

INTERGOVERNMENTAL AGREEMENT

BETWEEN

ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY

AND

CITY OF SURPRISE

FOR THE ARIZONA MILITARY AND ENERGY LAND USE PLAN

This **AGREEMENT** ("Agreement") is entered into this 25th day of April, 2016, by and between the **ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY** ("ASU") and the City of Surprise ("Agency").

WHEREAS, the Parties are authorized to enter into this Agreement with one another pursuant to Arizona Revised Statutes ("A.R.S"). § 11-952 and 15-342(13), inter alia; and.

WHEREAS, The Arizona Board of Regents (ABOR) is authorized to enter into agreements by the Arizona legislature (A.R.S. § 15-1625.B).

WHEREAS, Agency desires to obtain grant funding from the Department of Defense Office of Economic Adjustment for research to be performed by ASU, as described in the scope of work attached hereto and incorporated herein as Exhibit A (the "Project"), and ASU desires to conduct such research, the Project contemplated by this Agreement is of mutual interest to Sponsor and ASU and furthers the educational, scholarship and research objectives of ASU as a nonprofit, tax-exempt, educational institution;

NOW, THEREFORE, in consideration of the premises and mutual promises and undertakings herein contained, and for other good and valuable consideration, the parties agree as follows:

1. Effective Date. This Agreement will be effective as of the date of the last signature below.
2. Term. The term of this Agreement shall be for twenty (20) months from the effective date of this Agreement.
3. Scope of Work. ASU will use reasonable efforts to perform the services and deliver any reports or other items specified in Exhibit A.
4. Principal Investigator. ASU will provide Kristin Mayes, Director, Julie Ann Wrigley Global Institute of Sustainability as Principal Investigator ("PI") for work contemplated and performed under this Agreement.
5. Termination. Either party may terminate this Agreement at any time without cause by giving the other party thirty (30) days written notice prior to the date of termination.

6. Notices. All notices shall be mailed or delivered to the party to receive such notice to the following address.

a. If intended for Agency to:

City of Surprise
Attn: City Attorney's Office
16000 N Civic Center Plaza
Surprise, AZ 85374

Copy to:
Attn: Eric Fitzer
Title: Community Development Director
Phone: (623) 222-3020

b. If intended for ASU, to:

Office for Research & Sponsored Projects Administration
Arizona State University
P.O. Box 876011
Tempe, Arizona 85287-6011
e-mail: asu.awards@asu.edu
Phone: (480) 965-1427
Fax: (480) 965-2455

Copy to:
Attn: Kris Mayes
Title: Principal Investigator
email address: Kris.Mayes@asu.edu

7. Interpretation and Amendments. This Agreement contains the entire agreement between the parties hereto. This Agreement shall not be amended or modified in any manner, except by an instrument in writing signed by the parties hereto.

8. Headings. Headings are for convenience only and are not to be construed as part of this Agreement.

9. Invalidity of a Term. The parties agree that in the event any term, covenant or conditions herein contained should be held to be invalid or void, the invalidity of any such term, covenant or condition shall in no way affect any other term, covenant or condition of this Agreement.

10. Dispute. In the event of any dispute between the parties under this Agreement, the parties agree that they shall submit the dispute to arbitration pursuant to A.R.S. §§ 12-133(D) and 12-1518.

11. Conflict of Interest. The parties acknowledge that this Agreement is subject to

cancellation by the Governor of Arizona pursuant to A.R.S. § 38-511, the provisions of which are incorporated herein.

12. Prohibition Against Discrimination. In the event that it applies, the parties agree to comply with the Arizona Governor's Executive Order No. 2009-09.

13. Governing Law and Venue. This Agreement shall be governed by and interpreted in accordance with the laws of the State of Arizona. The exclusive venue for any litigation, arbitration, administrative hearing or the like concerning this Agreement or any matter arising therefrom shall be in Maricopa County, State of Arizona.

14. Unavailability of Funding. Every payment or financial obligation of the parties under this Agreement is conditioned upon the availability of funds appropriated or allocated for the payment of such obligation. If funds are not allocated and available for the continuance of this Agreement, this Agreement may be terminated by any party at the end of the period for which funds are available. No liability shall accrue to any party in the event this provision is exercised, and neither the Agency nor ASU shall be obligated or liable for any future payments nor for any damages as a result of termination under this paragraph.

15. E-verify. To the extent applicable under A.R.S. § 41-4401, each party and its respective subcontractors warrant compliance with all federal immigration laws and regulations that relate to its employees and compliance with the E-verify requirements under A.R.S. § 23-214(A). Each party has the right to inspect the papers of the other party or its subcontractors participating in this Agreement and may result in the termination of the Agreement by a non-breaching party under terms of this Agreement.

IN WITNESS WHEREOF, the parties hereto agree to carry out the terms of this Agreement and have executed this Agreement the day, month and year first written above.

ARIZONA BOARD OF REGENTS
ARIZONA STATE UNIVERSITY 4/25/14
Signature: [Handwritten Signature]

Name: Heather C. Clark
Associate Director Research Administration

CITY OF SURPRISE:
Name: [Handwritten Signature]

Sharon Wolcott, Mayor

ATTEST: [Handwritten Signature]
Sherry Aguilar, City Clerk

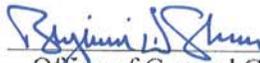
APPROVED this 15 day of March, 2016.

This Intergovernmental Agreement has been reviewed by the undersigned attorney for the Agency who has determined that it is in appropriate form and within the powers and authority granted by law to the Agency designed herein.

BY: [Handwritten Signature]
Robert Wingo, City Attorney

This Intergovernmental Agreement has been reviewed pursuant to A.R.S. § 11-952 by the undersigned, who has determined that it is in the proper form and is within the powers granted under the laws of the State of Arizona to those Parties to the Agreement represented by the Legal Counsel for Arizona State University.

Dated this 25TH day of April, 2016.

BY: 
Office of General Counsel for
Arizona State University

*Arizona Military & Energy Land Use Plan (AME-UP)***1. Point of Contact**

Mr. Eric Fitzer

Title: Director, Community Development

Address: 1600 North Civic Center Plaza, Surprise, Arizona 85374

Direct Phone: (623) 222-3020

Email: Eric.Fitzer@surpriseaz.gov

2. Potential Energy Development (and see Figure 1)

Project Title & Developer	Description	Location
Crossroads, Solar Reserve	Concentrated Solar Power tower, 150 MW, 538 ft. height	Gila Bend, AZ, Private Land
Quartzsite, Solar Reserve	Concentrated Solar Power tower, 100 MW, 653 ft. height	Quartzsite, AZ, BLM Land
Harquahala Valley Solar Tower, Abengoa Solar LLC		Tonopah, AZ, Private Land
Enviromission Tower, Enviromission LLC	Updraft tower, 200 MW, 2,600 ft. height	Quartzsite, AZ, State Land
Solar Wind Down Draft Tower, Solar Wind Energy, Inc.	Downdraft tower, 600 MW, 2,250 ft. height	San Luis, AZ, Private Land
Hualapai Valley Solar	Concentrated Solar Power – Parabolic Trough, 340 MW	Mohave County, AZ, Private Land
Sonoran Solar, NextEra Energy Resources	Photovoltaic, 300 MW	Buckeye, AZ BLM Land
Maricopa Solar Park, Marisol Energy 2 LLC	Photovoltaic, 300 MW	Maricopa, AZ, BLM Land
Mojave County Wind Farm, BP Wind Energy	Wind, 425-500 MW, 238 turbines, 397-492 ft. height	Kingman, AZ, BLM & Bureau of Reclamation Lands
Boquillas Wind Project, Edison Mission Energy & NTUA	Wind, 85 MW (first phase) – 200 MW (build out)	Navajo Reservation, AZ, Tribal Land
Yavapai Ranch, NextEra Energy	Wind, 99 MW, 81 turbines	Yavapai County, AZ, Private Land
Centennial West, Clean Line Energy Partners	Merchant Transmission, 600 HVDC, New Mexico to California	Northern AZ route
Sunzia Southwest Transmission Project, Sunzia	Merchant Transmission, 500 KV, New Mexico to Arizona	Southern AZ route
Southline Transmission Project, Black Forest Partners	Merchant Transmission, 345 KV & 115 KV, New Mexico to Arizona	Southern AZ route

3. Project Description

The City of Surprise and Arizona State University (ASU) seek to work hand-in-hand with the state, cities, counties, tribes, and military branches to create an *Arizona Military & Energy Land*

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Use Plan (AME-UP). The AME-Up plan will provide best practices for siting of renewable energy projects within the State of Arizona, one of the highest activity states for both military use and renewable energy projects. Rather than a static document, ***we propose a multi-dimensional tool that can be used as an interactive community planning resource that will spur discussion and collaborative siting for renewable energy projects, while respecting parameters and requirements of military bases and installations.***

By utilizing general and comprehensive land use plans, existing Renewable Energy Development Areas and Bureau of Land Management (BLM) Section 368 West Wide Energy Corridors, we can mitigate or prevent incompatible energy development activities that are likely to impair the continued operational utility of Arizona’s Department of Defense (DoD) bases and installations. The end result will be effective collaboration, including early engagement and dialogue between state and local governments, the DoD, and energy developers to ensure that proposed energy projects may proceed without compromising the DoD’s military testing and operational training.

Arizona is a natural model for addressing military and civilian use of land. The state is home to an integrated network of military facilities, including military airports, ranges and Special Use Airspace (SUA) connected by low-level Military Training Routes (MTR) that provide a key foundation for our nation's security (see map in figure 1). Arizona’s military bases are billion dollar economic engines for the state and often the largest employers in the communities where

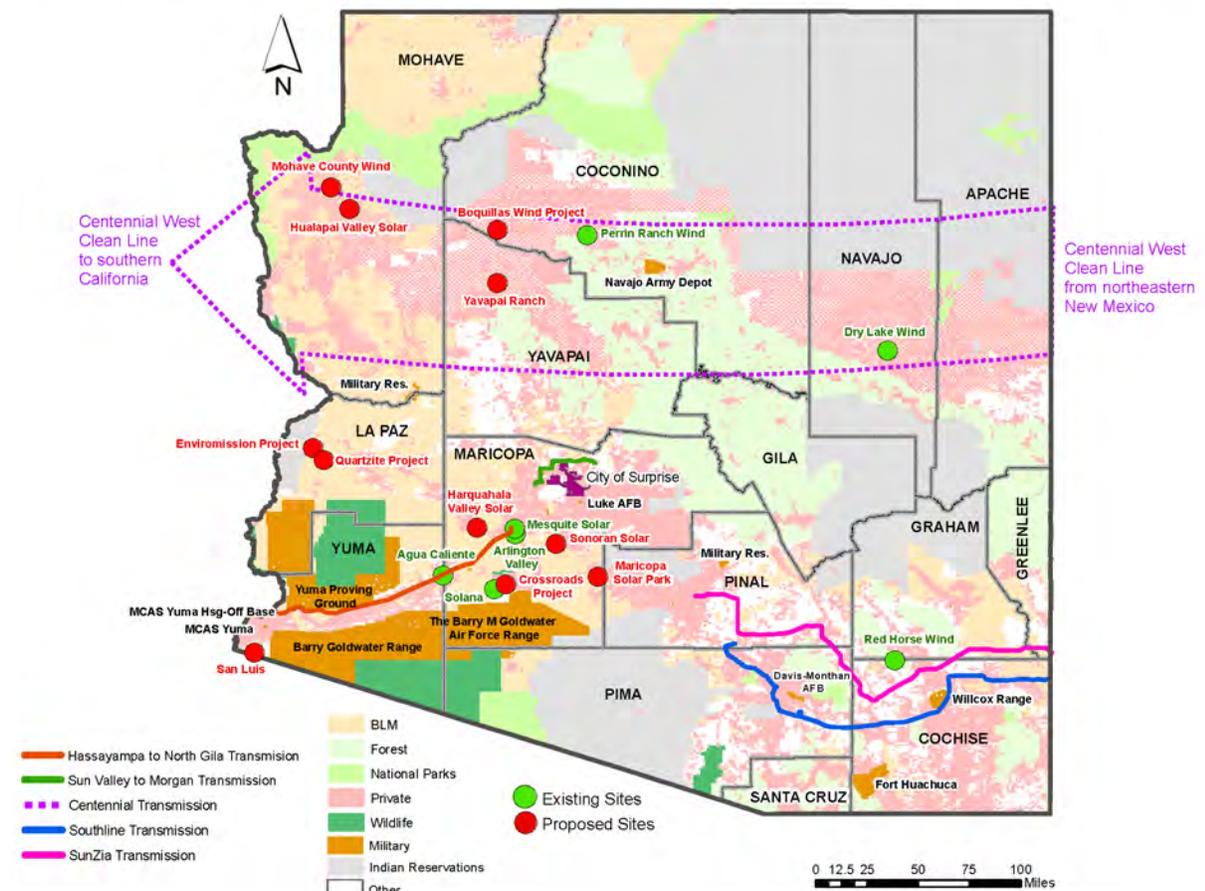


Figure 1. Definition of the Study Area. Arizona reflects the need for integrated management and collaboration across stakeholders to ensure that national security is not affected by renewable energy projects.

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they are located. Concurrently, Arizona has had record immigration since the 1950's (1950: 749,587 compared to 2015: 6.7 million). Added to the mix, Arizona has the greatest solar energy potential of any state. According to a 2014 study by the Environment Arizona Research & Policy Center, Arizona is #1 in the nation for installed solar (per capita). Smaller markets in wind and algae cultivation are rapidly expanding, as emphasis on alternative energy is driven by economic and resource availability.

In these ways, Arizona reflects two national needs: (1) military training and preparedness, and (2) development of renewable energy resources. Together these provide economic development, national safety and security, and quality of life for Arizona's residents.

Given all this activity, early coordination among energy developers, cities, counties, towns, state and tribal entities and the military will help ensure that project development conflicts are minimized so as to not impede military mission requirements.

The DoD is the largest energy consumer in the world, spending nearly \$20 billion every yearⁱ. Over the last few decades, renewable energy has emerged as a major component of military spending. The number of renewable energy projects on U.S. military bases rose from 454 in 2010 to 700 in 2012 and is steadily increasing each yearⁱⁱ. By 2025, the DoD is aiming to have 25 percent of the energy it procures or generates come from renewable sources. If this goal is reached, 297,000 new jobs from renewable energy development would be created as well as \$263.4 billion in capital investment. In addition, consumers would save \$64.3 billion in electricity and natural gas bills, increasing to \$95 billion by 2030ⁱⁱⁱ. Davis-Monthan Air Force Base, located in Tucson, Arizona is currently building a 14-megawatt solar array, the military's largest solar project. This solar PV project is expected to provide 35 percent of base electricity requirements, saving the base an average of \$500,000 annually^{iv}.

States have also increased their commitment to renewable energy, with 28 states, plus Washington DC and three U.S. territories adopting a renewable energy mandate.^v Arizona's Renewable Energy Standard, passed in 2006 by the Arizona Corporation Commission, requires an increasing amount of electricity sold in the state to be from renewable sources, reaching 15 percent by 2025^{vi}. Due, in large part to this energy standard, Arizona has increased renewable energy spending and initiated numerous renewable energy projects, which has had a correlating positive impact on the state's economy. In 2011, renewable energy projects created a total of 16,790 jobs and \$795 million in wages in Arizona^{vii}. These renewable energy projects have stimulated the local economy and kept money circulating within the state, benefitting the economy over time. By 2013, Arizona ranked second in the nation for utility-scale electricity generation from solar energy,^{viii} second only to California. By contrast, according to the Arizona Department of Commerce, with the continued use of fossil fuels, more than half of all expenditures for energy leave the state and are not reinvested in local economies^{ix}. Proper implementation and maintenance of renewable energy projects will reduce demand on imported fossil fuel, thus keep more money in the state.

Our proposed plan and tool, AME-UP, will also incorporate and provide guidelines and practices for comprehensive and detailed economic impact analysis. Economic impact is a major factor influencing the development of renewable energy projects on or near military installations and associated ranges. Examples of such impacts include opportunity cost of the military land space occupied, impacts on military base operations, financial returns on the renewable projects, economic value of the environmental impacts, job creation and local supply chain impacts, and

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impacts on the local and regional electric grid. We will quantify economic impacts using simulation tools such as the Jobs and Economic Development Impact (JEDI) model developed by National Renewable Energy Laboratory (NREL), stakeholder interviews, and empirical econometric modeling.

In addition, because Arizona is part of an integrated and interdependent complex of military ranges and Special Use Airspace (SUA) spanning all four services, we will work closely with the Southwest Regional Coordination Team (RCT), a cross Services team, who are responsible for encroachment and sustainment concerns in the Region. This includes working with representatives from each of Arizona's military branches spanning seven installations across the state (see call out box on the right & letters of support, *Army letter is pending*).

This project is especially critical given the December 30, 2014 recommendations by the Governor's Arizona Strategic Military Affairs Advisory Panel (SMAAP), which included:

- Airspace coordination/prioritization will be increasingly important as military flying missions grow in Arizona. Existing airspace must be protected.
- Continued growth of the energy sector in Arizona will continue into our future. While this is an economic advantage to the state, new energy infrastructure can potentially encroach on military operations (see call out box below). This necessitates completing an early review of new projects, which are crucial to retaining our installations.

Air Force Bases/Ranges

- Barry M. Goldwater Air Force Range, Phoenix
- Davis Monthan Air Force Base, Tucson
- Luke Air Force Base, Glendale

Army Bases

- Camp Navajo Army Base, Flagstaff
- Fort Huachuca Army Base, Cochise
- Yuma Proving Ground Army Base, Yuma County

Marine Corps Bases

- MCAS Yuma Marine Corps Base, Yuma

Identified encroachment issues with potential DoD impacts:

- Radar interference – wind
- Low-level flight obstructions – wind, solar towers
- Electromagnetic interference – electric transmission
- Glint – momentary flash – solar PV, solar towers
- Glare – continuous source – solar PV, solar towers
- Night Vision Goggles (NVG) – photovoltaic reflection (potential/research needed)

AME-UP will take into account military bases, airspace, and high and low level training routes throughout the state. In most Joint Land Use Studies (JLUS), a specific DoD installation is studied through an Air Installations Compatible Use Zone (AICUZ) program. Under the AICUZ program the Accident Potential Zones (APZ's) and day-night average sound levels (DNL'S) are identified. Due to the interconnected nature of Arizona's DoD bases and installations and the study of multiple renewable energy and transmission projects identified, the Military Influence Planning District (MIPD) studied by AME-UP will be state-wide.

3.1 Promoting Compatible Siting

The proposed project will leverage our partners' place in the regional ecosystem for the quick identification and recruitment of adequate resources and stakeholders to create and release a

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testing version of AME-UP. Recognizing that Arizona is a home rule state (local government authority), the writing and adoption of AME-UP will necessarily be a grassroots effort. Success in achieving our objectives will come through active collaboration, information sharing and consensus building. Using this approach, the project's overall goals are to:

- Identify best practices for **stakeholder engagement** around energy projects proximal, tangential, and impacting DoD test, training, and military operations such that it can be modeled and used repeatedly for scenario testing across situations and contexts.
- Identify best practices for energy **site qualification** for DoD test, training, and military operations such that it can be modeled and used repeatedly for scenario testing across situations and contexts.
- Create a best practices plan for **assessment** of existing and planned energy projects proximal, tangential, and impacting DoD test, training, and military operations such that it can be modeled and used repeatedly for scenario testing across situations and contexts.
- Identify best **land-use areas** for development of specific renewable energy technologies/projects such that it can be modeled and used repeatedly for scenario testing across situations and contexts.

Success in achieving our objectives will come through active collaboration, information sharing and consensus building using a bottom-up approach. Using this approach, we will achieve the following:

- Gather existing data and overlay military bases, airspace flight routes with the existing documentation of maps, community and county general and comprehensive land use plans, existing land use, zoning, BLM zones Renewable Energy Development Areas and BLM Section 368 West Wide Energy Corridors, in order to identify locations where siting of energy projects, including electrical transmission lines, could adversely impact Arizona's DoD testing, training, and military operations.
- Develop a framework for identifying and characterizing types of encroachment on military operations associated with renewable energy projects.
- Prepare a set of case studies illustrating various types of encroachment and how these were addressed through stakeholder engagement processes.
- Identify best practices for stakeholder engagement around energy projects proximal, tangential, and impacting DoD testing, training, and military operations.
- Identify best practices for energy site qualification for DoD testing, training, and military operations.
- Create best practices plan for assessment of existing and planned energy projects proximal, tangential, and impacting DoD testing, training, and military operations.
- Identify locations where siting of energy projects, including electrical transmission lines, could adversely impact Arizona's DoD testing, training, and military operations.
- Identify lands where the development of energy projects pose no threat to military installations in order to guide the development community in areas more acceptable for such energy development.
- Conduct a sensitivity analysis of lands where development of energy projects are likely to encounter permitting challenges or have meaningful negative environmental impacts.
- Utilizing the above documentation, create a comprehensive master DoD testing, training, and military operations land use plan.
- Frame the vision and plan for an online interactive geo-spatial tool that can be used by

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city and community planners, developers and stakeholders to identify potential permitting requirements, cultural and natural resource sensitivities, and opportunities/conflicts between renewable energy development and military facilities.

3.2. Definition of Study Area

The project team will concentrate in the regions of Arizona where, if proposed renewable energy projects are developed, could conflict with the military missions (see figure 1). The project team will, through an inclusive model of engagement, hold stakeholder meetings and focus groups to create a landscape assessment of challenges. The team will work with these regional groups to obtain feedback from those directly involved in and invested in the protection of the military mission concurrent with the successful development of renewable energy projects. This assessment will be used to indicate where there are current and potential impacts to the military missions underway in Arizona. These engagements will allow the project team to identify technical, economic and land use issues.

The project team will then create the AME-UP map to identify potential areas where energy development adversely impacts military missions, with the addition of real world examples where energy developments have been proposed, are in process or have been approved. Subsequently the AME-UP tool will provide land use and development guidance to the authorities having jurisdiction on best practices for development of energy projects in areas that may impact military missions. AME-UP will also identify lands where the development of energy projects pose no threat to military installations.

AME-UP will provide a framework for identifying and characterizing types of encroachment on military operations associated with renewable energy projects. This framework builds upon an overarching structure developed by the Sonoran Institute in its study of encroachment on public lands in Arizona. It is designed to help decision-makers and stakeholders determine the appropriate actions to address specific types of encroachment. Additionally, AME-UP will prepare a set of case studies illustrating various types of encroachment and how these were addressed through stakeholder engagement processes to avoid, minimize, or mitigate impacts. Both the framework and case studies will be designed to assist in developing and organizing best practices in siting, designing, and other actions to reduce impacts to military operations from renewable energy projects (see figures 2 and 3 for project schedule and milestones).

Future efforts to enhance AME-UP through the creation of an interactive tool could be completed through ASU's Decision Theater (<https://dt.asu.edu/>). The Decision Theater helps leaders visualize solutions to complex problems through advanced modeling and simulation technology. Using nodes at ASU and the McCain Institute in Washington DC, the network connects researchers from all disciplines with national and international policy makers. The Decision Theater's immersive visualization environments include: seven-screen panorama HD displays high-performance computation for analysis and simulation, large-capacity data storage, remote sites to allow sharing of expertise, and collaborative software for sharing applications across platforms.

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3.3 Capitalizing on Existing Strengths Integration with Existing/Ongoing Efforts

Arizona was ranked first in percentage of new electrical capacity from solar in 2014. Concurrently, Arizona’s military bases are often the largest employers in the communities where they are located. Arizona’s cities, towns and counties have years of expertise relative to coordination of development with military operations. As of 2015, Arizona’s military installations have been involved with seven (7) Joint Land Use Studies; and one more state-wide in nature.

However, these studies are specific to development encroachments or expansion of day-night average sound levels (DNL’s) and have not taken into account large scale energy development and the impacts on low/high level training routes and radar.

Capitalizing on the breadth and depth of the existing knowledge base and the capacity of ASU, the AME-UP model will be replicable in other parts of the country with regards to the coexistence of energy developments and military installations.

Task/Activities		Month															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase I: Research	1.1 Siting and permitting																
	Develop requirements list for DoD; Identify and compile requisite documents and resources for state, local, and federal land use; Identify and compile renewable energy project plans; develop encroachment framework; prepare case studies of encroachment impacts and stakeholder efforts to address these issue																
	1.2 GIS Data Collection																
	Identify and collect existing data resources; create opportunity for collection of real-time data																
Phase I: Research	1.3 Intangible Data Collection																
	Identify and collect existing economic and quality of life data; create opportunity for collection of real-time data																
	1.4 Stakeholder identification																
	Military, tribes, cities, counties, subject matter experts, state legislators, congressional delegates, Governor’s office, industry, utilities, non-governmental organizations																
Phase II: Outreach	2.1 Stakeholder Engagement																
	Stakeholders are contacted and surveyed for information and feedback regarding scope and impact of renewable energy projects on military operations using focus group and in person visits																
	2.2 Round-table Sessions																
	Two group sessions for six groups of stakeholders; data recording (notes and materials)																
Phase II: Outreach	2.3 Focus Groups																
	Small group sessions with key stakeholders; data recording (notes and materials)																
	2.4 Analysis																
	Overlay and integration of stakeholder information with task 1.2 Data Collection																
Phase III: Tool Dev.	3.1 AME-UP release																
Synthesis of data collection and all analysis into single document; incorporation of feedback from stakeholder groups																	
Phase IV: Test and Verify	4.1 Dissemination																
	Publication (hard copy) of report; delivery to stakeholders; online portal for scenario examination																
Phase IV: Test and Verify	4.2 Demonstration (Optional)																
Modeling of decision making tool using ASU’s Decision Theater																	

Figure 2. AME-UP Project Schedule.

Project Tasks	Performance Milestone(s)
1. Research	
1.1 Siting and permitting	Requirements list complete (Month 2)
1.2 & 1.3 Data Collection	All resources integrated into processing system (Month 3)
1.4 Stakeholder identification	Identification of >90% of stakeholder representatives (Month 7)
2. Outreach	
2.1 Stakeholder Engagement	Invitations to outreach activities complete (Month 7)
2.2 & 2.3 Round-table and Focus Group	>90% of planned meetings complete, with >75% attendance per meeting (Month 10)
2.4 Analysis	>90% of data from meetings captured and overlaid with Tasks 1.2 and 1.3 Data Collection (Month 11)
3. Tool Development	
3.1 AME-UP release	Version 1 of AME-UP delivered to DoD (Month 12)
4. Test and Verify	
4.1 Dissemination	Presentation to stakeholders (Month 12); Online portal in beta phase (Month 12)
4.2 Demonstration (Optional)	Decision making model in Decision Theater (Month 18)

Figure 3. AME-UP Performance Milestones.

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4. Project Parties

The proposed AME-UP project brings together key stakeholders with vested interest in the creation and use of a decision making tool (see call out box next page). Our initial key stakeholders are:

The City of Surprise is Arizona's tenth (10th) largest City with a population in excess of 120,000 residents and is located 45 minutes northeast of downtown Phoenix. As a proud neighbor of Luke Air Force Base, and the location of Luke Auxiliary #1 Airfield, the City of Surprise has supported the ongoing efforts to protect Luke's mission. The City, through its general plan, zoning ordinance and polices, has worked with Luke on the siting of land uses that do not impair Luke's overall military mission. The City, under AME-UP, will provide a point of contact, a place to convene stakeholder groups and expertise as it relates to siting of renewable energy projects, permitting of projects, and the locations of proposed renewable energy projects.

Arizona State University (ASU) is rapidly becoming the premier renewable energy research center in the country. ASU is home to a National Science Foundation and DOE funded Engineering Research Center in Quantum Energy and Sustainable Solar Technologies, operates a national public-private algae test bed, and has installed over 25MW of photovoltaics on campus rooftops. ASU's Global Institute of Sustainability is also home to the Sustainable Cities Network (SCN), a vehicle for knowledge sharing and coordinating efforts among communities across Arizona. SCN includes 26 cities and towns, Maricopa County and three tribal communities from the Phoenix-Metro area, as well as over 20 communities from other areas of the state. ASU will provide faculty expertise in geospatial information systems (GIS), mapping, renewable energy development, energy transportation, an economic and policy analysis. In partnership with the Pat Tillman Veterans Center, up to two veteran liaisons will be instrumental in AME-UP outreach efforts, providing important insight into military priorities and advancing the educational goals of these students.

The Arizona Department of Emergency and Military Affairs (DEMA) consist of the Army and the Air National Guard, the Division of Emergency Management, and the Joint Programs Division. DEMA provides unique capabilities and services to the citizens of Arizona in three distinct roles: community, state and federal. DEMA's role will be to help facilitate stakeholder identification and meetings as the state's military affairs specialists. DEMA facilities will be utilized for some project and stakeholder meetings.

The Sonoran Institute (SI) was founded in 1990 to help communities conserve and restore natural resources and manage growth and change through collaboration, civil dialogue, sound information, practical solutions and big picture thinking. SI is a nonprofit organization with offices in Tucson and Phoenix, Arizona; Bozeman, Montana; Glenwood Springs, Colorado; and Mexicali, Baja California, Mexico. SI will be responsible for development of an encroachment framework to identify and characterize direct, indirect, and perceived impacts of renewable energy projects on military operations and preparing a series of case studies describing how these impacts have been addressed through stakeholder processes.

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Western Regional Partnership (WRP) provides a proactive and collaborative framework for senior-policy level Federal, State and Tribal leadership to identify common goals and emerging issues in the states of Arizona, California, Nevada, New Mexico and Utah. WRP works to develop solutions that support WRP Partners and protect natural resources, while promoting sustainability, homeland security and military readiness. WRP's role will be to help identify stakeholders within the tribal and military communities and assist in facilitating both stakeholder meetings and focus groups. WRP will also assist in editing AME-UP prior to submission.

As a not-for-profit organization, the **Arizona Aerospace & Defense Association (AZADA)** is a neutral and all-encompassing voice for the aerospace community and its interactions with the military sector. The A& D industry accounts for over 97,000 direct jobs employed at over 3,500 establishments. Arizona's aviation and aerospace manufacturing industry is the fourth largest in the nation by total employment. AZADA will be utilized as an advisor in our stakeholder outreach and focus group efforts as a state leader in bringing together the larger aerospace community as it intersects with the military sector.

5. Local Military Involvement

Each of the military bases/ installations within Arizona has agreed to be active participants in this project. Thus, the project team has secured explicit commitment from the state's military branches - Air Force, Army and USMC (MCIWEST) for this project (see letters of support). This involvement includes participation in the research stage, stakeholder meetings, focus groups, overall project plan review/input and roll out of the plan to the local planning community.

Military

- Military Leaders – all branches
- Arizona Department of Emergency and Military Affairs
- Arizona Military Affairs Commission
- Arizona Commanders Summit
- Aerospace and Defense Alliance
- Western Regional Partnership

Tribal Leaders

- Tribal Solar Working Group
- Arizona's 22 Tribes
- Arizona Committee on Indian Affairs

City, County Leaders

- Arizona League of Cities and Towns
- Arizona League of Counties
- County/City/Town Council, Manager, Planner

Subject Matter Experts

- Bureau of Land Management
- Arizona State Lands Department

Arizona House of Representatives

- Military Affairs and Public Safety Committee
- Rural and Economic Development Committee
- Energy, Environment and Natural Resources Committee

Arizona State Senate

- Public Safety, Military and Technology Committee
- Energy Committee
- Natural Resources Committee
- Rural Affairs and Environment Committee

Arizona Governor's Office

- Military and Public Safety Policy Advisor
- Energy and Environment Policy Advisor
- Local Governments Policy Advisor
- Indian Affairs Policy Advisor

Utilities

- Arizona Public Service
- Tucson Electric Power
- Salt River Project
- Cooperatives

Non-Government Organizations

- Four Corners Wind Resource Center
- Tribal Solar Working Group
- Arizona Aerospace and Defense Alliance
- Arizona Solar Energy Industries Association
- Chambers of Commerce – state-wide including Military Committees

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In addition, Arizona has an active network of both government and non-government military organizations that will be involved in each phase of the proposed project. These include, but are not limited to, the Arizona Commander's Summit and the Arizona Military Affairs Commission.

6. Grant Funds and Other Sources of Funds

Arizona, like many states in the U.S., has several disparate and unconnected sources of information that are critical when considering land use and development. These resources are independently funded and operated. We propose to harness the vast amount of information available in multi-dimensions to create a decision making tool for the DoD. This ambitious project will be the first of its kind for Arizona. ASU and the City of Surprise have recognized the importance of this endeavor through their commitment for 10% match of the total project budget through personnel effort and meeting space. If successful, we will seek additional sustaining financial support from the state for operation and matching funds from ASU for research efforts.

7. Grants Management

The City of Surprise will serve as the prime recipient of the award, and administer a subcontract to ASU. The Sonoran Institute will perform work as a subcontract to ASU. This project will fall under the Community Development Department. Additional internal support for grant management includes the City's Grant Team and includes representatives from City Manager's Office, Human Resources, Information Technology, Sustainability, Finance, Risk Management and, Information Technology. The primary point of contact for the grant will be Mr. Eric Fitzer, Community Development Director. He will work closely with Ms. Leisa Brug, who represents ASU. The two have worked together for several years and are familiar with the extensive administrative infrastructure available to support AME-UP.

8. Submitting Official

The City of Surprise is authorized by the respondent to submit a proposal and subsequently apply for assistance from the federal government. Please see the appendix for DUNS and SAM verification.

References

ⁱ Roulo, Claudette. "DOD, Service Energy Programs Share Common Thread." 2014. *U.S. Department of Defense*. <<http://www.defense.gov/news/newsarticle.aspx?id=121958> >

ⁱⁱ Erwin, Sandra. "Renewable Energy Boom Underway at U.S. Military Bases." 2014. *National Defense Industrial Association*. <<http://www.nationaldefensemagazine.org/blog/Lists/Posts/Post.aspx?ID=1380> >

ⁱⁱⁱ Union of Concerned Scientist. 2009. "Clean Energy, Green Jobs." <http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/public-benefits-of-renewable.html#.VYL8GdyjwJ/ >

^{iv} Davis-Monthan Air Force Base. "Green in the Desert." *Davis-Monthan Air Force Base*. <<http://www.dm.af.mil/library/greeninthedesert/> >

^v See DSIRE database, at www.dsire.org. An additional 8 states have renewable energy goals.

^{vi} U.S. Energy Information Administration. "Arizona: State Profile and Energy Estimates." *EIA*. <<http://www.eia.gov/state/?sid=AZ> >

^{vii} Union of Concerned Scientist. 2009. "Clean Energy, Green Jobs." <http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/public-benefits-of-renewable.html#.VYL8GdyjwJ/ >

^{viii} U.S. Energy Information Administration. "Arizona: State Profile and Energy Estimates." *EIA*. <<http://www.eia.gov/state/?sid=AZ> >

^{ix} Madsen, Travis, and Diane Brown. "Renewing Arizona's Economy: The Clean Energy Path to Jobs and Economic Growth." *Frontier Group*. <<http://www.frontiergroup.org/reports/fg/renewing-arizonas-economy> >

Arizona Military & Energy Land Use Plan (AME-UP)

Appendix

Section I: Letters of Support (in alphabetical order)

Arizona Aerospace & Defense Association (AZADA)

Arizona Military Affairs Commission

City of Surprise

Department of the Air Force

United States Marine Corps

Western Regional Partnership (WRP)

Section II: Submitting Official Documentation



May 25, 2015

Mr. Bob Wingenroth
City Manager
City of Surprise
1600 North Civic Center Plaza
Surprise, Arizona 85374

Subject: Department of Defense (DoD), Office of the Secretary, Office of Economic Adjustment (OEA); field activity for community planning assistance to help prevent the siting of energy projects from adversely affecting DoD's test, training, and military operations.

Dear Mr. Wingenroth:

The Arizona Aerospace and Defense Association (AZADA) strongly supports your efforts with Arizona State University to obtain funding for community planning assistance to help prevent the siting of energy projects from adversely affecting the DoD's test, training, and military operations.

As a not-for-profit organization, the AZADA is a neutral and all-encompassing voice for the aerospace community and its interactions with the military sector.

The A& D industry in Arizona accounts for over 97,000 direct jobs employed at over 3,500 establishments. Arizona's aviation and aerospace manufacturing industry is the fourth largest in the nation by total employment. Arizona's military bases are billion dollar economic engines for the state and often the largest employers in the communities where they are located. So, it is especially important to work on a collaborative basis with energy developers, local entities, non-governmental organizations and the military to assure project development doesn't impede military base operations.

To best coordinate this work, it would be of great benefit to the State of Arizona if you and your partners received this funding to facilitate your goal of creating a Master Energy Land Use Plan. If the funding is awarded, the AZADA stands ready to assist in this endeavor in any way we can.

Sincerely,

A handwritten signature in blue ink, appearing to read "Birgitte Santaella", is written over a faint, larger version of the signature.

Birgitte Santaella

President, Arizona Aerospace and Defense Association

ARIZONA
MILITARY AFFAIRS
COMMISSION



Lisa A. Atkins, Co-Chair
Maricopa County

COL Thomas M. Finnegan, Co-Chair
USA, Ret., Cochise County

BrigGen Thomas Browning,
USAF, Ret., Member-at-Large

Richard Coffman
Cochise County

Hon. Gregory S. Ferguson
Supervisor, Yuma County

Michael Francis
Maricopa County

Hon. Clint Hickman
Supervisor, Maricopa County

LtGen Robert Johnston,
USMC, Ret., Pima County

Hon. Rick Mueller
Mayor, City of Sierra Vista

Monsignor Richard O'Keefe
Yuma County

Hon. Anthony Smith
Supervisor, Pinal County

Priscilla Storm
Pima County

Hon. Ramon O. Valadez
Supervisor, Pima County

James Wymer
Yuma County

Staff:

Dr. Joseph Cuffari
Governor's Policy Advisor on
Public Safety

Travis Schulte
Arizona Department of Emergency
& Military Affairs

July 8, 2015

Mr. Bob Wingenroth
City Manager
City of Surprise
16000 North Civic Center Plaza
Surprise, Arizona 85374

SUBJECT: Department of Defense (DoD), Office of the Secretary, Office of Economic Adjustment (OEA); Announcement of Federal Funding Opportunity (FFO); *field activity for community planning assistance to help prevent the siting of energy projects from adversely affecting DoD's test, training, and military operations.*

Dear Mr. Wingenroth:

On behalf of the State of Arizona, the Arizona Military Affairs Commission strongly supports your efforts with Arizona State University to obtain funding for community planning assistance to help prevent the siting of energy projects from adversely affecting the areas used by the U.S. Department of Defense for testing, training, and military operations.

Arizona's network of military installations, training and testing ranges, and associated airspace are among the best defense assets in the nation. No other state in the Union provides our warfighters with the unparalleled access to realistic training environments that we can here in Arizona. The Arizona Military Affairs Commission serves a critical role in the state to ensure that these assets and the missions they serve are protected and can meet any future need that this country faces. Through the Military Affairs Commission, Arizona is able to keep issues affecting military installations and missions in the forefront, balancing private property rights and economic development while insuring that state and local policy positions maintain and enhance military missions at the installation.

Arizona's military installations contribute \$9.12 billion to the state economy and are responsible for nearly 97,000 jobs, making the military the largest employer and economic driver in the State of Arizona.ⁱ Concurrently, Arizona is consistently ranked among the top two states nationally in solar output by the Solar Energy Industries Association, and Arizona was ranked first in percentage of new electrical capacity from solar in 2014. As these two economic sectors begin to overlap geographically, it is critically important to work on a collaborative basis with energy developers, local entities, non-governmental organizations, and the military to assure energy project development is compatible with the unique and varied military missions found throughout our state to ensure the continued economic growth and success for all.

The State of Arizona would greatly benefit from your proposed concept of developing an Arizona Military & Energy Land Use Plan. Early coordination among these partners will ensure that these two sectors, which are vital to the future of our economy, will continue to grow in a way that does not negatively impact the other. The Arizona Military Affairs Commissions fully supports your proposed concept and application to the Department of Defense Office of Economic Adjustment for this endeavor, and stands ready to assist you and your efforts in any way that we can.

Sincerely,



Lisa A. Atkins
Co-Chair



COL Thomas M. Finnegan, USA, Ret.
Co-Chair

¹ Maguire, Alan. "Executive Summary." In *Economic Impact Of Arizona's Principal Military Operations*, viii. Arizona: The Maguire Company, 2008. http://www.azdema.gov/mifapplication/2008_Maguire_military_econ_impact_exec_summary.pdf



Office of the City Manager

16000 N. Civic Center Plaza

Surprise, AZ 85374-7470

Ph: 623-222-1100

Fax: 623-222-1021

TTY: 623-222-1002

June 15, 2015

Subject: Department of Defense (DoD) Office of the Secretary, Office of Economic Adjustment; Announcement of Federal Funding Opportunity ;field activity for community planning assistance to help prevent the siting of energy projects from adversely affecting DoD's test, training, and military operations.

To Whom It May Concern:

It is my pleasure to communicate the strong support from the City of Surprise for joint efforts with Arizona State University to obtain funding for community planning assistance to help prevent the siting of energy projects from adversely affecting the Department of Defense's test, training, and military operations. Luke Air Force Base is a critical resource for our community and the west valley, and we recognize and appreciate the importance of our other military facilities around the state of Arizona. It is our honor to provide support to military institutions in Arizona in this way, and we look forward to working with our partner agencies.

The City of Surprise and Arizona State University (ASU) seek to work hand-in-hand with cities, counties, tribes, and military installations to create a Master Energy Land Use Plan. This plan will provide best practices for siting of renewable energy projects within the central and southern Arizona corridor, one of the highest activity regions for both military use and renewable energy projects. Connecting a wide swath of stakeholders across Arizona, the plan will incorporate existing documentation of maps, airspace, land use, land zoning, general plans, BLM zones, military installations, flight paths, and proposed and existing renewable energy projects alongside characterizations of intangible variables such as economic impact and quality of life. Using an inclusive model of engagement through stakeholder meetings and focus groups, the plan will rely on extensive input and feedback from those directly involved in and invested in the protection of the military mission concurrent with the successful development of renewable energy projects. Finally, subject matter experts at ASU will model scenarios to support decision-making integral to the effectiveness of the plan. It is our goal to create a report that will be used as a model for generations to ensure a bright future for all citizens of Arizona.

Arizona is consistently ranked among the top two states nationally in Solar output by the Solar Energy Industries Association. In fact, Arizona was ranked first in percentage of new electrical capacity from solar in 2014. Concurrently, Arizona's military bases are billion dollar economic engines for the state and often the largest employers in the communities where they are located. We recognize the importance of and are committed to working collaboratively with energy developers, local entities, non-

governmental organizations and the military to assure project development does not impede military base operations.

To best coordinate this work, it would be of great benefit to the State of Arizona if Surprise and our partners received this funding to facilitate the goal of creating a Master Energy Land Use Plan. We look forward to working to make this endeavor a great success with our partners.

Sincerely,

A handwritten signature in blue ink, appearing to read "Bob Wingenroth". The signature is fluid and cursive, with the first name "Bob" being the most prominent part.

Bob Wingenroth
City Manager, City of Surprise



UNITED STATES MARINE CORPS
MARINE CORPS INSTALLATIONS WEST-MARINE CORPS BASE
BOX 555010
CAMP PENDLETON, CALIFORNIA 92055-5010

1000
G-7
8 Jun 15

Mr. Bob Wingenroth
City Manager
City of Surprise
1600 North Civic Center Plaza
Surprise, Arizona 85374

Dear Mr. Wingenroth:

On behalf of Marine Corps Installations West (MCIWEST), we are pleased to support your efforts with Arizona State University to obtain OEA funding for community planning assistance in order to help prevent energy projects from adversely affecting the Department of Defense's (DoD) test, training, and military operations in Arizona.

The southwest region is home to the 1st Marine Expeditionary Force (I MEF). This unit represents 40% of the United States Marine Corps' (USMC) combat power. In addition, 65% of the USMC's Special Use Airspace (SUA) resides here. Solutions that support the ability to protect natural resources, while promoting sustainability, homeland security and our ability to maintain military readiness are a focused priority to MCIWEST.

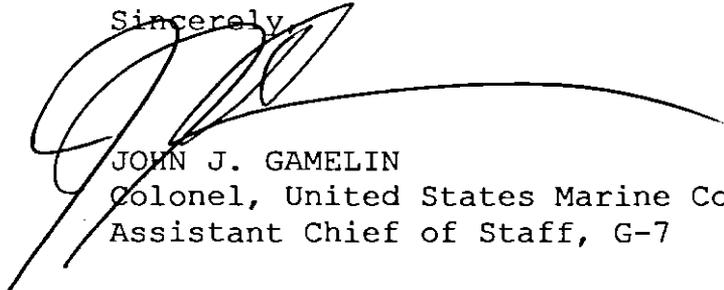
Arizona represents a key component in the USMC's ability to meet our national security training requirements. The system of integrated, cross Service ranges, which include both USMC and United States Air Force military Installations, SUA and live fire ranges are the backbone of pre-deployment training. Additionally, Marine Corps Air Station Yuma is home to Marine Air Group-11 (F-35 Lightning Strike Fighter), the Weapons Tactics Instructor School (WTI), and the future bed down for VX-22 (USMC's Test and Evaluation squadron).

Arizona is also consistently ranked among the top two states nationally in solar output by the Solar Energy Industries Association. Arizona was ranked first in percentage of new electrical capacity from solar in 2014. Given all this activity, early coordination among energy developers, cities, counties, towns, state and tribal entities and the military

helps ensure project development does not impede military base operations.

We support your proposed concept to work with key partners in Arizona to develop the Master Energy Land Use Plan, which could help facilitate energy development in areas compatible to the DoD mission. Please keep us informed on your project and ways that the MCIWEST may be able to assist your efforts.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Gamelin', with a long horizontal flourish extending to the right.

JOHN J. GAMELIN
Colonel, United States Marine Corps
Assistant Chief of Staff, G-7



DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND

JUN 17 2015

Mr. Charles E. Buchanan
Director, Range Management Office
7101 Jerstad Lane
Luke AFB AZ 85309-1629

Mr. Bob Wingenroth
City Manager
City of Surprise
1600 North Civic Center Plaza
Surprise, Arizona 85374

Subject: Department of Defense (DoD), Office of the Secretary, Office of Economic Adjustment (OEA); Announcement of Federal Funding Opportunity (FFO); *field activity for community planning assistance to help prevent the siting of energy projects from adversely affecting DoD's test, training, and military operations.*

Dear Mr. Wingenroth

As director for Luke AFB's ranges and airspace and coordinator for the Arizona Commanders Summit, I unreservedly support initiatives that promote the long-term sustainment of the Luke AFB mission and ultimately, the missions of all military installations throughout Arizona. The vast, remote ranges and airspace throughout the state, combined with the excellent weather provide exceptional training opportunities for the military, a \$9 billion industry in Arizona. Wind turbines and any vertically developed energy infrastructure can interfere with test and training operations or pose a safety risk to pilots. It's imperative to preserve the capability to provide realistic training to our warfighters.

While I don't specifically endorse one FFO proposal over any other submittal intended to protect the Luke AFB and Arizona installations' missions, any chance to collaborate and influence the multifarious organizations, municipalities, state and federal agencies, etc., to prevent and/or mitigate mission impact can pay dividends. I believe this can be an excellent opportunity to improve and streamline processes to the benefit of the military installations as well as the renewable energy industry in the state.

Thank you for your interest in protecting the training environment throughout the state. I look forward to working on this project to help define areas of concern, potential impacts and to provide necessary information about the military mission.

Sincerely,

A handwritten signature in blue ink, reading "C. E. Buchanan".

CHARLES E. BUCHANAN, GS-14, DAF



WESTERN REGIONAL PARTNERSHIP

Anthony Parisi, WRP Steering Committee Chair • Mike Mower, WRP Steering Committee Vice Chair
20118 N. 67th Ave. Suite 300-453, Glendale, AZ 85308

June 16, 2015

Mr. Bob Wingenroth
City Manager
City of Surprise
1600 North Civic Center Plaza
Surprise, Arizona 85374

Subject: Support for the Arizona Submission for OEA federal funding for “Community Adjustment Planning Assistance in Response to Support Department of Defense Mission Interests”

Dear Mr. Wingenroth:

On behalf of the Western Regional Partnership (WRP) Steering Committee, we are pleased to support your efforts with Arizona State University to obtain OEA funding for community planning assistance to help prevent energy projects from adversely affecting the DoD’s test, training, and military operations.

By way of background, WRP provides a proactive and collaborative framework for senior-policy level Federal, State and Tribal leadership to identify common goals and emerging issues in the states of Arizona, California, Nevada, New Mexico and Utah and to develop solutions that support WRP Partners and protect natural resources, while promoting sustainability, homeland security and military readiness

Arizona is home to a network of military facilities, including military airports, ranges and special use airspace connected by low-level flight corridors that provide a key foundation for our nation's security. Arizona is also consistently ranked among the top two states nationally in solar output by the Solar Energy Industries Association. Arizona was ranked first in percentage of new electrical capacity from solar in 2014. Given all this activity, early coordination among energy developers, cities, counties, towns, state and tribal entities and the military helps ensure project development does not impede military base operations.

We support your proposed concept to work with key partners in Arizona to develop the Master Energy Land Use Plan, which could help facilitate energy development in areas compatible to the DoD mission. This concept is consistent with the findings set forth in the WRP document titled, “Renewable Energy and Transmission Siting Coordination and Potential Impacts to the Military Mission.” The purpose of this document is to highlight the importance of determining potential energy project impacts on the military mission as early as possible. State statutes, executive orders and working groups are extraordinarily helpful to facilitate enhanced notification/communication. It is imperative that DoD entities provide information on any known impacts in a timely fashion to minimize and mitigate impacts. Please keep us informed on your project and ways that WRP may be able to assist your efforts.

Sincerely,

Mr. Anthony M. Parisi
WRP Steering Committee Chair
Head, Sustainability Office
Naval Air Systems Command Ranges
Phone: (805) 989-9209
Email: anthony.parisi@navy.mil

Mr. Michael Mower
WRP Steering Committee Vice Chair
Deputy Chief of Staff
Utah Governor’s Office
Phone: 801-541-1981
Email: mikemower@utah.gov

Arizona Military & Energy Land Use Plan (AME-UP)

SURPRISE, CITY OF
 DUNS: 021648936 CAGE Code: 3UMD4
 Status: Active

16000 N CIVIC CENTER PLZ
 SURPRISE, AZ, 85374-7463,
 UNITED STATES

Expiration Date: 12/04/2015
 Purpose of Registration: All Awards

Entity Overview

Entity Information

DUNS: 021648936
 Name: SURPRISE, CITY OF
 Business Type: US Local Government
 POC Name: Janeen Gaskins
 Registration Status: Active
 Activation Date: 12/04/2014
 Expiration Date: 12/04/2015

Exclusions

Active Exclusion Records? No

Dashboard

Surprise, City Of

DUNS: 02-164-8936

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Summary

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Tools

Summary ⓘ

Update Company Info ▶

Company Info

16000 N Civic Center Plz
 Surprise, AZ 85374
 Phone: (623) 222-1000
 URL:

DBA's :

Scores and Ratings

Score / Rating	Status	Last Date Changed
PAYDEX®	Fair	07/01/2015
Delinquency Predictor Class	Fair	07/14/2015
Financial Stress Class	Fair	07/14/2015
Supplier Evaluation Rating	Good	07/14/2015
D&B Rating	Good	07/14/2015

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1-800-700-2733

Alerts

There are currently no alerts issued for this company. If you only recently began monitoring this company, you will not receive your first alerts until score changes or events occur. To configure your alerts notification settings, please [Click Here](#)

Configure Alerts

City of Surprise

	Year 1		
	DoD	Cost Share	Total
Senior Personnel			
Eric Fitizer	\$0	\$11,830	\$11,830
Total Senior Personnel	\$0	\$11,830	\$11,830
(Fringe Benefits)	\$0	\$3,549	
Total ERE	\$0	\$3,549	\$3,549
Total Salaries, Wages & ERE	\$0	\$15,379	\$15,379
Contractual Costs			
Subcontract - ASU	\$459,461	\$31,992	\$491,453
Other - meeting room	\$2,700	\$0	\$2,700
Total Direct Costs	\$462,161	\$47,371	\$509,532
Indirect Costs	\$0	\$0	\$0
Total Budget	\$462,161	\$47,371	\$509,532

Arizona State University

	Year 1		
	Sponsor	Cost Share	Total
Senior Personnel (faculty)			
Kristin Mayes	\$15,000	\$3,750	\$18,750
Mike Pasqualetti	\$12,533	\$3,133	\$15,666
Qiu "Lucy" Yeuming	\$16,659	\$4,165	\$20,824
Nathan Parker	\$8,667	\$2,167	\$10,834
Total Senior Personnel (Faculty)	\$52,859	\$13,215	\$66,074
Other Personnel			
GRA - Kevin Seegmiller	\$17,500	\$0	\$17,500
GRA summer	\$5,833	\$0	\$5,833
Undergraduates/Hourly Grads Summary	\$17,680	\$0	\$17,680
Total Other Personnel	\$41,013	\$0	\$41,013
ERE (Fringe Benefits)			
Faculty	\$15,625	\$3,907	\$19,532
Grad Research Assistants	\$3,029	\$0	\$3,029
Undergrads/Hourly Grads	\$310	\$0	\$310
Total ERE	\$18,964	\$3,907	\$22,871
Total Salaries, Wages & ERE	\$112,836	\$17,122	\$129,958
Travel			
Domestic	\$668	\$0	\$668
Foreign	\$0	\$0	\$0
Total Travel	\$668	\$0	\$668
Participant Support Costs			
Stipends	\$3,000	\$0	\$3,000
Total Participant Support costs	\$3,000	\$0	\$3,000
Other Direct Costs			
1. Materials and Supplies -	\$1,000	\$0	\$1,000
2. Publication Costs	\$1,000	\$0	\$1,000
3. Consultant/Facilitator	\$125,000	\$0	\$125,000
4. Computer (+ software, harddrive, upgrade)	\$3,000	\$0	\$3,000
5. Subcontracts - List each separately below	\$0	\$0	\$0
Sonoran Inst	\$45,885	\$5,539	\$51,424
6. Other	\$0	\$0	\$0
GRA Tuition & Fees - AY per student	\$16,569	\$0	\$16,569
GRA Tuition & Fees - Summer per student	\$1,078	\$0	\$1,078
Venue costs for workshops., etc	\$2,000	\$0	\$2,000
Total Other Direct Costs	\$195,532	\$5,539	\$201,071
Total Direct Costs	\$312,036	\$22,661	\$334,697
Modified Total Direct Costs	\$270,504	\$17,122	\$287,626
Total F&A (@ 54.5%)	\$147,425	\$9,331	\$156,756
Total ASU Project Costs	\$459,461	\$31,992	\$491,453

Sonoran Institute	Year 1		
	Sponsor	Cost Share	Total
Senior Personnel			
Salaries & Benefits	\$34,665	\$4,474	\$39,139
Total Salaries, Wages & ERE	\$34,665	\$4,474	\$39,139
Travel			
Domestic	\$1,000	\$0	\$1,000
Foreign	\$0	\$0	\$0
Total Travel	\$1,000	\$0	\$1,000
Other Direct Costs			
Other - Project Operations	\$425	\$142	\$567
Total Other Direct Costs	\$425	\$142	\$567
Total Direct Costs	\$36,090	\$4,616	\$40,706
Modified Total Direct Costs	\$36,090	\$4,616	\$40,706
Indirect Costs	\$9,795	\$923	\$10,718
Total Request Sonoran Inst.	\$45,885	\$5,539	\$51,424