

TRAFFIC MANAGEMENT PLAN FOR THE SPRING VALLEY WIND ENERGY FACILITY

Prepared for

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and

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INTRODUCTION

This Traffic Management Plan has been developed on behalf of Spring Valley Wind LLC (SVW) and the Bureau of Land Management (BLM) Schell Field Office for the proposed Spring Valley Wind Energy Facility (SVWEF). Typical wind power projects are constructed in remote areas over large physical distances and thus incorporate many miles of roads. These roads will include both existing county, state and federal motorways, as well as newly constructed roads built for the purpose of building and maintaining the wind power equipment. This plan provides for methods to address traffic control issues caused by construction activities, minimum road design standards, and other stipulations required by the BLM or any other associated land management/jurisdictional agencies.

TRAFFIC SAFETY

Public access to the SVWEF will be restricted for public safety during the construction phase of the project. Access will be restricted in areas where active construction is taking place. Numerous hazards exist, both to the workers and those traveling through or near the site on public access roads. Therefore, warning signs will be posted along the access roads indicating the dates of construction activities and recommending that the public take alternate routes during that time period. In addition, within the laydown area where supplies, including those deemed hazardous, and equipment will be properly secured (e.g., fenced) to prevent theft, tampering, or injury. Areas with construction in progress will be secured so that no one without proper safety training will be able to access them. Wind turbine generator access doors will remain locked at all times. Public access through the project area will be restored during operations.

During the construction of the project, deliveries will be directed to a single, controlled point of entry at the project main gate located at the project entrance off State Route (SR) 893, in the same location as the job trailer and site laydown yard. Guidance to the main gate will be provided by strategically located signs that provide verbal and visual direction from the position of the sign to the main gate. Security will be provided at the main gate, and all vehicles will be required to stop and check in. Each on-site contractor, subcontractor, and supplier must prepare a listing of the expected deliveries for the day and provide this list to security personnel at the beginning of the day. Any unannounced or unplanned delivery will be held at the main gate until an authorized representative of the party ordering the delivery can appear at security and vouch for the delivery. All deliveries will be escorted by an authorized representative of the ordering party from the main gate to the point of delivery.

All on-site personnel will receive an orientation detailing the on-site traffic rules with exception to delivery truck drivers that do not leave the cab of their vehicle and do not leave the laydown yard. Orientation will include:

- Detailed emergency procedures
- Off-road travel restrictions and the penalties for doing such
- Review of a detailed site map (provided to all personnel) that includes:
 - Traffic flow and direction requirements to access the various parts of the project site
 - Routes for emergency procedures
 - Emergency notification contact information
- Review of specific project area traffic rules, including:
 - For vehicles traveling in the same direction, the rear vehicle may not pass the front vehicle until the front vehicle has stopped.

- During periods of high traffic volume on the project roads, the site safety manager will coordinate the traffic flow.
- Smaller, more maneuverable vehicles must yield to larger, less maneuverable vehicles.
- Driving under a load is prohibited.
- Seat belts are required any time a vehicle is in motion.
- Signage for an on-site speed limit of 24 km per hour (15 miles per hour [mph]) and other traffic direction will be posted as necessary throughout the site. Violation of the speed limit will result in warnings and possibly termination of site access privileges.

Upon completion of the orientation, all personnel will be given a sign with unique identification, which must be displayed in full view on the dash of the vehicle. This unique identification number will be recorded by security as vehicles pass through the main gate. All vehicles must be checked out by security at the end of the workday. This inventory will be checked against the list created at the beginning of the day. In the event there is a vehicle that did not check out with security at the end of the day, the supervision of the responsible contractor will not be allowed to leave the site until the missing vehicle is accounted for.

Daily meetings will be held to discuss road use requirements and projected deliveries of each meeting participant in order to identify potential time and location conflicts. Working cooperatively, all parties will determine the appropriate schedule for activities in order to minimize delays and road use conflicts. Delivery information will also be provided to security. Proper coordination will:

- Normalize traffic flows
- Improve management of high use points to promote the overall project schedule
- Enhance inventory control
- Minimize the impact on public traffic
- Reduce potential for accidents involving the public
- Minimize the impact of traffic-related activities on site neighbors
- Minimize the deterioration of public motorways

Additionally, during construction, SVW will implement the following specific actions for roads within the project area as part of the Traffic Management Plan in order to provide for the safety of the general public, SVW employees, contractors, and visitors, such as federal agency employees.

- During construction, traffic safety on the project roads will be managed by the primary contractor (Balance of Plan).
- The site safety manager will regularly check the project roads for any safety hazards or obstructions and take action to remove or apply warning information accordingly.
- SVW will establish formal protocols to enhance personal and vehicle safety.
- Speed limits will be posted (e.g., 40 km per hour, or 25 mph) and enforced to reduce airborne fugitive dust. Project personnel and contractors will adhere to speed limits commensurate with road types, traffic volumes, vehicle types, and site-specific conditions, to ensure safe and efficient traffic flow (BLM 2005).
- During construction, traffic will stay within designated construction areas. During operation, traffic will exclusively use the roads developed for the project as disclosed in the Plan of Development and Environmental Assessment. Designated project roads will be clearly marked

and compliance to this requirement will be strictly enforced. Use of other unimproved roads will be restricted to emergency situations (BLM 2005).

- The following measures will be implemented for the use of SR 893 and U.S. Route 6/50. All activities will be monitored for compliance by the BLM and/or a designated inspector.
- Signs will be posted at key intersections (SR 893 and U.S. Route 6/50) two weeks prior to the commencement of construction activities that indicate the expected dates and locations of motorized traffic restrictions.
- As practicable, construction vehicle travel will be limited on SR 893 and U.S. Route 6/50 during the morning and late afternoon commute times (approximately 7 am to 9 am and 4 pm to 6 pm).
- All construction traffic will exercise due caution and care to prevent undue conflict with public use of the roads.
- Flagmen on public motorways will be stationed during the delivery of oversized machinery, equipment, and materials, and during the movement of heavy equipment.
- Temporary signage will be stationed at each point on a public road where the project site boundary crosses that road.
- Construction traffic control will be provided as needed in congested areas, such as the intersection of SR 893 and U.S. Route 6/50.
- Signs will be sized, numbered, and colored as stipulated in the current edition of the Federal Highway Administration's *Manual on Uniform Traffic Control Devices* (U.S. Department of Transportation 2009).
- Warning signs will be posted with flags on either end of the section being worked alongside public roads to warn drivers of work in progress.
- Appropriate temporary guards, signs, bridges, lights, and other signals will be provided and placed as necessary for public safety.
- Signs will be moved, as needed, so that they do not precede machinery by more than 0.5 mile.
- Signs will only be posted when machinery is actually working.
- A reflectorized "Slow Moving" vehicle emblem will be attached to all slow-moving equipment when outside the project area.

ROAD STANDARDS

This section provides standards for all roads on the project site. Roads on-site are on BLM land and would be managed by the right-of-way grantee. This section also provides standards for Nevada Department of Transportation (NDOT) roads (NDOT 2001).

General Project Roads

General standards for all roads on the site will comply with applicable road design criteria that are in effect at the time improvements are made.

Procedures

- Obtain approval for all plans from a Nevada Registered Professional Engineer.

- Obtain all applicable permits and approvals from the BLM prior to commencement of construction.
- Prepare all required plans and schedules for approval and/or review by the BLM prior to improvements being made.
- Comply with the project Stormwater Prevention Pollution Plan (SWPPP) and other applicable construction plans to prevent air and water pollution and erosion of existing waterways.

Requirements

- Vehicles will remain on the designated project construction footprint. Drive and crush activities are allowed for sensitive resource avoidance, geotechnical investigations/testing, meteorological tower placement, and temporary laydown.
- All temporary road widths must be restored in accordance with the project restoration plan (SWCA Environmental Consultants 2010).
- A vehicle wash station (water, compressed air, or similar) and tracking pad will be installed at each entrance to the project used by construction vehicles as a means to control mud, soil, or other vehicle track out and to control the spread of noxious weeds by construction vehicles exiting the project area.
- Existing BLM standards regarding road design, construction, and maintenance are described in the BLM Manual 9113 and the Gold Book (Rocky Mountain Regional Coordinating Committee 1989) and have been used in the road design and layout. Generally, roads will follow natural contours, be constructed in accordance with standards as described in BLM Manual 9113, and be reclaimed to BLM standards. As described in BLM Manual 9113, BLM roads should be designed to an appropriate standard no higher than necessary to accommodate their intended functions (BLM 2005).

Nevada Department of Transportation Roads

NDOT standards in this document are based on the *Standard Specifications for Road and Bridge Construction* (NDOT 2001). The standards pertain to roadways included in the state's system of maintained public rights-of-way. All road improvement construction will comply with applicable road design criteria that are in effect at the time improvements are made. SR 893 is the only state-maintained public right-of-way road adjacent to the project area that may be impacted by the project. No improvements to that right-of-way are considered necessary for access to the site as of preparation of this document. If a state right-of-way requires improvements, the following should be followed:

Procedures

- All plans will be prepared by a Nevada Registered Professional Engineer.
- For improvements to state roads, approval from NDOT and all permits will be obtained prior to the commencement of the improvements or encroachment onto a public right-of-way.
- Improvements of existing substandard roadways will conform to current state standards.
- The SWPPP and Traffic Management Plan are to be submitted to the Director of NDOT (Engineer) at least seven days prior to the preconstruction conference for approval and/or review prior to any improvements. Drainage impact analysis, traffic impact analysis, and mitigation plans may also be required prior to construction. Construction may not begin without prior approval from the Engineer.

- Written notification will be provided to emergency services (fire, police, ambulance, etc.) at least 24 hours in advance of traffic detours and at least 48 hours prior to the commencement of construction activities.

Pollution Prevention

- Comply with the project SWPPP and other applicable construction plans to prevent pollution to air and waters of the U.S. and to minimize damage.
- Apply water in amounts provided by and on areas designated by the Engineer.
- When applying water directly to the roadbed, process the material until the layer is uniformly wet. Do not disturb previously placed and compacted layers.
- Cultivate excavation slopes to depths specified by the Engineer and spread topsoil to a minimum depth of 75 mm (3 inches).
- Repair any damage to roadbeds, shoulders, etc., resulting from hauling and placing topsoil.
- Compact topsoil from construction of Nevada state roads under the jurisdiction of NDOT unless otherwise specified by the engineer.
- Give the Engineer a minimum of 24 hours' notice of any seeding operations.
- Unroll and place erosion control fabric parallel to water flow immediately after final grading. Overlap strips a minimum of 150 mm (6 inches).

Modification and/or Construction of Roadways and/or Shoulders

- If an existing roadway is to be modified, pulverize the existing roadways to the required depth as indicated in the plans.
- Maintain the surface in an acceptable condition.
- Do not process roadbed materials if the temperature is below 2°C (35°F) or if conditions indicated that the temperature will fall below 2°C (35°F) for four hours or more within a 24-hour period after final compaction.
- Clean up and remove all debris from roadways at frequent intervals.
- Limit grading to mainly motor grader work.
- Eradicate so that the ground is restored to its original state or better condition.
- Dispose of materials as directed.
- Maintain public traffic. Allow emergency vehicles immediate passage through the construction area.
- If a shoulder is to be constructed, clear and grub for a minimum width of 3 m (10 feet).
- Do not allow windrows exceeding 100 mm (4 inches) in height if the adjacent lane is open to traffic. Do not place materials into ditches or back slopes.
- Grade and compact the shoulder after the paving is complete.

Detours

- Stake the exact location of the detour.

- Use barricades, portable sign supports, and cones or drums with attachments that meet the National Cooperative Highway Research Program Report 350 testing criteria for Category 2 devices. Usually, these are Type I, II, and IIIB devices.
- Use Type III, IV, V, VI, or X reflective sheeting to reflectorize construction signs, barricades, and other devices.
- Place all traffic control devices along the detour prior to opening the detour up to traffic.
- Place signs so that they are visible and do not restrict lateral clearance of sight distance.
- Protect highway closures with barricades and warning and detour signs. Direct traffic around the entire closed portions of roadway.

TRANSPORTATION PLANNING

Turbine equipment will eventually be delivered, which will warrant a separate and more detailed transportation plan, the dates and schedule of which are yet to be determined. A detailed route transportation study for the project will be provided by the turbine manufacturer once wind turbines are purchased. This study will include the following information:

- **Project Description** – This section includes the site location, number of turbines, general terrain, and other conditions.
- **Purpose of Report** – The turbine transport company (as contracted by turbine manufacturer) will identify all relevant permit requirements and any readily observable structural modifications, upgrades, and/or repairs to public roads and other transportation infrastructure that may be required to permit the transport of the units to the project site. The project construction contractor may conduct a similar transportation study for any large equipment deliveries to the project site.
- **Equipment** – This section provides a detailed description of the transportation equipment planned for use in delivering the turbine components to the project site. Typically the section includes a figure with overall dimensions for the nacelle transport, tower top transport, tower base transport, tower mid-transport, and tower blade transport. It also includes information on turning radius requirements and axle loading of each oversized transport vehicle.
- **Route Study** – This section provides a detailed description of each route proposed for the various components, including the starting location and list of roads/highways/etc. that is considered the best route option. This study will include a check on clearance of bridges and power lines. Note that each type of component is likely to have a different starting location (i.e., a factory, port, or rail location).
- **Points of Note** – This section will summarize any areas of general concern for each of the transports. These concerns can range from road radius or structural limitations to overhead wire clearance to traffic curfews. Any restrictions would also be detailed in this section with proposed work around plans.
- **Required Improvements and Actions** – This section summarizes those areas that need to be addressed prior to delivery.
- **Photographs** – The study will provide photographs showing the various roads, with emphasis on areas needing improvement or areas of concern.

LITERATURE CITED

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