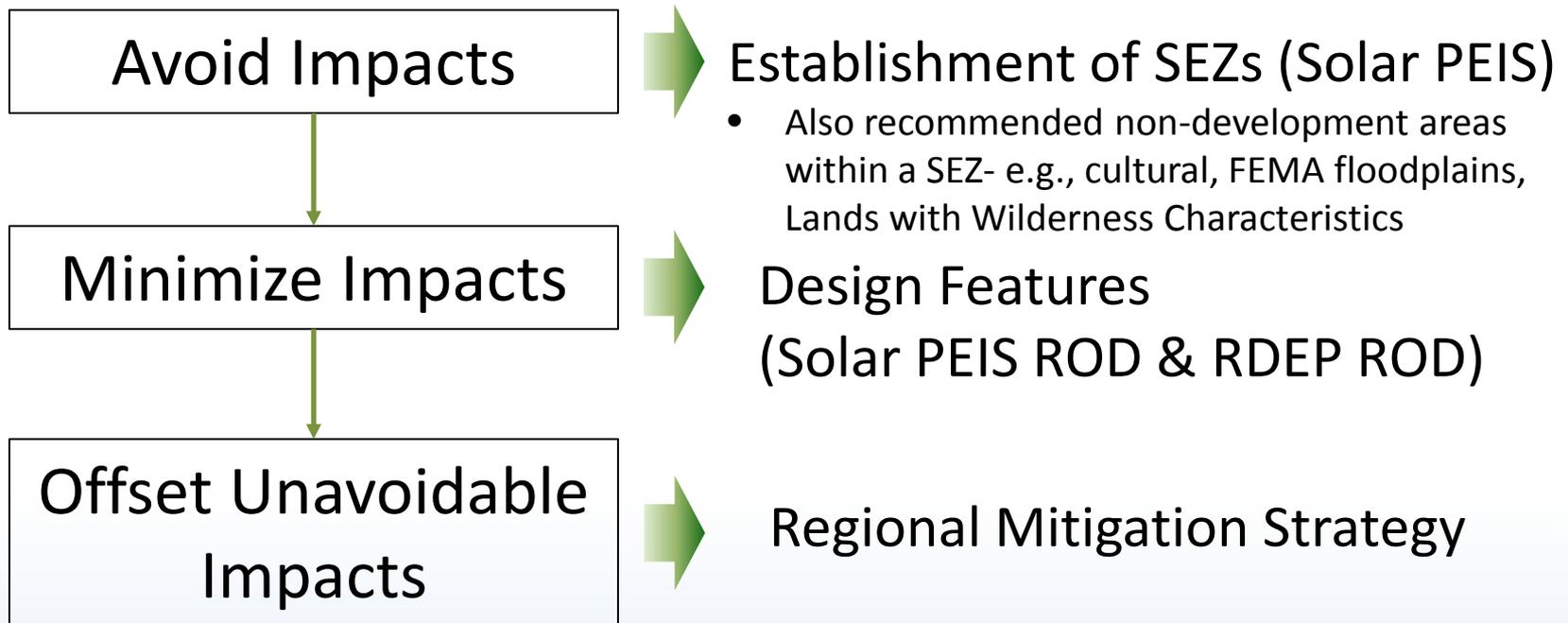


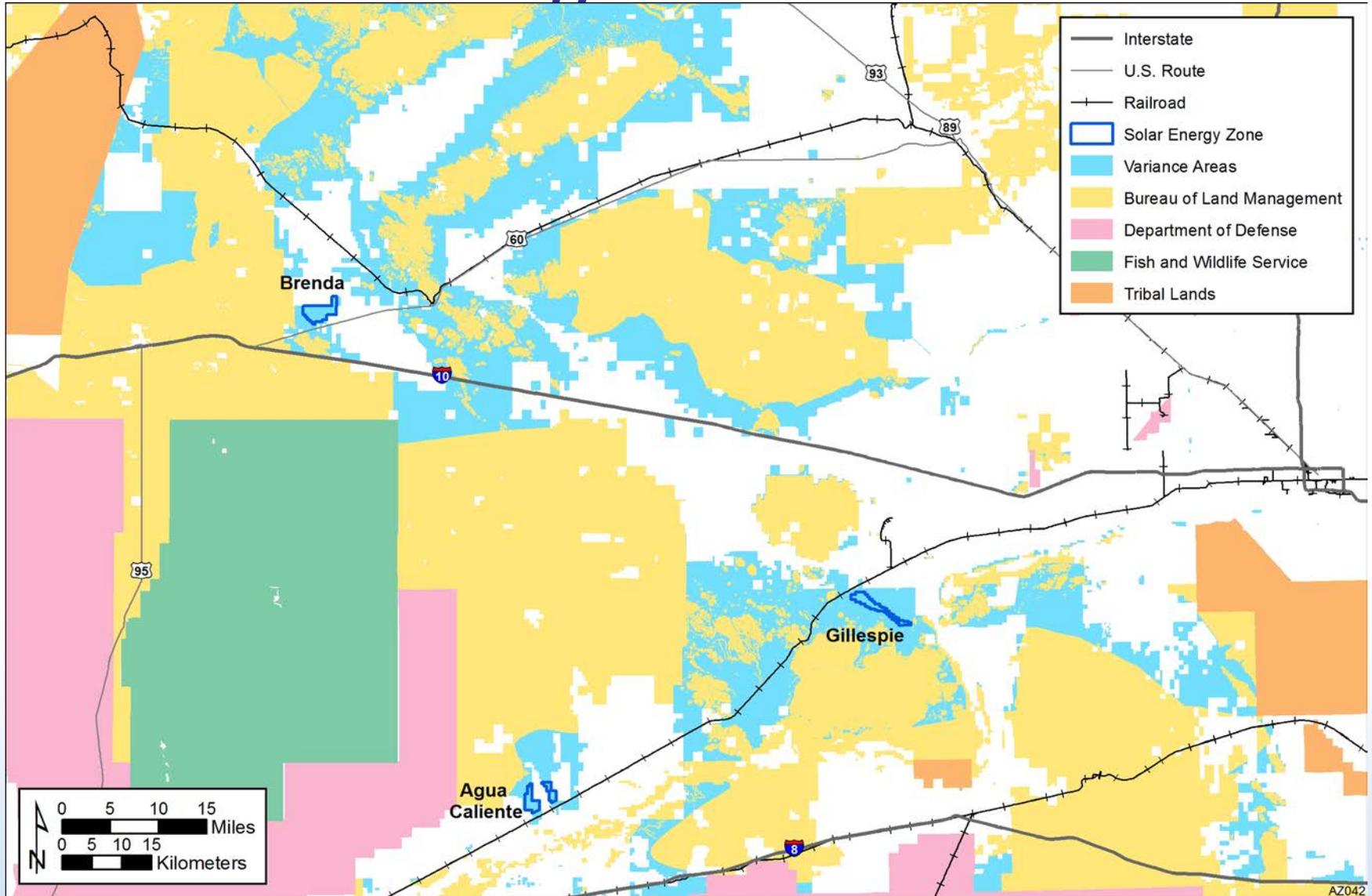
Arizona Solar Regional Mitigation Strategy Workshop 3: Strategy Content

Presented by:
Lane Cowger and Bill Werner, Arizona BLM
Arizona SRMS Workshop 3
Phoenix, AZ
September 17, 2015

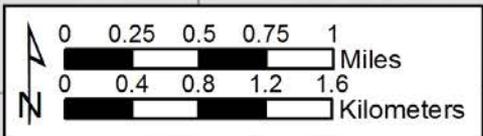
BLM Mitigation Hierarchy: Focusing our Discussion



Arizona Solar Energy Zones

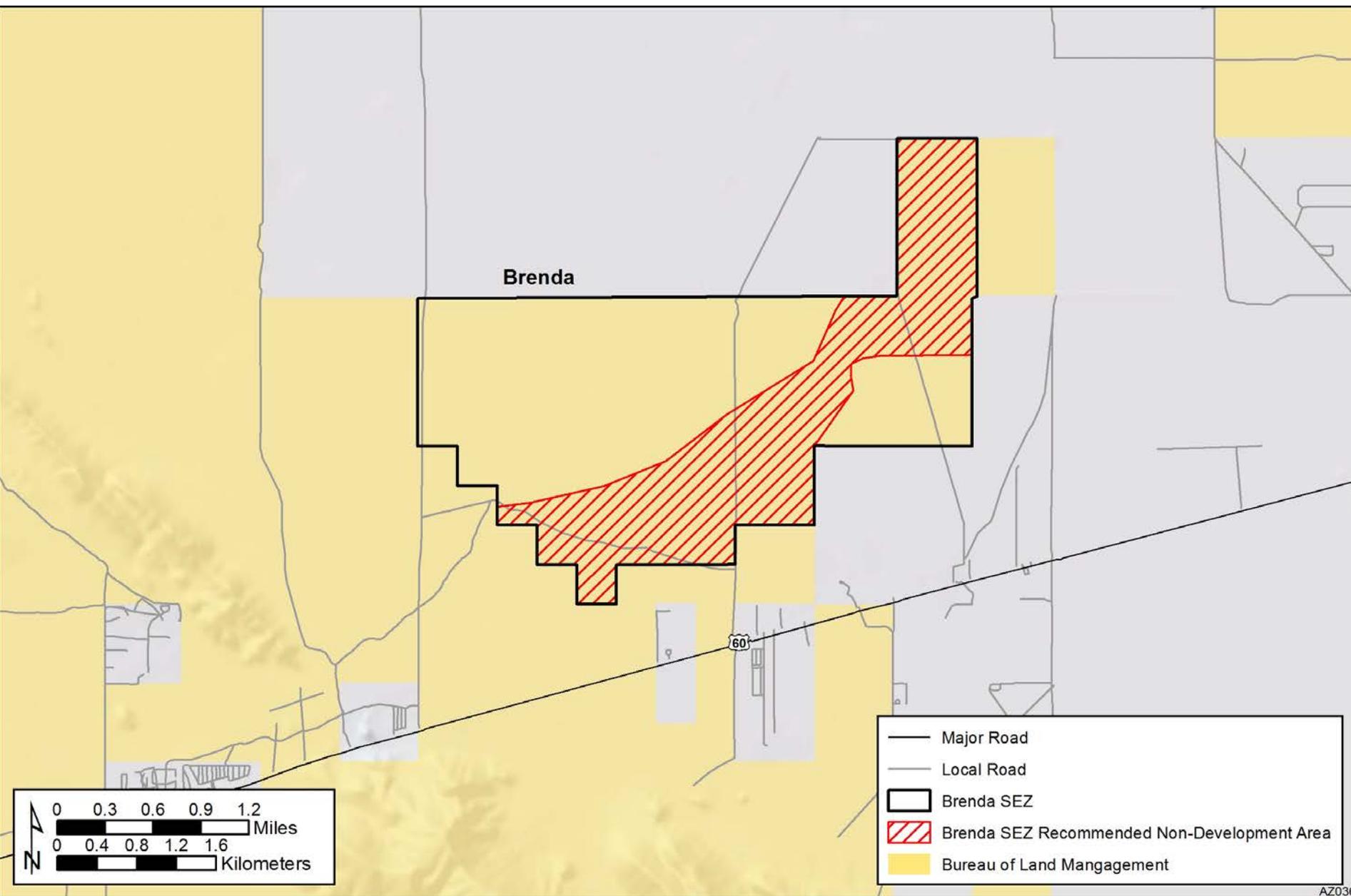


Agua Caliente



AZ035

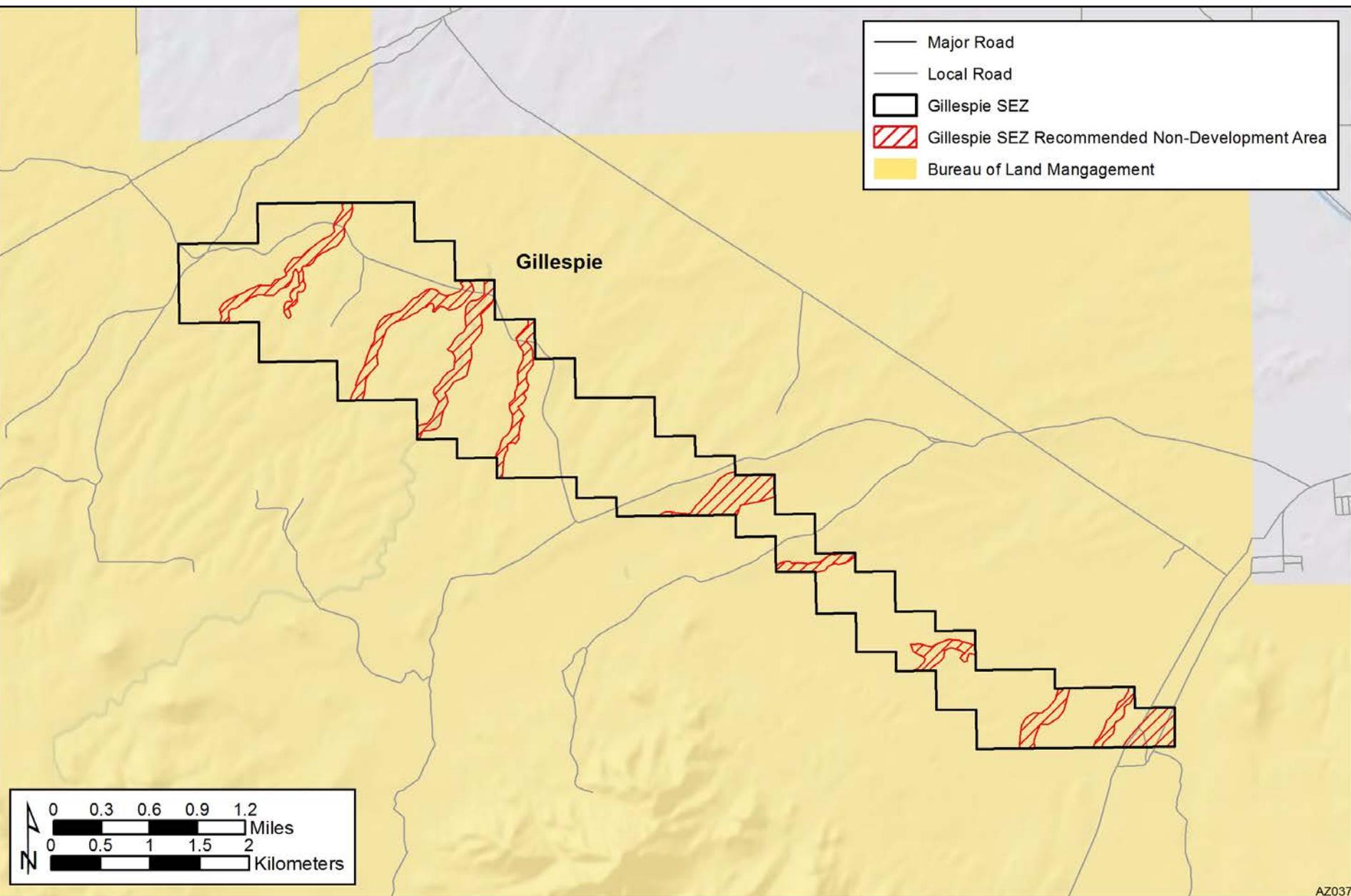




AZ036



-  Major Road
-  Local Road
-  Gillespie SEZ
-  Gillespie SEZ Recommended Non-Development Area
-  Bureau of Land Mangement



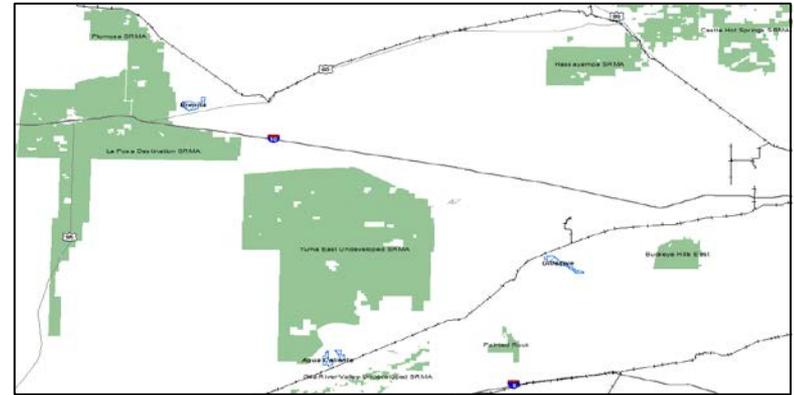
AZ037



Resources in AZ SEZs That May Warrant Regional Compensatory Mitigation (Appendix A)*

- Vegetation and Riparian Areas- Creosote Bursage and Desert Scrub
- Wildlife and Migratory Birds
- Animal Special Status Species
- **Surface Water**
- Soils/Erosion
- **Cultural Resources**
- **Native American Concerns**
- Public Access and Recreation
- **Specially Designated Areas**
- **Visual Resources**

*Black text identifies those resources that require regional compensatory mitigation; orange text identifies those resources; that may require compensatory mitigation depending on further assessment.



SRMAs in the Vicinity of the Arizona SEZs



Sonoran population of Desert tortoise

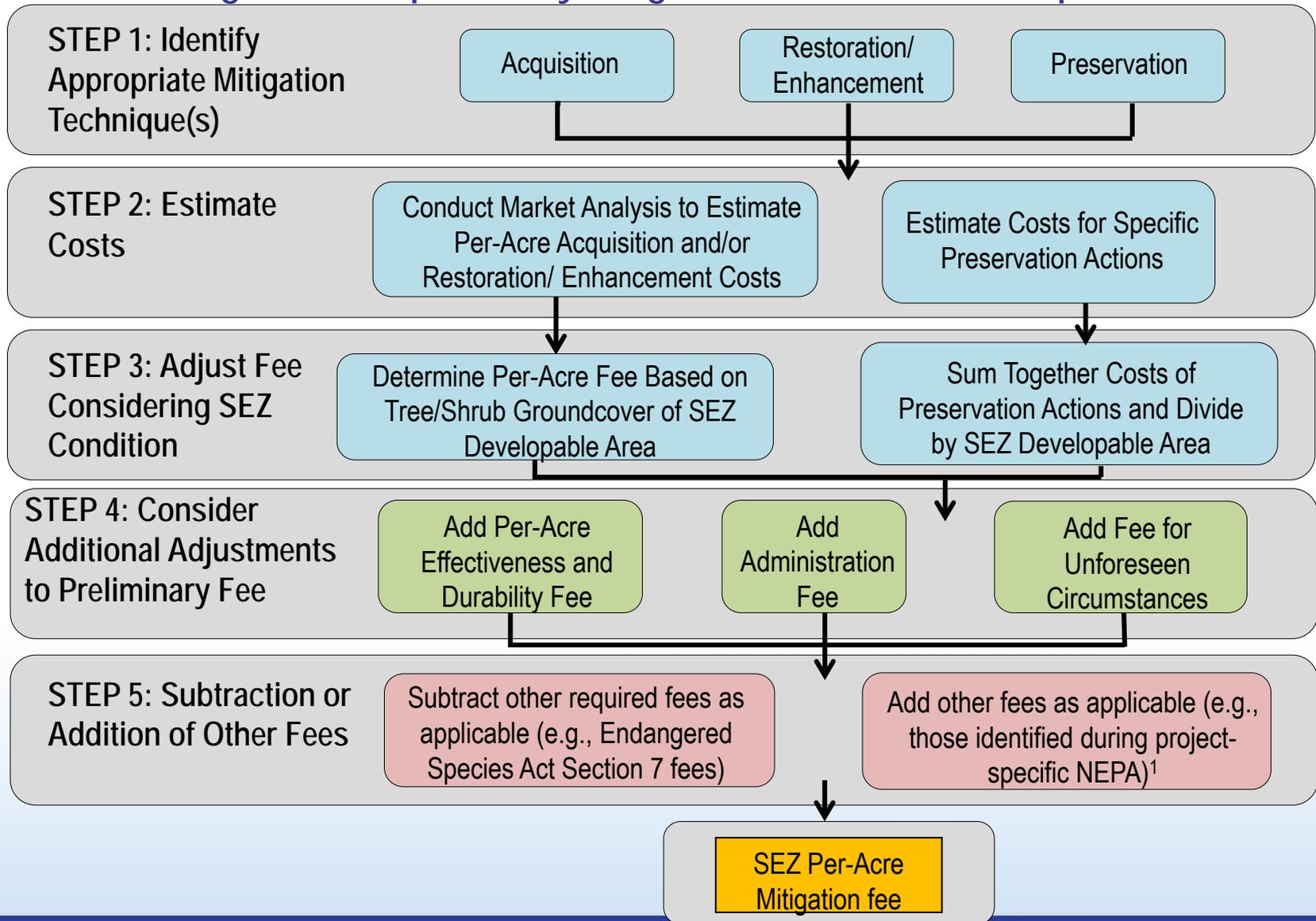
Regional Mitigation Goals for Arizona SEZs

- **Preserve and/or restore** creosote bursage and desert scrub, Palo Verde-mixed cacti, riparian vegetation ecosystem/habitat community disrupted by development (taking into account the existing landscape condition).
- **Maintain** viable populations (equal to or larger) of affected BLM or other **special status species** in the region.
- **Identify and preserve** significant **cultural resources** and ensure that they are available for appropriate uses by present and future generations. Seek to reduce imminent threats to cultural resources and resolve potential conflicts from natural or human-caused deterioration or potential conflict with other resource uses by ensuring that all authorizations for land use and resource use will comply with the National Historic Preservation Act.
- **Preserve and/or enhance scenic quality** in the region through preservation of open-space landscapes and undisturbed views, or through restoration of habitat to compensate for visual resources impaired by development.

Resource Impacted that May Warrant Compensatory Mitigation	Regional Goals and Regional Objectives/ RMP Guidance	Mitigation Desired Outcomes	Potential Mitigation Actions
Ecosystem: Sonoran-Mojave Creosotebush White Bursage Desert Scrub Vegetation Community	<p>Goal: Preserve and/or restore creosote bursage and desert scrub ecosystem/habitat community disrupted by development (taking into account the existing landscape condition).</p> <p>Objective: Maintain or restore Sonoran-Mojave Creosotebush White Bursage Desert Scrub in moderately-high to very-high intactness in the Sonoran Desert in Arizona.</p> <p>RMP guidance: Require mitigation where plants and parts of plants will be destroyed from a residual impact as a result of development, disturbance, or disposal. For BLM-authorized surface disturbing activities within desired plant communities, impacts to vegetation will be mitigated through: avoidance, minimization, soil stabilization and vegetative rehabilitation, transplanting appropriate species, salvage of plant and plant parts. (Yuma RMP)</p> <p>Identified as a “desired plant community” or “native plant/vegetative community.” (Yuma, Lake Havasu, Lower Sonoran RMPs)</p>	<p>Create, restore, and/or acquire equivalent acreage of Sonoran-Mojave Creosotebush-White Bursage Desert Scrub lost through development on SEZ to 80% of existing vegetative cover (acres) and composition of primary plant species within 5 years of initiation of land disturbing development on the SEZ.</p> <p>Create, restore, and/or acquire equivalent acreage of cryptogam cover lost through development on SEZ.</p>	<p>Habitat enhancement</p> <p>Close and revegetate unauthorized roads within the WSA boundaries.</p> <p>Improve vehicle barriers and signage along WSA boundaries.</p>
Ecosystem: Sonoran Palo Verde-Mixed Cacti Desert Scrub Vegetation Community	<p>Goal: Preserve and/or restore Palo Verde-mixed cacti ecosystem/habitat community disrupted by development (taking onto account the existing landscape condition).</p> <p>Objective: Maintain or restore Sonoran Palo Verde-Mixed Cacti Desert Scrub in moderately-high to very-high intactness in the Sonoran Desert in Arizona.</p> <p>RMP guidance: Require mitigation where plants and parts of plants will be destroyed from a residual impact as a result of development, disturbance, or disposal. For BLM-authorized surface disturbing activities within desired plant communities, impacts to vegetation will be mitigated through: avoidance, minimization, soil stabilization and vegetative rehabilitation, transplanting appropriate species, salvage of plant and plant parts. (Yuma RMP)</p> <p>Identified as a “desired plant community” or “native plant/vegetative community.” (Yuma, Lake Havasu, Lower Sonoran RMPs)</p>	<p>Create, restore, and/or acquire equivalent acreage of Palo Verde-Mixed Cacti Desert Scrub ecosystem habitat community lost through development on SEZ to 80% of existing vegetative cover (acres) and composition of primary plant species within 5 years of initiation of land disturbing development on the SEZ.</p> <p>Create, restore, and/or acquire equivalent acreage of cryptogam cover lost through development on SEZ.</p>	<p>Habitat enhancement</p> <p>Riparian system rehabilitation or restoration.</p>



Steps for Calculating Per-Acre Regional Compensatory Mitigation Fees Based on Impacts



Recommended Mitigation Obligation

Solar Energy Zone	Per Acre Fee
Agua Caliente	\$2,929 - \$3,692
Brenda	\$3,119 - \$3,943
Gillespie	\$3,402 - \$4,345

	Agua Caliente SEZ	Brenda SEZ	Gillespie SEZ
Developable Acres	2,021 acres	1,906 acres	2,213 acres
Number trees	1,112	1,298	2,035
STEP 2:			
Acquisition Cost (\$500 * developable acres)	\$1,010,500	\$953,000	\$1,106,500
Restoration: Tall Pot Method # trees * (3*\$258.5)	\$862,356	\$1,006,599	\$1,578,143
Restoration: Seeding \$1,800*2 applications * (25% of total acres)	\$1,818,900	\$1,727,200	\$1,991,700
Short-Term Monitoring	\$25,000	\$25,000	\$25,000
Adaptive Management:			
Tree replacement: 50%	\$431,178	\$503,300	\$789,072
Tree replacement: 100%	\$862,356	\$1,006,599	\$1,578,143
Reseed: 50% effort	\$909,450	\$863,600	\$995,850
Reseed: 100% effort	\$1,818,900	\$1,727,200	\$1,991,700
Monitoring/Resampling	\$25,000	\$25,000	\$25,000
STEP 3:			
SEZ Base Fee	\$5,082,384 - \$6,423,012	\$5,103,699 - \$6,470,598	\$6,511,265 - \$8,296,186
STEP 4:			
Effectiveness & Durability Fee	\$65,000	\$65,000	\$65,000
Adjusted Base Fee Subtotal	\$5,147,384 - \$6,488,012	\$5,168,699 - \$6,535,598	\$6,576,265 - \$8,361,186
Administration Fee	5%	5%	5%
Unforeseen Future Circumstances Fee	10%	10%	10%
Adjusted Base Fee Subtotal	\$5,919,492 - \$7,461,214	\$5,944,004 - \$7,515,938	\$7,562,705 - \$9,615,364
STEP 5:			
Other Fees (ESA, etc.) – none currently identified	0	0	0
Adjusted Base Fee	\$5, 919,492 - \$7,461,214	\$5,944,004 - \$7,515,938	\$7,562,705 - \$9,615,364
Per Acre Fee	\$2,929 - \$3,692	\$3,119 - \$3,943	\$3,402 - \$4,345



Possible Additional Fee Adjustment Factor

In the final SRMS document BLM may consider an **additional adjustment factor** to account for the potential environmental benefit of locating several solar facilities in an SEZ, in close proximity to one another, as opposed to locating the facilities dispersed throughout the region.

The specific methods for calculating the adjustment factor have not yet been determined, but the adjustment factor may consider the potential number and size of solar developments clustered within the SEZ, and the potential beneficial reduction of edge effects by that clustering.

Revised Candidate Site Matrix

- New section headers under site characteristics:
 - Feasibility,
 - Effectiveness/Additionality,
 - Risk,
 - Durability

Each section was scored by BLM based on stakeholder information provided in the matrix.

- A “Preliminary Score” was added to “Additional Considerations” to get a total combined score used to rank the candidate sites.

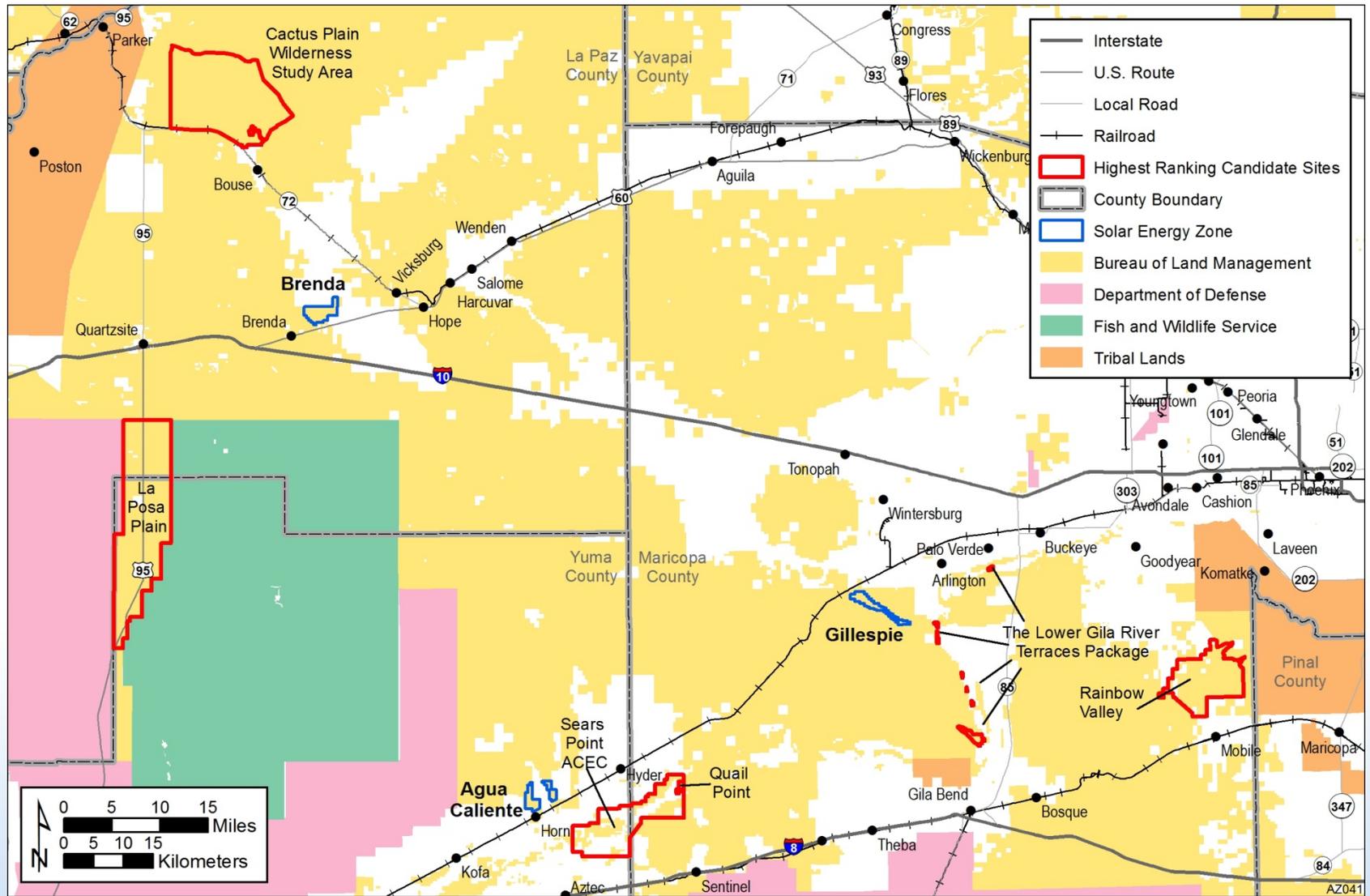
Criteria	Candidate Sites				
	Ranegras Plain (AZGFD)	Sacaton Flats (AZGFD)	Cactus Plain (AZGFD)	Hoodoo Wash (AZGFD)	Palomas Plain (AZGFD)
14c. Mitigation consists of actions that would not otherwise be undertaken by BLM.	√	√	√	√	√
RISK					
15. Risk of action(s)	3	3	3	3	3
Justification of risk score. Scores for 15a through 15b were provided by stakeholders. BLM used these scores as well as their knowledge of the sites and actions.					
15a. What are the constraints or threats to success?	Conflicts with recreation and grazing	Conflicts with recreation	Conflicts with recreation and nearby agriculture	Conflicts with recreation and nearby agriculture	Conflicts with recreation
15b. What are surrounding land uses that will impact mitigation success (e.g., proximity to expanding urban areas, pressures on region for recreational land use, excessive groundwater withdrawal and drawdown conditions that could affect resources on the mitigation site)?	4 Some recreation impacts	4 Some recreation impacts	Nearby agriculture activity may result in groundwater draw down	Some recreation/grazing impacts	Some recreation/grazing impacts
DURABILITY					
16. Durability of action(s)	3	3	3	3	3
Justification of durability score. Scores for 16a through 16b were provided by stakeholders. BLM used these scores as well as their knowledge of the sites and actions.					
16a. How durable would the mitigation be from a timeframe and management perspective? Use scale of 1 (low) to 5 (high).	3	3	3	3	3
Justification.	BLM Land Identified in RMP as a Wildlife Habitat Area	BLM Land Identified in RMP as a Wildlife Habitat Area	BLM Land Identified in RMP as a Wildlife Habitat Area	BLM Land Identified in RMP as a Wildlife Habitat Area	BLM Land Identified in RMP as a Wildlife Habitat Area
16b. Are there potential effects of future climate change?	High	Moderate	Moderate	Moderate	Moderate



Candidate Site Matrix Results

- Highest Scoring sites for Agua Caliente & Gillespie:
 - Sears Point ACEC,
 - Rainbow Valley,
 - The Lower Gila River Terraces Package,
 - Quail Point
- Highest Scoring sites for Brenda:
 - Cactus Plain Wilderness Study Area,
 - La Posa Plain

Highest Ranking Candidate Site Locations



Mitigation Effectiveness & Monitoring

- Step 1. Develop Management Questions and Monitoring Goals.
- Step 2. Identify Measureable Monitoring Outcomes and Indicators.
- Step 3. Develop Sampling Schema.
- Step 4. Develop Analysis and Reporting System.
- Step 5. Define Adaptive Management Approach.



Photos courtesy of www.firstsolar.com

Questions?



Comments

- Draft strategy distributed for stakeholder review-
available on the project website:
http://www.blm.gov/az/st/en/prog/energy/solar/arizona_regional_mitigation.html
- The BLM requests comments by October 2, 2015
Send to lcowger@blm.gov