GREAT LAKES PARK TRAINING INSTITUTE

02-27-12 THROUGH TO 03-01-12

POKAGON STATE PARK, ANGOLA, IN
## Great Lakes Park Training Institute Schedule of Events / 27 February-1 March 2012

<table>
<thead>
<tr>
<th>Date</th>
<th>Monday 27 February</th>
<th>Tuesday 28 February</th>
<th>Wednesday 29 February</th>
<th>Thursday 1 March</th>
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<tbody>
<tr>
<td>7AM</td>
<td></td>
<td>Breakfast in the Dining Room.</td>
<td>Breakfast in the Dining Room.</td>
<td>Breakfast in the Dining Room.</td>
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<td></td>
<td></td>
<td>Registration opens at 730AM.</td>
<td>Bird Hike meets at Sun Deck at 7AM. Registration opens at 730AM.</td>
<td>Registration opens at 730AM.</td>
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<tr>
<td></td>
<td></td>
<td>Working with Different Groups—Kelly Overly (JA)</td>
<td>A Natural Energy Source: Wind Power—Emily Sautter (JA)</td>
<td>Pedal Power—Making the Connection—Nancy Kruprianz, Mark Young (GR)</td>
</tr>
<tr>
<td>10AM-1130AM</td>
<td></td>
<td>Appfire: What’s Hot in Mobile—Michael Baker (JA)</td>
<td>Splash Pad Design and Water Management Solutions—Greg Stoks (GR)</td>
<td>Year Long Look at the Challenges and Rewards of Fishing...as Seen Through the Eyes of an Angler—Ted Bohman (JA)</td>
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<td></td>
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<td>Valuing Volunteerism—James O’Brien, Denis Buehler (GR)</td>
<td>Emerald Ash Borer and Other Forest Pests—Rick Tyler (CR)</td>
<td>Sustainable Landscapes—Tony Eyerman, Steve Barker (CR)</td>
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<td></td>
<td></td>
<td>White-Tailed Deer Impacts to Park Forests—Rick Tyler (CR)</td>
<td>Reduce Liability and Improve Your Bottom Line—Eric Kleinert (WG)</td>
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<tr>
<td>1145AM</td>
<td></td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch Buffet in Lake James at 1145AM</td>
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<tr>
<td>1PM-2PM</td>
<td></td>
<td>Welcome and Opening of the Institute in the Lake James Room at 1PM.</td>
<td>Gadgets (JA) 5 Things You Need to Know Now About the ADA—Jennifer Skulski (CR)</td>
<td>Lunch Buffet in Lake James at 1145AM</td>
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<td>Hands-on Workshops</td>
<td>Reduce, Reuse, &amp; Recycle with Staff Support—Nancy Hughes (GR)</td>
<td>Stories, Songs, and Dances of the Metis’ Voyageur—Genot Picor (JA)</td>
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<tr>
<td>215PM-315PM</td>
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<td>NCA Playground Surface Study: First Year Findings—Jennifer Skulski (CR)</td>
<td>Leading Your Team for High Performance: Define the Right Outcomes!—Dr. Chip Taylor, Dr. Sally Jo Vasicko (GR)</td>
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<td>Reduce, Reuse, &amp; Recycle with Staff Support—Nancy Hughes (GR)</td>
<td>Stormy Weather—Sam Lashley (WG)</td>
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<tr>
<td>NIGHT</td>
<td>Awards Dinner and Reception at 6PM (JA)</td>
<td>Dinner in Inn Dining Room at 530PM</td>
<td>Dinner Buffet in Lake James at 630PM</td>
<td>Session Location Key</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ice Cream Social/Game 7PM (JA)</td>
<td>Vendor Social at 7PM</td>
<td>JA / Lake James Room</td>
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<td></td>
<td>Toboggan Run starting at 730PM</td>
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<td>WG / Wigwam Room</td>
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<td></td>
<td></td>
<td>GR / Game Room</td>
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<td></td>
<td>CR / Crooked Lake Room</td>
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**Session Location Key**
- JA / Lake James Room
- WG / Wigwam Room
- GR / Game Room
- CR / Crooked Lake Room
**Electrical Conservation: Green Up Your Operation and Improve Your Bottom Line**

Monday 27 February 2012 / 130PM-5PM

**SPEAKER(S)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Company</th>
<th>Address</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>
Being a good steward of your facility’s electrical resources means a lot more than just turning off the lights when you leave the room. Delve into electrical conservation in this illuminating workshop. We’ll be doing assessment of your facility and learning how to identify problem areas in your electrical usage, including how to consult with your utility provider. New technologies will be examined and measurement of operational savings will be discussed. Finally, we’ll examine electrical safety in installation and maintenance.

Steuben County REMC has 842 electric co-ops across the country.

Carbon Dioxide has become a political issue. It is produced when a fossil fuel like coal, wood or natural gas is burned. Experts from both sides of the issue have debated the effects of CO2. Congress has stopped debating on CO2. They believe it is a greenhouse gas and that it needs to be controlled.

In 2007 the government gave regulations control to the EPA. Now, the EPA regulates ground water usage and regulates CO2 emission allowances. They took the Cap and Trade idea and used it without any legislative involvement.

In 2011 the government introduced two bills to slow down the EPA. Now they must gain approval from congress to make new rules. Both bills passed the House but not the Senate.

The effects from the EPA now mean that over the next 15 years, 50,000 MW of coal energy will be retired completely. The only way to replace the energy is to replace it with alternative energy or just to not use it at all. Many coal plants will be replaced with natural gas units. However, the new capitol investment to make the change will be very expensive.

Industry changes are starting to lead more to free services such as Blower Door Tests and Heat Loss and Heat Gain calculations with HVAC analysis.

Next speaker; concentrated on how to save money in many different aspects of the industry. Energy star equipment can help reduce energy use greatly.

How pool heating systems work. High efficiency pool heaters are the new thing to get. They are 84% more efficiency. 15-35% fuel savings. No pilot flame. Also, pool covers are great because they reduce evaporation and save money on water and pool chemicals.

Lighting. Upgrading lights to newer standards such as replacing old lights with T8 lights and LED lights can save places up to 30% on electric bills. Light sensors have also been introduced recently to help save power.

Food Service. Use less hot water. Install occupancy sensors for things like fans and venting systems in kitchens. Use more efficient water heaters.

Pipe wrap, energy star equipment, renewable energy, demand management, heat recovery projects, and gas tankless water heaters are all great ways to reduce the amount of energy used.

New speaker gave a great speech on his past experience being a burn victim in 1980. He is missing an arm and a leg but is thankful to be alive still to tell his story and train others on power line training.

Mainly spoke on safety. Examples were given on how to get away or out of a car with a power line down on it.

Line loss is when trees are touching power lines. It costs the people more money due to loss electricity through the tree.

**SESSION LEARNING OBJECTIVES**

- Learn about the industry and rate changes that may affect your bottom line.
- Identify five rules to electrical safety.
- Describe how to measure operational savings in terms of electrical efficiency.
The Future of Electric Energy

In order to Understand the Future of Energy

• We first must understand how legislative and regulatory actions have shaped where we are today.
• And how decisions made by Congress and the EPA can effect us as we move forward.

Deregulation in the 1990’s

• With Enron’s influence states all across the country began deregulating the electric market.
• The trend began in California and followed wherever retail electric rates were considered to be higher than average.

Turning Electricity into a Commodity

• Subject to market changes, counter party transactions, mark to mark securities deposits.
• Profits now became the primary driving force in our industry.
• Price volatility becoming a very real part of our business.

Deregulation Today

• Enron no longer exists.
• Many of the states that passed legislation early on have either repealed the laws or simply limited choice at the retail level.
• However, deregulation at the wholesale level still remains.

Leading to an Era of Ever Changing Legislation and Regulation

• Countless actions to deal with market changes.
• Regional transmission organizations to ensure reliability.
• Adding even more upward pressure on retail electric rates.
Recent Legislation Takes on a New Twist

• Carbon Dioxide has become a political issue.
• It is produced when a fossil fuel like coal, wood or natural gas is burned.
• The effects of CO2 have been debated by experts from both sides of the issue for years.

For Congress, the Debate is Over

• CO2 is a considered a Greenhouse Gas.
• Contributing to Global Warming.
• And must be controlled.

Cap and Trade Legislation

• Basically a tax on emissions.
• It passed the U. S. House of Representatives in 2009 but not the Senate.
• The President would like to see it reintroduced and brought to his desk for approval.

How it Works

• Allowances for CO2 emissions provided to electric generation providers.
• Each year these allowances are diminished.
• Power providers would either reduce their CO2 output or purchase allowances from some other entity.

Its Effect on the Midwest

• The Legislation will significantly increase the price of power on Natural Gas and Coal generating units.
• The Midwest would be hit hard.
• Retail rates could increase by hundreds of dollars a year.

Legislating Renewable Mandates

• Have been introduced as a part of the Cap and Trade bill at the Federal level.
• States are looking at their own versions.
• Both require a % of a utility’s wholesale power to come from renewable sources.
The Challenges with Mandates

- Location.
- Technology constraints and storage.
- High costs for both hardware and energy produced.

The Regulating Side of GHG

- 2007 U.S. Supreme Court provided a broad ruling relating to the Clean Air Act.
- Giving the EPA authority to regulated Greenhouse Gases under the existing statute.
- However, it did not provide a deadline or require specific regulations.

The EPA’s Role

- Proposed an endangerment finding in April 2010.
- In January 2011 the Title V GHG Tailoring Rule began the EPA’s regulatory process on large sources such as power plants.
- The EPA is also regulating ground water used by power plants.

In essence, the EPA is acting just like Cap and Trade without any legislative involvement.

Slowing the EPA Down

- Last year there were two bills introduced in Congress designed to slow the EPA down.
- By making the EPA gain approval from Congress on any ruling having a significant financial impact on our national economy.
- Both bills passed the House but failed in the Senate.

The EPA’s Effect

- To date nearly 50,000 MW of coal fired generation will be retired in the next 10 years.
- This represents 15% of the entire coal generation in the U.S.
- Most will be here in the Midwest.
**Shale Gas Expansion a Glimmer of Hope**

- With the development in new technologies, natural gas located in shale rock formations has significantly improved gas supplies and reduced price volatility.
- As a result, many of the retired coal facilities will be replaced with natural gas units.
- But the new capital investment will be high.

**Shale Gas Fracturing and EPA**

- The EPA currently has not been heavily involved in the fracturing drilling process so far.
- However, regulations will still remain on the carbon output as natural gas is consumed in the electric generating process.

**Our Industry’s Position**

- Cooperatives are also concerned for the environment.
- But we need a balanced and affordable solution that continues to utilize all of our natural resources and the development of new technologies.

**Local Efforts**

- Many Cooperatives are aggressively installing a new two-way communication infrastructure known as an Automated Metering Information system.
- This system will provide numerous benefits in meter reading, engineering analysis, demand response programs and provide detailed analysis of our members' energy consumption.

**Cost-Saving Options**

- Through Demand Response we plan to create cost-saving options for our members.
- By voluntarily controlling electric devices within our members’ homes and businesses.
- We also plan to take advantage of market prices by selling this excess capacity when appropriate and/or avoiding high-cost peaking power.
Energy Efficiency

• Energy Audits.
• Blower Door tests.
• Heat Loss and Heat Gain Calculations with HVAC analysis.
• Tips on energy efficient construction techniques.
• Energy efficiency programs.

Legislation and regulations have clearly driven electric costs over the last several years. If both areas remain unaltered, electric rates will continue to climb.
Energy Efficiency Opportunity

- Pools
- Lighting
- Food Service
- Heating Systems
- Cooling Systems
- HVAC Systems
- Other Energy Efficiency Opportunities

The Pool as a System of Water & Air

The Pool as a System of Water & Air

- Annual Energy Usage Breakdown
- Typical Pool Energy Flows
Pool Water Heating Systems

- **Indirect System**
  - Steam / Hot Water Boiler
  - Heat Exchanger

- **Direct System**
  - Pool Heater

**High Efficiency Pool Heaters**

- Min. 84% Efficiency
- 15 – 35% Fuel Savings
- No pilot flame

Solar Water Heating - Benefits

- Economic alternative to conventional heating
- Reduces electric & natural gas heating requirements. Available < 30% of the year.

Swimming Pool Covers

- Reduces evaporation when unoccupied
- Payback of 1.2 to 7.4 years for Upper Midwest

<table>
<thead>
<tr>
<th>Pool Cover Type</th>
<th>Cost/ sq. ft (installed)</th>
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</thead>
<tbody>
<tr>
<td>Manual</td>
<td>$2</td>
</tr>
<tr>
<td>Automatic</td>
<td>$7</td>
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</tbody>
</table>

Pool Chemicals

Maintaining Energy Balance Affects Chemical Costs & Use

- Excessive evaporation increases pool chemical costs
- Imbalance between air & water systems yield higher chemical concentrations in water & chloramines in air
- Evaporation & chemical injection rates must balance with water recirculation rate to ensure a safe & comfortable environment

Lighting
New Linear Fluorescent Lighting Systems
Higher Efficiency & Smaller Diameters

Old Technology - T12 Lamps (fat tubes)
Current Technology - T8 Lamps
• Direct Replacement for T12
• Requires Ballast Change
• Up to 40% Energy Savings
Newer Technology - T5 Lamps
• Metric in length
• Optimal for Indirect Lighting Systems
• Fluorescent Options for High Ceilings
Newest Technology - T8 HP Lamps
• Beefed up T8

Lighting Types - HID
One class: High Intensity Discharge
Types:
• Metal Halide
• High Pressure Sodium
• Mercury Vapor
• Low Pressure sodium
• Ceramic Metal Halide

HID Replacement
• High Bay Fluorescent
• T5 and T8
• Up to 50% more efficient than HID
• May not be appropriate for:
  • Unheated spaces or cold warehouse, pools
  • Extremely dirty, solvent, oily or dusty locations
• Pulse-Start Metal Halide
  • 320 Watt Fixtures
  • Not screw-in base

Example Retrofit:
400 MH to T8 Fluorescent

Compact Fluorescent Lamp
• Use the rule of 4
• Dimming issues
• Screw in vs. Pin Based
• Disposal
Example Retrofits:  
HID & Incandescent to T5HO

- 54, 400-w HPS HB fixtures 465-w
- 6, 400-w MH HB fixtures 458-w
- 4, 500-w Incand fixtures 500-w

- 42, 4-lamp T5HO fixtures 234-w
- 4, 6-lamp T5HO fixtures 351-w
(all e/w wire grills)

LED/SSL
- Energy Star/CEE designations
- Buyer beware
- The right application is crucial
- New stuff daily

Induction

Occupancy Sensors

Passive Infrared (PIR)  
Technology

Best Applications
- small enclosed spaces without obstructions
- areas with high air movement
- areas with high ceilings
- hallways and storage aisles
- spaces with areas of unwanted detection
- as wall switch replacements

Poor Applications
- partitioned restrooms
- storage areas with obstructions
- large enclosed spaces with low ceilings

Ultrasonic Technology

Best applications
- large offices and classrooms
- enclosed areas up to 2,000 square feet
- storage areas with obstructions
- partitioned hallways
- partitioned restrooms

Poor applications
- non-enclosed areas
- areas with high air flow
- high ceiling areas (above 15 feet)
- spaces with areas of unwanted detection
Additional Lighting Efficiency Strategies

- Controls –
  - Daylight Harvesting using photoelectric sensors
  - Time clocks
  - Energy Management System

- Fixture Count Reduction
- Lamp Count Reduction
- Low Watt Fluorescent T8 (30W, 28W, 25W)

Where Energy Dollars Go

A single piece of food service equipment can use a much energy as a single family home.*

The kitchen can use 5 times more energy than general commercial space.*

* Per Pacific Gas & Electric's Food Service Technology Center
Pie chart information from the Energy Information Administration

Use Less Hot Water!

Pre-rinse spray valves
  - Use 2.0 gpm or less

ENERGY STAR® Dishwashers
  - Uses 25% less energy
  - Uses 25% less water
  - Save $1000 annually in water and energy costs
  - Run dishwasher at capacity

Efficient Food Service Equipment

- ENERGY STAR®
  - Fryers
  - Steam cookers
  - Refrigerator/freezers
  - Solid and glass door
  - Dishwashers
  - Hot holding cabinets
  - Ice machines
  - Convection ovens
  - Griddles

Other Equipment with Established Efficiency Standards
- Combination ovens
- Large vat fryers
- Rack ovens
Refrigeration Best Practices

- Anti-Sweat Heater Controls
- High efficiency condenser and evaporator fans
  ~ 8-15% savings (ECM Motors)
- Beverage Machine Vending Controls
- EMC fan motors
- Strip curtains reduce infiltration
- Maintain gaskets on all doors

Ventilation Opportunities

- Exhaust hood operation is largest opportunity for savings*
- On/off timers OR
- Variable flow controls
  - Vary amount of exhaust based on level of cooking
  - Savings due to:
    ⇒ Less fan energy
    ⇒ Less wasted heated or cooled air

* Pacific Gas & Electric’s Food Service Technology Center

Variable Volume Control Ventilation

Restaurant Application Example

18 Hour per day operation
82% of time exhaust did not need to be at highest level
33% of the time used only 12.5% of the energy

Useful References

Food Service Technology Center
- www.fishnick.com

ENERGY STAR®

National Restaurant Association
- conserve.restaurant.org

Consortium for Energy Efficiency
- www.cee1.org (follow link under commercial to kitchens)

Heating Systems

Heating System Efficiency
Boilers - Steam

- Operation Pressure for typical space heat
  - 0.5-15 psig
- Efficiencies not above ~82%
- Important Components
  - Steam Traps
  - Condensate Return (Tanks & Pumps)

Basic Steam System Schematic

Boilers - Hot Water

- Standard efficiency - 80%
- Condensing Efficiency - 90%+

Boilers - Controls

- Outdoor Air Reset
  - Resets water temperature based on outdoor air temperature - typically down to 140°F
- Outdoor Air Cutout
  - Shuts off boiler above a set outdoor air temperature

Boiler & DWH Replacement

Boiler Only Replacement
Boilers

- Impacts to Efficiency
  - Scale
  - Oversizing
  - Excess Air
  - Return Temps from System

Modulating Burner Control

- Increase turn-down ratio
- Reduces burner on/off cycles
- Less heat up the stack
- Better response to frequent changes in heating load
- Achieve 1% to 5% annual fuel savings
- 3 to 4 year payback

Furnaces

- PVC Piping = High Efficiency
- Standard Efficiency = 80%
- High Efficiency = 90%+

Other Heating

Unit Heaters:
- Most Efficient Option:
  - Infrared Radiant

Cooling - Efficiency

- EER = Energy Efficiency Ratio (A/C 65kBtuh+, PTACs, WSHP)
  \[ EER = \frac{\text{Rated Cooling Output (kBtu)}}{\text{Rated Electrical Input (kW)}} \]

- SEER = Seasonal Energy Efficiency Ratio (A/C <65kBtuh)
  \[ SEER = \frac{\text{Total Seasonal Cooling Output (kBtu)}}{\text{Total Electrical Input (kWh)}} \]

- COP = Coefficient of Performance, cooling (heat pumps)
  \[ COP = \frac{\text{Rate of Net Heat Removal}}{\text{Total Electrical Input}} \]

- kW/ton (chillers) = kW Input / tons of cooling output
Cooling - Efficiency

\[
\frac{kW}{\text{ton}} = \frac{12}{EER}
\]

Greatest Cooling Efficiency when:
- lowest kW/ton
- highest EER, COP or SEER

\[
EER = \frac{\text{COP}(3412)}{1000} \text{ Btu/watt - hr}
\]

\[
\text{COP} = \frac{EER}{3.412}
\]

Air Conditioning

- Rooftops
- Split Systems
- Chillers

Cooling - Rooftop

Cooling - Chillers

Coolers are used for cooling in commercial and industrial process applications
- Air cooled
- Water cooled
  - cooling tower

HVAC SYSTEMS
HVAC Systems

Primary components convert energy from fuel or electricity into heating and cooling energy in the form of hot water, steam, chilled water or refrigerant:

- Refrigeration equipment - water chillers and direct-expansion (DX) equipment.
- Boilers – to produce hot water or steam to distribute to heating coils
- Pumps circulate chilled water, hot water, and cooling tower water.

Air Distribution System Types

Common system types:

- Constant Volume (CV) and CV Terminal Reheat Systems
- Variable Air Volume (VAV) and VAV with Terminal Reheat Systems
- Dual-Duct and Multizone Systems
- Hydronic Systems and Air-Water Systems
Variable Refrigerant Flow Systems

- Called VRF (Variable Refrigerant Flow) or VRV (Variable Refrigerant Volume)
- One or more outdoor units connected to multiple indoor units
- Separate ventilation required
- Eliminates overheating and overcooling

Hydronic Systems and Air-Water Systems

- Heated and/or cooled water is pumped to a terminal unit in each zone
- Two-pipe and four-pipe systems
- Combined hydronic-air systems provide conditioned air from a central air system that is heated or cooled by terminal units

Cost Reduction Opportunities
All Systems

- Scheduling
- Lower unoccupied thermostat setting
- Morning warm up
- Adjust minimum position on outside air dampers to supply only the amount needed
- Adjust/repair dampers to close tight
- Convert to variable air volume

ADDITIONAL HVAC EFFICIENCY MEASURES
Heat Pumps - Air to Air

Ground Source Heat Pumps

- Closed Loop - Uses supply pipe coiled at least 8 ft under the surface of the water.
- Open Loop - utilizes 2 wells or surface body water. The water comes out of the supply well, circulates through the building then returns to the body of water through the recharge well.

Closed Loop Ground Source

- Horizontal - dug shallower into the earth and require large amounts of land
- Vertical - trenches are dug deeper rather than spread out, requires less land
- Vertical systems used more frequently than horizontal

Other Energy Efficiency Opportunities

- Bi-annual tune-ups for boilers & furnaces
- Pipe wrap
- Energy Star Equipment
- Gas Tankless Water Heaters
- Chiller Plant Optimization
- Heat Recovery Projects
- Building Shell – Low emissivity windows, wall/roof insulation
- Renewable energy
- Peak shaving/load shifting/demand management

Questions?
Public Safety Education
Inspired by Indiana’s REMC’s
Presented by Gayvin Strantz, Connie Sparks, Chuck Tiemann CLCP Sr Risk Manager

Public Contact

- What does the Public really Think?
- The public usually believes Four things about electricity.
- What are they?

This really scares me!!!

- The public believes the following
- The primary/distribution line voltage is about 120-240 volts.
- The lines are insulated.
- If a line is on the ground it is dead.
- Finally--- the public believes down line devices protect them. i.e Breakers/Fuses
- When in fact they do not protect humans—only equipment---sometimes
- How many has been shocked by 120/240 volts?
- Treatment—Potable Water in first 90 seconds

How many public contacts are there each year with rural electrification?

- 2001-111
- 2002-96
- 2003-105
- 2004-105
- 2005-104
- 2006-114
- 2007-93
- 2008-102
- 2009-116
- 2010-112
- 2011-95

Approximately 100 vehicle type accidents were reported this includes farm equipment accidents as well with two fatalities—just in Indiana
- Over 1,000 electrocutions in the workplace-350 in the farming industry

Not a Pretty Picture!!!

This is a bathroom outlet.

Some people believe in those Ground Fault Circuit Interrupters.
But they just take up a lot of space and cost too much!
Equipment Size and Height

Telephone
Cable
Can make Maneuvering Equipment very difficult at times

Step Potential
Please *Do Not Leave* the scene Unsecured

Vehicular Accident
Energized at 7200 Volts
Ice is both an insulator and conductor.

Trees in power lines may and kill innocent children every year. Approximately 8–12 children in rural areas suffer severe burns, loss of limbs, extensive rehabilitation and unfortunately - loss of life.

Lightning - How hot is it

- The average hot lightning bolt is 54,000 amps with voltages measuring near one-billion volts.
- Information from the weather channel—Dr. Steve Lyons

What do the results look like---WARNING!!

- The next few slides are graphic

480 volt contact
Proper Gloves/ Type I Rubber Gloves would prevent this!!! Not Leather Gloves

Here is the result of an electrical flash burn WITH-----

- No FR shirt

I'll show you mine if . . . .

Smell a Rat?
It's a good idea to cover all unused knock-outs.

Let's have a bar-be-que
Thank You and May God Bless
All of You

- Close with Zac story
- Remember go home the same way you went to work
How to Hire the Right Person for the Right Job

Monday 27 February 2012 / 130PM-5PM

SPEAKER(S)

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Carmel, IN 46033  
Email: allen.patterson@hamiltoncounty.in.gov

SESSION DESCRIPTION

Ever pick through a list of candidates and think, “Gee, these aren’t the people at all that I was trying to attract to this job?” This hands-on workshop will help you get over the hiring blues and start getting you the people you want and your organization needs. We will introduce an in-depth and interactive hiring process, as well as spending time on how to find the right people for your agency.

Primarily, with decreasing budgets and staff, when filling an open position, hiring staff typically looks for a team player and a good role model for their company. When making an attempt to hire, staff should create a needs analysis. This needs analysis should
include a current job description, competencies and credentials of future employee, types of interactions, fit for job/values, and management expectations for the new employee. One major key factor is practicing the Berens Interaction Styles to determine how people interact with others. The InterStrength Method truly focuses on the how. How does one act and react? How do they define their own personality? How does one’s contextual self (current behavior), developmental self, and core self (hardwiring from birth) coordinate in the job field? Two major symptomatic diseases are ‘be like me’ and ‘be like them’. These situations occur when hiring staff isn’t quite looking at the whole picture, but rather trying to change and adapt people whose ultimate actions are out of their control. Finding the whole picture takes time and patience, as every individual’s personality is different and always will be.

In this session, the participants were asked to choose a poster that best represents their opinions. The key theme in this interactive exercise is that specific jobs have different specific needs. Sometimes planning is a better method whereas sometimes helping others get involved is a more efficient tactic. To be a good leader, hiring staff should look at every tactic as a possibility, even though one’s hardwiring will likely never change. Typically, individuals are the “in charge”, “chart the course”, “get things going,” or “behind the scenes”-type of people, with different communication and interactions styles for each type.

Essentially, knowing how to evaluate possible future employees can truly help eliminate problems in the workplace. Knowing different interaction styles can help aid hiring staff in calculating the best candidate for the job. Look for clues in the interview process and start with the job description and the company’s needs. Compile all data from interviewees and compare the answers to the questions asked to all candidates. Is this individual the type of person you’re looking for? Configure their temperament and interaction styles for their Berens Style.

A lot of employers say that longevity is a big key to hiring. As someone who hires, one should prioritize job responsibilities so they know exactly what they’re looking for in the future employee. One should then advertise as much as possible and be extremely detailed in their job postings, being very skill specific. Lastly, who will be looking at the resumes? Having one reviewer will pinpoint consistencies while using multiples staff members to review will generate more variety in one’s job market. Notice the little things about resumes that make them stand out from the normal, everyday individual. Interviews take time and patience. The applicant should be put at ease and should be given consideration right off the bat. Narrow the field by assigning scores to candidates, having second interviews, debriefing with staff (even your receptionist), or give potential employees homework for them to show off more about their decision making skills, consultant feedback to client (role play situations), etc. By the second interview, real work should be attempted by interviewees. Spending time on interviews may seem tedious, but at the end of the day, companies will save themselves time and energy.

SESSION LEARNING OBJECTIVES

- Explain two methods for locating appropriate candidates for your agency.
- Describe the process for assessing your current hiring techniques.
How to Hire the Right Person for the Right Job
February 27, 2012

Introductions . . .
• You are …
• We are…

(Client)
Allen Patterson, CPRP
Director
Hamilton County (IN) Parks & Recreation Department
23 years Executive Management and Parks Experience

(Consultant)
Judy Gareis, SPHR
HR Essentials, Inc.
(Senior Professional in Human Resources)
MALS Skidmore College:
Organizational Leadership & Development
30 years Executive Management and Consulting Experience

Information for the afternoon…
Handouts
Schedule and breaks
Stretching & restrooms
Questions
Cell phones & interruptions
Additional resources

Our Objectives for Today
• Share a success story
• Outline interactive hiring process
• Teach interaction styles model
• Share how-to’s
• Answer your questions
Your Objectives

What would you like to learn today?

Where did we begin?

Situation

- Open Position
- Living with a poor job match (or two)
- Decreasing budget
- Decreasing staff
- Uncertainty if/when be able to hire again
- Need a team player/Good role model

Needs Analysis

- **Current** job description
- Competencies & credentials
- Types of interactions
- Fit for the job/organization/values
- Management expectations

“Full” training day learning:

- Berens Interaction Styles (how we interact with others)
- Temperament (core needs, values, talents & behaviors)
It’s break time!  
Please be back in 15 minutes!

Interactive Interviewing Components

My HR Background
- Son of an HR Director (formerly Chemical Eng)
- Went with him on several recruiting trips
- Asked a lot of questions
- Heard a lot of stories
- Treat people with respect
- Ask what you want to find out, not what you think you should ask

Interview War Stories
- Tongue Piercing
- “and what not”
- “metabolism”
- Many others!

Goals
- Fill the position
- Happy/Satisfied employee
- Happy/Satisfied agency
- Good worker
- Team player
- Longevity
- Not to have to go through this process again anytime soon

Procedure
- Job Description/Personality Match
- Advertising/Promoting the opening
- Reviewing resumes
- Interviewing Process
- The hire
Job Description/Personality Match

- Review and revise your Organizational Chart
- Review and revise your job description
- Determine strengths and weaknesses of past employees
- Prioritize job responsibilities
- Estimate time spent on each responsibility
- Determine positive and negative traits of a successful employee in this position

Job Description/Personality Match

- Create (mentally or physically) an “agency personality profile”
- Determine positive and negative traits of a successful employee in your agency
- Utilize interaction/temperament tools to determine a “profile” of the person you are looking for
- Utilize interaction/temperament tools to determine traits to look for

OR

- initiates actions & contact with others
- comfortable with pace
- adaptable & flexible
- seeks out opportunities
- demonstrates creativity
  - makes things happen or brings people together
- responds only when asked
- slower pace/approach
- focused internally
- overly direct
- lacks persuasiveness

Advertising/Promoting Opening

- “Have to” – Local papers, internal avenues
- Online – ie. Career Builder
- Profession specific avenues – national, state, or local organizations and publications
- Skill specific organizations or publications
- Word of mouth – personal invites (no promises)

Reviewing Resumes

- Who
  - One Person – Consistency
  - Multiple People – Variety
  - Administration
  - Management
  - Supervisors
- What you are looking for
  - Skills
  - Experience
  - Longevity
  - Reasons for leaving positions
  - Stretching the truth
  - Extra Training – company or personal time
  - Little clues – references (management)
  - Keep an open mind
Interviewing Process

- Many quick first interviews (5-30 minutes)
- Score sheets
- Narrow the field
- Second interviews (hands-on/interactive)
- Debriefing (a lot)
- Paperwork

First Interviews

- Many quick interviews
- Resumes are 1D pieces of paper
- Leave no stone unturned
- You’ll get a pretty quick feel
- Courtesy interviews (yes/no)
- Put the interviewee at ease
- Keep an open mind

First Interview Questions

- Prepare questions and potential follow-ups
- Have a purpose
- Story - “What did the people on either side of you do?”
- Gauge skillset and experience – avoid yes/no questions
- Take note of body language
- Be consistent but don’t be afraid to leave the script – follow hunches
- Take notes, but watch
- Score promptly – discuss big differences if multiple people

Narrow The Field

- Not too narrow, reasonable, scores should tell you
- Keep a variety of applicants
- This is where courtesy interviews end

Second Interview

- +/- 5 people
- 3 or more hours
- Homework
- Questions
- Real life work
- Debrief with applicant
- Debrief with staff

Homework

- Something specific to your job to bring to 2nd interview
- This example – Resource Development Specialist
- 10 potential sponsor contacts that are new to us – what is the connection – how much to ask for
- 3 potential grant opportunities that are new to us – what is the connection
- 3 potential new volunteer groups to contact – what is the connection – how will they be used
Homework “Show and Tell”

- Listen for understanding of instructions
- Ask applicant to explain their thought process
- Look for understanding of your organization and its direction
- Look for clues of interaction/temperament styles
- “Right” answers are not the most important thing

2nd Interview Questions

- More focused – on job
- More theoretical – explain situations
- More long term – where do you see yourself
- Designed to provide more clarity to interaction/temperament style determinations

2nd Interview Real Work

- Seated at actual desk of position (if possible)
- Given actual work duties
- Request communication with other key staff members (local or not)
- Mimic your agency’s work environment (ours has a lot of interruptions and distractions)
- Calls from the public (our public was Judy)
- Make it un-realistic (reaction to stress tells a lot)
- Significant amount of time (ours 2 hours)

Telephone Calls to Candidates

- Consultant role play as volunteer
- Consultant feedback to Client:
  - Detail from conversations
  - Overall impressions/reactions
  - Candidates’ follow-up, if any
  - Working hypothesis of interaction style and temperament

Debrief With Applicant

- Story – “I hope it won’t hurt my chances if I tell you I don’t like you guys very much right now”
- Work Product
- How they felt
- What they liked
- What they didn’t like
- What stressed them
- Again – no “right” answers
- Questions for us?
- Looking for more interaction/temperament clues

Debrief With Staff

- Promptly
- First Impression
- Interaction/Temperament styles
- Match for job
- Match for agency
- Don’t overvalue skillset (personality is part of their make-up, skills are taught/learned
- Avoid “over-qualified” or “under-qualified”
- The right selection should rise to the top
What should you do next?

Plan your hiring process carefully:

- Update job descriptions *first*
- Use advertising phrases to attract best fit
- Use structured interview questions
- Have multiple interview conversations
- Use exercises that put candidates under stress
- Learn a model to identify individual differences

Questions?

Please complete evaluations before you leave
Thank you!
The Timber Take-Down

Monday 27 February 2012 / 130PM-5PM

SPEAKER(S)

Tim Glasper
Maintenance Foreman I
Pokagon State Park-IDNR
450 Lane 100 Lake James
Angola, IN 46703
Email: tglasper@dnr.in.gov

Gene Huss
Maintenance Repair II
Pokagon State Park-IDNR
450 Lane 100 Lake James
Angola, IN 46703

Brady Givens
Assistant Park Manager
McCormick’s Creek State Park
250 McCormick Creek Road
Spencer, IN 47460
Email: bgivens@dnr.in.gov

SESSION DESCRIPTION

Following the success of last year’s Woody Plant Removal session, the Pokagon Crew is back this year with even more about managing a park’s timber resources. Learn about the successes and struggles involved in a timber sale from park property, head out onto the property to try out some tools and safety procedures, and take a shot with the stump grinder.
Session focused on chainsaw operation, safety, and maintenance. Additional information was provided pertaining to the stump grinder, and environmental impacts of the skidder.

Chain saw operation is the second most dangerous activity in the work force. Knowledge of proper chainsaw operation is essential for a safe and productive work environment. Personal protective equipment (PPE) includes Kevlar chaps, eye protection, ear protection, hardhat, and boots. It is also recommended to be in close proximity to a first aid kit and communication device. The strenuous nature of sawing requires consumption of water and frequent breaks.

The chainsaw provides many safety features including the chain break, throttle lock, chain catch, hand guard, and spark arrestor. The hand is the most injured sight. Proper saw maintenance helps reduce mishaps. Thorough equipment inspection is recommended; this includes chainsaw and PPE.

Proper saw operation procedures include two different start positions, the knee lock, and ground start. Felling, bucking, and limbing require keen awareness of bar positioning. It is best to attack with the lower half of the bar tip, in order to reduce push, pull, and kickback. Compression and tension were also conceptualized. Proper technique involving the face cut, back cut, bore cut, and spring pole were demonstrated and evaluated.

The stump grinder removes tree stumps, post timber harvest. It is highly mechanized and requires minimal human excursion. State park timber harvests must only be implemented in extreme circumstances of parasitic infestation.

**SESSION LEARNING OBJECTIVES**

- Identify three issues related to timber removal on park property.
- Describe two safety measures that should be instituted during timber removal.
Closing the Generational Divide: Working with Different Groups

Tuesday 28 February 2012 / 815AM-930AM

SPEAKER(S)

Kelly L. Overly
Assistant Park Manager
Ohio Department of Natural Resources
3116 State Route 3
Loudonville, OH 44842
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SESSION DESCRIPTION

Tired of that twenty-something texting instead of working? Wondering why things aren’t like they used to be? So are we! Different generations have clashed in the workplace for centuries, but as technology develops more rapidly and media changes constantly, today’s workplace is more challenging than ever. Discover how we recognize and appreciate the differences between generations in the workplace today and use these differences to make our organizations stronger.
This session focused on explaining the characteristics of the four generations of individuals in today's workforce, reasons why members of different generations can clash, and how we can understand, manage, and supervise these individuals in a dynamic working environment.

The four generations presented and discussed were the Traditional Generation (1922-1945), the Baby-Boomers (1946-1964), Generation X (1965-1980), and Generation Y/Millennial (1981-1998). Each generation is reflective of the cultural climate and national/international events during their adolescence and young adulthood, and each generation is equipped with different tools and attitudes to bring into the workplace.

The Traditional Generation (1922-1945) is characterized by hard-working, rule-abiding, disciplined individuals who respect authority and place duty before fun. The Baby Boomers (1946-1964) are the most highly represented generation in today’s workforce, and this group consists of workers committed to quality, problem-solving, long-term career building, and loyalty to employers. Generation X (1965-1980) is the generation least represented in the workforce today, made up of productive multi-taskers who prefer job-sharing and flexible working hours, are independent and mobile, and choose to balance their work and personal lives more than the generations preceding them. Finally, the Millennials (1981-1998) are idealistic young workers who are hungry for feedback, are constantly multitasking, are heavily involved in teamwork, and are used to instant gratification.

As supervisors, it is important to motivate individuals of these generations to utilize their strong points. For instance, Traditionalists typically are effective mentors to younger employees, but are not as comfortable with current technology as Generation X and the Millennial Generation are. Baby-Boomers are committed to achieving high levels of responsibility and crave challenges, whereas Generation X is more inclined to balance work and personal life and have a more personal perspective with a “I do it my way” attitude. Millennials are inundated in technology and prefer cyber training and lectures to “face to face” contact. They seek creative challenges and employ their knowledge of technology in problem-solving. We can use these generation’s talents to our advantage by encouraging individuals to take responsibilities in their strong areas. Millennials are incredibly tech savvy, so they are talented at marketing through social networks; Baby-Boomers are great at organizing and executing meetings and events, and are talented at identifying goals and reaching them on a time schedule.

To manage conflicts between those of different generations, it is important to approach the situation with understanding of generational differences. With co-worker to co-worker conflicts, try to take each co-worker aside and explain how/why the other worker is different based on her or his experiences and age to promote understanding between them. As a supervisor, try to understand the language of your employee’s generation to work through miscommunication. Finally, understand your customer’s goals and needs and which of your employees is best suited to work with those needs to provide the best experience for everyone involved.

**SESSION LEARNING OBJECTIVES**

- Describe typical characteristics of each generation in today’s workforce.
- Identify three ways to overcome conflict between generations.
Closing the Generational Divide: Working with Different Groups

Great Lake Park Training Institute
Kelly Overly
Park Manager
Ohio State Parks
February 28 2012

Overview

• Discovering and Understanding the Different Generations
• Managing and Supervising the Generations

A Penny for Your Thoughts.

Do you remember?

Do you remember?
Do you remember?

**Traditional Generation** 1922-1945

**Characteristics**
- Hard worker
- Adhere to rules; have a very defined sense of right and wrong
- Loyal, disciplined, logical, detail oriented
- Duty before fun
- Respect authority; Prefer hierarchical organizational structures

**Baby Boomer** 1946-1964

**Characteristics**
- Workaholic; long hours at work, nights and weekends
- Builds career over long term
- Loyalty to employer
- Career and themselves, one in the same
- Commitment to quality
- Finding solutions to problems
- Being in charge, respect authority

**Generation X** 1965-1980

**Characteristics**
- Very productive, set and meet goals, multi-taskers
- Balance work and life; like flexible working hours, job sharing, just as important as salary
- See themselves as free agents
- Comfortable with authority but not impressed by titles
- Technically competent
- Love independence, want to do it their way

**Millennials** 1981-1998

**Characteristics**
- Idealistic
- Hungry for frequent feedback
- Seek freedom as a sign of respect and trust
- Expressing themselves not defining themselves through work
- Always multitasking
- Relaxed work environment
- Teamwork
- Getting everything immediately

How Do You Supervise and Work with 4 Different Generations?
Motivating Generations

**Traditionalists**
- Want to be mentors
- Seek fulfillment through their second career
- Need experience to be respected
- Not tech savvy
- Prefer long lectures and meetings
- Less likely to be involved in emails, webinars

Motivating Generations

**Baby Boomers**
- Need to work
- Search for Success
- Satisfied by full engagement
- High Levels of Responsibility
- Praise
- Want challenges

Motivating Generations

**Generation X**
- Expect recognition for ambition
- Balancing work and life is just as important as income
- Want to do it their way
- Flexible Hours
- Dislikes "meetings about meetings"
- Seeks challenging assignments
- When supervising, hands off attitude work best

Motivating Generations

**Millennials**
- Idealistic
- Hungry for frequent feedback
- See freedom as a sign of respect and trust
- Prefer Cyber training and lectures vs. face to face
- Seek creative challenges, personal growth and meaningful careers
- Use of technology

Motivating Generations

**Millennials Myth vs. Fact**
Myth - They are disloyal.
Fact – They don’t look at jobs as careers. They grew up with reboot and reset when things are not working. If they do like something and feel the relationship there is 100% commitment.

Myth – They are rebels.
Fact – They question everything. This generation was raised to question everything. They will ask why to see how things work.

Motivating Generations

**Millennials Myth vs. Fact**
Myth - They are lazy.
Fact – They work differently. They are going to use technology to find the easiest and fastest way to do the job.

Myth – They are slackers.
Fact – They are motivated by different things. They are not going to be motivated by money and promotions. They are motivated by praise, trust and appreciation.
Motivating Generations

**Millennials Myth vs. Fact**

**Myth** - They have no communication and interpersonal skills.

**Fact** – They communicate differently.

Thanks to Facebook, texting and other social media, they speak in abbreviated formats. They can still communicate, just differently.

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**Tom’s Shoes**

Using Generations to Your Advantage

- You have a disgruntled customer who needs to talk out their frustrations.
- You need new ideas for programming.
- Need to draw in new customers for revenue/attendance.
- Need to form teams to create a new marketing format.

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Using Generations to Your Advantage

- Need to create a new employee training module.
- Need to cut costs and save money.
- Need to do more with less.

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Managing Conflicts Between the Generations

- Co-worker – Co-worker
- Supervisor – Employee
- Employee – Customer
So what’s next?

- Learn about your management style
- Learn your employees
- Learn about your customers
- Re-create yourself and your department
- Guess what? In 5-8 years a whole new generation is coming
  Generation R

References


SESSION DESCRIPTION

Smartphones are becoming attached at the hip of more and more people every day. After getting one, many soon realize there are an overwhelming amount of apps out there. So how do you know which ones are life savers and which ones are the most outstanding time wasters? With Facebook constantly at your fingertips and spasmodic new email notifications or Twitter updates sounding off, how will you ever find time to do anything but manage your phone? We'll explore some of the coolest (and most useful) apps out there and discuss smart ways to use smartphones.
Session began with Michael Baker explaining what smartphones are, that they enable the user to access information unlike previous phones and that smartphones have been around for around ten years with the first iPhone debuting in 2007.

Michael Baker explained that smartphones are typically a touch screen format equipped with a camera and allows the user to engage in mobile computing. Session then went into explaining the big two phones, the Apple iPhone and the Google Android smartphones. The Apple iPhone has more reliability and more apps to choose from, but with less user control while the Android has more control and more telephones to choose from. Session then went into detail showing the technical aspects of the two phones the highlights were the number of applications, with Apple having over half a million while Google had three hundred and eighty thousand apps. Next was shown how to get said applications with Apple only being able to get apps through iTunes and the Android having more possibilities to get apps from anywhere from the Google market place, Amazon, and Androilib.com.

The session then turned its attention to the applications themselves by demonstrating their usefulness and capabilities of a few selected apps. The first app, named Evernote is an app that allows its user to take notes, and then said notes would be organized into the users other devices such as a laptop or tablet. Keep Track Pro, much like Evernote keeps track of graphing and charting which could be useful for charting the planting of trees. Alarm Clock Extreme is an app that allows its user to be woken up by their own choice of music or tone. Drop Box is an application that allows for multiple users to “drop” information, or attachments into one location so multiple users have access to them. The next item session focused on was apps that are fun, or social. The big three are Facebook, Twitter, and YouTube. The lesser known which was pointed out was ForeSquare which lets users be followed or checks into places. Then there were apps like Angry Birds, Tiger Woods Golf, and Skype.

Quick Response Codes, or QR codes were presented next, which are smartphone scan able that once scanned, will take the user to a website for further information about whatever the QR code was adhered to. Mr. Baker gave an example of putting them on a trail head, then having the user scan the code, then it will take the user to a site with a detailed map. QR codes are easy to generate through various websites. Near Field Communications, or NFC’s were brought up next, which are chips in phones that detect nearby radio communication which are used in hotel checkouts, libraries, and even Google Wallet which allows the user to pay through their smartphone.

SESSION LEARNING OBJECTIVES

- Describe some of the best apps for productivity, data collection, and workplace tools.
- Discuss how to use smartphones in a way that balances work and fun and life.
- Identify different ways to find and install apps.
What does it take to lure and keep the best volunteers in your town? Every park and agency manages their volunteers differently, but many of the most successful volunteer programs have expectations and practices in common. Discover what makes a successful volunteer program and take away great ideas to implement in your park or organization.
Ohio State Parks currently manages over 8,000 volunteers and 54 friends groups who served a total of 380,000 hours just last year. To manage such a successful volunteer program, it is suggested that the volunteers be guided with structure and organization, establish clear goals and objectives, receive recognition for their work, and be directed and supported from the park staff.

When finding volunteers for your park, there are specific traits you should be looking for. Some of these traits or qualities include dedication, enthusiasm, and an understanding of the division’s mission or vision. The best volunteers tend to be from volunteer groups like the Boy Scouts, 4-H clubs, colleges, or Park Friends Groups. In comparison to an individual, a volunteer group is usually more coordinated and goal oriented.

The best way to manage your volunteers with structure and organization is to create a set of documents specifically for the service program. These documents could include the advertising materials, a staff manual, liability forms, donation reports, and so on. A contract or volunteer agreement form is also recommended to ensure the volunteer understands the park’s practices. The next organizational step involves giving the volunteers an identity. By providing the volunteers a t-shirt, ball cap, or a name tag, this identity and sense of belonging can be recognized amongst the volunteers as well as the park visitors.

In order to establish clear goals and objectives with the volunteers, it is important they first understand the goals and objectives of the park district. Afterwards, by allowing the volunteers to vote on projects and share their ideas, you can ensure a better commitment to the volunteer projects. Popular projects include the building of shelter houses, playgrounds, dog parks, disc golf courses, bridges, the planting of trees, trail work, and event programming. Upon completion of a project, it is important the volunteers receive recognition and appreciation for their work. This could include certificates of appreciation for the volunteers and a plaque of recognition at the project site.

Finally, a successful volunteer program requires direction and support from the park staff. It is important to establish a line of separation from the volunteers and staff while still offering guidance and respect. Park managers must be able to identify a hidden agenda or conflicting interests with the volunteers and be able to guide them towards the park mission. By following implementing these guidelines, your park or organization will be able to establish a successful volunteer program.

SESSION LEARNING OBJECTIVES

- Describe three practices that an agency can implement to maintain a successful volunteer corps.
- Explain three traits to look for in a volunteer.
- List at least two places to advertise for volunteers.
OHIO STATE PARKS

VALUING VOLUNTEERISM

By:
James L. O’Brien
Asst. Park Manager/ NW District
What does it take to lure & keep the best volunteers in your park? Every park & agency manages their volunteers differently, but many of the most successful volunteer programs have expectations & practices in common. Discover what makes a successful volunteer program & take away ideas to implement in your park or organization.
Session Learning Objectives

• Describe three practices that an agency can implement to maintain a successful volunteer corps.

• List at least two places to advertise for volunteers.

• Explain three traits to look for in a volunteer.
Ohio State Parks/ Volunteer Program

• Ohio’s official volunteer program began in 1982 with a handful of enthusiastic park visitors

• The first friends group was established by Jerry VanZile in 1998 at Harrison Lake State Park, under Chief Dan West

• Currently, OSP has over 54 official 501c3 Friends Groups

• OSP has 8,000 volunteers that volunteered over 390,000 hours last year

• Annually friends groups have contributed over $600,000 to park improvements
Successful Volunteer Program Practices

- Structure, Organization and Guidance - someone to take the lead
- Clear Goals/Objectives
- Volunteers need to be shown that they are appreciated by showing recognition.
- Clear Direction and support from Park Staff
Different Volunteer Opportunities

- Parks Friends Groups (501c3)
- Individual Volunteers (5-15 Juniors, 16-18 Green Teens, and Adults)
- Volunteer Naturalists
- Camper Hosts
- Volunteer Groups (Scouts, 4-H, Colleges)
Volunteer Forms to help get Organized

- Volunteer Program Staff Manual
- Handout on “How to Get Involved”
- Volunteer Agreement Form (2 years)
- Group Sign Up Form
- Volunteer Report Form
- Annual Donations Report
- Motor Vehicle Accident Liability Form
- Volunteer Supply Order Form
- Volunteer Park-of-the-Year Nomination Form
- Certificate of Appreciation
Giving Your Friends an Identity

- Volunteer Ball Cap/Visor
- Volunteer in the Park T-Shirt
- Name Tags
- Camper Host Signage
- Service Pins (5 year, 10 year, 15 year)
Three Traits to look for in a Volunteer

- Enthusiasm
- Dedication
- Commitment
- Helpful
- No hidden agenda
- Understands the Division’s Mission/Vision
- A variety of different skills/talents
Places to Advertise for Volunteers

- Local News Paper
- Park Hand Outs/Fliers
- Completed Projects within the park
- Local Community
- Chamber of Commerce
- Other Volunteer Groups looking to partner
- Specific Venues (Cycling Shops, Colleges, Campground, Local Horse Shows, as many places as possible)
Popular Friends Projects

- Shelter Houses
- Playgrounds
- Dog Parks
- Disc Golf
- Nature Centers
- Bridges
- Replacement Trees
- Trail Work
- Programming

Friends of Findlay S.P.
Things to Watch Out For

• Friends Groups/Hosts taking too much ownership of the park
• Groups Vision/Mission conflicting with the agencies
• Volunteers taking short cuts on projects (avoiding state and local rules/regulations)
• Maintaining a defined line between park staff and volunteers
• Labor Relations Issues (eroding bargaining unit)
Friends of Harrison Lake S.P.

- Shelter House- $21,000
- Playground Equipment- $16,000
- Shelter Roofing- $3,500
- Basketball Court- $2,600
- Benches & Swings- $1,800
- Trees- $1,800
- Average 2,000 volunteer hours
- Six Special Events Per Year- Fireworks, Halloween, Ice Cream Social, Pancake Breakfast, Car/Craft Show
Friends of Alum Creek Dog Park

• Partnership between the Friends of Alum Creek and Park Staff
• Project took place between 2006-2007
• $25,000 Project Total
• 300,000 Users the first year
• 30 Core Volunteers with an additional 15 doing fund raising
• Volunteers conduct general maintenance/upkeep
Thank You!

Any Questions?

James L. O’Brien/ Asst. Park Mgr.
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SESSION DESCRIPTION

Long term forest management can’t be successful without factoring in the effects of our flourishing quadruped, the white-tailed deer. Explore behaviors, impacts, and management tools through a 27-year perspective on deer management with the Cleveland Metroparks.

Rick Tyler, a former Chief of Natural Resources for Cleveland Metroparks, focused his session on the insight gained from over 25 years of experience in deer management in an urban setting. Discussed were the program’s history, observed behaviors and impacts, as well as the management tools utilized in the deer management efforts. A thorough history of Cleveland Metroparks
introduced the talk, so the audience could understand how the organization developed, and how the land can dramatically transform over time.

Once the park’s inherited agricultural land developed into forests, the parks experienced an explosion in the deer population. This increased population in deer led to interference with the human population, including increased deer-vehicle accidents and damage to landscapes. Damages to the park’s forests and natural communities became noticeable, but before any action could be taken Cleveland Metroparks had to figure out a way to document the deer populations and damage to forest communities.

Management methods that Rick discussed included visual documentation of impacts, such as browse lines that display vegetative destruction. The parks are annually hunted by law enforcement officers that donate the meat to local food banks. In cooperation with a local botanist, the organization set up and 1300 permanent vegetation plots, using GIS maps to track data over time that can help managers identify low browse and high browse areas. Methods of deer population density estimations used included pellet counts (the systematic counting of deer feces within a given area) and infrared tracking using aircraft at night.

SESSION LEARNING OBJECTIVES

- Describe two effects that a heavy deer population can have on forest lands.
- Explain how deer density is determined across a major metropolitan park district.
- Describe the differences between local vs. regional deer management.
Reduce Liability and Improve the Bottom Line

Tuesday 28 February 2012 / 10AM-1130AM

SPEAKER(S)

Eric Kleinert
Director
Human Resources Division, IN DNR
402 W. Washington Street
Indianapolis, IN 46204
Email: ekleinert@spd.in.gov

SESSION DESCRIPTION

Handling workman’s compensation can be both tedious and daunting, especially with all the other things already on your plate. Explore the difficulties and learn to tease out the tangles in this management session. We will be looking at safety, reporting, tracking claims, release statements, and reasonable accommodation.

As an employer, one takes on several different liabilities with employees being on the clock. To protect oneself, however, it is important to know the facts on what is and is not appropriate in the job world. The number one aspect stressed in this session is to
follow the injury/illness report. It can be used as a point of reference, determined at the point of injury, for future employee injury claims. There are red flags to watch out for, and limitations that employers should be aware of. More specifically, the laws vary per state. Knowing the laws, following them, and being familiar with legislation can save a company a lot of future time and money.

Average cost of worker’s compensation ranges from 750 to 5300$. The focus of the employer should be emphasizing the injured employee’s return to work. Minimize the cost, while maintaining the best outcome for the employee. In order to do this effectively, an employer may consider using a case manager. It can end a claim based on noncompliance or other legality issues. Saving your tail is important, but ensuring that it’s done in a timely, appropriate manner will save multiple, future employee complaint issues. Sometimes a trade off, such as reduced efficiency, is necessary in getting the employee back to a job...period. Adding details (ensuring legality) to an employee manual can also provide the employer with greater flexibility in the future.

Typical worker’s compensation treatment can be anything from emergency room visits, to follow up visits, physical therapy, or even specialists or surgical procedures. However, be aware that emergency rooms can be extremely inefficient, ineffective, and nonetheless, expensive. Finding an alternate facility can alleviate time and money, while creating value and efficiency, as one keeps their employee happy and healthy in the worker’s compensation process. It could also ensure employees get back to work on a part time basis. Protecting oneself, as an employer, can include asking the injured to return with medical paperwork, but one must maintain employee contact as they are out of the office. Establish progress reports and touch base with the injured, off-of-work, employees. Specific paperwork can also help save an employer in a courtroom.

Modified duty policy, or temporary, modified duty reports, can determine an essential function of each job while the injured prioritizes getting back to work. Similarly, "Light Duty" has been known to be extremely cost effective and health beneficial to both parties. Activity isn't necessarily always a bad thing, but modifications may need to be made. American Disability Act protects long-term injuries as well. Acquiring permanent, life-long disabilities from work can be a tricky situation. FML is a law put in place to protect the employee, over lengthy periods of time, from being fired and/or for receiving money for worker's comp. Regard the workers compensation handbook for your state’s specific details.

In addition, employers can find the great value in a worker’s compensation clinic. These clinics understand scheduling issues, priorities of the companies, legality issues, awareness of substance abuse, and even partnership with other facilities. Number one thing to look for in a clinic is accessibility. Looking at specialization and location are very important aspects as well.

Knowing the facts can save an employer time, money, and frustrations. Knowing the laws can help protect anyone in the courtroom involved in a possible lawsuit. Make a difference.

SESSION LEARNING OBJECTIVES

- Write an accident/injury report.
- Define/Refine protocols for handling workman’s compensation at your agency.
SESSION DESCRIPTION

Have you developed or used a gadget lately that has revolutionized your park’s operations? From the smallest to the largest, every gadget you use could come in handy for someone else! Don’t miss this show-and-tell for big kids that has been a part of the Great Lakes Park Training Institute from its earliest years!

The gadgets session focused on gadgets easily made around the house and inexpensive gadgets bought in stores.

First in the household gadget section, various speakers discussed homemade bike racks, made from steel rods and PVC piping. Next, they discussed a stand up mechanism used for hoisting cars in the air. The mechanism was made of steal and fit onto standard car hoist set-ups. The point of the mechanism was to extend the height of the controls higher in the air, making the operator more comfortable when using the hoist. Lastly, there was a great homemade shield made from tupperwear that blocks debris from falling on people when they are drilling holes above them. Simply take the cap of a tupperwear dish off, drill into the center of the tupperwear through the bottom of it, and drill straight up. The tupperwear will catch any debris and keep it out of the operators eyes.

In the store section for gadgets the main theme was magnets that can be placed anywhere and be used for various things. First up first was the Light Mine. It is a ball in the shape of a mine with lights and magnets on it. It can be stuck in any tight space, at any angle, and can provide lights in tight spaces such as the engine bay of a car. Next, there was a Magnetic Warning Flashlight,
made by TechBrand. The light was magnetic and used a red LED light that flashed to show a person in distress or broke down in a vehicle.

Also in the store bought section of gadgets were a few products that essentially could extend, with a light and magnet, to pick up dropped nuts and bolts in tight spaces. First was the Extendable Flex Magnet Flashlight, made by Sensible Products. Next, was the Probe, made by MDS Incorporated.

Zoro Tools had their adjustable LED headlight featured in the gadgets session. Their headlight can be adjusted to fit any size head and features an adjustable bright LED light.

Last up at the session was the Solar Night Guard. It is a simple red LED light that flashes throughout the night to warn off predators to crops or farm animals. The best part about the light was that it is fully powered from the sun.
GADGET SESSION 2012

presented by
Richard Sobecki
Retired District Park Superintendent
Huron Clinton Metroparks

GREAT LAKES PARK
TRAINING INSTITUTE

GADGETS

- Innovative problem solving ideas
- Inexpensive
- Relatively easy to make
- Made from items around the shop
- Can be ideas
- Can be purchased items that make the job easier to do.

Keep losing the plastic tubing? This extra wire should help.

Losing Tools?

From the pages of Successful Farming

Red and White Really Pop
At one time, I'd set my fencing tools down and then have a hard time finding them again in the leaves or other ground cover. They're easy to see now, though. I wrapped the handles with red and white electrical tape. The tape also gives a renewed grip.

Adapting a tie down to a truck bed

- Way More Adaptable
The factory tie-down points on my pickup are for the hook-type, and only accommodate the 1-inch size, which is often insufficient. By simply forming a loop with chain and securing it with a 3/8-inch bolt, I can now use a variety of sizes. These sizes work better for most of my loads, and they're more likely to be on hand when I need them.
Bad Door Seal

- When a shop floor is uneven, the seal on an overhead door may not work. Apply a bead of expanding foam insulation to the seal then cover it with wax paper. Close the door, and the foam will expand to fill every gap. When it’s dry, remove the wax paper and trim the ragged edges.

Lowboy Trailers can present a problem getting up on the front of them after your equipment is loaded.

Dave Miller fastened a set of folding steps from a travel camper to the frame and the deck under the gooseneck trailer he uses on his farm near Clyde, Ohio. No more crawling up onto the deck on hands and knees. When finished he folds the step up and out of the way.
Removing Labels
submitted by Eric Richards

Use CRC oil to remove old labels. Let it soak in for 15 to 30 minutes and most labels will then easy peel off.

Bungee Cords
from Detroit News Outdoor writer Eric Sharp

At any time, a half-dozen moribund bungee cords languish in the back of my truck, too stretched out to be of much use but with just enough life left that my Scottish soul won’t let me throw them away.

But they’ve gone to the bungee morgue now that I’ve tried Just Ducky bungees, pure polyurethane models that are far stronger than the dozen-elastics-inside-a-shroud type and should last at least until you lose them.

The Just Ducky bungees are available with a variety of hook or loop ends that make them amazingly versatile, and their improved hook design makes them less likely to slip and come flying back at your face.

That alone should make them worth their increased price of about $4 to $8 for campers, boaters and other outdoors people. They’re available at some bigger outdoors retailers, including Cabela’s and Bass Pro, and many online sites.
Holding onto screw, nuts, bolts etc: While you work can be easy with magnets
Another way to use magnets

Organizing nut/screws etc: when removing

Glue magnets to cardboard

Place removed nut etc: on magnet

Label the pieces
Add more magnets as needed

Remove magnets when done and store for future use

Skate Boarders

Pool noodles and bungee cord used to hold down car cover
HELPFUL TIPS

Make sure you get full pictures before you buy online.

GREAT LAKES PARK TRAINING INSTITUTE 2013 GADGETS SESSION PRESENTERS

- If you would like to present a gadget or gadgets or know of someone who would, please notify me through one of the following ways:
  
  Richard Sobeski
  
  e-m: rs601@yahoo.com
PROPANE CONVERSION KITS

- Convert your gas powered equipment
- New Green Conversion Kits let you convert a wide variety of 4-cyl. gas engines to propane while retaining the option of running on gas.
- Propane burns about 80 percent cleaner than gas and on the average, 40 percent less expensive.
- Green Conversion kits are priced at $252 each. Run propane estimates payback on the units at 8 weeks or less depending on use.

CONTACT—runpropane.com

REFILLABLE PROPANE CYLINDERS

- Purchase Tanks as small as 1lb

CONTACT—www.mantank.com

OVERSEED FIELDS WITH MODIFIED BRUSH HOG MOWER

1. Bolt spring loaded tines to mower flail arms to get scarifying action
2. Install container over hole behind gear box to dispense seed.
3. See Farm Show Magazine Vol. 35 No 6
4. 2011 Page 10
OVER SEEDING

LUGGER TO TURF TIRE CONVERSION

GET OLD, BALD TRUCK TIRES THAT ARE ½ SIZE BIGGER THAN THE LUGGER TIRES.
CUT 2 TO 2 ½ IN. OFF THE INSIDE OF EACH TIRE SIDEWALL AND SLIDE THEM ONTO THE TRACTOR TIRES AND THEN REINFLATE.

"WOBBLE AUGER" “DIRTLESS DIGGING”

AUGER PRODUCES A HOLE THAT HAS NO LOOSE DIRT IN THE BOTTOM OR TOP OF HOLE.
PUSHES RIGHT THROUGH DIRT, SAND, CLAY, ASPHALT AND EVEN ROCKS.
CONTACT www.danuser.com

NITE GUARD SOLAR

A SOLAR POWERED FLASH OF RED LIGHT THAT TURNS ON AUTOMATICALLY AT DUSK AND OFF A FULL DAYLIGHT.
ANIMAL BEHAVIOR STUDIES HAVE SHOWN THAT NIGHT PREDATORS ALL SHARE A DEEP FEAR OF FLASHING LIGHTS.
REPELS-- RACCOON,OPOSSUM,FOX,SKUNKS,BEARS,COUGARS,COYOTE,OWLS, AND HAWKS. $19.95each.
CONTACT-- www.niteguard.com

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Gadgets 2012

Light Mine

Striker Hand Tools

Light Mine

Light Mine

Light Mine

Light Mine

Magnetic Work Light

Harbor Freight
Magnetic Work Light

Magnetic Work Light

Magnetic Warning Flashlight

Tech Brand From Home Depot

Magnetic Warning Light

Magnetic Warning Flashlight

Extendable Flex Magnetic Flashlight

Made By: Sensible Products
Extendable Flex Magnetic Flashlight

8 Function Warning Light

Probe Light
Adjustable LED Headlight

From Zoro Tools

Anti Slip Sand Shaker

Anti Slip Sand Shaker

Anti Slip Sand Shaker

Drill Debris Catcher
Drill Debris Catcher

Drill Debris Catcher
END VIEW/ LEGS AT 30 DEGREES
¼” DRILL BIT FOR HOLES

TRIATHOLON RACK
10’ X 1 ½” CONDUIT FOR MAIN POST
10” X 1/2” CONDUIT FOR LEGS CUT TO 5’

STORAGE

½” CONDUIT W/CRIMP 48’’ UP

7-8 BIKES PER RACK
SUPPLIES AND COSTS

• 1 -10’ X 1 ½” STANDARD CONDUIT- $10.50 ea.
• 2 - 10’ x ½” STANDARD CONDUIT- 1.50 ea.

• TOTAL PER RACK= $12

• ¾” DRILL BIT/DRILL PRESS
• BALLPEIN HAMMER
• *FREE LABOR INCLUDED*
5 Things You Need to Know Now About the ADA

Tuesday 28 February 2012 / 1PM-2PM

SPEAKER(S)

Jennifer Skulski
Director of Marketing & Special Projects
National Center on Accessibility at IU
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Bloomington, IN 47404
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Email: jskulski@indiana.edu

SESSION DESCRIPTION

Many regulatory changes have gone into effect over the last two years regarding the Americans with Disabilities Act. The new regs cover everything from Segways to swimming pool lifts. Compliance with the accessibility standards covering recreation facilities is just 16 days away. Is your agency ready? This session will highlight the five things you need to know to get your accessibility management program on track and prepared to better service the guests with disabilities.

The major revisions to the regulations of the ADA, Americans with Disabilities Act include policies regarding wheelchair and other power-driven mobility devices, communications and auxiliary aids, ticketing policies, and service animals.

In regards to wheelchairs and power-driven mobility devices, the ADA states that both wheelchairs and mobility aids (canes, crutches, walkers, etc) must be allowed in all areas open to pedestrian use unless the public entity can demonstrate that the power-driven mobility device cannot operate in accordance with valid safety requirements. This assessment must be made regarding the class of the device, not the individual’s use of the device. This safety assessment could include the type, size, weight, dimensions and speed of the device; volume of pedestrian traffic; facility’s design and operation characteristics such as whether the service, program or activity is conducted indoors, the square footage, density, placement of stationary devices, and availability of storage for the device; legitimate safety; the substantial risk of harm to environment, cultural or natural resources. Furthermore, inquiries into the disability are permissible only when requesting to provide a credible assurance that the mobility device is required because of the person’s disability by valid, state-issued disability parking placard or card or a verbal representation which is not contradicted by observable fact.

Further revisions limit service animals to dogs and miniature horses trained to perform tasks for people with disabilities. Service dogs must be individually trained to do work or perform tasks for the benefit of an individual with a disability including a physical, sensory, psychiatric, intellectual, or other mental disability. The service animal must be under the handler’s control, and similar to the mobility device regulations, inquiries about the disability are only permissible when requesting to provide assurance that the service animal is performing a task to benefit a disability, but inquiries about the disability itself are not permissible. Exceptions to the service animal regulation could include the animal being out of the handler’s control or the animal not being housebroken.
The 2010 ADA Standards for Accessible Design replacing the 1991 and 1994 ADAAG has definitive accessibility standards for the first time in history. March 15, 2012 is the compliance date for these new standards. It addresses facility issues regarding swimming pools, playgrounds, boating facilities, fishing facilities, golf, sports courts, and sports fields. Not included are outdoor developed areas such as trails, picnic areas, campgrounds, and beaches.

To comply with these new standards, districts must plan all new construction according to the ADA standards and also do the following:

1. Designate individuals to oversee the agency compliance.
2. Develop a grievance procedure.
3. Provide a notice to the public.
5. Create a transition plan which identifies physical and communication barriers to programs, goods or services, identification of solution for removal, and timeline for removal.

SESSION LEARNING OBJECTIVES

- Identify the significant changes to the ADA related to parks and recreation.
- Define “ADA compliant” as related to the new regulations and products.
- Layout a plan to evaluate your accessibility management program.
5 things you need to know NOW about the ADA
5 Things You Need to Know

1. What are the major revisions to the ADA?
2. What do the 2010 Standards cover?
3. What’s the ballyhoo over March 15, 2012?
4. What are the major facility issues for parks and recreation?
5. Now what do I do?
1. Major Revisions to Regulations

- Wheelchair and other power-driven mobility devices
- Communication and auxiliary aids
- Ticketing policies
- Service animals
Defines “wheelchair”

A manually-operated or power-driven device designed primarily for use by an individual with a mobility disability for the main purpose of indoor, or of both indoor and outdoor locomotion.

Defines “other power-driven mobility device”

Any mobility device powered by batteries, fuel, or other engines—whether or not designed primarily for use by individuals with mobility disabilities—that is used by individuals with mobility disabilities for the purpose of locomotion, including golf cars, electronic personal assistance mobility devices (EPAMDs), such as the Segway® PT, or any mobility device designed to operate in areas without defined pedestrian routes, but that is not a wheelchair within the meaning of this section.
Use of Wheelchairs

- Must be allowed in all areas open to pedestrian use.

- Use of mobility aids (i.e. canes, crutches, walkers, etc) must also be allowed in areas open to pedestrian use.
Use of OPDMDs

- Reasonable modifications to policies, practices and procedures must be made to allow use of OPDMDs, unless...

- the public entity can demonstrate that the class of other power-driven mobility devices cannot be operated in accordance with legitimate safety requirements that the public entity has adopted
Reasonable Modifications & OPDMDs

- Burden is on the entity to show it is not reasonable to allow OPDMD.

- Assessment is made regarding the class of device, not the individual’s use of the device.
OPDMD Assessment Factors

- Type, size, weight, dimensions, and speed;
- Volume of pedestrian traffic;
- Facility's design and operational characteristics
  - (e.g., whether its service, program, or activity is conducted indoors, square footage, density, placement of stationary devices, and availability of storage for device);
- Legitimate safety;
- Substantial risk of harm to environment, cultural or natural resources.
Inquiries

**NOT Permissible**
- Inquiry into disability
  - “What’s your disability?

**Permissible**
- Request to provide a credible assurance that the mobility device is required because of the person's disability
  - Valid, State-issued, disability parking placard or card
  - Verbal representation, not contradicted by observable fact, that the other power-driven mobility device is being used for a mobility disability
Service Animals

- Limits definition to dogs.
- Comfort or emotional support animals are NOT covered.
- Miniature horses trained to perform tasks for people with disabilities.
Any dog that is individually trained to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual, or other mental disability.
Service Animals

- The work or task performed must be directly related to the individual’s disability.
- Must be under handler’s control.
- Inquiries about disability not permissible (similar to OPDMD).
Exceptions

- The animal is out of control and the animal's handler does not take effective action to control it; or

- The animal is not housebroken.
2. 2010 Standards

- 2010 ADA Standards for Accessible Design (2010 Standards)
  - Toss out copies of 1991 & 1994 ADAAG

- For the very first time in the history of the ADA recreation facilities have definitive accessibility standards.
3. What is March 15, 2012?

- Compliance date
- Starting line vs deadline
4. Facility Issues for Parks & Rec

- Swimming pools
- Playgrounds
- Boating facilities
- Fishing facilities
- Golf
- Sports courts and fields
What’s NOT included in the new standards?

- Outdoor developed areas
  - Trails
  - Picnic areas
  - Campgrounds
  - Beaches

- Rulemaking under Architectural Barriers Act (ABA)
  Final rule expected in 2012
5. Now what?

- Assign
- Assess
- Plan
- Transition Plan
- and plan some more....
1. Designate individuals to oversee compliance
2. Develop grievance procedure
3. Notice to public
4. Self evaluation (Completed by Jan 26, 1993)
5. Transition plan (Completed by July 26, 1992)
   - Identify architectural barriers and timeline for removal
   - Structural modifications completed by Jan 26, 1995
Transition Plan Components

- Identification of physical & communication barriers to programs, goods or services
- Identification of solution for barrier removal
- Prioritization and targeted timelines for barrier removal
<table>
<thead>
<tr>
<th>Location</th>
<th>Feature/Photo Reference</th>
<th>Deficiency/ Standard</th>
<th>Reference Document</th>
<th>Recommendations</th>
<th>Universal Design Recommendations</th>
<th>Employee Area</th>
<th>Safety Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking</td>
<td>Parking</td>
<td>There are no accessible parking spaces near the park entrance from the parking lot.</td>
<td>ADAAG 4.1.2(b)(5), 4.6.2; ADA-ABA 208.3.1</td>
<td>Add accessible parking space to serve shortest accessible route from parking lot to the accessible entrance to the playground.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking</td>
<td>Actaklic 001, 032</td>
<td>ADAAG 4.1.2(b)(5), 4.6.2; ADA-ABA 208.3.1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Routes from parking lot heading south toward ball diamond; path throughout park</td>
<td>Accessible Route - Exterior</td>
<td>East side of path has running slope up to 8.8%; west path has running slope up to 7.5% and cross slope up to 9.5%; path throughout has areas exceeding 6% cross slope and 5% running slope. 21'-12' drop offs into or drainage ditch have no edge protection.</td>
<td>ADAAG 4.3, 4.8.7ADA-ABA 402, 405</td>
<td>Reroute path to maintain slope no greater than 5% for accessible route or follow standards for ramp with landings, handrails and slope not to exceed 6%. Provide edge protection at least 2' in height along the drainage ditch.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk/Bike Path</td>
<td>Actaklic 003, 005, 010, 015, 023, 024, 027, 030</td>
<td>ADAAG 4.3, 4.8.7ADA-ABA 402, 405</td>
<td></td>
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</tr>
<tr>
<td>Path from parking lot toward ball diamond to the west of the wooden playground structure</td>
<td>Accessible Route - Exterior</td>
<td>There is a 2' change in level from the parking lot to the pathway.</td>
<td>ADAAG 4.5.2; ADA-ABA 403.4, 303</td>
<td>Maintain level path by adding asphalt patch to correct change in level resulting in a running slope less than 5%.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk/Bike Path</td>
<td>Actaklic 004</td>
<td>ADAAG 4.5.2; ADA-ABA 403.4, 303</td>
<td></td>
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The National Center on Accessibility at Indiana University has led the research investigation on the accessibility of playground surfaces. This session will present an overview of the first year findings from the 5-year longitudinal study underway. How accessible were the surfaces after installation? What types of deficiencies arose? How will surface maintenance be affected? What implications arise for the industry and playground owner/operators?
Session focused on playground surfaces and the findings of the first year study done by the National Center on Accessibility at IU. There are over 100 varieties of commercial playground surface material and around 5,300 to 18,600 new and renovated playgrounds each year with little to no surface performance data enabling playground owners to make informed decisions. There was a lack of data, and the purpose of the study was to gather such data and evaluate playground surfaces and how they hold up. The playgrounds researched had to be studied within the first 12 months of installation, on public land, drivable from Bloomington, and approval from land or park owner. There were five surface materials studied; engineered wood fiber product, shredded rubber, unitary rubber mat, unitary rubber (poured in place), and a combination of hybrid surface systems under development. The study was then conducted in such matter; installation form, on-site inspection, rotational penetrometer measurements for firmness and stability, and the optional TRIAX 2000 measurements for impact attenuations. Within the study there were nine critical areas; entry to playground, accessible route, egress point of slides, swings, entry points, climbers, ground level play, sliding poles, other areas.

The key findings were there is no perfect surface and there is no correlation between price and performance and that there was something wrong with impact continuation on all surfaces tested. Also, the loose filled engineered wood fiber had greatest number of deficiencies affecting accessible route, loose fill engineered wood fiber had highest values for firmness and stabilities. And poured in place, tiles, and engineered wood fiber have correlations between number of deficiencies and sum value for firmness and stability. A surface with fewer accessibility deficiencies and lower measurement for firmness and stability does not necessarily meet the safety standards for impact attenuation. Other findings were that installers and contractors did not know how to properly install surface and that there was/is informational gaps between the manufacturer and the playground owner, in that the information on how to install and maintain simply was not there.

SESSION LEARNING OBJECTIVES

- Describe the method to assess the accessibility of playground surfaces.
- Discuss issues affecting the accessibility of different types of playground surfaces after installation.
Year One Findings

A Longitudinal Study of Playground Surfaces to Evaluate Accessibility

Statement of Problem

- More than 100 varieties of commercial playground surfaces.
- 5,300 to 18,600 new & renovated public playgrounds each year.
- Lack of reliable product performance data prohibits public playground owners from making informed choices.

Purpose of Study

To evaluate a variety of playground surfaces, their ability to meet accessibility requirements, their costs upon initial installation and maintenance over 3-5 years.

Research Questions

**Installation**

1. How well do various playground surfaces meet the accessibility requirements upon installation?
2. What are the costs for the various playground surfaces and are the costs related to performance?
3. What accessibility issues arise out of initial installation?

Research Design

- Within 12 months of installation
- NCA longitudinal study
- Advisory committee
  - RPTS faculty
  - NCA staff
  - U.S. Access Board staff
  - National Playground Safety Institute
  - Beneficial Designs
  - Members of the Access Board Reg Neg Committee or ASTM F08.63 Playground Subcommittee

Playground Selection

- Municipal park settings
- Limited within driving distances of IU-Bloomington;
- Accessibility to children with and without disabilities;
- Surface materials consistent with study;
- Geographic location;
- Seasonal weather conditions; and
- Willingness of owner/operator to participate.
Limitations

- Sample size, recruiting technique and ability to generalize findings to general population;
- Visitor use and impact on surface conditions;
- Weather;
- Risks of liability affecting playground owner’s willingness to participate in the study.

5 Categories of Surfaces

1. Engineered wood fiber product;
2. Shredded rubber / crumb rubber;
3. Unitary rubber mat / tile surfaces;
4. Unitary rubber “poured in place” surfaces;
5. Combination or hybrid surface systems under development.

Initial Surface Requirements

1. ADA-ABA 1008.2 Accessible Routes;
2. ADA-ABA 1008.2.6 Ground Surfaces;

Instrumentation

1. Installation form
2. On-site visual inspection
3. Rotational Penetrometer measurements for firmness & stability
4. TRIAX 2000 measurements for impact attenuation (optional)

9 Critical Areas

1. Entry to playground where playground surface starts
2. Accessible route connecting accessible play elements
3. Egress point of slide(s)
4. Swings
5. Entry point(s) to composite structure(s)/transfer stations
6. Climber(s)
7. Ground level play element(s) such as spring rockers, play tables, interactive panels, etc
8. Sliding poles
9. Other areas (i.e. water play elements, etc)

Accessible Routes & Walking Surfaces

- Slope
  a. 403.3 The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.
- Floor and ground surface (403.2 refers to 302)
  a. 302.1 Floor and ground surfaces shall be stable, firm, and slip resistant.
- Openings
  a. 302.3 Openings in floor or ground surfaces shall not allow passage of a sphere more than 1/2 inch (13 mm) diameter.
- Changes in level (403.4 refers to 303)
  a. 303.2 Changes in level of 1/4 inch (6.4 mm) high maximum shall be permitted to be vertical.
  b. 303.3 Changes in level between 1/4 inch (6.4 mm) high minimum and 1/2 inch (13 mm) high maximum shall be beveled with a slope not steeper than 1:2.
- ASTM F1951-99 Ground surfaces shall be inspected and maintained regularly and frequently to ensure continued compliance with ASTM F 1951.
  a. ASTM F 1292
1st On-site Measure
Surface Deficiency Score (SDS)

- Slope exceeds 1:16 (6.25%)
- Cross slope exceeds 1:48 (2.08%)
- Change in level greater than ½ inch
- Opening greater than ½ diameter

Running slope should be less than 6.25% (1:16)
Cross slope should be less than 2.3% (1:48)
Ground level ramp surface cannot exceed 6.25% (1:16).

Changes in level cannot exceed ½ inch. Changes in level from ¼ to ½ inch must be beveled.

Running slope should be less than 6.25% (1:16). Cross slope should be less than 2.3% (1:48). Changes in level cannot exceed ½ inch. Changes in level from ¼ to ½ inch must be beveled. Openings cannot exceed ½ inch diameter.

Openings no greater than ½ inch sphere.

ASTM F1951-99

- A lab test in a controlled environment
- Wheelchair work method
- 7% ramp used as baseline
- Measures work per sq ft for straight propulsion and turning
- Manual rehabilitation wheelchair with rider 165 + 11 lbs
- Records data applied to pushrim over 6 ½ ft distance
The surface "passes in the lab" if the work to propel across the surface and to turn is less than the work required to propel across a 7% ramp.

\[
\text{PASS} = \text{WORK on surface sample} < \text{WORK on 7\% ramp}
\]

2nd On-Site Measure

**Firmness & Stability**

- Rotational Penetrometer
- Developed by Beneficial Designs as a portable field test to replace ASTM 1951.
- Wheelchair caster set in spring loaded caliper.
- Measures the vertical displacement of the penetrator.
# Sample Values for Various Surface Types*

<table>
<thead>
<tr>
<th>Surface Type</th>
<th>Firmness</th>
<th>Stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>.15 - .17</td>
<td>.17 - .19</td>
</tr>
<tr>
<td>Turfgrass</td>
<td>.55 - .65</td>
<td>.69 - .79</td>
</tr>
<tr>
<td>Carpet (½ inch cut pile w/ ½ inch pad)</td>
<td>.32 - .43</td>
<td>.41 - .55</td>
</tr>
<tr>
<td>Sand</td>
<td>1.13</td>
<td>&lt; 1.13</td>
</tr>
</tbody>
</table>

*The values are from sample surfaces that are not part of a playground installation.

---

## 3rd On-Site Measure

### Impact Attenuation (Optional)

---

## Data Report

---

## Findings
## Playground Sites

<table>
<thead>
<tr>
<th>Surface Area</th>
<th>Cost / sq ft</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIP</td>
<td>$6.59 to $19.80</td>
<td>$30,019 to $136,065</td>
</tr>
<tr>
<td>Tile</td>
<td>$8.96 to $15.29</td>
<td>$15,950 to $27,971</td>
</tr>
<tr>
<td>EWF</td>
<td>$1.08 to $2.30</td>
<td>$4,200 to $12,500</td>
</tr>
<tr>
<td>Hybrid</td>
<td>$7.50 to $12.65</td>
<td>$74,000 to $111,626</td>
</tr>
</tbody>
</table>

N = 25 sites

### LSD
- PIP: $6.59 - 19.80
- Tile: Mean = 15.29
- Firmness: 36.50
- Stability: 40.05
- Sum: 77.35

### Changes
- Failure for impact attenuation

### LSD
- Tile: $8.96 - 15.29
- Firmness: 36
- Stability: 40.55
- Sum: 76.62

### Changes
- Separation at seams
- Punctures
Table 4
Surface Deficiency Score (SDS) within One Year of Installation

<table>
<thead>
<tr>
<th>Surface by Type</th>
<th>N</th>
<th>Mean</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIP</td>
<td>50</td>
<td>.00</td>
<td>0</td>
</tr>
<tr>
<td>TIL</td>
<td>39</td>
<td>.36</td>
<td>0</td>
</tr>
<tr>
<td>EWF</td>
<td>70</td>
<td>2.16</td>
<td>3</td>
</tr>
<tr>
<td>HYB</td>
<td>26</td>
<td>.04</td>
<td>0</td>
</tr>
</tbody>
</table>

Surface Deficiency Score (SDS)

- ANOVA, Post hoc test: multiple comparisons of SDS
- Significant difference in the number of identified deficiencies between EWF and the other three surfaces.
Table 2

<table>
<thead>
<tr>
<th>Surface Type</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIP</td>
<td>50</td>
<td>.505808</td>
<td>.060747</td>
<td>.008591</td>
<td>.228</td>
<td>.480</td>
</tr>
<tr>
<td>Tiles</td>
<td>39</td>
<td>.397360</td>
<td>.038379</td>
<td>.005972</td>
<td>.216</td>
<td>.342</td>
</tr>
<tr>
<td>EWF</td>
<td>70</td>
<td>.4206</td>
<td>.051741</td>
<td>.007659</td>
<td>.238</td>
<td>.568</td>
</tr>
<tr>
<td>HYB</td>
<td>26</td>
<td>.47969</td>
<td>.068999</td>
<td>.011943</td>
<td>.207</td>
<td>.568</td>
</tr>
<tr>
<td>Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIP</td>
<td>50</td>
<td>.505808</td>
<td>.060747</td>
<td>.008591</td>
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<td>.342</td>
</tr>
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<td>EWF</td>
<td>70</td>
<td>.4206</td>
<td>.051741</td>
<td>.007659</td>
<td>.238</td>
<td>.568</td>
</tr>
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<td>26</td>
<td>.47969</td>
<td>.068999</td>
<td>.011943</td>
<td>.207</td>
<td>.568</td>
</tr>
</tbody>
</table>

ANOVA, Post hoc test: multiple comparisons of means for firmness & stability

There is no statistical difference between PIP & EWF.

All other comparisons by surface type show a statistical difference in mean values for firmness and stability.

Future questions:
- Is there a statistical difference between unitary and loose fill surface materials when SD is compared?
- Do surfaces with greater variability require more maintenance over time?

Table 3

<table>
<thead>
<tr>
<th>Surface Type</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIP</td>
<td>50</td>
<td>.77184</td>
<td>.128745</td>
<td>.018207</td>
<td>.492</td>
<td>1.078</td>
</tr>
<tr>
<td>Tiles</td>
<td>39</td>
<td>.59942</td>
<td>.079460</td>
<td>.012724</td>
<td>.462</td>
<td>.908</td>
</tr>
<tr>
<td>EWF</td>
<td>70</td>
<td>1.12406</td>
<td>.168176</td>
<td>.020101</td>
<td>.782</td>
<td>1.730</td>
</tr>
<tr>
<td>HYB</td>
<td>26</td>
<td>.93354</td>
<td>.127251</td>
<td>.024956</td>
<td>.708</td>
<td>1.168</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>.89034</td>
<td>.248761</td>
<td>.018289</td>
<td>.462</td>
<td>1.730</td>
</tr>
</tbody>
</table>

ANOVA, Post hoc test: multiple comparisons of standard deviation for firmness & stability

Only statistical difference is between EWF and the other three surface types in the sample.

Future questions:
- Is there a statistical difference between unitary and loose fill surface materials when SD is compared?
- Do surfaces with greater variability require more maintenance over time?

Pearson Correlation, bivariate correlations between the sum of firmness and stability with the surface deficiency score (SDS)

There is a bivariate correlation between all of the surfaces except the hybrid surface systems.

This does NOT suggest that the SDS or Firmness & Stability have an effect on one another.
SDS Compared to Stability

- **Pearson Correlation, bivariate correlations between the stability with the surface deficiency score (SDS)**
- There is a correlation between the stability measurement and the SDS with all of the surfaces in the sample.
- Future question: Could this suggest/predict that surfaces measured with greater stability will have fewer number of accessibility deficiencies while surfaces with lesser stability will have more identifiable accessibility deficiencies?

Key Finding(s)

- **There is NO perfect surface.**

Key Findings

1. Loose fill EWF had greatest number of deficiencies affecting accessible route.
2. Loose fill EWF had highest values for firmness and stability.
3. PIP, TIL and EWF have correlations between number of deficiencies and sum value for firmness and stability.

Key Findings

4. Occurrences were identified where the installation did not parallel the manufacturer’s installation instructions or procedures for the laboratory test sample for ASTM F1951.
5. A surface with fewer accessibility deficiencies and lower measurement for firmness and stability does not necessarily meet the safety standards for impact attenuation.
6. The relationship between surface cost and performance in this sample was inconclusive.

Where do we go from here?

- **Longitudinal Study** – data collection continues in May
  - Recruiting additional sites
  - Access Board commitment to funding through Sept 2012

- **Maintenance Data**
  - What was done?
  - How much material added?
  - Size of surface area repaired?
  - Cost?
National Center on Accessibility

- First Year Findings – Playground Surface Study
  www.ncaonline.org
Session Title: Reduce, Reuse, and Recycle with Staff Support and Commitment

Tuesday 28 February 2012 / 1PM-2PM & 2:15PM-3:15PM

Speaker(s):

Nancy Hughes
Compost & Recycling Coordinator
Cleveland Metroparks Zoo
3900 Wildlife Way
Cleveland, OH 44109
Email: neh@clevelandmetroparks.com

Session Description:

What are you doing to reuse and reduce within your parks? What can you do better? How can you measure your successes and failures? Discover innovative ways to foster environmental responsibility within your organization and witness examples of these programs in actions with other organizations.
The Cleveland Metroparks Zoo is leading the way in sustainability and the green revolution, serving as an ideal example for zoos everywhere. Understanding that sustainability is the ability to meet the needs of the present without compromising the ability of future generations to meet their own, we can (through a focused effort) improve profits, protect the planet, and improve the quality of people’s life. These changes can be made through reducing waste and recycling, energy use, water use, building design and landscaping, alternative transportation, and purchasing.

In 2010, the Cleveland Metroparks Zoo worked together to form a Sustainability Visioning Plan with five major goals: **Purchasing** (applying sustainable criteria to Park District purchasing practices), **Infrastructure** (applying sustainable criteria to minimize adverse impacts from Park District maintenance, design, and construction), **Networking** (identifying, developing, and contacting like-mission organizations that promote sustainability to insure a system of support opportunities), **Education** (developing and proving educational opportunities to employees, community partners, the general public and other target groups identified), and **Staff** (improving upon employee accountability for practicing sustainability through mechanisms such as job descriptions, work plans, and work assignments).

To design a sustainable strategy/green plan, which is a measure of the impact human activities have one the environment in terms of the amount of greenhouse gases produced (specifically carbon dioxide emissions), the carbon footprint of human activities needs to be evaluated. This is estimated by using a Carbon Calculator that measures outputs of electricity, natural gas, and propane use; amounts of garbage produced and recycling efforts; number of vehicles, distance driven, fuel efficiency; and air travel (visit carbonfootprint.com).

Water use can also be tracked and made more efficient in a facility with dual flush or compost toilets, waterless urinals, motion sensors for sink faucets, aerators, high efficiency dishwashers and washing machines; storm water can be managed through the utilization of rain gardens, rain barrels, green roofs, and pervious pavement.

To reduce waste and promote recycling, the Cleveland Metroparks Zoo has pushed for abundant and clearly marked recycling receptacles with clear pictures and text to gain attention, and utilizes recycles all plastics 1 PETE, 2 HDPE, 3 PVC, 4 LDPE, 5 PP, 6 PS, and 7 OTHER; the metals aluminum, brass, copper, copper wire, iron, and stainless steel; glass (bottles, automotive, and window/door panes); cardboard (using a cardboard baler); wooden pallets (reuse or sell good pallets to a recycler, and recycle broken pallets into mulch); paper; phonebooks (through community collection program); batteries (visit rbrc.org for rechargeable battery recycling corporations free boxes and free shipping service); tires and vehicle fluids; electronic equipment; inkjet and toner cartridges (through community collection programs); compact fluorescent lightbulbs; and cell phones (through community programs).

**SESSION LEARNING OBJECTIVES**

- Describe what actions other organizations have adopted to implement recycling programs.
- Gain the ability to measure recycling and reduction of carbon footprint efforts within your organization.
Reduce, Reuse, Recycle... RETHINK

Nancy Hughes, February 28, 2012

CHALLENGES...

Picture credits: CMZ Photo Safari '06

CHALLENGES...

one example

Picture credits: CMZ Photo Safari '06

Challenges... grumblers

How to ‘convert’

Picture credits: CMZ Photo Safari '06

Opportunities...

Successes and Moving Forward

Picture credits: CMZ Photo Safari '06
**Sustainability is...**

Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

...is a focused effort to improve profits, protect the planet, improve the quality of people's lives.

---

**2010 Sustainability Visioning Plan**

**Goal 1 - Purchasing:** Apply sustainable criteria to Park District purchasing practices.

**Goal 2 - Infrastructure:** Apply sustainable criteria to minimize adverse impacts from Park District maintenance, design, and construction.

**Goal 3 - Networking:** Identify, develop and contact like-mission organizations that promote sustainability to inscribe a system of support opportunities.

**Goal 4 - Education:** Develop and provide educational opportunities to employees, community partners, the general public and other target groups identified.

**Goal 5 - Staff:** Improve upon employee accountability for practicing sustainability through mechanisms such as job descriptions, work plans, and work assignments.

---

**CMZoo SUSTAINABILITY STRATEGY aligned with AZA GREEN GUIDE**

**Categories – General & Program-Specific Recommendations:**
- Energy
- Water
- Chemicals
- Waste
- Purchasing
- Awareness
- Innovation

---

**SUSTAINABILITY STRATEGY - GREEN PLAN**

A measure of the impact human activities have on the environment in terms of the amount of greenhouse gases produced, specifically carbon dioxide emissions.

This is estimated by using a Carbon Calculator that measures outputs:
- electricity, natural gas, and propane use
- amounts of garbage produced and recycling efforts
- number of vehicles, distance driven, fuel efficiency
- air travel

---

**What can be recycled?**

- **LANDFILL CAN**

---

If you're not for Zero Waste, how much waste are you for?
NEW RECYCLE BINS in 2010

CMZ recycles – Many PLASTICS

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Litres</td>
<td>1.25</td>
<td>2.18</td>
<td>18</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
</tr>
<tr>
<td>Yards</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

PLASTICS CMZ Recycles or Collects for Reuse
- Stretch Wrap #4
- Banners vinyl
- Temporary Signs chloroplast
- Hospital Syringe Covers #5
- Greenhouse Roof polycarbonate
- Styrofoam “Peanuts” & Bulk #6
- Nursery Pots #1, 2, 5, and other

PLASTIC POLLUTION EDUCATION

All the plastic ever made for the last 50 years or so (unless it was incinerated) is still on Earth. It seems that plastic breaks down, but it does not go away. It goes, usually, to the oceans, where it is becoming part of the food chain.

What we know:
- Plastic pollution accumulates in oceanic gyres
- Plastic pollution dominates marine debris
- Plastic degrades at sea (breaks apart, but doesn’t break down)
- Plastic absorbs and releases chemicals
- Animals eat or get tangled in plastic pollution

5 Ocean Gyres

Algalita.org junkraft.com 5gyres.org

Recycling from Top to Bottle

We drink out of them, eat off of them, sit on them and even drive in them.

They are durable, lightweight, and can be made into virtually anything.

But it is these useful properties of plastics which make them so harmful when they end up in the environment.

86% sea turtles
43% marine mammals
44% birds

Animal impacts (Derraik, 2002)
Gray Whale Necropsy – April, 2010 found 20 plastic bags

80% of marine debris comes from land-based sources

- People that litter
- Municipal landfills
- Transportation of garbage and debris
- Open trash collection containers
- Industrial facilities
- Storm Water pollution...

Ohio’s Back Yard – LAKE ERIE – Edgewater Beach, April 2008

Record Year for Floods at Zoo in 2011

- Big Creek is the 3rd largest tributary of the lower Cuyahoga River, flowing 12 miles before joining the Cuyahoga at a point 7.4 miles above the mouth of the river where it empties into Lake Erie.
- The watershed drains 39 square miles from 7 municipalities (Cleveland, Brooklyn, Linndale, Parma, Parma Heights, Brook Park, and North Royalton). What watershed do you live in?
We can go with this... OR THAT

Recycled Plastic Bottles Used To Make Ford Focus Electric Seats

We can go with this... OR THAT

Storm Drain Decals

Storm drains are not part of the wastewater treatment system. They carry water (pollution and litter!) directly to the nearest creek, river, or lake.

Aluminum

Bauxite Mine in Newport, Jamaica

Where does Aluminum come from?

EVERYTHING WE CONSUME IS EITHER GROWN OR MINED

Recycled aluminum has the same qualities as newly extracted aluminum!

The greatest deposits of Bauxite are located in tropical and subtropical areas of Australia and Guinea, Brazil, Jamaica, and India.

Less than 1% of aluminum comes from U.S. domestic bauxite.

4th Annual: Sat. Sept. 8, 2012

The Great Lake Erie BOAT FLOAT

Aluminum is not a renewable resource.
### LOCAL PROJECTS
- Friends of Big Creek
- Ohio Eastern Plains Garter Snake
- CMP Vernal Pool Restoration
- Little Beaver Creek Reforestation
- Great Lakes Restoration
- Western Watershed Audubon Society
- Coyotes Ecology and Behavior
- Golden Frog Immune System

### GLOBAL PROJECTS
- Turtle Survival Alliance
- Amazon Conservation Association
- Snow Leopard Enterprise
- Mbeli Bai Gorilla Project
- Cheetah Conservation Fund
- Gharial telemetry Project
- International Rhino Foundation
- Elephant Conservation in S. Africa
- Kinabatangan Orangutan Conservation

### CMZ Recycles - $ METALS $

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>8.9</td>
<td>13.08</td>
<td>14.00</td>
<td>24.93</td>
<td>35.65</td>
<td>25.80</td>
<td>21.64</td>
<td>23.13</td>
<td>14.07</td>
</tr>
</tbody>
</table>

Metals: brass, copper, copper wire, iron, stainless steel

### CMZ Recycles - $ GLASS $

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>3.92</td>
<td>5.22</td>
<td>7.62</td>
<td>9.27</td>
<td>5.58</td>
<td>5.84</td>
<td>5.51</td>
<td>7.07</td>
<td>7.26</td>
</tr>
</tbody>
</table>

### CMZ Recycles - $ CARDBOARD $

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>23.71</td>
<td>38.59</td>
<td>41.06</td>
<td>44.93</td>
<td>39.16</td>
<td>42.25</td>
<td>39.22</td>
<td>43.53</td>
<td>–</td>
</tr>
</tbody>
</table>

### CMZ Recycles - $ PALLETS $

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>152</td>
<td>256</td>
<td>400</td>
<td>240</td>
<td>150</td>
<td>707</td>
<td>295</td>
<td>480</td>
<td>541</td>
</tr>
</tbody>
</table>

### CMZ Community Recycling Programs - $ PAPER $

- Paper Recycling with AbitibiBowater
  14 drop off locations throughout Metroparks

<table>
<thead>
<tr>
<th>Year</th>
<th>2003 (Sept. - Dec.)</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>~15</td>
<td>95.23</td>
<td>79.09</td>
<td>94.56</td>
<td>52.09</td>
<td>40.59</td>
<td>43.00</td>
<td>45.26</td>
<td>47.42</td>
</tr>
</tbody>
</table>

- office and school papers, newspapers, magazines, catalogs, colored paper, envelopes, etc.
- 100% recycled into newsprint

To support Bat Conservation International, www.batcon.org
April 29 – “If I Ran the Zoo” event
June 17 – Father’s Day can crush
October – Boo at the Zoo
November 10 – America Recycles Day
**CMZ Community Recycling Programs**

Cuyahoga County Solid Waste District
June 1st – September 30th
at Zoo & Metroparks

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
<td>15.61</td>
<td>2007</td>
<td>17.16</td>
<td>2008</td>
<td>24.98</td>
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<tr>
<td></td>
<td>2009</td>
<td>22.70</td>
<td>2010</td>
<td>18.39</td>
<td>2011</td>
<td>7.14</td>
</tr>
</tbody>
</table>

### CMZ recycles: BATTERIES – Vehicle, Radio, Rechargeable, Alkaline

- The Rechargeable Battery Recycling Corporation – [rbrc.org](http://rbrc.org)
  - Provides free boxes and shipping for businesses and recycling drop-off locations for rechargeable batteries at retail stores such as Best Buy, Home Depot, Radio Shack, Sears, Staples, Target and Wal-Mart.

### CMZ recycles – TIRES & VEHICLE FLUIDS

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
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<tr>
<td>Vehicle Fluids</td>
<td>293</td>
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<td>119</td>
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**CMZ recycles - ELECTRONICS**

<table>
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<th></th>
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<td>633</td>
<td>538</td>
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**CMZ Community Recycling Programs**

Where Zoo Visitors Recycle

<table>
<thead>
<tr>
<th>Inkjet and Toner Cartridges</th>
</tr>
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<tbody>
<tr>
<td>2004</td>
</tr>
</tbody>
</table>
**Compact Fluorescent Bulbs (CFLs)**

**Community Recycling Programs**

**Cell Phone Recycling**

- Mining for COLTAN ORE (columbite-tantalite) in Africa’s Congo region

**OPPORTUNITY:**

Cincinnati Zoo’s Cell Phone Collection

- In 2010, they collected 10,365 phones.
- In 2011, ~15,000.

**AMERICA RECYCLES DAY**

- **Recycling Collections**
  - cell phones
  - aluminum cans
  - printer cartridges
  - athletic shoes
  - pots, pans, dishes
  - and more

- **Recycling Exhibits**

- **Recycling Activities**

4th Annual: Saturday, November 10, 2012
**GREEN EVENT PLANNING**

**THINGS TO CONSIDER:**
- Invitations / Announcements? ... electronic / explain Zero Waste
- Will there be prizes / awards? ... recycled content
- Will there be decorations? ... reuse
- Will there be food / drinks? ... vegetarian, local, organic choices
- Food & Drink Supplies? ... reusable, no bottled water or Styrofoam
- Landfill / Recycling Bins & Signs? ... clear directions
- Need Volunteers? ... help with education at waste stations
- Waste Disposal? ... work with hauler, get weights, compost option

---

**Water Conservation**

The 3 main meters and all sub-meters are read 2 times a day.

---

**WATER Audit**

Walk through your buildings and site...
- Does your facility keep track of water usage?
- Do all of your buildings have meters on them?
- Are irrigation heads positioned properly?
- In your buildings, do you use:
  ✓ Dual flush toilets
  ✓ Compost toilets
  ✓ Waterless urinals
  ✓ Motion sensors for sink faucets
  ✓ Aerators
  ✓ High efficiency dishwashers / washing machines
- For storm water management, do you:
  ✓ Utilize rain gardens
  ✓ Utilize rain barrels
  ✓ Utilize green roofs
  ✓ Utilize pervious pavement

---

**Energy Audit 2006**

*with American Municipal Power and Cleveland Public Power*

- Assessed the water, natural gas, & electricity usage in our 29 buildings (297,878 ft²)

- Overall findings:
  - A total estimated $314,198 per year savings with a combined simple payback of about 3.0 years.
  - Improvement of the environment by reducing CO₂ emissions by approximately 5,826,995 pounds per year

---

**Energy Audit 2011 – 12**

*with American Municipal Power and Cleveland Public Power*

- Do all of your buildings have meters on them?
  - What is plugged in... and why?
    - How old are your appliances and equipment?
    - Is your equipment Energy Star certified?
    - Have you updated your lighting to T-8 FLs or LEDs?
    - Have you installed motion sensors where applicable?
    - Are computers and lights turned off when not in use?
**OPPORTUNITY: Ohio Zoo's Solar Projects**

- **Akron Zoo**: African Elephant Crossing opened May 5, 2011

**Cleaning Exhibits**

**Compost Process at the Zoo**

**ORGANIC WASTES**

- Herbivore wastes
- Landscape debris

**African Elephant Crossing**

- Leadership in Energy and Environmental Design (LEED) Green Building Rating System™

**Solar Power**

- Education Stations

**8 BIKES in 2010**

**ECO GRANT**

- Cleveland Metroparks

**Solar Projects**

- Train powered by 7.38 kW of solar power from an array of panels on top of the train depot.

**Connecting Exhibition**

- Selects Third Sun Solar for large solar array
- Construction to begin in 2012
Compost Process at the Zoo

Delivery to compost site

Windrow system
Aerobic process

^ aerating a windrow
checking temperature and moisture levels

Compost Process at the Zoo

Before... After

herbivore wastes

landscape debris

Screening mature compost
Using ZooPoo Compost on grounds

Zoo Entrance Bed

BUY ZooPoo Compost

- Spring 2012 – Buy in April, Pick up in May
  - 2011 SOLD OUT IN 6 HOURS!!!
- Fall 2012 – Buy in September, Pick up in October
  - 2011 SOLD OUT IN 5.5 HOURS!!!

BUY ZooPoo Compost

- Spring 2012 – Buy in April, Pick up in May
  - 2011 SOLD OUT IN 6 HOURS!!!
- Fall 2012 – Buy in September, Pick up in October
  - 2011 SOLD OUT IN 5.5 HOURS!!!

Using ZooPoo Compost Locally

Kentucky Community Gardens

growing vegetables for local Great Lakes Brewery Company and Restaurant

Marge's Garden

- 381 customers
- 103 repeat buyers
- > $20,000

Food Waste Composting

CMZ generates

~700 wet tons / year

Food Waste Composting

CMZ generates

~700 wet tons / year

Lorikeet Nectar Cups

~ 30,000 cups per year!

Food Waste Composting

CMZ generates

~700 wet tons / year

Lorikeet Nectar Cups

~ 30,000 cups per year!

Nature Friendly Products

Made from corn-based PLA:

- renewable resources
- 100% biodegradable and compostable*
- Non-toxic

*Polyactic Acid (PLA) is a biodegradable polymer derived from lactic acid. It is made from 100% renewable starch-based resources.

**Compostable within 50-100 days in properly managed composting facilities.

Nature Friendly Products meet BPI (Biodegradable Products Institute) standards for compostability and are US Compost Council Certified.
### Biodegradable Products Institute, Inc.

All BPI-approved products meet stringent, scientifically based specifications: ASTM D6400 or ASTM D6868.

<table>
<thead>
<tr>
<th>Description</th>
<th>Environment Conditions</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>140°F (efficient and aerobic)</td>
<td>47 days</td>
</tr>
<tr>
<td>Potato Starch</td>
<td>104°F (domestic compost heap)</td>
<td>120 days</td>
</tr>
<tr>
<td>Sugar Cane</td>
<td>59°F (underground)</td>
<td>2 years</td>
</tr>
<tr>
<td></td>
<td>50°F (cold environment)</td>
<td>2.6 years</td>
</tr>
<tr>
<td></td>
<td>39°F (discarded in lake or sea)</td>
<td>4 years</td>
</tr>
</tbody>
</table>

- **Corn**
- **Potato Starch**
- **Sugar Cane**

### 2012 Food Waste Collection

**Rainforest Café / Treetops / Roaring Lion**

### Sustainability Center / Urban Ecology

- Outreach to local community through mission-driven projects:
  - Composting
  - Community Gardens
  - Browse Gardens
- Urban Ecology / Urban Wildlife studies

### Any Questions? clemet zoo.com

Nancy Hughes, Sustainability, Compost & Recycling Coordinator
Cleveland Metroparks Zoo, 216.661.6500 x 4508
neh@clevelandmetroparks.com

Photo Credit: P. Valley
Maintenance of Artificial Turf for Longevity

Tuesday 28 February 2012 / 1PM-2PM & 215PM-315PM

SPEAKER(S)

Dan Otto
Deputy Director
Schaumburg Park District
235 East Beech Drive
Schaumburg, IL 60021
Email: daotto@parkfun.com

SESSION DESCRIPTION

You won’t sow, grow, or mow this turf, but you will have to maintain it! Find out how to handle your artificial turf to increase longevity. Learn types of equipment to use, grooming schedules, different kinds of turf available, and troubleshooting tips.

SESSION LEARNING OBJECTIVES

- Describe three types of artificial turf on the market today.
- List two problems associated with artificial turf and their solutions.
- Explain how often grooming artificial turf is needed.
Parks, the Past and Preservation: Integrating Cultural History on the Natural Landscape

Tuesday 28 February 2012 / 330PM-5PM

SPEAKER(S)

Dennis C. Delor  
Special Events, Marketing & Volunteer Coordinator/Park Historian  
St. Clair County Parks and Recreation Commission  
200 Grand River Avenue, Suite 107  
Port Huron, MI 48060  
Email: ddelor@stclaircounty.org

SESSION DESCRIPTION

How does the past influence the future of a park? When the past is “part” of the park. Most parks have a past. In some parks, it is a physical structure or landmark, while in others it may be only a memory. In some cases, the past can even be brought to the park! Learn how history can enhance your park, without breaking your budget.
Dennis Delor took us on a journey of St. Clair County Parks and Recreation’s experiences and successes with integrating historic buildings and structures for use by the organization and the community. Dennis wanted those listening to his talk to walk away with a sense of whether or not to take on a historic building or property. His talk was built around the scenario of the questions you should ask of your organization if someone were to give your organization a historic building or property.

The first question to ask is, “Does it work with your master plan?” Here one must consider the target audience, overall goal, budget, staffing and what obstacles are in place. The second question to consider is, “Does it fit in the park’s setting?” Components of this question to consider include the recreational, historic, and interpretive value. Delor’s final question to consider is, “Is it worth the price?” There are many costs to consider when taking on a historic piece of property, including pre-purchase costs, clean, repair/restoration, and development/engineering costs.

Finally, Delor spoke of challenges to consider that he himself has faced with taking on historic property in St Clair County. These include moving the building to another location, finding skilled labor that can properly rehab the building, staying in-line with accessibility guidelines, and finding proper materials when restoring the building.

SESSION LEARNING OBJECTIVES

- Identify ways to integrate historical structures into the recreational landscape.
- Discover the meaning of cyclical maintenance in regards to historic structures.
- Identify the gains and pitfalls of preservation and interpretation in parks.
- Gain knowledge of ways to promote local history in their parks through partnerships, preservation, and interpretation.
- Gain an understanding of how preservation and interpretation enhance park use.
The Role of Parks and Recreation in Public Health

Wednesday 29 February 2012 / 830AM-945AM

SPEAKER(S)

Dr. Bryan McCormick
Department Chair
Recreation, Park, and Tourism Studies
Indiana University-HPER
1025 E. 7th Street
Bloomington, IN 47405
Email: bmccormi@indiana.edu

SESSION DESCRIPTION

Join us in this session led by Dr. Bryan McCormick of Indiana University as we examine the idea of parks and recreation as public goods. We will identify and explore the linkages of parks and recreation services to public health. Participants will be presented with basic knowledge of public health as a profession and will be guided in identifying how their services may be positioned to address public health needs.

The Organized Recreation Movement began in the United States with the Boston Sand Gardens (1885) and the Settlement House Movement (with the Hull House in 1889), and with the designation of public lands such as Central Park (1858) and our US National Parks (1872) with a national call for social reform and a public health movement. Moving later into the era of the Baby Boom generation, parks have focused less on social reform and more on customer service. However, there are many ways that we can apply the role parks and recreation play in public health today. There are a variety of definitions for the phrase “Public Health”, but it is broadly “the practice of preventing disease and promoting good health” (operating on the level of a population), which can be focused to “organized community efforts aimed at the prevention of disease and the promotion of health” (operating on the level of smaller, localized communities).

The core functions of Public Health are assessment, policy development, and assurance (of access to clean air and water supply, healthy and safe food, smoking bans to protect non-smokers, etc.). The traditional disciplines of Public Health include epidemiology (originally the study of epidemics and their causes, expanded to the study of any health factor), biostatistics (employed to calculate and estimate risk through probability), environmental health (focuses on the spread of disease via air, water, and food), social and behavioral health (focuses on related to behavior), and health and policy management (examines the influence of public policy on public health).

Public Health aims to understand the determinants of health, how to build healthy communities, and how to understand prevention. Determinants of health include biological and genetic makeup, individual behaviors, social interactions and norms, the physical environment, and access to health services. To improve the health of communities, interventions can target one or more determinant of health through information, policies, and programs. Interventions can lead to positive behavior change, reduction in diseases, fewer injuries, and improved well-being and health-related quality of life.

Healthy Community Design can either protect or threaten a community’s health. Mixed land use of commercial, residential, and recreational areas and shortening of distance between these areas, transportation alternatives, higher density, accessible pedestrian and bicycle infrastructure, affordable housing, community centers, and access to green space and parks are all factors of a healthy community design.

Public parks have the opportunity to be utilized by those from all backgrounds within a community, which makes public parks an essential body in the active promotion of Public Health. Parks can improve the quality of life by providing physical, emotional, and social benefits, and play a vital role as a community resource. Ways that parks might be able to improve public health would be to improve the healthy development, safety, and well-being of adolescents and young adults; to improve the health, function, and quality of life of older adults; to promote the health and well-being of people with disabilities; to increase the quality, availability, and effectiveness of education and community-based programs designed to prevent disease and injury, improve health, and enhance quality of life; and finally to promote health for all through maintaining and providing a healthy environment for the community.
SESSION LEARNING OBJECTIVES

- Identify two ways in which the role of parks has evolved in regards to value as a public good.
- Explain one way that the parks and recreation industry can positively benefit the world of public health.
A Natural Energy Source: Wind Power

Wednesday 29 February 2012 / 10AM-11:30AM

SPEAKER(S)

Emily Sautter
Wind Program Manager
Green Energy Ohio
7870 Olentangy River Road, Suite 304
Columbus, OH 43235
Email: emily@greenenergyohio.org

SESSION DESCRIPTION

Are wind and solar power in your park agency’s future? This session will raise the visibility of wind and solar power as an efficient, effective source of power. Parks and recreation agencies are natural leaders in conservation and environmental stewardship, but few have employed wind energy technologies. Public parkland may be ideal for siting wind turbines and solar arrays as an alternative source of energy, a revenue generator and an educational tool.
Emily Sautter, Wind Program Manager of Green Energy Ohio, outlined the advantages of wind and solar power, introduced wind energy systems and solar energy systems, explained siting and permitting wind energy systems and solar energy systems, and and explained incentives, financing, and best practices.

Green Energy Ohio is a state-wide non-profit organization dedicated to promoting environmentally and economically sustainable energy policies and practices through education and outreach, an annual solar tour, a solar thermal rebate program, and a wind program (wind monitoring and economic feasibility studies/consultation; public wind database gathered through wind monitoring sites throughout Ohio).

The advantages of wind and solar energy include the environmental benefits of utilizing a sustainable resource, a hedge against long-term price volatility of other fuels (coal, natural gas, etc), energy security, and economic development benefits (creation of jobs, leases and royalty payments to landowners, and tax payments to state, local, and communities and schools.

The scope of work involved in determining the economic feasibility study for a wind project including obtaining FAA approval; identifying zoning/permitting and utility interconnection requirements; preliminary wind resource evaluation; site visit and research; analysis of on-site utility bills; identification of wind turbine options; calculation of energy production estimates; financial analysis; and report preparation. Small and mid-sized wind turbine installation considerations include types of wind turbines, local wind resources, site selection, local zoning and permitting, and payback considerations. Small wind turbines generate 100 kW and less, and provide clean energy for individual homes, farms, small businesses, and schools. Mid-sized wind turbines generate 100kW to 1MW, distributing generation for manufacturing facilities, large businesses, schools, etc. Utility scale wind turbines generate 1 MW+, and provide power sold to utility through power purchase agreement, and larger units are more efficient and cost effective.

Local wind resource evaluation involves site-specific wind data collection. This requires a minimum of 12 months for commercial and utility scale operations. Residential/small wind projects can utilize publicly available data. Turbines should be at least thirty feet above anything within 300 feet. The ideal location for a turbine is often on the highest point of a property.

In consideration of permitting, local zoning of wind project developments are usually governed by either county, township, or municipal zoning authorities. A zoning variance may be required, and a building permit may be required (which could involve site plans from a state licensed engineer or other design professional, and requirements to meet all local, state, and federal building codes). Public opinion is important in the development of a project, so it is important to engage the public early and often, communicate the benefits of the project to the public, and present credible, clear information centered on scientific basis.

Energy efficiency is incredibly important to consider in the undertaking of a project. Though wind and sunshine is free, wind and solar power equipment is not; before investing in any electrical power system, an energy audit should be conducted. The less electricity necessary to be consumed, the smaller the wind or solar energy system is needed.

### SESSION LEARNING OBJECTIVES

- Describe the environmental, economic, and educational advantages of wind power.
- Identify the challenges of siting wind and solar facilities, the permit process, and potential funding support.
- List the steps in site assessment and development of wind power technology; best practices.
A Natural Energy Source: Wind & Solar Power
GLPTI 2/29/12
Emily Sautter
Wind Program Manager
Green Energy Ohio

GLSC, Cleveland – 225 kW Vestas
Huron Elem. – 100 kW Northern Power Systems

Green Energy Ohio
State-wide non-profit organization dedicated to promoting environmentally & economically sustainable energy policies & practices

- Education & Outreach
- Annual Solar Tour
- GEO Magazine
- Solar Thermal Rebate Program
- Wind Program
  - Wind monitoring & economic feasibility studies / consultation
  - Public wind database (data & reports) – wind monitoring sites throughout Ohio
- www.greenenergyohio.org

GEO Achievements

- Partnered with Cleveland Indians to install Solar Canopy at Progressive Field (2007)
- Installed Solar PV system at Ohio Governor’s Residence (2004)
- Installed wind monitoring tower on Cleveland Water Intake Crib in Lake Erie (2005) – highest test tower in Great Lakes
- Conducted 1999-2000 Bowling Green wind assessment study, led to first utility-scale turbines in Ohio (2003-04)
- Celebrating 11 years!

Ohio Anemometer Loan Program

- Started in 2006 by Ohio Dept. of Development & managed by GEO
- Wind resource assessment & economic feasibility studies for Non-Profits, Public Entities, Small Businesses/Industries
- Goals of program:
  - Increase awareness of wind energy in Ohio
  - Enhance the understanding of Ohio’s wind resource potential by adding measured wind data to Ohio’s wind maps, and
  - Assist eligible applicants with assessing their wind resource for mid-size to utility-scale distributed generation wind projects (100 kilowatts [kW] to 5 megawatts [MW])

Wind Monitoring Equipment & Temporary MET Tower
Monitoring Ohio Wind Fee For Service Projects

- NASA Plum Brook Station – Erie Co.
- Toledo Zoo
- Baughman Tile Co. – Paulding Co.
- Parker Hannifin Corp. – Preble Co.
- Crown Equipment Corp. – Auglaize

Economic Feasibility Studies for Wind Projects

**Scope of Work**

- Obtain FAA approval; identify zoning/permitting and utility interconnection requirements
- Preliminary wind resource evaluation including access to wind data from our database
- Site visit & research
- Analysis of on-site utility bills
- Identify wind turbine options
- Calculate energy production estimates
- Financial analysis
- Report preparation

Advantages of Wind & Solar Energy

1. Environmental benefits / sustainable resource
2. Hedge against long-term price volatility of other fuels (i.e., coal, natural gas)
3. Energy security
4. Economic development benefits
   - Creates jobs
   - Lease & royalty payments to landowners
   - Tax payments to the state, local communities & schools

Advantages of Wind & Solar Energy

- Can be cheaper than conventional sources of electricity; will most likely be cheaper in the future
- Educational Tool
- Marketing Tool

Small & Mid-Sized Wind Turbine Installation Considerations

A. Types of Wind Turbines
B. Local Wind Resource
C. Site Selection
D. Local Zoning & Permitting
E. Payback Considerations
Energy Efficiency the First Step

• Wind and Sunshine is FREE to us daily
• Wind & Solar power equipment is NOT!
• Before you invest in any electrical power system you should conduct an energy audit and reduce energy needs
• The less electricity you consume, the smaller the wind or solar energy system you need

Turbine Performance

• Power Curve
  – Power output (kW) plotted as a function of wind speed
  – Cut-in wind speed
  – Cut-out wind speed
  – Rated wind speed

Energy Efficiency the First Step

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Turbine Performance

• Power Curve
  – Power output (kW) plotted as a function of wind speed
  – Cut-in wind speed
  – Cut-out wind speed
  – Rated wind speed

Types of Wind Turbines

• Small Wind Turbines
  – 100 kW and less
  – Clean energy for individual homes, farms, small businesses, and schools
• Mid-Sized Wind Turbines
  – 100 kW to 1MW
  – Distributed generation for manufacturing facilities, large businesses, schools, etc.

Types of Wind Turbines

• Utility Scale Wind Turbines
  – 1 MW +
  – Power sold to utility thru power purchase agreement
  – Larger units are more efficient and cost effective

Types of Wind Turbines

• Horizontal Axis
  – Main rotor shaft is arranged horizontally
  – Generator and gearbox must be mounted at the top of the tower with rotor
  – Rotor must be oriented into the wind

Types of Wind Turbines

• Vertical Axis
  – Main rotor shaft is arranged vertically
  – Generator and gearbox can be located closer to the ground
  – Rotor does not need to be oriented into the wind
Types of Wind Turbines

- **Upwind**
  - Blades are upwind of turbine hub and tower
- **Downwind**
  - Blades are downwind of turbine hub and tower
  - Wind speed influenced by hub and tower

Available Wind Data Sources

- NREL & AWS Truepower 80 m wind speed map
- AWS windNAVIGATOR (30 & 60 m)
- Ohio Wind Speed & Power Density Maps – AWS Truepower (30, 50 and 100 m)
- Ohio Power Siting Board Interactive Wind Map
- GEO Public Wind Database (27 m–100+ m)
- Other Sources: National Climatic Data Center

Local Wind Resource Evaluation

- Site-specific wind data is best
  - 12-months minimum for commercial & utility scale
  - Residential / small wind – use publicly available data; cost for wind study can exceed turbine cost
- Manage expectations – Ohio has a marginal wind resource but you can still take advantage of it

Ohio Wind Speed Map at 30 meters

Monthly Wind Speed Profile

Fort Wayne 21 Year Average by Month
Wind Speed Distribution and Turbine Power Curves

Ohio Wind Speed Distribution (40 m) & Northwind 100 Power Curve

Turbine Performance

• Energy Curve
  – Annual or monthly energy production plotted as a function of annual average wind speed at hub height

General Site Selection Criteria

• Turbine should be at least 30 feet above anything within 300 feet
• Ideal location often on highest point of property
• Prevailing direction

Permitting - Local Zoning

• < 5 MW (Ohio)
• Wind project development is governed by either county, township or municipal zoning authority.
• Local governments throughout Ohio are working on creating ordinances to address their specific community needs.
• Points to consider...

Permitting - Local Zoning

• Maximum Turbine Height – Length of prop at maximum vertical rotation to tower base.
• Setbacks – Establish a “clear fall zone” around turbine from public roadways, property lines, buildings..
• Environmental – Noise, shadow flicker, etc.
Permitting – FAA & ODOT

- Submit Federal Aviation Administration (FAA) Form 7460-1 for turbines that exceed 200 ft. and/or penetrate navigable airspace ([www.oeaaa.faa.gov/oeaaa](http://www.oeaaa.faa.gov/oeaaa))
  - Airports & medical heliports
- Submit similar info to Ohio Dept. of Transportation (ODOT), Div. of Aviation

Payback Summary

- Payback is dependent on:
  - Total system cost
  - Local electric utility rates (> $0.09/kWh)
  - Incentives available
    - Grants, Tax Credits, Renewable Energy Credits, etc.
  - Wind resource (> 6.0 m/s or 13.4 mph @ 50 m)
  - Degradation of equipment over time
  - Availability of system (e.g., maintenance)

Public Opinion

- Engage public early & often
- Communicate the benefits of the project to the public
- Present credible, clear information centered on scientific basis

Noise Concerns

- Northwind 100 (100 kW) – 55 dBA at 30 meters from hub
- Bergey Excel 10 (8.9 kW) – 42.9 dBA at 60 meters from hub
- Skystream 3.7 (2.1 kW) – 41.2 dBA at 60 meters from hub

Shadow Flicker

- Occurs when rotating blades come between the viewer & the sun, causing a moving shadow
- Effect can be easily predicted to determine location & duration
- Effect is generally short-lived (i.e., a few hours over a year’s time).
- OPSB limits exposure to 30 hours per year
- Solutions: appropriate turbine siting, setbacks, trees to intercept shadow, neighbor payments, curtail turbines (30/8760 = 0.3%)

Visual Concerns

- Tall Objects 300’ to hub, 450’ to tip
- “Beauty is in the eye of the beholder”
- Existing objects on skyline
  - Cell towers, billboards, water towers, utility lines
- Painted gray/white or other colors to blend in with surroundings
- Careful siting to minimize visual concerns

Source: California Energy Commission

Payback Summary

Source: California Energy Commission

Public Opinion

Source: California Energy Commission

Noise Concerns

Source: California Energy Commission

Shadow Flicker

Source: California Energy Commission

Visual Concerns

Source: California Energy Commission
Environmental Considerations

• Wildlife impacts
  – Endangered/threatened species in vicinity
  – Breeding/migratory birds
  – Bats
• Contact USFWS, ODNR & local avian groups
  – Potential avian study?
• Monopole Tower
• Use Turbines with Slower Spinning Blades

Environmental Considerations

• Survey Effort Required by ODNR
• Proper siting is principal mitigation strategy

Sources of Bird Mortality in U.S.

Number of Birds per Year

Sources of Mortality


Environmental Considerations

• Wetlands
  – Section 401 and 404 permits – Clean Water Act
• Subsurface conditions
  – historic land use
  – Fill materials
  – Depth to bedrock
  – Presence of groundwater

Components of a Solar Electric System

• Modules to produce electricity
• Power conditioning equipment, such as an inverter and charge controller
• Mounting racks and hardware for modules
• Wiring for electrical connections
• Batteries for electricity storage (optional)

Cells, Modules, Arrays

• Cells make up modules
• Modules make up arrays

Sources of Bird Mortality in U.S.

Source: www.wfae.org

Indiana Brown Bat. Source: ODNR

Bald Eagle. Source: www.wfae.org

Wetland. Source: www.earthportal.org

Figure: 2007 American Technical Publishers
Solar Cells

- Semiconductor materials
  - Mono or single-crystal silicon
  - Multicrystalline silicon
  - Polycrystalline silicon
  - Amorphous silicon
- Thin film solar

Solar Cell Energy Conversion Efficiency

<table>
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<tr>
<th>MATERIAL</th>
<th>TYPICAL EFFICIENCIES</th>
<th>BEST LABORATORY EFFICIENCY</th>
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<td>Gallium arsenide (GaAs)</td>
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<td>30</td>
</tr>
<tr>
<td>Monocrystalline silicon</td>
<td>14 to 17</td>
<td>25</td>
</tr>
<tr>
<td>Polycrystalline silicon</td>
<td>11.5 to 14</td>
<td>20</td>
</tr>
<tr>
<td>Ribbon silicon</td>
<td>11 to 13</td>
<td>16.5</td>
</tr>
<tr>
<td>Copper indium gallium arsenide</td>
<td>9 to 11.5</td>
<td>19</td>
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<tr>
<td>Cadmium telluride (CdTe)</td>
<td>8 to 10</td>
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<tr>
<td>Amorphous silicon (a-Si)</td>
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<tr>
<td>Granitel</td>
<td>4 to 5</td>
<td>11</td>
</tr>
<tr>
<td>Polymer</td>
<td>1 to 2.5</td>
<td>5</td>
</tr>
</tbody>
</table>

- Efficiency values typically between 11% & 17%
- Efficiency values are on the increase
- Cost of solar cells increase as efficiency increases

Power Conditioning Equipment

- Inverter – converts DC into usable household AC power
- Charge Controller – regulates the flow of electricity to and from the battery

Roof Mounting Systems

Variety of Mounting Equipment Available to Suit any Rooftop Need

Ground Mounted Systems

- Rack, pole or tracking mount
- Easy access, adjustment of tilt and direction, high visibility
- Typically cost more than roof mount because of additional cost associated with foundations / poles, etc

Wiring / Electrical Equipment

- Meter – track energy produced by solar electric system
- Wiring – connecting solar electric system to grid or battery and load
Batteries

- Optional use to store produced energy and used along with a charge controller
- Usually flooded lead/acid or sealed AGM

Stand-Alone System with Energy Storage

Grid Connected System

Grid Connected System with Energy Storage

Hybrid System Design

Solar Resource

- Ohio Solar Resource
  - 4 kWh/m²/day for a tilt = latitude collector
- Solar Maps:
Site Assessment Tools:

**Solar Pathfinder**

Shows shading effect at site during all times of the year

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**Shading, Orientation & Tilt**

Order of Importance
1. Shading
2. Orientation
3. Tilt angle

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**Roof Size / Roof Condition**

- Roughly 20 ft² of roof space needed for each kWh of AC power desired
- The best time to install a roof-mounted solar system is during construction or roof replacement to achieve the lowest installation cost
- Ensure the roof is structurally sound to hold an array

---

**Permitting Solar Energy Systems**

- Small solar systems governed by either county, township or municipal zoning authority.
- Some local governments have zoning ordinances for solar energy systems. Some example restrictions:
  - Ground mounted systems not allowed in front yards
  - Roof mounted systems must not extend 12 inches above roof line
  - Not permitted in historical districts
- A building permit and/or electrical permit may or may not be required

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**Interconnecting to the grid**

- Must interconnect to the grid to net-meter or take advantage of Renewable Energy Credits
- Obtain an Interconnection agreement from your electric provider
  - Includes the utilities requirements to connect your renewable energy system to the grid
  - Usually safety measures such as automatic shut off if the grid goes down

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**Federal Renewable Energy Incentives (Wind & Solar)**

- **Residential Renewable Energy Tax Credit**
  - 30% tax credit on total installed cost of system
- **USDA Rural Energy for America Program (REAP)**
  - Grants and loans for eligible farmers, ranchers, and rural homeowners and businesses
  - Generally available to state government entities, local governments, tribal governments, land-grant colleges and universities, rural electric cooperatives and public power entities, and other entities, as determined by the USDA
- **Modified Accelerated Cost-Recovery System**
  - Solar and wind equipment depreciate over 5 years
  - 50% bonus depreciation if installed in 2012
**State & Utility Incentives**

- The Database of State Incentives for Renewable Energy (DSIRE) will be your greatest resource for understanding federal and state renewable energy and energy efficiency incentives:
  - www.dsireusa.org

**Ohio Net-Metering Law**

- Limited to those in investor-owned utility service areas
- If the system produces more energy than consumed during a billing period, a credit will be applied to utility bill
- Credit may be used to offset charges during other months
- Limited to kWh charges only
- Can’t overproduce annually – you become a producer
- Can overproduce monthly – but not financially beneficial

**National Net-Metering Policies**

- Ohio utilities must provide 25% of retail electricity supply from alternative energy resources by 2025
- 12.5% generated by advanced energy sources: clean coal, advanced nuclear power, CHP, fuel cells
- 12.5% must be generated from renewable energy resources: PV, solar thermal, wind, geothermal, biomass, landfill gas, fuel cells, hydroelectric
- At least 50% of renewable energy requirement must be met by in-state facilities
- Solar carve out of 0.5%; Yearly benchmarks
- Utilities must implement energy efficiency and peak demand reduction programs; cumulative energy savings of 22% by 2025

**Other State RPS Policies**

- Renewable Portfolio Standard/S.B. 221
  - Solar carve out of 0.5%; Yearly benchmarks
  - Utilities must implement energy efficiency and peak demand reduction programs; cumulative energy savings of 22% by 2025

**Renewable Energy Credits (REC)**

- Tradable, non-tangible energy commodity
- 1 REC is proof of 1 MWh of renewable energy generation
- Can be sold to aggregators, renewable energy installers, or directly to the electric utilities
- Selling your RECs Removes the “renewable” attribute of your power, turning the power you produce with your system into “brown” power
**3rd Party Ownership/PPAs**

- 3rd party owns, operates, and maintains the system
- You act as host for the system and purchase the power created at a reduced rate from what you would pay the utility
- Long-term contract (10-20 years)
  - May contain option to buy system after some time period
- Beneficial for tax-exempt entities

**Best Practices: Selecting a Renewable Energy Contractor**

- How should people find a contractor:
  - Contact the following organizations for a list of recommended vendors in Ohio:
    - National Organizations
      - North American Board of Certified Energy Practitioners (NABCEP)
      - American Solar Energy Society (ASES)
    - State Organizations
      - Green Energy Ohio (GEO)

**Best Practices: Wind Turbine Design Certification**

- Small Wind Turbine Certifications
  - National Renewable Energy Lab (NREL)
    - Independent testing
  - Use standards adopted by the International Electrotechnical Commission (IEC)
    - Small Wind Certification Council (SWCC)
      - Independent certification body
      - Small Wind Turbine Performance and Safety Standard
      - Have certified two turbines:
        - Bergey Excel 10
        - Skystream 3.7

**In Summary: Wind Energy Site Checklist**

1) What is the strength of your wind resource?
   - Data from wind speed maps should be sufficient
2) Do you have a site that is free of obstructions?
   - Turbine should be at least 30 feet above any obstruction within 300 feet
   - Turbine should be as close to the point of connection to the facility as possible
3) Does the facility’s electric profile match closely to the monthly wind speed trends in the area?
   - You don’t want to produce more electric than what you will use
4) Does local zoning allow wind turbines? If so, what are the requirements of the code? Setbacks? Height restrictions?

**In Summary: Wind Energy Site Checklist (cont.)**

5) Does your State have a net-metering policy? What are the requirements?
6) Does your State allow for 3rd party ownership?
7) What incentives are available in your State?
8) Determine turbine size based on budget, electric load, and spacing.
9) Choose a turbine with a certification (SWCC or other) and a proven track record
10) Find a wind energy installer

**In Summary: Solar Energy Site Checklist**

1) Do you have a south facing and un-shaded roof?
   - What is the condition of the roof?
2) If no roof space available; Do you have enough un-shaded space for a ground-mounted system?
3) Does the facility’s electric profile match closely to the solar resource trends?
   - You don’t want to produce more electric than what you will use
4) Does local zoning allow solar panels? If so, what are the requirements of the code?
5) Does your State have a net-metering policy? What are the requirements?
In Summary: Solar Energy Site Checklist (cont.)

5) Does your State allow for 3rd party ownership?
6) What incentives are available in your State?
7) Determine solar array size based on budget, electric load, and spacing.
   - Can always add more panels later
8) Choose a Solar Panels with a certification (SWCC or other) and a proven track record
9) Find a solar PV installer
   - We recommend NABCEP certified

Case Study: Glacier Ridge Metro Park

- Columbus and Franklin County Metropolitan Park District
- 1000 acres Located in southeastern Union County near Dublin, Ohio
- Bergey 10 kW (rated at 7 – 8.5 kW)
- 120 foot lattice tower
- Erected in 2002
- Grid tied
- Total Cost = $80,000

Case Study: Lake Metroparks Farmpark

- 26 kW Solar Array (2002)
- 10 kW Wind Turbine (2012)
- 114 foot tower
- Grid Tied
- Total Cost of wind turbine = $75,000
- $25,000 donated from the Lake Park Foundation

Case Study: Rhode Island Fisherman’s Memorial State Park & Campground

- Northwind 100
- Will supply about half of the electrical needs of the park
- Total Cost = $688,010
- $399,917 from a multi-state settlement with AEP for Clean Air Act violations;
  $150,594 from ARRA;
  $137,500 from R.I. Economic Development Corporation

Questions?

Emily Sautter
Emily@GreenEnergyOhio.org
216-789-5248
www.GreenEnergyOhio.org
Electric Load & Array Sizing

- Check the total number of kWh’s from your electric bill.
  - The bill usually shows your current months usage and your annual average.

- Decide what percentage you want to supplement: 1% to 100%.
  - Average residential installation in Ohio ~ 3kW system
  - In 2011, average costs for installed PV systems are running between $5.00 and $8.00/watt.
  - Larger systems often will be less per watt than smaller systems.

Electric Load & Array Sizing

- Need to determine total connected load or the number of kWh’s from your electric bill
  - Divide the average monthly kWh’s by 30 days in a month
  - Then divide that by 4 hours of optimum sunlight in a day

Example:

- 1,200 kWh/month  30 days = 40 kWh/day
- 40 kWh/day  4 hours of average sun/day

10 kW of PV needed to offset your total current usage
Water, Water, Is This Guy Wet! Splash Pad Design and Water Management Solutions

Wednesday 29 February 2012 / 10AM-1130AM

SPEAKER(S)

Greg Stoks
Principal
ARC—Aquatic Recreation Company, LLC
6500 Carlson Drive
Eden Prairie, MN 55346
Email: aaltman@aqua.com

SESSION DESCRIPTION

Quench your thirst for knowledge about splash pad design and systems! Building a splash pad for recreation and visual appeal is an involved process. We'll look at the steps a park system should take to initiate a splash pad project and follow with a discussion on water management systems.
As a great additive in hot weather, a splash pad is a highly effective recreation appeal for just about anyone. From large families to individuals with disabilities, a splash pad is a great way to get everyone to participate in some outdoor fun! Splash pads are cost friendly in the sense that they don’t take nearly as much money to build as the construction of a pool. In addition, splash pads are very low maintenance in comparison to a swimming pool. They are not as time intensive in terms of cleaning, but also in the sense of repairs. Another great reason to incorporate a splash pad in a leisure service provider’s area is the low risk management. Without standing water, lifeguarding is optional, as the potential risk for individual’s drowning is not there like it is with a swimming pool. This saves the company in many aspects of liability, but also saves time and money in terms of employees and their labor.

Several details go into the planning of a splash pad’s future location. Demographics, topography, and budget are three key components to consider. Ensuring that a splash pad will be successful in the selected area is extremely important. Economics, age sectors, and security concerns are a few demographics to consider. Also, the likelihood that a splash pad will be profitable at a poor, land or soil location is low. When designing, however, the major aspect to consider is one’s budget. Water costs money, as do the products. The rough, average cost of a splash pad can be anywhere from 75 to 150$ per square foot. Details on the specifics typically depend on the type of mechanical systems used in the splash pad itself.

With pros and cons on both sides, domestic single pass and recirculating splash pads are the two systems to keep in mind in design planning. Specific concerns come in mind on initial costs, water costs over time, maintenance needs and liability, and consumer wants. The start up costs for a domestic mechanical system are quite low, as is the upkeep and risk management potential. The major downfall, however, is the less interactive experience due to the lesser amount of water. A splash pad’s success rides on water. Some would say the more water, the more fun. Domestic single pass mechanical systems consume millions of gallons of water annually, but the flow is still less effective than its counterpart.

When using a recirculation system, a larger budget is needed. The initial costs, liability, maintenance, and operating costs are higher overall. The benefits though come across to the customers. This design uses a fraction of the water consumption as it’s consistently reused. The idea that the splash pad produces more water statistically seems to create a more fun experience for one’s consumers. Recirculation systems are mostly used in larger water venues. Keeping these systems in mind, while working on one’s layout design, is very important.

Architectural decisions should be based on consumer wants and needs. Age groups, accessibility, and space planning are all major priorities when building a splash pad for any area. The American Disability Act (ADA) has specific laws in place for these recreation facilities. Future expansion is most certainly assumed as well with new technologies being designed. Product selections depend on company preference. What is one’s target market? What activities is the company looking for? What type of social, physical, and educational atmosphere is the service provider striving towards? At the end of the day, it is all about the consumer. Reaching out to get feedback on what people in the area want can certainly be important. Many different layouts, products, and spaces are available for the construction of future splash pads. The water awaits you!

SESSION LEARNING OBJECTIVES

- Describe steps in the planning and implementation process involved with a splash pad project.
- Identify at least types of water management systems related to splash pads.
- Describe the pros and cons of a flow thru water to waste system vs. a water recirculation system.
Overview of splash pads and design considerations for splash pad planning

Presented by:
Greg Stoks, Principal
Aquatic Recreation Company (ARC)

www.arc4waterplay.com

Evolution of Water Play

A generation ago water play consisted of kids running through a lawn sprinkler, playing with a garden hose or using squirt guns.

Running through the sprinkler spraying each other with a hose, squirt guns.

Evolution of Water Play

Splash Pads: A water play area with no standing water which incorporates ground sprays and water play structures.

The beginning of public water play entities followed with the use of domestic water source and free sprays.

Evolution of Water Play

As water play has evolved, so has the demand for enhanced and unique experiences. With the utilization of recirculation systems splash pads are offering bigger and more dramatic water entertainment experiences.
Why an interactive splash pad?

- Cost Effective Aquatic Amenity
- The splash pad experience has better usage than traditional pools or wading pools.
- Enhances the marketability of developments, neighborhoods and overall community.
- Accessible play opportunity for all ages and abilities.
- Encourages physical activities.
- Promotes social development.
- Provides relief and entertainment on hot summer days.

- Reduced liability because of no pool of water.
- Significantly decreased long term operational costs.
- No or limited supervision required.
- Environmentally friendly (recirculation) systems, lower water consumption than pools.
- Fastest growing type of aquatic facility.
- Is a popular amenity that enables citizens to lead a more active, healthy and social lifestyle.

- Location Demographics
  - Expected Usage Volume
    - 20 – 25 s.f. per patron
  - Expected Patron Demographics
    - Age sectors
    - Safety / Security Concerns
      - Vandalism

Design Considerations

- Location / Site
  - Site Considerations
    - Available Utilities
    - Existing Building / Mechanical Space / Bathroom Facilities
    - Vehicle Parking and Patron Access
    - Land Topography
    - Soil Conditions
    - Debris Loads
    - Wind Conditions

- Budget
  - Guilds design development
    - Size
    - Product type and selection
    - System type and sizing
    - Helps prioritizes your project investment values
  - Rough Cost Domestic Single Pass Type Splash Pad $75 to $100 s.f.
  - Rough Cost Recirculation Type Splash Pad $110 to $150 s.f.

- Mechanical System
  - Domestic – Single Pass
    - Initial costs are less
    - Need to evaluate water / waste service costs
      - U.S. Avg. Water Cost Per Gallon = 1.5 cents
      - U.S. Avg. Waste Water Service Charge = 3 cents
    - Less Liability – Water Quality Concerns
    - Less Maintenance – 30-min / day labor & Safety Check
    - Lower Operating Costs (excluding water / waste costs)
    - Less Flow – Design greatly effected by feature flow rates
    - Less Interactive “Fun” Experience
      - Will consume millions of gallons of water annually
Typical Domestic Single Pass Splash Pad Water Use Example:
- 200 gpm total feature flow rate splash pad
- Open 6 months per year
- 7 Days a week
- 4 hours a day average use
- 200 x 6 = 12,000 gallons per day
- 12,000 x 4 (average daily use) = 48,000 gallons daily
- 48,000 x 30 days = 1,440,000 gallons monthly
- 1,440,000 x 6 months = 8.64 million gallons per season

Dollars & Sense:
- 8.64 M x 4.5 cents = $38,880.00 Water / Waste

City Water Systems
Typical Isometric
Mechanical system options:
- Above/Below grade
- Sequencing

City Water Systems
- Activation Bollard
- Control Panel
- Distribution Manifold
- Drain Box
- Vault Enclosure
- Above Ground Enclosure

Single Pass Conservation
Retention Ponds & Fields = Infiltration / Evaporation
Single Family Homes Are Designed to Infiltrate 1,200 Gallons per Day
Infiltration Rates Vary based on Soil Conditions.
Rough Rule of Thumb is 1 s.f. surface area = 1 gal/day absorption rate

Single Pass Conservation
Underground Water Reservoir Collection to Irrigation
One Acre Typically Takes 2,500 gallons a day to irrigate.
Holding tank installed costs roughly are $4 per gallon

Design Considerations
Recirculation
- Initially Costs More Expensive
  - On a 200 gpm system will add $50K to $60K to overall project budget
- If Water / Waste services costs occur typically 4-5 yr payback (Avg. of $13K annual savings)
- More Liability, Maintenance and Operational Costs
  - Annual Costs on 200 gpm system = $25,000
- Design is not limited by water flow
- More Water... More Fun Interactive value greatly increases with larger water venues
- Water Consumption a fraction of single pass system
Recirculation Systems

Mechanical system options:
- Above/Below grade
- Heaters
- UV treatment

Design Considerations
Splash Pad Layout

Usage Needs
- Age Appropriate Play Zones
- Dry / Parent Zone
- Gathering Zone
- Shaded Structures, Tables, Benches
- Accessibility, Paths, Walkways, Controlled Access
- Space planning for 20 – 25 s.f. per person capacity

Usage Needs
- Accessibility / ADA
- Future Expansion
- Interchangeable Products

Product Selection

1 to 3 years of age:
- Lower, non aggressive ground sprays such as bubblers which provide a fun, educational experience of texture & water.

4 to 6 years of age:
- Lower structures and less aggressive water formations such as the Water Wiggle, which provide a fun, wet and interactive experience.
7 to 12 years of age:
- Interactive water play features such as the Water Dump designed for direct interaction by users to create unique water formations and play only limited by the user's imagination.

13+ years of age:
- Larger interactive & big water features such as the Multi Play VII which provide a "wow" factor using overstated sized structures and large volumes of water.
Product Options

Low Flow

Interchangeable
Product Design

Flow Control
Valves

High Flow

Custom Banners

Color Options

For a hard copy of this presentation along with our full catalog, please leave your business card.

Thank You!
Emerald Ash Borer and Other Forest Pests

Wednesday 29 February 2012 / 10AM-11:30AM

SPEAKER(S)

Rick Tyler
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Email: rtdrummer1@oh.rr.com

SESSION DESCRIPTION

Greater global mobility has ushered in a new era of nuisance organisms. What are park districts currently doing to address newly introduced forest pathogens? Learn how you can reduce them in your park and what to be prepared for sooner rather than later.

Rick Tyler, retired Chief of Natural Resources for Cleveland Metroparks, devoted this session to the invasive species that are plaguing public and private lands throughout the country, focusing primarily on the emerald ash borer, a small insect that kills ash trees. Rick’s talk encompassed what agencies are currently doing to prevent, track, and control the spread of these destructive organisms.

Rick gave an overview of pests that Cleveland has dealt with in the past, including the chestnut blight, Dutch elm disease and the gypsy moth. Out of the three pests, the city only had success battling the gypsy moth, which affects oak trees. The biggest current battle the city and region are facing is with the emerald ash borer (EAB), which was detected in 5 areas of Ohio in 2004. Methods of control include quarantining counties that have the EAB from circulating lumber or firewood, and surveying trees to detect where the path of EAB is moving. Also discussed were treatment options, which include systemic injections of insecticide.

The remainder of the session was devoted to identifying pests that may become problematic in the Great Lakes region in the future. These include the hemlock woolly adelgid, and thousand cankers disease. Although it is hard to prevent the introduction on these invasive pests, Rick stressed the importance of nationwide regulation the sales of timber and firewood by the USDA in slowing the spread of outbreaks.

SESSION LEARNING OBJECTIVES

- Describe two major pathways for invasive pathogens to spread across the United States.
- Describe some long-term forest management practices as all species of ash at the stand-level begin to decline/die from EAB infestations.
- List two pests that are becoming a threat to our forests and what effects they could have.
Forest Pests Are You Ready?
Impacts to Parks
Risk Management
Contain the Pest
Post Impact Options

Dutch Elm Disease impact on American Elm

Save The Elm Program

Chestnut Blight on American Chestnut

Chestnut Gall

Maugel Injecticide B

Agri-Fos fungicide applied with penetrating oil over 8 feet of trunk to soil-line

Gypsy Moth impact on Oak
Aerial applications of Gypcheck (for light infestation zones) and Dimilin saved thousands of acres of oak-dominated forest areas. State picked up cost. Agency created spray blocks (also cooperative spray blocks.)

Spread of Emerald Ash Borer 2002 to 2012
First detected in 2002 in Detroit

Spread of Emerald Ash Borer 2002 to 2012
Detected in 5 areas of Ohio in 2004

Ohio Department of Agriculture issues the first EAB quarantines

Spread of Emerald Ash Borer 2002 to 2012
ODA initiates “gateway” strategy to contain the spread of EAB mid-year 2005

ASH REDUCTION “FIRE BREAK”
Within the 6 mile wide “FIRE BREAK”, Ash species will be removed which are greater than 1.5 DBH
A survey is being completed which will route the “BREAK” through the least ash-populated areas.
Homeowners are footing the bill for removal from private residences

Dan Pettt and John Jaeger, Chief of Natural Resources for Toledo Metroparks, inspect an infested ash tree in the Oak Openings Reservation.
Ash eradication area in the Toledo Metroparks


**The ODA Management Strategy**

1. Contain the core infestation.
2. Eradicate outlier infestations promptly.
3. Survey to detect and delineate infestations.
4. Quarantines to restrict artificial spread.
ODA Ash Eradication Program Eliminated

Ohio Eradication Efforts

Spread of Emerald Ash Borer 2002 to 2012

Regional Spread of Emerald Ash Borer 2002 to 2012

Ohio Department of Agriculture EAB Detection Tree Program

- 10,000 ash trees across Ohio established as “EAB detection trees”
- Detection trees are 6 to 9 inches in diameter
- Trees are girdled, tagged and a GPS coordinate taken.
- ODA field agents return fall of 2008 to check for signs of EAB.
- This is how EAB was found in Cuyahoga County

EAB detection trees 2007
EAB detection tree
Cuyahoga County

EAB quarantine established for
Cuyahoga County on October 3, 2006

2008 ODA Shift from Detection Trees to Deltoid Traps

Firewood Transport is THE primary means of EAB accelerated spread

Problem 1: Keeping pace with rapidly changing policies emanating from State / Federal Agencies.
Problem 2: Developing, Communicating & Enforcing policies to protect the trees / forests of your land conservation / park agency.

Example: ODA Quarantined ALL Ohio counties beyond actual confirmed EAB areas. IRONY: This provided opportunities for accelerated spread of EAB via ash products.

ODA started with total containment to slow the spread to detection trees & quarantine zones to total county quarantines in a 9 year time frame. (2002 – 2011)
Had to play “Catch-up” with Ash Material Compliance Agreements

- Jump from Quarantined “Zones” within counties to Quarantined Counties to All Quarantined Counties
- Forced to formulate “Firewood Policy” for park district / land conservation agency
- Continuous updating of ash materials compliance agreements in place for removal of ash materials (trunks, ash chips, contracted ash removal)

Cleveland Metroparks response to Cuyahoga County EAB detection & quarantine

- Propose changes and additions to public policies regarding firewood and other products generated from ash trees.
- Propose changes to internal practices and policies to prevent spread of EAB throughout Cleveland Metroparks.
- Change language of existing “firewood alert” signs to reflect new policies.

New Public Policies

Transport of firewood into or through Cleveland Metroparks is prohibited

Cleveland Metroparks park regulations for support:

521.01 Litter and Disposal thereof...(prohibits dumping of firewood in Cleveland Metroparks)

339.01 Moving property requires prior permit...(prohibits moving firewood through Cleveland Metroparks in a vehicle designed for transport of goods & materials without permit)

New Public Policies

Prohibit the removal of “split firewood” by the public, from any facility in the Cleveland Metroparks that is provided for use ONLY in that respective facility.

Cleveland Metroparks Park regulations for support:

541.01 Property defacement, destruction or removal (aimed at removal of split firewood provided by Cleveland Metroparks for use on park property).

New Public Policies

Firewood supplied to Park facilities shall be generated from “non-ash” species.

New Public Policies

Visitor Services will include new Cleveland Metroparks public policies regarding ash trees and firewood in public correspondence.
New Internal Policies

Continue to allow the public to take firewood-sized (non-split) wood (non-ash) purposefully deposited by Cleveland Metroparks resulting from tree trimming, storm clean-up or tree removal.

This will prevent storage space issues for excessive amounts of “non-ash” wood.

New Internal Policies

• Ash wood generated within Cleveland Metroparks as a result of routine tree work, will NOT be transported to any other Reservation except for tub grinding operations.

• Routine inspection of ash wood for EAB to be conducted by Cleveland Metroparks employees during tree trimming and removal operations.

New Internal Policies

• Any ash species pruned, dead-wooded or removed will be hauled back to the nearest Park Operations management center.

• Stored ash wood will be marked to avoid processing into split firewood.

• Accumulated ash wood will be hauled to a tub grinding operation (October to March) located at either North Chagrin, Brecksville or Mill Stream Run Park Operations management center.

Firewood Alert signs currently posted throughout Cleveland Metroparks will be updated to reflect changes to firewood policies.

Ash Tree Survey

• Completed by park staff by Spring 2007

• All “user facilities” including golf courses, nature centers, Chalet etc.

• A base number of 3,546 ash trees identified and recorded as potential future hazards in user/facility areas.

• Will allow for a prioritization of where highest number of hazard ash trees will be located.
“Ruler” Ash Size Class 4’-12’

“Hugger” Ash Size Class 13’-20’

“Tower” Ash Size Class 22’ or Greater

Anywhere Reservation Parkway Management Plan 2011
Develop a Post-EAB Forest Management Plan
Long-term forest recovery strategies

Provide guidelines for tree replacement in public facilities.
Prioritization of hazardous trees in public facilities and along park roadways.
Detail management strategies for interior forest zones. This will look at secondary stress factors on non-ash species.
Provide management guidelines for associated woodland habitats impacted by tree loss.

Emerald Ash Borer Ash Tree Treatment
Initiated in Spring 2011

Ash Treatments with TREE-Age

- Insecticide viable for 2 years
- Trees selected for injection marked
- GPS coordinates taken
- Treated ash re-injected every 24 months

Tree-age
(Emamectin Benzoate)
Applied to ash specimen via trunk injection.
Additional Arborjet Kits & Training

- Each kit costs $570.00
- Training takes 30 minutes
- GPS coordinates taken with loaned units
- Treated ash re-injected every 24 months

Emerald Ash Borer
Ash Tree Removal

Contractor hired to remove potential hazardous ash
Forestry & Park Operations-preemptive ash tree removal

Initiated in Spring 2011

Vegetation Maintenance Policy for your Agency

Outlines continuous rotation program to:
- Maintain safe sightlines along parkways & intersections
- Prune / Trim / Deadwood tree specimens at public facilities and along parkways / parking lots / property lines
- Conduct annual hazard tree evaluation / inspection
- Carry out ongoing Hazard Tree Risk Management Program (removal of hazard trees)

Attorney and / or Risk Manager for your Agency

- Assists with formulating a hazard tree risk management program
- Annual hazard tree inspection process
- Rotating tree maintenance / removal program
- Encompasses periodic pathogen infestation causing tree death / decline on a wide scale

Victor Merullo

Provides application of law and trees to private, municipal and park settings.

Provides examples of case law regarding tree ownership, reasonable care, negligence of duty of care, prudent oversight and management of trees on properties etc.
Contracted removal of EAB Infested Ash Trees
Ash Removal Contract

Included Ash Material Compliance Agreement to cover ash materials being transported to non-quarantined areas.

2010: Ash Compliance referred to non-quarantined Ohio counties.

2011: Ash Compliance referred to other states ash materials might be transported to.

Long-Term Forest (Post – Ash) Management Plan

Proactive management regimes applied to forest areas where impacts to ash from EAB will affect residual forest community.

- Continuous updating infested ash maps / inventories
- Adjust routine tree removal program to accommodate infested ash prior to becoming hazards
- Contracted ash removal
- Removal of ash materials
- Ash Treatment Program
- Lingering Ash (U.S.F.S.?)

Hemlock Wooly Adelgid (HWA)

Hemlock Woolly Adelgid (HWA) (Adelges tsugae)

Tsuga spp.

- Kingdom – Plantae
- Division – Pinophyta
- Class – Pinopsida
- Order – Pinales
- Family Pinaceae

Tsuga heterophylla
western hemlock

Tsuga is a genus of conifers known as hemlocks. There are four species in North America, and four to six in east Asia.

Hemlocks

- Medium-sized to large evergreen trees, ranging from 20–60 m tall, with a conical to irregular crown, with the latter occurring especially in some of the Asian species. The leading shoots generally droop. The bark is scaly and commonly deeply furrowed, with the color ranging from grey to brown. The branches stem horizontally from the trunk and are usually arranged in flattened sprays that bend downward towards their tips.
Hemlocks that are affected tend to have a grayish-green appearance

- **Scientific name:** Adelges tsugae
- **Native to:** Asia – Japan and China
- **Date of U.S. introduction:** 1920s Pacific Northwest; 1951 – eastern United States
- **Means of introduction:** Arrived accidentally in shipments from Asia
- **Impact:** Destroys eastern hemlock trees by sucking their sap

**HWA Life History**

- HWAs are aphid-like insects, getting their name from their woolly white appearance and host preference.
- Have a very complex life cycle, producing two generations per year.
- Eggs are a brownish-orange, wrapped in a white fluffy substance secreted from the female.
- Reddish-brown nymphs hatch, with a thread-like mouthpart capable of branch piercing hemlocks to suck the sap.
- Adults are reddish-purple and have two pairs of wings; those that are wingless stay on the hemlock host to produce 50-300 eggs.
- Both the adults and nymphs suck sap from young twigs, which causes the trees to die in only a few years.
Spread

• In North America, the species lacks natural enemies that are needed to stop it from spreading. Much of the spread is pushing westward from the eastern United States.

• Spread occurs by a number of different means, including wind, birds, and mammals. Human influence impacts spread rate, through incidental transport and movement of nursery stock.

Smoky Mountain Impacts

• The hemlock woolly adelgid has already affected the Blue Ridge Parkway for about 10 years, and the Shenandoah National Park since the late 1980s.

• Within these two areas over 80% of hemlocks have already died due to infestation.

• The National Park Service is working to control the rate of spread of the adelgid with various treatment types.

Foliar Treatment

• Hemlocks found along developing areas or backcountry sites are being treated with an insecticidal soap or horticultural oils.

• This spray is able to smother and dry-out the adelgids on contact, and the equipment is able to spray up to 80 feet into the canopy.

• This particular treatment only kills the insects that are present on the tree when the application was applied.

Systemic Treatment

• Trees too tall for the spray or those near campsites are treated either by soil drenching or by injecting the insecticide directly into the trunk.

• Soil drenching is proving to be the most effective. Soil drenching is temporarily removing organic matter or duff and then pouring a mixture of imidacloprid (insecticide) and water on the bare ground. Once complete, the ground is covered back up.

• Results have been dramatic, since the trees recover their color and produce new growth.

Predator Biocontrol (2002+)

Predators introduced for control in the eastern United States, left to right (origin): Sasajiscymnus tsugae (Japan), Scymnus sinuanodulus (China), and Laricobius nigrinus (western North America)
Standardized Sampling for Detection and Monitoring of Hemlock Woolly Adelgid in Eastern Hemlock Forests
prepared by Dr. Scott Costa, University of Vermont

The Sampling Plan

- Monitor spread and level of infestation
- Decision making for management action
- Assess management success
- Research tool

Specific Goals for Sampling HWA Within a Stand

1) Detection – Are they out there?

2) Characterization – What is the level of infestation?

Sample Lower Branches

- Inefficient to sample above ground level
- Data indicates lower branches are suitable

Woolly Masses - Present or Absent

Presence or Absence Sampling Plan

Presence or Absence
White Woolly Masses
Lower Branches
NOT Tree Condition
Hemlock Woolly Adelgid Sampling Plan

• Examine 2 branches on up to 100 trees.
• HWA can be detected with 75% reliability when ≥ 2% infested trees.
• Efficient determination of % trees infested using defined precision (0.25).

Where to Sample on Trees

• 2 Branches you can reach
• Underside of last 1 meter
• Ignore foliage quality
• Base of needles – follow twigs

What to Look For

• Any evidence of woolly masses
  – Large egg sacks
  – Immature HWA
  – Scars of woolly masses
• No counting
• Not the typical HWA picture
  – initially have fewer HWA

If it doesn’t look like HWA it probably isn’t HWA

• Spittle Bugs
• Caterpillar Webbing
• Scale Insects
• Spider Webbing
• Mite Webbing
• Only at base of needles, usually
• Only on underside, usually

Bag Questionable Samples Especially in Low density Areas

THE LAW

Once you find ONE HWA on a tree, you are done with that tree!
When to Sample?

Summer Sisten
Difficulty to Detect

Hope for Hemlock’s future!
Biological Pest Management

- Insect-killing Fungi
  - Lecanicillium muscarium

- Predators
  - Sasajiscymnus tsugae: Japan
  - Laricobius derodontid: British Columbia
  - Scymnus lady beetles: China

Thousand Canker Disease
(Walnuts)

Nightmare on Walnut Street:
Thousand Cankers Disease as an
Emergent Threat to Juglans

Whitney Cranshaw
Colorado State University
Thousand Cankers Disease (TCD) – An Insect/Fungal Disease Complex affecting some Juglans spp.

A beetle – walnut twig beetle

A fungus – Geosmithia "morbida"

Walnut Twig Beetle
Pityophthorous juglandis

Adults enter trees and excavate galleries

An egg gallery is produce along which eggs are laid

Larval feeding produces a loose network of meandering tunnels in the cambium
A full grown larva, preparing to pupate.

Adults and pupa, covered with Geosmithia spores

Adults emerge through minute exit holes

The Pathogen - Geosmithia morbida

Walnut twig beetles emerging from infested trees are contaminated with spores of the fungus

Geosmithia is introduced into wounds made by walnut twig beetles
Growth of the fungus beyond the inoculation site creates a dead region (canker) in the cambium.

Multiple cankers produce girdling that seriously restricts movement of nutrients.

Death by TCD – Working Hypothesis

- Girdling from cankers (and bark beetle tunneling) restricts movement of nutrients.
- Trees weaken as stored energy reserves become depleted.
  - External symptoms develop in end stages of infestations
- Trees ultimately die from energy depletion.

Flagging symptoms emerge in end stages of 1000 cankers on black walnut.

TCD Symptoms in July 2009 (Olney Springs, CO) – Tree is now dead
Foliage wilting may occur rapidly on TCD-compromised limbs.

Origin of Thousand Cankers Disease

The walnut twig beetle was originally described (1928) from Arizona walnut, *Juglans major*.

Original collections of the beetle were made in 1896.
In 2008-2009 surveys, walnut twig beetle was repeatedly found in Arizona walnut at several sites in NM and AZ.

Progression to full-blown Thousand Cankers Disease has not been observed in AZ walnut.

Walnut twig beetle in AZ walnut functions as a “typical” *Pityophthorus* species of twig beetle. Attacks are normally limited to small diameter branches and function as a form of natural pruning.

Southern California walnut *Juglans californica*

Another native host of walnut twig beetle?
California records for walnut twig beetle date to the late 1950s (Los Angeles County).

Geosmithia “morbida” is also likely to be a native fungus.

Evidence suggesting Geosmithia “morbida” is a native fungus

- The fungus is consistently associated with walnut twig beetle – wherever walnut twig beetle occurs
- The genetics of Geosmithia strains collected over broad geographic areas appear to be showing diversity (data limited)
  - No apparent genetic bottlenecks
- Geosmithia “morbida” is a warm temperature fungus
  - Consistent with a warm climate of origin

Progression to full-blown Thousand Cankers Disease has not been observed in AZ walnut.

Resistance to Thousand Cankers Disease may often result from differences in susceptibility to Geosmithia morbida

Canker formation in black walnut

Canker formation in Southern California walnut

The Geosmithia fungus is has been found consistently associated with the tunnels and frass of walnut twig beetles – regardless of Juglans spp. or site of collection.
How did this happen?
- Somehow the beetle jumped hosts.

Spread of walnut twig beetle through the western states involved human transport of infested wood products.

What is Thousand Cankers Disease?

A canker producing fungus (with vector) + A susceptible host (black walnut) = A canker producing fungus (with vector) + A nonsusceptible host (Arizona walnut)
Thousand Cankers is a different disease in different Juglans hosts.

Thousand Cankers Disease (TCD)
- An Insect/Fungal Disease Complex affecting Juglans spp.

A Brief History of the Discovery of Thousand Cankers Disease

In New Mexico and Colorado the decline of black walnut and the involvement of walnut twig beetle was originally assumed to be associated with drought.

Other Recent New State Records for Walnut Twig Beetle
- Idaho – 2004 record; associated with die-off of black walnut in Boise-Meridian area (Frank Merickel)
Other Recent New State Records for Walnut Twig Beetle

- Idaho – 2004 record; associated with die-off of black walnut in Boise-Meridian area (Frank Merickel)
- Oregon – Common in 2004 traps samples in the Dalles area. Review of samples identified 1997 sample from Portland (Jim LaBonte)
- WA – Recovered from symptomatic trees in Prosser area (2008)

Thousand Cankers Disease was first formally described (i.e., published in refereed journal) in August 2008

Areas with Walnut Twig Beetle Confirmed - 2009

Native Range of Juglans nigra (Black walnut)

Can Thousand Cankers be Contained in the West?

States Known to have Thousand Cankers Disease as of August 23, 2011

- State with TCD Confirmed
- State Without TCD
- States with TCD regulations
Thousand Cankers presents a new paradigm of a tree disease

Tree death from Thousand Cankers results from overwhelming numbers of individual infections – not a single inoculation.

Good News: It takes a long time (Decade? More? A bit less?) for a tree to die following initial colonization by walnut twig beetles.

Visual symptoms of Thousand Cankers only develop in the last 2-3 years of the life of the tree.

Bad News: By the time symptoms appear it can be assumed that the walnut twig beetle is generally distributed in the area.

Walnut twig beetles readily breed in logs.
Two 18-in logs produced 23,040 beetles in one year after being cut.

Bad News: Walnut wood from symptomatic trees or trees cut due to TCD infection is extremely infectious.

Relative Resistance of *Juglans* to Thousand Cankers Disease – Preliminary Observations

- **Highly Susceptible**
  - Black walnut (*Juglans nigra*)
- **Moderately Susceptible**
  - Northern California walnut (*J. hindsii*)
- **Moderately Resistant**
  - Southern California walnut (*J. californica*)
  - Persian/English walnut (*J. regia*)
- **Highly Resistant**
  - Arizona walnut (*J. major*)
  - Little walnut (*J. microcarpa*)

Bad News: Prospects for effective chemical control of walnut twig beetle are poor.

Drenching branch sprays for walnut twig beetle

Foliar treatments?

The beetle attacks all areas of the tree. Attacks can occur over a period of several months (mid-April through mid-September). Establishment and maintenance of coverage will be very difficult.
Soil treatments and Walnut Twig Beetle - Anecdotes

- **Imidacloprid** may assist in *slowing spread* of walnut decline – if it is applied prophylactically
- Dinotefuran, dimethoate may assist slowing spread of decline – but trees are not saved
  - Treatments are not legal on nut-bearing trees

Systemic insecticide soil drenches/trunk injections?

The fungus grows ahead of the beetle. Cankered areas may prevent movement of insecticide to the beetle feeding site.

States with Existing or Proposed TCD Quarantines

- Missouri
- Iowa
- Kansas
- Michigan
- Indiana
- Nebraska

Value of the *Juglans* Quarantine

- Announcement of quarantine vastly increases public awareness of issue severity
- National quarantine would empower state and local officials to develop effective containment actions

Where is APHIS on this issue?

Current decision of this agency is that it is not their problem since insect is native to the United States

Implications of TCD Finding in Native Range

- There are now no ecological or geographic barriers that will prevent TCD spread throughout the entire range of *Juglans nigra*
  - Natural spread will be slow (comparably) but inexorable
- Containment through restrictions on movement of walnut wood products may slow spread
Foresters are the Front Line in the Detection of Thousand Cankers Disease!

- Investigate symptomatic trees
- Locate limbs with evidence of walnut twig beetle
- Trap walnut twig beetle

Bad News: No effective traps for walnut twig beetle have been identified.

Attractants with limited activity are in early development.

A walnut log in Denver waiting for Uncle Benny from Chicago

Wood salvaged from TCD-affected trees is extremely contagious

Beetle infested black walnut from Boulder area with bark attached as advertised on the internet

What about chipping?
Walnut twig beetles were able to complete development in larger pieces following chipping.

TCD Training Workshops – Many states are now trained in TCD diagnosis.

Background and History

- Pathway analysis for EAB
- Many infestations located in or near campgrounds
- Quickly became apparent that a variety of pests could move with firewood
- All hardwood firewood regulated in ALB and EAB quarantines

What Pests?

Firewood can spread a number of forest pests and diseases:
- ALB
- Beech bark disease
- Dutch elm disease
- Emerald Ash Borer
- Gypsy moth
- Hemlock woolly adelgid
- Oak wilt
- Sudden oak death
- Etcetera, ad nauseam

How Firewood Moves

- Bundled firewood sold at retail outlets – can move from coast to coast
- Cordwood sales – usually sold within 50 miles
- Non-commercial movement
  - Camping trips
  - Second/vacation homes
  - Anything else you can think of
Do People Really Bring Firewood with Them?

• In 3.5 hours during a firewood stop on a road outside the quarantined area, 318 pieces of firewood were seized moving in violation of federal and state quarantines.

• On a tip, all campers at a Michigan state park over a specified weekend were contacted and asked if they moved firewood into the park. Of those that responded 75% brought firewood to the park, one man hauling it from his back yard in Kentucky to Michigan.

More History…

• Resolutions asking APHIS to publish National firewood regulations
  – National Plant Board
  – National Assoc. of State Foresters
• Some States have established regulations or policies for firewood

So, We Have a Problem…

• Defining firewood
• National and regional scale producers accessible for Federal regulation and enforcement
• Small scale producers and private citizens are not
  – This is the higher risk class
• Buyers for retail chains like “bright lines”
  – Certified firewood?
• Lack of an industry organization

Solving the Problem

• Listening sessions to gather ideas
• Needed – a comprehensive strategy
  – Regulations, State and Federal
  – Coordinated outreach and public education efforts
  – Voluntary measures, including BMPs
• Multiple parties need to be involved in implementation
  – Private sector and governmental

National Firewood Task Force

• Multi-agency group
  – National Plant Board
  – National Association of State Foresters
  – U.S. Forest Service
  – National Park Service
  – APHIS
• Charged with developing recommendations for the comprehensive strategy
  – Also asked to identify others who will need to be involved

NFTF at Work

• Met by phone and in person
• Divided into three sub-committees
  – Regulations, Outreach, Voluntary
• Specific recommendations from each sub-group
• Report with recommendations is being finalized now
Recommendations for Regulations

• Best Management Practices
  – Treatment, labeling, record keeping
  – Pointers for consumers

• Federal Regulations
  – Labeling and record keeping requirements ASAP
  – Treatment requirements to be added later if needed

• States should base regulations they develop on BMPs

Recommendations for Outreach

• Consistent core message(s)
  – Focus on connection between firewood and the movement of invasives

• Targeted audiences & outlets
  – TV and Radio PSAs to reach private citizens
  – Robust internet presence
  – Trade journals
  – Corporate buyers
  – Outdoors recreation industries

• Messages to support regulations

Recommendations for Voluntary Measures

• Promote BMPs for the firewood industry

• Encourage a voluntary certification program
  – Industry run if possible
  – Needs an industry organization
  – Follow standards in BMPs
  – Proprietary labeling device
  – Marketing advantages

• Firewood exchange programs at campgrounds

Questions and Feedback?

Are there parts of this strategy you can assist in implementing?

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21st Century Security and Your Parks

Wednesday 29 February 2012 / 1PM-2PM & 215PM-315PM

SPEAKER(S)

Michael A. Sutton  
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Gregory Pickard  
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SESSION DESCRIPTION

In today’s ultra-mobile, super-connected, technology-obsessed world, security in our public spaces has become an even greater challenge. Explore ways to make your parks and especially your playgrounds safer through the use of preventative security technology and smart strategy.

Session started with Mr. Sutton introducing himself and giving a brief background in law enforcement, followed by his presentation of the product made by Miracle Recreation Equipment Company that omits high frequency noise levels only heard by teens and kids in their early 20’s. The need for this type of equipment was outlined by Mr. Sutton in that child safety and paramount, but with gang
activity, vandalism, and even child predication on or around playgrounds. Furthered by the fact that 90-95% of vandalism comes from teenagers. The product Mr. Sutton is highlighting is called Sonic Screen, made by Miracle Recreation Equipment Company, and was designed with these things in mind. The device, designed to blend in on playground equipment or in its surrounding omits a high frequency (18-20 KHz) noise that deters loitering, vandalism, and theft by teenagers. The Sonic Screen is used around the world mostly in Canada and the United States, with high rates of success in the reduced vandalism and loitering rates. The unit that houses the Sonic Screen, the Miracle Tech Security System comes with motion detection, a motion detected light, infrared, and a video monitoring system designed to keep the playgrounds and parks safe. There are various models and prices when choosing a security system.

Session then turned over to Greg Pickard from Solutions International, Inc. Mr. Pickard started session by giving a brief description of the variations of types of cameras from analog cameras, which are blurry to the more advanced IP cameras with more megapixels and the ability to zoom in and out of an image and analyze heights, types, periods of time. The ability to act as virtual security is most important, and Mr. Pickard also points out the difference is huge when comparing IP cameras and analog ones. Session then went into detail about the abilities and roles IP cameras can play in parks and recreation, with the adjustable settings a park officer can sit in his or her office and not have to go out on patrol, saving the county and park money by not having a patrol officer roaming around their park. IP cameras can be programmed to notify their users when an offense has taken place that the user set up, for example Mr. Pickard pointed out camp fires and extinguish times; by programming IP cameras to notify the park official if there is a hot spot in a camp fire it essentially eliminates the need to drive out to the camp site and visually inspect each and every one of the fire pits Instead, the user can scan the area and then zoom in on any hot spots. Session then turned its focus on park entrances and exits; Mr. Pickard gave an example of park closing hours and the need to be notified if someone or something came into an area that was not supposed to be there, with an IP camera the user can set it up to notify them if a vehicle or person comes on the property, again saving man hours and money.

**SESSION LEARNING OBJECTIVES**

- Identify three ways to deter child predators on your playground.
- Describe two ways to avoid vandalism in your parks.
- Describe new security technology available.
Leading Your Team for High Performance

Wednesday 29 February 2012 / 1PM-2PM & 215PM-315PM

SPEAKER(S)

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SESSION DESCRIPTION

What with the daily surprises that park life brings to a workforce team, how can you lead your crew to maximize performance and turn out fantastic work continuously? By defining the right outcomes and then ensuring that your team has the resources it needs to achieve them! Discover ways to increase productivity and enhance employee satisfaction by adopting outcome-based supervisory techniques.

Session focused on maximizing employee potential through a Laissez Faire management approach. Primarily, promoting focus on results as opposed to the traditional dictatorship of prescribing methodology for tasks.
Employees appreciate, and are motivated through autonomy, mastery, and purpose. Autonomy creates a greater sense of creative freedom, resulting in pride of one’s production. Comprehensive knowledge and skill development is beneficial for both employee and organizational goals. These concepts are exponentially greater when coupled with a sense of connection to a positive purpose.

Focusing on staff production outcomes rather than method, conserves management energy, which can then be directed towards higher level priorities. Additionally, employees tend to be aware of the more efficient and productive means towards accomplishing their task. Defining responsibilities as outcomes ensures that our progress encompasses validity regarding organizational mission.

Therefore, leadership objectives include identification of important outcomes, and defining acceptable levels of performance. This is achieved through clear communication of priorities and expectations. Equip staff with the necessary tools to complete their task. Essentially, management should provide an environment that contains adequate resources and structure, while eliminating barriers, and fosters a culture that energizes employee performance.

**SESSION LEARNING OBJECTIVES**

- Learn to define employee responsibilities in outcome-based terms.
- Identify key workplace influencers that can either enable or inhibit team performance.
LEADING YOUR TEAM FOR HIGH PERFORMANCE

Define the right outcomes!

Great Lakes Park Training Institute 2012

Introductions

- Sally Jo Vasicko, Co-Director, Bowen Center for Public Affairs, Ball State University
- Charles Taylor, CPM Coordinator, Bowen Center for Public Affairs, Ball State University

Session objectives

- Learn how to define team member responsibilities in outcome-based terms (and why that is important)
- Identify workplace influencers that can either enable or inhibit team member performance

What motivates our team members?

- Autonomy – the ability to control our own work behavior
- Mastery – the opportunity to learn and develop new skills
- Purpose – a connection to something important, worthwhile, and larger than ourselves

What about money?

- Insufficient pay or pay that is perceived as unfair can be a DE-motivator
- But money itself isn’t an important motivator for creative work

Exercise

- Think about the three most important employees (or job positions) that report to you
- On the handout, list their job titles and briefly (one or two sentences) describe their responsibilities
Employee performance

BEHAVIOR

+ OUTCOME

= PERFORMANCE

Why focus on outcomes?

- We don't have the time or energy to tell our staff every move to make – we should be focused on higher level priorities.
- They likely know more about how to do their job than we do.
- Pointing to the destination and letting them determine the path contributes to motivational factors of autonomy, mastery, and purpose.
- Defining responsibilities as outcomes helps us to ensure that our activities are contributing to organizational mission and vision.

Exercise

- Take another look at the responsibilities you listed in the first exercise.
- On the provided handout, identify the tasks and activities (verbs) that produce the outcomes and results (nouns) that define the desired performance.

Exceptions

- Sometimes we do specify methods.
  - Safety
  - Legal/regulatory compliance
  - Routine, non-creative work
- In these situations, we should explain why we must do it a certain way.

Managers’ leadership responsibilities

- If we don't tell our employees what to do, then what do we do?
- Identify the important outcomes.
- Define acceptable levels of performance.
- Make it possible for our employees to perform at a high level.
Managers’ leadership responsibilities

Managers and leaders must provide a work environment that provides resources and structure, while removing barriers, and fosters a culture that fuels employee performance.

Workplace influencers

- **Structure**
  - Clear priorities and performance expectations
- **Work processes**
  - Well-defined work flow with timely, accurate handoffs
- **Technology**
  - Access to tools that are right for the job

Workplace influencers

- **Skills**
  - Adequate training in critical skills
- **Motivation**
  - Autonomy, mastery, purpose
  - Feedback, rewards, recognition
- **Workplace environment**
  - Safe and ergonomic
  - Collaborative

Exercise

- **Small group discussion**
  - What are the important workplace influencers in your workplaces?
  - How do they hinder or enable high performance?
- **Debrief**
  - What important workplace influencers did you identify?
  - On which influencers do you, as managers, have the greatest impact?
  - On which influencers do you have the least impact?

Lessons learned

- **Autonomy, mastery, and purpose** are the primary motivators that lead to high performance
- **Employee responsibilities** should be defined in terms of outcomes – not tasks or activities
  - Contributes to motivation
  - Connects activities to mission and vision
  - Frees managers to focus on higher level priorities
- **Provide resources for and removal obstacles to high performance** by attending to workplace influencers
Stormy Weather

Wednesday 29 February 2012 / 1PM-2PM & 215PM-315PM

SPEAKER(S)

Sam Lashley
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SESSION DESCRIPTION

Recognize the warning signs of hazardous weather and be proactive about safety in your parks and organizations. From storm-spotting to tornadoes, floods to blizzards, thunder, lightning, and hurricanes…we’ll look at them all! Be prepared, not scared!

The National Oceanic and Atmospheric Administration (NOAA) is the sole official voice for the U.S. government for issuing warnings during life-threatening weather situations. The National Weather Service utilizes a multi-tier system of weather statements for public notification. A Hazardous Weather Outlook is issued daily to provide information on weather or hydrologic events that may occur
in the next 7 days. An advisory is issued when a hazardous weather or hydrologic event is occurring, imminent, or likely. A watch is used when the risk of hazardous weather or hydrologic event is possible (50% confident). Essentially, people should have a plan of action, and remain attentive to weather conditions. Warnings are issued when hazardous weather or hydrologic event is occurring. These events have been identified on radar, and are stated with a 70% - 85% confidence level. A warning insinuates weather conditions that pose a threat to life or property, it is recommended to take protective action.

The session was informative regarding weather terminology. Dew point refers to the temperature to which a volume of humid air must be cooled, for water vapor to condense into liquid water. Heat index is a combination of heat and humidity (human perspiration/evaporation is hampered when the surrounding air is already saturated). Instability is the condition of the atmosphere when spontaneous convection and severe weather can occur. Air parcels, when displaced vertically, will accelerate upward, often forming cumulus clouds and possibly thunderstorms. Wind shear refers to the frequent change in wind speed within a short distance. It can occur vertically or horizontally. A downburst is a localized area of damaging winds caused by air rapidly flowing down and out of a thunderstorm. A shelf cloud is a low, horizontal cloud formation, and is associated with the leading edge of a thunderstorm. A tornado is a rotating column of air that is in contact with both the surface of the earth and a cumulonimbus cloud or, the base of a cumulus cloud. A funnel cloud is essentially a tornado, minus ground contact. Rip current is a channel of water flowing seaward from near the shore. When wind and waves push water toward the shore, that water is forced sideways by the oncoming waves. This water streams along the shoreline until it finds an exit back to the sea or open lake water.

The coolest concept discussed was lightning. Storm clouds are charged like capacitors in the sky. The top portion of the cloud is positive and the lower portion is negative. How clouds acquire this charge remains a mystery. One hypothesis states, through the process of evaporation and condensation, molecular collision occurs, thus freeing electrons from rising moisture (electrons descend, while protons ascend). Charge separation in the cloud, produces an electric field. As this separation intensifies, the electrons at the earth’s surface repel deeper into the lithosphere, due to the strong negative charge located at the cloud base. This results in the earth’s surface to acquire a strong positive charge. A conductive path from the negative cloud bottom shoots downward contacting the positive earth surface (current flow is attempting to neutralize the charge separation), In turn, creating a path that short-circuits the cloud and earth. Feeling the energy from a storm is a beautiful experience!

The above information is pertinent for park management in order to provide a safe environment for guests, and limit facility damages.

SESSION LEARNING OBJECTIVES

- Identify three major weather threats in your area.
- Define/Refine weather emergency protocol for your park or agency.
- Explain one hazard of each weather event discussed in this session.
Visitors, neighbors, coworkers, bosses, and the people that you meet…and don’t like. What do you do when you are constantly interacting with those challenging folks that don’t make you smile? Discover strategies and mechanisms for handling irritating people and situations.

In this session, the speaker goes on to ask the group to judge individuals based upon their looks and their appearances. In addition, he explains that a difficult person seems to be difficult based on their personality style, life events and situations, stuff in their past, or their fears about the future.

There are several different aspects of people, and everyone has different qualities about themselves. One type of individual is
a pit bully. These people attempt to overpower others and aggressively get what they want. Another type of person is the know-it-all. Their goal is to be heard, which makes them feel important. The sneaky snake is the dishonest, two-faced, and devious individual. They tend to not be the most trustworthy, or honest, people. A pessimistic, glass-half-empty person is typically known as a crybaby. Then, there are the types of people who are outgoing, and pushovers who can't say no, also known as "alrightokuhhuhsure" types. Difficult people tend to be difficult with everyone, and although you are not to blame, you may be able to analyze the situation to find a bit of improvement. Don't take it personally, as these people are about themselves and only themselves.

There are several strategies to dealing with these different types of individuals. With a pit bully, be unpredictable and sound/act confident. If it’s necessary, report them, but in a group, just ignore them. Dealing with the know-it all takes a certain type of expert so, as an employer, make sure you're ready with the facts and just let them go. Give them an out and be prepared to call them out as you stand your ground. Strategically speaking, a sneaky snake should not be given the opportunity to make snide comments. Exposé these individuals and address their tone. Accountability is HUGE for sneaks; as they need metric rules on follow up conversations. Alrightokuhhuhsure types needs to be reassured while things are taken slower. Employers need to help them clarify their objectives and prioritize their tasks. When dealing with negative people, one should not offer an alternative solution until the problem has been thoroughly discussed. Do not try and argue with negativists out of their pessimism. One should only offer facts and anticipate the negative individual’s objections.

Plain and simple, when the problem is the focus of the situation, the problem will always get bigger. As the solution to the problem is discussed more and more, the solution will always get larger as well. In an attempt to ask oneself, “what can I do?” leadership can be taken (by anyone) to turn differences into strengths. Disagree with employees, without being disagreeable. However, as a leader, this tactic takes practice. Acceptance is the answer, as people cannot change anyone other than themselves. No one should take the bait of the difficult fish. So, as an employer, NOT reprimanding employees for difficult, bad, or disrespectful behavior is way more harmful than actually punishing them.

SESSION LEARNING OBJECTIVES

- Understanding how perceptions impact actions and relationships.
- Develop a strategy for coping with those that annoy you.
- Understanding the roles of boundaries in a relationship.
Tall, Grande, or Venti: How Do You Serve Up Your Customer Service?

Wednesday 29 February 2012 / 3:30PM-5PM

SPEAKER(S)

Vicki Basman
Chief of Interpretation
Indiana DNR
402 W. Washington Street, Rm. W298
Indianapolis, IN 46204
Email: vbasman@dnr.IN.gov

SESSION DESCRIPTION

Successful businesses have learned the art of customer service and hospitality. They fulfill what the customer wants and keep them coming back. What can we as park professionals learn from these successful business models about service and hospitality for our visitors? Learn why you should super size your customer service skills, and help that visitor feel like a Quad Venti Skinny with Double Chocolaty Chip Frappuccino Blended Cream.

SESSION LEARNING OBJECTIVES

- Identify two principles of customer service.
- Explain the importance of all employees of a park system practicing good customer service.
- Explain the concept of becoming a customer’s “third place” and why this is a worthy goal for a park or recreation setting.
How Do You Serve Up Customer Service- Tall, Grande, or Venti?

Vicki Basman, Chief of Interpretation
Indiana Division of State Parks and Reservoirs

But first, a story of....

What did the store do wrong?

- Did not know product
- Did not know customer!
- Did not train in basic customer service

Definition of customer service:
“Provision of service to customers before, during, and after a purchase”

Really?
Parks need to care about that?

YES, YOU DO!
Good customer service can set you apart from competition for people’s time, energy, and financial support.

Who does it well?

STARBUCKS COFFEE®
How Starbucks models good customer service:

• Greet people, smile
• Know and are excited about their product
• Help you understand product, give samples of new products
• Pleasant, attractive, well kept facility creates comfortable atmosphere
• Create a sense of community

Examples of poor customer service:

• Attention is not on you, the customer
• Don’t know about their products
• Poor attitude among employees
• Unattractive facility. No sense of place.
• Don’t strive to create a community

Who doesn’t do it so well?

Q: What can we as park professionals learn from successful business models like Starbucks?

A: A lot!

The Customer Service Pyramid

Survival

Survival = Basic Needs & Safety
Starbucks
Greet patrons
Explain menu
Where/how to

Parks
Greet visitors
Hand out maps
Where/how to

The Customer Service Pyramid
Knowledge
Survival

Knowledge = Insight and appreciation

The Customer Service Pyramid
Commitment
Knowledge
Survival

Commitment = Belonging, Helping

Starbucks
Drink samples
Food samples
Read *Onward*

Parks
Signs
Programs
Interp. Center
Commitment with purpose
Community with unity

If we want people to make a commitment, we need our parks to become an important part of their community.

We want to become ......

Home = 1st Place
Work = 2nd Place
Our Parks = 3rd Place

Everything Matters!

Today, visitors want (demand) positive experiences.

Elements of Experience Economy
- Accentuate positive cues
- Eliminate negative cues
- Create a sense of place

Good customer service will make this happen!
Vicki’s Top Ten List

#10: Get feedback from customers - use evaluations
# 9: Identify and appreciate your customer’s needs
# 8: Listen to them
# 7: Know what they want
# 6: Make them feel appreciated
# 5: Help them understand your product
# 4: Accentuate the positive
# 3: Know how to apologize
# 2: Give more than expected
# 1: Treat your employees well! Train, inform, update and praise them. Often!

May all your customer service moments be more like a good cup of coffee……... than a can of anchovies.

Thank you!

Vicki Basman, Chief of Interpretation
division of State Parks and Reservoirs
Confessions of a Camp Counselor

Thursday 1 March 2012 / 830AM-945AM

SPEAKER(S)

Scott Watson
5351 East Thompson Rd. #129
Indianapolis, IN 46237
Email: scottwatson@heartlandintervention.com

SESSION DESCRIPTION

Life at camp. It’s a completely different world. Only when you take a step back, do you have the chance to look at your attitudes, behaviors, and motivations. How can you take the lessons from that one fun world and use them in the real world? Scott Watson will share stories and tales to jumpstart your journey of introspection.

In this morning’s session, we had planned on learning about the major sensations that camp can bring to almost any individual. With a lot of thought behind it, our speaker switched up his talk and described his entire life, and his passion, with a picture of camp instead. Growing up at camp, one could relate to the epic amounts of learning that can come from camp experiences. Camp can bring children SO much more than a week away from home. Without insecurity, camp gives kids the opportunity for a sense of
belonging, friends, escape from everyday life, fun, laughter, etc.

The speaker goes on to ask what is the one thing in life that you feel you MUST do? With a survey of patrons under 90 years old, 63% of people claimed they wish they had risked more in this lives. What’s stopping us? Although life would be better if things were different, we are judged on actions…not our intent.

Build relationships that will last a LIFETIME. These friendships can come from anywhere...including camp. What individual would you phone at 2 am, just to talk? Although one’s job may seem to be about the facility and programs, it is not. As a leisure service provider, one’s focus and one’s vision should be about the people.

The speaker advises everyone not to live a mundane life, but rather find quality individuals whom you can share a section of life with...who can help push us to do that one thing in life we feel we need. The lifelong stories that will forever be timeless involve great friends. The details of these stories, the ones made with lifelong friends, are typically remembered the most. Camp can create a difference in anyone’s life. Wouldn’t you LOVE to be that individual for someone? To allow an atmosphere for children that can change lives, bringing a sense of belonging in kids, could also save a kid’s life.

Life is TOO short. Take the time, and the opportunity, to make a difference in someone’s life. It’s not about facilities. It’s not about programs. Who saw potential in you? What is special about you, which someone discovered in roughly a couple of minutes after meeting you? Are you providing that same experience for those special people you come into contact with? Plant the seed in those you come into contact with...kids, management, camp staff, anyone. I learned today that getting it right, or getting it wrong, isn’t too important. Tender moments in life are created from the way in which you treat people.

SESSION LEARNING OBJECTIVES

- Have an understanding of how one’s motives impact one’s behavior.
- Develop an awareness of how the past can shape the present.
- Understand the role of relationships on mood and well-being.
Support for non-motorized transportation has never been greater than it is currently. Trails connect destinations, but more importantly, they connect people.

Session focused on Michigan Trail Greenway Alliance, a non-profit organization that fosters and facilitate the creation of an interconnected statewide system of trails and greenways for recreation, health, transportation, economic development and environmental/cultural preservation purposes.

It is implemented at both the state and local levels by assisting public and private interest in trail and greenway planning, funding, development and maintenance. MTGA builds public support for trail and greenway development through events, membership, education, information and advocacy activities. There is tremendous growth of interest in and use of existing trails. Trails help connect people with nature, trails help children get to school safely, trails help encourage people to exercise, trails bring families together and trails are good for our economy.

Connecting Michigan is a year-long project spearheaded by the MTGA to address the critical issues which impede the progress on developing a quality statewide interconnected system of trails and greenways. During the course of this project, they have engaged all of their stakeholders: the Michigan Departments of Natural Resources, Transportation, Community Health, Travel Michigan, the Governor’s Council on Physical Fitness, the National Parks Service, Michigan Recreation and Park Association, many regional trail coalitions, regional planning and transportation organization, local governments elected officials and personnel, and individual trail advocates.

SESSION LEARNING OBJECTIVES

- Describe how new ADA regulations are affecting trail management and Federal Transportation policies are impacting trail funding.
- Identify strategies for developing connectivity through partnerships with multiple jurisdictions.
- Identify how community cycling programs can provide measurable environmental benefits.
Year Long Look at the Challenges and Rewards of Fishing…as Seen Through the Eyes of an Angler

Thursday 1 March 2012 / 10AM-1130AM

SPEAKER(S)

Ted Bohman
Property Manager
Pokagon State Park
450 Lane 100 Lake James
Angola, IN 46703
Email: tbohman@dnr.in.gov

SESSION DESCRIPTION

Join Pokagon park manager Ted Bohman as he shares his experiences as a lifetime angler. Using personal photographs and stories, Bohman will guide you through the seasons in, on, and around the water.
Sustainable Landscapes

Thursday 1 March 2012 / 10AM-1130AM

SPEAKER(S)

J. Anthony Eyerman, ASLA, LEED AP
Director, Planning and Landscape Architecture
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Suite 250 - Office 24
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Steve Barker
Restoration Ecologist
Cardno JF New
708 Roosevelt Road
Walkerton, IN 46574
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SESSION DESCRIPTION

To build truly sustainable parks, we need to build sustainable, integrated systems. Discover trends, techniques, and tools to facilitate sustainability on a landscape level at your park! In order to design a park with sustainability in mind, we must integrate environmental, fiscal, and social concerns. Set an example for residents in your community. Learn how to overcome economic and cultural barriers to fully engage homeowners, property managers, and public decision-makers.

Steve Barker, and Ecological Resource Specialist with 15 years of ecological restoration and environmental planning experience, and Tony Eyerman, planner and landscape architect with over 32 years of experience in recreational planning and sustainable solutions design, discussed some of the projects of the Cardno International Environmental Management Companies; this multidisciplinary company focuses on water resources, natural resources, permitting and compliance, litigation support, and environmental economics.

Sustainability can mean “meeting the needs of the present without compromising the ability of future generations to meet their own needs”. Of the many values of sustainable design, there is the environmental value or reduced impact on natural resources and ecosystems; the economic value of less cost to operate, maintain, and construct; and the social value of enhancing community livability, and minimizing the impact on local infrastructure.

In Sustainable Design, we must recognize the following principles: Nature as a model and mentor; recognition of context (analysis and understanding of historic, cultural, social, environmental, and economic factors); creation of lasting value; treatment of landscapes as interdependent and interconnected; integration of the native landscape with development (providing and maintaining connections to adjacent habitats, creating supporting natural landscape components, and education/outreach); reuse of previously disturbed sites; reducing, reusing, and recycling; and knowledge sharing, education, and interpretation.

Green infrastructure can be broadly defined as the interconnected network of open spaces, natural areas, and ecologically engineered landscapes that provide or replicate ecosystems functions and services at multiple scales in the landscape (regional scale, community scale, neighborhood scale, and site level). Unfortunately, there are many barriers to sustainability/green infrastructure, including technical and physical, legal and regulatory, community and institutional, and financial. However, a paradigm shift has begun across the country and the world, in which we are beginning to gain a greater understanding of benefits and value, cost savings, and appreciation.

An important topic of focus was that of the functions and values of urban wetlands, including control of storm water ( detention and retention), nutrient uptake, wildlife habitat, and open space/aesthetics. Urban Wetlands can provide the Direct Use Benefits of recreation (like boating, birding, hunting, and fishing), the Indirect Use Benefits or nutrient retention, water filtration, and flood control, the Option Benefits of potential future uses and education, and the Non-Use/Existence Benefits of biodiversity, cultural heritage, and bequest value.

SESSION LEARNING OBJECTIVES

- Define and communicate sustainability effectively.
- Explain how to treat the landscape as Interdependent and Interconnected.
- Discuss reuse of previously disturbed sites.
Sustainable Park Design

Integrated, Interconnected, Interdependent Landscapes

Steve Barker, Cardno JF New
Tony Eyerman, ASLA, LEED AP, Cardno ENTRIX
Introduction

Cardno Companies
• International Environmental Management Company
• Recent expansion has involved the integration of ENTRIX, JF New, TEC and other companies
• Multidisciplinary company focused on Water Resources, Natural Resources, Permitting & Compliance, Litigation Support, and Environmental Economics

Steve Barker, Cardno JF New
• Ecological Resource Specialist 2
• 15 years of ecological restoration and environmental planning
• Experience…

Tony Eyerman, ASLA, LEED AP, Cardno ENTRIX
• Planner, Landscape Architect
• 32+ years of Recreational Planning and Sustainable Solutions design
• Experience…. 
What is your definition of sustainability?

“We have a responsibility to sustain - if not enhance - our natural environment and our nation's economy for future generations.”
-Steve Johnson, Administrator, USEPA

Sustainability means “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” - 1987 publication of the World Commission on Environment and Development report, Our Common Future

Sustainable developments are those which fulfill present and future needs (WECD, 1987) while [only] using and not harming renewable resources and unique human-environmental systems of a site: [air], water, land, energy, and human ecology and/or those of other [off-site] sustainable systems (Rosenbaum 1993 and Vieria 1993).
The Added Value of Sustainable Design

Environmental Value
• Reduced impact on natural resources and ecosystems

Economic Value
• Less costly to operate and maintain and often to construct

Social Value
• Enhance community livability
• Minimize impact on local infrastructure
Sustainable Design Principles

- Nature as a Model and Mentor
- Recognition of Context
- Create Lasting Value
- Treatment of Landscapes as Interdependent and Interconnected
- Integration of the Native Landscape with Development
- Reuse of Previously Disturbed Sites
- Knowledge Sharing, Education, and Interpretation.
Green Infrastructure Defined

Green infrastructure can be broadly defined as the interconnected network of open spaces, natural areas, and ecologically engineered landscapes that provide or replicate ecosystem functions and services at multiple scales in the landscape.

- Regional Scale
- Community Scale
- Neighborhood Scale
- Site Level
Barriers to Sustainability/Green Infrastructure

- Technical and Physical
- Legal and Regulatory
- Community and Institutional
- Financial

So Why???

I. Paradigm shift
   - Greater understanding of benefits and value
   - Cost savings and appreciation

“Our ability to perceive quality in nature begins, as in art, with the pretty. It expands through successive stages of the beautiful to values as yet uncaptured by language.”

— Aldo Leopold, A Sand County Almanac
Porter County Landscape Standards and Guidelines

1. Applicability
2. Street tree planting
3. Parking lot landscaping
4. Buffer yard landscaping
5. Perimeter landscaping
6. Lot plantings
7. Plant material
8. Soil information
9. Planting details
10. Landscape maintenance
11. Sustainability
12. Pedestrian network
13. Natural area protection
14. Stormwater best management practices
15. Tree preservation
16. Pruning best management practices
17. Landscape plan
18. Permit / inspection process
I was told there would be flowers : ( 
What Everyone Expects
Recognition of Context

Analyze & understand

- Historic
- Cultural
- Social
- Environmental
- Economic
- Delaware GC, urban,
- It’s got to fit! Context, scale,
Recognition of Context

- Ecological Inventories
- Water Resource Assessments
- High Value Habitat Assessments
- Cultural / Historical Assessments
- Recreational / Quality of Life
- Economic Development
Create Lasting Value
Integration of the Native Landscape with Development

- Provide and maintain connections to adjacent habitats
- Create supporting natural landscape components
- Education and Outreach
Integration of the Native Landscape with Development
Reuse of Previously Disturbed Sites
Reuse of Previously Disturbed Sites
Reuse of Previously Disturbed Sites
Reduce. Reuse. Recycle
Reduce. Reuse. Recycle
Reduce. Reuse. Recycle
Knowledge Sharing, Education and Interpretation
Knowledge Sharing, Education and Interpretation

Gasworks Park, Seattle, WA
Treatment of Landscapes as Interdependent and Interconnected
Treatment of Landscapes as Interdependent and Interconnected
Treatment of Landscapes as Interdependent and Interconnected

Maximizing Use of Open Space
Treatment of Landscapes as Interdependent and Interconnected
Treatment of Landscapes as Interdependent and Interconnected

Delaware Run BMP Study  Delaware, OH
Treatment of Landscapes as Interdependent and Interconnected
Treatment of Landscapes as Interdependent and Interconnected
Treatment of Landscapes as Interdependent and Interconnected
Treatment of Landscapes as Interdependent and Interconnected
Treatment of Landscapes as Interdependent and Interconnected
Treatment of Landscapes as Interdependent and Interconnected
Indiana Dunes State Park (Case Study)

I. Parking lot constructed by CCC in early 1930’s

II. Creek confined to 84” pipe

III. Area utilized for auxiliary parking until 2004.
Today, nonpoint source pollution remains the nation's largest source of water quality problems.
Urban Wetland Functions and Values

I. Control of storm water
   • Detention
   • Retention

II. Nutrient uptake

III. Wildlife habitat

IV. Open space/aesthetics

**Same functions and values as “Rural Wetlands”**

***More important – more limited***
Urban Wetland Benefits (Services)

I. Direct Use Benefit
   Recreation: boating, birding, hunting, fishing

II. Indirect Use Benefit
    Nutrient retention, Water filtration, Flood control

III. Option Benefit
     Potential future uses, Education

IV. Non-use (Existence Benefits)
    Biodiversity, Culture, Heritage, Bequest value
Indiana Dunes State Park
Auxiliary Parking Area
November 2004

Economic and Environmental Drivers:
- Limited use
- Maintenance
- Flooding
- E. coli
Conceptual Plan
Sustainable Development (Case Study)
Sense of Community
Conclusion

I. Integrate natural areas/open space protection with economic development and public use
II. Identify, valuate and communicate “services”
III. Compare Ecological Functions to “Hard” Infrastructure Costs and Outcomes
Summary of Sustainable Design Principles

- Nature as a Model and Mentor
- Recognition of Context
- Create Lasting Value
- Treatment of Landscapes as Interdependent and Interconnected
- Integration of the Native Landscape with Development
- Reuse of Previously Disturbed Sites
- Reduce. Reuse. Recycle
- Knowledge Sharing, Education, and Interpretation.
Thank you!

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Three hundred years ago, a French-Huron Metis’ scout disappeared into the wilderness to explore and trade. He found his way to the Great Lakes, where he was taken in by the Ojibwa People of the region. He was given a name and became part of their tribe. Today, he returns to share with you the stories, songs, and dances of the places he explored, from the Great Lakes, to the Ohio, Mississippi, St. Lawrence and Mohawk Valleys.

Mr. Genot Picor served as an historical and educational interpreter who took us on a journey back in time, introducing us to the French voyageurs of the North who served as traders and transporters of goods through the wild of the not-so distant past.
Many young men came to the Americas from France to escape orphanages and lives on the street to become voyageurs. There were the Monsieur du Larde (“lard-eaters”) who traveled along coastal regions during the summer seasons; there were the Courier du Bois (“Runners of the Woods”) who were independent fur traders, coming later to be regulated by the French government; but Mr. Picor focused on telling the tale of the Metis, those of mixed-blood from intermarriages with the French and native women. This group, recognized as a first-nation race in Canada, has its own cultural music and story-telling styles that is a unique combination of traditional French embellishment and animation with a native reverence for the Earth. Their stories, however, were primarily used for education, and not just entertainment.

A voyageur was provided, by his company, with a set of clothes to serve him during his cold journeys through the wild. He would receive two handkerchiefs, a tuque, garters for their pant-legs, moccasins, a large coat, a warm blanket, a sash (which the voyageur would wear tied in the back if married, and tied on the side if single), gloves, and - if they were lucky - a bear skin.

To relieve fatigue, many voyageurs would play small games or instruments, such as the jaw harp or flute. A voyageur might even court a young woman by sitting outside her lodge at night and playing the flute for her. If she emerged from the lodge and sat beside him, she accepted his proposal. How long the voyageur would play was proof of how dedicated he was, and how patient of a husband he would prove to be!

Mr. Picor finished the session by telling an interpretive story using his hands about the formation of the Manatu islands across from the sleeping bear dunes in Michigan, a folk tale passed down from the natives of the region.

SESSION LEARNING OBJECTIVES

- Describe how the voyageurs impacted the Great Lakes and their settlement.
- Identify three characteristics, skills, or traits of a voyageur.
- Explain how your park system can benefit from voyageur interpretation.
2011 Awards and Recognitions

FLAHERTY AWARD

Red Mill Pond GLEFER Project and Park Development
LaPorte County Parks Department
LaPorte, Indiana

Waukegan SportsPark
Waukegan Park District
Waukegan, Illinois

Taylor’s Dream Boundless Playground
Fort Wayne Parks and Recreation Department
ATTENDANCE AWARD

Tim Morgan (20 Years)
Superintendent, LaPorte County Parks
LaPorte, IN

John Greene (10 Years)
Parks Grounds Specialist, Deerfield Park District
Deerfield, IL

LAWSON AWARD

Jules Erwin
Assistant Director, Great Lakes Park Training Institute
Bloomington, IN
OUTGOING CHAIR RECOGNITION

Brian Huckstadt

EPPLEY SCHOLARSHIP

Thomas Hannan
City of Beech Grove Parks Department Director
Beech Grove, IN

GADGET AWARD

Triathlon Rack
Phase I
- Thirteen natural turf soccer fields
- Four 300' softball fields
- One championship synthetic soccer/softball field
- Nine restroom buildings
- Two concession facilities
- One maintenance building
- One playground with water play area
- 5,000 lineal feet of sidewalk
- Sustainable design elements
  - Native prairie landscape
  - Vegetated detention
  - Bioswales
  - Rain gardens
- Lightning detection system
- 16,000 sq. ft. of perennial flower beds
- First event of 2011: March 17
- Grand opening: June 3
- Last event of 2011: December 14
GOVERNOR SIGNS ZACH’S LAW

DAILY MAINTENANCE
- Trash cleanup
- Restrooms
- Irrigation
- Ball diamond preps

WEEKLY MAINTENANCE
- Field painting
- Mow schedule

MONTHLY MAINTENANCE
- Fertilization
- Aerification and overseeding
- IPM practices
- Perennial landscape

ANNUAL MAINTENANCE
- Core aerification
- Deep tine aerification
Taylor’s Dream

It all started with a Dream…

- Taylor Reuelle (11 years old) wanted a playground for children with disabilities.
- The physical, developmental, cognitive & sensory disabilities.
- Experience independent, self-directed play, each at their own level of ability.
- Kids of all abilities being able to playing together.

Community Involvement

- Hosted a Design Day
- Partnered with local agencies
  - Turnstone Center for Children & Adults with disabilities
  - The League for the Blind and Disabled
- Partnered with larger agencies
  - IDNR, Pepsi Cola, CVS Pharmacies, Boundless Playgrounds

Funding

- Designed for 2-5 year olds
Beta Pod
- Designed for 2-12 year olds

Gamma Pod
- Designed for 5-12 year olds

Splash Pad

Site Amenities

And why we did it!

Thank You
Great Lakes Parks Training Institute
for the
Daniel Flaherty Park Excellence Award
END VIEW/ LEGS AT 30 DEGREES
¾” DRILL BIT FOR HOLES

TRIATHOLON RACK
10’ X 1 ½” CONDUIT FOR MAIN POST
10” X 1/2” CONDUIT FOR LEGS CUT TO 5’

STORAGE

½” CONDUIT W/CRIMP 48” UP

7-8 BIKES PER RACK
SUPPLIES AND COSTS

• 1 -10’ X 1 ½” STANDARD CONDUIT- $10.50 ea.
• 2 - 10’ x ½” STANDARD CONDUIT- 1.50 ea.

• TOTAL PER RACK= $12

• ¾” DRILL BIT/DRILL PRESS
• BALLPEIN HAMMER
• *FREE LABOR INCLUDED*
Student Volunteers
Shea Combs
“Unless someone like you cares a whole awful lot, nothing is going to get better. It’s not.” - Dr. Seuss

Bernadette de Leon
“The real journey consists not in seeking new landscapes, but in having new eyes.” – Marcel Proust

Christopher Damkoehler
“You’re going to do something. You mise well do it right.” – Lonnie Racking

Lilian Hopson
“Shoot for the moon; even if you miss, you’ll land among the stars.” – Les Brown

Logan Cady
“I believe in the impossible...” – Fantasia Barrino

Abby Dean
“To keep every cog and wheel is the first precaution of intelligent tinkering.” – Aldo Leopold

Brandy Nethery
“Be the change you want to see in the world.” – Unknown

Steven Morrissey
“Fall seven times, stand eight.” – Chinese proverb
Bronze Sponsor

The Disc Golf Company

Bronze Sponsor
The Mission of the Great Lakes Park Training Institute is to provide the very best training and education programs that benefit all allied park and recreation agencies, professionals, and technicians at all levels by providing a learning environment to share new ideas, learn, and gain knowledge relating to successful operations, techniques, and methods in their respective fields.