Nevada Sagebrush Ecosystem Program

Delineation of Data Centers in the CCS

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NEVADA SAGEBRUSH ECOSYSTEM PROGRAM | Nevada Department of CONSERVATION & NATURAL RESOURCES | NDA Nevada Department of Agriculture | NEVADA DEPARTMENT OF WILDLIFE

What are Data Centers

- A data center is a physical room, building, or facility that houses information technology infrastructure for building, running, and delivering applications and services and storing and managing the data associated with those applications and services.

Data Centers in Nevada

- Google, Tract, Switch, EdgeCore, Novva, Vantage, and PowerHouse are all operating, building, or expanding facilities within the Tahoe Reno Industrial Center, a business park bigger than the city of Detroit.
- Microsoft acquired more than 225 acres of undeveloped property within the Tahoe Reno Industrial Center and an even larger plot in nearby Silver Springs, Nevada.
- Apple is expanding its data center, located just across the Truckee River from the Tahoe Reno Industrial Center.
- OpenAI has said it is considering building a data center in Nevada as well.

— **MIT Technology Review**

Concerns

- Habitat loss
- Large structure for perching and nesting
  - Generally 100,000 sq foot buildings, sometimes multi-story
- Increased activity
  - 10-50 employees per floor to manage the Data Centers after construction
- Noise
  - Produce an average of 65-85 dB(A) up to 96 dB(A) – **Data Centers Knowledge**
    - Similar to standing next to a semi truck
    - Sounds at or above 85 dB(A) can cause hearing loss over time
  - Current research suggests that ambient levels in undisturbed sagebrush habitat are often around 16–22 dB(A)
    - When near leks, shouldn't be higher than 10dB(A) over ambient
  - Lowest noise reduction recorded for a mid-size data center is 70 dB(A)
  - Noise reduces by 6 dB(A) for every doubling of the distance away
    - At 1 km, the noise is 10 dB(A)
  - State Plan: Noise levels from geothermal facilities, oil and gas pumping stations or gas pipeline compressor stations should not exceed 55 dB(A) at leks.

Concerns

- Use of large amount of power
  - Transmission lines
    - Data Centers currently use 2.5 gigawatts of power per day in Nevada
      - 300 - >1,000 megawatts per site
    - Additional 17 gigawatts requested
    - 1 gigawatt = 1,000 megawatts or 1,000,000 kilowatts
      - Average house uses 30 kilowatts per day
  - Webb Data Center in Reno plans to use 28.5 megawatts of power, which is enough to power 17,000 homes on average **– Reno Gazette Journal**
    - Similar to a sports stadium's power usage, which can range from 10-30 megawatts
  - 1-3 transmission lines per building plus backup diesel generators with equal power

- Miles of fiber optic cables

Concerns

- Use of large amount of ground water to cool servers
  - Pipes, Pumps, etc.
  - Data centers can consume <100,000 gallons up to 5 million gallons per day
    - One house uses 100-500 gallons per day of water
    - On the high end, equivalent to the water use of a town populated by 10,000 to 50,000 people **– Environmental and Energy Study Institute**
  - Can use power to cool, but then require more transmission lines and larger generators

- "Footprint similar to geothermal, needs similar to mining" **– NV Energy**

- At it's smallest, it's still similar to our largest impacts

Own Category – Data_Centers

- 100% weight with 6 km distance

- Justification
  - Same category as geothermal and mines
  - Large perching and nesting capabilities
  - Noise
    - Geothermal plants generate noise from 70-120 dB(A)
  - Extensive water processing and associated infrastructure for both water and power

Questions?

Thank You