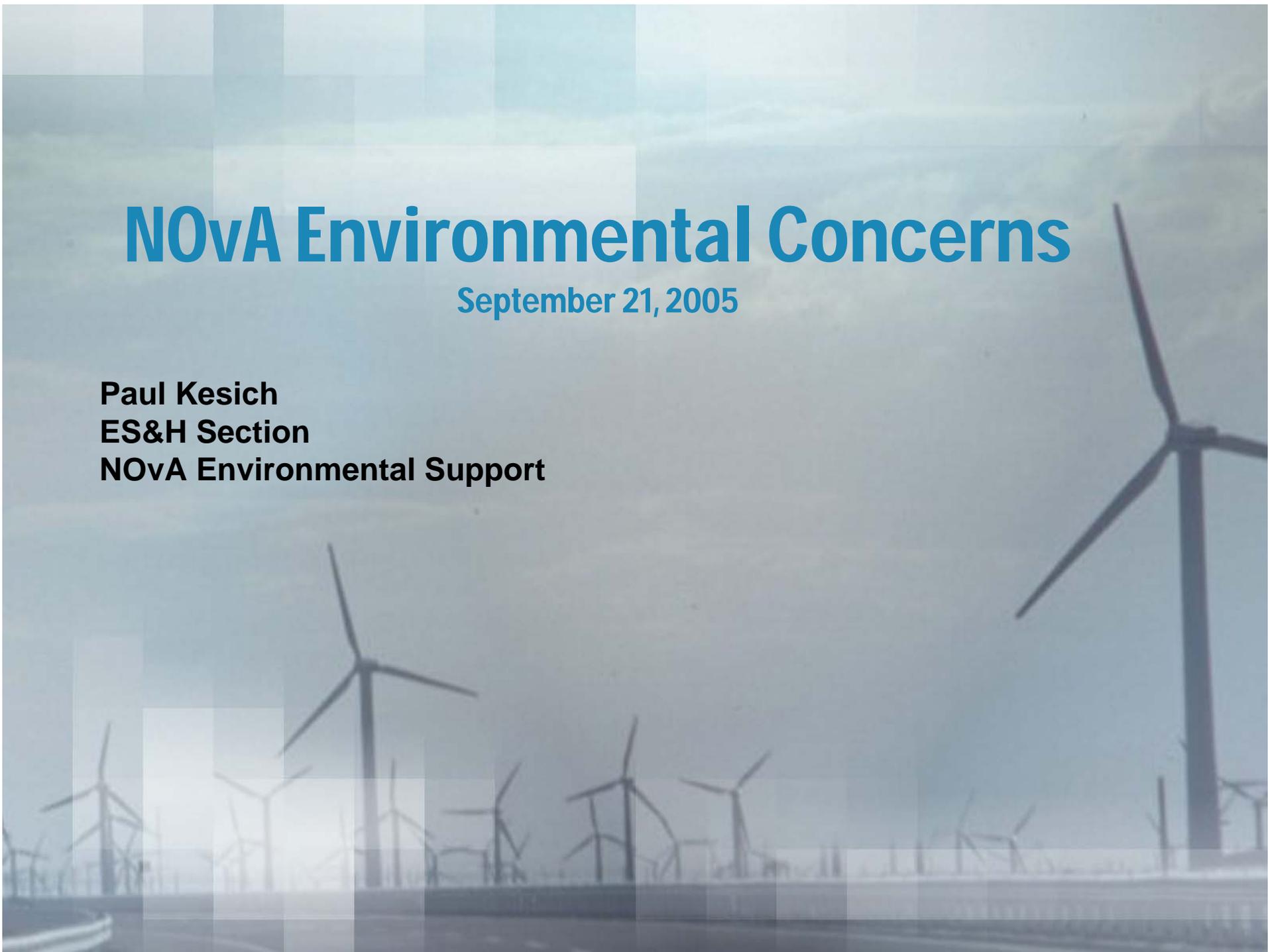


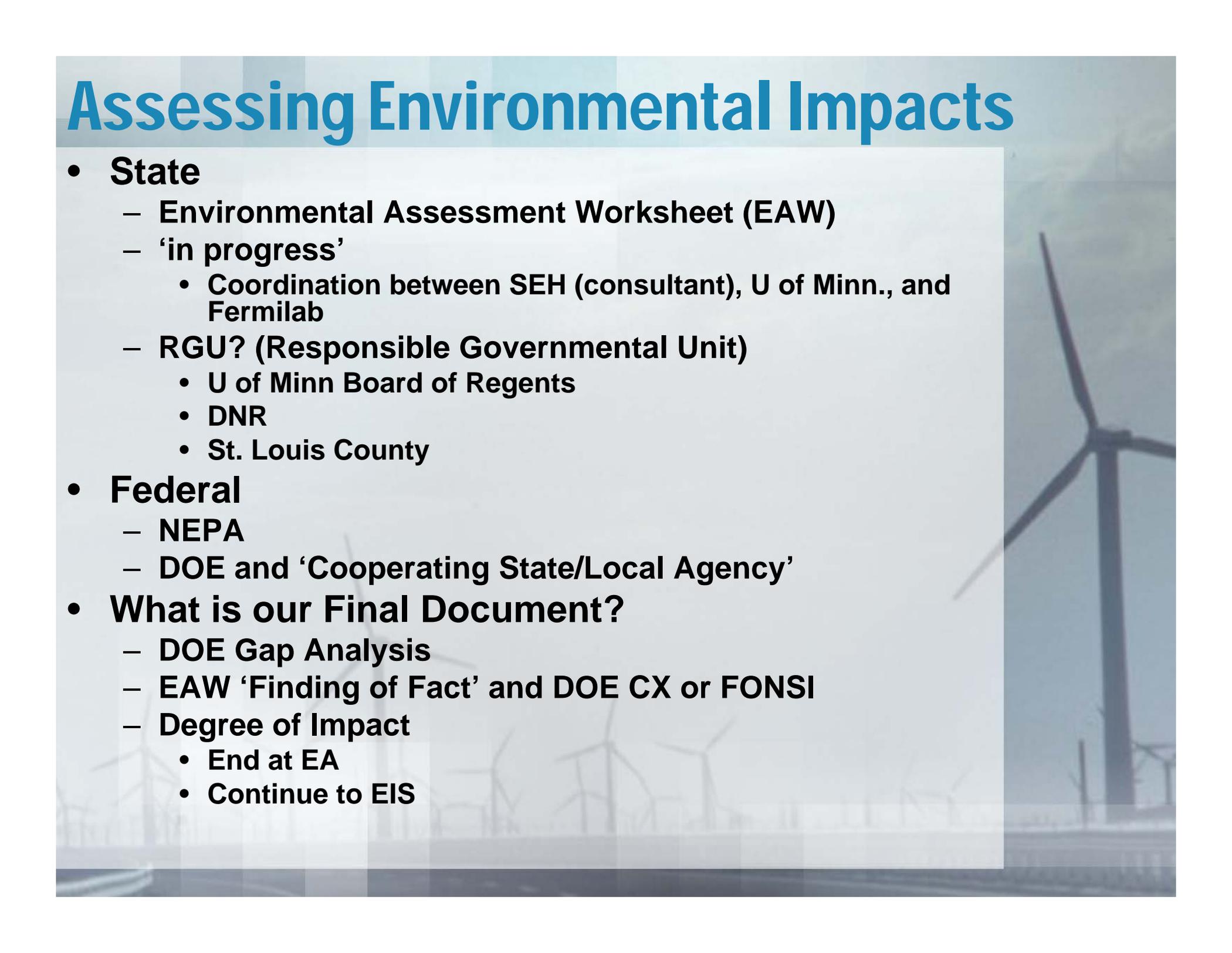
# NOvA Environmental Concerns

September 21, 2005

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**ES&H Section**  
**NOvA Environmental Support**



# Assessing Environmental Impacts

The background of the slide features a large, semi-transparent image of a wind turbine field. A prominent wind turbine is visible on the right side, with its three blades extending outwards. The rest of the field is shown in a lighter, faded perspective, creating a sense of depth. The overall color palette is a mix of light blues, greys, and whites, giving it a clean, professional appearance.

- **State**
  - Environmental Assessment Worksheet (EAW)
  - ‘in progress’
    - Coordination between SEH (consultant), U of Minn., and Fermilab
  - RGU? (Responsible Governmental Unit)
    - U of Minn Board of Regents
    - DNR
    - St. Louis County
- **Federal**
  - NEPA
  - DOE and ‘Cooperating State/Local Agency’
- **What is our Final Document?**
  - DOE Gap Analysis
  - EAW ‘Finding of Fact’ and DOE CX or FONSI
  - Degree of Impact
    - End at EA
    - Continue to EIS

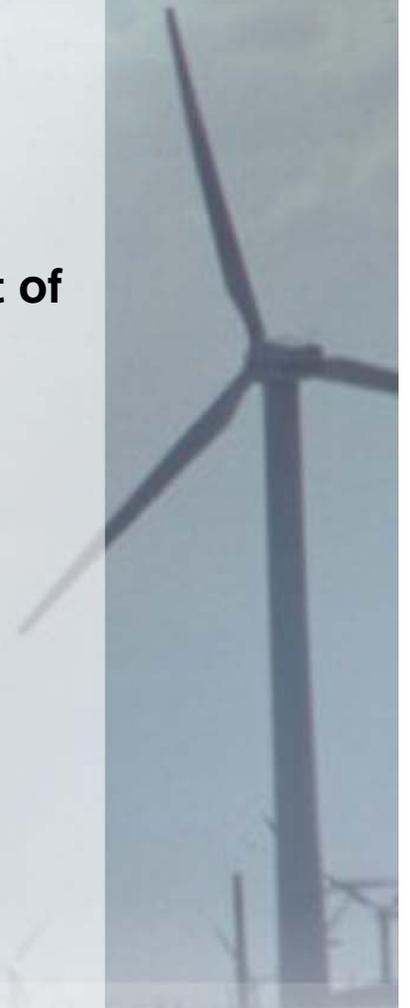
# What does the EAW evaluate?

## 31 Separate elements to worksheet

- **Project Description**
  - most important
  - 4 parts
    1. Summary for *EQB Monitor*
    2. Detailed to include any direct or indirect alteration or impact to the physical environment
      - a) Construction methods
      - b) Operational features
      - c) Project closure actions
    3. Purpose of project and beneficiaries
    4. Segmentation with future projects
- **Project Magnitude**
  - Quantification of project footprint
    - Area or length
    - Number of buildings, height, type, gross floor space
- **Permits and approvals**
  - A list of permits, approvals, reviews and financing required or sought from all government agencies prior to the beginning of the project
- **Land use**
  - Identifies past land uses which might contribute to present environmental concerns
  - Identifies any potential conflicts between the project and existing surrounding land uses
- **Cover types**
  - Quantifies acres of land cover before and after the project
  - Types:
    - Wetlands
    - Wooded/forest
    - Brush/grassland/cropland
    - Lawn/landscaping
    - Impervious surfaces
    - other

# What does the EAW evaluate?

- **Fish, wildlife and ecologically sensitive resources**
  - Identify the quality and value of habitats that exist at the location
  - Identify any ecologically sensitive resources
    - Threatened and endangered species
    - Rare habitats
- **Physical impacts to water resources**
  - Any action that would alter the rate of discharge into or out of a waterbody, frequency and extent of fluctuations, or interaction with groundwater
  - Modifications to any wetland, not just protected wetlands
- **Water use**
  - All information on
    - The appropriation and use of water
    - The systems from which water will be obtained
  - Includes amount of withdraw (DNR) and drilling (DPH)
- **Water related land use management**
  - Shoreland, floodplain, and wild or scenic rivers



# What does the EAW evaluate?

- **Water surface use (watercraft use)**
- **Erosion and sedimentation**
  - Construction and post-construction phases
  - Grading or alteration of five+ acres
  - Slopes and erosion prone soils
  - Control measures
  - Extensive excavation
    - Types involved
    - Where relocated
    - How used
- **Water quality: surface water runoff**
  - Amounts and composition of stormwater runoff
  - Techniques to minimize adverse quantity and quality impacts
  - Emphasize post-construction, permanent mitigation measures
  - Points of discharge to receiving waters
- **Water quality: wastewaters**
  - Sources, composition, amounts
  - Domestic and industrial
  - Treatment systems
  - Receiving waters for discharges



# What does the EAW evaluate?

- **Geologic hazards and soil conditions**
  - Information pertinent to potential groundwater contamination
  - Should include any boring logs generated
- **Solid wastes, hazardous wastes, storage tanks**
  - All types of wastes generated by the project that are not wastewaters or air emissions
  - Estimate quantities and compositions
  - Proposed methods and location of disposal
  - List all chemicals that will be on the site for any purpose
  - Anticipated contents of all tanks (also include location on site and special precautions to prevent leaks)
- **Traffic**
  - An estimation of traffic and source
- **Vehicle-related air emissions**
  - Identify and impact to air quality due to traffic congestion
- **Stationary source air emissions**
  - Covers all sources of air emissions other than traffic and construction-phase dust
  - Boilers, exhaust stacks or fugitive dust
  - Hazardous air pollutants
  - Greenhouse gases
  - Ozone depleting chemicals
  - Pollution prevention techniques and control devices
- **Odors, noise and dust**
  - Construction and operation phases



# What does the EAW evaluate?

- **Nearby resources**
  - Archaeological, historical or architectural
  - Prime or unique farm lands
  - Designated parks, recreational areas or trails
  - Scenic views and vistas
- **Visual impacts**
  - Identification of visual emission impacts (ex: intense light causing a glare problem to motorists) or visual nuisances (ex: lights on communication towers)
- **Compatibility with plans and land use regulations**
  - Is the project subject to any official governmental management plan adopted for the area
    - land use, water, resource
    - Local, regional, state and federal
- **Impact on infrastructure and public services**
  - List new or expanded public services or public works necessary to serve the project
    - Sewers, streets, power lines, police and fire protection
- **Cumulative impacts**
  - Puts the potential impacts of the project into the context of impacts caused by other past, present or future projects in the area
- **Other potential environmental issues**
  - If it wasn't already discussed put it here
- **Summary of issues**
  - Brief synopsis of potential impacts
  - Discussion of further studies
  - Discuss mitigation measures and alternatives
- **Requires certification by RGU**



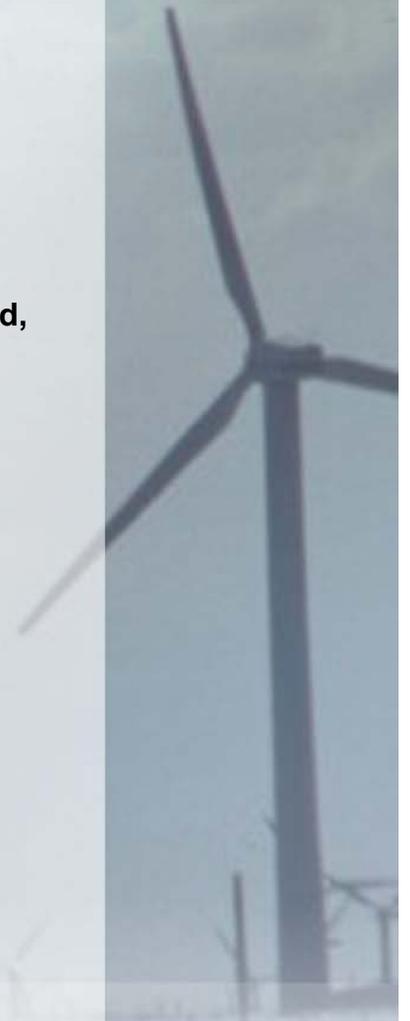
# The EAW Process

- **Determination of need (done)**
  - This is supposed to be done by the RGU (? – U of Minn)
    - Discretionary review
    - Mandatory review
      - Categories
      - Multiple (transmission lines, large quantity of storage, and square footage of institutional facility)
        - » The governmental unit with greatest responsibility
- **RGU obtains data (SEH ‘in process’)**
- **RGU completes EAW form and distributes to reviewing agencies**
- **Notice of the EAW is published in the *EQB Monitor* (December 2005)**
- **30 – day period for review and comments**
- **RGU considers the EAW information and the comments**
  - ‘Finding of Fact’
    - Is there a potential for significant environmental effects
    - If No, environmental review process is over
      - 30 day appeal time in district court



# What does the DOE EA evaluate?

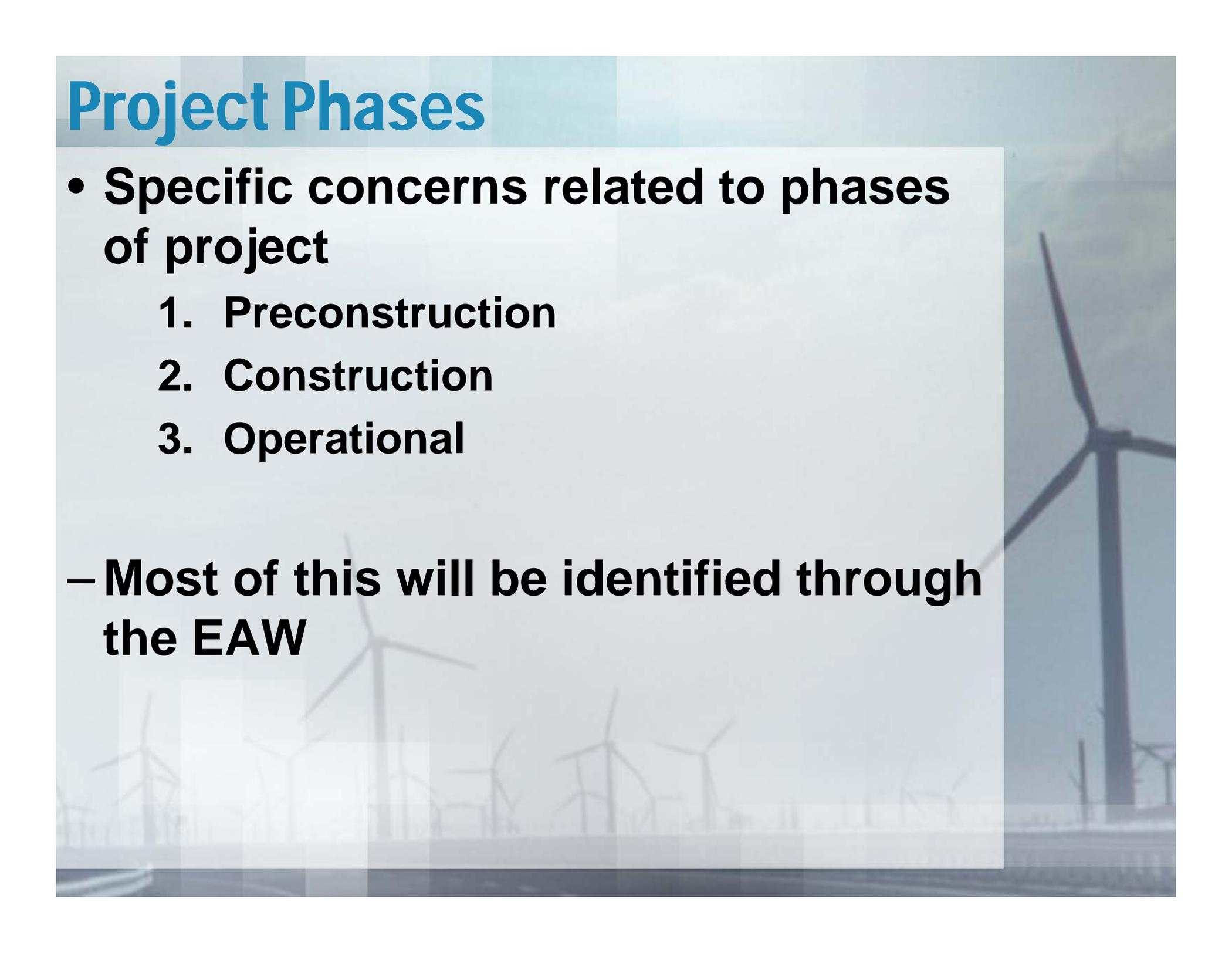
- **Summary**
- **Purpose and Need**
  - Identifies the problem or opportunity to which the agency is responding
- **Description**
  - The proposed action
  - Reasonable alternatives
  - No action
- **Affected Environment**
  - Presence or absence
    - Floodplains, wetlands, threatened or endangered species, prime or unique farmland, parks, wild and scenic rivers, natural resources, cultural resources
- **Environmental Impacts**
  - Individual or cumulative to above list
  - Short term and long term
  - Beneficial and adverse
  - Human health, accidents, transportation
- **Supplemental Topics**
  - Water resources and quality
  - Geology and soils
  - Air quality
  - Wildlife and habitats
  - Human health
  - Transportation
  - Waste management
  - Socioeconomic
  - Cultural sites



# The NEPA Process

- **Fermilab ES&H Manual Chapter 8060**
  - Proposed action
  - Project Information Form (PIF)
  - Environmental Evaluation Notification Form (EENF) with recommendation
  - DOE decision
- **The Final Document**
  - Environmental Assessment (EA) or Categorical Exclusion (CX)
    - DOE FSO to perform Gap Analysis
      - EAW and DOE EA
      - EA with incorporated EAW
        - » “Cooperating State/Local Agency”

# Project Phases



- **Specific concerns related to phases of project**

1. **Preconstruction**
2. **Construction**
3. **Operational**

– **Most of this will be identified through the EAW**

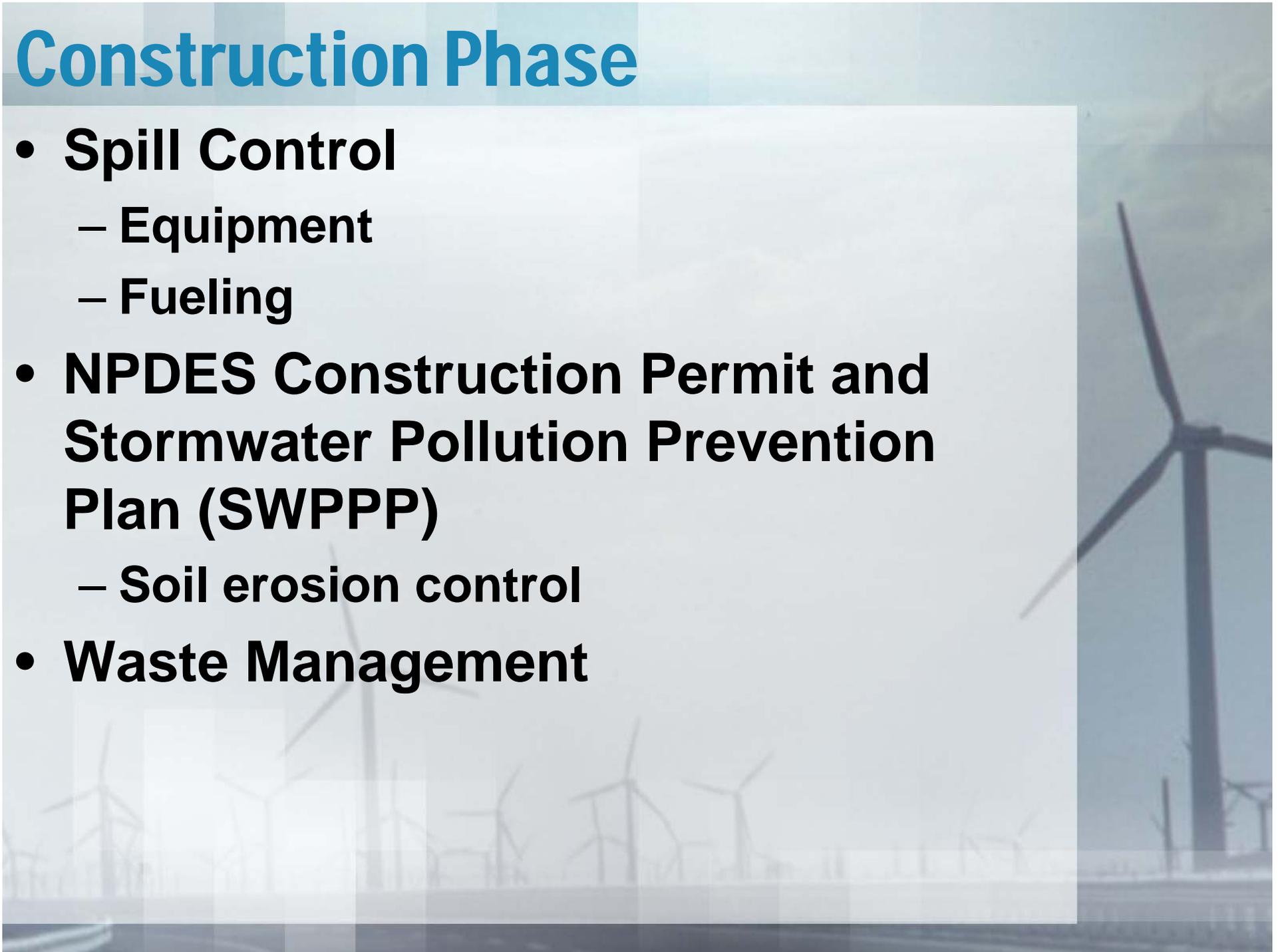
# Preconstruction Phase

- **Access and characterization impact reduction (HA)**
  - Restoration of vegetation
  - Boring abandonment
- **Opportunity Assessments**
  - Sustainability in design
  - Waste Minimization/Pollution Prevention
    - Scintillator composition
    - Scintillator disposal



# Construction Phase

- **Spill Control**
  - Equipment
  - Fueling
- **NPDES Construction Permit and Stormwater Pollution Prevention Plan (SWPPP)**
  - Soil erosion control
- **Waste Management**



# Operational Phase

- **Spill Prevention, Control and Countermeasures (SPCC) Plan**
  - Driven by potential impact of uncontrolled release to surface water
- **Water supply and use**
  - Process
  - Potable
- **Wastewater discharges**
  - Stormwater
  - Domestic (leach field)
  - Process
- **Process effluents and emissions**
  - Operational permits
    - Surface water
    - Air
- **Waste Management**
  - Domestic
  - Hazardous

