Article 8 Renewable Energy Ordinance

Section 801. Introduction and Purpose

A. Purpose

The purpose of this ~~section~~ Article is to:

1. Specify Conditional Use Permit (CUP) application requirements for the development of utility-scale renewable energy production facilities. The permitting process requires thorough review to help ensure that potential adverse impacts are carefully identified, addressed and mitigated. Due to the scale and complexity of these projects, they require more information and more time to process compared to typical applications. Therefore, the requirements in this Article 8 are in addition to the basic requirements in Article 1106-1107, unless otherwise specified herein.
2. Establish reasonable standards for the permitting, construction, operation, maintenance, and decommissioning of utility-scale renewable energy generation facilities.
3. Further the County's goals of protecting public health, safety, convenience, and general welfare, protecting the County's natural, cultural, and visual resources, and minimize adverse impacts through clear and enforceable siting and performance standards, and through applying appropriate conditions of approval.
4. Approve only Utility-Scale Renewable Energy projects that:
    a. Provide significant long-term local public benefit**;**
    b. Demonstrate proposed project design, siting, and construction, operation and decommissioning plans that comply with County standards**;**
    c. Clearly identify all potential adverse project and cumulative impacts, and propose measures to avoid, minimize and ~~fully~~ mitigate all identified potential adverse project impacts**;**
    d. Satisfy CUP evaluation criteria and standards in Article 11, and do not shift project related costs or risks to neighbors, County residents, local or state agencies, or onto the taxpayers**;** and
    e. Submit a complete application with reports and studies subject to 3rd party review at the applicant's expense prior to P&Z public hearings to consider the CUP.

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B. Applicability

This Article does not apply to personal or institutional renewable energy generation equipment that is intended to generate electricity to serve on-site residential, agricultural, or institutional uses ~~for use~~ that are primarily on the property on which the equipment is located, or to facilities with an actual or planned generating capacity of less than one megawatt. These include, but are not limited to, small wind energy systems and small solar energy systems, including ground-mounted systems, roof-mounted systems, pole-mounted systems, and systems affixed to shade structures located over parking areas.

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Section 802. Definitions

A. The following terms are defined as follows for purposes of this Article. Other definitions may be found in Article 2.

Abandonment – The formal and complete discontinuation of a renewable energy project or component part of the project, before the end of its intended operational life, resulting in the need for removal by the controlling entity of project components and related infrastructure, and the restoration of the site to its pre-construction condition vs decommissioning (see decommissioning).

Affiliate – A company, entity, or person that is related to or controlled by another company in a way that meets regulatory or legal definitions, and that may have a role in the project's structure, financing, or operations.

Applicant—Individual, organization, or entity that formally submits the project proposal, permits, and required documentation to the relevant regulatory authority for review and approval.

Agri-Voltaics – A system in which photovoltaic solar-energy panels and facilities ~~are~~ may OR are integrated with ~~be integrated~~ with agricultural production on the same site, allowing agricultural activities and electric generation to occur concurrently.

Does the Commission intend agri-voltaics to mean a solar facility that actually incorporates agricultural production?

If we say agricultural production 'may be integrated,' almost any solar facility potentially qualifies as agri-voltaic. If we say it 'is integrated,' then actual coexisting agricultural production becomes part of the definition.

Alternative Energy Storage System – A system that differs from battery energy storage system, including but not limited to: mechanical, electrochemical, electrical, thermal, and/or chemical systems as classified by the U.S. Department of Energy (DOE).

Applicable Electrical Standards – The laws, codes, standards, utility requirements, and approved engineering criteria applicable to the specific equipment and installation. Depending on the installation, these may include the National Electrical Code (NFPA 70), National Electrical Safety Code (ANSI C2), applicable IEEE and IEC standards, manufacturer requirements, and utility

interconnection requirements. Applicability shall be determined by the authority having jurisdiction and qualified design professionals.

Applicable utility interconnection requirements – The technical and operating requirements governing the connection of the wind farm to the utility grid.

> ***What the plan must include:*** *The applicable utility interconnection requirements and agreements, connection voltage, interface equipment, metering and protection arrangements, required studies, operating and communication requirements, and the status of required utility reviews or approvals.*
>
> ***Why it matters:*** *A wind farm does not operate in isolation. Its electrical system connects to a larger grid that must remain stable and protected. The interconnection must satisfy the applicable utility and regulatory requirements, including those addressing faults, disconnection, and safe operation.*

Arc Flash – A dangerous release of energy caused by an electrical arc. It can produce intense heat, light, pressure, molten material, and serious injury.

Biomass Energy Production – The production of energy, particularly electricity, **using** ~~from~~ woody **fuel (feedstock) from any of the following, but not limited to: green**

tree thinning, **wildfire mitigation, brush removal, watershed/grassland restoration work, dead tree salvage operations,** logging residues and mill scraps. ~~considered waste by-products, generated through forest, woodland, and/or grassland restoration treatments, as well as dead tree salvage operations.~~ **These are all standard land management practices that facilitate maintenance of a renewable supply of trees/shrubs.**

(Matt will work with Monica and Melana for a better definition)

Blades – The aerodynamic components attached to the rotor hub that capture the kinetic energy of the wind, convert it into rotational mechanical energy, and drive the generator to produce electricity.

Blade Failure/Fragment Throw – The loss of structural integrity or complete detachment of one or more rotor blades from the turbine hub, rendering the blade unable to perform its aerodynamic function and potentially causing significant operational and safety issues. ~~The~~ **An event where either a full blade or a segment of it is propelled through the air, potentially traveling significant distances before coming to rest, leaving a substantial contaminated issue of the area. Other substantial fragment particles can come from the hub and nacelle mechanisms.**

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Buried cable depth – How far below the ground electrical cables are installed.

> ***What the plan must include:*** *The proposed burial depth and installation method for each cable type, applicable code or utility requirements, mechanical protection, marking provisions, and details for locations where roads, drainage features, or other infrastructure affect the installation.*
>
> ***Why it matters:*** *Cables installed too shallowly or without appropriate protection may be damaged by excavation, vehicles, erosion, or other activities. Burial depth alone does not establish safety; cable construction, protection, location, and applicable requirements also matter.*

Collector-circuit routing -- The physical paths followed by electrical circuits between turbines and the collection equipment.

> **What the plan must include:** Mapped cable routes, circuit identification, underground and overhead segments, junctions, splices, terminations, crossings, and connections to electrical equipment.
>
> **Why it matters:** Workers and emergency responders need to know where electrical infrastructure is located. Accurate routing also helps prevent accidental damage during excavation, road work, repairs, and future construction.

Collector-system voltage – The voltage used by the cables that collect electricity from the turbines and carry it toward the substation.

> **What the plan must include:** The nominal voltage of each collector circuit, relevant operating limits, and the voltage ratings of associated cables, switches, terminations, and other equipment.
>
> **Why it matters:** A collector system often operates at a higher voltage than the turbine generator. A cable or termination suitable for one voltage may be unsuitable for another.

Communications Impact Analysis – A thorough assessment, performed by a qualified or certified consultant at the project developer's expense, of possible interference to all forms of radio frequency (RF) communications due to construction or placement of wind turbines, power-lines/poles, other tall structures, or facilities/components that can distort radio frequency spectrum important to emergency services providers, Federal-State-County-Municipal government agencies, utility companies, FCC-licensed equipment owners/operators, and local amateur radio citizens groups. The analysis determines which existing RF transmission/reception capabilities in the vicinity may be impacted by

DRAFT

the proposed project, including the cumulative effects of all other existing and known proposed renewable projects which may contribute to interference in the same vicinity. It also identifies effective and practical mitigation measures the project developer could implement to avoid or minimize any foreseen interference.

[Explanation] P&Z questioned the word “qualified” consultant in the first sentence, with “certified”, “licensed” or similar professional criterion preferred.

Upon further research, there is no appropriate one-word replacement term specified by the FCC for such consultants that perform this type of study. But there are qualifying criteria that should be considered for such consultants. Thus, we recommend keeping the original word “qualified” in that definition, and supplementing Section 802 with the following Qualified RF Communications Consultant definition.

(Chair Peterson and Director Fish will research professional certification vs. qualified.)

Communications with local fire and emergency services

What it means: A defined process for sharing essential electrical-system information with the agencies that may respond to an incident.

What the plan must include: *Emergency contacts, notification procedures, facility access instructions, maps, electrical one-line diagrams or responder-specific diagrams, equipment and hazard information, shutdown and isolation contacts, and arrangements for coordination or familiarization with the responsible local agencies.*

Why it matters: *Emergency responders may not routinely work at wind farms. Access to accurate information can reduce confusion and help prevent responders from entering hazardous areas or approaching equipment that remains energized.*

The applicant should coordinate the proposed procedures with the appropriate local fire and emergency services before the facility begins operation.

Conductor – A material, typically copper or aluminum, designed to carry electrical current.

Conductor sizes – The dimensions and electrical characteristics of the wires or cables that carry current.

> ***What the plan must include:*** *Conductor material, size, insulation type and rating where applicable, cable construction, installation method, and the engineering basis for selecting each conductor.*

DRAFT

> ***Why it matters:*** *A conductor that is too small for its duty may overheat and create a fire hazard. Cable capacity also depends on installation conditions, including burial, grouping, ambient temperature, and heat dissipation.*

Continuous Loading – The electrical current or power that equipment is expected to carry for sustained periods without exceeding its permitted operating limits.

Controlling Entity – The legal or organizational body that has overall responsibility for the project's planning, operation, financing, and completion, and that can direct the financial and operational decisions of the project's key participants.

Cultural Resources – The tangible and intangible heritage elements (such as: terrestrial archeological resources, above ground pre-historic and historic resources, Tribal cultural landscape and sites, visual resources) that may be present within or near a project's footprint and that are protected under laws such as the National Historic Preservation Act (NHPA), the Native American Graves Protection and Repatriation Act (NAGPRA), and state or tribal cultural heritage regulations.

Current – The flow of electrical charge through a conductor, measured in amperes. Excessive current can overheat conductors and equipment or create fire and equipment-damage hazards.

Cumulative Impacts – The total estimated effects of a proposed project when combined with the impacts of known past, present and foreseeable-future projects, over time and across the affected area.

Decibel A-weighting (dBA) – dBA is a measurement of sound using decibels that have been A-weighted. A-weighting is a frequency-dependent curve (or filter) that is applied to a sound pressure microphone to mimic the effects of human hearing. Given the same sound pressure level, microphone recordings can be different from the levels perceived by the human ear.

Decommissioning – The structured process of dismantling and removing the entire renewable energy system when it reaches the end of its operational life or when it is no longer economically viable to operate. It is a planned, regulated process that ensures safe removal, environmental protection, and site restoration by the controlling entity. As a part of the decommissioning, complete restoration of the project area will be restored.

DRAFT

Electrical Collector System – The network of electrical cables and associated equipment that gathers power from individual turbines and carries it toward a substation or other collection point.

Electrical Easement – A legally established right to install, access, operate, inspect, or maintain electrical infrastructure on land owned by another party, subject to the terms of the easement.

Electrical easements – The legal rights needed to install, access, operate, inspect, and maintain electrical infrastructure on the affected property.

> ***What the plan must include:*** *The location and width of required easements, the infrastructure within them, access requirements, and the status of necessary property rights and approvals.*
>
> ***Why it matters:*** *A project may be technically sound but still face safety and maintenance problems if access rights are unclear. Properly documented easements help ensure authorized personnel can reach and repair electrical facilities.*

Electrical Hazard Signage – Signs and labels identifying electrical hazards, voltage levels where appropriate, restricted access, emergency contacts, and required warnings.

Electrical hazard signage – Signs and equipment labels warning people about electrical hazards and identifying restricted areas or equipment.

> ***What the plan must include:*** *The proposed locations and types of warning signs, relevant voltage or hazard identification, equipment labels, emergency contacts where appropriate, and maintenance responsibilities.*
>
> ***Why it matters:*** *Responders and maintenance personnel need to recognize hazardous equipment and identify the correct circuit or facility. Signs are an important warning, but they do not replace physical access controls or safe work procedures.*

Electrical Infrastructure – All equipment and facilities used to generate, collect, transform, control, protect, ground, transmit, distribute, and interconnect electrical power produced by a utility-scale renewable energy facility.

DRAFT

Electrical Infrastructure Plan – A coordinated package of drawings, calculations, equipment specifications, engineering studies, and written procedures describing the facility's electrical systems and demonstrating that the systems have been appropriately designed and protected.

Electrical One-Line Diagram – A simplified engineering drawing showing the electrical connections between generators, transformers, cables, switches, protective devices, substations, and the utility grid.

Emergency Isolation – The ability to disconnect or de-energize a defined portion of an electrical system during an emergency, maintenance activity, or unsafe operating condition.

Emergency isolation – The ability to disconnect a circuit or equipment from its electrical source when it becomes unsafe or must be serviced.

> ***What the plan must include:*** *The location and identification of applicable disconnects and switching equipment, operating procedures, remote or local control provisions, and the steps required to isolate relevant electrical sources.*
>
> ***Why it matters:*** *During a fire or electrical incident, responders need to know what can be shut down and how. Turning off one switch does not necessarily mean all connected equipment or conductors are de-energized.*
>
> *The plan must distinguish between equipment that is disconnected and equipment that has been verified de-energized and made safe under the applicable procedures.*

Emergency response procedures – Written instructions for dealing with foreseeable electrical emergencies at the facility.

> ***What the plan must include:*** *Procedures for electrical fires, damaged cables, equipment failures, suspected ground faults, electrical contact incidents, emergency shutdown, isolation of affected circuits, restricted areas, and coordination with the utility and emergency responders.*
>
> ***Why it matters:*** *In an emergency, responders should not have to guess which equipment is energized, which disconnect controls a circuit, or whether electricity can still be supplied from another source.*
>
> *Procedures must identify who has authority to operate switching equipment and how responders will confirm the status of the system through qualified personnel.*

DRAFT

Fall Zone – A fall zone is the area of the land surrounding a wind turbine that may be affected by debris should the supporting structure collapse or any component of the wind turbine or anything attached to it fall to the ground.

Fault Current – Electrical current that flows during an abnormal condition, such as a short circuit or a connection between an energized conductor and ground. Fault current can be many times greater than normal operating current.

Fault-current calculations – Calculations estimating the electrical current that may flow if a short circuit or other major electrical fault occurs.

> **What the plan must include:** Project-specific fault-current calculations at relevant points in the system, the assumptions used, the utility's contribution where applicable, and verification that equipment interrupting and withstand ratings are adequate.
>
> **Why it matters:** During a fault, current can rise dramatically. Equipment that cannot safely withstand or interrupt that current may rupture, cause an arc flash, or spread damage to other equipment.

Fire protection – Measures intended to reduce electrical fire risks and support safe response if electrical equipment catches fire.

> ***What the plan must include:*** *Applicable fire-detection and suppression provisions, equipment-specific fire hazards, emergency shutdown arrangements, access for fire apparatus, and relevant information about transformers insulating fluids, batteries, or other equipment where present.*
>
> ***Why it matters:*** *Electrical fires may involve energized equipment, hot surfaces, combustible materials, or insulating fluids. Responders need information about the equipment and the hazards before choosing an approach.*
>
> *The plan must identify where ordinary firefighting tactics may be unsafe until electrical hazards are controlled. Fire-protection requirements should be equipment-specific and coordinated with the responsible fire authority.*

Generator – The equipment that converts mechanical energy from the wind turbine into electrical energy.

DRAFT

Glare – The visual sensation produced by bright light or reflection of sunlight that causes discomfort or visual disruption such as temporary after-images or retinal damage.

Grounding design – The engineered network of connections intended to manage electrical faults and voltage differences between equipment and the surrounding earth.

> ***What the plan must include:*** *Grounding layouts, conductor sizes, connections to equipment, grounding electrodes, applicable soil-resistivity information, and the calculations or studies used to evaluate grounding performance.*
>
> ***Why it matters:*** *Grounding is not simply installing a metal rod in the ground. It must be designed for the electrical system and site conditions so that faults do not create unacceptable hazards for people or equipment.*

Grounding System – Conductors, electrodes, and connections intended to provide electrical grounding and help control dangerous voltage differences during normal operation and electrical faults.

Ground-Fault Protection – Measures that detect or mitigate unintended electrical current flowing to ground.

Ground-fault protection – Methods used to detect or mitigate unintended electrical current flowing to ground.

> ***What the plan must include:*** *The ground-fault detection and protection method for applicable circuits, the devices and settings used, and the design basis for safe fault detection and isolation.*
>
> ***Why it matters:*** *A damaged cable or failed component can energize metal equipment or create a dangerous electrical path. Appropriate protection can help detect the problem and disconnect the affected circuit.*

Ground-Potential Rise (GPR) – An increase in the voltage of the soil and grounded equipment around an electrical fault relative to more distant earth.

Hazardous materials – Hazardous materials (HAZMAT) are substances or physical conditions that pose a risk to health, safety, property, or the environment during storage, use, transport, or disposal. They can include chemicals, biological agents, radioactive substances, flammable liquids, explosives, corrosives, oxidizers, and more. Hazardous

materials are any substance toxic to humans, animals, birds, plants, and all other life forms.

Hybrid Renewable Energy Storage System – A coordinated facility, system, or combination of interconnected facilities that incorporates one or more Renewable Energy Production Systems with one or more Energy Storage Systems, and is designed to generate, convert, store, manage, dispatch, or deliver energy from renewable resources. A Hybrid system may be co-located or physically interconnected, may share electrical, transmission, distribution, control, access, or other infrastructure, and may operate as a single integrated facility or as multiple coordinated facilities. The term includes associated equipment that is reasonably necessary for the operation of the system, including generation equipment, energy-storage equipment, transformers, substations, inverters, converters, interconnection equipment, control systems, communications equipment, access roads, and other accessory infrastructure.

Highway Repair Bond – A type of surety bond or other acceptable monetary means of compensation that guarantees a contractor or permit holder will complete highway(s) repair or improvement work according to the agreed terms, and will restore the roadway or related public property to its original condition if required.

Highway Use Agreement – (Road Use Agreement) is a written contract between a local government (such as a state, county, municipality, or town) and another party—often a developer, contractor, or company—that authorizes the use of a specific highway(s) or other public road(s) subject to agreed upon terms and conditions.

Highway Video Log – A structured, time stamped, and often geolocated video record that documents the condition, activities, and compliance of a highway or roadway throughout its lifecycle. It is used to capture visual evidence before, during, and after work on the road, providing an auditable, verifiable account of site conditions and actions.

Infrasound – Is very low-frequency sound waves with frequencies below the human hearing threshold—typically under 20 Hz—which is below the range of normal human hearing. Although humans cannot perceive it as a tone, it can be felt as vibrations and can still have physiological or wildlife/environmental effects. These waves are produced by wind turbines through aerodynamic and mechanical processes, and it can travel long distances. Not measured the same as dBA audible sound.

Inverter – Electronic equipment that converts direct current (DC) into alternating current (AC) or otherwise converts electrical power between required forms. Inverters are commonly used with solar panels and battery energy-storage

systems. A conventional wind turbine typically uses a generator and power-conversion equipment appropriate to its design; not every wind turbine uses a separate inverter.

Inverter – An inverter is electronic equipment that converts direct current into alternating current. Some power-conversion systems also perform additional control and conversion functions.

> *Solar panels and batteries commonly produce or store DC electricity and use inverters to connect to an AC electrical system. Wind turbines may use different power-conversion arrangements, depending on their generator and electrical design.*

Lightning Protection: Equipment and design measures intended to intercept or safely conduct lightning energy and reduce resulting damage or hazards.

Lightning protection – Measures intended to manage the effects of lightning strikes on turbines, electrical equipment, and connected systems.

> ***What the plan must include:*** *The applicable lightning-protection design, grounding and bonding provisions, relevant turbine and equipment protection, and the design measures used to reduce damage from lightning currents.*
>
> ***Why it matters:*** *Turbines are tall structures exposed to lightning. A strike can damage blades, electrical controls, insulation, cables, or other equipment. The protection design must account for the complete electrical installation.*

Major Highway – Any public roadway classified as a principal arterial or minor arterial under the most current functional classification system adopted by the State Department of Transportation or the County, including U.S. Highways, State Routes, and Interstate Highways, and any other roadway designated by the County as carrying regional or statewide traffic volumes of significance.

Maximum continuous loading – The maximum electrical current or power that equipment is expected to carry continuously within its permitted operating limits.

> ***What the plan must include:*** *Expected and maximum operating loads, equipment ratings, applicable temperature and installation assumptions, and any operating restrictions necessary to prevent overloading.*

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> ***Why it matters:*** *Equipment must be sized for the conditions in which it will actually operate, not just for average production. Overloading cables, transformers, or switchgear can cause overheating, deterioration, or failure.*

Micro-siting – Slight adjustments to the location of project components within an approved project to allow flexibility to avoid unexpected issues such as soil instability, sensitive environmental areas, cultural resources or critical wildlife habitats discovered during on-the-ground engineering review during the pre-construction phase. Micro-siting changes must not exceed 100 feet in distance from approved location, and must not increase component height, increase visual or auditory impact on any sensitive receptor, or encroach on setback requirements. Each micro-sitting adjustment must be approved in writing (with latitude/longitude coordinates) by the Community Development Director after field review of each proposed adjustment to ensure it complies with criteria above. Adjustments that exceed micro-sitting criteria will be treated as Substantial Modifications.

Non-participating Parcel – Any parcel of real property that is not subject to a recorded lease, easement, option, or other written agreement granting permission for the placement, construction, operation, or maintenance of a renewable energy facility and that is not under common ownership or control with the applicant or facility operator. A Non-Participating Parcel includes property owned by individuals, entities, or public agencies that have not executed a participation agreement with the renewable energy facility applicant at the time a complete application is submitted to the County.

Operator – The professional or team responsible for managing and running of the renewable energy project and the associated wind, solar and battery systems from commissioning through decommissioning.

Owner – The legal entity—such as a company, partnership, or individual—that holds title to the project's assets, rights, and obligations, and is responsible for its financial, operational, and regulatory management.

Participating Parcel – Any parcel of real property that is subject to a legally binding, written, and recorded lease, easement, option, or other agreement granting the renewable energy facility applicant or operator the right to construct, install, operate, maintain, or decommission renewable energy equipment or related infrastructure on contiguous parcel, and that is in effect at the time a complete application is submitted to the County. ~~A Participating Parcel also includes any parcel under common ownership or control with the renewable energy facility applicant or operator that is designated as part of the renewable energy project site.~~ **Any participating parcels under a lease, option, or agreement that is recorded at application, must be checked to make sure they have not expired before construction and that they continue through construction, operation and decommissioning.**

Photovoltaic Cells / Solar Panels – An electrical system or device that converts energy from the sun directly into electricity by the photovoltaic effect using photoelectric cells, also known as solar panels.

Project Boundary – The boundary of a renewable energy generation project as set forth in the project site plan and incorporated into the CUP. **Boundary to include all contiguous and non-contiguous parcels, easements, options, leased areas, collection systems, substations, staging areas and phases under common control or serving the same interconnection.** Legal Description must be included and include type of ownership; State, BLM, Private, Federal, etc., bordered by the project's perimeter boundary including Township, Section, and Range.

Qualified RF Communications Consultant – A currently state-registered Electrical Professional Engineer (P.E.) highly trained in electronic transmission equipment and communications systems, with strong demonstrated experience in performing studies, evaluation, and technical written submissions specific to RF communications, including various forms of interference affecting cellular phone, 2-way radio (UHF/VHF/shortwave), broadcast (AM/FM/TV), microwave path, digital data, and weather radar. Knowledge of RF propagation modeling, Fresnel-zone analysis, received signal calculations, signal-to-noise ratio and interference-to-noise measurements, antenna patterns, electromagnetic frequencies, and wind turbine blade/tower/generator caused scattering-reflection-clutter-diffraction-multipath concepts are all important. Proficiency in GIS terrain mapping software, plus FCC database and regulatory experience are equally required.

Protective Device – Equipment such as a circuit breaker, fuse, relay, or other device designed to detect or interrupt abnormal electrical conditions.

Protective-Device Coordination – The arrangement and settings of protective devices so that the device nearest a fault normally operates first, limiting the portion of the system that must be shut down.

Protective-device coordination – Making sure circuit breakers, fuses, relays, and other protective devices operate in an appropriate sequence when a fault occurs.

> ***What the plan must include:*** *Protection settings, coordination studies, equipment ratings, relevant time-current curves, and the design basis for isolating faults while limiting unnecessary shutdowns.*
>
> ***Why it matters:*** *If the wrong device operates—or a device fails to operate—a problem in one location can affect a much larger part of the wind farm or its grid connection. Coordination helps limit the affected area.*

DRAFT

Public-access controls – Measures that prevent unauthorized people from entering areas where electrical hazards are present.

> ***What the plan must include:*** *Applicable fencing, gates, locked access points, equipment enclosures, access-control procedures, and measures for locations where members of the public could encounter electrical infrastructure.*
>
> ***Why it matters:*** *High-voltage equipment should not be accessible to unqualified persons. Controls must be appropriate to the equipment and location, including electrical facilities near roads or other publicly accessible areas.*

Renewable Energy -- Power generated from natural resources that renew themselves, including but not limited to solar, wind, hydropower, geothermal, and biomass.

Renewable Energy Research Facility – A center focused on the study, testing and creation of renewable energy power generation and/or storage systems, typically associated with or overseen by an existing major Utility or University.

Renewable Energy Site Plan – A detailed, scaled graphical and technical document that shows how a proposed renewal energy facility will be laid out on a specific piece of land, as defined by the legal description. Including all the supporting infrastructure, environmental constraints, and operational considerations. It is the master layout blueprint used by developers, engineers, regulators, and stakeholders to guide design, permitting, construction, and operation. (See also Article 2)

Repowering – The process of upgrading or replacing major project components (including but not limited to: wind turbines, substations, transmission lines, solar arrays, etc.) with different equipment or location than in the approved CUP, amounting to a substantial modification. Minor repairs or replacement of identical equipment in the same foundation location does not constitute repowering.

Rual Land Use –

Scenic Travel Corridor – A major travel route that provides important scenic views of the County's rural landscapes, unique landforms, vistas and open spaces, which contribute to tourism, community identity and visual character as seen and experienced by residents and visitors traveling through the region.

DRAFT

Sensitive Receptor – Any location, structure, or place (for instance: residences, seasonal homes, schools, hospitals, natural or cultural sites, public facilities or other buildings where people live, work or gather) that is particularly vulnerable to adverse impacts from a renewable energy operations, such as noise, vibration, shadow flicker, or visual impact, and whose protection is important for human health, comfort, or environmental quality.

Setback Distance – The distance measured as follows: (i) For wind turbines, from the center of the turbine foundation; and (ii) for solar facilities, from the nearest outer edge of the solar equipment footprint or the nearest project perimeter fence, whichever is closest to the setback boundary; to the nearest applicable property line, edge of a public road right-of-way or railroad right-of-way, third-party transmission line, above-ground pipeline, communication tower, other structure, or other boundary established by Apache County.

Shadow Flicker – The repetitive alternation of light and shadows cast across the surrounding landscape due to sunlight interrupted by turning wind turbine blades; shadow length is determined by total turbine height and sun angle.

Step Potential – A voltage difference between two points on the ground that a person may contact with their feet while walking near an electrical fault.

Step-and-touch potential analysis – An engineering evaluation of dangerous voltage differences that can occur on the ground or between grounded equipment and the ground during an electrical fault.

> ***What the plan must include:*** *The applicable grounding and fault assumptions, calculations or modeling, the locations evaluated, and the measures needed to control identified hazards.*
>
> ***Why it matters:*** *During a major fault, the ground around electrical equipment can temporarily carry dangerous voltage differences. A person may be exposed by standing in two locations with different voltages or by touching metal equipment while standing on the ground.*
>
> ***Important distinction:*** *Step-and-touch potential is not the same as ordinary static electricity. It concerns potentially serious voltage differences caused by electrical faults and must be evaluated through engineering analysis.*

Storm-Water Runoff and Erosion Control Plans – Detailed site-specific plans showing existing and proposed drainage, retention and other stormwater control

DRAFT

structures correctly sized and placed to carry and/or capture excess rain, snowmelt or other precipitation that results from flow over or across the ground surface, impervious surfaces or structures like solar panels, roads, concrete pads, smooth roofs, access ways, or other compacted areas, and is not immediately absorbed into the soil.

Substantial Modification – Proposed changes in project design or components which alter (including but not limited to location, number, size, MW capacity, different technology, or equipment type, **safety systems,** etc.) in such a way that adverse impacts may be increased and/or require different mitigations. Micro-siting adjustments of 100 feet distance or less should not typically constitute a substantial modification, unless a protected resource or receptor would be adversely impacted by that change. **A substantial modification requires formal regulatory review and approval of a new CUP application.** (Also see Micro-siting definition.)

Substation – A substation is a facility containing equipment that controls, switches, protects, measures, or transforms electrical power.

> *A substation may include transformers, circuit breakers, disconnect switches, busbars, protective relays, grounding equipment, and connections to transmission or distribution lines. Not every substation contains every type of equipment.*
>
> ***County review should establish:** the facility's electrical layout, incoming and outgoing circuits, protection arrangements, grounding design, access restrictions, and emergency isolation procedures.*

Successor – The person, company, or entity that legally and operationally takes over the rights, obligations, and responsibilities of the original party (often the project developer, contractor, or owner) after that party's exit from the project. This can occur through a succession agreement, contract assignment, or transfer of ownership.

Surge Protection – Equipment or design measures that limit brief voltage increases caused by lightning, switching, or other electrical disturbances.

Surge protection -- Devices and design measures that limit brief, potentially damaging increases in voltage.

> **What the plan must include:** The location and ratings of applicable surge-protective devices, the equipment they protect, coordination with insulation ratings, and the grounding connections needed for proper operation.

DRAFT

> **Why it matters:** Lightning and electrical switching can create voltage surges that damage control electronics, communications equipment, and power-system components—even when the equipment is not directly struck by lightning.

Third-Party – Approved by the county, paid by the applicant

Total Wind Turbine Height – The maximum total height from ground level to the top of a vertically-oriented blade-tip, or topmost extent of some other designed wind energy collector.

Touch Potential -- A voltage difference between grounded equipment a person touches and the ground where that person is standing.

Transformer – Electrical equipment that increases or decreases voltage through electromagnetic induction. A transformer commonly increases generator voltage to a higher collection-system voltage or increases voltage again for transmission to the utility grid.

Transformer – A transformer changes AC voltage from one level to another. It does not ordinarily generate electricity or function as a substitute for a circuit breaker.

> *For example, a turbine may produce electricity at a relatively low voltage, and a transformer may increase that voltage so power can be collected more efficiently across the project. Another transformer may increase the voltage at the substation for delivery to the utility grid.*
>
> ***County review should establish:*** *where each transformer is located, what voltage it receives and supplies, its capacity and equipment ratings, what protective equipment serves it, and what fire or insulating-fluid hazards apply.*

Transformer locations – The locations of equipment that raises or lowers electrical voltage.

> **What the plan must include:** The location of every transformer; its voltage ratings, capacity, and type; relevant protective equipment; and the information necessary to identify applicable fire and electrical hazards. For oil-filled units, the plan should identify insulating-fluid type and quantity and the applicable spill-containment provisions.
>
> **Why it matters:** Transformers are major electrical components. They can contain substantial amounts of insulating fluid and may be damaged by faults or

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overheating. Responders need to know where they are and what hazards may be present.

Turbine-generator voltage – The voltage at which each wind turbine generates electricity.

What the plan must include: *The nominal generator voltage, operating range where applicable, equipment ratings, and the electrical connection from the generator or power-conversion equipment to the next component.*

Why it matters: *The voltage determines the type of equipment and insulation required. It also helps engineers understand how electricity leaves each turbine and what hazards may exist during maintenance or an electrical failure.*

Substation – An electrical facility containing equipment used to switch, protect, measure, and control power circuits and, where applicable, transform electricity between voltage levels.

Substation locations – The locations of the facilities that collect, switch, protect, and potentially transform electrical power before it enters the utility grid.

What the plan must include: *Site plans and electrical diagrams identifying transformers, circuit breakers, switches, bus work, protective relays, grounding systems, access points, and the facility's connections to incoming and outgoing circuits.*

Why it matters: *A substation may contain multiple energized circuits and high-energy equipment. Knowing its layout is essential for safe operation, maintenance, fault isolation, and emergency response.*

Utility crossings – Locations where the project's electrical infrastructure crosses roads, pipelines, other utilities, drainage features, or existing electrical facilities.

What the plan must include: *Crossing locations, profiles or sections where necessary, separation requirements, mechanical protection, installation methods, applicable approvals, and measures to prevent damage or unsafe electrical interactions.*

Why it matters: *Crossings are areas where installation errors or future excavation can damage electrical infrastructure or other services. Clear drawings help contractors, utility operators, and maintenance personnel avoid conflicts.*

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Utility Interconnection –The electrical connection between the generating facility and the utility's transmission or distribution system, including applicable utility requirements, protection, metering, and operating controls.

Utility-Scale Renewable Energy Production Facility – A renewable energy system primarily to generate electricity for distribution to off-site customers through the electrical grid and renewable energy storage systems having an actual or planned generating capacity of at least one (1) megawatt, including but not limited to accessory structures and buildings, including substations, anemometers, meteorological towers, gen-tie lines, and associated electrical infrastructure. The term does not include small wind or solar systems designed primarily for on-site residential, agricultural, or institutional energy consumption.

Utility-Scale Solar Energy Project – An energy generation facility using solar energy from the sun to generate electricity by the photovoltaic effect using photoelectric cells, also known as solar panels, and accessory structures and buildings, including but not limited to substations, gen-tie lines, associated electrical infrastructure and related energy storage systems to generate electricity for off-site customers tied into the local electrical grid, with the actual or planned ability to generate at least one (1) megawatt. The term does not include stand-alone solar electricity generating systems primarily for on-site residential, institutional, or agricultural use which do not feed residual power into the electrical grid as defined by the Arizona Corporation Commission.

Utility-Scale Wind Energy Project – An energy generation facility using wind technology and consisting of one or more wind turbines and accessory structures and buildings, including but not limited to substations, anemometers, meteorological towers, gen-tie lines, associated electrical infrastructure, and related energy storage systems, with an actual or planned generating capacity of at least one megawatt. The term does not include stand-alone wind electricity generating systems primarily for on-site residential, institutional, or agricultural use which do not feed residual power into the electrical grid as defined by the Arizona Corporation Commission.

Visual Impact – Refers to the change in the appearance of a landscape and the visual experience of people caused by the presence and operation of a renewable energy project, including how they alter scenic quality, view characteristics, and the overall aesthetics of the area.

Visual Resource -- Natural or built landscape features that contribute to scenic character and are visible from publicly accessible locations such as designated scenic highways, established public parks, recreation areas, historic sites, or recognized viewpoints or scenic travel corridors as may be identified in the Apache County Comprehensive Plan.

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Voltage – The electrical potential difference that drives current through an electrical circuit, measured in volts. Higher voltage allows a given amount of power to be transmitted with less current, but can increase the distance over which dangerous electrical contact or flashover may occur.

Water Use – The total amount of freshwater withdrawn, consumed, or otherwise utilized throughout the project's lifecycle from manufacturing and construction to operation and maintenance for specific purposes, excluding the operational electricity generation phase.

Wildlife Management Area –

Wildlife Viewing Area –

Wind Turbines – A wind energy system that uses the wind to turn a set of aerodynamic blades, interact with wind receptacles, or similar devices attached to an electric generator or turbine. The term does not include small wind turbines with an actual or planned generating capacity used primarily to generate electricity for on-site residential, institutional, commercial, or agricultural use.

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Section 803. Zones in Which Allowed / CUP Required

Renewable Energy Generation facilities are allowed only in the Agricultural-General and Industrial Zones, subject to securing a Conditional Use Permit (CUP) and to the applicable site development standards set forth herein. The CUP application shall comply with this Article and Article 11 of the Apache County Zoning Ordinance.

A. Preferred Criteria

When reviewing applications for Renewable Energy Generation Facilities, Apache County shall consider consistency with the Apache County Comprehensive Plan and applicable County Community Plans and favor site locations in areas identified as suitable for energy development. The following preferred criteria are intended to guide project design and site selection in a manner that best protects public health, safety, and welfare, minimizes land use conflicts and protects the County's natural, cultural, and scenic resources.

These criteria are intended to guide planning and mitigation strategies in order to protect the public health, safety, and welfare of the residents of Apache County.

1. Proximity to Existing Springerville and Coronado Generation Stations and Transmission Infrastructure — Sites should be located close to existing Generating Stations, transmission lines, substations, and interconnection points, to reduce the need for construction of new transmission infrastructure, and minimize the need for new interconnection lines to cross scenic travel corridors and the Little Colorado River.
2. **Lower Habitat and Vegetation Sensitivity** —Sites with limited wildlife habitat or vegetation sensitivity and located away from designated wildlife management and wildlife viewing areas.
3. **Distance from Population Centers** —
    a.) Utility-scale renewable energy facilities should be located in the most remote and sparsely populated areas of Apache County where they minimize conflicts with existing and planned residential development, incorporated municipalities, established unincorporated communities, residential subdivisions, airports, schools, parks, and other areas of concentrated public activity.
    b.) Utility-scale renewable energy facilities should be located primarily downwind, to the east/northeast of population centers, such that flames, smoke, toxic fumes or airborne contaminants from accidental fires, leaks or discharges are more likely to burn or blow away from population centers.

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c.) Preference shall be given to locations that maximize separation from areas of existing and anticipated population growth while protecting public health and safety, preserving community character and non-participating property values, and maintaining compatibility with the Apache County Comprehensive Plan and applicable County Community Plans.

4. **Compatible With Existing Land Uses**

   Preference should be given to locations where utility-scale renewable energy development supports continued agricultural and grazing operations, and minimizes conflicts with neighboring, properties, and other established rural land uses.

5. **Topographic Suitability**

   Locations where terrain is conducive to construction and maintenance, minimizing the need for extensive grading and vegetation removal disturbance, and/or subsurface rock layers are geologically stable to support facility foundations. Prohibits any industrial wind energy complex construction in the Springerville Volcanic Field due to its unstable geological nature.

6. Sites With Minimal Visual Impact

   Sites that have minimal visual impact on significant landforms, scenic travel corridors, scenic viewsheds of widely recognized aesthetic, historic or recreational value, and on scenic vistas as seen from existing residences, or sites which are more than 10 miles from Visual Resources.

B. Non-Preferred Area Criteria

1. For projects proposed outside of the County's designated preferred areas, applicants shall submit with the CUP application a detailed site selection analysis including all alternative locations considered, pros and cons of each alternative location considered, and why applicant's chosen location is superior to the County's preferred areas.

2. All proposed project locations and siting plans shall comply with the Apache County Comprehensive Plan and applicable County Community Plans.

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Section 804. General Development Standards

Section 804 General Development Standards

A. ~~Pre-Application Meeting~~ Conditional Use Permit Application, Review, and Approval Process

1. Pre-Application Meeting.
Prior to submitting an application for a Conditional Use Permit (CUP), the applicant shall participate in a mandatory pre-application meeting with Apache County Community Development staff. The purpose of the meeting is to review the applicable CUP process and requirements, review the Pre-Submittal Checklist contained in Article 8, Appendix A**,** applicable requirements, potential project impacts, and necessary studies, reports, and agency coordination required for application review. Staff shall not be required to document every informal communication or coordinate attendance by outside agencies.

The applicant shall be responsible for coordinating with applicable agencies and obtaining required studies, reports, and written comments. Agencies shall include but not limited to Apache County Engineering, Emergency Management, Environmental Health, local fire departments and districts, Arizona State Fire Marshal, affected municipalities and Tribal governments, Arizona Game and Fish Department (AGFD), Arizona Department of Transportation (ADOT), Arizona Department of Environmental Quality (ADEQ), Apache Natural Resource Conservation District (ANRCD), applicable land-management agencies, and other agencies having jurisdiction or relevant expertise or as directed by Community Development.

The pre-application meeting is advisory and shall not constitute approval of the proposed project, acceptance of an application, or a determination that the application complies with this Article.

2. Pre-Submittal Review
Prior to formal application submittal, the applicant shall participate in a formal pre-submittal meeting with Community Development staff and provide the materials required by the pre-application meeting and Article 8, Appendix A – Pre-Submittal Checklist**.**

Community Development staff shall review the application for completeness and identify deficiencies. The applicant shall be responsible for addressing deficiencies and providing additional information necessary to demonstrate compliance with this Article.

An outside agency's failure to respond shall not prevent continued County review unless its determination or approval is required by applicable law or necessary to establish compliance with this Article.

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3. Planning and Zoning Commission Preliminary Work Session

After Community Development staff has received a complete CUP application and the applicable agency reviews, reports, studies, and comments necessary for preliminary evaluation of the proposed project. The application shall be scheduled for a noticed public work session before the Apache County Planning and Zoning Commission.

The purpose of the preliminary work session is to allow the Commission to receive an overview of the proposed project, review the application and agency comments, identify issues requiring additional information or analysis, and ask questions of staff and the applicant before the application proceeds to the formal public-hearing process.

Staff shall provide a summary of the proposed project, applicable agency comments, and unresolved issues. The Commission may review the materials, ask questions, and identify additional information necessary before the formal public hearing.

The preliminary work session shall be conducted in accordance with Arizona Open Meeting Law. No formal action, approval, denial, or recommendation on the CUP application shall occur during the preliminary work session. Any additional information identified during the work session shall be addressed, as applicable, before the application is scheduled for formal public hearing.

Following resolution of outstanding application requirements, the application shall be scheduled for a Planning and Zoning Commission public hearing in accordance with the applicable notice and hearing requirements of the Article 11 of the Apache County Zoning Ordinance and Arizona Revised Statutes.

4. Planning and Zoning Commission Public Hearing and Recommendation

Following completion of the preliminary review process and resolution of outstanding application requirements, the CUP application shall be scheduled for a noticed public hearing before the Planning and Zoning Commission in accordance with Article 11 of the Apache County Zoning Ordinance and applicable Arizona law.

The Commission shall review the application, staff report, agency comments, and public testimony to determine whether the proposed project satisfies the applicable requirements of this Article and the Apache County Zoning Ordinance.

Following the public hearing, the Commission shall forward its recommendation of approval, approval with conditions, or denial to the Board of Supervisors, together with the supporting record and any recommended conditions.

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5. Board of Supervisors Public Hearing and Final Decision

Following the Planning and Zoning Commission's recommendation, the CUP application shall be scheduled for a noticed public hearing before the Apache County Board of Supervisors for consideration and final action.

The Board shall consider the Commission's recommendation, application materials, staff and agency reports, and public testimony. The Board may approve, approve with conditions, deny, or continue the application in accordance with applicable law.

Notice of the hearing shall be provided in accordance with Article 11 of the Apache County Zoning Ordinance and applicable Arizona law.

Approval of a CUP shall not authorize construction or operation of the facility until all applicable permits, approvals, and conditions required by the County and other agencies having jurisdiction have been satisfied.

Upon final decision the CUP application and any conditions shall be recorded in the Apache County Recorder's office. Agency comments, reports, studies, recommendations, identified deficiencies, and unresolved issues received by the County shall be retained in the project file in accordance with applicable Arizona State Records-Retention requirements.

B. Road Access and Construction Traffic

The applicant will construct only the minimum number of on-site access roads necessary for construction, operation, dust control, erosion, drainage, over-sized loads, emergency-access, and maintenance of the renewable energy facility. Temporary access roads, crane paths, and excess roadway widths used during construction, repairs, and decommissioning shall be reclaimed and re-vegetated with site-appropriate native species as soon as seasonally practical and to the extent reasonably feasible.

The applicant shall submit with the CUP application a plan of all proposed roads and crane paths, temporary and permanent, including legible topographical maps at a 1" = 200-foot scale with contour interval shown, for review and recommendations by the ANRCD and the Apache County Engineering Department. All permanent roads shall be built and maintained to County Engineering requirements.

1. CUP Application

The applicant shall provide detailed route designations for delivery of materials and project components on existing roads and highways within Apache County.

Where using existing roads an outside independent Engineering analysis, paid for by the applicant, must include a detailed video log of each access route, plus

an analysis of existing conditions before construction, to include bridge/culvert capacity, oversized loads, school-bus routes. The analysis shall also address potential detours and emergency delays, pavement or road damage during construction and operations including snow and monsoon seasons.

The applicant shall provide in the project site plan, detailed drawings for each road access including roadway width, turning radii, surface materials and design and adequate site visibility. Any proposed project road access with a major highway must be designated by exact mile marker (MM) locations.

The CUP application shall provide total miles of temporary cross-country crane paths planned and explain why they cannot be co-located upon engineered project roads. A detailed description shall be provided, including detailed descriptions, and illustrations as appropriate, of all methods that will be used to mitigate crane path impacts to the site-specific soils, vegetation, terrain, wetlands, highway surface, and/or other sensitive resources. Such methods shall incorporate heavy equipment safety and industry standards for crane operation and appropriate on-site resource protections.

During the County CUP review process, the crane path plan map and narrative shall be reviewed by the ANRCD and an Arizona registered third party engineer, on the plan's effectiveness for suitable path locations, OSHA operator safety requirements for stable supporting ground, soil, vegetation, and other resource protections, at the applicant's expense. The reviewers' written reports shall be provided to the Community Development Director, and any required corrections to the plan completed by the applicant prior to CUP public hearings.

2. Performance standards

These projects will require a road use agreement **with the county**, repair bond, pre-construction inspection to include road surface condition and video log, to be conducted and paid for by the applicant.

A post-construction inspection and video log shall be provided by the applicant's engineer with proposed detailed schedule of repairs required to return existing roads to at least pre-construction condition, subject to the approval of the County Engineer. All post-construction road and related drainage repairs must be completed prior to final inspection and prior to commercial operation.

Any ADOT permit-required highway improvements shall be complied with by the applicant as part of the CUP.

Any road reports, surface analysis, video logs or other documents used for determining road conditions including pre- and post-construction and

decommissioning of a project will become the property of Apache County and stored ~~in the permanent project file~~ **as required by the State of Arizona Records Retention Schedule or** the project life in Community Development and Engineering Departments.

As part of the CUP application, the applicant shall provide a preliminary construction work schedule to estimate time frames for traffic interferences due to delivery of major project components.

Prior to building permit issuance, a detailed construction work schedule shall be provided, subject to the approval of the County Engineering Department, ADOT and appropriate law enforcement agencies.

During construction, operation and decommissioning, the CUP holder shall keep all existing roads passable at all times, subject to the approval of County Engineering and Sheriff's Departments.

3. Decommissioning

The project owner at the time of decommissioning (see Section 811), shall provide a detailed construction work schedule for removal of major project components to determine time frame and potential for traffic interference due to removal of components.

The CUP holder during decommissioning period shall provide pre-decommissioning and post-decommissioning road surface reviews as per the pre- and post-construction requirements. (see Section 811).

C. Electrical Infrastructure and Transmission lines

Electrical collector lines, which connect electricity generation devices to any substations, shall be placed underground, except where **a waiver for** above-ground placement is approved **for specific collector lines** by the County **as part of the CUP** due to engineering, safety, or environmental constraints. **(a) they cross sensitive biological or archeological resources, such as canyons, wetlands, or sites eligible for the national register, or rugged terrain that would prevent the use of underground trenching and technology, (b) project terrain is found to be unsuitable, as determined by the applicant and confirmed by the Apache County Engineer, or (c) burying the lines would violate applicable laws or regulations. In these cases, collector lines will be allowed above ground subject to approval by the Community Development Department and County Engineer. Utility lines serving the electricity or phone requirements of building shall be placed in accordance with the utility easement requirements.**

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D. Fire Protection and Emergency Response

Renewable Energy Generation projects shall include fire **protection systems, equipment and administrative controls as specified in the current versions of:**

1. **The International Fire Code (IFC);**
2. **National Fire Protection Association (NFPA) 850, Standard for Fire Protection for Electric Generating Plants and High Voltage Direct Current (HVDC) Converter Stations;**
3. **NFPA 855, Standard for the Installation of Stationary Energy Storage Systems;**
4. And as required by the local Fire District ~~or~~ **and** State Fire Marshal.

The performance objective shall be to provide for life safety and prevention of an exposure fire resulting in a wildland fire event.

The applicant agrees to OR ~~agrees to~~ **shall** implement fire protection ~~measures~~ **systems, equipment and administrative controls** for the construction and operation of the energy project that are acceptable to the local fire district**, other likely responding fire units,** and other land management agencies adjacent to **or potentially impacted by** the proposed energy project**.** ~~, if any~~.

A Final Fire Protection and Emergency Response plan (Fire Protection Design Basis Document and Fire Risk Control Program in accordance with NFPA 850, and NFPA 855 is applicable) shall be submitted with the CUP.

A near-final Fire Protection and Emergency Response Plan shall be approved **in writing** by the **appropriate** fire district ~~or~~ **and** authority having jurisdiction **prior to CUP hearings. A more detailed** fire protection and emergency response plan~~s~~ shall be submitted as **OR if** required during the building permit review process**, and approved in writing by the fire authorities prior to building permit issuance.**

Require applicant funded first-responder capability including but not limited to, training, specialized equipment, annual drills, response-cost reimbursement for fire, EMS and ambulance services (based on written fire district findings), updated emergency contacts, and site access mapping.

E. FAA and FCC Compliance

1. **FAA Compliance**
   a. Renewable Energy Generation projects and tall facilities (e.g. meteorological towers, wind turbines, powerline poles, construction cranes, etc.) shall comply with applicable Federal Aviation Administration

(FAA) lighting, navigation, marking and other requirements, as potential aviation air obstructions regardless of location.

b. Lighting shall ~~be~~ comply with the ~~minimum~~ Aircraft Detection Lighting System (ADLS) required by FAA regulations or other public safety considerations. The use of low-intensity, red pulsating or blinking lighting with ADLS is required, so long as consistent with FAA regulations. The use of constant strobe or strobe-type lighting for nighttime use is prohibited unless specifically required by the FAA.

c. The CUP applicant shall include the FAA's Determination of Hazard/No Hazard to Air Navigation with the application for a conditional use permit. The issuance and expiration dates of the Determination and any Extension shall be clearly noted. If the Determination has been extended, the Extension shall be included to show that the Determination remains valid. Any filings submitted to the FAA by the applicant with respect to changes in turbine locations, ground elevations, turbine heights, lighting/marking or the addition of new turbines **and MET towers** shall be provided to the Apache County Community Development Department within 10 business days of submission to the FAA. The subsequent Determination of Hazard/No Hazard issued by the FAA in response to the changes shall be provided to the County within 10 business days of issuance.

2. FCC Compliance

a. The Applicant/Operator shall design, construct, operate, and maintain the Renewable Energy Facility in compliance with all applicable Federal Communications Commission (FCC) rules and regulations (including prohibitions on harmful interference, as defined by the FCC) and any other applicable federal or state authorizations, licenses, or permits governing radio frequency (RF) voice and data communications, microwave, broadcast, public safety, and telecommunications systems.

b. With the CUP Application, the Applicant shall submit a comprehensive pre construction Communications Impacts Analysis (defined in Section 802), coordinated with all existing RF communications parties that may be affected, prepared and certified/signed by a Qualified RF Communications Consultant as defined in Section 802.

c. At the Applicant's expense, the County may require independent analysis by a third-party Qualified RF Communications Consultant to confirm, clarify, or correct the methodology, findings, conclusions, and mitigations documented in the Applicant's submitted Communications Impact Analysis. The third-party consultant's written report will be used to inform the Planning and Zoning

Commission, public, emergency services agencies, and the Board of Supervisors before CUP decision.

d. Prior to construction, the CUP holder shall, at its sole cost, maintain and provide the County Community Development Department a current local point-of-contact (name, 24/7 phone, and email) authorized to receive and act on interference complaints from any party. The CUP holder's point-of-contact shall promptly document all details of complaints and within two (2) **business** days provide complainants with the current FCC contact information to report their concern directly to the FCC website's "RF Service Interference Complaint Portal" or other appropriate FCC access); then shall also promptly notify the County's Community Development Director of the complaint.

e. Upon notification by the FCC of their interference investigation, the CUP holder's designated local point-of-contact shall cooperate fully with FCC personnel to help verify source(s) of the possible interference; and shall keep the County Community Development Director and the complainant promptly notified of the investigation status.

f. If project-related interference is verified, within ten (10) calendar days of verification date the CUP holder shall, at its sole cost, implement and complete the FCC's required corrective action sufficient to eliminate the verified interference, and restore service to pre-project conditions. As necessary, such corrective action may include but is not limited to operational curtailment or cessation, repair, or replacement of the offending project facilities or components; and/or repair or replacement of the affected RF equipment to the owner's FCC-approved specifications. If pre-approved in writing by the FCC, the Community Development Director may grant a written time extension for good cause, for all corrective action to be completed.

F. Design and Appearance

1. Design

a. All turbines must be self-supporting. The base for any tower shall be designed to anchor and support the tower for the site, geological soil conditions, and as further subject to the industry standard for safety design. Turbines shall be installed on tubular, monopole-type towers, shall be of similar size, height, design and appearance and all blades shall rotate in the same direction.

b. The blade tip of any wind turbine shall, at its lowest point, have a ground clearance of not less than 75 feet.

c. Solar panels, wind turbines, and accessory and support buildings and other structures shall have a non-reflective finish and be designed and constructed to minimize glare to a degree that no after-image will occur as seen from

occupied structures, recreation areas, roads, highways or airport flight landing or takeoff areas.

d. Utilize exterior light fixtures that are shielded, on timers and comply with Section __, Lighting. In addition, the renewable energy facility shall use the minimum lighting necessary for building safety and security purposes.

e. Utilize an FAA-approved radar-activation system for aviation-warning lights when aviation-warning lights are required on wind turbines and meteorological towers by federal or state law.

2. Appearance

a. Towers, generator housings, hubs, blades, and solar panel stands shall be of uniform design and color, and painted with unobtrusive color that complements the surrounding landscape, including but not limited to white, off-white, beige, or tan, to blend with the environment and comply with FAA standards.

b. The appearance of other buildings and structures shall, to the extent reasonably feasible and consistent with public safety, use materials, colors, textures, screening, topography, natural vegetation and landscaping that blend the facility into the existing environment.

c. Turbines shall not display any advertising except for reasonable identification, restricted to one sign of the manufacturer or operator or the wind energy conversion facility. Such identification signage shall not exceed 3 square feet, be posted at the base of the tower and specify the following: the turbine identification number corresponding to the facility map as required in the fire protection and emergency response plan section, a warning of high voltage, the manufacturers name, and an emergency phone number for the operator.

d. **Use existing substations, or if new substations are needed, minimize the number and visual impact of the substations.**

G. Wildlife Protection and Cultural Resources

1. Wildlife Projection

Guy wires for meteorological towers, transmission lines and power poles shall only be used if necessary and shall contain bird diverters as recommended by Arizona Game and Fish Department or other appropriate state and federal natural resource management agencies.

Above-ground power lines shall comply with the Avian Power Line Interaction Committee standards to prevent avian fatalities.

Turbines and solar panels shall be designed so as not to attract nesting birds or serve as perches for raptors. The applicant shall refer to the Arizona Game and Fish Department and U.S. Fish and Wildlife Service **most current** guidelines that have been developed to aid project proponents in reducing impacts to wildlife.

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The applicant shall consult with the Arizona Game and Fish Department and other applicable agencies regarding potential wildlife impacts. Written comments from these agencies shall be submitted as part of the CUP application.

Pre-construction and post-construction wildlife studies shall be developed and performed in accordance with Arizona Game and Fish Department or U.S. Fish and Wildlife Service guidelines, and coordinated with, and subject to the approval of the applicable wildlife agency, with copies mailed to the Community Development Department.

Any wildlife impacts discovered during post-construction surveys shall be identified in the formal annual report submitted to the Arizona Game and Fish Department and U.S. Fish and Wildlife Service, with a copy to the Community Development Department. The formal annual report shall include avian, bat and wildlife deaths due to the project.

If the project is located within a Wildlife Linkages Area (as identified by the Apache and Navajo County Wildlife Connectivity Assessment, Arizona's Wildlife Linkages, or by the Arizona Game and Fish Department), passage for those species that use the Wildlife Linkages shall be maintained subject to the approval of the AGFD.

Security fencing will be designed according to AGFD's Wildlife Compatible Fencing Guidelines". Proposed fencing shall be designed to minimize visual impacts from and be complimentary with scenic corridors and adjacent properties, and to minimize impacts to wildlife and Wildlife Linkages. Security fencing shall be permeable to small animals by leaving a six-inch gap between the bottom of the fence and the ground, exclusive of substation facilities. When feasible, fencing shall be designed around groups or clusters of equipment, as opposed to fencing the entire site. New fencing shall not impact or impede existing easements to private, State or public lands.

Project fencing shall include minimum 18-inch by 18-inch signs warning of the presence of high voltage. Such signs shall be located a maximum of 300 feet apart and at all points of site ingress and egress. Projects without fencing shall place such warning signs on each transformer building and all points of ingress and egress. Project fencing, if applicable, shall be a minimum of six feet and maximum of eight feet in height (excluding barbed wire or cyclone wire fencing, which is permissible).

2.Cultural Resources

The applicant shall provide a report that addresses the following items: archaeological sites, historical sites, and Tribal cultural resources and how they will be protected. During construction when any of the previous items are inadvertently discovered, the contractor is required to stop work and immediate report to the Community

Development Department and the appropriate agencies involved. The appropriate agency will determine procedures and requirements to address the findings.

H. Permits and Agency Coordination

All required federal, state, and local permits applicable to the project shall be obtained prior to construction as required by the issuing agencies. The CUP holder is required to coordinate with federal, state, and local agencies, including but not limited to the Community Development Department, ANRCD, ADOT, ADEQ, and local fire and EMS departments and **fire districts**, for review of operations for the life of the CUP.

To ensure the structural integrity of the renewable energy facility, the owner shall ensure that it is designed and maintained in compliance with standards contained in applicable local, state, and federal building codes and regulations.

All Renewable Energy Systems shall be designed and constructed, ~~to the greatest extent feasible~~, to prevent interior and exterior access by the public and shall include interior ladders and locking doors. All renewable energy equipment installed at the facility shall be commercially manufactured and certified for utility-scale use under applicable industry standards and building codes. For construction and permitting purposes, all wind turbines and solar panels shall conform to the regulations for the applicable seismic zone of the adopted building code.

Documentation confirming an interconnection agreement, **power infrastructure feasibility study, NITS feasibility study** ~~or~~ **and** a power purchase agreement, or equivalent agreements, shall be required ~~prior to issuance of any building or construction permits~~ as a part of the CUP application submittal. All necessary building, grading, and other permits shall be obtained from the Apache County Community Development Department prior to any site preparation or construction. No building or structure may be constructed or occupied prior to full compliance with all applicable Community Development Department requirements, including **but not limited to** grading, drainage plans, flood control requirements, and issuance of building and other permits. Floodplain Use Permits, where required, for development in a floodplain shall be obtained through the Flood Control District prior to ~~development~~ **building permit approval.**

Any project design changes, project material changes, agency application changes, turbine models, solar panels, layout, capacity, storage or transmission, shall be submitted to Planning and Zoning Commission and Board of Supervisors. It will then be determined if a new CUP application or a modification to the existing CUP application is required for approval.

Construction at the site must be started within **two (2)** years of approval of the CUP application and must be completed and the facility operational within four (4) years or

the end of the permit. Applicant must provide any information deemed relevant by the Board of Supervisors, to include an updated decommissioning plan as required in Section ____.

I. Signs

Signs associated with the project are limited to one **(1) sign for major** project identification, information, interpretive, and address sign not exceeding ~~24~~ **32** square feet. **One (1) sign not to exceed 16 square feet** at each point of ingress and egress **which will include project developers name, address, emergency contact information for operators and safety warnings. Additional signage may be added during times when icing conditions may occur.** No other signs shall be installed except required warning and directional signs. Limited logos or manufacturer names are permitted on generator housings or hubs. No other advertisements or prominent logos or messages are allowed. All sign requirements are found in Apache County **Zoning** Ordinance Article 7. All sign permits shall be included in CUP approval and shall not require a separate sign permit under Article 7.

J. Noxious Weeds, Materials, and Site Management

Prevention-Minimization of Unnecessary Site Damage Prior To, During, After Construction

1. Prior to geotechnical test hole drilling the Applicant's geologist and engineer shall consult all available existing site-specific geological surveys and soil survey information already available. All forms of destructive sampling shall be kept to a minimum and restored promptly.

2. All test holes dug/drilled for soils and/or geotechnical studies or for construction, which are abandoned as non-suitable sites, shall be promptly filled (within 15 calendar days) with the same native materials that were extracted, placing rock below with soil on top.

3. State-Protected native vegetation removed for construction shall be salvaged or relocated according to Arizona Native Plant Law, in coordination with the Apache Natural Resources Conservation District (ANRCD) subject to the approval of Apache County.

4. Non-State-Protected trees/shrubs removed for construction shall be disposed of at the discretion of the landowner. On State- or County-owned lands, they shall be responsibly disposed of or lopped and scattered across barren soil where needed for topsoil retention or offered to community civic-charitable organizations as donated firewood. In all cases, coordination with the ANRCD, and~~/or~~ the local fire district/department, is required subject to the approval of Apache County.

5. Non-State-Protected, non-noxious herbaceous vegetation removed for construction shall be offered to nearby landowners or ranchers, or spread across barren soil, or burned in a responsible manner. Coordination with the ANRCD, and the local fire district is required. Noxious-invasive plant species shall be promptly disposed of according to the project-specific Noxious-Invasive Weed Prevention and Control Plan developed in coordination with the ANRCD, and the local fire district/department, is required, subject to the approval of Apache County.

6. A site-appropriate Noxious-Invasive Weed Prevention and Control Plan for project construction, operations, and decommissioning-restoration shall be prepared in ~~coordination~~ ~~consultation~~ **coordination** with the ANRCD ~~and as determined by Apache County~~ **subject to the approval of Apache County** shall be included with the CUP **Conditions of Approval**. The following options will be permitted – They may be:
7. Non-vegetative native materials (rock, cinders, soils) removed or displaced by pre- or post-construction excavation shall not be stockpiled on-site for more than 6 months, unless included in CUP approval. The following options will be permitted - They may be:
    - Used to reshape certain portions of the project site terrain, if needed and approved.
    - Donated to the County or local municipalities or businesses that can use them.
    - Stored or used on private lands by written agreement. Crushed and used for new road surfacing or for concrete foundation mixtures subject to the approval of the County Engineering and Building Departments.

K. Operations and Cleanup (Review in December, citizen's rewrite)

Operations

The renewable energy facility shall be maintained in operational condition at all times, subject to reasonable maintenance and repair outages. Operational condition includes meeting all noise requirements and other permit conditions and requirements of this Article and all provisions of the Apache County Zoning Ordinance.

OR

The renewable energy facility shall be maintained in operational condition at all times, subject to reasonable maintenance and repair outages. Operational

condition includes meeting all requirements and Permit Conditions of Approval, and other requirements of this Article and all provisions of the Apache County

Zoning Ordinance. All components shall be repaired or replaced with like-kind materials when either nonfunctional or in visible disrepair.

Should any part of the renewable energy facility be damaged, or should the facility violate a permit condition, the owner or operator shall cure any deficiency within 90 days after written notice from the County, unless specified differently elsewhere in this Article. If any renewable energy facility or component remains non-functional or inoperative for a period of one year, the CUP holder and/or its successors or assigns, without any further action by the County, shall remove said facility or component and restore the site at its own expense, subject to the provisions of the Decommissioning Plan.

Site maintenance.

a. **Native grasses or other native vegetation as approved by ANRCD shall be used to stabilize the site for the duration of the facility's use.**
b. **Weed control or mowing shall be performed routinely. Failure to maintain the site may result in revocation of the use permit and the facility's decommissioning.**
c. ~~**Anti-reflective coatings. Exterior surfaces of wind turbines, solar collectors and related equipment shall have a nonreflective finish and shall be designed and installed to limit glare to a degree that no after image would occur as seen from vehicular traffic or any adjacent building.**~~

Repair of components. All components shall be repaired or replaced when either nonfunctional or in visible disrepair.

Should any part of the renewable energy facility be damaged, or should the facility violate a permit condition, the owner or operator shall cure any deficiency within 90 days after written notice from the County, unless specified differently elsewhere in this Article.

If any renewable energy facility or component remains non-functional or inoperative for a period of one year, the applicant and/or its successors or assigns, without any further action by the County, shall remove said facility or component and restore the site at its own expense, subject to the provisions of the Decommissioning Plan.

Cleanup

If project components or materials must be replaced during construction or operations ~~due to manufacturing flaws, maintenance issues, weather extremes, accidents, or unforeseen events, including but not limited to turbine blade throw, tower collapse, cracked solar panels, battery leaks, oil spills, or similar incidents,~~ such materials shall

be completely removed and disposed of in accordance with decommissioning and site restoration requirements in Section 811 of this Article.

All such cleanup and removal activities shall be promptly reported to Apache County with notice provided to ANRCD for informational purposes. Cleanup will commence within thirty (30) calendar days **at the CUP holder's expense**. The CUP holder may ask for a longer time period in writing as necessary to accommodate site conditions and reasonable scheduling needs, ~~at the CUP holder's expense~~.

[New subsection in 804 or new section to follow section 805 Noise Requirements and Mitigation Measures]

Protection of Visual Resources and Private Property Rights

The applicant shall identify impacts to visual resources. Apache County shall assess the completeness of the applicant's analysis of visual resource impacts and, when taking action on the application per Zoning Ordinance section1107 E and F, shall:

- **Consider the private property rights of owners proposing projects that cause adverse visual impacts**
- **Consider the private property rights of owners who would experience adverse visual impacts**
- **Weigh the benefits to the applicant against the adverse impact to others, considering the severity of the impacts and the number of properties to be affected**
- **Enforce existing requirements in the Apache County Zoning ordinances and policies in the Apache County Comprehensive Plan and Community Plans relating to visual resources**

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Section 805. Noise Requirements and Mitigation Measures

A. Pre-Construction Sound Study

~~Prior to issuance of a Conditional Use Permit (CUP)~~, the applicant shall submit a sound study prepared by an independent qualified acoustical consultant **as part of the CUP application**.

The study shall:

• determine existing background sound levels at ~~representative~~ **sensitive** receptor locations, including nearby residences, schools, libraries, or hospitals;

• identify the major noise-producing components of the proposed facility, including **but not limited to** wind turbines, ~~solar~~ inverters, transformers, substations, **battery energy storage systems,** cooling equipment, **transmission or gen-tie lines,** and other ~~mechanical~~ equipment; ~~and~~

• forecast anticipated sound levels during operation including cumulative impact of multiple turbines, effects of facility aging and planned or probable modifications, and

• demonstrate that the proposed renewable energy facility will comply with the sound limits established in this section.

Background sound levels shall be determined using generally accepted acoustical measurement standards and practices.

B. Operational Noise Limits

Noise from ~~wind turbines, solar equipment, substations, transformers, cooling systems, and other mechanical~~ equipment associated with a Renewable Energy Generation Facility shall not exceed the following limits ~~at the exterior of any structure existing at the time of CUP approval~~ **as measured at the project property line**.

1. Non-Participating Parcels

Noise shall not exceed ~~50~~ **45** dBA LAeq (10-minute average) or five (5) dB above the measured background sound level (LA90), whichever is greater. ~~at any non-participating occupied residence, school, library, or hospital.~~

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2. Participating Parcels

Noise shall not exceed 55 dBA LAeq (10-minute average) at any participating ~~occupied residence.~~ **property, provided the following has been provided: An irrevocable written consent (or sound waiver easement) has been obtained from each property owner, stating the owner is aware of the proposed facility and the sound limitations imposed by this section, that consent is granted to allow sound levels to exceed the maximum limits specified herein, and that such consent will be memorialized in a notice recorded with the Apache County Recorder to notify future owners of the affected property. A copy of such consent on which the permit holder relies shall be submitted prior to approval of the CUP.**

C. Measurement Standards and Verification

Noise measurements used to demonstrate compliance with this section shall be conducted using calibrated sound measurement equipment and in accordance with generally accepted acoustical measurement standards.

After the project is constructed and is in operation, the permit holder's independent qualified acoustical consultant shall complete a compliance evaluation and report to be submitted to the Community Development Director. Post-construction noise levels shall comply with the noise levels established in this Section, or the evaluation report will include modifications needed to bring the project into compliance. Any recommendations will be completed within 60 days.

Apache County may require **additional** post-construction sound measurements if noise complaints are received or if the County determines that verification of compliance is necessary.

D. Waivers

The Board of Supervisors may approve a waiver of the sound limits established in this section where affected property owners provide written consent acknowledging the anticipated sound levels**, and the following has been accomplished: An irrevocable written consent (or sound waiver easement) has been obtained from each property owner, stating the owner is aware of the proposed facility and the sound limitations imposed by this section, that consent is granted to allow sound levels to exceed the maximum limits specified herein, and that such consent will be memorialized in a notice recorded with the Apache County Recorder to notify future owners of the affected property. A copy of such consent on which the permit holder relies shall be submitted prior to approval of the CUP.**

~~Any waiver shall be recorded with the Apache County Recorder to provide notice to future property owners. Any such~~ **Each sound** waiver **consent or sound waiver easement** shall be provided to Apache County Community Development prior to issuance of any building permit.

E. Construction Noise

Construction activities associated with Renewable Energy Generation Facilities shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Activities generating significant noise shall not occur on Sundays or federal holidays unless necessary for safety, emergency repairs, or **weather-related emergencies and** ~~continuous construction operations~~ approved **in writing** by the ~~County~~. ~~The~~ Community Development Director ~~may approve limited deviations from these hours when necessary for safety, weather conditions, or continuous construction operations.~~

RECOMMENDED Other Issues to Address

Third Party Review. Apache County reserves the right to contract with a qualified third-party consultant for the review and evaluation of the proposed project and any of the application materials. The selection of a consultant shall be made in consultation with the applicant, with a mutually agreed-upon "not to exceed" contract amount prior to final selection of the consultant. The cost for any such review shall be reimbursed to Apache County by the applicant before any building permit is issued. Additionally, and if deemed necessary, the reasonable cost for any third-party review(s) of any long-term monitoring or response to complaints or operational changes shall be reimbursed to Apache County by the CUP holder within 30 days after written demand by the County. In such cases Apache County shall provide written notice of the use of a third-party consultant to the applicant prior to such use.

The County may obtain reviews, inspections or other work completed by a third party for the purpose of review or monitoring of the facility, the costs of which shall be required to be reimbursed by the Facility owner or operator. Examples of such work include, but are not limited to reviews and associated inspections of the Wildlife Protection Plan, stormwater quantity and quality plans, the Decommissioning Plan, and compliance reports.

~~**Wind Turbine Blade Clearance. Wind turbine blades shall be designed so that the closest point of the sweep of the blade is at least 30 feet above finished grade.**~~

Shadow Flicker. Shadow Flicker from turbines shall not impact adjacent Non-participating properties or public rights of way by more than 30 hours per year, as

shown by a Shadow Flicker evaluation prepared by a qualified expert. Waivers or exceptions to Shadow Flicker impact may be approved by the Planning and Zoning Commission when the applicant demonstrates a significant or substantive need.

Air Quality Impacts for Biomass Energy Installations. Biomass Energy Installations shall obtain an air quality permit from the Arizona Department of Environmental Quality and adhere to all applicable Federal and State rules and regulations.

Visual Impact. Projects shall be designed to minimize visual impact by:

- **Placing all collection lines within the installation underground, including connections to a substation, to the greatest extent practical. Waivers or exceptions may be approved when the applicant demonstrates a significant or substantive need for above ground connections.**
- **Mitigating visual impacts from transmission lines connecting substations to the utility grid to the greatest extent practical.**
- **Designing and locating Utility Scale Renewable Energy Facilities in a manner to minimize adverse visual impacts.**

Stormwater Runnoff and Erosion Control (Monica & Derrik Knight)

Renewable energy projects shall comply with local, state and federal requirements including but not limited to the Clean Water Act and Arizona Pollution Discharge Elimination System (AZPDES). Due to the size of these

projects and amount of land disturbance, an engineered Stormwater Pollution Prevention Plan (SWPPP) will be required to ensure effective control of dust, stormwater, soil erosion and sedimentation during construction, operation, decommissioning, removal and site restoration.

A preliminary Stormwater Runoff and Erosion Control plan, Dust and Erosion Control plan shall be submitted with the CUP application that proposes:

- **Measures to control dust, stormwater runoff, erosion and sedimentation, including but not limited to, from access roads, laydown areas, stockpiles and all disturbed areas.**
- **Minimizing grading and vegetation removal.**
- **Maintaining and restoring natural drainage patterns.**
- **Heavy-duty Best Management Practices and structures such as retention basins, phased grading, and swales combined with perennial vegetative**

ground cover to capture runoff and filter out sediment and pollutants at the source during construction, and for the life of the project.

- **Owner or operator shall conduct inspections of all stormwater plan components at least every 14 days, and within 24 hours after precipitation events of 0.5 inch or more, to ensure that components are working properly and any needed maintenance and repairs shall be completed in a timely manner to avoid catastrophic failure.**

The preliminary Stormwater, Dust and Erosion Control Plan shall be reviewed by ANRCD and approved with the CUP. Final engineered SWPPP shall be approved by ADEQ, with a copy to the Community Development Department prior to issuance of building permits.

A copy of the approved SWPPP and all related documents shall be maintained by the CUP holder onsite for the life of the project.

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