



## City Council Staff Report

Date: September 2, 2009 CONSENT CALENDAR

Subject: ACCEPTANCE OF GRANT FROM THE COACHELLA VALLEY AIR QUALITY ENHANCEMENT TRUST FUND

From: David H. Ready, City Manager

Initiated by: Public Works and Engineering Department

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### SUMMARY

The Public Works and Engineering Department applied to Riverside County for a grant to cover a portion of the design costs for a new Fats, Oils and Grease ("FOG") receiving station at the City's wastewater treatment plant. The County approved the City's grant application, and it is necessary to approve a Grant Award & Authorization Agreement with Riverside County to receive the grant.

### RECOMMENDATION:

- 1) Approve the Grant Award and Authorization Agreement between the County of Riverside and the City of Palm Springs; and
- 2) Authorize the City Manager to execute all necessary documents.

### STAFF ANALYSIS:

The Colmac Air Quality Enhancement Fund ("Fund") was established through conditions of a settlement agreement resolving litigation between Colmac Energy, Inc. and Riverside County over the construction of a biomass energy plant near the unincorporated community of Mecca in the southern Coachella Valley, and can only be used for projects which enhance air quality within the Coachella Valley.

The County of Riverside administers the Fund on an annual basis. Each year the County solicits applications for projects within the Coachella Valley that will improve air quality. Previously, the City applied for and received grants from the Fund for a variety of air quality projects, including solar powered trash compactors for Downtown and the design phase of a gas treatment system for the City's wastewater treatment plant ("WWTP").

ITEM NO. 2.H.

This year, the Public Works and Engineering Department submitted an application for funding related to the design and construction of a Fats, Oils and Grease ("FOG") receiving station at the City's WWTP. FOG is a waste product category that includes many food-derived sources. Most common sources include restaurant fryer oils (yellow grease), restaurant sewer grease trap accumulations (brown grease), and other forms of waste. FOG that is considered brown grease is a highly energetic waste material with little economic value. Because the material may have been in contact with sewage and contains a wide variety of objectionable materials, there has been little incentive to recycle it. However, recent attention has turned to recycling FOG at municipal WWTPs due to its high energetic value, which when added to wastewater sludge at the WWTP, it increases the volume and improves the quality of the methane gas generated when wastewater sludge is treated.

An ultimate goal of the Public Works Department is to capture the methane gas generated by the wastewater treatment process, and use it in place of natural gas to generate electricity and operate pumps and other equipment. It is estimated that the City could initially receive 550 tons annually of FOG, ultimately increasing to as much as 1,825 tons annually of FOG. The FOG receiving station accomplishes a significant environmental benefit, by diverting a substantial amount of waste that would otherwise be disposed of in landfills or composting operations. The disposal of FOG at landfills or composting facilities allows the waste to degrade naturally in the open air, which produces uncontrolled methane emissions into the atmosphere. Methane, is a strong greenhouse gas, with more than 21 times the global warming potential of carbon dioxide, and capturing it and converting it to energy production eliminates the large uncontrolled release of it to the environment.

The County has approved the City's request for \$50,000 in funding for the FOG receiving station, and has forwarded a Grant Award & Authorization Agreement to facilitate the City's receipt and use of the grant funds. Staff recommends that the City Council accept the grant, and approve the Agreement.

FISCAL IMPACT:

Staff is currently negotiating with Veolia on a proposal to design a FOG receiving station at the WWTP, and the \$50,000 air quality grant funds will be used to offset the City's costs related to the design of the FOG receiving station.

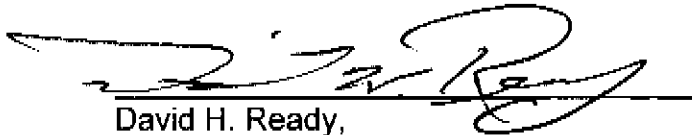
SUBMITTED:



David J. Barakian  
Director of Public Works/City Engineer



Thomas J. Wilson  
Assistant City Manager



David H. Ready,  
City Manager

Attachments:

1. Agreement

# GRANT AWARD & AUTHORIZATION AGREEMENT

The County of Riverside (the "County"), and the City of Palm Springs (the "Grantee") hereby enter into the following GRANT AWARD & AUTHORIZATION AGREEMENT (the "Agreement"):

## RECITALS

WHEREAS, the County issued a Request for Proposals for regional air quality enhancement projects, to be funded from the Coachella Valley Air Quality Enhancement Trust Fund; and

WHEREAS, in response to the County's request, the Grantee submitted a proposal for a Coachella Valley Air Quality Enhancement Project, which was subsequently reviewed by the Coachella Valley Air Quality Advisory Committee and recommended for funding; and

WHEREAS, on May 19, 2009, the Riverside County Board of Supervisors approved the recommendations of the Coachella Valley Air Quality Advisory Committee and authorized the County Executive Office to enter into an Agreement with the Grantee;

NOW, THEREFORE, in the joint and mutual exercise of their powers, and in consideration of the above premises and of the mutual covenants herein contained and for other valuable consideration, the parties hereto agree as follows:

## SECTION 1. DEFINITIONS

(a) "COUNTY" shall mean the County of Riverside, a political subdivision of the State of California.

(b) "GRANTEE" shall mean the City of Palm Springs.

(c) "AGREEMENT" shall mean that certain Grant Award & Authorization Agreement between the County and the Grantee dated \_\_\_\_\_ 2009.

(d) "PROJECT" shall mean the regional air quality enhancement project to be conducted by the Grantee for positive benefit to regional air quality in the Coachella Valley.

## SECTION 2. PURPOSE

The purpose of this Agreement shall be implementation and operation of a regional air quality enhancement program for the Coachella Valley. The Scope of Work to be performed by the Grantee pursuant to this agreement is attached hereto as Exhibit "A" and is incorporated herein by this reference.

## SECTION 3. ADMINISTRATION

The County Chief Executive Officer (or his designee) shall administer this Agreement on behalf of the County. All reports, notices or other documentation shall be submitted to the County Executive Office at the address set forth in Section 13.

#### **SECTION 4. TERM**

The term of this Agreement shall be one year from the final execution date. Approved project must be completed within the one year term. Extensions of this time period may be requested in writing and sent to the address set forth in Section 13.

#### **SECTION 5. ALTERATION**

No alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by the parties hereto, and no oral understanding or agreement not incorporated herein shall be binding on any of the parties hereto. The Board of Supervisors and the County Executive Officer are the only authorized County representatives who may at any time, by written order, make alterations within the general scope of this agreement.

#### **SECTION 6. TERMINATION**

The County may terminate this Agreement upon thirty days written notice to the Grantee for any of the following reasons:

(a) In the event the Grantee fails to perform the covenants herein contained at such times and in such manner as is herein provided; or

(b) In the event there is a conflict with any federal, state, or local regulation, or rule rendering any of the provisions of the Agreement invalid or untenable;

#### **SECTION 7. DOCUMENTATION OF EXPENDITURES**

All expenditures made pursuant to the Agreement shall be properly supported by appropriate accounting documents, and such documents shall be maintained in accordance with accepted accounting principles, practices, and procedures. The Grantee shall maintain and keep available all such documents for a period of not less than five (5) years after its Final Report has been submitted to the County as required by Section 9 herein, and be available for audit by the County.

#### **SECTION 8. PAYMENTS**

(a) The total payment due to the Grantee under this Agreement is \$ 50,000 which will be used to support a Fats Oils & Grease Receiving Station project.

(b) Payments shall be made to the Grantee upon receipt and approval of the reports and invoices as required in Section 9 below. Invoices for vehicle purchases must include proof of purchase and delivery.

(c) The County Executive Office shall review invoices in a timely fashion, and submit them to the Auditor-Controller for payment.

#### **SECTION 9. REPORTS**

The Grantee shall submit quarterly performance reports. The fourth quarter report shall include an invoice for payment and be submitted within forty-five (45) days of the one year term, project completion and/or vehicle purchase and receipt. In the event the project is completed prior to the end of a twelve month period, the Grantee need only submit reports for the quarters preceding the end of the project.

**SECTION 10. INSPECTIONS**

The Grantee shall make available to the County for inspection and audit its records and data with respect to all matters covered by the Agreement. Inspections and audits may be made at any time after reasonable notice is given the Grantee.

**SECTION 11. INDEPENDENT CONTRACTOR**

The Grantee is, for purposes arising out of this Agreement, an independent contractor, and shall not be deemed to be an employee of the County. Contractor is not, and shall not be considered to be in any manner, an employee, agent or representative of the County. Personnel providing services under this Agreement on behalf of Contractor shall at all times be under Contractor's exclusive direction and control.

**SECTION 12. FAIR EMPLOYMENT PRACTICES**

The Grantee shall not discriminate in the hiring of persons to fulfill its requirements hereunder based on race, religion, national origin, sex, age, medical disability or marital status, exclude any person from participation in, deny any person the benefit of, nor subject any person to discrimination under any program or activity funded pursuant to this Agreement.

**SECTION 13. NOTICES**

Any notices required or desired by either party shall be addressed to the respective parties as set forth below and are deemed submitted one day after their deposit in the United States mail, postage prepaid:

**County**

County of Riverside  
County Executive Office  
4080 Lemon Street, 4th Floor  
Riverside, CA 92501  
Attn: Robert W. Tremaine

**Grantee**

City of Palm Springs  
3200 East Tahquitz Canyon Way  
Palm Springs, CA 92263-2743

**SECTION 14. COMPLIANCE WITH LAW**

The Grantee shall comply with all Federal, State and local laws and regulations pertinent to its operations and the activities to be performed hereunder. The Grantee, its employees, and/or agents shall keep in effect any and all licenses, permits, notices, and certificates as are required thereby.

**SECTION 15. INCORPORATED MATTERS**

The Grantee expressly represents that all documents incorporated by reference herein, and matters within such documents, have been reviewed and understood.

**SECTION 16. ASSIGNMENT**

Neither this Agreement nor any part hereof shall be assigned by the Grantee without the prior written consent of the County.

**SECTION 17. WAIVER OF PERFORMANCE**

No waiver by the County at any time of any of the provisions of this Agreement shall be construed as a waiver at any time thereafter of the same or any other provisions contained herein or of the strict and timely performance of such provisions.

**SECTION 18. INDEMNIFICATION**

The Grantee shall indemnify, and hold harmless the County, Special Districts, their respective directors, officers, the Board of Supervisors, employees, elected officials and agents from any liability whatsoever arising from the negligence of the Grantee and relating to or in any way connected with the accomplishment of the work or performance of services under this Agreement. As part of the foregoing indemnity, the Grantee agrees to protect and defend at its own expense, including attorney's fees, the County, Special Districts, their respective directors, officers, Board of Supervisors, employees, elected officials and agents in any legal action based upon any such alleged acts or omissions.

**SECTION 19. SEVERABILITY**

The invalidity of any provision in this Agreement as determined by a court of competent jurisdiction shall in no way affect, except as provided in Section 15, the validity of any other provision herein.

**SECTION 20. PARAGRAPH HEADINGS**

The paragraph headings herein are for the convenience of the parties only, and shall not be deemed to govern, limit, modify or in any manner affect the scope, meaning or intent of the provisions or language of this Agreement.

**SECTION 21. ENTIRE AGREEMENT**

This Agreement is intended by the parties hereto as the final expression of their agreement and understanding with respect to the subject matter hereof, and supersedes any and all prior and contemporaneous agreements and understandings, oral and/or written, in connection herewith. This Agreement may be changed or modified only upon written consent of the parties hereto.

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IN WITNESS WHEREOF, the parties below have caused their duly authorized representatives to execute this Agreement on the \_\_\_\_\_ day of \_\_\_\_\_, 2009.

ATTEST:

**COUNTY OF RIVERSIDE**

**GRANTEE**

\_\_\_\_\_  
Name: Bill Luna

\_\_\_\_\_  
Name: David Ready

Title: County Executive Officer

Title: City Manager

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to Form:  
Pamela J. Walls,  
County Counsel

By: *Karen A. Hill*

Title: Principal Deputy County Counsel

Date: July 7, 2009

# EXHIBIT A

County of Riverside  
Coachella Valley Air Quality Enhancement Grant Program  
In Conjunction With The  
Coachella Valley Air Quality Advisory Committee

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Grant Award & Authorization Agreement Proposals

from the

City of Palm Springs

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[See Attached 4 Pages]

## **Palm Springs Wastewater Treatment Plant Fats, Oils, and Greases, (FOG) Receiving Station**

### **Project Scope**

In response to the Coachella Valley Air Quality Enhancement Projects Request for Proposal (RFP) from the County of Riverside, the City of Palm Springs, California, has prepared this Proposal to expand its existing renewable energy project to include a FOG receiving station that will increase gas production under controlled conditions and improve air quality in the Coachella Valley. The proposed project involves the increased production of anaerobic digester gas as a renewable energy resource. Use of this renewable energy resource will enhance air quality in the region in two ways: 1. The project will reduce the City's dependence on public utility electrical generation thus eliminating a proportionate burning of fossil fuel in local generation stations; and, 2. Initially, it will remove approximately 550 tons annually of FOG from the Coachella Valley area that would otherwise be disposed of in landfills or composting operations. In the future, the City's FOG receiving program could grow to as much as 1,825 tons annually of FOG. Current disposal options for FOG (composting or landfills) result in the release of substantial quantities of untreated methane gas into the atmosphere. One of the primary motivators to complete this project is the reduction of uncontrolled methane emissions to the atmosphere. Methane is a strong greenhouse gas, with more than 21 times the global warming potential of CO<sub>2</sub>.

The proposed project will include the design and installation of a FOG receiving station at the City of Palm Springs wastewater treatment plant (WWTP). The air quality benefit of the Palm Springs project is that FOG will be fermented under controlled conditions in the existing wastewater treatment plant digesters and the methane byproduct will be converted into energy without releasing methane to the atmosphere. The additional gas produced will be the primary energy source for existing boilers, internal combustion engine pumping systems and planned cogeneration systems including fuel cells and/or combustion turbines.

### **Background**

The City of Palm Springs owns a 10.9 MGD secondary wastewater treatment plant, located at 4375 Mesquite Avenue, Palm Springs, CA 92264. For the past two years, the City of Palm Springs has been developing plans and implementing programs to make the wastewater treatment plant operate as an energy independent facility. To achieve this, the City has embarked on a multiphase program with the incorporation of an anaerobic digester gas (ADG) treatment system that will allow for short term exploitation of the currently produced ADG in existing facilities. The next stage of development will be to enhance gas production using FOG so that a biogas-to-electricity "cogeneration" system can be built. This grant funding request, if approved, will expedite the development of that cogeneration project.

The main wastewater treatment processes at the plant include primary sedimentation, secondary treatment using trickling filtration, secondary clarification and discharge to percolation ponds. The processes used for solids handling at the WWTP include gravity thickening, anaerobic digestion and dewatering using sludge drying beds. Currently, about 85,000 cubic feet of anaerobic digester gas is generated daily. The ADG is used in the digester heating boiler with the balance burned in a waste gas flare. Continued growth in the service area and other factors are expected to increase daily ADG production to about 110,000 cubic feet within the next five years. The energy value of the ADG is currently about 185,250 therms per year. The digestion process only requires about 69,500 therms per year; therefore, only 37.5% of the ADG is needed for the digestion process and 62.5% (115,750 therms per year) is diverted to the waste gas flare.



## Project Goals

Completion of the proposed FOG receiving station project will increase gas production by about 50,000 cubic feet per day and 106,500 therms per year at projected initial FOG loadings. At ultimate FOG loadings, gas production could increase by up to 162,000 cubic feet per day and 355,000 therms per year above current levels. This augmented energy production will eliminate the need for purchased natural gas at the WWTP and will provide all of the gas production needed for the next phase installation of an on-site fuel cell cogeneration system. The FOG receiving station is therefore a critical component of the overall goal to take the City's WWTP "off the grid."

## Project Description

*FOG Receiving Station Performance Specification* – The FOG receiving station will be designed and constructed to allow for the receipt of incoming FOG deliveries and the loading of the digesters to produce additional volume and quality of methane gas to support the proposed fuel cells and cogeneration systems. The FOG station design will allow for the ability to screen and grind objectionable material, will allow for easy cleaning of piping, pumps and tankage by way of quick disconnect piping, will include spill containment for processes and delivery operations, will include an unloading station that allows for trucks to unload without traffic obstructions in the treatment plant roadways, will allow for adequate FOG storage for steady state loading of the digesters, will be designed so as not to require more than an average of two hours operator labor per 8-hour shift, will be integrated into the overall plant Supervisory Control And Data Acquisition (SCADA) system and will allow for automated feeding of the digester.

Major components of the FOG receiving station include:

A controlled access FOG receiving system that automatically records delivery information including: driver identification, time, and quantity delivered.

A "rock box" to screen out large materials, trash, and silverware that can damage pumps

A grinder to reduce the size of any food waste or other foreign materials that may be picked up along with the FOG

A decant tank to allow for the gravity separation of water from the oily material. Concentrated oily material will be blended and fed into the digester and decanted water will be sent to the treatment plant headworks

A blending tank that will pre-condition the FOG material with partially digested sludge prior to its introduction into the digester.

It is expected that a series of progressive cavity pumps will be needed to allow for feeding of FOG to the decant tank, blending of decanted FOG with digesting and/or thickened raw sludge, and recirculation of sludge between the digesters and the preconditioning tank. The pumping system will include needed redundancy

Microprocessor and SCADA control system

## Project Benefits

FOG is a waste product category that includes many food-derived sources. Most common sources include restaurant fryer oils (yellow grease), restaurant sewer grease trap accumulations (brown grease), vegetable oil byproducts produced during manufacturing (white grease), animal renderings, and other forms of food waste. Of particular interest for the City of Palm Springs and the project described here, is the "brown grease." Because this material is very heterogeneous, may have been previously in direct contact with sewage, and contains a wide variety of objectionable materials, it is generally considered a waste material without economic incentive to recycle. This status actually increases its appeal for the City of Palm Springs and this project. Some of the reasons for developing a FOG receiving station in Palm Springs include:



1. FOG is easy to acquire. Its affinity to accumulate on the inside of sewer lines causes them to plug and sewer manholes to overflow onto the streets. These overflows, referred to as Sanitary Sewer Overflows (SSO's) have been identified by both Federal and State regulators as a serious environmental problem. In response, on May 2, 2006 the California State Water Resources Control Board adopted Order No. 2006-0003 Statewide General Waste Discharge Requirement for Wastewater Collection Agencies. This new regulation requires sewer collection agencies to implement programs to control FOG in the sewer collection system. One of the key aspects of these required programs includes the adoption of inspection programs and mandatory grease trap and interceptor cleaning. This oversight has significantly increased the daily collection of FOG in all California communities, including those of the Coachella Valley.
2. Waste haulers will pay the City of Palm Springs to accept the material creating a revenue stream that will partially fund related capital improvements and wastewater operations.
3. Delivery of FOG to the centrally located Palm Springs Wastewater treatment plant will significantly reduce the number of round trips and road miles that waste haulers must manage. It is good for their business, good for the regional traffic picture, and provides a significant air quality benefit through the consequential reduction in vehicle emissions.
4. FOG when allowed to naturally degrade in the environment of a landfill or compost facility produces methane as its decomposition byproduct. The methane released in an uncontrolled environment acts as a strong greenhouse gas. The diversion of this waste to the Palm Springs Digester will result in the thermal destruction of methane with only a small percentage of CO<sub>2</sub> emissions produced as combustion byproduct. Because CO<sub>2</sub> is a weaker greenhouse gas, there will be a resulting global warming benefit.
5. FOG is an easily digestible material that has been shown to increase the efficiency of metabolic processes in a sludge digester. The result of mixing FOG with sewage sludge is not only the nearly complete destruction of the FOG, but also an increase in volatile solids destruction of the sewage sludge being processed. The City of Riverside has been operating a FOG demonstration project since July, 2006. Their studies have shown that the presence of FOG in the digester increases the overall bioactivity and actually increases the system's ability to digest non-FOG sewage sludge. This reduction in the physical volume of digested sewage sludge discharged from the digester has both financial and environmental benefits. Those benefits include: the reduction in waste disposal costs, the preservation of landfill airspace, and the reduction of air quality impacts associated with the land application of biosolids.
6. FOG is a highly energetic waste material. The caloric value of FOG is substantially greater than any other material typically introduced into the digester. The result is an increase in both the quantity and quality of gas production. Initial estimates of the increase in gas production are about 50,000 cubic feet per day. In addition to the increased volume of gas, it is also expected that this program will increase the quality of the gas, though the extent is difficult to predict given the variable and unknown characteristics of the FOG that will be received. In Riverside, they experienced an increase in the BTU value of the digester gas and the amount of gas generated per pound of volatile solids destroyed. The gas was also somewhat cleaner with reduced volatile organic compounds concentrations, reduced siloxanes, and reduced sulfur concentrations. The combined effect of increased volume, increased methane content, and cleaner gas resulted in favorable economics for the overall energy cogeneration system.



## Program Schedule

The City anticipates that this project, as described in the technical section will require 18 months to complete. The schedule will be determined not only by the specific needs of the project itself, but must also include other balance-of-plant construction that will be required to support the project such as upgrading the plant's electrical system.

## Project Organization

Mr. Marcus Fuller with the City of Palm Springs will be the overall Manager for the project. Ms. Carrie Rovney, also with the City of Palm Springs, will perform as the fiscal administrator. The City of Palm Springs currently plans to contract the project as a design-build contract under the authority of California Government Code 4217.

Project Manager  
Mr. Marcus Fuller  
Assistant Director of Public Works/  
Assistant City Engineer  
3200 East Tahquitz Canyon Way  
PO Box 2743  
Palm Springs, CA 92263-2743  
[Marcus.Fuller@palm Springs-ca.gov](mailto:Marcus.Fuller@palm Springs-ca.gov)  
760 323-8253 ext. 8744

Fiscal Administrator  
Ms. Carrie Rovney  
Department of Public Works  
Administrative Assistant  
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(760) 323-8160

## Project Costs

Project Task	Estimated Cost
Preliminary Design	60,000
Detailed Design	130,000
Construction	1,300,000
Construction Management and Commissioning	210,000
<b>Total Project Costs</b>	<b>\$1,700,000</b>

## Project Funding Sources

2009 & 2010 Funding Sources	%	Amount
2009 County of Riverside, COLMAC Fund for Coachella Valley Air Quality Enhancement Projects	3%	50,000
2010 County of Riverside, COLMAC Fund for Coachella Valley Air Quality Enhancement Projects	3%	50,000
City of Palm Springs Wastewater Fund and other Sources, as Available	94%	1,600,000
<b>Total 2008 &amp; 2009 Project Costs</b>	<b>100%</b>	<b>\$1,700,000</b>

## Funding Request

The requested amount of funding is \$50,000 for 2009 and an additional \$50,000 for 2010

