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# MEMORANDUM

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Date: July 20, 2017

To: The Honorable Chair and Members  
Pima County Board of Supervisors

From: C.H. Huckelberry  
County Administrator 

Re: **Resolution 2017-39: Reaffirming County Commitment to Address Climate Change and Direction to County Departments and Resolution 2017-51: Furthering Pima County's Commitments to Climate Protection and Joining County Governments across the Nation in Signing on to the County Climate Coalition in Support of the Paris Climate Agreement**

As a follow-up to Board of Supervisors Resolution 2017-39 and Resolution 2017-51, I directed staff to prepare a report on actionable priorities Pima County should undertake to meet the Paris Climate Agreement's 2025 goals, which is to reduce greenhouse gas emissions (GHG) by 26 to 28 percent below 2005 levels.

Because some 89 percent of County operations' GHG emissions is the result of electricity produced from fossil fuels, the County will need to reduce our current GHG emissions by 40 percent. To reach this goal, the report concludes there are four core mitigation and adaptation means to achieve this target, and I am directing staff to take the following actions:

A. Solar Installations. Rapidly scale up renewable energy infrastructure by adding up to 40 to 42 megawatts (MW) of solar photovoltaics (PV) (estimated to require approximately 150 to 200 acres of surface area), combined with battery storage where feasible. Identifying sites where solar panels or covered parking can be easily installed will enable the County to take maximum advantage of current but soon to be revised Tucson Electric Power net metering benefits. Where possible, solar electrical energy facilities will be erected on all County parking facilities, either garages or surface parking areas. Areas of first priority will be those where the County has large electrical energy loads for building or other facilities.

1. All departments will review the attached report and provide their written assessment and recommendations for suitable solar sites (rooftop, covered parking, vacant but disturbed land, etc. that are adjacent to facilities) to me by September 1, 2017. Sites that are also suitable for battery storage and electric vehicle charging should also be noted. I will review the departmental assessments with the Office of Sustainability and Conservation, Regional Wastewater Reclamation Department (RWRD) and the

Facilities Management Department (FMD) to determine which solar installations sites are priorities.

2. FMD and RWRD will serve as leads in working with the Procurement Department to develop contracts with approved solar contractors by mid-October 2017 at the latest so the highest priority solar installations can be constructed within six months of executing solar service agreements with providers.
  3. FMD will continue to work with other departments to identify suitable solar sites and a schedule for installation in order to meet the goal of 40 MW production by 2025, or sooner.
  4. All new County facility and building construction will require solar installations to meet at a minimum 60 to 80 percent of electricity load. Where feasible, "campus" types of developments sponsored by the County will consider district energy systems to further reduce electricity and water demands.
- B. Energy Efficiency. Increase energy efficiency in the highest energy use buildings older than 40 years through a combination of retrofits and improving employee behavior to reduce electricity use by 20 percent. All older County-owned buildings in the downtown will have windows replaced and building insulation improved.
1. FMD should independently identify alternatives or confirm information in the attached report regarding increasing energy efficiency in the 10 highest electricity use/need buildings older than 40 years in the downtown complex through a combination of retrofits, operational controls and improved employee behavior change.
  2. FMD will provide a written plan and schedule for increasing energy efficiency in existing buildings by December 1, 2017.
  3. As part of the written plan, FMD will explore establishing a green revolving fund, whereby the savings accrued through efficiency measures and renewable energy are re-invested in continued and ongoing greenhouse emission reduction efforts in operations.
- C. Downtown Energy District. Create a Pima County Downtown Energy District by interconnecting and adding County-owned buildings to the existing downtown Central Plant.

1. FMD will provide a written plan and schedule for the Downtown Energy District by December 1, 2017.
- D. Fleet Vehicles. Continue improving fleet efficiency and electric vehicle (EV) infrastructure by replacing gasoline passenger sedans with electric vehicles and improving employee driver behavior (reduction in idling when possible, efficient routing, etc.). The County will purchase 20 electric vehicles per year for the next six years and will largely replace gasoline powered sedan-style vehicles in the current vehicle fleet.
1. Fleet Services will independently identify alternatives or confirm discovery information in the attached report regarding continuing to improve fleet efficiency and EV infrastructure by replacing gasoline passenger sedans with electric vehicles and improving employee driver behavior (reduction in idling of diesel vehicles/heavy equipment when safe and possible, efficient routing, etc.)
  2. Fleet Services will provide a written plan and schedule by December 1, 2017 to improve fleet fuel efficiency by 10 percent (in nonelectric vehicles) and replace 120 gasoline sedans with electric vehicles by 2025 or sooner.
- E. Green Infrastructure and Low Impact Development with Trees (GI-LID + Trees). Install GI-LID + Trees on County properties and rights of way (ROWs) where possible that are not vulnerable to removal or interference by utilities. This strategy would yield the highest return on investment in terms of carbon sequestration, building cooling, reduction in urban heat island effects and stormwater management and flooding abatement.
1. The Regional Flood Control District (RFCD), the Department of Transportation (DOT) and the Department of Environmental Quality (PDEQ) will serve as leads in collaboration with FMD, Natural Resources, Parks and Recreation, Development Services and OSC (and other stakeholders as needed) to identify best options and priorities for GI-LID + Trees on County properties and ROWs by December 1, 2017.
  2. An AutoCASE™ study should provide a GIS layer & map for siting GI/LID + Trees and a cost-benefit analysis and to determine:
    - a. Value of sequestered carbon (GHG sequestration/storage benefits);
    - b. Avoided utility costs for water and electricity by reducing building temperatures and overall urban heat island effects. (A special emphasis should be placed on establishing trees in critical need areas – low canopy/above average heat – given the growth time required to realize full benefits and savings.);

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c. Air quality benefits such as avoided costs in public health and reduced productivity and in maintaining regulatory compliance, as well as the calculated clean air benefits for tourism and economic development,

d. Identify infrastructure vulnerabilities to flooding and stormwater damage and opportunities to avoid capital improvement costs and to reduce insurance costs (associated with flooding) via the installation of GI-LID + Trees.

The AutoCASE™ findings and report will be presented to the Board of Supervisors for consideration as a budget expenditure to cover implementation over a period of seven years (completion by 2025).

3. The highest priority area for green infrastructure investment will be the County Regional River Park System.

F. Sustainable Action Plan for County Operations. Prepare an update to the *Sustainable Action Plan for County Operations* to reflect the County's alignment with the Paris Agreement.

1. I am requesting that the OSC prepare and deliver an outline to me to by March 1, 2018 with an update for how to revise the Sustainable Action Plan (SAPCO) to reflect the County's alignment with the Paris Agreement.

2. Based on the outline, I also anticipate streamlining and reorganizing how SAPCO is operationalized. In the past, much of the work has been undertaken voluntarily by departments; but given the priority need to accelerate this work, I will be assigning the appropriate directors and staff implementation responsibilities in the future.

G. Biogas Renewable Energy. The County will construct necessary infrastructure to make biogas generated from the wastewater treatment process into a clean form of methane gas capable for use as a commercial fuel. The County will then sell clean biogas for beneficial use.

The actions discussed above are also summarized in the attachment table.

CHH/mjk

Attachments

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c: Jan Leshar, Chief Deputy County Administrator  
Carmine DeBonis, Jr., Deputy County Administrator for Public Works  
Tom Burke, Deputy County Administrator for Administration  
Nanette Slusser, Assistant County Administrator for Public Works  
Lisa Josker, Director, Facilities Management  
Jackson Jenkins, Director, Regional Wastewater Reclamation  
Frank Samaniego, Director, Fleet Services  
Suzanne Shields, Director, Regional Flood Control District  
Priscilla Cornelio, Transportation Director  
Ursula Nelson, Director, Environmental Quality  
Chris Cawein, Director, Natural Resources, Parks and Recreation  
Carla Blackwell, Director, Development Services  
Linda Mayro, Director, Sustainability and Conservation  
Mary Jo Furphy, Director, Procurement

**Immediate/near-term priorities and departmental assignments for Implementation  
of Board of Supervisors Resolutions 2017-39 and 2017-51**

<b>Actions to Reduce GHG Emissions</b>	<b>kWh Saved/ Yr</b>	<b>MTCO2 e/Yr Reduced</b>	<b>% of Target</b>	<b>Assigned To</b>	<b>Report Responses Due</b>	<b>Plan to Implement Due</b>	<b>Estimated Completion</b>
<b>a. Solar: Install 41 MW of Solar at County Facilities (considering battery storage where feasible)</b>	86,739,000	79,000	106	<b>FMD*</b> <b>RWRD*</b> <b>OSC*</b> Procure. All Depts.	09/01/17	10/20/17	Interconnection Agreements mid-October 2017. Completion mid-February 2018.
<i>*Leads FMD, RWRD and OSC should independently identify alternatives or confirm discovery information in the attached report to rapidly scale up renewable energy infrastructure by adding up to 40 to 42 megawatts (MW) of solar photovoltaics (PV), combined with battery storage where feasible, to take maximum advantage of current net metering rates. Solar electrical energy facilities will be erected on all County parking facilities, either garages or surface parking areas. Areas of first priority will be those where the County has large electrical energy loads for buildings or other facilities.</i>							
<b>b. Energy Efficiency Buildings/ Operations: Improve EE by 20 percent in 10 Highest Energy Use Buildings</b>	9,538,000	8,700	12	<b>FMD*</b>	09/01/17	12/01/17	12/01/25
<i>*Lead should independently identify alternatives or confirm discovery information in the attached report regarding increasing energy efficiency in the 10 highest use/need buildings older than 40 years through a combination of retrofits a combination of retrofits and improved employee behavior reduce electricity by 20 percent. All County-owned buildings in the downtown complex will be upgraded will be upgraded through window replacement and improved building insulation.</i>							
<b>c. Downtown District Energy</b>	TBD	TBD	TBD	<b>FMD*</b>	N/A	12/01/17	12/01/25
<i>*Lead will create a Pima County Downtown Energy district by interconnecting and adding County-owned buildings to the existing downtown Central Plant.</i>							
<b>d. Fleet Efficiency:</b>	N/A	590	1	<b>Fleet*</b>	09/01/17	12/01/17	12/01/25
<b>1.) Improve Fleet Fuel Efficiency 10 percent (in nonelectric vehicles)</b>							
<b>2.) Replace 120 gasoline sedans with electric vehicles</b>	N/A	91	<1	<b>Fleet*</b>	09/01/17	12/01/17	12/01/25
<i>*Lead will independently identify alternatives or confirm discovery information in the attached report regarding continuing to improve fleet efficiency and electric vehicle infrastructure by replacing gasoline passenger sedans with electric vehicles and improving employee driver behavior (reduction in idling of diesel vehicles/heavy equipment when safe and possible, efficient routing, etc.) The County will purchase 20 electric vehicles per year for the next six years and will largely replace gasoline powered sedan-style vehicles in the current vehicle fleet.</i>							
<b>e. Green Infrastructure and Low Impact Development with Trees AutoCASE study</b>	N/A	176	<1	<b>RFCD*</b> <b>DOT*</b> <b>PDEQ*</b> NRPR DSD OSC	N/A	12/01/2017	12/01/25

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<b>1.) GI-LID + Trees</b>									
<b>(proxy = 66,000</b>									
<b>SF/1.5 acres rain</b>									
<b>garden &amp; curb cuts)</b>									
<b>2.)</b>	<b>Just</b>	<b>Trees</b>	970,000	700	1	<b>RFCD*</b>	N/A	12/01/2017	12/01/25
<b>(10,000</b>	<b>desert</b>					<b>DOT*</b>			
<b>trees low VOC)</b>						<b>PDEQ*</b>			
						NRPR			
						DSD			
						OSC			

*\*Leads should independently identify alternatives or confirm discovery information in the attached report regarding strengthening the adaptive capacity and resilience of County operations and reduce infrastructure vulnerabilities to climate change through. An AutoCASE study should be undertaken to create a GIS layer and map as well as and cost-benefit analysis of installing GI/LID + Trees on County properties and rights of way that would yield the highest return on investment in terms of carbon sequestration, building cooling, reduction in urban heat island effects and stormwater management and flooding abatement as well reduced air pollution.*

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<b>f. Sustainable</b>	N/A	N/A	N/A	<b>OSC*</b>	N/A	03/30/17	12/01/25
<b>Action Plan for</b>							
<b>County Operations</b>							

*\*Lead should prepare an update to the Sustainable Action Plan for County Operations to reflect the County's alignment with the Paris Agreement.*

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<b>g. Biogas</b>	TBD	TBD	TBD	<b>RWRD*</b>	N/A	03/30/17	12/01/25
<b>Renewable Energy</b>							

*\*The County will construct necessary infrastructure to make biogas generated from the wastewater treatment process into a clean form of methane gas capable for use as a commercial fuel. The County will then sell clean biogas for beneficial use.*

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