MEMORANDUM FOR EAB MEMBERSHIP

FROM: 88 ABW/CEV
5490 Pearson Rd.
Wright-Patterson AFB OH 45433-5332

SUBJECT: Environmental Advisory Board (EAB) February 2007 Meeting Minutes

1. Location: Fairborn Library

2. Date/Time: 21 February 2007, 6:00 pm

3. Acting Chairman: Mr. Tim Clendenin, 88 ABW/CEVY

4. Members Present:

<table>
<thead>
<tr>
<th>NAME</th>
<th>ORGANIZATION</th>
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<tbody>
<tr>
<td>Bohannon, Donna</td>
<td>Ohio EPA/OFFO</td>
</tr>
<tr>
<td>Brown, Dave</td>
<td>Sierra Club</td>
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<tr>
<td>Clendenin, Tim</td>
<td>Env. Management Division</td>
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<tr>
<td>Falleur, Dawn</td>
<td>Green Env Coalition</td>
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<tr>
<td>Jurick, Bob</td>
<td>B.W. Greenway</td>
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<tr>
<td>Lindsay, Matthew</td>
<td>MVRPC</td>
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<tr>
<td>Scambilis, Nick</td>
<td>Beavercreek Env Adv Comm</td>
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<tr>
<td>Shoemaker, Jim</td>
<td>City of Dayton</td>
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</tbody>
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5. Members Absent:

<table>
<thead>
<tr>
<th>NAME</th>
<th>ORGANIZATION</th>
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<tbody>
<tr>
<td>Berger, Chris</td>
<td>City of Huber Heights</td>
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<tr>
<td>Boada-Clista, Lydia</td>
<td>League of Women Voters</td>
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<tr>
<td>Little, Richard</td>
<td>Beavercreek Township</td>
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<tr>
<td>Mason-Smith, Karen</td>
<td>US Env. Protection Agency</td>
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<tr>
<td>Mays, Mark</td>
<td>Env. Management Division</td>
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<tr>
<td>Ritzi, Bob</td>
<td>Dayton Env. Advisory Bd.</td>
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<td>Sowers, Bob</td>
<td>City of Fairborn</td>
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6. Other Attendees:

<table>
<thead>
<tr>
<th>NAME</th>
<th>ORGANIZATION</th>
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<tbody>
<tr>
<td>Anderson, Jo</td>
<td>88 ABW/CECX</td>
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<tr>
<td>Ferguson, Jan</td>
<td>88 ABW/CEVO</td>
</tr>
<tr>
<td>Jones, Gavin</td>
<td>88 ABW/CEMM</td>
</tr>
<tr>
<td>Layer, Holly, Lt</td>
<td>88 ABW/PA</td>
</tr>
<tr>
<td>Lurker, Peter</td>
<td>88 AMDS/SGPB</td>
</tr>
<tr>
<td>Weisman, Dulcie, Col</td>
<td>88 AMDS/SGPB</td>
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7. Administrative:

The meeting was brought to order by Mr. Tim Clendenin by welcoming everyone to the meeting. Mr. Clendenin was chairing the meeting for Mr. Mark Mays, who was out of town on business. The EAB members and other attendees introduced themselves and the meeting proceeded with the first agenda item.

8. New Business:

a. Executive Order 13423. Mr. Clendenin explained that this new executive order signed on 24 January 2007 replaced five existing executive orders:

   E.O. 13101 – Greening the Government through Waste Prevention, Recycling, and Federal Acquisition. Complying with this order started the Government purchasing items whenever possible containing recycled content.

   E.O. 13123 – Greening the Government through Efficient Energy Management. This order initiated the Government acquiring alternate fueled vehicles such as Compressed Natural Gas, Bio-diesel fueled and E-85 (85% Ethanol fueled) vehicles.

   E.O. 13134 – Developing and Promoting Biobased Products and Bioenergy. One of the goals of this executive order is to decrease our energy usage and increase usage of alternative fuels which will aid in decreasing our dependency on foreign oil.

   E.O. 13148 – Greening the Government through Leadership in Environmental Management

   E.O. 13149 – Greening the Government through Federal Fleet and Transportation Efficiency

With the signing of Executive Order 13423, these previous executive orders have been revoked. The web link for viewing the entire text for the new Executive Order is the Office of the Federal Executive website (www.OFEE.gov). The Air Force is awaiting guidance from DoD for implementation of Executive Order 13423. As soon as CEV receives guidance, the information will be shared with other organizations on base. Mr. Clendenin added that the Air Force has been recently recognized as the leading agency in the Federal Government for procurement of renewable power.

b. WPAFB Energy Management Program. As guest speaker, Mr. Gavin Jones, the Energy Manager at Wright-Patterson AFB, reported on the base’s Energy Program. Mr. Jones began with an earlier Executive Order mandating a 25% reduction in energy usage by FY2005. Wright-Patterson AFB is currently at an overall reduction of 23%. In 2005, President Bush signed the Energy Policy Act, mandating a 2% reduction per year from FY2006 to FY2015. Mr. Jones displayed a graph demonstrating the progress the base has achieved in energy reduction. An energy cost comparison pie chart revealed that half of all energy on base is used to make heat. Measuring the cost of energy for the base, electric comprises 60%, coal 20% and natural gas, 20%. The base has three central heating plants, two are fired with coal and the other is a supplement using natural gas. With coal being the least expensive of the fuels, the coal-fired boilers are used in the winter months. In order to comply with environmental permit requirements, natural gas is used for the summer months. The base’s coal plants are fitted with bag houses and operate well below the permitted emissions limits. Studies are conducted to check steam traps to ensure steam is not escaping and therefore heat is being retained. Studies are also conducted to check the lengthy piping system on the base for insulation damage. There are over 60 miles of piping on the base, and many pipes are close to the ground which allows equipment or animals to damage the insulation, allowing heat to escape. Infrared system surveys are conducted to inspect roofing for water
leaks and inside buildings for adequate insulation in the walls. The goal is to reduce the base’s heating footprint.

Mr. Jones displayed a graph which revealed the time of the day when the energy demand is at its peak. Laboratories that regularly perform energy-intensive tests are performing those tests after regular hours to not push the already peaked energy level higher which would create extra cost. Tyndall AFB, Florida is doing a pilot test. They will replace regular fluorescent lighting with LED bulbs. The LED bulbs are more energy efficient by producing more light with less heat than regular bulbs. In the planning stage is an LED bulb that will fit into a fluorescent light fixture. The museum will be an excellent place to use these LED lights. Since the LED lights do not emit ultraviolet light, they will assist in preserving artifacts located throughout the museum, as well as saving energy.

Manually-read meters are being replaced with electronic meters. These meters can be read by driving by them. The billing is generated automatically. When electricity is out, the electronic meters can analyze the reason for the outage. Energy management systems enable more control for air handling units. During peak demand periods, the load can be shed in 15 minute intervals, thus saving energy costs. The electronic meters can perform health checks for buildings such as the hospital or headquarters. The system can also indicate that the air filter needs to be changed.

The base has entered into energy savings performance contracts (ESPC). The contractor purchases and installs the energy-saving equipment and the base pays the contractor with the energy savings. The contractor is responsible for operation and maintenance of the equipment. The three task orders awarded for this contract are:

- Task Order 1: Re-control of air handlers and lighting retrofits
- Task Order 2: Turbine cogeneration units
- Task Order 3: Fume hood retrofits, lighting for 32 facilities.

Geothermal heating and cooling is a good energy saving system. The air is not drawn in from the outside. The air is routed into the ground which is warmer in the winter and cooler in the summer, so it takes less energy to warm or cool the air. A solar thermal system is a good way of warming the air so it doesn’t take much energy to bring it up to a preferred inside temperature. Mr. Bob Jurick asked about the lights turned on at Wright-Patterson AFB on the weekends. Mr. Jones said that is being addressed to possibly have fewer lights on and still maintain adequate security.

c. Mercury Incident, 26 January 2007. Mercury was discovered by contractors working in a catch basin adjacent to Building 18 in Area B on Friday, 26 January 2007. The mercury was mixed in sediment in the catch basin. The total amount of mercury found was less than 2 tablespoons. It was determined that the mercury was a result of an old incident. The sediment and mercury were put in containers for disposal.

d. Building 274 Demolition. Mr. Clendenin reported on the demolition of Building 274, which was most recently used as the civilian personnel office. Previous to civilian personnel, the building was the old civilian club. Building demolition creates a great recycling opportunity. Scrap metal in the amount of 2008 pounds and 15,000 pounds of ceiling tiles was captured from the building debris to be recycled. The ceiling tiles are stacked and shrink-wrapped on a palette for pick-up by Armstrong for recycling.

e. WPAFB Entry Gate Master Plan. Ms. Ferguson reported on Wright-Patterson’s entry gate master plan. It is a matter of concern that WPAFB has too many entrance gates for a base of its size; it is both a security and a manpower issue. The previous Commander, Col Weaver, had requested bringing the part of Area C named Kitty Hawk on the other side of Route 444 to join with Areas A and C. Ms. Ferguson
displayed an overview to show how this would be accomplished. The base is working with the city of Fairborn and the Miami Valley Regional Planning Commission in the creation of the plan. The base is doing a concept study that is at the 65% design stage. Environmental Management will begin the environmental assessment this spring.

f. Comments. Mr. Jurick inquired whether the base recycles Styrofoam. Mr. Clendenin replied that it is not cost effective. The question was asked from where the funding for the Gate project will come. Ms. Ferguson replied that it will not be Air Force funds and she will do research to supply the answer in the meeting minutes. The current plan is that funding would be sought from several sources, including the Defense Access Road Program, Department of Transportation funding, the Military Construction program, and regular Operations and Maintenance funding for some of the work that would occur inside the fence at the base.

9. Next Meeting: The next meeting is scheduled for 16 May 2007 at 6:00 p.m. in the Fairborn Library meeting room.

Approved as Written

________________________                                      __________________________
TIMOTHY L. CLENDENIN, Acting Co-Chair  RICHARD LITTLE, Co-Chair

______________________________
PHYLLIS J. KENNEDY, Recorder
Environmental Advisory Board

Rich Little, Co-Chairman
Tim Clendenin, Acting Co-Chairman

21 February 2007
Agenda

- Executive Order 13423
- Energy Management at WPAFB
- Mercury Incident
- Demolition of Building 274
- Entry Gate Master Plan
Executive Order 13423

- Strengthening Federal Environmental, Energy, and Transportation Management
- Signed 24 Jan 07
- Revokes Five Previous EOs
  - EO 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition
  - EO13123, Greening the Government Through Efficient Energy Management
  - EO 13134, Developing and Promoting Biobased Products and Bioenergy
Executive Order 13423

Revoices Five Previous EOs, cont.

- EO 13148, Greening the Government Through Leadership in Environmental Management
- EO 13149, Greening the Government Through Federal Fleet and Transportation Efficiency
-
Executive Order 13423

• Summary

  • VEHICLES: Increase purchase of alternative fuel, hybrid, and plug-in hybrid vehicles
  • PETROLEUM CONSERVATION: Reduce petroleum consumption in fleet vehicles by 2% annually through 2015.
  • ALTERNATIVE FUEL USE: Increase alternative fuel consumption at least 10% annually.
  • ENERGY EFFICIENCY: Reduce energy intensity 30% by 2015.
  • GREENHOUSE GASES: Reduce greenhouse gas emissions by 3% annually or 30% by 2015.
  • RENEWABLE POWER: At least 50% of current renewable energy purchases must come from new renewable sources (in service after January 1, 1999).
  • BUILDING PERFORMANCE: Construct or renovate buildings in accordance with sustainability strategies, including resource conservation, reduction, and use; siting; and indoor environmental quality.
  • WATER CONSERVATION: Reduce water consumption intensity by 2% annually through 2015.
• **PROCUREMENT**: Expand purchases of environmentally-sound goods and services, including biobased products.

• **POLLUTION PREVENTION**: Reduce use of chemicals and toxic materials and purchase lower risk chemicals and toxic materials from top priority list.

• **ELECTRONICS MANAGEMENT**: Annually, 95% of electronic products purchased must meet Electronic Product Environmental Assessment Tool standards where applicable; enable Energy Star® features on 100% of computers and monitors; and reuse, donate, sell, or recycle 100% of electronic products using environmentally sound management practices.

• **ENVIRONMENTAL MANAGEMENT SYSTEMS**: By 2010, increase to at least 2,500 the number of Federal operations that implement environmental management systems.
88th Air Base Wing

Serving Customer and Country

WPAFB Energy Management Program

Gavin Jones, CEM
88 ABW/CEMM
Energy Management Program

• Program Directives
  – Executive Order 13123 (FY85-FY05)
    • Mandated 25% reduction by FY2005 (FY1985 Baseline)
    • WPAFB overall reduction: 23%
  – Energy Policy Act 2005
    • Mandates 2% per year reduction from FY2006 – FY2015 (FY2003 baseline)
      – Permits exclusions for mission-driven loads
      – Current progress: GOOD
    • Mandates metering in all facilities by FY2012
Energy Management Program

- Program Directives (cont.)
  - Executive Order: Strengthening Federal Environmental, Energy, and Transportation Management (dated 24-Jan-2007)
    - Sec. 2. Goals for Agencies. In implementing the policy set forth in section 1 of this order, the head of each agency shall:
      - (a) improve energy efficiency and reduce greenhouse gas emissions of the agency, through reduction of energy intensity by (i) 3 percent annually through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal year 2015, relative to the baseline of the agency's energy use in fiscal year 2003;
      - (b) ensure that (i) at least half of the statutorily required renewable energy consumed by the agency in a fiscal year comes from new renewable sources, and (ii) to the extent feasible, the agency implements renewable energy generation projects on agency property for agency use;
      - (c) beginning in FY 2008, reduce water consumption intensity, relative to the baseline of the agency's water consumption in fiscal year 2007, through life-cycle cost-effective measures by 2 percent annually through the end of fiscal year 2015 or 16 percent by the end of fiscal year 2015.
WP Energy Reduction Progress

2005 EPACT Energy Reduction Goal Line

Integrity-Service-Excellence
Energy Management Program

Energy and Cost Comparison

Basic Energy Split:
40% Electric, 40% Coal, 20% Natural Gas
~ ½ Of All Energy Goes To Make Heat

Basic Cost Split:
60% Electric, 20% Coal, 20% Natural Gas

Integrity-Service-Excellence
Energy Management Program

Heat Areas of Focus

3 Central Heat Plants:
• Two Coal Fired Plants with Natural Gas Supplemental
  • Coal is Still the Best $/MBTU (million british thermal units)
  • Plants Retrofitted with Baghouses for Emissions
• One Natural Gas Fired Plant with Fuel Oil Backup
• Two Co-Generation units in One Plant Capable of Producing Two MW of Electricity
• Over 60 Miles of Distribution Piping

Areas of Winter-Time Study:
• Steam Trap Survey
• Piping Insulation Checks
• InfraRed (IR) System Surveys (if able to procure equipment)

Goal:
• Reduce WP’s Heat Energy Input Footprint—Environmental, Energy and Cost Savings!

Integrity-Service-Excellence
Energy Management Program

Serving Customer and Country

Electrical Bill Breakout

**Basic Energy $ Split:**

- 48% Demand
- 50% Consumption
- 2% Other
Energy Management Program

Peak Electrical KW Demand Comparison

Demand Cost: ~$12,270 / MW
Energy Management Program

½ Hour Electrical KW Demand Comparison

8/3/2006
4/14/2006
Energy Management Program

½ Hour Electrical KW Demand Comparison w/Lab Testing

- 11/15/2006
- 11/14/2006
- 11/12/2006
Energy Management Program

½ Hour Electrical KW Demand

Period 22-Dec-2006 --> 28-Dec-2006

WPAFB Total KW Demand

WPAFB KW Demand by HV Circuit
Energy Management Program

½ Hour Electrical KW Demand for Facility 10266

Period 22-Dec-2006 --> 28-Dec-2006

[Graph showing half-hour electrical KW demand for Facility 10266 from 22-Dec-2006 to 28-Dec-2006.]
Energy Management Program

Electrical Energy Monitoring Progress

• Electronic Metering
  – Replace Existing Mechanical, Manually Read Meters
  – Installation in Existing Facilities
  – Specified for Installation in all New and Retrofit Facilities
  – Provides Remote Reading Capabilities
  – Automatic Reading Database Update
  – Automatic Billing Generation
  – Strategically Placed Advanced Electronic Meters

Provide:
• Load Profile Analysis
• Fault Analysis
• Measurement and Verification of Energy Conservation Efforts
Energy Management Program

Energy Cost Challenges

• Energy Rate Picture
  – Historic Energy Cost:
    • FY04: $24.5M
    • FY05: $25.6M
    • FY06: $30.3M
    • FY07: $32M (Projected)

• Utility Rates Update
  – Natural gas: 28.9% increase (Feb 05 – Feb 06)
    • Anticipate 10-15% decrease in FY07
  – Coal: 93.6% increase (Feb 05 – Feb 06)
  – Electric: Contract under negotiation
    • Contract expired Aug 06
    • New contract term through Nov 2010; anticipate 10-15% increase
Energy Management Program

Energy/Cost Control Measures:

• Energy Management Systems
  – Control Air Handling Units
  – Load Shedding During Peak Demand Times
  – Maintenance Function
    • Monitor Critical Systems
    • System “Health” Checks
    • Scheduling of Occupancy for Heating and Cooling
    • Night Set-Back Control
Energy Management Program

Energy Conservation Initiatives

– Energy Savings Performance Contract (ESPC)
  • Contracting method whereby the contractor, an Energy Service Company (ESCO), incurs the cost of implementing energy conservation projects (ECPs)
  • ESCO is paid monthly from the energy and energy-related savings
  • ESCO liable for proper operation and maintenance
    – Contract guarantees minimum savings
– 3 task orders awarded
  • Currently developing scope for 2 additional tasks
Energy Management Program

Serving Customer and Country

• ESPC Update
  – Task Order 1 - Bldg 30001
    • Re-control of air handlers, lighting retrofits, steam hot water (restaurant), install water-conserving fixtures
    • Guaranteed Annual Savings: $65K
  – Task Order 2 - Cogeneration at 20770
    – Installed (2) turbine cogeneration units - Total capacity: 1.8 MW
    – Guaranteed annual savings: $314.5K
  – Task Order 3 – Fume hood and lighting retrofit
    – Retrofit all lighting (32 facilities), retrofit 69 fume hoods (20654), add free-cooling (20651)
    – Guaranteed annual savings: $388.9K
    – Construction in progress on final phase (ECD: Jun 07)
Energy Management Program

Serving Customer and Country

• Alternate Energy Opportunities
  – Museum Hangar Construction
    • Geothermal Heating/Cooling good option
    • LEED (Leadership in Energy and Environmental Design) Certification
    • Include Energy Efficiency in Design Requirements
    • Demonstration Alternate Energy Program for Museum Outreach
  – Future Considerations
    • Solar Thermal
    • Solar Electric (Photovoltaic Arrays)
    • Wind
  – Environmental Considerations
    • Increase Recycling
      – Amount and Types of Materials
    • Alternate Fuels in Vehicles
      – E-85
      – Biodiesel
Mercury Incident 26 Jan 07

Mercury found in catch basin near F/20018-B
- Reported by a contractor late on a Friday afternoon
- Response based on info available at time
- Total of ~2 T of mercury recovered
88th Air Base Wing

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Demolition of Building 274

88 ABW/CEV
Bldg 274 Demolition
88th Air Base Wing
Serving Customer and Country

WPAFB Entry Gate Master Plan

Jan Ferguson
88 ABW/CEVO
Objectives

• Enhance anti-terrorism and force protection
  - Reduce the # of entry control points
• Provide efficient and safe traffic flow
• Lay foundation for future development
Future End State - Overview

Legend:
- Upgrade (Minor)
- Relocate/Reconfigure
- Close
Future End State – Area A & C

New Installation Boundary Fence

“Super” Gate 1C
Relocate/Reconfigure For Increased Capacity

Gate 8C

Gate 9A
Special Use Only

Gate 12A
Use For Ceremonial Purposes Only

Gate 38C

Gate 39C

Realign State Route 444
Reconfigure State Route 444 to Merge into Central Ave

Provide Access To Gate 15A
Enable Access from State Route 444

“Super” Gate 15A
Relocate/Reconfigure For Increased Capacity

Gate 38C

Gate 39C
Future End State – Area A & C

- Gate 1 C – Relocate & Reconfigure
  - Major Upgrades to a “super gate”
- Relocate State Route 444
  - Demo Kittyhawk facilities
  - Bring Kittyhawk inside the fenced boundary
  - Move State Route 444 to completely outside
  - Upgrade Fairborn secondary roads
Future End State - Area A & C

Legend:
- Relocate/Reconfigure

Gate 26C
Relocate / Continue Current Operations

Serving Customer and Country
Future End State - Area A & C

Legend:
₽ - Relocate/Reconfigure

Gate 16A
Upgrade for Current Operations
Commercial Vehicle Inspections
The next meeting of the Environmental Advisory Board (EAB) is scheduled for 16 May 2007 at 6 pm in the Fairborn Library.