process of digesting food (the infamous "cow burps and farts").10 Storage of pig manure makes up the majority of methane emissions associated with the animal.11 With increases in herd sizes, the methane reduction benefits of digesters shrink dramatically. As the U.S. pursues its methane reduction strategy, we cannot afford to waste billions of dollars on false climate solutions, such as digesters that encourage herd growth.

Compare digesters with silvopasture — another livestock-focused practice that helps farmers and ranchers integrate livestock and trees. While a silvopasture-based operation has only a fraction of the herd that a confinement-based operation does, the farmer can still make ends meet. Not only can planting and managing trees in pastureland capture and store carbon, but the trees can also provide additional nutrition for livestock in the form of fruits and nuts.<sup>12</sup> Additionally, silvopasture can bolster wildlife habitat, improve biodiversity and provide needed cooling for livestock on hot summer days. Silvopasture can be the backbone of a sustainable livestock operation, and at an average contract cost of \$8,894, is a bargain compared to digesters. Nationwide in FY23, 97 silvopasture EQIP contracts were awarded at a total cost of \$862,743, just slightly over the cost of two digesters.



Anaerobic digester on a dairy in Pennsylvania.



Silvopasture integrates livestock and trees.

#### MOONLIGHT IN VERMONT

In Fiscal Year 2023, Vermont awarded 1,434 EQIP contracts. Of those contracts, two were for anaerobic digesters. Those two digesters were awarded a combined \$840,722, or 5.5% of the state's total of over \$15 million. In the same year, nearly 66% of applicants for EQIP, or 584 applications, in Vermont were turned away. The money that went to those two digesters could have instead been used to help 264 farmers implement a conservation crop rotation, a practice that can conserve soil, build resilience, reduce fertilizer use and diversify income for farmers. Or, it could have helped 583 farmers try conservation cover,<sup>13</sup> a

practice that can restore high-erosion cropland to native grassland that, by NRCS's own rankings, has the same positive effect on greenhouse gas emissions as digesters.

FUNDING CONTRASTS IN MICHIGAN

In FY23, Michigan awarded four pond sealing or lining concrete contracts for \$1,088,066, an average of \$272,016 per contract. While we do not know the specifics of each contract, we know that the contracts awarded in Michigan were more expensive than the national average for this contract by nearly \$100,000, suggesting they likely went to larger livestock operations.

Michigan has a diverse agricultural sector, including row crop commodities, fruit and vegetable production, robust urban agriculture and forestry. This diversity of crops and animals raised means more resilience for the state's economy and is often highlighted by leaders in the state, including Senate Agriculture Committee Chair Debbie Stabenow. With the money used to fund four pond sealing contracts, 76 high tunnels could have been funded, helping small-scale producers extend their growing season and providing local food sources in urban areas such as Detroit

where high tunnels enable farmers to grow large amounts of food on small plots of land.

# WHICH EQIP PRACTICES ARE THE MOST EXPENSIVE?

While conservation is not always cheap, there is a difference between spending resources on true conservation versus more industrial practices that lock in harmful ways of growing crops and raising livestock. Table 1 below shows the top 10 EQIP practices by average contract size in Fiscal Year 2023. Many of these practices benefit large-scale operations and subsidize agricultural systems that run counter to conserving resources. Among these practices are anaerobic digesters, waste facility cover and waste storage facilities.

The average cost of EQIP contracts for five anaerobic digesters funded in FY23 was over \$400,000. Digesters can cost much more than this: According to the University of California – Davis, digesters for dairy cattle cost about \$1,190 per milking cow.<sup>15</sup> For an operation with 2,000 milking cows, the total cost of a digester is roughly \$2.38 million. Digesters are also eligible for funding from the Rural Energy from America Program, a taxpayer-funded program that

Table 1: Top 10 EQIP Practices by Average Contract Size, Fiscal Year 2023

Practice	NRCS Practice Standard #	Number of Contracts Awarded	Total Spent on Practice	Average Contract Size
Anaerobic Digester*	366	5	\$2,042,494	\$408,537
Groundwater Recharge Basin or Trench	815	7	\$1,567,848	\$223,978
Pond Sealing or Lining Concrete	522	26	\$4,559,016	\$175,347
Fish Passage	396	26	\$3,104,200	\$119,392
Combustion System Improvement*	372	307	\$23,155,354	\$75,425
Waste Facility Cover*	367	1268	\$76,829,494	\$60,591
Waste Storage Facility*	313	1083	\$64,240,259	\$59,317
Pond Sealing or Lining	521	46	\$2,579,241	\$56,070
Irrigation Ditch & Canal	428	73	\$4,025,685	\$55,146
Water Conservation System	818	11	\$555,516	\$50,501

Practices with asterisks\* are listed on the FY 2024 Climate Smart Agriculture and Forestry List by NRCS, thereby eligible for IRA contracts.

helps farmers finance and install energy production on their land, with a focus on renewable energy.<sup>16</sup>

Another expensive practice at a contract level is pond sealing or lining concrete. This practice, which used an average of just above \$175,000 in EQIP dollars in FY23, can be used with waste storage facilities and other liquid manure management practices to prevent manure seepage into groundwater.<sup>17</sup> While this practice can have other uses for drinking water for pastured livestock, NRCS does not separate and share data on whether a practice is used for waste management, drinking water for livestock or another use.

Because FY23 was the first year EQIP included funding from the IRA, we indicated which practices are eligible for IRA money with an asterisk in the tables below. We were unable to access data that separates IRA-specific funding from general Farm Bill funding, so we could not analyze how much of this new climate funding is going to true conservation versus practices we determine to be industrial in nature.

Another way to look at EQIP contract expense is by the total dollar amount spent per practice (see Table 2). While some industrial practices show up again on this list, such as waste storage facility and waste facility cover, there are also many true conservation practices included. Cover crops are by far the most popular EQIP practice nationwide and help thousands of farmers improve soil health, prevent erosion, and provide additional income and feed sources. Over \$142 million was spent on cover crop contracts in FY23.

Nearly \$60 million was spent on high tunnels in FY23, otherwise known as "hoop houses." High tunnels can help farmers extend their growing seasons and are popular among small-scale producers and vegetable growers, among others. High tunnels can be a climate adaptation tool for farmers, helping them insure against threats such as early frosts and heavy rainfalls while also building local food security and sovereignty.

As in FY22, many irrigation practices are present on this list. While not all irrigation practices are inherently destructive, some practices intended to conserve

Table 2: Top 10 EQIP Practices by Dollar Amount Spent, Fiscal Year 2023

Practice	NRCS Practice Standard #	Number of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop*	340	15,531	\$142,527,904	\$9,177
Fence	382	13,890	\$87,351,178	\$6,289
Brush Management*	314	13,834	\$87,127,812	\$6,298
Waste Facility Cover*	367	1,268	\$76,829,494	\$60,591
Irrigation System, Sprinkler*	442	1,512	\$73,234,721	\$48,436
Irrigation Pipeline*	430	2,779	\$67,436,318	\$24,266
Waste Storage Facility*	313	1,083	\$64,436,318	\$59,317
Forest Stand Improvement*	666	6,519	\$64,240,259	\$9,100
High Tunnel System	325	3,369	\$59,325,367	\$14,481
Pasture & Hayland Planting*	512	6,333	\$48,785,974	\$7,643
Pipeline	516	9,451	\$48,400,584	\$4,773

Practices with asterisks\* are listed on the FY 2024 Climate Smart Agriculture and Forestry List by NRCS, thereby eligible for IRA contracts.

water for farmers in dry areas can lead to increased water use.<sup>19</sup> In an era of drying aquifers and less consistent rainfall, conservation programs should go toward true water saving measures. If we incentivize practices such as large-scale drip irrigation that might use less water per crop acre ("more crop per drop") but expand an operation and thus its water usage, the environmental benefit will diminish.

# WHICH EQIP PRACTICES ARE MOST POPULAR?

Another important way to consider EQIP awards nationwide is by the number of contracts awarded. This can be shorthand for the number of farmers served by different practices. Some of the clearest differences between Table 3 and the previous tables are that the most popular practices are relatively inexpensive. Of the top 10 most popular practices, not one averages over \$10,000 per contract. For a small grazer, a \$3,000 prescribed grazing contract can be life changing, helping reduce feed costs or improve pasture health. For a small-scale row crop farmer, a cover crop contract can be the gateway to implementing conservation across their whole farm, creating what could become a soil health multiplier effect. Even a simple practice, such as pasture and



Harvesting ginger in a high tunnel at Sang Lee Farms in New York.

hayland planting, could lead to higher quality, more digestible hay for livestock, requiring less digestion and leading to less emissions from enteric fermentation.

Table 3: Top 10 EQIP Practices by Number of Contracts Awarded, Fiscal Year 2023

Practice	NRCS Practice Standard #	Number of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop*	340	15,531	\$142,527,904	\$9,177
Fence	382	13,890	\$87,351,178	\$6,289
Brush Management*	314	13,834	\$87,127,812	\$6,298
Trough or Tank	614	11,146	\$32,749,590	\$2,938
Prescribed Grazing*	528	10,682	\$34,489,035	\$3,229
Pipeline	516	9,451	\$45,108,345	\$4,773
Heavy Use Area Protection	561	9,147	\$39,847,639	\$4,356
Herbaceous Weed Control*	315	6,627	\$21,074,323	\$3,180
Forest Stand Improvement*	666	6,519	\$59,325,367	\$9,100
Pasture & Hayland Planting*	512	6,333	\$48,400,584	\$7,643

Practices with asterisks\* are listed on the FY 2024 Climate Smart Agriculture and Forestry List by NRCS, thereby eligible for IRA contracts.

# WHAT DOES NRCS CONSIDER CLIMATE SMART?

According to NRCS, "climate-smart agriculture and forestry is an integrated approach that enables farmers, ranchers, and forest landowners to respond to climate change by reducing or removing greenhouse gas emissions (mitigation) and adapting and building resilience (adaptation), while sustainably increasing agricultural productivity and incomes." Since the IRA was enacted as law, NRCS updates the list of agricultural practices it considers to be climate smart each year. The practices and enhancements on this list are eligible for the \$8.45 billion in EQIP dollars set aside by the IRA for climate-smart agriculture.

Below is a list of practices eligible for EQIP funding, compared with NRCS' ranking of each practice's effects on greenhouse gas emission (GHG) reduction. The bolded practices have been identified as "climate smart" by NRCS, making them eligible for IRA funding. NRCS uses a scale from negative five to five, with five providing "substantial improvement" and negative five



A farmer plants corn directly into cover crops.

providing "substantial worsening."<sup>21</sup> NRCS uses this type of ranking for resource concerns other than GHG reduction, including soil erosion, air quality and water. Despite the larger matrix NRCS uses, this GHG ranking list, in particular, informs the agency's decisions on which practices should be eligible for IRA dollars.

Table 4. How NRCS ranks the physical effects of each EQIP practice on greenhouse gas emissions (GHGs)<sup>28</sup> (Bolded practices are included on the FY24 Climate Smart Agriculture and Forestry list.)

Conservation Practice Standard	NRCS Ranking of Effects on GHG Emissions
Access Control	1
Access Road	Ο
Agrichemical Handling Facility	0
Air Filtration and Scrubbing	2
Alley Cropping	2
Amending Soil Properties with Gypsum Products	0
Amendments for Treatment of Agricultural Waste	1
Anaerobic Digester	4
Animal Mortality Facility	1
Anionic Polyacrylamide (PAM) Erosion Control	0
Aquaculture Ponds	0
Aquatic Organism Passage	0
Bivalve Aquaculture Gear and Biofouling Control	0

Conservation Practice Standard	NRCS Ranking of Effects on GHG Emissions
Brush Management	1
Channel Bed Stabilization	0
Clearing & Snagging	0
Combustion System Improvement	2
Composting Facility	1
Conservation Cover	4
<b>Conservation Crop Rotation</b>	1
Constructed Wetland	1
Contour Buffer Strips	1
Contour Farming	0
Contour Orchard and Other Perennial Crops	1
Controlled Traffic Farming	0
Cover Crop	2
Critical Area Planting	2
Cross Wind Ridges	0

Conservation Practice Standard	NRCS Ranking of Effects on GHG Emissions
Cross Wind Trap Strips	1
Dam	0
Dam, Diversion	0
Deep Tillage	-4
Denitrifying Bioreactor	0
Dike and Levee	0
Diversion	0
Drainage Water Management	1
Dry Hydrant	0
Dust Control on Unpaved Roads and Surfaces	0
Dust Management for Pen Surfaces	0
Early Successional Habitat Development/Mgt.	0
Emergency Animal Mortality Management	1
Energy Efficient Agricultural Operation	2
Energy Efficient Building Envelope	2
Energy Efficient Lighting System	2
Feed Management	4
Fence	1
Field Border	1
Field Operations Emissions Reduction	1
Filter Strip	1
Firebreak	1
Fish Raceway or Tank	0
Fishpond Management	1
Forage Harvest Management	0
Forest Farming	1
Forest Stand Improvement	3
Forest Trails and Landings	0
Fuel Break	1
Grade Stabilization Structure	0
Grassed Waterway	1
Grazing Land Mechanical Treatment	2
Groundwater Testing	0
Heavy Use Area Protection	0
Hedgerow Planting	1
Herbaceous Weed Treatment	1
Herbaceous Wind Barriers	1
High Tunnel System	0
Hillside Ditch	0

Conservation Practice Standard	NRCS Ranking of Effects on GHG Emissions
Irrigation and Drainage Tailwater Recovery	1
Irrigation Canal or Lateral	0
Irrigation Ditch Lining	0
Irrigation Field Ditch	0
Irrigation Land Leveling	0
Irrigation Pipeline****	2
Irrigation Reservoir	0
Irrigation System, Microirrigation****	1
Irrigation System, Surface & Subsurface	1
Irrigation Water Management****	1
Land Clearing	-1
Land Reclamation, Abandoned Mined Land	1
Land Reclamation, Currently Mined Land	1
Land Reclamation, Landslide Treatment	0
Land Reclamation, Toxic Discharge Control	0
Lined Waterway or Outlet	0
Livestock Pipeline	2
Livestock Shelter Structure	0
Mine Shaft & Adit Closing	1
Monitoring Well	0
Mulching	0
Nutrient Management	3
Obstruction Removal	0
On-Farm Secondary Containment Facility	0
Open Channel	0
Pasture and Hay Planting	4
Pest Management Conservation System	0
Pond	0
Pond Sealing or Lining - Geomembrane or Geosynthetic Clay Liner	0
Pond Sealing or Lining, Compacted Soil Treatment	0
Pond Sealing or Lining, Concrete	0
Precision Land Forming and Smoothing	-1
Prescribed Burning	2
Prescribed Grazing	2
Pumping Plant****	1
Range Planting	3

Conservation Practice Standard	NRCS Ranking of Effects on GHG Emissions
Recreation Area Improvement	2
Recreation Land Improvement and Protection	-1
Residue and Tillage Management, No Till	3
Residue and Tillage Management, Reduced Till	3
Restoration and Management of Rare or Declining Habitats***	1
Riparian Forest Buffer	3
Riparian Herbaceous Cover	2
Road/Trail/Landing Closure and Treatment	1
Rock Wall Terrace	1
Roof Runoff Structure	0
Roofs and Covers/Waste Facility Cover**	4
Row Arrangement	0
Salinity and Sodic Soil Management	1
Saturated Buffer	0
Sediment Basin	0
Shallow Water Development and Management	0
Short Term Storage of Animal Waste and Byproducts	-1
Silvopasture	2
Sinkhole Treatment	0
Soil Carbon Amendment	4
Spoil Disposal	0
Spring Development	0
Sprinkler System****	1
Stormwater Runoff Control	0
Stream Crossing	0
Stream Habitat Improvement and Management	1
Streambank and Shoreline Protection	1
Stripcropping	0
Structure for Water Control	0
Structures for Wildlife	0
Subsurface Drain	0
Surface Drainage, Field Ditch	0
Surface Drainage, Main or Lateral	0
Surface Roughening	-2

Conservation Practice Standard	NRCS Ranking of Effects on GHG Emissions
Terrace	0
Trails and Walkways	0
Tree/Shrub Establishment	4
Tree/Shrub Pruning	0
Tree/Shrub Site Preparation	0
Underground Outlet	0
Upland Wildlife Habitat Management	0
Vegetated Treatment Area	1
Vegetative Barrier	1
Vertical Drain	0
Waste Facility Closure	1
Waste Recycling	1
Waste Separation Facility (no)	1
Waste Storage Facility*	-1
Waste Transfer	0
Waste Treatment	1
Waste Treatment Lagoon	-3
Water and Sediment Control Basin	0
Water Harvesting Catchment	0
Water Well	0
Watering Facility	0
Waterspreading	0
Well Decommissioning	0
Wetland Creation	3
Wetland Enhancement	1
Wetland Restoration	3
Wetland Wildlife Habitat Management	0
Wildlife Habitat Planting	3
Windbreak/Shelterbelt Establishment and Renovation	4
Woody Residue Treatment	1

<sup>\*</sup>Used for compost bedded-pack

<sup>\*\*</sup>Used for biogas capture

<sup>\*\*\*</sup>Used specifically to "restore floodplain hydrology"

<sup>\*\*\*\*</sup>Used for energy use reduction

<sup>\*\*\*\*\*</sup>Specifically used for alternated wetting and drying in rice production



Irrigation system at Sang Lee Farms.

NRCS places a high value on quantifying climate improvements. By its own admission, the numbers used in its CPPE matrix are not rigorous or strictly scientifically based, but rather a helpful way to inform NRCS policies. Interestingly, anaerobic digesters and feed management are tied for the highest ranking of all practices on the list, receiving the same ranking as practices such as tree/shrub establishment and soil carbon amendment. Additionally, NRCS has not shared the scientific basis for adding digesters to the climate smart list. A recent Freedom of Information Act (FOIA) request from Earthjustice to NRCS on the scientific basis of adding digesters showed that only four studies were used, two of which are roughly 20 years old and not peer reviewed.<sup>22</sup> One of the more recent studies used highlighted the ammonium nitrogen present in digestate, the waste product created by the process of anaerobic digestion,23 with the fourth focused on proper venting of digesters for worker safety. The continued presence of digesters on the climate smart list without proper scientific evidence showing climate benefits will continue to shut out more deserving farmers and practices. It would continue a trend of public dollars bolstering the false climate solution of methane digestion and biogas production also seen through California's Low Carbon Fuel Standard.24

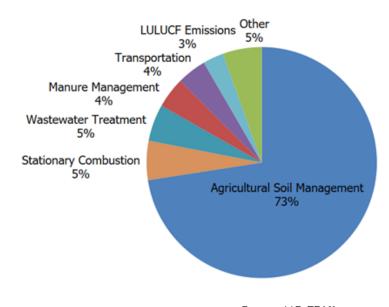
Some practices on the climate smart list do not rank highly on the CPPE matrix. While one can assume that a waste storage facility for compost bed and pack (the only waste storage facilities eligible for IRA funding) would have better climate benefits than traditional waste storage facilities, both are combined into one practice, making it hard to differentiate the two. Additionally, in analyzing contract data, the public does not know how many contracts within that practice go toward composting compared to the liquid manure storage typically funded.

# IT'S NOT JUST CARBON DIOXIDE AND METHANE

A notable practice that is not included in the list of climate-smart practices is organic management. This practice assists producers in improving soil health and reducing greenhouse gas emissions by reducing the use of chemical fertilizers and pesticides.25 The production and application of chemical fertilizers is a major known source of nitrous oxide (N2O), which is 265 more potent a climate heater than carbon dioxide and lasts 121 years in the atmosphere.26

If we are serious about tackling climate change through our agricultural systems, we need to invest more in ways of producing food and fiber that emit less, including organic agriculture. We also need to tackle all climate heating gases, not focus solely on carbon dioxide or methane. This is the mandate set out by the text of the Inflation Reduction Act and is something NRCS should fully pursue.

Figure 1. U.S. Nitrous Oxide Emissions, By Source



Source: U.S. EPA<sup>29</sup>

#### **POLICY SOLUTIONS**

- Remove expensive practices mostly used for CAFOs from the Climate Smart Agriculture and Forestry list
- Lower the EQIP payment limit from \$450,000 to \$150,000 so more farmers can access the program
- Train NRCS staff in outreach to small-scale producers and the practices such producers use
- Ensure NRCS staff are paid well and disincentivize high turnover in other ways. In 2022, of the 1,500 NRCS positions eligible for direct hire, only 800 hires were made, and only 500 were retained<sup>27</sup>
- Create a more transparent process for determining climate smart practices through a public comment process or some other means
- Incorporate IRA funding into EQIP baseline to ensure stable funding years beyond the IRA's cutoff of 2031
- Ensure CSP is well-funded and EQIP producers can graduate to CSP to promote whole-farm conservation
- Create waste storage facility for composting as an additional practice and remove practice 313 from the Climate Smart list

#### CONCLUSION

EQIP remains a popular program throughout the U.S. FY23 saw an increase of over 2,000 applications from FY22, and additional funding from the IRA was able to connect more farmers with funding than in previous years. This is good news! Additionally, most IRA funding is going to good practices that help farmers build soil health and steward their lands more sustainably.

Despite the hard work of the NRCS staff and the conservation community to publicize climate-focused farming practices, available funding still barely scratches the surface of demand. With reforms, existing funding for EQIP can go much farther in helping farmers implement the practices they need to build climate and economic resilience.

More farmers involved in conservation means more positive neighbor-to-neighbor chats about the benefits experienced, the income saved and the crops planted despite heavy rains. It means more birdsong, more monarch butterflies and more biodiversity in the face of a wildlife crisis. It can mean more demand for local, small-scale mills, butchers, equipment dealers and more vibrant main streets, or a step closer to true agroecology in the U.S. It could simply mean a farmer tries something new or experiences a little stress relief and the satisfaction of looking out the window and not seeing that bothersome gully anymore.



Grassed waterways reduce gully erosion.

#### Endnotes

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# **Appendix**

# Top five EQIP practices by total statewide dollar amount, Fiscal Year 2023

Source: United States Department of Agriculture. Natural Resources Conservation Service. Direct data request with NRCS staff.

#### Alabama

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Tree/Shrub Establishment	612	360	\$4,126,683	\$11,463
Animal Mortality Facility	316	126	\$2,953,848	\$23,443
Forest Site Preparation	490	350	\$2,927,215	\$8,363
Waste Facility Cover	367	126	\$2,457,715	\$19,506
Building Envelope Improvement	672	65	\$2,346,384	\$36,098

#### Alaska

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Tree/Shrub Establishment	612	65	\$4,955,746	\$76,242
Forest Stand Improvement	666	67	\$2,852,946	\$42,581
Fish Passage	396	2	\$1,397,121	\$698,561
Animal Trails and Walkways	575	1	\$747,226	\$747,226
Forest Slash Treatment	384	40	\$642,549	\$16,064

#### Arizona

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Brush Management	314	163	\$4,002,695	\$24,556
Irrigation System, Sprinkler	442	50	\$3,979,396	\$79,588
Trough or Tank	614	187	\$1,411,805	\$7,550
Fence	382	103	\$1,287,391	\$12,499
Pumping Plant for Water Control	533	91	\$1,160,683	\$12,755

#### **Arkansas**

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Shallow Water for Wildlife	646	316	\$7,150,550	\$22,628
Irrigation Pipeline	430	297	\$6,826,684	\$22,985
Irrigation Land Leveling	464	180	\$6,313,324	\$35,074
Cover Crop	340	628	\$5,281,018	\$8,409
Building Envelope Improvement	672	159	\$4,179,717	\$26,288

# California

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Combustion System Improvement	372	239	\$19,924,880	\$83,368
Irrigation System, Micro	441	242	\$11,082,447	\$45,795
Irrigation Pipeline	430	205	\$8,540,048	\$41,659
Forest Stand Improvement	666	503	\$6,655,434	\$13,231
Waste Storage Facility	313	32	\$6,182,767	\$193,211

# Colorado

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Irrigation Pipeline	430	205	\$5,824,786	\$28,414
Forest Stand Improvement	666	213	\$4,798,774	\$22,529
Irrigation System, Sprinkler	442	99	\$3,651,443	\$36,883
Conservation Crop Rotation	328	132	\$2,953,752	\$22,377
Cover Crop	340	241	\$2,257,722	\$9,368

# Connecticut

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Waste Storage Facility	313	6	\$843,148	\$140,525
Brush Management	314	121	\$776,266	\$6,415
Building Envelope Improvement	672	21	\$651,397	\$31,019
Forest Stand Improvement	666	48	\$500,751	\$10,432
High Tunnel System	325	28	\$467,194	\$16,686

#### Delaware

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Soil Carbon Amendment	808	55	\$1,840,256	\$33,459
Nutrient Management	590	66	\$952,260	\$14,428
Waste Facility Cover	367	30	\$867,530	\$28,918
Heavy Use Area Protection	561	95	\$729,596	\$7,680
Amendments for Treatment of Agricultural Waste	591	60	\$576,300	\$9,605

# Florida

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Fence	382	469	\$3,748,281	\$7,992
Obstruction Removal	500	378	\$2,911,609	\$7,703
Forest Site Preparation	490	169	\$2,492,832	\$14,750
Clearing & Snagging	326	65	\$2,482,647	\$38,195
Tree/Shrub Establishment	612	173	\$2,230,371	\$12,892

# Georgia

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	441	\$6,986,887	\$15,843
Waste Facility Cover	367	98	\$6,524,698	\$66,609
Forest Site Preparation	490	478	\$5,775,639	\$12,083
Tree/Shrub Establishment	612	384	\$5,615,677	\$14,624
Waste Storage Facility	313	86	\$3,909,156	\$45,455

#### Hawai'i

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Fence	382	108	\$1,757,331	\$16,272
Brush Management	314	86	\$1,351,014	\$15,709
Tree/Shrub Establishment	612	46	\$1,178,814	\$25,626
Mulching	484	125	\$1,136,694	\$9,094
Trough or Tank	614	112	\$817,669	\$7,301

# Idaho

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Irrigation Pipeline	430	196	\$10,645,995	\$54,316
Irrigation System, Sprinkler	442	116	\$3,442,779	\$29,679
Structure for Water Control	587	234	\$2,267,645	\$9,691
Cover Crop	340	293	\$2,243,826	\$7,658
Fence	382	200	\$1,594,106	\$7,971

# Illinois

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Organic Management	823	139	\$5,966,841	\$42,927
Cover Crop	340	547	\$3,728,281	\$6,816
Waste Facility Cover	367	50	\$2,729,536	\$54,591
Heavy Use Area Protection	561	264	\$2,599,494	\$9,847
Underground Outlet	620	307	\$1,790,092	\$5,831

# Indiana

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	933	\$6,083,835	\$6,521
Brush Management	314	756	\$4,283,309	\$5,666
Waste Facility Cover	367	69	\$3,698,995	\$53,609
Nutrient Management	590	224	\$3,412,220	\$15,233
Waste Storage Facility	313	49	\$2,915,620	\$59,502

# Iowa

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	1,124	\$11,465,121	\$10,200
Waste Storage Facility	313	44	\$4,155,099	\$94,434
Waste Facility Cover	367	32	\$4,136,670	\$129,271
Underground Outlet	620	181	\$2,039,875	\$11,270
Pasture & Hayland Planting	512	199	\$1,838,376	\$9,238

#### Kansas

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Terrace	600	515	\$5,603,008	\$10,880
Cover Crop	340	437	\$5,221,183	\$11,948
Prescribed Grazing	528	795	\$4,061,522	\$5,109
Nutrient Management	590	170	\$3,052,538	\$17,956
Brush Management	314	636	\$2,898,525	\$4,557

# Kentucky

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	467	\$5,266,187	\$11,277
Fence	382	841	\$3,933,357	\$4,677
High Tunnel System	325	147	\$2,622,544	\$17,840
Forest Stand Improvement	666	313	\$1,958,107	\$6,256
Pasture & Hayland Planting	512	324	\$1,620,171	\$5,001

# Louisiana

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	297	\$4,516,634	\$15,208
Irrigation Land Leveling	464	113	\$1,968,669	\$17,422
Tree/Shrub Establishment	612	115	\$1,309,235	\$11,385
Forest Site Preparation	490	110	\$1,293,350	\$11,758
Irrigation Pipeline	430	58	\$1,207,560	\$20,820

# Maine

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Mulching	484	98	\$1,612,433	\$16,453
Waste Facility Cover	367	21	\$1,415,862	\$67,422
Forest Stand Improvement	666	104	\$1,105,216	\$10,627
Heavy Use Area Protection	561	66	\$843,852	\$12,786
Waste Storage Facility	313	17	\$841,644	\$49,508

# Maryland

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Waste Facility Cover	367	35	\$3,453,841	\$98,681
Heavy Use Area Protection	561	167	\$2,327,960	\$13,940
Waste Storage Facility	313	32	\$1,749,262	\$54,664
Fence	382	155	\$1,032,069	\$6,659
High Tunnel System	325	72	\$980,494	\$13,618

# Massachusetts

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
High Tunnel System	325	54	\$954,416	\$17,674
Brush Management	314	139	\$927,224	\$6,671
Forest Stand Improvement	666	64	\$606,092	\$9,470
Floodwater Diversion	400	20	\$580,606	\$29,030
On-Farm Equipment Efficiency Improvements	374	40	\$490,709	\$12,268

# Michigan

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	329	\$5,144,875	\$15,638
Waste Facility Cover	367	34	\$2,803,506	\$82,456
Waste Storage Facility	313	20	\$1,802,224	\$90,111
Nutrient Management	590	165	\$1,768,569	\$10,719
High Tunnel System	325	85	\$1,204,098	\$14,166

#### Minnesota

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Waste Facility Cover	367	40	\$5,362,011	\$134,050
Cover Crop	340	745	\$5,174,600	\$6,946
Waste Storage Facility	313	38	\$3,351,002	\$88,184
Nutrient Management	590	329	\$2,699,137	\$8,204
Pest Management	595	217	\$2,578,354	\$11,882

# Mississippi

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	1,055	\$16,730,119	\$15,858
Irrigation Pipeline	430	188	\$6,211,476	\$33,040
Fence	382	859	\$4,225,757	\$4,919
Structure for Water Control	587	330	\$3,622,978	\$10,979
Dike	356	149	\$3,290,994	\$22,087

# Missouri

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	1,183	\$8,502,741	\$7,187
Pasture & Hayland Planting	512	992	\$8,068,902	\$8,134
Waste Facility Cover	367	31	\$2,595,047	\$83,711
Terrace	600	90	\$2,412,370	\$26,804
Fence	382	426	\$2,396,539	\$5,626

# Montana

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Fence	382	232	\$5,310,395	\$22,890
Forest Slash Treatment	384	527	\$4,068,000	\$7,719
Forest Stand Improvement	666	426	\$3,671,287	\$8,618
Herbaceous Weed Control	315	309	\$3,559,168	\$11,518
Brush Management	314	254	\$3,087,623	\$12,156

# Nebraska

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	590	\$3,032,425	\$5,140
Prescribed Grazing	528	353	\$2,926,640	\$8,291
Brush Management	314	535	\$2,586,963	\$4,835
Irrigation System, Sprinkler	442	64	\$2,407,676	\$37,620
Pumping Plant for Water Control	533	311	\$2,298,421	\$7,390

# Nevada

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Irrigation Pipeline	430	81	\$3,050,851	\$37,665
Irrigation System, Sprinkler	442	37	\$1,601,263	\$43,277
Structure for Water Control	587	118	\$956,102	\$8,103
Irrigation Ditch & Canal	428	19	\$842,862	\$44,361
Pipeline	516	31	\$353,858	\$11,415

# **New Hampshire**

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Waste Storage Facility	313	10	\$772,555	\$77,256
Waste Facility Cover	367	6	\$590,611	\$98,435
Forest Stand Improvement	666	57	\$410,055	\$7,194
Wildlife Habitat- Restore and Management	643	11	\$409,405	\$37,219
Pest Management	595	53	\$336,075	\$6,341

# New Jersey

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Floodwater Diversion	400	19	\$1,042,775	\$54,883
Cover Crop	340	163	\$879,827	\$5,398
Waste Storage Facility	313	10	\$759,783	\$75,978
High Tunnel System	325	38	\$747,040	\$19,659
Irrigation System, Sprinkler	442	14	\$711,440	\$50,817

#### **New Mexico**

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Irrigation System, Sprinkler	442	99	\$5,758,021	\$58,162
Brush Management	314	257	\$4,767,301	\$18,550
Forest Stand Improvement	666	199	\$3,157,030	\$15,864
Irrigation Pipeline	430	118	\$2,543,644	\$21,556
Fence	382	184	\$2,331,063	\$12,669

# **New York**

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Waste Storage Facility	313	32	\$4,855,324	\$151,729
High Tunnel System	325	234	\$4,527,751	\$19,349
Waste Facility Cover	367	22	\$1,720,254	\$78,193
Heavy Use Area Protection	561	51	\$1,257,637	\$24,660
Fence	382	117	\$1,009,353	\$8,627

# North Carolina

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Animal Mortality Facility	316	76	\$8,360,713	\$110,009
Waste Facility Cover	367	93	\$6,892,200	\$74,110
Waste Storage Facility	313	88	\$4,114,241	\$46,753
Cover Crop	340	210	\$3,471,136	\$16,529
Forest Stand Improvement	666	132	\$1,547,990	\$11,727

# North Dakota

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Nutrient Management	590	281	\$6,977,885	\$24,832
Residue Management, No Till & Strip Till	329	168	\$3,389,613	\$20,176
Wildlife Wetland Habitat Management	644	390	\$2,308,622	\$5,920
Cover Crop	340	164	\$1,573,723	\$9,596
Fence	382	205	\$1,306,974	\$6,375

# Ohio

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Waste Facility Cover	367	121	\$6,721,689	\$55,551
Waste Storage Facility	313	81	\$4,613,340	\$56,955
Cover Crop	340	546	\$4,048,711	\$7,415
Brush Management	314	1,052	\$2,858,188	\$2,717
Heavy Use Area Protection	561	475	\$2,086,402	\$4,392

#### Oklahoma

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Pasture & Hayland Planting	512	563	\$8,224,351	\$14,608
Cover Crop	340	464	\$4,027,193	\$8,679
Brush Management	314	922	\$3,657,499	\$3,967
Irrigation System, Sprinkler	442	34	\$1,952,569	\$57,429
Prescribed Burning	338	204	\$1,320,500	\$6,473

# Oregon

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Forest Stand Improvement	666	496	\$8,008,759	\$16,147
Irrigation System, Sprinkler	442	87	\$4,438,026	\$51,012
Forest Slash Treatment	384	483	\$2,979,930	\$6,170
Brush Management	314	546	\$2,437,129	\$4,464
Irrigation Pipeline	430	149	\$1,920,526	\$12,889

# Pennsylvania

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Waste Storage Facility	313	107	\$5,425,228	\$50,703
Waste Facility Cover	367	96	\$4,983,293	\$51,909
Cover Crop	340	348	\$3,006,336	\$8,639
Heavy Use Area Protection	561	241	\$2,624,927	\$10,892
Fence	382	436	\$1,998,299	\$4,583

# Rhode Island

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Wildlife Habitat- Restore and Management	643	48	\$974,432	\$20,301
High Tunnel System	325	27	\$489,360	\$18,124
Forest Stand Improvement	666	67	\$233,453	\$3,484
Forest Harvest Trails & Landings	655	43	\$172,209	\$4,005
Brush Management	314	121	\$156,964	\$1,297

# **South Carolina**

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
On-Farm Equipment Efficiency Improvements	374	87	\$6,650,992	\$76,448
Closure of Waste Impoundment	360	17	\$2,144,070	\$126,122
Forest Stand Improvement	666	107	\$2,057,726	\$19,231
Cover Crop	340	240	\$1,925,050	\$8,021
Waste Facility Cover	367	25	\$1,900,678	\$76,027

# South Dakota

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Pipeline	516	559	\$5,424,877	\$9,705
Fence	382	451	\$3,248,398	\$7,203
Well	642	65	\$2,793,669	\$42,980
Cover Crop	340	355	\$2,782,330	\$7,838
Stream Crossing	578	152	\$2,021,277	\$13,298

#### Tennessee

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	716	\$7,445,058	\$10,398
Streambank & Shoreline Protection	580	142	\$5,900,828	\$41,555
Fence	382	1,075	\$3,771,329	\$3,508
Forest Stand Improvement	666	138	\$2,617,473	\$18,967
High Tunnel System	325	181	\$2,290,759	\$12,656

#### Texas

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Brush Management	314	2,168	\$31,136,803	\$14,362
Irrigation System, Sprinkler	442	188	\$14,378,139	\$76,479
Irrigation System, Micro	441	69	\$10,600,702	\$153,633
Fence	382	1,132	\$8,766,849	\$7,745
Wildlife Upland Habitat Management	645	508	\$7,752,323	\$15,260

#### Utah

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Irrigation Pipeline	430	327	\$9,770,668	\$29,880
Irrigation System, Sprinkler	442	235	\$7,246,746	\$30,837
Brush Management	314	169	\$2,536,021	\$15,006
Range Planting	550	83	\$1,481,994	\$17,855
High Tunnel System	325	98	\$1,339,834	\$13,672

#### Vermont

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Feed Management	592	82	\$3,901,702	\$47,582
Waste Storage Facility	313	14	\$2,501,438	\$178,674
Manure Transfer	634	34	\$866,977	\$25,499
Cover Crop	340	190	\$857,599	\$4,514
Anaerobic Digester, Controlled Temperature	366	2	\$840,722	\$420,361

# Virginia

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Fence	382	601	\$3,943,329	\$6,561
High Tunnel System	325	108	\$2,001,369	\$18,531
Pasture & Hayland Planting	512	172	\$1,875,379	\$10,903
Waste Facility Cover	367	25	\$1,839,700	\$73,588
Pipeline	516	289	\$1,685,934	\$5,834

# Washington

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Residue Management, Mulch Till	345	66	\$2,614,165	\$39,609
Tree/Shrub Establishment	612	85	\$2,610,477	\$30,711
Irrigation System, Sprinkler	442	55	\$2,504,396	\$45,534
Forest Stand Improvement	666	147	\$1,799,279	\$12,240
Nutrient Management	590	68	\$1,395,755	\$20,526

# West Virginia

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Waste Facility Cover	367	34	\$2,210,725	\$65,021
Fence	382	439	\$1,439,493	\$3,279
Heavy Use Area Protection	561	430	\$1,397,040	\$3,249
Trough or Tank	614	344	\$678,961	\$1,974
Streambank & Shoreline Protection	580	32	\$647,713	\$20,241

# Wisconsin

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Cover Crop	340	638	\$6,955,894	\$10,903
Pond Sealing or Lining Concrete	522	19	\$2,888,889	\$152,047
Waste Storage Facility	313	24	\$2,645,837	\$110,243
Heavy Use Area Protection	561	84	\$2,367,082	\$28,180
Forest Slash Treatment	384	12	\$1,892,099	\$157,675

# Wyoming

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Irrigation System, Sprinkler	442	88	\$5,645,269	\$64,151
Herbaceous Weed Control	315	110	\$3,297,839	\$29,980
Fence	382	274	\$3,267,526	\$11,925
Irrigation Pipeline	430	111	\$2,034,093	\$18,325
Pipeline	516	127	\$1,690,730	\$13,313

# Pacific Territories

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Waste Facility Cover	367	15	\$558,147	\$37,210
Mulching	484	49	\$277,158	\$5,656
Waste Storage Facility	313	35	\$217,869	\$6,225
Trough or Tank	614	14	\$106,626	\$7,616
High Tunnel System	325	6	\$92,065	\$15,344

#### **Puerto Rico**

Practice	NRCS Practice Standard #	# of Contracts Awarded	Total Spent on Practice	Average Contract Size
Obstruction Removal	500	1,171	\$7,579,056	\$6,472
Clearing & Snagging	326	200	\$4,183,348	\$20,917
Combustion System Improvement	372	27	\$1,590,270	\$58,899
Waste Facility Cover	367	10	\$695,025	\$69,503
Heavy Use Area Protection	561	70	\$491,664	\$7,024