

**CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE**  
**2018 Alternative Manure Management Program**  
**Projects Selected for Award of Funds**

#*	Organization Name	Project Description (as submitted by applicant)	Primary Management Practice**	CDFA Funding Award***	Total Project Cost	County	GHG Emission Reduction Over 5 years (MTCO <sub>2</sub> e)****
1	AJ Borba Holsteins	Install a Houle double screen mechanical inclined separator with roller press along with a concrete sand trap and processing pit.	Solid Separation	\$570,113	\$570,113	Merced	10,561
2	Andrew Zylstra Dairy, Inc.	Mechanical Separator Proposal	Solid Separation	\$270,497	\$280,497	Stanislaus	6,156
3	Antonio Brasil Dairy	Construction of a compost bedded pack barn over existing flushing corrals with conversion of flushing to dry scraping.	Compost Bedded Pack Barn**	\$641,196	\$641,196	Merced	3,917
4	Art Silva Dairy	A Two-Stage liquid/solid manure separator with composting in windrows on a concrete slab will be installed to provide several benefits: reduction of greenhouse gases and odor, removal of excess nutrients from irrigation/application water, production of dry manure solids that can be readily composted, dried, spread or sold as fertilizer or reused as bedding for cows, and provide a system built with durable, high quality materials that will perform for many years with minimal maintenance.	Solid Separation	\$405,521	\$505,521	Stanislaus	2,797
5	Arthur Oliveira Dairy	Oliveira dairy is applying for the alternative manure management program with a goal of reducing methane emissions from manure on the dairy. We would like to acquire a US Farm Systems dual screen separation system with processing pit and conveyor belt, removing a significant amount of methane forming volatile solids from the ponds. This project would also remove significant amount of the manure nutrients from the lagoon and they could be handled in solid form allowing more nutrients to be exported from the dairy. The significant manure removed would be stored on a concrete storage pad for open solar drying.	Solid Separation	\$544,661	\$544,661	Merced	4,104

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6	Bordessa Family Dairies	The Ocean Breeze Dairy Project will involve a flush to scrape conversion of an existing freestall barn and weeping wall separator. The conversion from wet to dry will allow the scraped manure to be collected and composted on site for use as a soil fertility input. A new Compost Bedded Pack (CBP) barn will be constructed to house heifers and dry cows. This project utilizes a completed Carbon Farm Plan as the basis for implementation. The goal of the project is to increase manure management efficiencies while mitigating atmospheric greenhouse gas emissions and increase soil health through compost application.	Flush-to-Scrape**	\$675,359	\$753,874	Sonoma	2,578
7	Bosma Milk Company	We will reduce our green house gas emissions by converting our flush lane dairy to a vacuum scrape system with a Loewen Honey Vac. The vacuumed product will be processed by a 3 stage roller drum separator to reduce the moisture content prior to solar drying. After solar drying manure will then be used as bedding or field nutrients. This process will prevent the manure from entering the anaerobic conditions present in the manure lagoon. Total 5 year reductions of green house gas emissions of 56,157 mtCO <sub>2</sub> e are estimated, or a total of 60% annually.	Flush-to-Scrape	\$704,618	\$704,618	Tulare	56,137
8	Brodt Dairy	Brodt Dairy's Bovine Carbon Conquerors project is designed as a comprehensive upgrade to the manure management system on the dairy. It is categorized primarily as solid manure separation and composting in passive windrow management for the existing scrape system. The project will install a new 200 foot x 134 foot pole barn for use as a bedded pack barn and a 90 foot x 80 foot pole barn under which will be a solid manure storage area. Two passive composting areas under both barns 10-foot overhangs will help facilitate manure composting production. The project also includes decommissioning an older lagoon and a small underground concrete manure storage tank. It is estimated that the total project GHG emission reductions over 5 years will be 3,582 mtCO <sub>2</sub> e.	Solid Separation**	\$750,000	\$837,920	Humboldt	6,200
9	BWC Weststeyn Dairy LP	BWC Weststeyn Dairy's proposed project is to convert from flush to scrape in conjunction with constructing a compost pack barn. With the completion of this project, we will be able to move dry cows and replacement heifers off of flushed alleys into a barn with scraped alleys. This will allow us to eliminate all solids produced by these animals from entering our lagoon. Solids produced in this barn will either be tilled into the pack or composted in static windrows.	Flush-to-Scrape**	\$749,925	\$848,400	San Joaquin	4,568
10	Deniz Dairy	Deniz Dairy proposes to significantly reduce methane production by the installation of a separator and in vessel composter. Both large and small fibers in the solid part of all waste materials will be immediately removed from the lagoon for separation and composting, with the construction of a small pit equipped with an agitator and pump. This will allow them to reduce solids in their storage ponds by at least 75% and create a recycled, organic, and sterile bedding material for their cows. This will also reduce the carbon footprint of the dairy by eliminating the need for 200 tons of bedding material each year that adds to the solids currently sitting in the lagoons.	Solid Separation	\$615,549	\$647,549	Sonoma	739

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11	Den-K Holsteins, Inc.	Den-K Holsteins proposes to construct a weeping wall solid manure separator on our dairy that currently uses no separation of the flushed manure before the storage pond.	Solid Separation	\$98,000	\$100,500	Merced	5,514
12	Dewit Dairy Inc.	The Dewit Dairy proposes to vacuum scrape manure from the existing flush lanes for part of the year and continue to flush for the remainder of the year. The vacuumed manure will be dried on a new concrete slab. This will prevent a significant amount of the manure that currently goes to the lagoon from ever reaching the lagoon and forming methane.	Flush-to-Scrape	\$673,115	\$716,715	San Joaquin	11,506
13	Diamond J Dairy, LLC	It has been our hope since developing our CNMP with USDA-NRCS staff to reduce GHG emissions generated from our manure handling process. We are thankful for the opportunity to ask for \$518,237 to convert our open lagoon manure storage to a solid separator system with open solar drying. We have a team in place for this shovel ready project that can execute the completion within 6 months of approval. Using Quantification Methodology we are reporting an estimated reduction in GHG emissions by 6644 mtCO <sub>2</sub> e/5yr in our low income & disadvantage community, as determined by CalEPA to be a target of AB1550 in Merced County. As we have developed our application we see a beautiful story of human impact and environmental protection. We are first generation farmers, helping train up first generation Americans and reducing environmental impact of dairy farms in Ca through reducing GHG emissions, reducing leaching of nutrients from manure storage and bringing modern farming to under served families.	Solid Separation	\$518,237	\$553,487	Merced	6,644
14	Dias Family Dairy	Install a US Farms System mechanical separator with concrete pad for intensive composting activities and purchase a 165 HP Case tractor with compost turner for composting of separated solids.	Solid Separation	\$445,997	\$445,997	Merced	2,380
15	Double B Dairy	The Double B Dairy is proposing a solid manure separator on an existing flush dairy to remove some of the manure solids from the flush water before the lagoon.	Solid Separation	\$635,244	\$674,957	Merced	6,186

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16	F&S Brasil Dairy	The F&S Brasil Dairy is proposing to install a Mechanical Separator through the AMMP Grant Program as a means to reducing methane emissions on the dairy facility. The dairy is proposing to acquire a US Farm Systems dual screen separator with a goal of removing 55% of the solids from the waste stream. A concrete receiving pit for the mechanical separator is also proposed as part of the project.	Solid Separation	\$213,969	\$218,969	San Joaquin	8,557
17	Frank Coelho & Sons	This project includes the installation of a sand trap, sand lane, slope screen separator, screw press separator, and infrastructure to connect to the existing flush and settling basin manure management system. The new system will allow for higher efficiency in separating organic from inorganic material in flush water, decrease the greenhouse gas emissions by decreasing the anaerobic digestion in the lagoons, decrease the running time of equipment operating on internal combustion engines, increase aerobic digestion of organic matter to improve bedding quality for livestock.	Solid Separation	\$584,912	\$707,470	Merced	12,149
18	GM Silva Dairies #1	Proposal to install a two-stage separator, receiving pit and compost drying slab on existing dairy facility. Proposal outcome is to reduce GHG emissions and implement better manure management practices and ease of export through composting to reduce anaerobic conditions.	Solid Separation	\$400,000	\$415,001	Merced	3,926
19	GM Silva Dairies #2	Proposal to install a two-stage separator, receiving pit and compost drying slab on existing dairy facility. Proposal outcome is to reduce GHG emissions and implement better manure management practices and ease of export through composting to reduce anaerobic conditions.	Solid Separation	\$666,959	\$691,959	Merced	3,987
20	Godinho Dairy, Inc.	Our goal is to reduce the amount of greenhouse gasses (GHG), odor and dust produced by our current program. The type of project we are proposing is a pasture-based management program. The construction of a compost bedded pack barn will lead to a decrease in the amount of manure flushed into our anaerobic lagoon and therefore a decrease in GHG emissions. This manure management project will reduce our carbon footprint and increase cow comfort. Daily in-place mixing using a rototiller will increase temperatures and decrease moisture, therefore decreasing the number of pathogenic bacteria. Thus, leading to better cow health and less GHG emissions.	Compost Bedded Pack Barn	\$736,333	\$736,333	Merced	2,733

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21	Henry A Garcia Dairy	We will be converting flush lanes to a vacuum scrape system utilizing a Loewen Honey Vac. Collected manure will be deposited in a newly constructed concrete bunker, processed through a de-watering screw press and then receiving a second treatment through the existing sloped screen separator. Separated solids will then be spread on a concrete solar drying pad for final drying and stock piled and covered to prevent re-watering. By reducing the organic matter entering the lagoon system we will reduce our greenhouse gas emissions by 79% annually. The total estimated mtCO <sub>2</sub> e reduction over a 5 year period is 25,720 and reductions should continue to accumulate after.	Flush-to-Scrape	\$503,501	\$503,501	Tulare	25,720
22	J Troost Dairy, LP	We will be converting our flush lane system to vacuum scrape for manure handling. Collected manure will be deposited in a concrete bunker for processing through screw presses, and undergo two additional screenings through slope screen separators. In addition, we will have the option to apply collected manure as slurry to our compost rows and compost it directly. Combining the multistage manure processing and vacuum collection results in an annual reduction of produced GHG's by 83%. The total estimated reductions over a 5 year period is 57,592 mtCO <sub>2</sub> e.	Flush-to-Scrape	\$723,399	\$723,399	Madera	55,590
23	JB Dairy	Installation of an Albers Primary Separator system complete with roller press, along with a concrete pad for manure composting with passive windrowing and concrete pad and side walls under an existing shade structure for manure drying during winter months. The installation of the separator proposes to remove a significant amount of the solids currently conveyed in the waste stream to the storage ponds. The manure removed through the separator will allow for shaded solar drying during rainfall months and passive windrow composting on a composting pad. Implementing separation of solids from the waste stream and composting will directly reduce Carbon Dioxide (CO <sub>2</sub> ), Methane (CH <sub>4</sub> ) and Nitrous Oxide (N <sub>2</sub> O), which are all Green house gases that have been found to be harmful to the environment. The additional practices of shaded drying during wet months, along with open windrow composting will provide even further reduction of green house gases.	Solid Separation	\$748,678	\$748,678	Merced	5,787
24	Joe Meirinho & Son Dairy, LP	We will be installing a sloped screen separator and de-watering screw press to process flushed manure that is currently discharged into an anaerobic separating pond. Green house gas reductions will be achieved by reducing the amount of organic material entering anaerobic conditions. Total projected GHG reductions of 54% will be realized annually. A total reduction of 16,727 mtCO <sub>2</sub> e are estimated to occur over the 5 year project lifespan. Separated manure solids will then be automatically stacked to solar dry and be protected from re-wetting.	Solid Separation	\$244,384	\$244,384	Stanislaus	4,898
25	John Machado Dairy	Install new separator with cement slab to open solar dry manure and reduce green house gas emissions.	Solid Separation	\$462,937	\$462,937	Merced	4,390

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26	Jose V. Silveira Dairy	Improve separation efficiency by upgrading our current separator system to a more modern, more efficient US Farm Systems Sloped Screen Separator with incline screw press and swing stacking belt conveyor. Install a processing pit to allow for collection of our flushed waste stream and conveyance of the wastewater through the new separator for maximum separation removal, this processing pit will also be used for flushing activities which will allow for reduced flushing times and help reduce energy usage and maintain clean and dry flush lanes. Also, expand our current open solar drying manure storage pad area to allow for the additional separated solids that will be removed with the upgraded system. All practices are anticipated to reduce a significant amount of green house gases.	Solid Separation	\$550,618	\$550,618	Merced	5,482
27	Manuel Oliveira	Installation of a US Farm Systems Sloped screen separator with incline screw press and swing stacking belt conveyor with concrete pad for open solar drying.	Solid Separation	\$646,305	\$646,305	Merced	5,793
28	McClelland Dairy	The McClelland Dairy project will involve a flush-to-scrape conversion of the dairy's existing manure management system. A manure solid separator will be added in conjunction with composting in intensive windrows. An existing flush freestall barn will be decommissioned and converted to a covered composting site. A new freestall barn will be constructed with scrape and solid separator system. This project uses a completed Carbon Farm Plan as the basis for implementation. The goal of the project is to increase manure management efficiencies while reducing atmospheric greenhouse gas emissions and increasing soil health through compost application. The project shows quantifiable GHG emission reductions of 18,089 mt/CO <sub>2</sub> e over 5 years. Additionally, the conversion provides other benefits including the reduction of odors, volatile organic compounds (VOCs), ammonia, and hydrogen sulfide (H <sub>2</sub> S) emissions.	Flush-to-Scrape**	\$749,961	\$1,443,766	Sonoma	10,273
29	Ray-Lin Dairy	We will be converting the housing of the milking portion of the herd to a compost bedded pack barn (loafing barn). The support stock will be moved into the free stall barns and a sloped screen separator will be utilized to process flush waste water from the support herd. The combination of these 2 practices was chosen to maximize the green house gas reduction by diverting the highest manure generating animals to a system that excludes anaerobic conditions. In combining these 2 practices an annual reduction of 77% of produced GHG emissions can be achieved. The total mtCO <sub>2</sub> e reduced over the 5 year project will be 18,784.	Compost Bedded Pack Barn**	\$750,000	\$769,575	Stanislaus	18,053
30	SBS AG	Change of Waste Water Handling and Solid Collection Management for the reduction of GHG produced. Converting from Settling Ponds to Processing pit and Separating System to capture volatile solids before the lagoons.	Solid Separation	\$385,404	\$400,904	Tulare	7,887

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31	Silva Dairy Farms	Silva Dairy Farms will be installing a mechanical separator with screw press along with a processing pit and concrete pad for intensive windrow manure composting and also purchasing a utility tractor with compost-tiller for intensive composting. The installation of the mechanical separator proposes to remove 40% of the solids currently conveyed to our storage ponds and allow us to windrow the removed manure for composting purposes on a concrete pad. The installation of the processing pit allows for collection of flushed solids in the pit to be conveyed through the separation system as the rate required for maximum separation. The installation of these practices is predicted to significantly reduce greenhouse gas emissions on the facility	Solid Separation	\$694,507	\$694,507	Merced	5,830
32	Silveira Dairy	Silveira Dairy will be installing a curved and sloped screen mechanical separator with reception pit, along with a concrete pad for passive manure composting with anticipation of significantly improving their existing waste handling system to reduce greenhouse gases.	Solid Separation	\$447,420	\$453,920	Madera	7,788
33	T & C Louters Dairy	T & C Louters Dairy is applying for the 2018 Alternative Manure Management Program with the goal of reducing methane emissions and more effectively managing our manure. To minimize our environmental impact, the dairy is proposing to acquire a US Farm System single slope mechanical separation system with screw press, sand trap, concrete slab for drying manure-laded sand and processing pit. This system will remove a significant amount of the methane forming manure solids from the flush water before entering the anaerobic environment of the settling basins and storage lagoon.	Solid Separation	\$518,776	\$523,776	Merced	3,586
34	Thommen Dairy	The purpose of this project is to minimize the amount of solids entering ponds by adding a screen separator in conjunction with a processing pit. Currently a settling basin is used to separate solids prior to flush water entering our storage ponds. Majority of milking cows at Thommen Dairy are housed in free stall barns where feed lanes are flushed 3 times per day. After the solids are removed from separator they will be composted in an intensive windrow turned with a 12' PTO compost turner.	Solid Separation	\$510,253	\$536,253	Fresno	10,545
35	Tony & Fatima Garcia Dairy Inc.	The Tony Garcia Dairy proposes to vacuum the lanes in the cow housing with a vacuum wagon and handle the collected manure in a dry form for 110 days per year and continue with flush manure handling the remaining days of the year.	Flush-to-Scrape	\$346,634	\$351,634	Stanislaus	5,414

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36	Vierra Dairy Farms	This project entails a Bio-Lynk Solid Separator System and the infrastructure to operate. Within this system there are: 4 rotary(barrel)separator screens, 2 primary stage and 2 secondary stage, numerous pumps to move material, an agitation pit, 3 flush tanks, a sand lane and a manure stacking area. We are asking the AMMP for grant funding to aid in construction of the system. Having the Bio-Lynk system is essential to our continued operation. Primarily it will decrease the Volatile Solids that are accumulating in our lagoon and settling ponds creating Methane Producing Compounds. Additionally we will see a dramatic increase in the quality of bedding material which is of huge importance to animal health welfare. We anticipate an overall increase in the electric consumption of the dairy BUT we also foresee a substantial decrease in the diesel fuel usage due to reduction in heavy equipment that is currently required.	Solid Separation	\$750,000	\$1,402,750	Merced	19,772
37	Vierra Dairy Farms #3	This project consists of a US Farm System Screen Separator, concrete stacking area and a material handling wagon. We are using an elevated screen so that we do not need a conveyor. Separated material will drop directly onto the concrete stacking area and from there be transported by wagon to a windrowing area. VDF #3 currently has no separation ability. All the VS/MPC's are transferred directly to the lagoon through the flush. Our goal is to reduce this as much as possible, as economically as possible, through the separator project. Secondly providing an excellent bedding source. We are anticipating a small increase in electricity usage due to the separator, we are using an existing pump to move water over the screen. We think we will be net neutral in diesel usage. There will be an increase due to windrowing and moving of material around the site, but a decrease due in slurry tanker work and excavator use.	Solid Separation	\$287,878	\$294,628	Merced	1,870
38	Wilgenburg West LLC	Wilgenburg West, LLC proposes to improve the manure management of their facility utilizing a vacuum tanker and applying slurry from cow lanes to compost rows. The dairy would be converted to a heifer lot in the process and thus allow for the removal of 4 lagoons and will greatly improve the grading of the facility and corrals to slope towards 1 lagoon allowing for better water management. Improving grade of facility will allow for better drainage and improve the management of the 70% of manure deposited on soil by allowing this soil to remain dry and out of an anaerobic environment. This project would be an excellent example of what a comprehensive feedlot manure management plan should strive for with very low GHG emissions per animal as an alternative to incorporating a digester system which is not feasible for smaller operations.	Flush-to-Scrape	\$342,207	\$918,216	Kings	4,326
29	Willem Postma Dairy #1	We will be installing a multi stage manure separation system consisting of a new sloped screen separator and a LWR First Wave manure processing system. The combined systems along with the injected polymers will remove 90% of the total soluble solids and fibrous material from the wastewater prior to its discharge to the lagoon system. All removed material will be processed by presses to de-water and create nutrient cake. This process will reduce GHG emissions by 83% annually. Total reductions over the 5 year project will amount to 28,668 mtCO <sub>2</sub> e.	Solid Separation	\$732,090	\$732,090	Stanislaus	20,113
40	Zuppan Dairy	This project aims to improve manure management through installation of a manure solid separator to reduce the use of settling ponds and increase wastewater storage and ease of use. The project will also install a small manure pit, with pump and agitator, to more efficiently get manure from distant barns to the separator. Finally, additional concrete pads will be installed to allow for solids storage with open solar drying.	Solid Separation	\$343,273	\$368,273	Glenn	4,059
			<b>Total</b>	<b>\$21,638,430</b>	<b>\$24,365,851</b>		<b>388,515</b>

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