

Joseph E. Bonadiman & Associates, Inc. (JBA) has a firm commitment to alternative energy projects. In the last decade, we have lent our expertise to for the development of solar fields, wind generation facilities, hydrogeneration systems, cogeneration systems, waste-heat-boiler systems, and Biosolids-to-Energy (B2E) facilities.

In the last four years, we have directly or indirectly provided Civil Engineering and Land Surveying services to clients such as NRG Energy, eSolar, First Solar, U.S. Solar, Amonix, Sunpower, and Tessera Solar (among others) for large-scale solar generating station sites in the Southwestern United States.

These projects include a 92 Megawatt (MW) solar field in Los Angeles County, CA, a 22 MW solar field in Riverside County, CA, a 20 MW solar field in San Diego, CA, and a 20 MW solar field in New Mexico, among others.

Our services for these projects have included site layout and design, grading, field and aerial topographic surveys, ALTA's, Records of Survey, construction staking, hydrology studies & drainage analysis, floodplain modeling, water quality documents, cost estimates, applications/permits coordination, and project/bid management.

In addition, we have provided clients with preliminary site research/investigations and "fatal flaw" analyses for dozens of potential solar sites in California, Arizona, Nevada, and New Mexico.

These recent projects have given us unparalleled experience in the challenges and considerations unique to each of major solar technologies, included Concentrating Solar Power (CSP), fixed and tracking photovoltaic (P.V.), Concentrating Photovoltaic (CPV) units, and Concentrating Solar Power (CSP) units.

We believe these projects demonstrate our long-term commitment to the innovative technologies that promise a brighter, cleaner future.

The following sections identify the primary Alternative Energy project services offered by JBA and provide a select list of client references and examples of our Alternative Energy project experience.

Primary Services

▪ Planning Phase Services

Alternative Energy project agency approval and acquisition of entitlements/permits generally requires the preparation of an overall application package, which typically includes (but is not limited to) the following:

- Topographic base mapping, including the location of existing monuments, boundaries, utilities, street centerlines and right-of-way, drainage improvements, and other features. For large projects, aerial surveys are provided in lieu of field



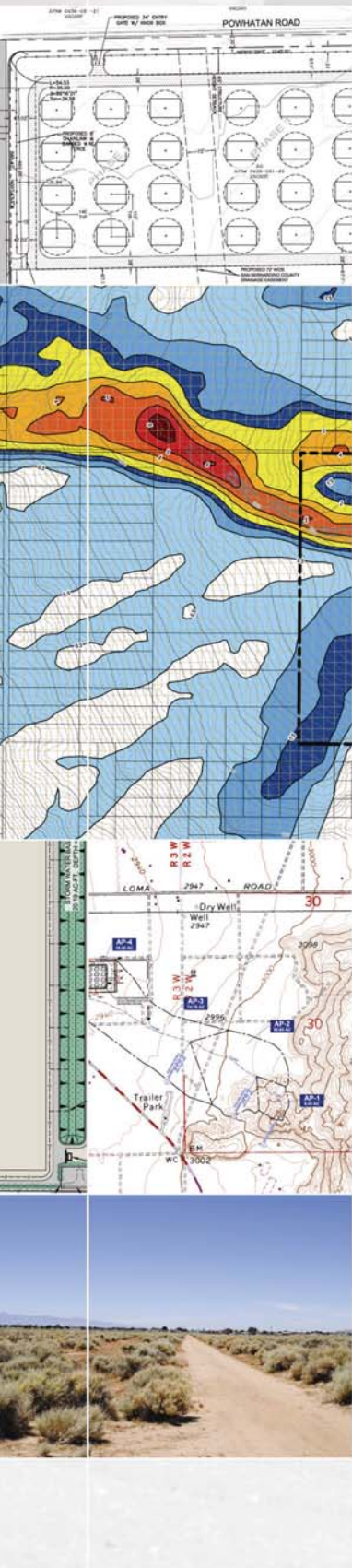
activities. Existing record maps and legal documents are also incorporated as needed.

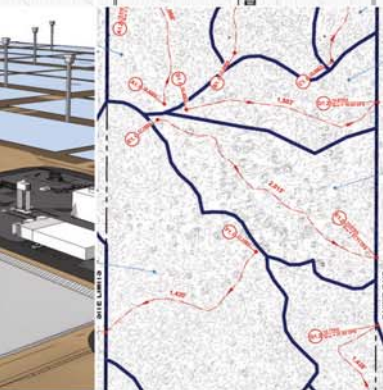
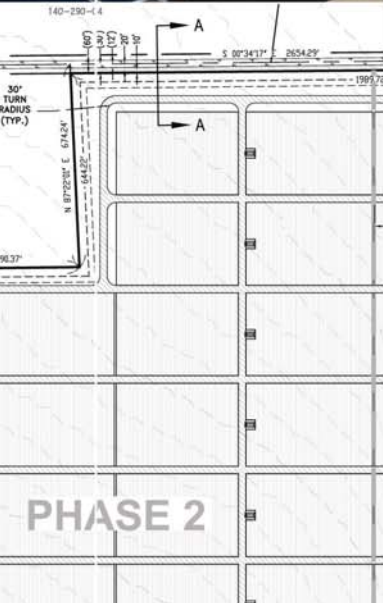
- Preliminary grading and drainage, preliminary layout of utilities, and proposed access (including emergency/fire access).
- Preliminary Water Quality Management Plan (P-WQMP) preparation and identification of proposed post-construction Site Design, Source Control, and Treatment Control Best Management Practices (BMPs) in accordance with agency requirements.
- Preliminary Hydrology & Hydraulics Study preparation for the purpose of designing a Preliminary Drainage Plan for the mitigation of off-site and on-site runoff, including the preliminary design of proposed storm drains, channels, and/or basins. For projects located within existing FEMA floodplains and/or alluvial fans, preliminary floodplain simulations/modeling and analyses and preparation of FEMA Letter of Map Revisions (LOMR's) may also be required.
- Coordination with planning/environmental firms to assist them in addressing environmental impact issues and prepare Negative Declaration, Initial Study (IS), or Environmental Impact Report (EIR) documents, as required.
- Coordination with technology providers to incorporate preliminary site design and equipment layout considerations.
- Coordination with local agencies, including design review meeting attendance.

▪ **Design Phase Services**

Final Alternative Energy project agency approval and permitting generally requires the preparation of all improvement plans and final design documents, which typically include (but are not limited to) the following:

- Records of Survey and ALTA preparation.
- Improvement plans preparation, including precise grading and drainage, utility plans (water, sewer, storm, etc.), street improvement plans, lighting plans, erosion control plans, and detail sheets.
- Final Water Quality Management Plan (F-WQMP) preparation and identification of proposed post-construction Site Design, Source Control, and Treatment Control Best Management Practices (BMPs) in accordance with agency requirements.
- Final Hydrology & Hydraulics Study preparation, including a final Drainage Plan for the mitigation of off-site and on-site runoff and final design of proposed storm drains, channels, and/or basins. Detailed hydraulic analyses are also prepared as-needed. For projects located within existing FEMA floodplains and/or alluvial fans, final floodplain simulations/modeling and analyses and preparation of FEMA Conditional Letter of Map Revisions (CLOMR's) may also be required.
- Coordination with technology providers to incorporate final site design and equipment layout considerations.
- Preparation of construction cost estimates.
- Coordination with local agencies on an as needed basis.





Construction Phase & Post-Construction Services

Alternative Energy project construction phase services offered by JBA includes construction staking (for slopes and drainage improvements, street curb and gutter, all on-site/off-site "wet" and "dry" utilities, etc.) and the preparation of Storm Water Pollution Prevention Plans (SWPPPs) and associated Best Management Practices (BMPs) for construction activities. JBA also provides revisions to improvement plans as-needed based on changes made by contractors in the field. Post-construction services include "as-built" surveys and the subsequent preparation of "as-built" plans to be filed with local agencies.

Project and/or Construction Management

If requested by the client, JBA provides Project Management and/or Construction Management services for Alternative Energy projects, including (but not limited to) management and coordination of all subcontractors, cost/budget management, and project scheduling, progress tracking, and general documentation.

Site Scoping & Preliminary “Fatal Flaw” Analyses

JBA has the full capabilities to perform preliminary site/property scoping for potential Alternative Energy project locations, utilizing available Geographic Information System (GIS) data to prepare preliminary "Fatal Flaw" Analyses for properties of interest to inform our clients of major ownership, drainage, flood, environmental, access, easement, or permitting issues with the potential to impact the site in question.

Client References (Partial List)

We invite you to contact the following clients, or others referenced in our project abstracts, regarding JBA’s capabilities and technical expertise in Alternative Energy projects:

| Client/Address | Contact |
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| NRG Energy, Inc. 1817 Aston Avenue, #104 Carlsbad, CA 92008 | Richard Dryden 760 / 710-2150 |
| U.S. Solar Holdings 1015 West Hays Street Boise, ID 83702 | 208 / 344-5428 |
| Amonix, Inc. 1709 Apollo Court Seal Beach, CA 90740 | Nick Hashka Project Manager 562 / 200-7700 |
| eSolar, Inc. 3355 West Empire Boulevard, Suite 200 Burbank, CA 91504 | Michael Bass Project Manager 818 / 303-9567 |
| First Solar (as Subcontractor to Modern Alloys, Inc.) 350 West Washington Street, Suite 600 Tempe, AZ 85281 | 419 / 662-6899 |
| BioSoils of Southern California P.O. Box 1611 Colton, CA 82324 | Jim Sullivan President 909 / 910-0520 |



Project Experience (Partial List)

The select projects listed below are indicative of JBA's experience in **Alternative Energy**. Select example projects are also discussed in greater detail in the abstracts following this section.

| Project Description* | Services | Project Location |
|--|---|---|
| Alpine Solar Project 600-Acre Photovoltaic (P.V.) Solar Project (92 Megawatt) | Civil Engineering, Surveying, Hydrology & Drainage, Floodplain Analysis, and Bid Coordination. | Los Angeles County, CA |
| Roadrunner Solar Project 200-Acre Photovoltaic (P.V.) Solar Project (20 Megawatt) | Civil Engineering, Surveying, Hydrology & Drainage, and Conceptual Landscaping Plans. | Dona Ana County, NM |
| Borrego Solar Project 300-Acre Photovoltaic (P.V.) Solar Project (20 Megawatt) | Civil Engineering, Surveying, Hydrology & Drainage, Floodplain Analysis, and Water Quality. | San Diego County, CA |
| Powhatan Solar Project 20-Acre Solar Tracking Unit Project (1.7 Megawatt) | Civil Engineering, Surveying, Hydrology & Hydraulics, Water Quality Management Plan (WQMP), and Planning Application preparation. | San Bernardino County, CA (near Town of Apple Valley) |
| Blythe Solar Project 120-Acre Photovoltaic (P.V.) Solar Project (22 Megawatt) | Construction Staking & ALTA preparation. | County of Riverside, CA (near Blythe) |
| 540-Acre Potential Concentrating Solar Project | Conceptual Site Plans & Conditional Use Permit (CUP) Application. | Los Angeles County, CA |
| Potential Concentrating Solar Project | Conceptual Site Plans & Easement Research. | Kern County, CA |
| 10-Acre Biosolids-to-Energy (B2E) Project | Civil Engineering, Land Surveying, Hydrology Study & Drainage Analysis, and Water Quality Management Plan (WQMP). | Colton, CA |
| Potential Solar Project Property Acquisition Support | Preparation of Preliminary Due-Diligence Reports for various potential solar sites in CA and AZ. | CA & AZ |
| Potential Solar Sites Property Research | Preliminary Site Investigations & GIS research for various potential sites of interest in CA, NV, and NM. | CA, NV, & NM |
| Proposed Natural Gas Pipeline to Power Desert Irrigation Facilities | Feasibility Study Preparation | Cadiz Valley, CA |
| Lake Arrowhead Community Services District (LACSD) Grass Valley Recycled Water Project | Construction Management | Lake Arrowhead, CA |
| Zond Industries Wind Generation Facility | Principle Engineer | County of Riverside, CA (Banning Pass) |
| Sheep Creek Water Company Hydrogeneration System | Design Engineer | County of San Bernardino |
| Saint Bernadine Medical Center Waste-Heat-Boiler Combination | Principle Engineer | San Bernardino, CA |
| Anaheim Memorial Hospital, Victor Valley Hospital, & Griswold's Inn – Cogeneration Systems | Principle Engineer | Southern CA |

*Note: Project Descriptions are summaries only and do not necessarily list all services provided.

