

Ordinance No. 02008 ZN 004 Section IX

Wildlife Issues and Concerns (Birds, Bats, and Insects) Associated with the Proposed Rolling Farms Wind Project, LLC

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EXHIBIT
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Introduction

- Power-grid wind turbines have been in operation in the United States since the early 1970's.
- Have been considered an environmentally friendly method of electric generation.

Introduction

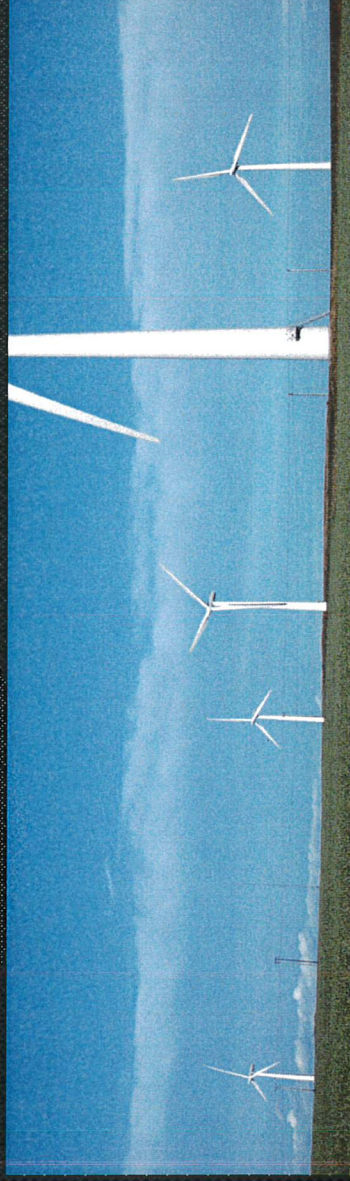
- In the 1980's large number of dead raptors, mainly golden eagles and red-tailed hawks, were found near the one of the nation's first large-scale wind energy facilities in California's Altamont Pass Wind Resource Area.
- This situation initiated awareness of the potential for adverse impacts of wind energy facilities on birds and prompted subsequent study of the problem.

Introduction

- In 2000, dead bats were unexpectedly discovered during a bird fatality study at the Buffalo Ridge Wind Farm in Minnesota (Erickson et al. 2001).
- In 2003, an estimated 1,400 to 4,000 bat fatalities occurred in six-week period at the Mountaineer Wind Energy Center in West Virginia (Allison et al. 2019), prompting a new wave of concern and research.

Introduction

- As wind development has expanded in the US and abroad, research has extended to address growing concerns about effects on a wide range of wildlife species, and to include habitat impacts as well as fatalities.



- ▶ Detrimental effects of wind turbines fall into three categories
 - Collision (direct effect)
 - Habitat degradation (indirect effect)
 - Behavioral changes (indirect effect)

Bird Mortality

- Best estimates to date for US bird deaths from turbine collisions are between 140,000 and 500,000 per year. As wind energy capacity increases, statistical models predict that mean bird deaths from wind turbine collisions could reach 1.4 million birds per year. (<https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds/collisions/wind-turbines.php>)
- US average of three to six birds per megawatt of installed wind energy capacity per year (Alison et al. 2019)