



# POLLUTION PREVENTION Northwest

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## P2 and National Security

*Can P2 serve to enhance national security? PPRC asked this question of our regular readers, and others in the P2 network here in the Northwest and across the country. The responses were varied, fascinating and thought provoking. This issue of Pollution Prevention Northwest brings you a sampling of the responses, as well as other related ideas for your consideration.*

*Here at PPRC, our entire staff wishes the best for the security, health and quality of life for everyone in the Northwest and beyond.*

**S**ecurity: the topic du jour. Although America slowly is recovering from the shocks of last September, these attacks, the anthrax scares and the economic downturn have reframed the way we view the world. As practitioners of pollution prevention, do our activities have a role in this new world view?

The following pages touch on some areas where the confluence of P2 and sustainability concepts and their practical implementation may indeed help enhance national security: renewable fuels, energy efficiency, smart “green” buildings, chemical “pharmacies” and more.

Read on for discussion of how these concepts are already working. Many of the topics are relevant across industry or subject lines. Regular readers may feel a bit of déjà vu with some of the following topics, but it’s no accident: pollution prevention does make us more secure.

### ENERGY

Whatever your political leanings, serious security risks in our energy

system exist today and have for years:

- A drunk American cripples an 800-mile oil pipeline (that carries 20% of the U.S.’s domestic oil). A single bullet hole shuts down the pipeline for 3 days and sprays 285,600 gallons of oil over a large forested area. Over \$3 million is spent during the first 10 days of cleanup. 2001.
- Explosives (left by an unknown source) blast a hole in the same pipeline, spilling 670,000 gallons of oil. 1978.
- Rolling blackouts & steep price hikes in previously stable California energy market. 2001.
- Oil tanker docked in Los Angeles harbor explodes, shatters windows miles away. 1978.

Potential terrorist “targets” such as long-distance electric transmission lines, oil and gas pipelines, and liquefied natural gas marine tankers that carry more explosive power than a fully-fueled airliner are already vulnerable to accidents, lunatics, and terrorists. On top of this, dependence on Mideast oil exposes the nation to additional risks.

In contrast, renewable energy sources, better utilization of energy, and wider spatial distribution of energy sources can enhance security while preventing pollution.

### Renewables

Renewable power sources, such as wind, solar, biomass, geothermal, wave energy, and potentially fuel cells, can generate clean domestic power that may be more secure than many of

*continued next page...*

## INSIDE

P2 & National Security .....	1
Energy .....	1
Green Buildings .....	3
Smart Growth .....	4
Transportation .....	4
Chemicals .....	4
Insurance .....	6
Federal Agencies .....	6
State & Local Government .....	7
Business & Industry .....	8
Individual Action & Conclusion.....	8
News Digest .....	9
Meet Our Staff .....	10

our current energy sources.

Wind power is coming of age across the world, and throughout the Northwest. The Bonneville Power Administration (BPA) recently began purchasing Northwest-produced wind power to supply 18,000 homes. Still under construction, this wind power comes from the Stateline Wind Project on the Washington-Oregon border. This facility will eventually provide enough power for 300,000 people. Other wind projects exist in Washington, Oregon, and Alaska (see list at <http://www.awea.org/projects>) and a working group has formed in Idaho to help take advantage of the state's significant wind-power potential (<http://www.idwr.state.id.us/energy/Wind>). Wind power can sell for as low as 4 cents/kWh, making it competitive with fossil-based energy, and the American Wind Energy Association predicts that the price will continue to drop to 2.5 to 3.5 cents/kWh by 2005.

Solar power also holds much promise: the technology keeps getting better and cheaper, and it has the advantage of being generated at the site where it is needed. Solar cells cost a tenth of what they did in the 1980s and

are starting to move out of the fringe into the mainstream. Mt. Rainier National Park recently installed a solar system to power employee housing, water pumping, and restrooms at one park location. It meets 85% of electricity needs and replaces a noisy, petroleum-fueled generator. Roof-based solar panels at the Seattle Center now power the interior lights for one of the Center's buildings. The photovoltaic industry will grow 25% annually according to the Department of Energy, and the agency projects that this growth is sustainable through the year 2020.

Other renewable fuels, geothermal, bioenergy and wave power can also add to the Northwest's energy mix. The earth's geothermic energy generating potential in the Northwest is quite high, and largely untapped (see map <http://www.rnp.org/htmls/geotherm.htm>). At the Oregon Institute of Technology, the campus has been using geothermal energy to heat and cool the campus since 1964 at a savings of over \$200,000/year as compared to a natural gas fired boiler system (read more at <http://geoheat.oit.edu/service.htm>).

Biomass – generating energy and fuels from agricultural products like rice straw or switchgrass – also holds potential and could be supported by the Northwest's large agricultural base. The national Bioenergy 2002 conference is scheduled for Boise, Idaho this September (<http://www.ott.doe.gov/rbep>).

Yet another interesting renewable technology involves harnesses the power of ocean waves. A 1 megawatt demonstration project just off Washington's Olympic peninsula could be up and running by year's end (<http://www.nrglink.com/pressreleases/pr120901aquaenergy.html>).

Arguably the hottest new technology, fuel cells, are gathering lots of attention. Working fuel cells are already on the ground: a New York City police station installed a fuel cell in 1999 that brought the station's supply up to its modern-day needs and allowed it to avoid installing a power-line upgrade with a \$1.2 million price tag. The

## On energy...

*Energy security starts with using less energy far more efficiently to do the same tasks. Then it gets that energy from sources that are inherently invulnerable because they're dispersed, diverse, and increasingly renewable.*

**Amory and L. Hunter Lovins**, Rocky Mountain Institute

## On renewables...

*The benefits of shifting away from reliance on fossil fuel include: uninterrupted, distributed clean power resources, effortless Kyoto compliance, cleaner quieter vehicles, world class engineers that produce world class products and the economic advantage of being among the first to supply wind, geothermal, solar and fuel cell technologies.*

**Carolyn Gangmark**, Environmental Protection Agency, Region 10

## On the future of energy...

*[In two decades] The energy industry's small players ... [are] likely to be people like us – when we're not using the fuel cells in our homes and cars, we'll plug them in to serve as Internet-like "micropower" nodes supplying electricity to the grid.*

**David Stipp**, *Fortune Magazine*, November 12, 2001

Department of Defense has keen interest in fuel cells for power generation in remote locations, and has dozens of installed fuel cells as part of an ongoing pilot project (<http://www.dodfuelcell.com>). Every major auto manufacturer as well as corporations like General Electric and DuPont have made large investments in development of the technology, and the Bush Administration recently announced plans to push for faster adoption of fuel cell vehicles. Here in the Northwest, BPA is conducting a commercial test of residential-sized fuel cell systems (more at [http://www.bpa.gov/Energy/N/projects/fuel\\_cell](http://www.bpa.gov/Energy/N/projects/fuel_cell)).

Energy visionaries suggest that the future is in small fuel cells powered by clean and safe hydrogen sources. Although not yet ready for prime time in

### MORE ON RENEWABLES

#### State Energy Alternatives

*Learn more about renewable energy technologies, and see what's ongoing or planned in your state*  
[http://www.eren.doe.gov/state\\_energy/states.cfm](http://www.eren.doe.gov/state_energy/states.cfm)

#### Renewable Energy Policy Project

*Read renewable energy news and scads of related information*  
<http://www.crest.org>

#### Energy Report: "Poised for Profit"

*The authors assert that the NW is poised for global leadership in the clean energy industry, which may grow twice as large as passenger and cargo aircraft manufacturing over the next two decades.*  
<http://www.climatesolutions.org/staging/pubs/pdfs/CleanEnergyReport.pdf>

the consumer market, energy companies are eager to benefit from the huge fuel efficiency gains that this technology could provide and research and development is quickly advancing.

Renewable technologies are no longer just for long-haired “back to nature” hippies. These technologies can reduce U.S. dependence on foreign energy sources and prevent the pollution associated with fossil-based fuels. Some renewables are now outright cheaper than fossil fuels, and the economies will continue to improve over time. Royal Dutch/Shell projects that half the world’s energy may come from renewables by 2050.

### **Efficiency & conservation**

Despite the flash and technowizardry appeal of new technology, it’s important to keep in mind the simple and practical methods that save energy *today*. Efficiency (doing more with less energy) and conservation (using less) has yielded dramatic results.

In 2001, the Northwest saved about 85 megawatts of electricity ~ enough to serve more than 80,000 homes. Lest the reader think this was a one-time event, take a look at this trend: from 1980 to 1999 regional conservation efforts spearheaded by BPA saved almost 750 average megawatts of power. In effect, the public “built” a large power plant that’s pollution free, works 24/7, and requires almost no maintenance. This power “output” is nearly enough energy to serve the combined electricity needs of Boise, Idaho and Tacoma, Washington.

These savings help keep energy demands down in the Northwest, even while the population grows.

#### **EFFICIENCY LINKS**

##### **Performing Walk-Through Energy Audits of Industrial Facilities**

<http://www.bpa.gov/Energy/N/reports/audit/index.shtml>

##### **How to Save Energy at Home and the Workplace**

[http://www.bpa.gov/Energy/N/energy\\_home/save\\_energy](http://www.bpa.gov/Energy/N/energy_home/save_energy)

### **Distribution**

Military strategists have long noted that a wide distribution of what could be considered potential “targets” is inherently safer than bunching them all together. Last October, one well-armed drunken hunter dramatically demonstrated this principle by disabling a large Alaskan oil pipeline. Other centralized energy sources or conduits (e.g. nuclear power plants, large-scale liquefied natural gas storage facilities, long distance high voltage electrical lines) could also make attractive “targets.” Expensive protection measures like armed guards and intelligence-gathering are useful, but unlikely to be 100% successful forever if someone is motivated to attack.

Greener, sustainable energy solutions could involve appropriately-scaled renewable systems that are spatially distributed and provide uninterrupted power directly to the user – no mining, drilling, shipping, pumping, or refining involved. A distributed energy system simply has no large terrorist targets, and power users have the enormous benefit of protection from disruptions and price fluctuations, also enhancing their security. Not surprisingly, these systems are on the rise; this could be the wave of the future.

### **GREEN BUILDINGS**

Green buildings are designed and operated in ways that reduce their energy consumption, provide enhanced occupant comfort, productivity and health, and are physically safer for occupants. As such, many green building elements overlap with those of safe buildings.

Picking up the energy theme again, green buildings use less energy while still providing full heating, cooling, and lighting functions. Buildings that have solar cells or other independent energy systems would be safer in the event of an attack. Occupants would have reliable power for basic needs such as food storage and preparation, heating/cooling, and ventilation systems. These

### **On efficiency...**

*Before September 11, energy efficiency was a no-lose proposition... After September 11, the case for energy efficiency has become even stronger, as America comes to grip with the security risks of overdependence on oil from the Middle East... Since the Persian Gulf region controls two-thirds of the world’s proven oil reserves, America’s dependence on the Middle East will increase as long as the nation uses so much oil so inefficiently. Greater efficiency will reduce dependence on the Middle East and buy time for development of clean, domestically produced petroleum alternatives, including hydrogen fuel cells and bio-energy... Wasteful energy consumption is a risky indulgence the nation can no longer afford.*

**Jim DiPeso**, REP America (Republicans for Environmental Protection)

### **More on efficiency...**

*At this time of increased public awareness of the link between energy security and homeland security ... energy efficiency remains the quickest, cheapest, cleanest way to reduce our nation’s dependence on foreign oil and increase national security.*

**David M. Nemptow**, The Alliance to Save Energy



### **On green building...**

*Building owners should seriously consider the benefits of green technology as an available means of making buildings more safe. As terrorism escalates, tenants will demand a safe and secure environment. At the same time, these measures will improve indoor air quality and increase peace of mind, thereby enhancing worker productivity.*

**David J. Freeman & Robert L. Wegman**, from [http://www.earthtimes.org/nov/environmentalissuesprotectingnov1\\_01.htm](http://www.earthtimes.org/nov/environmentalissuesprotectingnov1_01.htm)

buildings would also be cheaper to operate in the face of energy price hikes for other reasons.

Building access can be designed to attractively provide easily-guarded entrance points that also reduce heat or cooling loss.

Green buildings provide high indoor air quality through technologies such as high efficiency particle air (HEPA) filters and positive pressure ventilation systems that prevent impurities from entering into building air systems. These systems protect indoor air quality and help keep residents healthy, however, in the event of a chemical or biological attack, these air quality technologies would be vital to protect occupants from harmful airborne substances.

These and other green building techniques can simultaneously protect occupant health and security.

## SMART GROWTH

Like the security that comes from decentralized energy sources, some have argued that increasingly spread-out communities would be inherently safer than high-density urban housing. The prevention mentality, however, would suggest that the converse is true: sprawl only compounds the problem – leading to greater reliance on cars, less use of transit, more traffic, and increased demands for fuel.

Designing communities that reduce reliance on cars has the additional benefit of encouraging neighborhood community. Neighborhood-based crime watch programs have amply demonstrated that where neighbors know and

look out for one another, crime is reduced and security enhanced.

## TRANSPORTATION

Closely linked to the previous topics, transportation is a key piece of the whole security puzzle. The current trends of increased vehicle miles traveled in conjunction with decreased overall fuel economy spells trouble for sustainability. In contrast, 9/11 has forced some people to consider their transportation impacts, at least in terms of their personal security.

Hybrid vehicles, such as the Toyota Prius and Honda Insight, have been bright stars on a dim fuel economy horizon lately. 2001 model cars and trucks had the lowest fuel economy in two decades (20.4 mpg), and overall U.S. demand for gasoline is on the rise. Gas consumption in November 2001 was up 3% from the previous year. Since gasoline accounts for more than 40% of U.S. petroleum use, increased fuel economy could significantly reduce demand, with simultaneous reduction of air pollution and greenhouse gas emissions.

Reduced demand for air travel has had a significant, though difficult to quantify, pollution-reducing effect as well as a severe economic impact. Many governments and businesses have clamped down on work-related travel and many individuals now choose to avoid personal trips by air. If you're one of these people, you can see how it affects your personal carbon dioxide contribution at [https://www.greentagsusa.org/GreenTags/calculator\\_intro.cfm](https://www.greentagsusa.org/GreenTags/calculator_intro.cfm).

Interest in alternative forms of commuting grew after 9/11. According to the International Telework Association and Council, about 16.5 million Americans telecommute to a regular job at least once a month, and this figure is growing by about 20 percent annually. Electronic conferencing is also growing more popular, and is projected to replace some business travel permanently.

Despite these varied trends, promising new technologies exist on the horizon. Fuel cell vehicles and second generation hybrid vehicles (soon to include the 2003 hybrid Ford Escape SUV and 2003 fuel cell vehicles from Honda and Daimler-Chrysler) can help reduce demand for gasoline while also reducing pollution.

## CHEMICALS

Those in the P2 field have officially been reducing toxics for more than a decade (P2 Act, 1990), yet risks still abound: 850,000 facilities in the U.S. use hazardous or extremely hazardous chemicals. These chemicals are manufactured, transported, and stored: posing some risk at each stage of being used inappropriately. According to EPA data, more than 120 chemical plants have types and quantities of hazardous chemicals that would produce toxic clouds if released; and at their current locations these plants would each threaten more than a million people.

Even before last September, security experts were concerned about inappropriate use. And with good reason:

### On urban planning...

*Designing communities so that people can walk or take mass transit to their jobs or to the store, as they do in New York, Boston, Philadelphia, Portland, Washington, and the nation's other great cities is another means to reducing oil dependence and improving national security.*

**Keith Schneider**, Michigan Land Use Institute

### On personal pollution...? Airport bar tabs on the rise

Despite fewer flyers, and many bars now being limited to ticketed travelers only, airport bars have reported their business is back to previous levels, some even report a rise in sales since 9/11.

**Washington Post**, 12/5/01

### On chemical facilities...

*...chemical facilities are now under heightened security, as are the nation's transportation systems, military sites, and government properties. Better security is necessary, but in the long-term our strategy should be to minimize our use of toxic chemicals altogether, and the sooner the better.*

**Anne Platt McGinn**, Worldwatch Institute

- EPA receives reports that thieves break into industrial/commercial locations every few weeks seeking ammonia, an ingredient in illegal drugs. Valves sometimes are left open, exposing the thieves, and the local community. Reported in February 2001.

- Online ingredient lists and recipes for do-it-yourself explosives manufacturing readily available. Internet provides library of information (or disinformation).

- According to the U.S. Chemical Safety and Hazard Investigation Board over 60,000 chemical accidents occur a year, resulting in more than 250 deaths annually.

- American citizens create and detonate ammonium nitrate truck bomb at Murrah Federal Building, killing 168. April 1995.

Because facilities that use toxics are so dispersed and so integrated into U.S. manufacturing and the economy, there are no simple security answers, but there are several topics beyond classic P2 techniques and technologies that deserve consideration.

### **Site security & transportation**

Many facilities have stepped up worker identification checks, hired additional guards and enhanced perimeter security. To help spread these precautions across the industry, several industry trade groups recently published guidelines for site security that detail voluntary methods to enhance both physical and informational security (<http://www.socma.org/PDFfiles/SecurityGuideFinal10-22.pdf>).

Ensuring security of rail, truck and barge links poses additional challenges as these vehicles may go through residential areas and/or be parked for extended periods at locations near where the materials are needed and security may not be as tight. In recognition of this problem, the Federal Motor Carrier Safety Administration has begun non-regulatory informational visits with most of the nation's hazardous materials carriers. The visits are intended to help carriers realize possible

threats and guard against them (<http://www.fmcsa.dot.gov/hazmatsecure.htm>).

Best management practices, automatic shutoff features, and secure tamper-proof locks and well-trained and attentive employees are all important to safeguarding chemicals.

### **Risk management planning**

Controversial both before and after 9/11 is the public availability of detailed chemical information and "worst case scenarios" for chemical facilities, as required by section 112r of the Clean Air Act.

Information is a double-edged sword: it can help citizens understand risks that could affect them and make them better able to work with facilities to encourage process changes or chemical substitution that both prevent pollution and reduce local risks. On the other hand, the same information could be used against the public to plan attacks.

Policymakers and stakeholders have argued about this for years. A great deal of this information is only available in hard copy form at a small number of libraries, rather than on the internet. After 9/11, related online information about emergency plans, mapping, and pipeline locations was removed from Federal web sites. Discussion and possible legislation continues. See links below for additional information.

### **Chemical use reporting**

Chemical use reporting, beyond the level of the Toxics Release Inventory, may be another tool to increase P2 and security. Massachusetts, New Jersey, and Eugene, Oregon adopted legislation requiring this type of reporting and some individuals that responded to PPRC's initial questions thought chemical use reporting would have sweeping effects for both P2 and national security.

Results from both Massachusetts and New Jersey indicate that chemical reporting has led to significant chemical reductions, trends *not* mirrored elsewhere in the nation. Furthermore New

## **RISK MANAGEMENT PLANNING & ACCESS TO INFORMATION**

### **News Article: "Some Government Agencies Pull Potentially Sensitive Data from Web"**

[http://abcnews.go.com/sections/scitech/DailyNews/WTC\\_InternetSecurity\\_011004.html](http://abcnews.go.com/sections/scitech/DailyNews/WTC_InternetSecurity_011004.html)

### **EPA's Risk Management Program**

<http://www.epa.gov/swercepp/birima.htm>

### **Internet-based RMP Info: CON**

<http://www.nationalreview.com/comment/adler092701.shtml>

### **Internet-based RMP Info: PRO**

<http://www.ombwatch.org/article/archive/104/>

Jersey also reported significant financial savings: every dollar spent on reporting and planning yielded \$5 - \$8 in savings to companies (World Resources Institute report at <http://www.wri.org/meb/measure/bx04-mup.html>). Not surprisingly, when a business understands how chemicals are being used and their full costs, there is greater motivation to reduce chemical use and waste.

A more far-reaching chemical reporting system would make it more difficult for any terrorists to operate without being tracked, and hopefully prevented, from using chemicals inappropriately.

## **STATE & LOCAL CHEMICAL REPORTING PROGRAMS**

### **Massachusetts Toxics Reduction Information**

<http://www.turi.org/turadata/Success>

### **Firms Benefit from Tracking Chemical Use in NJ & MA**

<http://www.wri.org/meb/measure/bx04-mup.html>

### **Eugene Chemical Reporting Database**

<http://www.ci.eugene.or.us/toxics>

## Chemical exchanges

Online chemical exchange sites have stepped back to examine their security protocols after last September. Some of these sites facilitate the trade of large quantities of toxic, caustic and explosive materials, and in a virtual environment, it may be hard to know exactly who is procuring the materials.

Operators of these sites need to ensure security is adequate to protect against misuse or legal liability. Security screening has been enhanced, and additional measures are being considered, such as digital certificates and biometric identifiers (e.g. retinal or fingerprint scans).

Perhaps 9/11 could decrease the use of waste exchanges, and instead have the effect of sending still-usable materials directly to disposal. This is a long-term trend that requires examination.

## Learning from nature

Back to the drawing board, engineers and innovators have a role in making the chemical process safer and developing better products.

Carbohydrate chemistry involves using naturally-derived materials to produce feedstocks for products like pharmaceuticals, pesticides, and plastics. These basic materials, such as corn, are renewable, available domestically, and overall pose fewer hazards than the chemically-derived materials they replace. According to the Worldwatch Institute, bio-based products already account for about 30% of the U.S. market in surface cleaning agents, adhesives, and additives in plastics. Not only is it possible and safer, it's economic.

Chemists and inventors can also strive to learn from eons of evolution. "Biomimicry" – taking a lead from nature – provides an array of inspiring ideas that humans could copy. Spider's silk (ounce for ounce, stronger than steel) or the adhesive that mollusks produce (barnacles and mussels use biodegradable materials to produce a strong non-toxic anchor) would be useful in thousands of human-scale

applications.

Labs and engineering schools across the world are developing self-cleaning paint, better hearing aids, non-toxic wastewater treatment, and more. At the University of Washington, a team is learning how the abalone produces fracture-resistant mother-of-pearl that is twice as tough as our high-tech ceramics, but manufactured without toxins or high energy inputs.

To read more on the topic, visit <http://www.arn.org/docs2/news/engineersasknature121201.htm>, <http://65.165.109.4/books/biomimic.html> or <http://www.biomimicry.org>.

## INSURANCE

Estimates of insured losses from the September 11 attacks range from \$30 billion to more than \$60 billion. Insurers have said they will pay claims from September 11, but warn they might not financially survive another blow of that magnitude without help from the federal government and reinsurance companies (that assume risk initially assumed by another insurer). Reinsurers reportedly have declined to cover terrorism for all lines of insurance in new contracts with primary insurers.

Sectors specifically identified of being at risk include: agriculture, sports/recreation, construction, transportation, retail, energy, real estate, financial and state & local government (read more at <http://www.disasterinformation.org/aiastatement01.htm>).

Policymakers are debating legislative fixes, but in the meantime, insurers might consider specific preventive efforts when issuing future policies. Companies that have policies to reduce toxic materials used on site, follow best management practices, address site security issues, and provide worker training might be less risky to insure.

## FEDERAL AGENCIES

Federal agencies have planned for and developed policies on counter-terrorism for years. Many of these

strategies also promote P2. Further, as the largest purchaser of goods and services, the federal government can use environmentally preferable purchasing to specify products and services that enhance security.

## Fuel efficiency

According to the Defense Science Board Task Force, the Department of Defense is the nation's largest energy user. This is largely due to inefficient tanks, planes, and ships that require significant logistical support to deliver the enormous quantities of fuel they demand. Many fuel-saving technologies have been identified that also lessen the need to place logistical support staff in potentially dangerous situations, reduce the pollution generated by all this movement, and reduce total fuel demand. According to energy expert Amory Lovins, "comprehensive military fuel efficiency could probably save upwards of ten billion dollars a year, because the few billion dollars of direct annual fuel savings can trigger far larger avoided fuel delivery costs."

Fuel-efficient "green" fleets provide another opportunity for the government to both reduce its fuel consumption and to stimulate the market for highly efficient passenger vehicles.

The federal government's purchasing power can help bring economies of scale and lower purchase prices to technologies such as hybrid vehicles, solar panels and fuel cells that will reduce America's reliance on oil and enhance national security.

## Energy

Mentioned previously, energy is another major security/P2 overlap. Federal facilities and agencies have realized significant cost savings from energy efficient lighting and building upgrades. They also have supported the development and use of green energy technologies. Opportunities still exist for additional savings, research, and acquisition of energy-saving technologies and products.

## Chemical control

Federal facilities have successfully used Environmental Management Systems (EMSs) to reduce use of hazardous substances.

Another tool, Authorized Use Lists, have worked well in Washington state and elsewhere to reduce the sheer number and types of toxic materials at federal facilities.

The chemical “pharmacy” concept dovetails increased security and P2, and has been working well at many federal facilities, especially military bases, in the Northwest. This system is used to tightly control hazardous chemicals and wastes: set amounts of specified hazardous chemicals are delivered to each worker at his/her place of production and all wastes are accounted for and removed. This reduces waste and eliminates mystery “orphan” waste containers, plus it also reduces traffic in and out of the facility.

### On cities...

*Much terrorism – and counterterrorism action – will focus on urban areas... Terrorists seeking to influence political conditions have many incentives to attack urban targets.*

**RAND**, from “Countering the New Terrorism,” 1999

## STATE, COUNTY & LOCAL GOVERNMENT

As evidenced on 9/11, in the event of an emergency, state and locals are the first responders. They must have plans and expertise in place, and wind up shouldering much of the cost for these activities. Preliminary estimates from the National Governors Association projected that homeland security efforts could cost \$4 billion in this first year alone.

Security work by state and local governments is broad: enhancing security measures to protect airports, seaports, waterways, utilities, public transit and other public infrastructure;

additional training for police and fire personnel; bolstering public health programs; and procuring communications and rescue equipment. There is not necessarily a P2 “connection” for each of these preventive measures, but this discussion highlights a couple of the clearest connections.

Also useful to note is the perennial funding challenge. Of the approximately \$10 billion federal anti-terrorism budget, only 4.9 percent is allocated to state and local first response activities. Of this amount, most funding is earmarked for states, rather than cities and major population centers. Given budget concerns, it may be useful for state and local governments to point out the connection between P2 and security to help fund projects that have these multiple benefits.

## Water and wastewater

The vast majority of American water and sanitation utilities are municipally owned and operated. Municipalities now must address threats of physical destruction and biological or chemical contamination as new elements of standard emergency preparedness efforts. There is new motivation to switch to safer water treatment technologies that do not require chlorine, which is potentially volatile and often stored in on-site rail cars near urban areas. Some wastewater treatment plants are fast-tracking the switch to sodium hypochlorite (that doesn’t have the potential to drift off-site), ultraviolet light treatment, or ozone. All of these water treatment methods involve less-hazardous materials and enhance security of the facilities and surrounding areas.

Water conservation efforts can also be useful to make supplies go further,

### **Water Security in Your Community: How Local Government Managers Can Prepare for the Unexpected**

March 14, 2002

11 am Pacific time (2 pm Eastern)

<http://www.lgean.org/html/webcast>

### On the concept of *prevention*...

*Structural, cultural, institutional, and statutory changes are needed to secure the nation’s critical infrastructure so that terrorists have less incentive to target them and the nation can respond quickly if they do.*

**Heritage Foundation**, From “Defending the American Homeland”, 2002

save energy, and make citizens less vulnerable to any disruptions in the water system.

## Energy

Some municipalities own and operate power generating facilities. Seattle City Light, for example, owns and maintains hydropower dams. Obviously, protection of these facilities is an immediate high priority. Conservation efforts, and development of other renewable energy sources have been and will continue to be part of a longer term strategy to minimize, diversify and distribute risk.

## Pest management

Parks departments may increase local safety by reducing chemical use in landscaping activities. Herbicides and pesticides are often stored near the place where they will be used – neighborhood parks, playfields and public buildings. Integrated pest management, in addition to thoughtful plant choice, reduces the need for storage and use of these chemicals.

## Waste exchanges

The internet has been an incredible boon to successful industrial waste materials exchanges across the country. In addition to the industry-run exchanges (previously mentioned), many are run by municipalities. Although an aid to P2, red flags have been raised that dishonest traders might use these services to acquire materials inappropriately.

## BUSINESS AND INDUSTRY

Many of the previous topics also apply to private businesses and industry: renewable energy, conservation, green construction, careful chemical use and oversight, just to name a few. Some businesses may find that environmental health and safety provides a useful framework to incorporate security enhancements, and over the long term makes their operations more sustainable.

With changed mentalities after September, the P2 message may resonate with businesses that were previously uninterested.

Meanwhile, some companies that proactively addressed security threats prior to last fall are beginning to reap the benefits. DuPont Safety Resources has taken the knowledge and experience from its own environmental health and sustainability work and now offers trainings to help others defend against physical and electronic threats (<http://www.dupont.com/safety>).

## INDIVIDUAL ACTION

After the events of last fall, a renewed sense of patriotism emerged. Many Americans want to do something tangible to help: across the country thousands of people were turned away from blood banks (they quickly reached their maximum capacity for storage), demolition/recovery crews at the site of the World Trade Center had to turn away hoards of willing volunteers (crews were already full), applications for national service with AmeriCorps are up, and relief efforts raised over \$435 million from businesses and citizens for the families of victims.

This volunteerism and desire to contribute is nothing new. For example, the “victory” garden allowed those at home to help with the war effort decades ago. Americans also rationed their use of supplies like gasoline and food to ensure that the military had enough. They hunted to find materials that could be recycled into the war effort: even FDR found a half ton of recyclable metal in the White House

basement that went to the World War II effort.

Given this intense desire to help, P2 information providers can explain to the public that they can fight the “war on terrorism” by using energy wisely, driving less, and integrating efficiency into their purchasing decisions (cars, houses, appliances).

### LINKS FOR INDIVIDUALS

#### More on Victory Gardens

<http://americanhistory.si.edu/house/yourvisit/victorygarden.asp>

#### Home Improvement Toolbox

<http://www.epa.gov/hhiptool/>

#### Energy Efficient Home Appliances

<http://energystar.gov/products/forhome.shtml>

#### Fuel Efficient Cars & Trucks

<http://greencars.com>

## CONCLUSIONS

The events of last September have deeply affected the U.S. and the world. None of this discussion is intended to make light of the tragedy, or suggest that it has done any favors for people and the environment. It hasn't. Many security efforts, such as additional lighting, cameras and other security equipment, will be responsible for increased energy use and resulting pollution.

Here at PPRC, we try to be realists, and we think it's important to recognize the deep-rooted effects of the sometimes-intangible work done in the P2 field. Security in the new millennium will be multi-faceted, and requires a broad perspective. Pollution prevention is a part of the whole.

There's already lots happening here in the Northwest and elsewhere to protect security, with the side benefit of preventing pollution, from high-tech to tried-and-true energy technologies, to green building and thoughtful commu-

## On the big picture...

*Pollution prevention is an important component of sound, sensible environmental planning. ...I hear a high level of anxiety about certain kinds of seemingly remote risks. Meanwhile, I wonder who is trying to make the world safer for asthmatic children who live in cities with high levels of air pollution or for the billion or more citizens of our planet who lack clean drinking water. Let's talk about how P2 can strengthen not just national security, but the security of human needs, worldwide.*

**Nancy Helm, City of Seattle**

## And lastly...

*The only way to win World War III is to prevent it.*

**President Dwight Eisenhower, 1956**

nity planning, to transportation and everyone has a role to play.

Educators use the term “teachable moment” to refer to a time when students are ripe to absorb a particular lesson. Six months after the largest terrorist attack on American soil, we are experiencing a long and resonant teachable moment that touches every American. Pollution prevention and energy efficiency have been instrumental in protecting the quality of life in the Northwest, but there's still plenty of opportunity to use these tools to do even more while simultaneously helping enhance our security.

## P.S. Root Causes

Several contributors noted that P2 is basically about finding the root causes of problems. Both international development (including P2 technologies) and the relationship between environment and security were mentioned and may be interesting followup, if the reader is so inclined. A few additional links are provided on the next page.

# News Digest

## New From PPRC: Product Stewardship Tool

This resource provides practical information on design for environment, eco-labeling, life cycle management, green purchasing, take-back programs, and servicizing. You'll find printable checklists for putting the tools into practice; information about who's doing it already; and where to find more information on the web. Check it out at <http://www.pprc.org/pubs/topics/epr>.

## More From PPRC: Greening Supply Chains

Find solid background information on the various components of greening a supply chain, practical suggestions on implementing the techniques, information about who else is already implementing these practices, and loads of links in this resource. It contains many case studies and also provides results from a survey that will help government agencies understand how they can support businesses in greening supply chain initiatives. Take a look at <http://www.pprc.org/pubs/topics/grnchain>.

## Diesel Solutions Program

A coalition of businesses and agencies in the Puget Sound area has developed the Diesel Solutions program to make diesel vehicles in the region dramatically cleaner. This voluntary initiative will leverage ultra-low sulfur diesel fuel into western Washington and enable a wide range of public and private fleets to join a consortium to retrofit diesel vehicles. This is a model program with experience that can be transferred to other urban areas of the country. For more information, visit <http://www.pscleanair.org/dieselsolutions>.

## Green Office Guide

The City of Portland Office of Sustainable Development produced "The Green Office Guide" to help businesses cut their office operating costs. The 40-page booklet includes tips, case studies, and more. Get a copy from [http://www.sustainableportland.org/Grn\\_Off\\_Guide.pdf](http://www.sustainableportland.org/Grn_Off_Guide.pdf) or call 503-823-7222.

## NPPR Conference in Portland

The National Pollution Prevention Roundtable will gather in Portland, Oregon from April 2 – 5 for this year's meeting. The event will focus on the latest in P2 policy, regulatory and technical innovations and sustainability practices. Find more information at <http://www.p2.org>.

## Alaska Site Assessment Program

The Alaska Green Star program offers a new assistance program that makes house calls! The program assists businesses and organizations to increase efficiency and reduce waste in the workplace. It's more than just the usual general tips, hints, and ideas; it also provides facility-specific suggestions to increase efficiencies; decrease energy, waste management, purchasing, and labor costs; and improve employee comfort and safety. For more information, contact Green Star at 907-278-7839 or [jeanne@greenstarinc.org](mailto:jeanne@greenstarinc.org).

## Sustainability Recognition for the NW

A recent report ranks the 50 states according to their sustainability efforts: Oregon came in first in the nation, and Washington tied for fourth place. "The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning" provides a detailed appraisal of individual state preparedness to implement sustainability as integral public policy. A supplemental technical volume, "Detailed Results of the Green Plan Capacity Analysis," is also available. Access both reports from <http://www.rri.org/home.html>.

## Environmental Design Conference

The EnvironDesign6 conference is dedicated to in-depth exploration of real-life challenges and concrete solutions of the sustainable design movement. It features workshop sessions, a product learning center and keynote addresses from Robert F. Kennedy, Jr., Peter Senge, Oregon Governor John Kitzhaber, William A. McDonough, and others. It will be held in Seattle, Washington from April 3 – 5, 2002. More information is available at <http://www.environdesign.com>.

### FOLLOWUP LINKS ON ROOT CAUSES

**UN Environment Chief: Fight Terrorism's Root Causes**  
<http://ens.lycos.com/ens/sep2001/2001L-09-21-02.html>

**Why Root Causes Are Important**  
[http://www.homerdixon.com/pop/root\\_frames.htm](http://www.homerdixon.com/pop/root_frames.htm)

**Center for Environmental Security**  
<http://www.pnl.gov/ces/>

**Global Policy Forum on Terrorism**  
<http://www.globalpolicy.org/wtc/terrorism/terrindex.htm>

# Meet Our Staff

## Cathy Buller Networking Lead

Cathy has worked at PPRC since 1997 (plus a volunteer stint 1995-96), focusing on research projects, workshop planning, and facilitating discussions among P2 program managers in the Pacific Northwest. Her unofficial title at PPRC is "Director of World Change through Party Planning." Her "party planning" credentials date back to her high school's Earth Day conference in the mid-1970s, and include work in the mid-1990s planning seminars for the multi-day Waste Information Expo hosted annually by King County, WA Dept. of Ecology, and others.

In between, Cathy studied environmental planning at UC Santa Cruz, then worked for a big consulting firm writing environmental impact statements for pipelines, transmission lines, shopping malls, and intergalactic weaponry. She helped write permit applications and negotiate the first RCRA permits for commercial hazardous waste treatment, storage and disposal facilities in Washington and Oregon. Early on she also bagged alfalfa sprouts for a living, and worked as Santa's elf at a shopping mall Holiday Photo Booth. (David Sedaris made much more money out of the experience!) She is still put off by great quantities of alfalfa sprouts, and by scrawny little dogs that really never will photograph well.



Cathy Buller  
cbuller@pprc.org

Moving into pollution prevention work coincided with a personal re-commitment to work on practical, community-based, sustainable solutions to the social and environmental inequities of our time. At PPRC and in community volunteering, Cathy enjoys settings where people with diverse and sometimes competing interests listen to each other, speak with respectful honesty, and forge effective solutions. Since last September, she's flown an Earth flag from her car's antenna, and will soon add a bumper sticker that reads, "Oh, Evolve!"

Cathy and her husband volunteer extensively at their daughter's Waldorf grade school - a thriving new school with endless opportunities to help with renovation, fundraising, festivals, open houses, and field trips. It is "a complete experience of community" for them, full of growth and satisfaction at many levels. Along with academic work, their daughter is adept at climbing tall, tall evergreens, doing handwork of any kind (she taught Cathy how to knit!), caring for animals, and singing lovely songs. (Her rap version of "Who Built the Ark - Noah, Noah" was a memorable excursion from the norm.)

Whenever possible, Cathy likes to swim, bicycle, garden, dance, enjoy live music, and explore mountains and beaches. Last fiction book read: "A Thousand Acres," by Jane Smiley. Current non-fiction reading: "Three Strikes: Miners, Musicians, Salesgirls, and the Fighting Spirit of Labor's Last Century" by Howard Zinn, Dana Frank, and Robin Kelley. And yes, the quest for complete basement clean-out continues.



**PPRC**

*Practical solutions for big environmental issues*

PPRC, a non-profit organization, is the Northwest's leading source of high quality, unbiased environmental solutions information. Through a collaborative approach, we focus on solutions that integrate resource efficiency and environmental health into business, government, and communities.

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