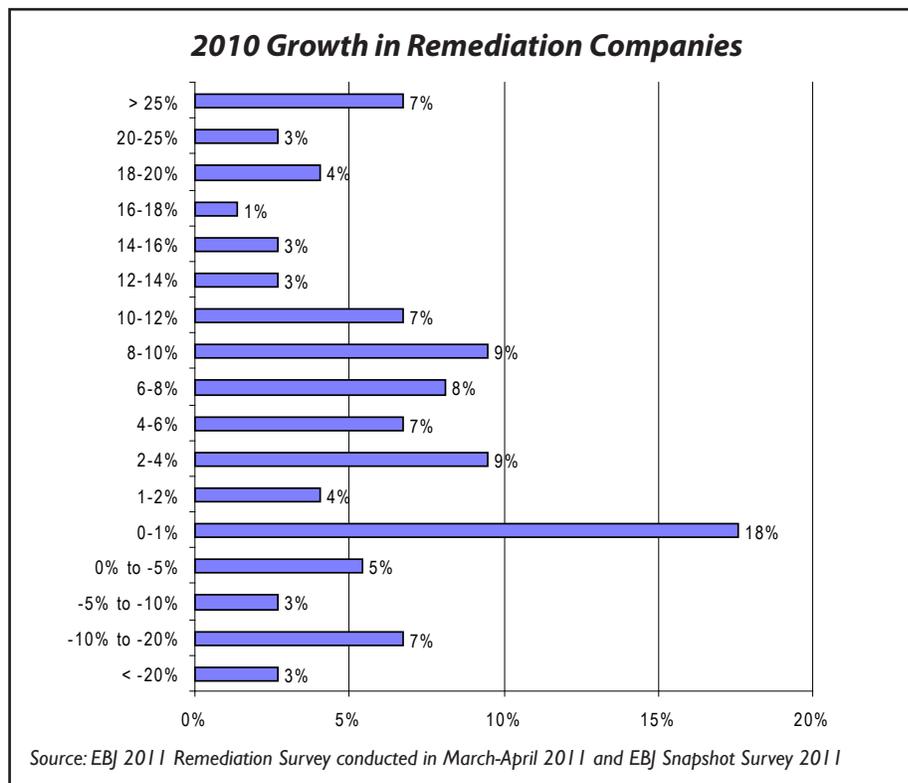


REMEDICATION & REDEVELOPMENT MARKET HOPES NASCENT RECOVERY COMPLEMENTS FEDERAL STABILITY

Like some elected officials, the environmental cleanup market was supposed to have a term limit. Unlike those elected officials, nobody quite knows what the limit of that term is, but it was widely thought that the number of hazardous waste sites in the United States was finite, and that we would gradually draw down that portfolio and have successfully addressed the dirty side of our industrial legacy by some time this decade. After all we are not supposed to be making asbestos or Superfund sites anymore. But while closure has been obtained at thousands of sites nationwide (including more than 350 Superfund sites that have been removed from the National Priorities List), the database of contaminated sites seems not to be diminished much no matter how hard remediation contractors work.

Like the practice of philosophy or even healthcare, the cleanup business is supposed to be working itself out of a job. For those in the remediation business, however, the work has kept coming as waves of sites have come into play over the past decade as regulatory, economic and development priorities change—and new categories like manufactured gas plants or shale gas sites emerge—and the business is not in free fall or even decline. EBJ estimates the U.S. remediation business grew 2-3% in 2010 to \$7.7 billion in total revenues, of which 62% is generated by remediation construction, with the remainder in consulting, design and analytical work.

Remediation contractors reported better than average performance in the environmental industry in 2009 and 2010. All



remediation companies, including consultants and engineers, reported aggregate revenue gain of 0.9% in 2009 and 2.9% in 2010. Of the 74 companies reporting remediation revenues in EBJ's 2011 surveys, 31% reported declines in 2009 and 18% declined in 2010 (see chart above for the spread of 2010 growth responses). For just remediation contractors, or those doing site construction predominantly, revenue gain was 9% in 2010.

Although it's been quite some time since the remediation segment was one of the leading growth segments of the environmental industry, contaminated sites do keep turning up, and not all of them are small, over-looked parcels. What's more, the large, complex sites already known to exist continue to present challenges, and even the not-so-large and complex sites still require re-visiting from time to time to improve upon the original remedy—some-

Inside EBJ

Remediation Overview: Market rebounds to 2-3% growth in 2010 from a flat 2009; Demand in private sector should balance government cutbacks in 2011-2013 1-5

Beltway Bullets: EBJ's Washington insider derides the partisan politics pervading the capitol; Energy and environmental policy face an uncertain future 6-7

Brownfields market widens in scope to survive collapse in property values 7-11

GM RACER Trust sets up new cleanup program to address 120+ sites 12-13

State programs suffer budget cuts but try to keep pace with site backlog 14-19

Company Profiles: Weston Solutions finds opportunity in reduced property values; GZA sees demand growing in the private sector; Gannett Fleming not giving up on federal work; Hull & Associates takes a different tack in redevelopment; Columbia Technologies maps the sub-surface; Geotechnology gets the lead out 20-27

Application of Remediation Technologies: 1992-2010 in Soil Treatment

	Number of Appl 92-96	% of Proj	Number of Appl 00-04	% of Proj	Number of Appl 06-08	% of Proj	Number of Appl 09-10	% of Proj
Excavate/Dispose Off-Site	4,065	41.5%	6,548	34.6%	8,455	33.4%	5,472	34.1%
Soil Vapor Extraction (SVE)	4,159	42.5%	4,142	21.9%	6,011	23.8%	1,946	12.1%
Cap & Containment	2,673	27.3%	4,631	24.5%	2,862	11.3%	1,385	8.6%
Solidification/Stabilization	713	7.3%	1,629	8.6%	1,925	7.6%	1,992	12.4%
In-Situ Bioremediation	1,575	16.1%	2,631	13.9%	2,375	9.4%	1,972	12.3%
Ex-Situ Bioremediation	800	8.2%	1,570	8.3%	888	3.5%	930	5.8%
Monitored Natural Attenuation			498	2.6%	3,716	14.7%	1,999	12.5%
Thermal Desorption	493	5.0%	553	2.9%	647	2.6%	881	5.5%
Chemical Oxidation					3,108	12.3%	1,765	11.0%
Permeable Reactive Barriers					905	3.6%	1,352	8.4%
Soil Washing	218	2.2%	204	1.1%	551	2.2%	408	2.5%
On-Site Incineration	136	1.4%	121	0.6%	571	2.3%	285	1.8%
Total Number of Applications	14,832		22,526		32,016		20,388	
Total Number of Active Projects	9,785		18,935		25,289		16,028	
Applications per Project	1.52		1.19		1.27		1.27	

Source: EBJ annual surveys of remediation companies; Sites may have multiple applications; Some technology categories were added in latter years

times because that remedy was the wrong one, sometimes because it was badly implemented, and sometimes because new, "green" technologies and approaches can help us to achieve modern, sustainable or politically desirable goals. In both ways, the cleanup market keeps plugging along.

It is ironic that the one movement expected to inject sustainable life and purpose into the cleanup market has struggled as much or more than any portion of the remediation business in the past couple years. The term "brownfields" was coined in the 1990s, conveying the idea that we weren't just cleaning up past contamination but recycling properties back into productive economic use in the places that needed economic revitalization most—cities—while paying the additional environmental dividend of protecting green spaces from new development. Brownfields redevelopment meant more than just alleviating the guilt of our polluted past; it was an engine for economic development and urban renewal.

Alas, the brownfields market is still at its core a real estate market, albeit one that claims reuse, recycling and sustainability as major components of its value proposition. The crash in the real estate bubble, of course, was itself a central figure in the recent recession, and real estate and land de-

velopment still haven't recovered, although some indicators are starting to point in the right direction.

In EBJ's 2011 Snapshot Survey, conducted in January and February, EBJ asked executives across the environmental industry to rate client sectors according to business growth in 2010 and the outlook for 2011-2013. Commercial and residential property development ranked in the bottom three client sectors in 2010 with local government; and in the bottom five of 26 ranked markets for 2011-2013. Polling remediation companies specifically in

March-April 2011 in EBJ's annual Survey of Remediation Companies, Markets, and Technologies, real estate developers ranked 11th of 17 client markets for 2011-2012 growth prospects, up from last in a similar ranking from 12 months ago (see table on page 3).

Robert Colangelo, executive director of the **National Brownfield Association** (NBA; Barrington, IL) affirms the stagnant market perspective when he points out that the traditional industrial, commercial, residential, and mixed-use segments of the brownfields redevelopment

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Ranking of Remediation Client Categories by Growth Prospects for 2011-2012

	Very Strong	Strong	Good	Flat	Modest Decline	Big Decline	2010 Rank
Petroleum (Exploration & Refining)	10%	33%	33%	21%	2%	0%	3
Power Utilities (Nuclear & Conventional)	2%	23%	48%	27%	0%	0%	5
Chemical, Pharmaceutical, & Plastic *	2%	25%	33%	38%	2%	0%	10
Manufactured Gas Plants	7%	11%	25%	55%	2%	0%	6
Mining	4%	19%	23%	43%	6%	4%	9
Federal: DOE	0%	10%	31%	52%	4%	2%	2
General Manufacturing	0%	4%	45%	47%	6%	0%	10
Federal: DOD	0%	10%	33%	49%	6%	2%	1
Transpo Eqpt (Auto, Aero, Rail, Ship)	0%	9%	32%	51%	9%	0%	11
Banks, Law, & Finance	0%	7%	35%	52%	4%	2%	14
Real Estate Developers	0%	6%	31%	53%	6%	4%	16
Electronics/High-Tech	0%	2%	33%	56%	6%	2%	6
Federal: Other	2%	9%	20%	54%	11%	4%	7
Federal: EPA	2%	4%	25%	56%	8%	4%	4
Gas Stations & Matls Transpo Svcs	0%	0%	29%	60%	8%	2%	15
Local Government	0%	8%	12%	51%	27%	2%	13
State Government	0%	4%	20%	49%	22%	4%	12

Source: EBJ Survey of Remediation Companies, Markets, and Technologies 2011. Question was: Please rate the following clients in terms of prospective revenue growth in the next two to three years. Ranking derived from a factor of weighted responses. * Not separate from general manufacturing in the 2010 survey

market are “very flat” into 2011. The real estate market remains in a state of decline, with perhaps a million more foreclosures to come this year, and this condition has a domino effect on the brownfields market. There are bright spots in brownfields redevelopment, however, as Colangelo and others detail in the feature beginning on page 7. These include the progressive and visionary projects that dogged, innovative developers are pursuing—the siting of solar photovoltaic (PV) power plants on closed landfills, or the conversion of urban in-fills into urban gardens, or the establishment of small medical centers on former gas stations (“minute clinics,” or “doc in a box”). And transit, transit, transit: the redevelopment of blighted properties along transportation corridors is a huge opportunity, or will be when more lending gets off the sidelines and into the game.

Other pluses for brownfields redevelopment: more experienced developers, improved cleanup technologies, mature and adequate liability protection, specialty service providers with more appetite for risk, supportive government policy, development incentives, and the brownfields redevelopment industry’s solid track record. In

addition, the depressed real estate market has an up side—properties are available for very low prices.

Representatives of environmental consulting, engineering, and cleanup contracting firms exhibiting at the Brownfields 2011 conference in Philadelphia in April tended to be more upbeat than not. Yes, the market is challenging, but the deals are out there; you just have to be patient, they say. Executives spoke to EBJ on the general condition of the remediation market in 2011, after what all agree were difficult years in 2009 and 2010 when enforcement and consent decrees kept the market moving to some degree, but discretionary spending on the management of corporate site portfolios in many client sectors was on hold. Clients are now asking for budgets and cleanup cost estimates, said a representative of one national engineering firm. An executive of one East Coast cleanup contracting firm agreed that clients are now sending out for bids again, but they’re not necessarily awarding the work. The bids coming back are still perceived to be over budget, even if those bids are lower than in the past. “Clients need more confidence to spend,” said the executive.

Robert Toups, president and CEO of **ATC Associates, Inc.** (Lafayette, LA), characterizes his firm’s remediation business as flat over the past couple of years with the commercial properties segment taking the hardest hit. Says Toups, “due to the economic climate, it is very difficult to forecast what direction the market will take.” However, “we are currently seeing projects that were delayed for the past two years now in line for start-up this year. There are signs of some recovery out there.” ATC recently won a five-year nationwide contract for remediation work for a major oil client—an assignment that will engage 30 of the firm’s 67 locations. This contract was timely as over the past year ATC had seen a slowdown in activity at the oil and gas industry’s non-regulated sites. Some state cleanup programs have helped contribute what appears to be an upturn in the cleanup business, Toups reports. “The outlook is very fuzzy though, with states operating within huge budget deficits.” Meanwhile, he adds “we see continued federal market stability,” especially from the Department of Defense (DOD).

Robert Stover, vice president of business development at **Environmental**

Restoration, Inc. (St. Louis, MO), tells EBJ that the mining industry has been growth segment, offering a nice volume of work in the cleanup of tailings piles and the closure of lagoons. In addition, the firm's brownfields work didn't fall off because Walmart and other "big box" retail clients "are not afraid of it" and were active. He also claims his firm is the **Army Corps of Engineers'** largest Environmental Remediation Services (ERS) contractor. The federal market has been quite healthy, he reports.

Whether it will stay that way is something cleanup contractors in the federal sector evince some concern about, as EBJ sources for this issue and our 2011 Outlook issue have indicated. Budget-cutters in Congress have taken direct aim at the **U.S. Environmental Protection Agency's** (EPA) budget, but thus far, the cleanup budgets for DOD and Department of Energy (DOE) have held up. They may do so for the 2012 federal fiscal year as well, as EBJ's Washington correspondent Andrew Paterson says in his "Beltway Bullets" column on page 6.

DOE and DOD do keep awarding significant contracts. In January 2011, for example, DOE's Office of Environmental Management (EM) issued multiple-award indefinite-delivery/indefinite-quantity (ID/IQ) contracts to 11 companies to perform environmental cleanup work at various DOE sites. The companies receiving the contracts were the following: **AECOM Technical Services; Bechtel; CDM; CH2M HILL Constructors; EnergySolutions Federal Services; Fluor Federal Services; Jacobs Engineering Group; MACTEC Engineering and Consulting; Science Applications International Corp.** (SAIC); **Shaw Environmental & Infrastructure;** and **Washington Group.** The contracts have an estimated total value of \$907 million over five years.

The names on this list reflect a fact that has been true for some years: the DOE cleanup club is a rather exclusive one, and hard to break into. That's not likely to change. For DOD, there's less exclu-

Remediation Bid Win Rates: 2002-2010

	2002	2004	2006	2007	2009	2010
Private Contracts Bid	13,189	10,820	17,444	14,826	5,154	5,576
Private Contracts Won	8,751	6,418	9,495	8,713	2,134	2,398
Private Award Rate	66.4%	59.3%	54.4%	58.8%	41.4%	43.0%
Public Contracts Bid	3,193	3,115	3,061	2,636	1,352	1,510
Public Contracts Won	1,220	1,560	2,027	1,374	454	526
Public Award Rate	38.2%	50.1%	66.2%	52.1%	33.6%	34.8%

Source: EBJ annual Survey of Remediation Companies, Markets, and Technologies

sivity, as small firms can continue to find opportunities, especially if they can take advantage of set-asides or mentor-protégé relationships with the larger, more established firms. DOD's Military Munitions Response Program (MMRP) continues to provide opportunity, and the various branches—the Army Corps of Engineers, the Navy, etc.—continue to let task orders. Despite the budget uncertainties, the outlook for the federal market appears to be fairly stable.

APPETITE FOR TECHNOLOGY AND GREEN REMEDIATION

As the remediation market matures, advances in cleanup technology gain acceptance as well (see trends chart on page 2). "The industry has caught up with new technology, which has been proven over the past few years," says Deborah Jackson, recently appointed CFO at **TerraTherm, Inc.** (Fitchburg, MA), which deploys in situ thermal desorption (ISTD) technology and has enjoyed upwards of 50% annual growth through the recession.

"Consistent with most innovative

technologies, early adopters embraced it while others remained to be convinced," says Jackson. "As few as two to three years later—as well as today—we're in a position where both the government and commercial clients have adopted the technology due to its benefits." She adds "we now have a long track record of successfully completed projects with zero safety issues or legal disputes."

Innovative technology has a role to play in the movement to make remediation more "green" or sustainable as well, but it is not the deciding factor. Serving on a green remediation panel at Brownfields 2011, Douglas Sutton, an engineer at **Tetra Tech, Inc.** (Pasadena, CA) claimed that green remediation is an optimization market, not a technology-specific market. Sutton, who works with EPA on remedy evaluation and optimization, offered several examples of approaches that can reduce a cleanup solutions environmental footprint: using extracted groundwater instead of potable water for blending and extracting chemicals; decreasing the size of blowers in soil vapor extraction (SVE)

Green Remediation: Comparison of Energy Costs

	Average Annual Energy Consumption (MWh)	Average Annual Cost (\$)*
Pump & Treat	490,000	52,381,000
Thermal Desorption	93,000	9,941,700
Multi-phase Extraction	18,700	1,999,030
In Site Thermal Treatment	13,000	1,389,700
Air Sparging	10,000	1,069,000
Soil Vapor Extraction	6,700	716,230
Ex Situ Stabilization	22	2,352
Other**	6	641

Source: EPA, "Green Remediation Best Management Practices," April 2011; * Using the August 2010 national average of \$106.90/MWh for commercial use; ** Including ex situ bioremediation of soil, in situ bioremediation (source), in situ chemical oxidation (source), in situ bioremediation of groundwater, and in situ chemical oxidation of groundwater.

systems once extraction points have been eliminated; and segregating clean soil from contaminated soil to reduce soil requiring treatment or disposal. EPA's best practices effort has also provided more detailed baselines for sustainable remediation, particularly in energy use.

Ultimately, green remediation and remedy optimization fundamentals include comprehensive data integration, a good handle on tools and technology, and a readiness to be constructive. "Ask questions over and over again about the site conceptual model," Sutton advised.

Other EBJ sources indicated that they are taking steps to reduce the environmental footprint of their cleanup actions, including the use of solar power to drive equipment, the tendency to adopt on-site solutions to reduce the truck trips associated with "dig and haul," and recycling construction debris and other materials. By varying degrees they do see a trend towards sustainable remediation; some firms see more demand from the larger clients, while others see it across the board in the federal and private sectors. If you don't show your ability to provide sustainable solutions in your bid documents, you're not in the game, they say.

Ultimately, although sustainable remediation and progressive and visionary brownfields redevelopment lend a good measure of excitement, and some novelty, to the remediation marketplace, the majority of the cleanup market remains a challenging and very competitive one. Bid win rates fell noticeably in 2009 from previous years and only inched back up in 2010 (see table on page 4). Clients are more sophisticated and continue to try to transfer more risk to the cleanup vendors, who have to devote more resources to job screening

Clients Expecting Remediation Firms to Share More Risk

Substantially More Risk	10%
More Risk	36%
About the same level of risk	55%
Less Risk	0%

Source: EBJ Survey of Remediation Companies, Markets, and Technologies 2011. Question was: Rate the level of risk that your clients in general are expecting you to take on remediation projects.

EBJ Survey Comments: Challenges for Remediation

The economy, budgets, private spending and enforcement are the prevailing concerns for the remediation industry in 2011. Executives were asked an open-ended question and below are selected responses; a semi colon indicates a separate response.

What do you think is most important challenge the facing the remediation industry in 2011?

- Continued price pressure: Balancing the uncertainty associated with "new" remedial end-points with depressed property values
- Budgets, most corporations are still being cautious; Budgets and spending
- City, State, and Federal governments have no money and there is a potential ripple effect into an already slow private development market
- Declining budget and focus on other government spending; Distraction and turmoil in regulatory agencies
- Funding; General health of the US and Asian economies
- General uncertainty. Most manufacturing firms are guarding cashflow pretty tightly. Planned projects have been pushed back 'until further notice' as a result of corporate austerity. Manufacturing production has increased over the last nine months and we feel as if some cash will be put to use... As a result of these factors, planning has to be the greatest challenge. It is tough to predict work, and therefore tough to predict staffing and equipment needs.
- Industry Consolidation
- Jaded, burned out customers who are sick of remediation work
- Lack of professionals within the environmental industry
- Lack of response from regulators and the economy
- Pace of recovery of the economy; State of the economy; Funding
- Regulatory enforcement
- Risk management is becoming more prevalent and business is reluctant to spend money on remediation given the economy
- Stakeholder understanding of the benefits in more proactive and comprehensive investigation and remedial measures that will reduce project life-cycle costs
- Uncertainty regarding Congressional funding and how it will impact government spending and private sector investment

and business development—and to occasionally make the difficult decision to walk away from a job. Those firms with strong existing client relationships—as well as reputations for having good relationships with regulators—continue to have the inside track in key industrial and government client segments.

The remediation business expects growth of only 3% on average in 2011 according to the EBJ survey, and the outlook beyond is only slightly more positive. EBJ forecasts remediation market growth at 3.5% in 2012 and 2013. Today's less than stagnant private markets should recover

enough to balance a modest decline in the still relatively stable federal markets, and specialized niches in technology and redevelopment should continue to grow. As aggregated comments from survey respondents demonstrate, the economy, funding and budgets for projects are much larger concerns for the industry than regulations or specific programs in 2011. The confidence in the volume of work to be done in remediation does not wane, but the art of demonstrating its value outside the regulatory system has become more challenging in the moving target of remediation and redevelopment. ■

BELTWAY BULLETS: DIVIDED WE FALL...

Political and Budget Editorial by Andrew Paterson, EBJ Contributing Editor - Energy

The voters gave us divided government in November, and Congress is living up to it. Each side is gunning the other down for points on how to cure a massive, unsustainable budget deficit, and what shape a restructuring of government will take. And the moderate Republicans and southern Democrats that supplied some negotiating room in previous decades—they're mostly gone.

Some observers are calling this the most polarized Congress certainly since World War II. They just don't like each other. It used to be that Ted Kennedy and John Chafee or even Trent Lott could sit down for a drink. No longer. You can't order "compromise crumpets" at the Tea Party.

Bipartisanship is on the shoals. Politics in the Capitol has deteriorated to a childish "shoving match," says commentator David Brooks, strong-arming by the numbers, not the art of the deal. The reason? Who can say? The important thing is, if industry and energy and environmental executives want "clear leadership" from Washington, D.C., they are not going to get it—not this year, and not next year amidst an acrimonious presidential campaign.

President Obama kicked off his "Winning the Future" reelection bid in April, so the 2012 campaign is upon us. The GOP is terribly fragmented at the moment, without a clear front runner.

If you put a gun to my head on the Republican ticket, I might go with "Romney-Rubio," (former Massachusetts Governor Mitt Romney and current Florida Senator Marco Rubio) or "Huntsman-Huckabee" (U.S. ambassador to China and former Utah Governor Jon Huntsman and former Arkansas Governor Mike Huckabee), for jingle effect alone. If the ticket is tycoon Donald Trump and former Republican vice presidential candidate Sarah Palin, then pull the trigger and spare us.

If unemployment slowly creeps below 8%, the President can win by a margin as large as 60% to 40%, says the probability meter for now. But a double-dip or prolonged recession with higher interest rates would favor any Republican.

Complicating the calculus already for the Democrats is that, in 2012, they must defend 23 Senate seats, while the GOP only has 10 targets up. Democrats worry that the Senate may slip from their grasp, even if Obama wins.

So, the outlook would be President Obama, like Clinton in 1997-2000, facing a second term with the Republicans in charge of Congress. No environmental legislation emerged from that combination.

It's the severe budget deficit, however, that will overshadow all Congressional deliberations and federal actions no matter who wins the White House in 2012. A Republican president with a kindred Congress could lead to another huge fossil-fuel bonanza, as if the BP oil spill in the Gulf of Mexico never happened.

EYES WIDE SHUT

Who blinked? The Democrats, on the lame duck tax deal in December, when the President went along with the Republicans to renew the Bush tax cuts (just through 2012), against opposition in Obama's own party. What's more, several pro-Obama commentators felt the Democrats flinched as well on the \$38 billion of cuts for the latest vote to enact the FY 2011 budget.

Just on the energy and environment fronts, the push for a cap-and-trade bill that consumed a lot of 2009 into 2010 has imploded. The United Nations Framework Convention on Climate Change (UNFCCC) conclave in Copenhagen fizzling in December 2009 did not help. Few Americans have faith in the UN handling the money. The death knell here was the election of truck-driving Republican Scott Brown in January 2010 for Ted Kennedy's ("the people's") Senate seat from Massachusetts, enabling Republicans to filibuster any attempt to pass a climate change bill in the Senate, with a cold winter to boot. The Waxman-Markey climate bill passed the House in June 2009 (on a razor thin 219-212 vote), and then lost ground in the

Senate. The Kerry-Boxer measure never made it to the floor in 2010.

The new House in 2011 promptly dissolved the Joint Committee on Energy Independence and Climate Change, formerly headed by Congressman Ed Markey (D-MA). The emerging EPA rules on hazardous air pollutants, effluents, and coal ash are now the top focus of utilities and industrial boilers and cement kilns; greenhouse gases (GHGs), not so much.

The GOP regime at House Energy and Commerce eagerly embraced affordable domestic fossil fuels and nuclear power as the path forward. A narrower Senate margin of 53-47 means "energy security" is the priority, not "climate."

The TEPCO nuclear disaster in Japan has not dampened interest by several reactor sites in the U.S. where they already operate a couple of units (examples: Southern Co. in Georgia, SCANA in South Carolina, TVA in Alabama). More than 80% of America's nuclear fleet (104 reactors delivering 100 gigawatts of capacity) is not in an earthquake zone nor located near a coast. We are only looking at adding reactors where we already have them.

Ironically, without cap and trade, after Republicans derided carbon rules for making fossil fuels more expensive, gasoline prices are up \$1.00 already due to several factors, including Mideast turmoil, minimal new finds, and recovering demand in China and Asia. So there is your hydrocarbon "price signal." Even staunch Reaganauts Charles Krauthammer and economist Art Laffer have favored modest carbon taxes, "so that we keep some of the money here, rather than importing oil at \$1-\$2 billion a day."

Ditto on fuel sourcing for the Pentagon. Our fossil import addiction, much of it from hostile regimes, also undermines the U.S. currency in the long term, given the trade imbalances and dollars sloshing around the globe now. Little thought is given in policy to the fuel heritage we (don't) leave to our progeny for their civilization... they don't vote.

The battlefield for the future of government now shifts to a "multi-trillion" heavyweight fight before June 30, focused on the

debt ceiling and FY 2012 budget, that will go several rounds. Cleanup spending for DOD and DOE could survive through 2012, especially where tied to a court order. Cheap natural gas is driven now by easy access to huge shale gas fields, which involves deep subsurface hydraulic fracturing, or “fracking.” Mixed in with the budget slugfest will be blatant runs at curbing regulation: environmental, energy exploration, healthcare, and financial. Utilities are especially focused on rule modifications by EPA and other agencies.

New coal plants are certainly facing elevated air emission regulations (SO_x, NO_x, mercury, particulates—but not GHGs), but natural gas below \$5 is the biggest factor delaying construction for coal. Creaky old units will close—some say 10% of the U.S. fleet. In fact, TVA just announced an historic agreement to shutter 18 of its 59 boilers in what could be a bellringer for modernization. The move could entail a shift of 4,000 megawatts (MW) to gas (and more EIS work) across the Southeast.

Duke Energy is completing a modern 600 MW integrated gasification combined cycle (IGCC) coal plant at Edwardsport, Indiana, but with costs mushrooming to \$3 billion from \$2 billion initially, state commissioners are re-evaluating rate approvals. Other new coal units all had to evaluate prospects for capturing CO₂ via reuse or sequestration, as well as evaluating the shutdown of units older than 40 years, as a tradeoff (see *Climate Change Business Journal*, Vol. 4, No. 2/3, February/March 2011, p. 28). All these trends mean attention to “subsurface stewardship” is rising.

Of concern, however, is that, while retiring coal units make space, natural gas seems to be elbowing out from renewables. In Europe during the 1990s, they called this the “dash for gas.” Didn’t we see this roller coaster rip through our merchant electricity sector in the late 1990s also, leaving massive bankruptcies? We may have dodged a bullet by avoiding cap and trade; we don’t need more energy price volatility to chill investment. Modernizing our energy sector with a smaller emission profile will require a steadier march in a partisan policy landscape that will not change soon. ■

DESPITE DEPRESSED REAL ESTATE MARKET, BROWNFIELDS BUSINESS EVOLVES TOWARDS BROADER VISIONS

Judging from the level of attendance at the Brownfields 2011 conference in Philadelphia on April 3 through 5 and the attendees’ enthusiasm and excitement, one would never know that the state of the brownfields redevelopment market is less than robust. And judging from the ongoing stresses in the real estate and land development markets, one would be hard-pressed to account for the level of optimism among brownfields redevelopment proponents, analysts, and practitioners.

These individuals are under no illusions. Deals are hard to make these days, and they know it. Too much money is still sitting on the sidelines, and financial backers who do get in the game are demanding equity. Too many properties are still going to remain upside down for the foreseeable future, even with state or federal funding and incentives.

Yet there are positive developments. Most notably, the mayors of many cities of all sizes—from Philadelphia, Pittsburgh, St. Louis, New York City and Chicago to Lansing, Youngstown, Flint, and East Palo Alto—are looking to brownfields redevelopment as the anchor for economic recovery and the establishment of sustainable communities. Indeed, much of the excitement generated at Brownfields 2011 came from mayors, who are seeing this as a time of investment, planning, and teeing up sites to be ready for redevelopment when the economy does come back.

In fact, there was some pushback from these mayors against the draconian cutting being pursued by some state governors and by Republican legislators in the U.S. Congress. “There’s never a bad time for brownfields redevelopment,” said Virg Bernero, mayor of Lansing, Michigan, during a plenary panel opening the conference.

Urging the federal government to fully fund the brownfields programs of agencies like the **Economic Development Administration** (EDA) and the **U.S. Environ-**

mental Protection Agency (EPA), Bernero declared that “taxes are the price you pay for civilization; you can’t cut your way to prosperity.” Cities, where most people live and work, need investment, “and these projects are investment,” he noted. “You’re not giving away money, you’re planting seeds.” Looking at current budget trends in Washington, DC and in the states, he warned that “brownfields could be the baby that’s thrown out with the bathwater. We have to stand and fight.”

In addition to the vigor demonstrated by Bernero and his peers, the brownfields market is seeing the emergence of a broader, progressive vision of the ways in which city administrations, in collaboration with neighborhood groups and the private sector, can leverage brownfields inventories and existing infrastructure to build sustainable communities. One of the hottest of these trends is “brightfields” development, which involves the construction of solar photovoltaic (PV) farms or other renewable energy facilities on closed landfills and other brownfields sites. Another is the exploitation of brownfields sites to revive communities around transit corridors—a huge theme during the conference.

MARKET STILL HAMPERED

Despite the emergence of these opportunities, the fact remains that the fundamental conditions for a robust brownfields market aren’t there. As Robert Colangelo, executive director of the **National Brownfield Association** (NBA; Barrington, IL), has always put it, brownfields are a subset of the real estate market, and “real estate development is in a state of steep decline. There’s a domino effect from the residential market.”

Colangelo points to recent data showing that one million foreclosures are expected this year, and five million homes are two months in arrears in payments. “There’s such a glut of real estate that it will be a long time before we work off the surplus.”

Yet Colangelo is not without hope. “I see some bright spots. The industrial, commercial, residential, mixed use, open space—these are the traditional markets, and they are very flat. Where I see traction is in what I call ‘progressive development.’”

Airport reutilization is one of these progressive types of development, and Colangelo points to several recent examples: the Glenview Naval Air Station in the Chicago metropolitan area, which “has been turned into a mixed-use live-work-play area”; the mixed-used development at Stapleton Airport in Denver; and the Mueller community in Austin, a former municipal airport within the city limits being developed into a live-work-play community. “All of these are 10-, 15-year projects in various stages,” says Colangelo. “There’s cleanup to be done and redevelopment to be done, and the projects are moving forward.”

Another trend in progressive redevelopment is urban agriculture, “which is hot right now,” he says. Urban agriculture runs the gamut from hothouses, community gardens, vertical gardens, and a combination of aqua and hydroponics.

ACTION IN BRIGHTFIELDS

Additional categories of progressive development include the aforementioned rightfields and transit-oriented development. “Putting these transportation hubs in metropolitan areas increases property values while cleaning the area up,” says Colangelo. An example is Richmond, California, where the city government bought land to create a mixed-use, pedestrian-oriented “transit” village around a rail hub connecting Amtrak to the Bay Area Transit Authority (BART) system—the only Amtrak-BART connection.

On the brightfields front, numerous projects have already been completed, and many others are in the works. In early March, for example, **MACTEC Engineering and Consulting, Inc.** (Alpharetta, GA) received a contract from **Brightfields Development LLC** (Wellesley, MA) to provide engineering, design, and permitting support for the design and installation of a \$10 million solar power project on a closed landfill in Scituate, Massachusetts.

Under the contract, MACTEC will complete a topographic survey of the site, evaluate existing landfill conditions, conduct a wetlands delineation study, and provide geotechnical and civil engineering evaluations and permitting services. Brightfields, which specializes in the development of solar energy projects on landfills, brownfields sites, and other contaminated properties, plans to install 9,500 solar panels at the Scituate site.

Brightfield and renewable energy were the subject of several panels at Brownfields 2001, with the over-arching message that, as exciting as brightfields development might be, there’s nothing easy about it. “A PV panel has fewer moving parts than a PV deal,” said Bob Springer, a senior project director at the **U.S. Department of Energy’s National Renewable Energy Laboratory** (NREL), citing the need to navigate a broad array of science and engineering, policy and finance, and market factors in completing a brightfields project.

The renewable energy market is no gold rush, advised Steve Parnes, vice president of business development at **EnviroFinance Group LLC** (Sacramento, CA). No entity will have the ability to take on the liability of cleaning up a landfill, capping it, and installing the solar farm, he noted. “You do what you do on top of the landfill, while someone else takes care of what’s beneath.”

Currently, Parnes’ firm is focusing on opportunities in New Jersey and Massachusetts because the solar renewable energy credits (SRECs) offered by those states are what it takes in today’s market to make such projects viable, he said. Indeed, the SRECs are more valuable than the energy sold in many states, noted Robert Lamkin, a lawyer in the energy and natural resource practice of law firm **Greenburg Traurig LLC**. The good news, says Lamkin, is that utilities will sign SREC agreements with developers. The bad news is, they won’t be 15- to 20-year deals. There’s too much uncertainty about potential changes in regulation and public attitudes, he explains. Agreements are more likely to be in the three- to five-year range.

As challenging as brightfields and other progressive projects may be, they are the

wave of the future, Colangelo believes. “These progressive projects are happening out there—not at the frequency of the traditional activities in the past. They are larger projects, they take government investment, and we are seeing activity.”

Looking out a bit further, Colangelo sees what he calls a “visionary” market—trends that aren’t quite here yet but are coming. These ideas revolve around the concept of “sustainable, place-making communities.” Cities like Vancouver, San Diego, San Francisco, and Seattle “are attracting the best talent, professionals, and investment capital,” he notes. “These are *places*. People want to go there. Place-making is the next big idea—how do you make a city a place people want to go to.”

BROWNFIELDS TAIL TO SUSTAINABILITY DOG

In fact, “brownfields is now the tail,” he emphasizes. “The dog is rebuilding sustainable communities. It’s not just a focus on one brownfields site and cleaning it up. It’s about building a sustainable community.” That said, Colangelo is quick to point out recycling infrastructure constitutes the highest level of sustainability, as opposed to the lowest level—building a “code building” on a greenfield site.”

Mary Hashem, executive vice president of **EFG Brownfields Partners**, the result of a recent merger between **EnviroFinance Group LLC** (Sacramento, CA) and **Brownfield Partners, LLC** (Denver, CO), agrees that brownfields are now the tail wagged by the sustainability dog, with a caveat. “From a planning perspective, absolutely, sustainability is at the forefront of everybody’s minds.” However, “what you’ll find is, ‘sustainability’ means urban in-fills—everything from restoring an old office building that needs to be brought into conformity with today’s energy standards to transit-oriented development. And what you’ll find is that urban in-fill properties are brownfield properties. They are an integral piece of the puzzle, encompassing the issues that you are going to find as you deal with the built environment.”

Commenting on the merger with EnviroFinance Group, Hashem says her firm, Brownfields Partners, had always remained

busy and enjoyed success, even through the economic downturn, “but we were investment capital-poor.” Brownfield Partners had always focused on big projects, but “we financed our deals on a one-on-one basis.” Combining with EnviroFinance helps with that investment capital, she says.

For its part, EnviroFinance was seeking to be more of an equity partner in deals rather than play its traditional role as a lender. With many properties going into foreclosure during the real-estate crisis, traditionally less-risky debt plays were incurring equity-level risk without the same level of return. Brownfields Partners offered the ability to take an equity position and enjoy the potentially higher returns.

Commenting on the state of the brownfields industry and the run-up to the property market collapse, Hashem says “it has always been my contention that a good real estate market is good for brownfields. There were others in the industry who felt otherwise. I would certainly agree that an overheated market can be detrimental. And I think there was a lot of speculation in the run-up. There was cheap and easy money to be had, property values were skyrocketing, and in the days prior to the market collapse, those factors did have some impact because people had over-inflated views of their property values.”

In the fall of 2008, the market turned, and deals were hard to come by. “You found it almost impossible to find capital,” Hashem says. “The two biggest impacts we felt were the drying up of the capital markets, and the lack of a real sense of what property values were. Valuation became a very difficult thing. You have to make an assumption about a) what is a property worth today, and b) what its value will be some years down the road when it’s cleaned up and redeveloped. Values were falling so quickly, nobody knew where the bottom was, and you can’t make an investment on a property without making assumptions about current and future value. The uncertainties in the valuations and the unknowns combined with nobody being willing to free up the capital. It’s not that money wasn’t there—people were just sitting on it.”

The closing of a major deal prior to the

downturn more than sustained Brownfield Partners, and the consulting and advisory services practice continued to do well. Today, “we feel very excited about the future,” says Hashem. “We feel the market’s turned. I think the worst is over. It’s not exactly boom times, but we feel optimistic about where the market is going and the opportunities.”

POLICY SETBACKS

Evans Paul, executive director **National Brownfields Coalition** (Washington, DC) and a consultant operating under the banner **Redevelopment Economics**, also sees some silver linings on the clouds, at least in the marketplace if not on the policy front. “The positive side of the coin is that a number of the smart-growth developers that often do development and similar urban redevelopment projects are taking advantage of the reduced price of real estate and are starting to do the early-spade or early-stage work, getting ready for when the real-estate market is hopefully back to normal. We’re seeing a little bit of a pickup in vertical development versus the land assembly—vertical development meaning the actual construction or rehabilitation of buildings.”

“Values were falling so quickly, nobody knew where the bottom was, and you can’t make an investment on a property without making assumptions about current and future value.”

The one financing mechanism that continued to work through the recession was Federal Housing Authority (FHA) loan guarantees, which as Paull points out, could be used for multi-family housing. “They’re not restricted to affordable housing, so we have been seeing a fair number of projects that have proceeded with FHA loan-guarantee backing in multi-family housing construction. Now that the real-estate market is starting to pick up a little bit, we’re starting to see a bit more of the

full-spectrum of activities—shopping centers, mixed use, industrial development.”

The other side of the coin, however, is that the governmental incentives are potential targets for de-funding, according to Paull, whose coalition serves as a voice for the brownfields redevelopment movement on Capitol Hill. “Many of the brownfields incentives that have been very effective at the state and federal levels are in jeopardy.”

As Paull observes, in the moving target of ongoing budget negotiations, the outlook isn’t good for federal brownfields programs. As of the week of April 11, the House of Representatives had approved a spending package covering the rest of FY 2011 that maintains EPA’s brownfields program at FY 2010 levels—\$100 million for site assessment and cleanup and \$49.5 million for other brownfields assistance—but takes whacks at other programs, zeroing some out altogether.

These programs include three administered by the Department of Housing and Urban Development (HUD): the Community Development Block Grant (CDBG) program, which takes a \$650 million hit; the Brownfields Economic Development Initiative (BEDI), which would get nothing; and the HUD Sustainable Communities program, reduced by a third. Other associated programs and agencies taking hits would be the Clean Water State Revolving Fund (CWSRF), which would be reduced by \$600 million; the Energy Efficiency and Conservation Block Grant Program (EECBG), which was authorized under the American Recovery and Reinvestment Act of 2009 (ARRA) but would not be renewed; and the Economic Development Administration (EDA), which would see a \$9 million cut (see chart on p.9).

“TELL YOUR STORIES”

As Ken Brown, partner at the government affairs firm **The Ferguson Group** (Washington, DC), told the audience during a Brownfields 2011 breakfast hosted by NBA and the **Brownfields Communities Network**, “the programs you care about are under siege. Tell your stories.”

In this kind of environment, it might appear that reauthorization of the federal

Brownfields Impacts of House Budget

HUD BEDI: \$0.0, down from \$17 million

HUD Sustainable Communities: \$100 million, down from \$150 million

HUD CDBG: \$3.34 billion, down \$650 million from \$3.99 billion

CWSRF: \$1.5 billion, down \$600 million from \$2.1 billion

EECBG: \$0.0 (same as FY 10 - previous appropriations were under ARRA)

EDA: \$246 million, down \$9 million

Source: National Brownfields Coalition

brownfields law would have no chance. Yet NBC and others aren't thinking that way, and are working to bring forward a revised brownfields law as a critical economic development initiative.

A measure to reauthorize federal program, H.R. 5310 didn't pass in the last Congress, but NBC and associated parties are working to have another bill introduced during the current Congressional session. Paull says that NBC has identified tentative lead sponsors in the Senate, although he was not prepared to name them this early in the process—i.e., before the budget process is concluded, and Congress can get around to other business.

"The offices we're working with are very well placed in terms of committee leadership—it's bipartisan all the way," he says. "Brownfields has always been one of those issues that has benefited from bipartisan support, and it may be one of the few issues that Congress is able to agree on and make some progress on."

Interestingly, Judy Sheahan, environmental director for the **U.S. Conference of Mayors** (USCOM), disclosed during the NBC breakfast meeting that Republican support for brownfields reauthorization has come from an unexpected direction. About three weeks before Brownfields 2011, Senator James Inhofe (R-OK)—historically one of the most aggressive and vocal opponents of EPA—called USCOM asking the organization to reach out to long-time brownfields supporter Senator Frank Lautenberg (D-NJ) to begin discussions towards a possible brownfields reauthorization (the organization already had been talking to Lautenberg). According to

Sheahan, Inhofe had been a supporter of the 2002 bill and has been lobbied by officials from Tulsa and Oklahoma.

The House is not as far along as the Senate, although Representative Frank Pallone, Jr., who was the chief force behind H.R. 5310, is certainly on board and working on reintroduction. "It's a matter of trying to find a well-placed Republican who can meet with Pallone," says Paull. "That's where a lot of our attention is now." USCOM's Sheahan was a bit less positive during the breakfast meeting, suggesting that House members and their staffs really don't understand what brownfields redevelopment does and what it means for urban economic recovery.

For any new bill, "we are making the argument that a fiscally sound approach would be to put an inflation factor on the \$250 million adopted in 2002 and bring that up to 2012 as the first year of a reauthorized program," says Paull. "That would up the reauthorization to \$320 million, and then if you use an inflation factor on that, at say 2 to 3%, you'd get up to \$360 million by 2016. We're hopeful that can work as an approach."

A good bill would include other reform proposals, he continues. "Probably the number one issue we hear about from local government grantees is that they would like to be able to switch the funds from one pot to another, so that they could have a multi-purpose grant that can be used for site assessments, cleanups, and revolving loan funds. Three could go into one and address the highest priority sites without having to go through another grant round."

Another reform that would make the program more efficient would be to change eligibility criteria to allow non-profits to be eligible for all three grant categories, according to Paull. In addition, "there is one liability issue we want to make progress on—the liability that local governments incur when they acquire contaminated properties," he says in reference to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liabilities. "We really want to see the shackles taken off of local government so we can encourage them to be aggressive in acquiring contaminated, blighted properties."

INVESTORS DEMAND EQUITY

Several sessions during Brownfields 2011 probed the current state of the market, and the picture is mixed: yes, there seems to be some recovery, but it is a more challenging market in which to make deals. According to panelist Randall Jostes, president and CEO of **Environmental Liability Transfer, Inc.** (St. Louis, MO), although 2010 was a "horrible" year for the market, coming out of the bottom in 2009, his firm is seeing "a tremendous uptick in activity in 2011." There has been lots of activity in bankruptcies and in mergers and acquisitions, as shareholders begin to make demands for corporations to use wealth on hand, he said. "I've got users, and they want brownfields." There's also an abundant supply of sites, to go along with improved cleanup technologies and insurance policies. Although some regulators still challenge deals and want to be punitive, "regulators are tending to act as better, more cooperative partners," he pointed out.

Phyllis Riina, a vice president of real estate services firm **CB Richard Ellis** (Los Angeles, CA) affirmed that it's a tougher market to do deals, with more conservative leverage. "Equity is required on every deal now. The capital is there, but you need to find an equity partner to do deals if you don't have the equity."

Amy Edwards, brownfields attorney with **Holland & Knight LLP** (San Francisco, CA) affirmed Paull's observation that good sites are available at reduced prices. Lending had "dropped off the face

of the earth, especially for sites with contamination,” she said. Lenders are coming back, “but not at terms that are completely favorable yet. This provides opportunities for more experienced developers. Deals are out there; you have to look for them.” She added that, with the recession, site reviews are quicker because of less backlog.

Accompanying these positive factors are challenges, she continued. Some regulators still occasionally confuse the line between the “volunteer” (the developer) and the “bad guy” (the responsible party). Moreover, some sites are being sold at auction without thorough due diligence, and some state standards are still unclear as to what it will take to get to closure. “The standard can’t be a moving line; you need certainty,” Edwards noted.

THE 80-20 RULE: DIVIDED BY FOUR

Addressing attendees during a couple of sessions, NBA’s Colangelo invoked the proverbial “80-20” rule to characterize the current state of the market. Approximately 80% of today’s brownfields sites are still too burdened with liabilities to be redeveloped in today’s market, he said. Three-quarters of the remaining 20% have favorable attributes, but will need help in the form of government funding and incentives and a change in use to give a clear picture of the return on investment and attract private capital. The remaining 5% won’t need such support to move through the pipeline.

Positive factors girding the market today and into the future include mature and adequate liability protection, supportive government policy, development incentives, and the brownfields redevelopment industry’s solid track record, according to Colangelo. Today’s business model is different from the pre-recession model, however. The “cleanup to flip” model no longer works, he said. The end use must be part of the plan. Players have to coordinate the cleanup with green construction, the local development plan, and—in the near future—a sustainable regional development plan. “Don’t expect speculative investment in brownfields redevelopment,” he emphasized. “In fact, avoid it. You have to have users. This is a user-based development market.”

Charlie Bartsch, senior advisor on economic development at EPA and a former vice president and senior fellow at **ICF International** (Fairfax, VA) said that the federal role is to help communities position properties now. “Everybody loves grants, but there are other federal tools,” he noted, pointing to non-traditional players with compatible missions, such as DOE, the Army Corps of Engineers, the Small Business Administration (SBA), and the U.S. Department of Agriculture (USDA), as resources for communities engaged in brownfields redevelopment.

“Don’t expect speculative investment in brownfields redevelopment. In fact, avoid it. You have to have users. This is a user-based development market.”

The big trend at EPA, he emphasized, is area-wide planning—that is, selecting collections of sites and planning around them. “Small brownfields offer excellent opportunities to make a whole area attractive,” he remarked.

He further advised developers to use traditional federal tools in new ways—for example, applying the Clean Water and Drinking Water Revolving Loan Funds in ways that align redevelopment goals with water quality. Also, transportation-related funding, low-income housing tax credits, can be linked to cleanup and redevelopment.

From the exhibit floor, cleanup professionals who spoke with EBJ echoed the message of hope in the midst of challenging conditions. Robert Stover, vice president of business development at **Environmental Restoration, Inc.** (St. Louis, MO), said his firm has had success courting large consumer retailers, and be-

cause of that, the brownfields business remained strong. “Walmart and the other big box companies are not afraid of brownfields.” He said. A professional with another small Midwest environmental consulting firm acknowledged that “it has been trickier to do deals. They’re out there, but you have to be patient.”

It was left to government officials to provide inspiration and set the course for action. “The economic downturn isn’t going to last,” said Connecticut Governor Dan Malloy during the opening plenary session. “You have to plan for the future. Identify your skills sets locally, and use existing infrastructure. Rochester, New York, is now a center for the collection agency industry, and we’re trying to figure out the proper roles for cities like Bridgeport, New Haven, Danbury, and Waterbury.” He advised governments to combine historic tax credits with other types of tax credits, but acknowledged that, given the current budget-cutting mood in Congress, “it doesn’t look good out there.”

Philadelphia Mayor Michael Nutter urged fellow mayors and government officials to act now. “We’re not making any more real estate; you have what you have. Be creative, play to your strengths. This is the time for planning.”

Steven Black, deputy city manager in Bay City, Michigan, offered practical advice: remove obstacles to closure; complete environmental due diligence and surveys; clear titles; delineate wetlands and floodplains; initiate incentives; resolve zoning issues; demolish structures; develop a brownfields redevelopment plan; consider public private partnerships. That’s the kind of advice that should warm the ears of environmental consultants. ■

Site Characterization Methods

	2009	2010
Direct sensing w real time info	17.9%	15.8%
Drill & Sample	41.9%	43.5%
Portable GCs & Field Instrumentation	11.9%	11.9%
On-Site Mobile Laboratories	8.3%	5.8%
Soil/Gas Surveys	11.6%	10.0%
Non-Intrusive Scanning	10.2%	8.4%

Source: EBJ Annual Surveys of U.S. Remediation Contractors

ESTABLISHMENT OF GM TRUST SIGNALS NEW FOCUS ON CLEANUP OF AUTO INDUSTRY SITES

RACER Trust is the third largest holder of industrial property in the U.S. with more than \$700 million in assets.

In mid-March 2011, the U.S. Department of Justice (DOJ) announced that it had reached a settlement agreement with **Motors Liquidation Co.**, the successor to **General Motors Corp.** (GM) formed from the automobile giant's bankruptcy, under which Motors Liquidation will pay \$51 million to resolve environmental liabilities at 34 former GM plants in 11 states. That \$51 million comes on top of \$773 million under an existing GM settlement with the federal government that's going towards the cleanup of 89 sites in 11 states, including 47 in Michigan.

To facilitate the cleanup and redevelopment of these former GM sites, the U.S. Bankruptcy Court established the **Revitalizing Auto Communities Environmental Response (RACER) Trust**, which formally announced its existence on March 31. The bankruptcy settlement was the outgrowth of negotiations between the federal government, the "old GM," the 14 states where the GM sites are located, and the St. Regis Mohawk Tribe, whose tribal lands have been impacted by polychlorinated biphenyl (PCB) contamination arising from production and disposal activities at GM's now closed power train manufacturing plant in Massena, New York.

The real announcement of the trust, however, came during the Brownfields 2011 conference in Philadelphia on April 4, where RACER Trust officials and friends detailed the organization's mission scope, resources, and goals in several panels.

The panelists' excitement was palpable: The RACER Trust is the facilitating engine for a major new cleanup program, one that trust officials are describing as one of the largest in U.S. history. The purpose of the

trust is not only to clean up the former GM sites but also to facilitate the return of the properties to productive use, with a strong flavor of green in those reuse options. Furthermore, the trust is intended to serve as a model for efforts to address the abandoned, underutilized, and contaminated properties of other automobile companies, and ultimately for the redevelopment of industrial sites across multiple economic segments.

In its formal announcement, the RACER Trust said that it is the third largest holder of industrial property in America and the largest environmental trust in U.S. history, with over \$700 million in assets. The trust will be led by Elliott Laws, managing member of **EPLET, LLC**, the trustee organization, general counsel for the D.C. law firm **Crowell & Moring LLP**, and former assistant administrator of the U.S. Environmental Protection Agency's (EPA) Office of Solid Waste and Emergency Response under the Clinton Administration.

The trust's redevelopment officer is Bruce Rasher, vice president of brokerage services within **CB Richard Ellis'** Asset Repositioning Management Group. Specific regional cleanup management responsibilities fall to four individuals: Pamela Barnett, a professional geologist and experienced Resource Conservation and Recovery Act (RCRA) Corrective Action project manager, whose territory will cover Delaware, Louisiana, Massachusetts, Ohio, Pennsylvania, and Virginia; Robert Hare, most recently environmental director for Motors Liquidation Co. and now the trust's cleanup manager for Indiana, Illinois, Kansas, Missouri, Wisconsin, and New Jersey; M. Brendan Mullen, a former consultant at **Hatch Mott MacDonald** and now the trust's cleanup manager for the state of New York; and Grant Trigger, former director of brownfield redevelopment for **REI Investment Group** and now entrusted to manage the cleanups of the former GM sites in Michigan.

Moderating a panel on "auto brownfields" at Brownfields 2011, Matt Ward, a partner at the government affairs firm **The Ferguson Group** and policy director of the **Mayors Automotive Coalition** (MAC; Washington, DC), described the RACER

Trust as the largest cleanup program in U.S. history—questionable, depending on how you measure, but in terms of a single corporate entity's cleanup liabilities, enormous indeed. When the scope is expanded to include the entire auto industry and its legacy of manufacturing operations and plant shutdowns, "enormous" barely captures the job, Ward suggested.

"There are 500 'auto brownfields' in the U.S.," he said, with 140 GM sites, 21 Chrysler plants, and 17 Ford facilities topping the list. With each of these, anywhere from two to ten dependent supplier sites come in tow, he added. "The problem is major, and the scope of each site is significant as well," Ward noted, citing as an example the projected \$30 million cleanup at the former GM plant in Wixom, Michigan. The **Center of Automotive Research** (Ann Arbor, MI) is currently conducting a study and inventory of auto brownfields sites.

BLUEPRINT FOR AN AUTO REVIVAL

MAC was formed, Ward noted, by the mayors' offices of communities that now or once did host automobile and supplier facilities, out of an interest in ensuring that automobile manufacturing remains strong in the United States, as well as an interest in broadening and diversifying their manufacturing base. "Part of that mission is taking closed plants and supplier facilities and returning them to economic development," he said. An essential part of the RACER Trust's mission, he and others went on to say, will be the involvement of the affected communities in any decision regarding the redevelopment plan and sale of any auto brownfields site.

Panelist Virg Bernero, mayor of Lansing, Michigan, emphasized the importance of creating a strong and diverse manufacturing base for his city and other historic hosts to the automobile industry. He said that Lansing has three GM legacy sites, spread over 200 acres, and his plan is to turn the sites into a global manufacturing center. His administration has been marketing the sites globally and attracted interest from a major Indian conglomerate, which he did not name. "You need to be nimble and hyper-competitive" in

the redevelopment market, he stressed.

He further advised that automobile communities undertake infrastructure asset audits. An advantage of acting swiftly in the current market is that it is currently a buyer's market in real estate, "especially for companies looking for a skilled work force."

Panelist Phyllis Riina of CB Richard Ellis urged that infrastructure asset inventories be accompanied by studies determining the "highest and best use" for the redeveloped properties, with environmental assessments key to preparing each property's pro forma. There are unique requirements to make these sites fit for redevelopment, she said, and while there can be a lot of demand for such sites, the environmental cleanup cost at some will still turn them upside down.

Asked what mayors and other elected municipal officials can do today to tee up sites that may not move through the pipeline before the end of their administrations, Keith Bosman, mayor of Kenosha, Wisconsin, stressed the development of a clear plan, using the Urban Land Institute and other consultants as needed. Bernero agreed, saying that "you need to get community buy-in and private-sector involvement."

WHAT'S NEEDED: JOBS, JOBS AND MORE JOBS

While the preservation of open-space is likely to be part of many redevelopment efforts, Bernero was blunt about what Lansing truly needs—employment. "We need those spaces filled in," he noted, adding that his city has several-score parks that he can't maintain under current budget constraints, and that he is in the process of selling two of the city's four golf clubs. "This was a manufacturing community, and I need jobs."

Speaking on several panels during Brownfields 2011, Laws said that the RACER Trust's funds will have a dual

RACER Trust Priority Sites

Facility Name	Location	Primary Use
Stamping-Indianapolis	Indianapolis, IN	Manufacturing facilities
GMVM-Shreveport Assembly and Stamping	Shreveport, LA	Manufacturing facilities
GMPT-Flint North #5/#10/#81	Flint, MI	Manufacturing facilities
Stamping-Grand Rapids	Grand Rapids, MI	Manufacturing facilities
GMPT-Livonia	Livonia, MI	Manufacturing facilities
Pontiac Centerpoint Campus-Central	Pontiac, MI	Engineering/Office/Warehouse
GMVM-Pontiac Assembly	Pontiac, MI	Manufacturing facilities
Stamping-Pontiac North Campus (#14)	Pontiac, MI	Manufacturing facilities
Pontiac Centerpoint Campus-West	Pontiac, MI	Engineering/Office/Warehouse
GMPT-Willow Run	Ypsilanti, MI	Manufacturing facilities
GMPT-Massena	Massena, NY	Manufacturing facilities
GM-IFG Syracuse	Syracuse, NY	Engineering/Office/Warehouse
Stamping-Mansfield	Mansfield, OH	Manufacturing facilities
GMVM-Moraine Assembly	Moraine, OH	Manufacturing facilities
GMPT-Parma Complex	Parma, OH	Manufacturing facilities

Source: *The Revitalizing Auto Communities Environmental Response (RACER) Trust*

purpose—cleanup and repositioning sites for redevelopment. The trust will have extensive input into the future use of auto brownfields, with a particular interest in green technology and renewable energy. Many of the buildings on these properties have lots of roof space, he said, indicating the substantial potential for solar photovoltaic (PV) installations. While at one point he offered that "no idea is too crazy," he did declare that "we won't let you come in and take a site to build a scrap yard."

Outlining the structure of the \$700 million-plus in funding, Laws said that the trust has established specific cleanup funding "buckets" for all 60 sites with known contamination and "cushion" funding for the remaining 29 sites and for unexpected overruns. There are about 10 sites with "high holding costs," so those will be the ones that the trust will deal with first.

Those sites include the largest, led by the Willow Run Factory in Ypsilanti, Michigan, a plant built by Henry Ford during World War II. At the war's height in 1944, the 5 million square foot facility produced more than 650 B-24 bombers per month, and the airfields next to the plant are still in operation—a clear amenity. In terms of cost, however, it's the Massena plant that's getting the biggest share of the trust's pie initially—some 25% of

the budget, according to Laws. The Massena plant is scheduled for demolition in 2011 and 2012.

The site inventory is kept on the IDEA database developed by top 10 remediation firm **ARCADIS** (Denver, CO). Laws said that, through its web site (www.RACER-Trust.org), the trust will be transparent, not only with its financial information but also with its plans for the disposition of each site.

Consultants and contractors can get involved in the GM legacy cleanups and redevelopment projects by visiting the RACER Trust web site and submitting their statements of qualifications (SOQs). Although SOQs were technically due by April 14, cleanup manager Hare told EBJ that the deadline was not hard and fast. The trust set the deadline in order to obtain as much information as possible as quickly as possible, but it is always interested in hearing from firms with the right qualifications.

He affirmed that remedy selections have been made for many of the GM legacy sites—hence the estimate of the level of funding that the trust would need to deal with them—and that the trust hopes to "keep costs within these parameters." Still, as Laws mentioned in his presentation, there will be flexibility in the ultimate decisions on how to clean up the sites. ■

STATE CLEANUP PROGRAMS SOLDIER ON THROUGH BUDGET WOES, RESPONSIBLE PARTY CONSTRAINTS

As is no surprise to anyone who follows the news, virtually every state in the United States is undergoing some kind of budget shortfall, with some states—California, Wisconsin, Ohio, and Michigan among them—finding themselves in very dire straits indeed. The headlines have focused on public workers—teachers, police, firefighters, health-care workers—and their allegedly bloated benefit packages, pension programs, and bargaining rights, but the pain is extending much further.

Seldom discussed in the news articles on what is being done to control state budgets is the impacts of the shortfalls on environmental programs, and in particular on state-supported and -regulated site cleanups. In part, this may be because the funding levels for such programs are lower than those for other programs and line items that have been the principal targets of budget-cutters. Also, most state cleanup programs are funded not through general revenues but through fees, bond measures, and private parties that either come forward voluntarily or must undertake cleanups as a result of enforcement actions.

State cleanup programs haven't escaped the impacts of budget deficits, however. The staffs of state environmental departments, including the professionals in the cleanup bureaus and offices, are largely funded through general revenues, and some state cleanup offices have suffered staffing cuts, thereby slowing the movement of site cleanups through the pipeline. In addition, some bond funds for cleanups are running short, and the state legislatures have yet to address the issue. Then, of course, private parties are suffering economically as well, meaning that, in several states, fewer sites are entering the voluntary cleanup programs, and even the cleanups driven by

enforcement actions and consent decrees are slowing down, as regulators cut the responsible parties some slack.

EBJ interviewed several directors of state remediation programs to get a sense of the current condition of their cleanup efforts—how budgets are affecting cleanup progress, how the program offices have reacted, and what the future holds. The picture that emerges is one of state agencies struggling to make do, stretching dollars, and innovating and streamlining programs where possible. The state cleanup programs are not without their resources—if not in current funding levels, then in ways to make their programs work better and move contaminated sites through the pipeline quicker.

Most states have multiple cleanup programs: those addressing abandoned or enforcement-led sites, the costs of which come from state funds or are recovered from the responsible parties; voluntary cleanup programs addressing brownfields and typically funded by those parties electing to place their properties in the system, sometimes with funding, incentives, and liability protection support from the state; leaking underground storage tank (LUST) programs, typically funded through taxes and fees imposed on gasoline retailers; federal Superfund support programs, under which states match 10% of the federal funds and often assume 100% of the ongoing operations and maintenance (O&M); and special-purpose programs targeting certain types of sites that pose extraordinary risks, such as waste tire sites, illegal dumps, or dry-cleaners. The funding for these types of programs may come, again, from annual budgets or fees.

“ONE PROGRAM” APPROACH

The state of Massachusetts departs from the multi-program approach, having for several years implemented a one-cleanup program, even before the **U.S. Environmental Protection Agency** (EPA) began moving in the one-program direction. “Our Waste Site Cleanup Program encompasses brownfields, LUSTs, etc., using the same rules for all sites,” says Paul Locke, director of the Division of Response and Remediation, in the **Massachusetts Department of Environmental Protection's**

Bureau of Waste Site Cleanup. “You have a release, it's notifiable and comes into our system. All sites follow the same timeline and process.” The Waste Site Cleanup regulations are codified in the Massachusetts Contingency Plan under Chapter 21E of the Massachusetts General Laws.

Although Locke regards the one-cleanup program as having worked well over the years, the program has undergone changes to make it work better. A key change came in the 1990s, with adoption of a “semi-privatized” program known as the Licensed Site Professional (LSP) program.

“We had more sites than EPA did, and we still do,” he explains. “EPA cherry-picks the worst of the worst, leaving everything else for us to deal with. So the model of signing off every step of the way didn't work, because we didn't have the staff. A backlog mounted. In 1994, we went to the semi-privatized program, the LSP program. LSPs are paid for by the responsible parties and certify the work is done correctly, and then we audit that work to make sure that it was. We can pick and choose what we audit, which frees us up to do what only the government can do, such as emergency response.”

Funding for the Waste Site Cleanup Program comes from two “big pots,” according to Locke. First, a line item in the state budget pays for most of the staff. As Massachusetts has suffered from the budget woes like other states, the Bureau of Waste Site Cleanup has suffered a staff cut of about 25% since 2002, with funding going from \$62 million to about \$46 million.

“The other big pot of money is a bond fund that we can use for things like emergency response and buying equipment,” says Locke. “If we have to take immediate action, we have the money to do that. The big reductions we're feeling are the state line item.”

To further stretch the available funding, the bureau took a hard look at the reviews it was conducting, responsibility for which it had retained under the 1994 law. “We asked, is that the best use of our time? We saw that most of our reviews and approv-

als were routine, and we didn't really need to be overseeing everything to that extent. The time-critical actions were just as likely to occur at lesser tier sites, lower than the Tier 1A. We changed the regulations to give ourselves flexibility to target the things only we can do."

As another example of streamlining, the state tackled the permitting process. "If you are in our system for over a year, you need to get a permit to continue," Locke says. "Our permits are a little different from other states—it's a permit to proceed, as opposed to discharge. We saw that, if you couldn't process permits, you couldn't clean up, so we've given presumptive approval. That gives us, again, more flexibility.

Those changes were implemented in 2006. "It's put the program in a somewhat better position, and we have a lot of flexibility to shift staff around," says Locke.

Like many other states, Massachusetts focuses more on the risks posed by sites regardless of category, rather than on, say, manufactured gas plants (MGPs) as a priority class. "The caveat is, there are certain types of sites that tend to pose more risk," Locke notes. An example is vapor intrusion sites. "Within that general category, there are certain types of sources that are worse than others—for example, dry-cleaners. Over the past decade, there have been a lot of efforts to manage those facilities in a more environmentally friendly manner, but we're still dealing with a decades-long legacy. These are contaminants that don't break down quickly, and we're still living with those releases."

Locke also points out that, while some categories of sites pose relatively lower risks than others, there can be so many of them that they are important to prioritize for cleanup. "Petroleum sites for example. It makes sense to provide guidance on how to clean those up, just because they are so common. We're trying to develop streamlined guidance for homeowners to deal with heating oil problems.

Locke feels the state's cleanup program is, all in all, in good shape. "I don't want to paint a rosy picture, but given the budget shortfalls we've had, we've been able

to shift resources around so that we can do the work that needs to be done, and the cleanup work has continued." As the economy recovers, however, "you'll see notifications go up and people put shovels in the ground again. Realistically, we'll need more resources to deal with things we've put aside."

LSRP IN DEVELOPMENT

LSP-type programs like that in Massachusetts are rare. One state that has recently gone down that road is New Jersey, which did so when it modified its cleanup laws in 2009 through the passage of the Site Remediation Reform Act (SRRA). The measure's principal accomplishment was the establishment of the Licensed Site Remediation Professional (LSRP) program, which requires responsible parties to initiate and complete cleanups under the direction of LSRPs from the private sector without waiting for direction and pre-approval from the **New Jersey Department of Environmental Protection** (NJDEP).

"I don't want to paint a rosy picture, but given the budget shortfalls we've had, we've been able to shift resources around so that we can do the work that needs to be done, and the cleanup work has continued."

The LSRP program "will take more cleanups into the LSRP domain, and that will allow us to focus on cases that aren't being addressed, and to look at risks and sites that aren't being cleaned up," according to David Sweeney, NJDEP's assistant commissioner for site remediation. "It will also will give us time to look at brown-field regional issues, river issues, and other pressing issues. The LSRP will help remove the pressure we've had arising from having so many cases and not enough staff."

Any new case coming into the system goes directly to the LSRP program, and by May 2012, "all cases will be LSRP,"

says Sweeney. In the meantime, NJDEP is in the process of preparing the rules and guidelines regarding LSRP certification—which is creating uncertainty among cleanup consultants and contractors working in New Jersey. An executive at one New Jersey-based cleanup contracting firm, speaking to EBJ at the Brownfields 2011 conference in Philadelphia in early April, noted that, without the guidance and rules, there are no criteria for determining how to bid a project. The firm realizes it has to hire an LSRP, but without the criteria, it's difficult to know who to hire. Hopefully, the executive said, that uncertainty will disappear when the rules come out in May 2012.

One of factors drawing out the process of developing LSRP rules is the great extent of stakeholder involvement in developing them, according to Sweeney. "One of the things we're proud of here is, throughout the implementation of LSRP, we've used a very aggressive stakeholder process. In the past, in developing rules and guidance, because we thought we were smarter than everybody else, we just put out regulations and guidance for comment. Now, instead of us thinking we have all the answers, we ask for participation from the people who are affected by these rules and guidance. It's a tough process to go through, because everybody has a perspective, but you wind up at the table with reasonable people working things out, and you produce better documents."

NJDEP's Site Remediation Program is currently organized into the Division of Responsible Party Site Remediation and the Division of Publicly Funded Remediation, each with their obvious sources of funding. The former encompasses enforcement-driven sites as regulated under the Industrial Site Remediation Act (ISRA), as well as programs for brownfields remediation, LUST cleanup, federal facilities Superfund cleanup and corrective action under the Resource Conservation and Recovery Act (RCRA), and unregulated heating oil tank (UHOT) cleanup. The latter division takes responsibility for sites where the responsible party cannot be found or is unable or unwilling to take responsibility.

"Certainly the budget situation affects cleanup," says Sweeney. On the respon-

State Brownfields and Voluntary Response Programs

EPA Region	State	Grants	Bonds	Loans	Tax Abatement	Tax Credits	Environmental Insurance
1	Connecticut		X	X	X	X	
	Maine	X					
	Massachusetts		X	X	X	X	X
	New Hampshire; RI			X			
	Vermont	X		X		X	
2	New Jersey	X		X	X	X	
	New York		X	X		X	X
	Puerto Rico				X		
3	Delaware; DiC; Maryland	X		X		X	
	Pennsylvania	X		X		X	P
	Virginia					X	
	West Virginia			X			
4	Alabama	X		X		X	X
	Florida			X		X	
	Georgia				X		
	Kentucky	X					
	Mississippi	X	X			X	
	North Carolina				X		
	South Carolina	X			X	X	
	Tennessee	X		X		X	
5	Illinois	X		X		X	
	Indiana	X		X	X	X	
	Michigan	X		X		X	
	Minnesota	X		X			
	Ohio	X		X	X	X	
	Wisconsin	X		X		X	UD
6	Arkansas			X			
	Louisiana			X		X	
	New Mexico	X		X			
	Oklahoma			X			
	Texas			X	X	X	
7	Iowa, Kansas			X			
	Missouri	X		X	X	X	
8	Colorado	X		X		X	X
	Montana	X		X			
	N & S Dakota	X					
	Utah, Wyoming	X					
9	Arizona	X		X		X	
	California	X		X			UD
	Hawaii; Nevada	X		X			
10	Idaho				X		X
	Oregon	X		X			
	Washington	X		X	X	X	

Source: EPA, "State Brownfields and Voluntary Response Programs: an Update from the States," 2009; P: Pending; UD; Under development; No programs in Alaska and Nebraska

sible-party side, “companies that are struggling have less money and face stress to embark on a cleanup. We require them to do it, and we’ve had successful grant programs for brownfields and USTs, and lots of people have taken advantage of those funds, although they aren’t in the shape they were in.”

Sweeney maintains that NJDEP manages its budget very well, but “we don’t have any excess of money.” Where federal facilities are concerned, the state has a cleanup law that pre-dates the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and “that law gave us a pot of money to match the federal money.”

The more pressing fiscal problem is in the funding set up for brownfields and LUST sites, he notes. “We have a lot of people asking for money from those programs, and we don’t have the money to meet the need.” The state claims success in the amount of money its made available for brownfields and LUST cleanups, “but those funds are under stress now.” As of February 2011, New Jersey’s Site Remediation Program had 16,044 active cases in the system, including 2,011 LSRP, 513 UHOT, and 13,520 other cases.

New Jersey has been dealing with MGP sites for many years, and they’re no longer a particular “highlight” of the state’s cleanup program, Sweeney notes. NJDEP prioritizes sites according to whether they present “immediate environmental concerns” (IECs). For example, “if a site is near wells for drinking water, that’s an IEC. We require those parties to do an immediate fix. We also do that for vapor intrusion. Rather than focus on the type of site that it had been, we focus on the impact to receptors.”

A step down from IECs is “interim remedial measures”—quick fixes to reduce risk, according to Sweeney. “That might encompass a quick excavation, cap, or extraction.”

Another top priority is the development of a remedial priority scoring system that will use tools like geographic information systems (GIS) to assess the risks posed to neighborhoods and other sensitive areas

and facilitate quick, detailed decisions on cleanups. “There’s a whole new generation of GIS program layers, and adding data to all of our land uses is very helpful to us,” says Sweeney.

“In contrast to some other states, NJDEP has been fortunate in not having reductions in force,” he sums up. “While some of our resources, like the grant programs for brownfields, are cash-strapped for having been successful, we’re not losing people, and our state is in pretty good shape. Our governor and commissioner have demonstrated devotion to the environment despite the economy.”

BOND SHRINKAGE IN NY

Cleanup programs in the state of New York are also facing budget problems, particularly with the Environmental Restoration Program (ERP), one of three brownfields programs. The ERP was funded under a \$200 million bond act going back to 1996, and only about \$20 million remains in the fund. Reminded that the New York legislature has acquired a reputation for inaction and asked what the chances are that it will restore the bond funding, Dale Desnoyers, director of the **New York Department of Environmental Conservation’s** (DEC) Division of Environmental Remediation, noted only that “it’s hard to tell what the legislature is thinking.”

New York has a state Superfund program and a petroleum sites program similar to the LUST programs in other states, according to Desnoyers. The petroleum sites program is funded in part by a \$21 million annual appropriation, partly from general revenues and partly from dedicated taxes. One of the brownfields programs was initially a voluntary program, but in 2003, “we established a statutory program with better benefits and tax credits,” says Desnoyers.

He estimates that the ERP has about 145 active sites, while the voluntary brownfields program still has about 600 sites in progress. The new brownfields program with improved tax credits has more than 200 sites in the pipeline.

The cleanup program regime managed by the **Illinois Environmental Protection Agency** (ILEPA) exhibits the more

traditional division of programs, and there seems to be no movement afoot to consolidate them. The majority of the cleanup work is the responsibility of the Bureau of Land, which oversees several programs: the cleanup of enforcement-led sites and abandoned sites, the latter being funded by fees and cost recoveries at other sites; a LUST program funded through gasoline retail taxes and fees; a voluntary cleanup program focused on brownfields, funded by user or management fees applied to each site and billed to program participants on an hourly basis; and the state’s 10% share of federal Superfund cleanups and its participation in other federal facility cleanups, such as the actions at military bases.

ILEPA’s Division of Remediation Management and Division of Land Pollution Control have smaller cleanup programs, such as the Illinois Illegal Dumps program and the Used and Waste Tire Cleanup Program, according to Bureau of Land Chief Scott Phillips. Under the former, “we clean up what tend to be small open dumps, although last year we found the largest dump ever in the state, and the cleanup cost more than \$1 million. That program is funded through fees paid into the Solid Waste Management Fund.”

The Used and Waste Tire Cleanup Program “is funded by a fee that’s paid when you purchase a new tire in Illinois,” Phillips says. “Tires are a particular problem because the water accumulated in these tires are breeding grounds for mosquitoes.” Although both of these programs are important, he adds, the principal responsibility for cleanup in Illinois falls to the Bureau of Land.

“We’re not exempt from the economic downturn nationally,” he declares. “Our state fiscal situation has been widely reported, and we have issues. But ILEPA is fortunate in that we are funded basically through these federal grants and these fees, such as the tire fee, and a disposal fee on construction debris. We’re 100% funded from these activities, which means that we don’t get funded through the general revenue fund, which all other agencies have to use. So our situation is certainly a lot better than other agencies.”

Even so, “that’s not to say that we are

completely out of the woods,” he continues. “Sometimes these special funds are used for other purposes, even outside the environmental arena; it has happened. But by and large, we have been able to continue our efforts here. We try to carefully manage our money, look at the revenue stream, see what’s available, and what projects will need it over the next few months. We’re making do.”

According to Gary King, the Bureau of Land’s division manager for cleanup programs, the 10% match for cleanup actions at federal Superfund sites is a bigger issue than would at first appear. “This is an issue that I won’t say is universal, but many states are facing it,” he tells EBJ. “10% doesn’t sound like much, but because of the size of the projects, there’s a major risk associated with that responsibility. I don’t think we’ve seen less than a \$20 million federal Superfund cleanup in Illinois in the last 10 years. We’re talking about a state share of \$3 million, or \$4 million, or \$5 million on a project. These are major projects, and that 10% share is a significant financial burden.”

EPA has been willing to help ease this burden in a couple of ways, he hastens to point out. First, the agency will provide credits towards future projects for projects in which the state had spent more than its 10% share. “That’s been very helpful, and a good, workable procedure,” King says. Second, EPA has extended the time required to pay any monies owed.

Unfortunately, the situation is compounded by the fact that more sites, particularly in the Midwest, are going onto the National Priorities List (NPL) without any responsible party to assume the

Ranking of Remediation Market Drivers in 2011

	Crucial	Very Important	Important	Not So Important	Meaningless
State Enforcement Activity	26%	51%	17%	4%	1%
Economic Health of Primary Customers	31%	39%	24%	3%	3%
Private clients’ annual/long-term budgets	18%	41%	32%	6%	3%
Federal EPA Enforcement Activity	18%	41%	26%	10%	4%
Overall Economic Growth Rates	13%	37%	39%	10%	1%
Corporate minimization of potential liabilities	10%	37%	35%	16%	1%
Pace of Property Development/Transactions	10%	25%	47%	16%	1%
Funding Levels at DOD	18%	25%	28%	22%	7%
Trend in Property Values	7%	22%	48%	20%	3%
State Brownfields Funding	2%	36%	32%	26%	5%
Federal Brownfields Funding	8%	27%	32%	29%	5%
Funding Levels at DOE	16%	17%	30%	23%	13%
Existing Cradle-to-Grave Liability Laws	8%	21%	38%	29%	5%
Diversion of federal cleanup funding	10%	26%	24%	29%	10%
Congressional [In]Activity on CERCLA	5%	31%	28%	29%	8%
State Liability Relief/Financial Incentives	5%	17%	52%	22%	5%
City/Muni Brownfields Initiative Programs	1%	24%	36%	31%	7%
Federal Liability Relief/Financial Incentives	1%	18%	43%	34%	4%
ARRA funds to states	5%	23%	29%	32%	12%
Interest Rates	3%	12%	39%	43%	3%
Pace of Corporate M&A Activity	2%	12%	40%	38%	8%
SEC/Financial Disclosure Rules	3%	12%	30%	45%	9%
Set-Asides on Government Work	5%	9%	33%	36%	17%
Sustainability/CSR programs	0%	9%	35%	45%	11%

Source: EBJ Survey of Remediation Companies, Markets, and Technologies 2011. Question was: Please rate the importance of the following Market Drivers in stimulating remediation expenditure by your clients:

cleanup burden. “I see that trend continuing, particularly with the economic downturn,” King warns. Moreover, states take on a 100% burden for ongoing O&M. “Those are significant costs, not only for Illinois, but for other states.” King estimates that the state has 55 NPL sites currently in progress—none of which rise to the level of a New Bedford Harbor in terms of scope and cost, “but we do have projects involving the dredging of waterways,” King notes.

Under the state’s voluntary cleanup program, about 200 sites are cleaned up every year, he estimates. The number of LUST sites completed annually totals about 800. “In the voluntary program, there has been a reduction in the number of sites entering the system the last couple of years, owing to the economic situation of the potential participants,” says King. “When money

freezes up for development, that naturally affects site development.”

Limitations on funding mean that ILEPA has to be very careful in prioritizing the sites that pose the most risk. One category of site that Illinois and other states have been targeting over the past few years consists of abandoned schools. Often located in poor neighborhoods, such facilities can be left to deteriorate by cash-strapped communities and can be tempting places for children to play or for homeless people to seek shelter, thereby risking exposure to asbestos and other hazardous substances.

The state of Texas also divides up its cleanup responsibilities into the traditional categories. State and federal Superfund programs are supported by a mix of state and federal funds, while RCRA Corrective Action and other enforcement-led

programs are financially underwritten by responsible parties and hazardous waste permit holders.

The Texas Voluntary Cleanup Program (VCP) “provides incentives to participants for cleanup and redevelopment of properties with contamination,” according to Andrew Morrow, a spokesperson for the **Texas Commission on Environmental Quality** (TCEQ). “When cleanup is completed, future lenders and landowners gain statutory protection that limits their liability to the state regarding past contamination at a site. As a result, many unused or under-used properties may be restored to productive use. Parties entering the VCP submit an application and agree to pay all oversight costs.”

TCEQ also manages a grant from the Environmental Protection Agency (EPA) to provide assistance in performing assessments, limited cleanups, and technical reviews to eligible parties and brownfield properties, says Morrow. “The program provides assistance to local governments and non-profit organizations regarding the redevelopment of brownfield properties.” Texas also administers the Petroleum Storage Tanks (PST) Program, supported by state and federal funding, and the Dry Cleaner Remediation Program (DCRP), which is funded through fees collected from dry-cleaner facilities and solvent distributors, among others.

Altogether, TCEQ was managing a total of more than 4,300 sites in its various programs as of February 2011. Asked to characterize the near-term funding outlook for these programs, Morrow comments, “the agency uses a risk-based approach in selecting which sites are addressed first. This approach ensures that sites that pose the greatest risk to the public and/or the environment are addressed with the limited funds available.” TCEQ is not undertaking any initiatives to improve its cleanup programs at this time, she added.

SUCCESS FOR “CLEAN OHIO”

As afflicted by budget problems as other industrial Midwestern states, Ohio administers a successful cleanup program, dubbed “Clean Ohio,” that incentivizes participation in the state’s Voluntary Ac-

tion Program (VAP) and has garnered praise from participants. Under VAP, the **Ohio Environmental Protection Agency** (Ohio EPA) certifies private-sector environmental professionals and laboratories to demonstrate that properties entering the program are cleanup up to its standards, upon which the agency issues a covenant not to sue the owner or developer and future owners.

“This protection applies if the property is used and maintained in the same manner as when the covenant was issued and it continues to meet standards,” says Ohio EPA spokesperson Linda Oros. “Voluntary investigations and remediation under VAP are paid for by the volunteer directly, or with the assistance of state and federal grants, such as the Clean Ohio Fund or grant-funded technical assistance.

More sites, particularly in the Midwest, are going onto the National Priorities List without any responsible party to assume the cleanup burden.

The Clean Ohio Fund takes two forms. The Clean Ohio Revitalization Fund (CORF) provides grant funding of up to \$3 million for the cleanup of brownfield sites and pays for some redevelopment costs such as property acquisition and infrastructure. “The grant requires a 25% match, which can include the cost of previous investigative work, infrastructure, acquisition, demolition, environmental insurance, and clearance within two years prior to submitting an application,” says Oros. “CORF typically holds two funding rounds a year, and applications for projects throughout the state compete against one another for limited funding.”

A corresponding fund, the Clean Ohio Assistance Fund (COAF), provides grant funding for projects in so-called “Priority Investment Areas” on a rolling basis “as long as money remains available,” says Oros. COAF provides funding up to \$300,000 for Phase II assessments and \$750,000 for cleanup projects.

CORF has provided grants amounting to more than \$255 million since Clean Ohio’s inception in 2000. COAF has provide more than \$26 million in grants for Phase II assessments and more than \$40 million in grants for 58 cleanups. The VAP has, since its creation in 1994, received 426 “no further action” (NFA) letters issued by certified professionals and issued 316 covenants not to sue (CNS). “We are currently reviewing 30 NFAs submitted in request of a CNS and are providing technical assistance on 238 projects,” says Oros.

“While specific funding sources appear to be solid, Ohio’s government is faced with a deficit,” she notes. “In an effort to cut costs and improve efficiency, Ohio EPA is combining its Division of Hazardous Waste Management into its Division of Emergency and Remedial Response and Division of Solid and Infectious Waste Management. This move should cut several top and mid-level managers over time and result in an overall savings to the agency.”

The action should also facilitate coordination between the VAP and Ohio EPA’s RCRA cleanup program on projects that are undergoing site-wide voluntary remediation, according to Oros. In addition, “efforts are underway to review the VAP, streamline review times, and simplify requirements for remedies. The agency is also developing a process to allow properties with a covenant not to sue to make modifications over time to support construction or demolition changes that occur on a property after cleanup, rather than seeking a new covenant.”

As the drama surrounding state budget deficits plays out, state environmental offices and professionals may survive relatively intact while the public’s ire is directed towards teachers, healthcare workers, and other unionized public employees, whose pensions and benefits are under attack. Then again, the relatively low priority attached to environmental cleanup compared with other issues may pose continuing stress on remediation programs, unless state and local leaders can successfully link cleanup to redevelopment and economic recovery. In the meantime, state cleanup departments are, as ILEPA’s Phillips puts it, “making do.” ■

WESTON SOLUTIONS SEES LIFT IN PRIVATE-SECTOR CLEANUP; FEDERAL SIDE STAYS STABLE

Having for several years taken an end-to-end position in the brownfields redevelopment market by acquiring sites, cleaning them up, and then undertaking the redevelopment and construction for the ultimate end use, **Weston Solutions, Inc.** (West Chester, PA) is finally seeing the numbers work. One factor is the slump in the property market; as an upside to what is certainly a difficult situation for many American property owners—about 11 million homeowners are still “under water,” according to one survey—low property values are offering opportunity for companies like Weston to come in and move sites through the redevelopment process.

“It’s definitely a bigger pipeline than last year,” affirms John Walker, vice president responsible for the real estate development business at Weston. “Land values are coming down to a level that will allow us to purchase, redevelop, and then lease or sell. Up to 2010, that was not the case. People had such high expectations that it was difficult to make the numbers work.

“We started investing in opportunities to add value not only in remediation but in horizontal and vertical construction in 2002. That was a small part of the business until 2009, and then we ramped it up and re-organized around our Green Development Business. We couldn’t make the values work until then.”

Walker estimates that Weston currently has several dozen of these redevelopment projects in various stages in the pipeline, “some where we’ll locate our own offices, and others in transit locations where we want to bring tenants to the table.” He stresses that, in today’s market, it’s critical to deploy a “tenant in tow” strategy—that is, determine the end use for the property to a significant extent as part of the package going in. “It’s difficult to finance verti-

cal construction without part of the property being pre-leased or spoken for.”

Those circumstances meant that the American Recovery and Reinvestment Act (ARRA), also known as the economic stimulus package, really didn’t have an effect on the brownfields market. “You needed shovel-ready projects,” says Walker, and projects without end users lined up don’t qualify. Furthermore, “brownfields redevelopment is very much more complicated than fixing roads. The low-hanging fruit in brownfields was picked in the 1990s and 2000s, and you’re ending up with sites that are more and more complicated.

New, less-complex projects can come along as legacy companies and responsible parties “get religion” and see the value of their properties are nowhere near their prior assumptions, says Walker. More sites may thus enter the pipeline as their owners “realize that hanging on to these properties for another 10 years through another market cycle may not be the right thing to do. But the projects now are the larger, more difficult ones—and those are the ones we like to do.”

In today’s market, it’s critical to deploy a “tenant in tow” strategy—that is, determine the end use for the property to a significant extent as part of the package going in.

To anchor a site, Weston will sometimes serve as the initial tenant itself, as noted. In 2010, the firm completed a 21,000 square foot office building on a brownfields site in Concord, New Hampshire, signed a long-term lease to occupy the majority of the building, and recently signed up the property’s last tenant. Currently, Weston is building on a former contaminated automobile dealership site in Lakewood, Colorado, where it will lease half of the 30,000 square-foot space and find tenants for the rest. The bank pad developed as part of this project was just sold to Chase Bank.

“We want to locate in facilities that

we develop from ‘brown to green’ where we can show off our green development and LEED design-build capabilities,” says Walker, referring to the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) program. It doesn’t hurt that the Lakewood property will have access to rail transit, as such amenities are highly popular in today’s redevelopment market.

“It’s kind of tough coming out of the ground in today’s economy, in terms of new construction, but we’re getting a lot of interest, and we are hoping to fill the first building by the end of the second quarter, and then take occupancy on July 1,” says Walker. “Then we’re looking to begin construction on Phase 2, a larger 100,000 square foot mixed-use building on that site next year.”

Another factor girding opportunity in this difficult redevelopment market is demographics, according to Walker. Young people graduating from college are gravitating to the city, he explains. “To attract that talent, you have to be in an urban or transit-oriented location. The big box retailers are seeing that trend as well and are looking to downsize so that they can fit into urban locations to attract these people.”

Weston’s perspective on the brownfields redevelopment market and the remediation segment of the environmental industry generally comes from years of experience as a leader in the cleanup market. On Engineering News-Record’s (ENR) annual list of top environmental firms, Weston is a perennial top 40 firm, and a top 20 firm in the hazardous waste cleanup segment. The 2010 ENR list placed Weston at number 32 overall based on 2009 environmental revenue of \$285.4 million (about 57% of total revenue) and at number 14 among the top firms in hazardous waste with \$190.3 million in 2009 revenue.

“For 2010 the trend was probably steady, if not up about 2 to 3%, on straight remediation,” says Walker. He estimates that about 65% of Weston’s cleanup work is performed in the federal sector, 25% in the private sector, and 10% for state and local entities. For 2011, growth in remediation may tick up a bit to 4 or 5%, he

suggests. “Right now, the growth is on the private side.”

Weston is an established cleanup contractor with the Department of Defense (DOD), enjoying some very large assignments. Its work at the former Mare Island Naval Shipyard—a remediation and “early transfer” site in Vallejo, California—is now winding down, according to Walker, while the massive cleanup at Fort Ord down the coast is “going very well.” Fort Ord is a large-scale project being undertaken in a partnership with LFR (now a unit of ARCADIS) and involves the removal of unexploded ordnance (UXO).

“There are lots of large UXO cleanups going on around the country—Fort Ord, for example—and that’s an area where we have particular expertise,” says Walker. “Our track record on safety in that part of the industry is second to none.”

All clients, public and private, are demanding a sustainable approach to cleanup, he adds. “That’s a huge part of the market today. Even when you bid on the job, if you’re not showing your ability to provide sustainable services—recycle materials, energy efficient equipment and systems powered by renewable sources, reduced time to completion, etc.—you’re not in the game. That’s a huge part of our business.”

DOD contracts are also trending towards guaranteed fixed-price and performance-based awards, Walker says. “You come up with a scope and plan, and it’s not time and materials. We try to protect ourselves by focusing on states and locations where Weston has good relationships with the regulators. Where necessary, we try to purchase insurance products to cover downside risks on these contracts.”

Ensuring success in the current marketplace comes back to “finding an end use that will allow us to cobble together the dollars to enable the cleanup,” Walker says. “Most people are not interested in doing cleanup just for cleanup’s sake—and that’s true for owners in all sectors. Finding that tangible way to get out of the property in order to get the funding and get the project started—that’s the biggest challenge.” ■

GZA FINDS PRIVATE-SECTOR CLEANUP MARKET TURNING IN THE RIGHT DIRECTION

Starting out life in 1964 as a soils and foundations specialty consultant, **Goldberg-Zoino & Associates, Inc.** made a natural migration into the environmental cleanup field as new federal and state hazardous waste laws enacted over the subsequent two decades put the national spotlight on remediating contaminated sites. Today operating as **GZA GeoEnvironmental** (Norwood, MA), the firm has grown with the environmental industry to maintain consistent prominence on annual “top 200” lists and still counts remediation as one of its strongest practice areas.

Indeed, despite an economic climate in which property transactions and land development have suffered as much as any segment of the environmental industry and of the economy overall, GZA is enjoying a commendable level of growth in its remediation practice. It’s not double-digit growth, but the remediation segment of the industry has no cause to be greedy.

Senior principal Al Ricciardelli estimates that net revenue for GZA’s remediation practice—a more important measure of growth in that particular segment than gross revenue, he says—has been in the 5 to 10% range for each of the last three years. “We’re happy with that,” he comments. Gross revenue in the segment has grown more in the 2 to 3% range, but that still compares favorably with growth in the remediation industry overall, he believes.

GZA generated about \$100 million in total gross revenue during 2010, and the site investigation and remediation practice accounted for somewhere between 40 to 50% of revenue, and probably closer to 50%, according to Ricciardelli. More than 90% of the cleanup business comes from the private sector, with a broad mix

of clients. “We do a fair amount of work for utilities, and a fair amount in ‘hard manufacturing’—for example, the automotive and electronics industries in the Great Lakes area,” he notes.

Other client sectors include land and property development and contracting in support of medical and educational facility construction. Unlike many of its competitors, GZA doesn’t have a strong presence on the petroleum side of the market, Ricciardelli remarks. Altogether, GZA employs more than 550 engineers, scientists, and technical personnel at 12 offices in the Northeast and Midwest.

Although the sluggishness of the remediation market has prompted other environmental engineering firms to shift professionals out of cleanup and into other types of environmental work, GZA hasn’t had that experience. If anything, because the remediation practice is growing at a slightly faster rate than the rest of the company’s business, it’s more likely to see transitions into that practice, according to Ricciardelli.

HOT AND COLD SPOTS

Of course, the remediation business has its hot and cold spots. Like many of its peers in the field, GZA has experienced slow going in the property development segment of the market. There has, however, been an up-tick in the work associated with the development of community health centers in urban areas, usually with the support of brownfields funding, Ricciardelli notes, adding that brownfields cleanup is part of GZA’s suite of services rather than a specific focus.

Contractor work in support of infrastructure projects has been healthy, Ricciardelli reports. Compliance-driven work continues at a solid pace, arising from a step up in enforcement in certain states, he says, singling out Massachusetts and Rhode Island as particularly strong in enforcing environmental regulations.

The strongest source of business, however, has been the energy industry. In particular, GZA has had steady business in the cleanup of manufactured gas plants (MGPs), and Ricciardelli anticipates that the MGP cleanup market is one that still

has some legs. There are still a good number of MGP sites within GZA's service territory, which traces a Northeast quadrant. "Many utilities have been very aggressive in pursuing those sites, others less so, so there are many sites that still need work," he observes.

Overall, "we're seeing indications of improvement in the market," Ricciardelli reports. "We're seeing more site assessments for property transactions than in the past. I will say it feels very fragile. And we could take three steps back in a heartbeat. But I'm seeing positive signs."

He reports that the company is fielding increased demand for cleanups that meet sustainability and efficiency goals, although the demand is not uniform across all categories of clients. "The larger companies in particular are looking for it, while the smaller clients are more worried about the bottom line."

Conversations with regulators are also turning towards the implementation of more sustainable technologies—cap in place as opposed to dig and haul, for example, and the use of solar-powered equipment on site. "I do believe there has been a shift away from dig and haul, because it is not perceived to be as sustainable as other options," Ricciardelli says.

For on site treatment, GZA is deploying the full range of technologies, from chemical oxidation and electrical resistance heating to high-vacuum extraction and bioremediation. In the bioremediation category, GZA offers some proprietary technologies. Each new technology undergoes a cycle of enthusiasm, then retrenchment as the technology works at some sites and not at others, and then acceptance as the proper applications are better understood, according to Ricciardelli. "Chemical oxidation, for example, was seen as a panacea, and now that we see that it isn't, it's being used less. It's being used at sites where it's more appropriate."

As for contracting vehicles, the company will contract in any number of ways, but for about 15 years it has been offering what it calls "Contract to Closure," under which the firm takes on the regulatory and financial risk on a project. "We're seeing

increased interest in that program in the marketplace," Ricciardelli says.

The company is also experiencing pressures from the marketplace on contract terms—for example, on limiting liability. "We've had to walk away from some assignments because of those limits—more so than in the past," Ricciardelli notes.

GANNETT FLEMING LOOKING TO REVITALIZE FEDERAL CLEANUP BUSINESS

While future federal budget levels present a concern for environmental engineering companies with a presence in the Department of Defense (DOD) and other federal remediation markets, the federal cleanup business has been stable in recent years while the private-sector market has been and remains spotty. Remediation firms can hardly be blamed, then, for flexing their business development muscles and seeking to establish, or re-establish, their presence in the federal markets despite the murky budget outlook.

Gannett Fleming, Inc. (Harrisburg, PA) is one firm looking to take advantage of existing relationships between other segments of its business and DOD in order to re-ignite its remediation work with the federal government. The company sees its strong relationship over the years with the Army Corps of Engineers in dams and other areas of geotechnical engineering as potentially opening the door to an increase in cleanup work with DOD and other federal agencies, whether in the form of stand-alone environmental projects or in the form of environmental support for the design and construction side of the business.

"We're hoping we can build on that relationship," says Ron Leins, a vice president in remediation practice management at Gannett Fleming. He notes that the firm has a number of large federal projects in the works this year, has been short-listed on several proposals, "and we're waiting to see." He acknowledges that, as a mid-size firm, it is difficult to compete with the much larger firms in the federal cleanup business. A mentor-protégé relationship

Ultimately, the challenge is pricing pressures, he concludes. "It is reasonably competitive out there. We as a company are challenged to maintain the quality we need to deliver to our clients in light of those pressures. We've been successful at it, but it has been a challenge." ■

with PARS Environmental, Inc. (Robbinsville, NJ), a small business with a foothold in the federal market, should help.

Gannett Fleming's environmental practice is divided into two segments—remediation and environmental management. Of the firm's 60-plus offices in the United States, 14 or 15 have remediation personnel, according to Leins, but specific cleanup jobs can and will pull expertise from other segments of the business, such as the geotechnical engineers.

Leins estimates that the site remediation practice generated about \$13 million in 2010 (the company's overall environmental revenue totaled about \$100 million in 2009, according to data compiled by Engineering News-Record, which placed Gannett Fleming at 73rd on its 2010 list of the top 200 environmental firms). The \$13 million figure represents an ongoing flatness in the remediation segment in recent years, compared with growth in the 5 to 8% range prior to the recession. The public-private split is currently about 25-75, with the public-sector work including contracts with state and municipal entities.

The recession certainly had its impact, according to Leins. Two state contracts—with Florida and Michigan—didn't meet projections because those states "were not spending money under these contracts," says Leins. "That probably affected us more than any other sector." Meanwhile, "our private clients cut back on what they were spending," reports colleague Gary Rozmus, a Gannett Fleming vice president and leader of the firm's brownfields work.

The practice probably didn't suffer more

than a couple of layoffs, Liens goes on to say, but “we had to pull our wings in and stay lean and mean. We did a lot of business development in as many areas as we could, and we continue to do that.”

The business development efforts appear to be paying off, as successes over the past several months are laying the foundation for what Leins and Rozmus see as a 5% growth track for Gannett Fleming’s site assessment and cleanup business in 2011. “We’re seeing significant awards under New York’s Brownfield Opportunity Area grant program,” notes Rozmus. “We’re also involved in significant work with New York City, which now has its own Brownfield Cleanup Program.” The firm has an “on-call” contract with the city and developed and maintains the city’s Speed Portal inventory of brownfields sites.

RAILROADS BUYING

In addition to the advances on the brownfields front, Gannett Fleming won master service contracts with three of the Class 1 railroads and, in keeping with a strategy to broaden its U.S. coverage, expanded its remediation coverage to the Southwest and increased its workload in southern California.

Historically a U.S.-focused firm, the company is now also looking overseas, having recently opened an office in Abu Dhabi. “We have relationships there, and are seeing more interest in remediation in the Middle East,” says Leins. “We’re also seeing elevated interest in other regions, including Latin America.”

Gannett Fleming also strengthened its remediation practice through acquisition, picking up Risk Assessment Management Group, Inc. (Houston, TX) in 2008. The firm is well-known nationally and internationally, says Leins, and provides an extra measure of capability in bringing sites to risk-based closure.

The company has been providing guaranteed fixed-price remediation services for some time through a separate unit—**TerraSure**, which targets sites in the \$1 million to \$10 million range. Although the company had enjoyed explosive growth through the middle of the decade (EBJ, Vol. 19, No. 3/4, 2006), Leins reports that

EBJ Survey Comments: Challenges for Companies

Adapting to a tightened market, or preparing to emerge from it, is the prevailing concern for remediation companies in 2011. Question posed in March 2011.

What is the most important challenge facing your company in 2011?

Staying afloat

Adapting to more pay for performance risk

Capitalizing on the coming industry growth with limited resources for sales/marketing

Controlling costs and properly estimating the scope of a project

Finding qualified employees; Finding qualified personnel to meet demand

Investment funding for development of new technology

Keeping quality people during slow periods

Lack of enforcement; Lack of government spending; Lack of qualified candidates for employment

Looser regulations being re-written in CA that will allow 1/3 of existing UST sites to immediately close. This could take effect by the end of this year.

Maintaining quality work product while fostering growth under tight pricing pressures

Staffing a workforce for the increased demand for our services and having the appropriate time to train the staff for the work.... No newly hired remediation worker comes completely prepared to perform the job. It takes time to articulate the importance of safety/regulations, and even more time to properly prepare someone to respond to an emergency.

Unstable economy, changing markets, spending cuts, intense price and fee pressure leading to low margin work.

the business model is challenging to implement, and TerraSure has faced the same market pressures in recent years as the rest of the business. “You have to look and bid very carefully to foresee how much it will cost to clean up a site. There’s not much room for error—but it’s holding its own.”

Guaranteed fixed-price contracting is a major growth trend in federal contracting, but time and materials is still the contracting vehicle of choice for Gannett Fleming’s industrial clients, according to Leins. Furthermore, a number of the private-sectors clients are putting pressure on their vendors to reduce prices, which in the current climate is difficult to do, according to Leins. “If they pay you early, they want a discount, and it’s tough to cut rates and give a discount.”

Rozmus points out, however, that “if you can get into a master services agreement that can minimize the need to generate proposals, you can share those savings with the client.” Clients establishing such

agreements with their preferred suppliers are not very flexible on terms, but “we haven’t walked away. We generally try to work out contracts while making strong business decisions. We also work with clients that are good clients. We enter into relationships that have generated a good level of trust.”

Leins adds, “we have a lot of repeat business and good relationships. We have a good safety record—an A rating from a number of clients.” The biggest challenge going forward will be the high level of competition. “For a company our size, larger firms that continue to merge and acquire make it difficult to compete, particularly in the federal market,” Leins concludes. The company has to work a lot harder to attain the same level of work as in past years, and profit margins “are not what they used to be.” We have to make the most of our staff resources, deploying good people who are linked to projects and clients, and having a strong on-the-ground presence. ■

HULL & ASSOCIATES RIDES BUMPY BROWNFIELDS MARKET ON INNOVATIVE DEVELOPMENT OPPORTUNITIES

In January of this year, project development and engineering firm **Hull & Associates, Inc.** (Dublin, OH) announced a partnership with Pilkington North America, a maker of glass products, under which Hull developed and installed a 250 kilowatt (kW) ground-mounted solar photovoltaic (PV) array on a brownfields site at Pilkington's former East Toledo plant. Hull managed the project through affiliate Hull Energy, LLC, a recently formed entity focusing on the development and operation of renewable energy projects for municipal, commercial, and industrial clients.

The formation of a special-purpose limited liability corporation (LLC) is one of the approaches that Hull & Associates has taken to create opportunity in an otherwise flat market for brownfields redevelopment, a core practice area in which the firm has established a solid reputation over the years. Under this model, Hull forms a separate investment group to bring redevelopment projects to completion, leaving the more traditional consulting side of the business to undertake the actual cleanup work without assuming the project risk.

Another example is a current project in Toledo, where a newly formed LLC, River Road Redevelopment II, LLC, closed in March on a former manufactured gas plant (MGP) site owned by Columbia Gas of Ohio and hired Hull & Associates to undertake the cleanup. "We said we'd transfer the property to ourselves and use our consulting expertise to bring public funding to the project," says Hull & Associates CEO Craig Kasper. "We worked through a grant application to bring \$3 million to the property, which reduced the cleanup cost."

This approach, applied to the "brightfields" market—the development of renewable energy facilities on brownfields sites—and to other, sometimes non-traditional redevelopment projects pursued with longstanding partners, is a formula

that is keeping the company very busy, according to Kasper. Such projects are picking the company up in a market segment that, overall, is "still pretty flat and hasn't improved significantly," he says. "We've maintained our business because of our ability to create some of these projects. The market is coming back, but very slowly and cautiously, and I think it's going to be a very slow return to the previous level of activity, to the point where the development world starts to spend money again."

"The market is coming back, but very slowly and cautiously... it's going to be a very slow return to the previous level of activity."

Kasper estimates that Hull generated about \$24 million in 2010, from work in four distinct but inter-related markets. The firm has a "very traditional" environmental practice focusing on Superfund, Resource Conservation and Recovery Act (RCRA) corrective actions, and other types of cleanup assignments. The business in straight cleanup, without the redevelopment component, slowed through the recession because responsible parties experienced constraints on spending, but that business "is starting to pick up again," says Kasper.

A waste management practice encompasses landfill design and permitting, including ash management for utilities. A third practice is urban revitalization, "which for us is a very vertically integrated service, with Phase I and II assessments being a big part," notes Kasper.

Finally, Hull has a segment focused on renewable energy development. The original entry into the energy field came about eight years ago in the form auditing and efficiency-related consulting work. The

development of renewable energy projects started up about four years ago, according to Kasper, who estimates the energy segment of the business accounted for approximately 10 to 15% of the company's revenues during 2010, while the other three segments of the business split the remaining revenue fairly equally. Hull & Associates employs approximately 140 people at four offices in Ohio, as well as offices in Indianapolis and Pittsburgh.

A signature of Hull's brownfields redevelopment work is the company's readiness to take on large projects, sometimes with non-traditional clients. The state of Ohio, for example, has overcome years of resistance to gambling and is allowing gaming companies to develop casinos. One such company, **Penn National Gaming, Inc.**, has chosen to redevelop the former Delphi automotive parts plant site in Columbus, a 1.5 million square foot building on 130 acres. **Duke Realty Corp.**, one of the largest publicly traded real estate investment trusts (REITs), and Hemisphere Development, a Cleveland-based brownfields developer, brought Hull in to perform the cleanup. As of publication, the majority of the cleanup had been completed, and the development of the casino had begun.

Duke Realty—"one of our very good clients," says Kasper—had worked with Hull before on another large project, a former General Motors (GM) assembly plant in the port of Baltimore. In about 2005, Duke had begun to look for opportunities to redevelop large facilities in ports, and the GM plant—a 300 million square foot plan on 200 acres—fit the bill. Hull has completed the cleanup of the site, which is being redeveloped into warehouse and office facilities to support port logistics and commercial development.

Duke and Hull followed up that project with another GM plant in Linden, New Jersey, a 300 million square foot facility on 100 acres, about 12 miles from midtown Manhattan. Hull is undertaking the cleanup of the site, which Duke will redevelop for commercial/retail opportunities on about half of the property and industrial development on the other half.

"There is a lot going on at former auto plants," Kasper notes. "There's a lot more

plants than just the assembly plants that were shut down over the years.” Colleague Kara Allison, Hull’s director of government and community relations, points out that the company is involved in the Mayors Automotive Coalition, a group whose members comprise communities with closed automobile assembly and supplier plants. “They got together as a group to steadily lobby EPA and Capitol Hill to help them find funding to address these sites and attract new uses.”

Allison’s organization within Hull has brought in more than \$154 million in funding from various sources for brownfields redevelopment projects. That ability to bring in funding and “our understanding of project development from the beginning of the project” is a key part of Hull’s value proposition, according to Kasper. “We understand site development and stakeholder needs, both as owners and as consultants.” In addition, “we’re controlled risk takers..”

Another source of opportunity in a challenging market has been the teeing up of sites to get them shovel-ready, even if there is no developer. Ohio again serves as an example. The Clean Ohio Fund provides about \$40 million in grants each year for brownfields remediation, and “when the program started up, the developer business was very robust,” says Kasper. “There were many ways to spend that money. When the development and credit markets tumbled, there was no one to go to a city to develop a project, although the money is still there.” Hull has been helping communities assemble portfolios of sites that can take advantage of this funding by putting properties in a position to be redeveloped once the market comes back.

For Hull, the biggest challenge in the brownfields redevelopment market “is to continue to be able to grow in order to invest in these projects we’re pursuing, and to figure out different ways of adding value to these projects,” Kasper concludes. “The credit market is there, but the money still isn’t pouring into redevelopment and renewable energy projects. We need to get these kinds of funding sources off the sidelines and into projects that can support our business.” ■

COLUMBIA TECHNOLOGIES RIDES DEMAND FOR HIGH-RESOLUTION SUB-SURFACE CHARACTERIZATION

Throughout much of the approximately three-decade-old history of waste site cleanup, sub-surface site characterization has been something of a high-stakes gamble. You could install monitoring wells into the soil and groundwater, spending thousands of dollars per well while essentially guessing how best to develop a picture of where contamination has spread or where a groundwater plume is headed—and you could be wrong, prompting a costly revisiting of the site and possibly even lawsuits.

More recent history has seen the advent of high-resolution techniques that have reduced the cost and improved the accuracy of sub-surface characterization. One company that has put those techniques to work at approximately 750 sites throughout its 10-year history is **Columbia Technologies** (Baltimore, MD), a provider of high-resolution direct sensing and mapping technologies such as the membrane interface probe (MIP), laser-induced fluorescence (LIF), the hydraulic profiling tool (HPT), a discrete groundwater profiler with on-site volatile organic compound (VOC) analysis, and associated data management tools for real-time information processing and visualization.

Columbia Technologies CEO John Sohl looks back on the company’s experience at those 750 sites and sees three principles in play when it engages clients in today’s marketplace. First, “they want to define the issue, and not just produce data for data’s sake, and to keep regulators off their backs,” he says. Second, clients understand that better information leads to better decisions on cleanup and response. Third, “they’re saying, ‘I’d rather have an abundance of fairly close information and be approximately correct than be precisely wrong.’”

High-resolution characterization can eliminate the chances of being “precisely wrong” while providing dense data quicker decisions, Sohl argues. “We’re collecting

data 20 times per foot, through a direct-contact reading. We take that data, link it to a central location, and process the data so that the technical team can make decisions on the fly, in real time. It’s much more cost-effective investigation that’s remediation-focused in real time. You’re not getting coarse data, not getting it late, and not using pre-conceived notions about groundwater flow.”

This improved level of information attains elevated significance as companies increasingly turn to in situ methods of dealing with their contamination problems, as part of the effort to make cleanups more sustainable and “green.” “Dig and haul” is still a common solution, Sohl notes, “but there’s a lot more interest in what’s going on in the ground and trying to remediate in place—through injection, fracturing, etc. What’s needed is a better understanding of the hydrology, geology, chemistry, and even the biology.”

SITES RE-VISITED

In fact, high-resolution characterization is playing a role in the re-visitation of sites where initial investigations and remedy selections haven’t produced the desired results. Sohl reports a recent conversation with a company that is funding a pump-and-treat remedy at a New England site. The company is burning through its budget on the cleanup and “sees itself as not getting anywhere.” Such situations are “giving rise to a better understanding of the value that these high-resolution tools can provide.”

Columbia Technologies has developed a solid niche in high-resolution sub-surface characterization; few, if any, other firms offer it as a core specialty, according to Sohl. Most environmental consulting and engineering firms do not have a lot of direct sensing expertise in house, so they “rely a lot on us to get it right,” he notes. Other competitors, like drilling companies, “do direct sensing as an add-on to other activ-

ity,” he says. “We lead with the science, knowledge, and information, and bring in the local drilling expertise to provide the best of both worlds to our clients. These drilling partnerships are an important element of our client service strategy.” He adds, “to my knowledge, no one does the information flow in a cloud-based world as we do, in real time.”

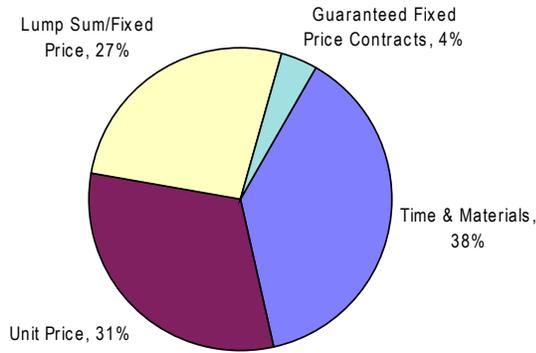
The firm has parlayed that niche into success, even through the economic downturn. Columbia Technologies undertook a little over 100 projects in 2010, about half at petroleum-related sites. One challenging project of note was a jet-fuel pipeline fracture underneath a runway at an East Coast airport. “That fracture had to be identified quickly without interfering with jet traffic. We used the LIF to get that information very fast, over the course of two or three nights.”

LIF is a recent addition to the firm’s technology portfolio. The technology has actually been in the marketplace for 15 to 20 years, but largely bottled up first as a government technology and then as the offering of a single supplier, **Fugro Geosciences**. Columbia Technologies purchased a new generation of LIF equipment from the developer, **Dakota Technologies**. The technology has particular application to petroleum-contaminated soils and has become a workhorse offering to the oil industry over the past couple of years. LIF “is now a growth area for us and for our clients in the C&E sector,” says Sohl.

That growth is evident in a breakdown of Columbia Technologies’ client base over the past three years. Business from the petroleum sector increased from 16.7% of revenue in 2008 to 21.2% in 2009 and 25.5% in 2010. This growth reduced the relative percentage of business in the industrial sector from 53.8% to 43.4% and then 39.2% over the same period.

The federal market, primarily consisting of Department of Defense (DOD) projects, accounted for 19.3% of revenue in 2008, dropped to 14.2% in 2009, and bounced back to 19.6% last year. The firm’s real estate-related business is small but did jump from 2% and less in 2008-09 to 6.9% in 2010. Public-sector business is also small and has jumped around: State/

Contract Types in U.S. Remediation Projects: 2010



Source: EBJ Survey of Remediation Companies, Markets, and Technologies 2011

local markets accounted for 9.0% of revenue in 2008, increased to 19.2% in 2009, and fell back to 8.8% in 2010.

Commenting further on the state of the petroleum segment of the business, Sohl points out that the downstream, retail end of the market “has been a disaster. The few consulting firms maintaining a foothold there are struggling in the red sea of competition, and some are questioning whether they should have stayed.”

“In the second half of 2009, we saw the market come back to where it was in 2008. Early 2010 was soft again, with worries about a double-dip recession, and the second half came roaring back.”

By comparison, the upstream side—exploration, production, and refining—presents solid opportunity. “We see the petroleum segment further upstream being lucrative in the coming years.” These clients have good technical staffs who work well with their cleanup vendors, and “they’re trying to do the right thing and clean sites up,” says Sohl.

Columbia Technologies felt the beginning of the economic downturn in the second quarter of 2008, when project opportunity began to collapse, particularly as it related to mergers and acquisitions. The

overarching uncertainty also put commercial projects on hold—that is, on the shelf, although not entirely cancelled, according to Sohl.

“That lasted about 18 months. In the second half of 2009, we started to see the market come back to where it was in 2008. The first part of 2010 was soft again, with worries about a double-dip recession, and the second half came roaring back.” The company is doing well in 2011 thus far. “It’s the third year in a row that first-quarter sales have grown,” Sohl reports.

He notes that Columbia Technologies did manage to grow profitable revenue in 2009 and 2010, despite the economic slowdown and the difficulties that some client sectors are suffering (the company falls into EBJ’s small-firm category, with annual sales of less than \$20 million). “The way we dealt with the slowdown was to diversify in geography and add technology. We picked up work in Canada and the West, and we pushed hard in the Midwest.”

The company also took aim at selling, general, and administrative (SG&A) expenses, cutting them significantly. That said, the firm did not compromise on sales activity. “When times get tough, you sell harder and you hit more targets,” said Sohl.

Looking forward, he sees the opportunities as global, as existing clients ask the company increasingly to follow them outside the United States. “We’re thinking from a global perspective. I’m confident that the site investigation/remediation market will grow in certain countries.” ■

GEOTECHNOLOGY INC. BENEFITS FROM EPA FOCUS ON MINING SITES IN MISSOURI

Lead mining began in Missouri as far back as the early 1700s, beginning with pick and shovel surface diggings but eventually graduating to operations that extended several hundred feet below the surface. Lead mining moved around the state as individual sites were played out or as new plays were discovered over the next several decades; the total volume of lead extracted from these early mines was believed to be sufficient to meet U.S. needs for the next 100 years.

The Civil War spurred an increased need for lead, and new plays were established. Much of this mining activity was concentrated in southeastern Missouri, the "Old Lead Belt," but even before the Civil War, significant lead deposits had been found in Joplin Creek Valley in southwestern Missouri, near the Kansas border, and by 1871, numerous mining operations had been established in the valley. Yet while the municipality of Joplin owes its origins to lead, historians say it was zinc that built it. By the turn of the 20th Century, Joplin was the lead and zinc capital of the world.

The legacy of decades of mining, of course, is environmental damage—acid drainage, erosion, cyanide and other chemical releases, and soil and groundwater contamination. The cleanup and restoration work is expensive and difficult—and a nice, stable source of business for companies with the expertise to take on such jobs.

Lead and zinc mine cleanup in Missouri has been a very productive niche for **Geotechnology, Inc.** (St. Louis, MO), a geotechnical and environmental consulting firm employing about 125 people at offices in St. Louis, Kansas City, Memphis, and Collinsville, Illinois. In fact, such cleanups are accounting for an increasing share of the firm's remediation work lately, offering opportunity in what is otherwise

a flat cleanup market, according to Senior Project Manager Michael Roark.

"That will be a source of good opportunity over the next year or two," he tells EBJ. "There's money appropriated for these old mining districts, of which there are quite a number out there."

Geotechnology was founded in 1984 as a geotechnical engineering company, subsequently bolting on additional service lines such as drilling, environmental services, and then materials testing. Roark estimates that, today, about one-third of the company's revenue is derived from geotechnical work, another third from construction materials testing, and the remaining third from environmental services.

The bulk of the environmental services category encompasses site assessment, testing, cleanup design, remedial action planning, and oversight, says Roark. The company engages in asbestos, lead, and mold management in buildings, leaking underground storage tank (LUST) cleanups, Resource Conservation and Recovery Act (RCRA) corrective actions, landfill permitting, and a broad range of environmental compliance services.

ONE ACQUISITION AND HELP FROM ARRA AND UST TRUST

To maintain its strength on the geotechnical side of the business, the company acquired substantially all of the assets of Memphis-based **Hall Blake & Associates** in late 2010, adding about 25 people. According to Roark, the firm is currently working to establish an environmental presence in that office to enhance the environmental service capabilities there.

The breakdown of Geotechnology's cleanup work is about 20% public and 80% private, Roark estimates, although the private-sector work, including the mine cleanups, will typically be driven by enforcement action and government programs, with government funding to support the initiatives. For example, many of its cleanups of LUST sites are funded through the **Missouri Petroleum Storage Tank Insurance Fund**, which was operating at a nearly \$28 million deficit as of March 31, 2011. Roark notes that

his company has enjoyed some benefit through the funding of LUST cleanups under the American Reinvestment and Recovery Act (ARRA), also known as the economic stimulus package.

The firm does get involved with brownfields redevelopment, says Roark, to the extent that it engages in the refurbishing of buildings with lead-based paint and asbestos. The Missouri Department of Natural Resources (DNR) administers a voluntary cleanup program that issues certificate of completion to site owners affirming that the contamination has been dealt with properly, and "that's typically how we enter the brownfields market," Roark notes. "I would say that, in the past year, the pipeline of projects is generally flat. There's been no increase in those types of developments, but it is a steady business—work is coming in."

He expects the brownfields market in Missouri to remain flat for at least the rest of the year. Through the Department of Economic Development, the state offers Brownfield Remediation Tax Credits to property owners and developers who can show that a project would not go forward without the credits, and "I have not seen a lot of use of those tax credits in the past few years, just because of the general economy," says Roark. "If the economy swings around, maybe we'll see more use of those tax credits in the future."

In addition to solid opportunity in mine cleanup in southwestern Missouri, Roark anticipates the emergence of a good building rehabilitation market. "As owners and developers are able to get financing, I see existing buildings as being a big source of environmental work. There's still a good stock of these older buildings that are impacted by asbestos, lead-based paint, and other hazardous materials, and I expect to see more of them rehabbed over the next year or two."

In the meantime, however, the cleanup market remains flat. "We're still trying to pull out of the last couple of years," he concludes. "It's still very cost competitive out there. You have to cost aggressively and deliver sooner." ■

COMPANY INDEX

ARCADIS	13	Hull & Associates	24
ATC Associates	3	ICF International	11
Brightfields Development LLC	8	Illinois Environmental Protection Agency	17
Brownfield Partners	8	MACTEC Engineering and Consulting	8
Brownfields Communities Network	9	Massachusetts Dept of Env'l Protection	14
CB Richard Ellis	10, 12	Mayors Automotive Coalition	12
Center of Automotive Research	12	Missouri Department of Natural Resources	27
Columbia Technologies	25	Mo. Petroleum Storage Tank Insurance Fund	27
Crowell & Moring LLP	12	Motors Liquidation Co.	12
Dakota Technologies	26	National Brownfield Association	2, 7
Duke Energy	7	National Brownfields Coalition	9
Duke Realty Corp	24	New Jersey Dept of Env'l Protection	15
Economic Development Administration	7	New York Dept of Env'l Conservation	17
EFG Brownfields Partners	8	Ohio Environmental Protection Agency	19
EnviroFinance Group LLC	8	Penn National Gaming	24
Environmental Liability Transfer	10	Redevelopment Economics	9
Environmental Restoration	3, 11	REI Investment Group	12
EPLET	12	RACER Trust	12
Fugro Geosciences	26	TerraTherm	4
Gannett Fleming	22	Tetra Tech	4
General Motors Corp.	12	Texas Commission on Environmental Quality	19
Geotechnology	27	The Ferguson Group	9, 12
Greenburg Traurig LLC	8	TVA	7
GZA GeoEnvironmental	21	U.S. Conference of Mayors	10
Hall Blake & Associates	27	U.S. Department of Energy	8
Hatch Mott MacDonald	12	U.S. Environmental Protection Agency	7, 14
Holland & Knight	10	Weston Solutions	20

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