JULY 2018

THE CDFA DAIRY DIGESTER RESEARCH AND DEVELOP PROGRAM AND ALTERNATIVE MANURE MANAGEMENT REDUCTION PROGRAM:

A REPORT TO THE JOINT LEGISLATIVE BUDGET COMMITTEE

A CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE REPORT TO COMPLY WITH ITEM 8570-101-3228 (A) OF THE 2017 BUDGET ACT

Contents

Executive Summary

According to the Budget Act of 2017, Item 8570-101-3228, it was the intent of the Legislature to evaluate the efficiency and cost-effectiveness of strategies to reduce emissions of short-lived climate pollutants, such as methane gas from dairy operations. The same budget act also required CDFA to submit to the Joint Legislative Budget Committee (JLBC) a report on the Dairy Digester Research and Development Program and the Alternative Manure Management Program no later than July 1, 2018 and include "(i) A summary of methane reduction funding awards made with funding appropriated in 2016-17 including the: (1) amount of the award, (2) name and location of the award recipient and herd size of the farm (3) name and location of any vendor(s) selected to put into operation an award funded project, (4) description of the methane reduction approach used in the award, and (5) projected reduction in the amount of methane gas emissions associated with an award" and "(ii) A discussion of the mitigation efforts undertaken by the department to comply with the provisions of Chapter 368 of 2016 (SB 859, Committee on Budget and Fiscal Review)."

CDFA received a $50 million appropriation from the Greenhouse Gas Reduction Fund (GGRF), authorized by the Budget Act of 2016, to fund dairy digesters as well as non-digester management practices for methane reduction on California's dairy and livestock operations. Dairy digesters are incentivized through the department's Dairy Digester Research and Development Program (DDRDP) while non-digester management practices are incentivized through the Alternative Manure Management Program (AMMP). Of the 2016 allocation, $35.3 million was awarded to 18 dairy digester projects in 2017 through the DDRDP and $9.9 million was awarded to 18 non-digester dairy manure management projects through the AMMP. The DDRDP projects have an estimated greenhouse gas (GHG) reduction of 4.14 million metric tons of carbon dioxide equivalent ($MTCO_2e$) over ten years and the AMMP projects have an estimated 328,281 $MTCO_2e$ over five years.

This report provides a detailed analysis of both programs including the requested information detailed in the Budget Act of 2017. A discussion on mitigation efforts is also included to comply with the required information as specified in the budget act (Item 8570-101-3228 (1)(a)(ii)).

I. Background

Methane is a potent greenhouse gas (GHG) that has a global warming potential 25 times that of carbon dioxide over a 100-year period. It is also a short-lived climate pollutant (SLCP). SLCPs are climate gases that remain in the atmosphere for a much shorter time than longer-lived climate pollutants such as carbon dioxide and have significant climate warming effects. With respect to California agriculture, methane is primarily emitted from manure lagoons on dairy operations and enteric emissions from dairy cattle.

CDFA administers two incentive programs that aim to reduce methane emissions from California's dairy and livestock operations:

1. Dairy Digester Research and Development Program (DDRDP) awards competitive grants to California dairy operations and digester developers for the implementation of dairy digesters that result in long-term methane emission reductions on California dairies and minimize or mitigate adverse environmental impacts.
2. Alternative Manure Management Program (AMMP) awards competitive grants to California dairy and livestock operations for technologies and specific management practices that result in long-term methane emission reductions and maximize environmental benefits. These non-digester manure management practices include practices such as:
   (a) conversion from a flush to scrape manure collection system and/or solid separation, followed by drying, spread, solid storage or composting; and,
   (b) pasture-based management practices such as conversion of a non-pasture operation to a pasture-based management, increasing the amount of time livestock spend at pasture, and/or construction of a compost bedded pack barn.

CDFA received $50 million from the Greenhouse Gas Reduction Fund (GGRF), authorized by the Budget Act of 2016, to fund dairy digesters as well as non-digester practices for methane reduction on California's dairy and livestock operations. Of this allocation, the DDRDP awarded $35.3 million to 18 dairy digester projects in 2017 and AMMP awarded $9.9 million awarded to 18 non-digester manure management projects in 2018.

Item 8570-101-3228 of the 2017 Budget Act (page 29) required CDFA to submit to the Joint Legislative Budget Committee (JLBC) a report on the Dairy Digester Research and Development Program and the Alternative Manure Management Program no later than July 1, 2018 and include "(i) A summary of methane reduction funding awards made with funding appropriated in 2016-17 including the: (1) amount of the award, (2) name and location of the award recipient and herd size of the farm (3) name and location of any vendor(s) selected to put into operation an award funded project, (4) description of the methane reduction approach used in the award, and (5) projected reduction in the amount of methane gas emissions associated with an award" and "(ii) A discussion of the mitigation efforts undertaken by the department to comply with the provisions of Chapter 368 of 2016 (SB 859, Committee on Budget and Fiscal Review)." The intent is to evaluate the efficiency and cost-effectiveness of strategies to reduce emission of short-lived climate pollutants, such as methane gas from dairy operations.

This report provides a detailed analysis of both programs including the requested information provided in the Budget Act of 2017. The report includes a summary of methane reduction funding awards made with funding appropriated in 2016-17 including the: (1) amount of the award, (2)

name and location of the award recipient and herd size of the dairy by range (3) name and location of any vendor(s) selected to bring into operation an award funded project, (4) description of the methane reduction approach used in the award, and (5) projected reduction in the amount of methane gas emissions associated with an award. A discussion on mitigation efforts is also included to comply with the required information as specific in the budget act (Item 8570-101-3228 (1)(a)(ii)).

II. 2016-17 Award Selection Process

A. DDRDP

1. Eligibility and Application Process

CDFA provides funding for dairy operators to install digesters on their open manure storage and treatment lagoons, which are the primary source of methane emissions from dairy operations in California. CDFA funds up to 50 percent of the total project cost with a maximum grant award up to $3 million per project. The total cost of installation of DDRDP-funded projects ranges between $1.9 million and $12.8 million. The maximum grant duration is two years after the execution of the grant agreement. To be eligible for funding, the project site must be located on a commercial California dairy operation. A group of dairy operations may submit one grant application to develop centralized dairy digesters and gas clean-up facilities for pipeline injection, known as a "cluster" or "hub and spoke" project. Defunct digesters that were constructed in the past and have become entirely non-functional for a minimum of 12 months due to technical or other issues are also considered eligible for funding. However, CDFA does not fund upgrades to existing functional dairy digesters to boost emissions reductions and energy production. Additionally, projects that propose to switch existing management practices on the dairy operation to those that increase baseline GHG emissions are not eligible for DDRDP funding since the funds for this program are allocated from the California Climate Investment (CCI) Program. Statute requires that all GGRF (and thus CCI) monies facilitate the reduction of GHG emissions.

A quantification methodology for estimating GHG emissions reductions was developed by the California Air Resources Board (CARB). The quantification methodology and calculator are available on CARB's website at www.arb.ca.gov/cci-quantification. Applicants report their estimated emissions reductions in their grant applications. Grant recipients are additionally required to report actual GHG emissions reduction data from their projects to CDFA for 5 years after project implementation. This data are further reported to CARB as part of their Annual Report to the Legislature on CCI investments. Any project benefits provided to disadvantaged and/or low-income communities are determined using the methodology developed by the CARB as provided in the Funding Guidelines for Administering Agencies.

CDFA also requires participating dairy operations in California to achieve the highest environmental standards. Funded projects must demonstrate protection of water and air quality. The design and construction of digester vessels (*i.e.*, ponds, lagoons, and tanks) must be demonstrated to be protective of surface and ground water quality. To meet the DDRDP water quality requirements, one of the following is required: double-lined ponds consistent with the Tier 1 specification of the Dairy General Order (R52013-0122) of the Central Valley Regional Water Quality Control Board, above-ground concrete tank, or below-ground concrete-lined tank. The digester system design, construction, and operation must minimize emissions of air pollutants as well. For methane-use-to-power-production projects, the total NOx (nitrogen oxides) emissions must be no greater than 0.50 pounds/megawatt-hour. These represent the most stringent water

and air quality protection standards across the State, and must be met by a project regardless of its location in California. Funded projects must use commercially available technologies to produce or capture methane for energy production or transportation fuel to ensure the long-term success of these projects.

All funded projects must comply with SB 859 (2016) which requires CDFA, prior to awarding grant funds from the GGRF, to review the applicant's analysis identifying potential adverse impacts of a proposed project. The requirements specified in the bill prohibits a project from receiving funding from the department unless the applicant has conducted outreach in areas that will potentially be adversely impacted by the project, determined potential adverse impacts of the projects, and committed to measures to mitigate impacts. The bill requires the department to prioritize projects based on the criteria pollutant emissions benefits achieved by the project.

CDFA has utilized the State Water Resources Control Board's electronic application system, the Financial Assistance Application Submittal Tool (FAAST), for the DDRDP application process.

2. Review Process

CDFA conducts three levels of review during the grant submission and review process. The first is an administrative review to determine if all grant application requirements are met. The second is a comprehensive financial review to evaluate the merits of the grant applications based on the scoring criteria. The third is a technical review by subject-matter experts and the Technical Advisory Committee (TAC). The TAC is a sub-committee of the California-Federal Dairy Digester Working Group. The TAC is further assisted in the review process through the evaluation of the GHG emissions reduction calculations and technical soundness of projects by academic experts associated with California universities.

3. Awarded Projects

For the 2016-17 DDRDP, CDFA received 36 applications requesting a total of $75.8 million. Details of the 18 projects awarded under 2016-17 DDRDP are provided in Table 1. All projects are currently under construction and expected to be complete by September 2019. CDFA awarded $35.3 million in grants to selected projects. The total cost of 2016-17 DDRDP projects is $114.9 million; ($79.6 million in matching funds). All funded projects will result in generation of renewable natural gas (RNG). The average herd size[1] of the funded projects is 7,430.

The majority of the DDRDP projects awarded (17 out of 18) during this round are part of 5 different clusters (Hanford, Kern, Calgren, West Visalia, and East Tulare; Image 1). Each cluster will be equipped with a centralized biogas clean up facility, which conditions the captured biogas produced by the dairy digesters to a required standard before being injected into the utility and ethanol refinery natural gas pipelines. These clusters could potentially be expanded to accommodate additional dairy digesters in future as the necessary basic infrastructure (i.e.,

[1] Herd size in this report refers to the number of animals on the dairy or livestock operation that are included in the project boundary, i.e., those livestock categories for which manure management will be affected by the project. Project boundaries and methods to identify them are included in the GHG emission reduction Quantification Methodologies for the DDRDP and AMMP. The project boundary delineates the GHG sources, sinks, and reservoirs (SSRs) that are included or excluded when quantifying the emission reductions resulting from the installation and operation of devices associated with the capture and destruction of methane (DDRDP) or from the adoption of various alternative manure management practices (AMMP).

biogas cleanup facility), which corresponds to a large portion of the costs, would already be in place.

4. Public Outreach and Technical Assistance Workshops

The development of the DDRDP framework and grant solicitation (Request for Grant Applications) involved a stakeholder and public engagement process. During the application period, CDFA provided application assistance workshops for potential applicants. In addition, CDFA received funding from the Strategic Growth Council to provide technical assistance to applicants. For DDRDP applicants, assistance in community outreach to meet program requirements pertinent to SB 859 (2016) was an identified need. CDFA contracted with the UC Davis Extension - Collaboration Center to provide support to applicants to design effective community outreach and engagement plans. A summary of these workshops is provided in Table 2.

B. AMMP

1. Eligibility and Application Process

AMMP provides financial assistance for the implementation of non-digester manure management practices in California to reduce GHG emissions. CDFA funds up to 100 percent of the total project cost with a maximum grant award up to $750,000 per project. The awarded projects must be completed within two years of the execution of the grant agreement and the project site must be located on a commercial California dairy or livestock operation. A group of dairy or livestock operations can submit one grant application to develop centralized projects (*e.g.*, a centralized composting facility) known as a “cluster” or “hub and spoke” project. Projects that propose to switch existing management practices on the dairy operation to those that increase baseline GHG emissions are not eligible for AMMP funding. Additionally, projects that have received DDRDP funding are not eligible for AMMP.

A quantification methodology for estimating GHG emissions reductions from AMMP projects was developed by the California Air Resources Board (CARB). Applicants are required to use the quantification methodology and its associated calculator tool to calculate estimated GHG emissions reductions achievable from a project. The quantification methodology and calculator are available on CARB’s website at: https://ww2.arb.ca.gov/resources/documents/cci-quantification-benefits-and-reporting-materials.

Any project benefits provided to disadvantaged and/or low-income communities are determined using the methodology developed by the CARB as provided in the Funding Guidelines for Administering Agencies.

Recipients are expected to comply with the California Environmental Quality Act (CEQA) and all applicable permitting within six months of the execution of the grant agreement. CEQA and permit compliance requirements vary depending on project type and location.

CDFA utilizes the State Water Resources Control Board’s electronic application system, the Financial Assistance Application Submittal Tool (FAAST) for the AMMP application process.

2. Review Process

CDFA conducts three levels of review during the grant submission and review process. The first is an administrative review to determine if all grant application requirements are met. The second is a comprehensive financial review to evaluate the fiscal merits of the grant applications based

on the scoring criteria. The third is a technical review by subject matter experts and aTAC. The TAC is a sub-committee of the California-Federal Dairy Digester Working Group and additional state, federal and academic subject matter experts.

3. Awarded Projects

CDFA received 53 applications requesting a total of $29.5 million for the 2016-17 AMMP. Details of the 18 projects awarded under 2016-17 AMMP are provided in Table 3. All projects are currently under construction and expected to be complete by January 2020. CDFA awarded $9.9 million in grant awards to selected projects. The total cost of 2016-17 AMMP projects is $12 million ($2.1 million in matching funds). The distribution of various manure management practices proposed by funded projects are shown in Figure 1. The average herd size of the funded projects is 1,934. The statewide distribution of projects funded by the 2016-17 AMMP is shown in Image 1.

5. Public Outreach and Technical Assistance Workshops

The development of the AMMP framework and grant solicitation (Request for Grant Applications) involved a stakeholder and public engagement process. During the application period, CDFA provided application assistance workshops for potential applicants. In addition, CDFA received funding from the Strategic Growth Council to provide technical assistance to applicants. CDFA awarded grants to technical assistance providers, including non-profit organizations, universities and Resource Conservation Districts) to assist potential applicants with their submission. A summary of all workshops is provided in Table 4.

Table 1. Details of 2016-17 Funded DDRDP Projects.

Project Name	Recipient Name	Project Location	Developer or Vendor for Project Implementation and/or Operation	Methane Reduction Approach*	GHG Emissions Reduction Estimates ($MTCO_2e$ - 10 years)	Herd Size Range**	Awarded Amount ($)
S&S Dairy Biogas	S&S Dairy Biogas	Visalia, Tulare County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	167,417	3,000-5,000	1,600,000
Circle A Dairy Digester Fuel Pipeline Project	Calgren Dairy Fuels LLC	Pixley, Tulare County	Maas Energy Works	RNG combustion in cogeneration turbines for bioethanol production	138,745	3,000-5,000	1,050,000
R Vander Eyk Dairy Digester Fuel Pipeline Project	Calgren Dairy Fuels LLC	Pixley, Tulare County	Maas Energy Works	RNG combustion in cogeneration turbines for bioethanol production	132,586	3,000-5,000	1,000,000
Hollandia Farms Dairy Biogas	Hollandia Farms Dairy Biogas	Hanford, Kings County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	178,426	5,001-8,000	1,500,000
Trilogy Dairy Biogas	Trilogy Dairy Biogas	Bakersfield, Kern County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	254,577	5,001-8,000	2,250,000
Moonlight Dairy Biogas	Moonlight Dairy Biogas	Visalia, Tulare County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	154,834	5,001-8,000	1,500,000
Legacy Dairy Digester Fuel Pipeline	Calgren Dairy Fuels LLC	Pixley, Tulare County	Maas Energy Works	RNG combustion in cogeneration turbines for bioethanol production	207,209	5,001-8,000	1,550,000
Bos Farms Dairy Biogas	Bos Farms Dairy Biogas	Tulare, Tulare County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	168,398	5,001-8,000	1,500,000
Red Top Madera Dairy Digester Project	Aligned Digester Cooperative LLC	Chowchilla, Madera County	Aligned Digester Cooperative LLC	RNG generation for local vehicle fueling station	282,475	5,001-8,000	3,000,000

Project Name	Recipient Name	Project Location	Developer or Vendor for Project Implementation and/or Operation	Methane Reduction Approach*	GHG Emissions Reduction Estimates ($MTCO_2e$ - 10 years)	Herd Size Range**	Awarded Amount ($)
Hamstra Dairy Biogas	Hamstra Dairy Biogas	Tulare, Tulare County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	205,115	5,001-8,000	2,000,000
Cloverdale Dairy Biogas	Cloverdale Dairy Biogas	Hanford, Kings County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	360,851	5,001-8,000	3,000,000
Rancho Teresita Dairy Biogas	Rancho Teresita Dairy Biogas	Tulare, Tulare County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	236,251	8,001-11,000	2,100,000
Wreden Ranch Dairy Biogas	Wreden Ranch Dairy Biogas	Hanford, Kings County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	393,915	8,001-11,000	3,000,000
K&M Visser Dairy Digester Fuel Pipeline Project	Calgren Dairy Fuels LLC	Pixley, Tulare County	Maas Energy Works	RNG combustion in cogeneration turbines for bioethanol production	203,416	8,001-11,000	1,500,000
Williams Family Dairy Digester Fuel Pipeline	Calgren Dairy Fuels LLC	Pixley, Tulare County	Maas Energy Works	RNG combustion in cogeneration turbines for bioethanol production	201,208	8,001-11,000	1,500,000
T&W Dairy Biogas	T&W Dairy Biogas	Bakersfield, Kern County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	294,982	8,001-11,000	2,600,000
Pixley Dairy Digester Fuel Pipeline Project	Calgren Dairy Fuels LLC	Pixley, Tulare County	Maas Energy Works	RNG combustion in cogeneration turbines for bioethanol production	212,622	11,001-14,000	1,600,000
Maple Dairy Biogas	Maple Dairy Biogas	Bakersfield, Kern County	California Bioenergy LLC	RNG generation and pipeline injection for vehicle fuel use	348,171	11,001-14,000	3,000,000
Total							35,250,000

* The utility involved with all projects proposing pipeline injection of RNG is the Southern California Gas Company.

**Herd sizes are presented as ranges. Per Government Code Section 6254(k) and Evidence Code Section 1060, dairy herd sizes are considered confidential and proprietary information by CDFA and accordingly exempt from public disclosure.

Table 2. Summary of CDFA DDRDP Outreach in 2016-17

Program Development Outreach Public Meetings

Meeting	Date	Location	Number of Attendees
Disadvantaged Community Outreach Meeting	11/9/2016	Tulare	9
2017 Digester Grant Development – Stakeholder Input	11/17/2016	Clovis	23
2017 Digester Grant Development – Stakeholder Input	11/21/2016	Sacramento	13
2017 Digester Grant Development – Stakeholder Input	11/22/2016	Modesto	10
2017 Digester Grant Development – Stakeholder Input	11/30/2016	Webinar	40
2017 Digester Grant Development – Stakeholder Input on Draft Solicitation	2/6/2017	Webinar	42

Application Assistance Outreach Public Meetings

Meeting	Date	Location	Number of Attendees
2017 Digester Grant – Application Workshop	5/12/2017	Sacramento	15
2017 Digester Grant – Application Workshop	5/15/2017	Tulare	20
2017 Digester Grant – Application Workshop	5/16/2017	Webinar	22
2017 Digester Grant – Community Outreach Assistance through UC Davis	May 2017	One-on-one Assistance and Consultation	9
2017 Digester Grant – Application Workshop	5/12/2017	Sacramento	15

Table 3. Details of 2016-17 AMMP Funded Projects.

Recipient Name	Project Location	Methane Reduction Approach	GHG Emissions Reduction Estimates ($MTCO_2e$ - 5 years)	Herd Size Range*	Amount Awarded ($)
Rivercrest Cattle Co.	Modesto, Stanislaus County	Compost Bedded Pack Barn	5,259	100-500	201,240.00
Regli Jerseys	Ferndale, Humboldt County	Solid Separation, Composting, Compost Bedded Pack Barn	460	100-500	523,756.00
Cal-Denier Dairy LLC	Galt, Sacramento County	Flush to Scrape, Composting, Compost Bedded Pack Barn	2,113	501-1,000	711,627.00
Lafranchi Ranch	Nicasio, Marin County	Flush to Scrape, Composting	5,774	501-1,000	744,000.00
Magneson Dairy	Ballico, Merced County	Solid Separation, Composting, Compost Bedded Pack Barn, Increased Time at Pasture	7,690	1,001-1,500	559,703.00
Milk River Dairy	Visalia, Tulare County	Flush to Scrape, Open Solar Drying	16,012	1,001-1,500	339,880.95
Double D Dairy	Ceres, Stanislaus County	Solid Separation, Composting	11,080	1,001-1,500	397,649.70
Alexandre EcoDiary Farms	Cresent City, Del Norte County	Compost Bedded Pack Barn	9,572	1,001-1,500	749,746.00
Manuel Da Silva	Escalon, San Joaquin County	Solid Separation, Composting	16,605	1,501-2,000	575,000.00
De Snayer Dairy	Lodi, San Joaquin County	Solid Separation, Solid Storage	36,494	1,501-2,000	536,448.32

Recipient Name	Project Location	Methane Reduction Approach	GHG Emissions Reduction Estimates ($MTCO_2e$ - 5 years)	Herd Size Range*	Amount Awarded ($)
Correia Family Dairy Farms	Gustine, Merced County	Solid Separation, Composting	20,996	2,001-2,500	352,812.89
DaSilva Dairy Farms LP	Escalon, San Joaquin County	Solid Separation, Composting	37,517	2,001-2,500	375,000.00
Robert Gioletti and Sons Dairy	Turlock, Stanislaus County	Flush to Scrape, Composting	20,630	2,001-2,500	749,999.50
Sierra View Dairy	Tulare, Tulare County	Flush to Scrape, Open Solar Drying, Compost Bedded Pack Barn	35,051	2,501-3,000	750,000.00
Alamo Farms	Modesto, Stanislaus County	Flush to Scrape, Composting	22,005	2,501-3,000	748,920.26
Alamo Dairy	Crows Landing, Stanislaus County	Flush to Scrape, Composting	15,582	3,001-3,500	735,634.32
Matos Dairy	Merced, Merced County	Solid Separation, Composting	42,638	4,001-4,500	563,859.37
Martins Farm LP	Modesto, Stanislaus County	Flush to Scrape, Composting	22,803	4,001-4,500	256,353.07
Total			328,281		9,871,630.38

**Herd sizes are presented as ranges. Per Government Code Section 6254(k) and Evidence Code Section 1060, dairy herd sizes are considered confidential and proprietary information by CDFA and accordingly exempt from public disclosure.

Table 4. Summary of CDFA AMMP Outreach

Program Development Outreach Public Meetings			
Meeting	**Date**	**Location**	**Number of Attendees**
2017 AMMP – Public Listening Session	4/17/17	Sacramento	25
2017 AMMP – Public Listening Session	4/21/17	Santa Rosa	33
2017 AMMP – Public Listening Session	4/24/17	Tulare	11
2017 AMMP – Public Listening Session	4/28/17	Webinar	45
2017 AMMP – Public Listening Session	7/25/17	Webinar	35

Application Assistance Workshops Conducted by CDFA

Meeting	Date	Location	Number of Attendees
2017 AMMP – Application Workshop	9/7/17	Eureka	12
2017 AMMP – Application Workshop	9/8/17	Santa Rosa	12
2017 AMMP – Application Workshop	9/14/17	Modesto	44
2017 AMMP – Application Workshop	9/15/17	Tulare	19

Technical Assistance Workshops Conducted by External Providers

Provider	Date	Location	Number of Attendees
California Dairy Campaign	9/5/17	Escalon	10
	9/7/17	Turlock	14
	9/13/17	Merced	10
	9/21/17	Hanford	10
Earth First Construction	9/11/17	Tulare	1
	9/12/17	Visalia	3
Humboldt Resource Conservation District	9/13/17	Ferndale	5
	9/14/17	Humboldt	3
Institute for Environmental Management, Inc.	9/19/17	Merced	0
	9/13/17	Escondido	2

Resource Conservation District of Greater San Diego County	9/22/17	Lakeside	3
	9/25/17	Del Mar	2
University of California, Davis Extension – Collaboration Center	9/14/17	San Rafael	2
	9/15/17	Santa Rosa	2
University of California, Davis	9/18/17	Modesto	15
	9/20/17	Tulare	9
	9/22/17	Davis	7
	9/25/17	Madera	14
	9/28/17	Modesto	13
	10/5/17	Hanford	13

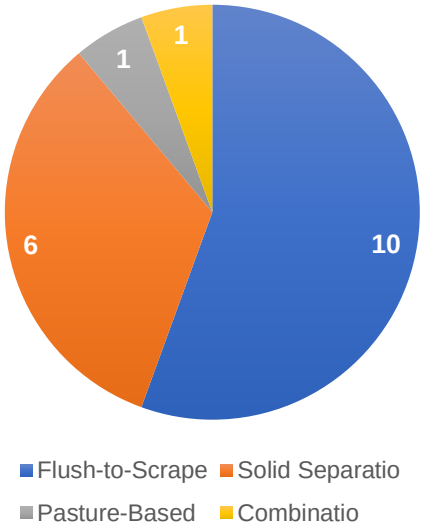

Figure 1. Various manure management practices implemented by 2016-17 funded AMMP projects. Number(s) of projects implementing each category of practice(s) are noted on the pie chart.

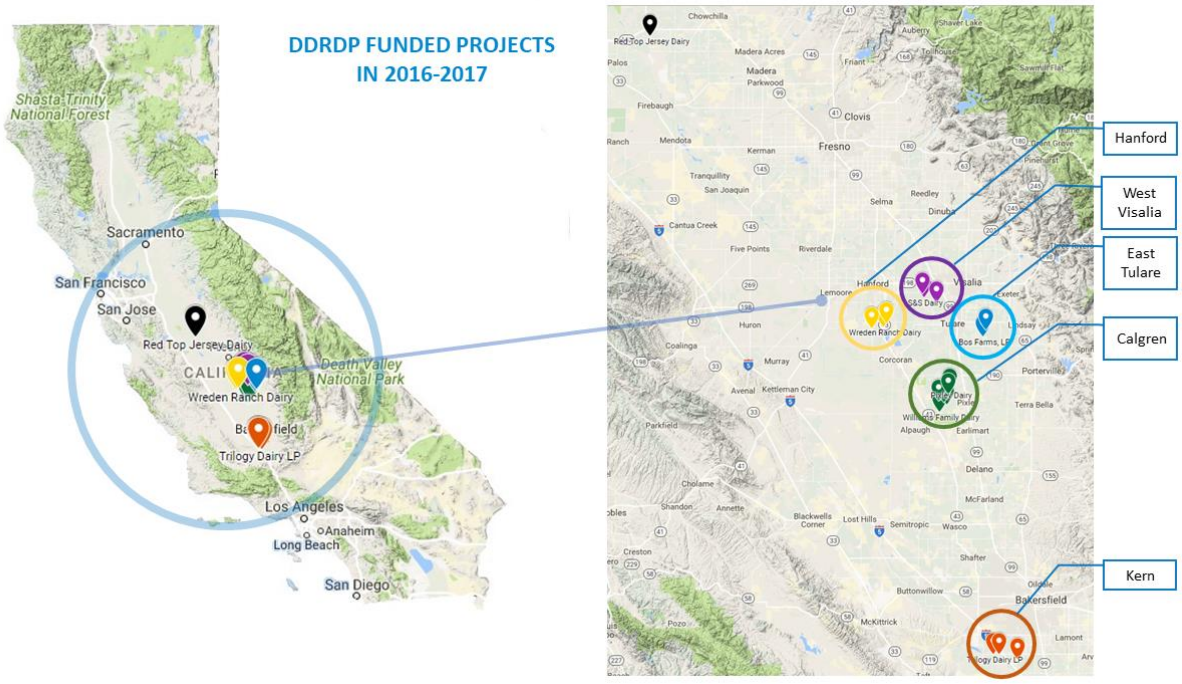

Image 1. Statewide distribution of 2016-17 DDRDP funded projects. Projects that are part of specific clusters are encircled in the right image and labeled with name of the cluster.

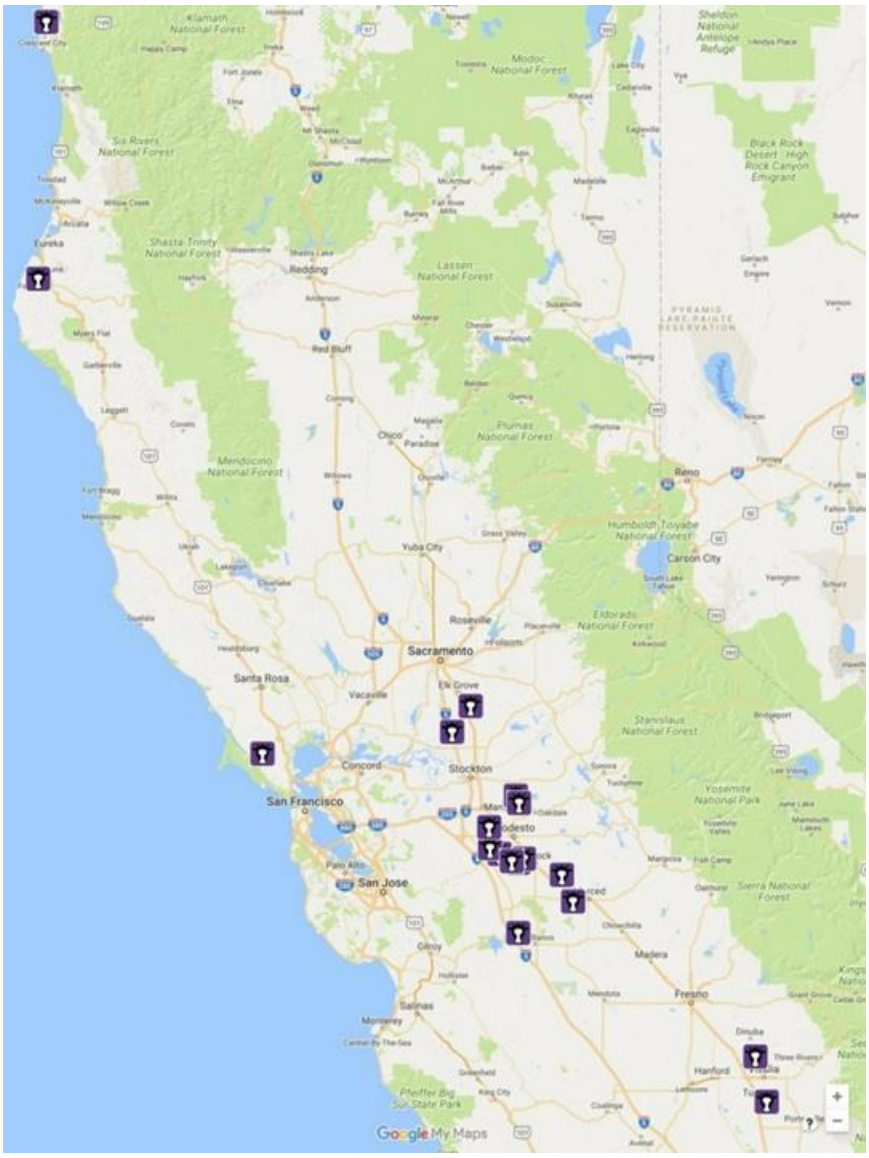

Image 2. Statewide distribution of AMMP funded projects.

III. Compliance with the Provisions of Chapter 368 of 2016 (SB 859)

California Government Code Section 16428.86(a) (i.e., SB 859 Section 6) requires CDFA to review the applicant's analysis identifying potential adverse impacts of the proposed project, including a net increase in criteria pollutants, toxic air contaminants, and hazardous air pollutants; groundwater and surface water impacts; and truck traffic and odor prior to awarding DDRDP grant funds from moneys made available from GGRF. Additionally, this legislation states that:

(i) A digester project shall not receive funding unless the applicant has demonstrated to CDFA that the applicant has done all of the following:
   a. Conducted outreach in areas that will potentially be adversely impacted by the project.
   b. Determined potential adverse impacts of the project.
   c. Committed to measures to mitigate impacts.

(ii) In making awards, CDFA shall prioritize projects based on the criteria pollutant emission benefits achieved by the digester project.

(iii) A digester project funded by CDFA that results in localized impacts in disadvantaged communities shall not be considered to provide a benefit to disadvantaged communities for the purposes of Section 39713 of the Health and Safety Code.

In response to requirements (i) and (ii) above, CDFA DDRDP application and scoring criteria were modified to include these requirements (resulting in 20% of the total score) in the following ways to ensure compliance with Section 16428.86(a):

1. <u>Application Section: Environmental Performance, NOx and Criteria Pollutants (10 points out of 100 total points awarded)</u>
   This section required applicants to describe the project's impact on NOx, other criteria pollutants, toxic air contaminants and hazardous air pollutants. Applicants were asked to include all potential emission sources and discuss how emissions would change before and after implementation of project. Applicants were required to provide supporting documents to support their analysis. Examples of options that can reduce or minimize generation of air pollutants mentioned above, were provided; including but not limited to, upgrading biogas to biomethane for vehicle fuel production (either onsite or through injection into a common Carrier Pipeline), Microturbine Installation (onsite Electrical Generation), Fuel Cell Installation (Onsite Electrical Generation), Natural Gas Process Fuel Replacement, Agricultural Pump Electrification. Additionally, if the projects proposed a biogas end-use that reduced or eliminated NOx emissions, such as RNG generation for pipeline injection or transportation fuel, the application could receive up to 5 additional points.

2. <u>Application Section: Community Impact (10 points of total 100 points awarded)</u>
   This section under "Community Impacts and Mitigation" sub-section, required applicants to conduct community outreach actions and describe community needs and describe how the community was involved in the local planning and environmental review processes for this project, including how neighbors were contacted, public meeting dates, and whether translation was needed and provided. Applicants were required to summarize the results of this outreach; identify community's concerns, questions, or comments and how they will be addressed, and to provide up to 3 letters of support from community members demonstrating that outreach was conducted.

Applicants were encouraged to (a) approach residents, community leaders, elected officials, advocacy organizations, local businesses, and members of vulnerable or underserved populations (i.e. elderly, youth, physically and/or mentally disabled, members from disadvantaged communities), departments, agencies, jurisdictions, etc. impacted by the project such as local health department, schools/school districts, emergency services, law enforcement, metropolitan planning organization, etc.; and (b) to use various methods to notify the community of outreach efforts, such as local newspaper, county website, radio and Television.

It was noted in the application template that the topic of discussion during outreach efforts must include potential adverse impacts of digester projects, including a net increase in criteria pollutants, toxic air contaminants, hazardous air pollutants, groundwater and surface water impacts, and truck traffic and odor.

Additionally, applicants were required to describe what, if any, mitigation measures will be included in the project, including but not limited to: mitigating potential impacts such as toxic air contaminants, hazardous air pollutants, groundwater and surface water impacts, truck traffic, odor; noting that mitigation measures committed to by applicant must be specific to the digester project and be included in the project Work Plan.

Under the "Localized Economic Benefits" sub-section, applicants were required to explain economic benefits that will be provided to the community (or communities) where project is located. If the project were to create temporary construction and/or permanent jobs in the community, applicants had to indicate how many jobs, total project work hours, job classification/trade, approximate salaries and benefits for each job classification and trade, how long these jobs will last, and how they compare to current unemployment rates.
CDFA contracted with the University of California, Davis Extension Collaboration Center to assist applicants with planning and executing their community outreach efforts.
These application sections were reviewed by the DDRDP-TAC. Scores obtained for these sections contributed to the overall score of the project. Projects were ranked for funding based on their overall score. Therefore, projects that did not score well in these sections could have up to 20 fewer points out of 100 and would not rank competitively for award selection.

Compliance with (iii) mentioned above: Projects awarded in 2016-17 did not include electricity generation end-use and, therefore, are not expected to create local air quality impacts. Furthermore, the requirement to double-line digester vessels (lagoons) is expected to reduce impacts to groundwater quality relative to unlined dairy lagoons. Therefore, these projects will be evaluated for benefits to disadvantaged communities based on the criteria provided in Funding Guidelines for Administering Agencies.

Among the 18 DDRDP applications that were selected for award, a total of 6 letters from community-based organizations were provided in support of the projects. These included environmental justice organizations such as Central California Asthma Collaborative and San Joaquin Valley Clean Cities Coalition; educational institutions such as California State University, Bakersfield – School of Natural Sciences, Mathematics, and Engineering, College of the Sequoias – Tulare College Center, and Lakeside Union School District; and, local employment focused

nonprofit organizations such as Proteus, Inc. These letters specifically noted the activities that were conducted by the applicants in their community. For example, the educational institution College of the Sequoias – Tulare College Center stated that the applicant for projects Rancho Teresita Dairy Biogas, Bos Farms Dairy Biogas, Moonlight Dairy Biogas, S&S Dairy Biogas, and Hamstra Dairy Biogas "reviewed the choice they have in the use of the dairy biogas - as a source for electricity generation or vehicle fuel and the relative environmental impacts of the different approaches" in the community meetings. In addition, the educational institution acknowledged that the same applicant "developed a program to advance our students learning about dairy digesters and provide valuable paid and competitive internship programs, focused on members of disadvantaged communities". In another instance, the San Joaquin Valley Clean Cities Coalition stated that the Red Top Madera Dairy Digester Project "offers the potential to improve the overall cleanliness of the dairy industry and agriculture in the San Joaquin Valley while providing local communities with new economic development opportunities, and cleaner-burning renewable natural gas…" and that "the team leading the project has a vested interest in improving the local community, and they have reached out to us to make sure we understand the nature of the projects."

The breadth of community outreach activities conducted by applicants included conducting public meetings including providing opportunities to learn about the advantages and disadvantages of construction in the community, engagement with local schools and universities to educate students and faculty on dairy digesters and providing paid internships to local students, engaging with local environmental and other non-profit organizations for feedback on projects, and, facilitation of public digester tours for interested local residents.