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Introduction
LMI is a not-for-profit organization focused on providing independent analyses and practical solutions to government managers. We are committed to improving public management directly through our consulting work and indirectly by research that benefits the public sector.

This booklet does not include abstracts of all LMI reports published in fiscal year 2009 but illustrates the breadth and depth of our capabilities in infrastructure management. You can obtain a booklet that includes abstracts from all of our programs at lmi.org.

BT819C1 September 2009
Agricultural and Biological Protection Study: An AEPI White Paper
Authors: AnnaSara Carnahan, Julia Kalloz, Matthew Phillip, and Steve Stone
Client: Battelle/AEPI
Releasability: Client

Agricultural and biological (ag-bio) terrorism is a threat to the United States. The possibilities include deliberate infectious contamination of the food supply or production animals and the use of agricultural chemicals such as pesticides or fertilizers to attack the population or infrastructure. Many local, state, and federal agencies are involved in the different aspects of food and animal produc-
tion, monitoring, safety, and response to biological threats. In a large emergency, the Army may be called upon to provide assistance, typically from state National Guard or reserve units, but possibly involving active component soldiers. In this white paper, written for the Army Environmental Policy Institute, LMI recommended increasing integrated training between local, state, and federal agencies involving the potential use of Army assets; increasing and improving Army preparedness exercises; establishing or updating memorandums of understanding and agreement, before an emergency occurs, between DoD, the Army, and other federal agencies as part of an all-hazards focus; and considering the expansion or augmentation of the Army Veterinary Corps, Army pesticide program, and other agricultural and public health training to focus attention on ag-bio preparedness and response issues.

PSA90T1 September 2009
Feasibility Determination Technical Report: Lindbergh Park Project, Port San Antonio, Texas
Authors: Mark W. Frye and Eric L. Stephens
Client: USAF
Releasability: Client

Port San Antonio, sensing a demand for antiterrorism/force protection (AT/FP)-compliant office space, was contemplating construction of such space in an area currently known as Lindbergh Park. Lindbergh Park is adjacent to Building 171, a 450,000-square-foot facility that will be the home to 11 Air Force organizations by 2011, including the Air Force Center for Engineering and the Environment, which is supported by several large contractors that may also desire to lease Class A space close to their customer. Port San Antonio believed market demand was sufficient to proceed with the Lindbergh Park Project and asked LMI to conduct an independent feasibility determina-
tion on its viability. In this report, we concluded that the Lindbergh Park Project appears viable. The number and type of administrative and physical requirements that would be imposed on the project are well within the scope of what Port San Antonio has already contemplated. The administrative limitations are manageable, and we did not identify any physical limitations.

DE927T 1  September 2009
Performance Baseline for Three RL ARRA Projects: External Independent Review
Authors: David M. Berkey, A. Scott Dam, Stephen A. Flannery, Douglas A. Gray, Marlene M. Hyde, Lloyd W. McClure, William S. Turner, and Gerald W. Westerbeck
Client: DOE
Releasability: Client

The Department of Energy (DOE) Office of Engineering and Construction Management (OECM) wanted to certify executable performance baselines for three DOE Office of Environmental Management (EM) American Recovery and Reinvestment Act (ARRA) projects at Richland, WA, and recommend ways for EM and the Richland Operations Office to improve project planning and execution. OECM asked LMI to conduct an external independent review (EIR) of the projects and to submit our findings, observations, and recommendations, along with an overall performance baseline validation recommendation. The EM ARRA projects are part of the overall ARRA program at Richland intended to create and save jobs, shrink the active site cleanup footprint, and assist in meeting regulatory commitments in the Tri-Party Agreement. In this EIR report, we document our 41 recommendations that correspond to our eight major findings, 18 findings, and 15 observations, and we provide a corrective action plan shell.
The Richland Operations Office was considering whether to undertake a new project to remove the nuclear core from the 100-KE Reactor at the Department of Energy’s Hanford Site over the next 4 years, instead of keeping the reactor in “interim safe storage” (ISS) for another 50 years and then disposing of it. Richland asked LMI to review the project’s cost estimate and compare it with ISS. In this report, LMI found that, from a life-cycle cost perspective, the Core Removal project would be preferable to ISS. The estimated life-cycle cost of the former, with a 50 percent probability of a cost between $60.7 million and $63.6 million, is substantially lower than that of the latter, which is far more uncertain and has a 50 percent probability of being between $69.0 million and $84.4 million. The greater uncertainty is due primarily to the uncertainty of the costs nearly 50 years from now for transporters, the placement of those transporters, and to a lesser degree the expected inflation over the 50 years.

In 2002, under its Revolution in Training (RIT) program, the Navy changed training delivery and decreased training manpower requirements. In
2006, LMI assessed the risks associated with these changes for the Assessment Division, Office of the Chief of Naval Operations (N81). Since then, training has undergone other changes that affect its delivery. N81 wanted to reassess the training readiness risk and determine whether the training investment strategy needs to change. In this report, we recommended the following to ensure the continued effectiveness of Navy training: have N15 (Education and Training Division) review and take action on the results of the Naval Education and Training Command (NETC) review of content conversion and delivery systems, have NETC delay the execution of proposed RIT II initiatives until content conversion is complete and NETC policies and procedures are in place, and have Manpower, Personnel, Training and Education (MPTE) set an executable Navy total force training strategy and define the future learning environment to allow NETC to align proposed RIT II initiatives with MPTE objectives.

AG903C3 August 2009
National Veterinary Stockpile and Multi-State Partnership Foot And Mouth Disease Logistics Exercise June 16–19, 2009: After Action Report/Improvement Plan
Author: Whitney Owen
Client: NVS
Releasability: Client, FOUO

The National Veterinary Stockpile (NVS) partnered with the Multi-State Partnership for Security in Agriculture (MSPSA), a group of 13 midwestern states, to plan and execute this combination tabletop and full-scale exercise. Around 120 people from various federal, state, and international partner organizations participated in the tabletop exercise, which took place June 16–17, 2009, outside Chicago, IL. The tabletop was followed by four full-scale exercises: East Peoria, IL (June 18), Lincoln, NE (June 18), Ontario, Canada (June 18),
The NVS deployed countermeasures and a mobile logistics team representative to each of the sites. The states performed warehouse logistics procedures in accordance with their state NVS plans to receive, inventory, stage, and store NVS supplies. Canada also practiced its warehouse logistics capabilities. In this after action report/improvement plan, LMI analyzed the exercise results, identified strengths to be maintained and built upon, identified areas for improvement, and included improvement plans for the NVS and states of Illinois, Kentucky, and Nebraska.

ATH90T1 August 2009

Dispensing Strategic National Stockpile Assets: Decision Support for State and Local Planners

Authors: Danny L. Addison, Paul A. Costello, and Mark A. Lyford

Client: ASTHO

Releasability: Client

The Division of the Strategic National Stockpile (DSNS) provides emergency supplies of medical equipment and pharmaceuticals to local public health agencies in the event of a catastrophe, such as a bioterrorist attack. The Association of State and Territorial Health Officials (ASTHO) wanted to provide a decision support tool to help state and local officials evaluate the options available for dispensing these supplies and choose those most suited to their populations and jurisdictions. With the assistance of ASTHO, LMI analyzed 10 methods in terms of their reach, limitations, costs, time to implement, and sustainability and came to conclusions on their limitations and weaknesses. We also analyzed the ability of the dispensing methods to serve various at-risk populations. Planners at the state and local levels can leverage this information and their knowledge of their own unique
requirements to determine which method or combination of methods is most appropriate for their use. They must consider population density, geographic area, and at-risk populations, among other things. Our conclusions and the associated decision matrix will guide them in determining the most appropriate method or methods of dispensing for their jurisdiction.

CE803C2 July 2009
Army Chesapeake Bay Strategy: Sustain the Mission, Preserve the Bay, Secure the Future
Author: Heather Cisar
Client: ODASA(ESOH)
Releasability: Client

The Army—the largest Department of Defense landholder in the Chesapeake Bay watershed—recognizes that it has an environmental stewardship obligation while ensuring soldiers are prepared for their national defense mission. The purpose of the Army Chesapeake Bay Strategy is to integrate conservation and protection efforts for the bay into its national defense activities in partnership with stakeholders. In this document, LMI prepared a science-based action agenda that reflects adaptive management principles and contributes to the long-term recovery of the Chesapeake Bay. The strategy contains five clearly defined goals designed to address the priorities established in Chesapeake 2000, Department of Defense Chesapeake Bay Strategic Action Plan, Chesapeake Action Plan, and Executive Order 13508, Chesapeake Bay Protection and Restoration. The Army Chesapeake Bay Strategy is a hallmark of the Army’s commitment to improve bay water quality, protect biodiversity, promote sustainable development of bay watershed communities, and build regional capacity to adapt to the potential effects of climate change.
Checklists for City Readiness
Authors: Mark A. Lyford, Paul Costello, and Deena Daggett
Client: LMI
Releasability: Client

From our experience working with New York City’s Office of Emergency Management, LMI recognized the need for tools to help emergency response planners at the city and county levels prepare robust, operationally sound plans that comply with their legal obligations. We developed seven checklists that cover a broad range of topics and issues for use by city and county planners in assessing the completeness and quality of their emergency response plans. We reviewed documents produced by cities, states, federal agencies, foreign governments, and international organizations, including those of the Federal Emergency Management Agency, Centers for Disease Control and Prevention, and Pan American Health Organization and Australia and the United Kingdom. Our checklists fall into seven categories: mass inoculation and other prophylactic measures; isolation, detention, and quarantine; evacuation; emergency shelters and temporary housing; taking or controlling of private property; debris removal; and disposal of human remains. LMI will use these checklists and the knowledge gained during this project to help planners assess and improve their plans.

PQIS 2008 Annual Report: Petroleum Quality Information System
Author: Mark Gross
Client: DESC
Releasability: Client

In 1989, the Office of the Secretary of Defense
Energy Policy Directorate established the Petroleum Quality Information System to facilitate the collection and dissemination of standardized fuel quality data. This resource allows a proactive approach to identifying and monitoring product quality trends across a wide spectrum. It also promotes a timely and comprehensive method of addressing the quality concerns that are vital in managing the integrity of bulk fuel procurements. In this 13th report, LMI provided a statistical assessment of critical chemical and physical properties for bulk fuels, propellants, the Marine Gas Oil In–Line Sampling Program, and TS1, Russian jet fuel procured by Defense Energy Support Center during calendar year 2008. This issue continues the data presentation as set forth in the ninth issue, including 8-year annual trending graphs based on weighted mean values for quick visual reference by product characteristics. Extensive efforts were made to ensure a complete volumetric representation of the test data. Only data supported by this criterion were included in the review. Data not supported by volumetric representation, incomplete or erroneous data entries, and results not supported by waiver or exemptions were purged from the core data used in this report.

AG803C8       June 2009
Authors: Mark Lyford and Dick Nolan
Client: NVS
Releasability: Client, For Internal Use Only

The introduction of an animal disease like foot-and-mouth could devastate American animal agriculture, harm the economy, and, for zoonotic diseases, threaten the public’s health. Having enough resources to respond quickly will be crucial. The National Veterinary Stockpile (NVS) provides states the resources they need to re-
spond. This guide, which LMI wrote, gave officials the information and guidance they needed to plan, train, and exercise for acquiring, processing, and using large quantities of resources to support the response to damaging animal disasters. Although the resources will come largely from the NVS, others will come from state and federal agencies, industry, other states, the private sector, and perhaps other countries. Thus, the guide served the broader purpose of helping states plan the complex logistics operation they will need to support their response to a catastrophic animal disease outbreak.

**AG803C7 June 2009**

*National Veterinary Stockpile Template for a State NVS Plan, Version 1*

Authors: Mark Lyford and Dick Nolan

Client: NVS

Releasability: Client

An outbreak of an animal disease like foot-and-mouth could devastate American animal agriculture, harm the economy, and, for zoonotic diseases, threaten the public’s health. Having enough veterinary resources to respond and the ability to distribute the resources quickly are crucial. The National Veterinary Stockpile gives states the resources they need to respond to catastrophic outbreaks, natural or human made. It holds large quantities of veterinary countermeasures (supplies, equipment, vaccines, and test kits) that deploy within 24 hours. States need a plan to manage the distribution of the resources to ensure responders get what they need. LMI wrote this template as a framework for such a plan. It provided guidelines, processes, and mechanisms for use in developing state plans. It also furnished text for adoption in the plan to minimize preparation time.
A national intelligence community organization wanted to better understand and quantify their facility needs. They asked LMI to undertake a comprehensive condition assessment and recapitalization initiative. We inspected the facility on site and used our Infrastructure Condition Assessment Model (I•CAM) to assess its condition. (I•CAM is an analytical tool for establishing project funding levels for restoring infrastructure assets to a desired level of condition over time.) In this report, we identified the facility’s current replacement value (CRV), its backlog, and calculated its current year facility condition index (FCI) in relation to its target FCI. The CRV is the cost to replace the facility in its entirety, while the backlog is a combination of urgent and life-cycle recapitalization requirements. The FCI is a ratio of backlog over CRV and the lower the FCI value, the better the condition of the building. A standard industry target FCI is 5 percent or less, indicating that the facility is generally good health and, while it may have some urgent needs, it does not have widespread problems and most of the equipment is still well within its life expectancy. In the case of this assessment, the resultant FCI was over 20 percent, indicating some major urgent needs as well as that several major groups of equipment had exceeded their life expectancy and were in
need of replacement. LMI provided a prioritized list of projects, assigned them by scheduled replacement year, and sorted them by condition, criticality, and cost. Based on this information, we also developed a ten-year funding forecast with a plan to reach the target FCI within five years, and then maintain the facility at the 5 percent target level thereafter.

The Bureau of Indian Affairs (BIA) operates numerous agencies and schools that are typically located in remote areas where private-sector housing is extremely limited or nonexistent. As a result, BIA provides housing to its key employees so they can respond to a variety of situations on short notice. BIA wanted to document its actual housing needs so it can bring the required housing inventory to an acceptable condition level and then maintain it. It asked LMI to help determine the size of its required housing inventory and to identify the costs of improving the housing inventory at 131 sites. In this report, we identified four actions that BIA can take to right-size its inventory and enhance the condition of its housing: eliminate undesirable housing units, replace units
for required occupants currently living in housing, replace units to meet accessibility standards, and repair the remaining inventory. BIA would need to remove 55 mobile homes, demolish 895 units, replace 244 units to house required occupants and meet ADA standards, and repair the remaining 2,429 units at a total cost between $133 million and $147 million.

The Domestic Staffing Model (DSM) is part of a comprehensive set of tools that the Department of State uses in the strategic management of its human capital. This model and the Overseas Staffing Model are analytical tools leadership uses to make informed decisions about the size and structure of the workforce needed to conduct U.S. foreign affairs. The models, which collectively represent the “HR demand,” are integral to the department’s strategic workforce planning and are the foundation for its budget and resource submissions. In this report, LMI presented the results of Phase 4 of the DSM, which included updating the model with FY08 data; adding additional reports, including comparisons to previous DSM data; adding new administrative capabilities to update organization and position data; and piloting a new capability for bureaus to enter and prioritize new position requirements.
The National Veterinary Stockpile (NVS) and Multi-State Partnership Foot-and-Mouth Disease Logistics Exercise was cosponsored by the U.S. Department of Agriculture Animal and Plant Health Inspection Service—Veterinary Services (APHIS VS), NVS, and the Multi-State Partnership for Security in Agriculture (MSPSA). MSPSA is a collaborative forum of state departments of agriculture, state veterinarian’s offices, homeland security advisors, animal health departments, and emergency management divisions from 13 midwestern states. In this situation manual, LMI described the plans for the tabletop portion of this exercise, including its purpose, format, scope, schedule, and agenda. The exercise featured approximately 150 participants from various state, federal, and international organizations. The tabletop exercise discussion of the coordinated response to the simulated FMD outbreak included reference to the incident command structure, as outlined in the National Response Framework of the National Incident Management System; APHIS VS response activities and actions; private industry procedures; state response activities; international actions—Canada, Mexico, and the North American FMD Vaccine Bank (NAFMDVB); issues surrounding the decision to vaccinate for FMD; trade implications; logistics of moving antigen and vaccine between states and countries; and international cooperation through the NAFMDVB.
The U.S. Army Corps of Engineers (USACE) wanted to examine the dual responsibilities of its chief information officer (CIO) and agency tender official (ATO) for the Army Corps of Engineers—Information Technology (ACE-IT), its service provider of information management and information technology. ACE-IT is an outgrowth of a sourcing competition that the in-house most efficient organization won. Following the promotion of the previous ATO, the responsibilities of that position were vested in the CIO, and mitigation measures enacted to preclude a potential conflict of interest. In this report, LMI found a conflict of responsibility that the mitigation measures, while legally sufficient, do not entirely eliminate. The dual nature leads to a bias for the CIO over the ATO, for headquarters over the field, for the staff over the operations. We found that USACE needs a champion for ACE-IT outside headquarters. We recommended the assignment of a uniformed officer, a colonel, as ACE-IT commander, who would advocate for ACE-IT with the district and division commanders and with headquarters. He would serve as “Mr. Outside,” freeing the civilian ACE-IT director to focus, as “Ms. Inside,” on the day-to-day functional responsibilities of the new organization.
In 2006, the Federal Acquisition Service (FAS) began implementing the performance management system used previously in the Federal Supply Service. The subsequent FY07 scorecards resulted in FAS’s first Organizational Performance Award to employees. To better outline FAS strategic goals and align the FY08 measures accordingly, the Management Council created the FAS 2008–2013 Strategic Business Plan. The core of the strategic plan is the strategy map, which is built around four core components: mission, vision, goals, and objectives. In this report, LMI detailed its efforts to develop business area scorecards and roll up measures to a FAS-wide scorecard, collect data for each measure on each business area scorecard, and develop baselines and targets for each measure to encourage improved performance. This report complements seven earlier reports documenting FAS’s efforts to implement its Performance Management System.

The Federal Acquisition Service (FAS) wanted to enhance its organizational performance award program by learning from other comparable federal programs. In this report, LMI identified
federal trends and best practices in compensation based on performance for FAS to consider when making decisions about its future program. We benchmarked four agencies: the Department of Energy’s Bonneville Power Authority, Federal Aviation Administration, National Aeronautics and Space Administration, and U.S. Army Armament Research, Development and Engineering Center. Taken together, these benchmarked organizations use a variety of mechanisms in their notably successful performance programs, including a mix of organizational, team, and individual awards, as well as monetary and nonmonetary recognition. We recommended several enhancements for FAS consideration: reward teams beyond the annual Commissioner’s Award for Teamwork, better balance ease and complexity in the program, train managers on the award system, periodically notify employees of any updates to or developments in the system, and enhance the program by strengthening the link between strategic goals and budgeting or cost containment.

MAN91T1 May 2009

Enhanced Disability Severance Pay
Authors: Timothy D. Williamson, Michael E. Brooks, David H. Brown, Kevin M. Cincotta, Nathan M. Gannon, John A. Wilson
Client: MANCOM
Releasability: Client

The Office of the Secretary of Defense wanted to review congressional intent in passing an enhanced severance pay benefit (in section 1646 of the National Defense Authorization Act of 2008), assess the Department of Defense (DoD) implementation of the benefit, and analyze the cost of potential changes to the implementing policy. In the LMI cost analysis, we determined that one in eight
service members who receive disability severance pay qualify using “combat zone” or “armed conflict” definitions. If the combat-related specialty compensation (CRSC) criteria had been used, approximately 270 additional service members would have met the broader criteria—an increase of about 25 percent. We estimated that DoD’s initial implementation of section 1646 resulted in $35 million more in severance payments per year. The annual potential budgetary impact of using the broader CRSC definition is only about $2 million for DoD severance payments and $4.5 million for the Veterans Administration. Representatives of the military departments said that a change to the criteria for enhanced severance pay would not pose a significant administrative burden. All cases going through disability evaluation are already assessed for CRSC criteria.

CE802C1 April 2009
Optimizing Project Selection for the U.S. Army Compatible Use Buffer Program: White Paper
Authors: Heather Cisar, William L. Allen III (The Conservation Fund), and Kent D. Messer (University of Delaware)
Client: U.S. Army Environmental Command
Releasability: Client

The Army Compatible Use Buffer (ACUB) program helps the U.S. Army prevent or reduce incompatible land uses and preserve military readiness. As the program expands and encroachment pressures continue, the gap between the demonstrated need for buffer protection and available ACUB funds is expected to increase. To bridge this gap, the Army needed to identify cost-effective opportunities for investment of scarce ACUB funds and leverage investments by other land conservation programs and partners. In addition, a science-based quantifiable method for measuring and documenting the benefits of ACUB program investments could assist the Army
in demonstrating to Congress that program funds are being allocated and executed wisely and in a timely fashion. In this white paper, LMI presented a framework for applying optimization to ACUB opportunity identification, project selection, and program documentation. We also documented The Conservation Fund’s recent collaboration with Fort A.P. Hill to develop a strategic assessment of ACUB protection opportunities and provided case studies demonstrating the additional benefits of optimization through integration of Microsoft Excel-based optimization tools with ESRI ArcGIS™ decision-support models. We found that strategically using optimization to rank and select compatible use buffer projects for funding could greatly benefit the Army.

AG803C6 April 2009
National Veterinary Stockpile Deployment Plan
Authors: Mark Lyford and Dick Nolan
Client: USDA APHIS
Releasability: Client, FOUO

The National Veterinary Stockpile (NVS) is the nation’s repository of critical veterinary countermeasures, providing the states and other jurisdictions the resources they need to respond to catastrophic animal disease outbreaks, natural or terrorist caused. Homeland Security Presidential Directive 9 requires the NVS to deliver the countermeasures within 24 hours anywhere in the United States. LMI wrote this plan for deploying NVS countermeasures, which describes pre-event, event, and post-event actions the NVS program manages. It includes contact information for coordination among staff members, other government personnel, and vendors. It describes how the NVS deploys, which depends on whether the countermeasures are physical, such as supplies and equipment, or support, such as emergency transportation or commercial depopulation, disposal, and
The way the deployment of countermeasures is managed depends on the scale of an event. One person may be able to coordinate the transport of a high-priority sample from the field, but several NVS teams working day and night at headquarters and in the field may be required to manage multiple deployments from government and vendor facilities during a large-scale outbreak.

The District of Columbia Courts asked LMI to review and make recommendations on possible enhancements to the design and structure of the current compensation programs for members of the Court Executive Service and senior managers, including current classification specifications, salary range structures, and the Courts’ practices relating to performance awards and salaries. These positions encompass a spectrum of critical responsibilities, ranging from the deputy executive officer, clerks of court, and directors of divisions, including the chief information and financial officers, to deputy division directors and senior court managers. In this report, LMI made recommendations for position, compensation, and performance management structures tailored to the unique needs of the Courts. We explored options without artificial constraints, such as linkage to judges’ pay, capped salaries, and cost. Options requiring statutory change were so identified. All recommendations were implementable within the
current organization structure. We also strongly recommended development and implementation of a transition plan that includes communication, training, facilitation, coaching, and support to help executives put the new system in place and begin using it for effective management purposes.

IBM70C1 March 2009
Authors: Susan Rosenberg and Lynn Masiello
Client: DHS
Releasability: Client

The Department of Homeland Security (DHS) created, through management directive, a Human Capital Line of Business (HC LOB). This HC LOB gives the DHS Chief Human Capital Officer (CHCO) the authority to design the optimum HC and development structure, processes, and systems to support DHS mission accomplishment. The CHCO adopted—with the advice and consent of DHS component and directorate executives—a Human Capital Planning Framework (HCPF). In this document, LMI presented the concept of operations for the HCPF, which described how it actually works in DHS, including the context for its creation and factors influencing the DHS approach to HC planning and execution, as well as the end state envisioned by the HCPF. It also explained the governance for the DHS HC LOB, including the guiding principles, defining the membership and authority of each of the governance bodies. It described the process used by the DHS HC LOB, including the responsibilities of the governance bodies in the planning and execution process.
To address its fiscal accountability, the National Nuclear Security Administration (NNSA) examines current business practices throughout the organization. This involves examining the management and operating (M&O) contractor environment at all NNSA sites to identify candidate opportunities for improvement. Since their inception, the facilities that design, manufacture, store, maintain, and dismantle the nation’s arsenal of nuclear weapons—historically referred to as the nuclear weapons complex and recently recast as the national security enterprise—have been managed and operated by independent contractors. Although these M&O contractors are required to perform their duties in accordance with Department of Energy and NNSA directives, standardized implementation of specific business practices has not been required. In this report, LMI and TechSource furnished information to the decision makers responsible for designing and implementing contract reform measures in NNSA to ascertain the magnitude of the capital project support costs incurred by M&O contractors at the eight NNSA sites—Kansas City Plant, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Nevada Test Site, Pantex Plant, Sandia National Laboratory, Savannah River Site, and the Y-12 National Security Complex.
The New York City Department of Transportation (NYCDOT) asked the American Association of State Highway and Transportation Officials (AASHTO) and LMI to comprehensively review the management controls in place for the procurement, payment, and change order activities associated with the construction phase of Division of Bridges programs. In this report, the AASHTO/LMI team found that the division has opportunities to strengthen controls in all three areas. For procurement, we recommended documenting policies and procedures, preparing a project management manual to ensure standardization, and developing procedures and guidelines to identify risks at all levels and assess their potential impact on schedule, cost, and performance to mitigate those risks. For change orders, we recommended improving and accelerating the process, encouraging parallel reviews to shorten processing time, and initiating a high-risk/high-dollar threshold to reduce the number and level of reviews needed. For payments, we recommended (1) modifying the current paper forms to allow change order payments to include information on rates and quantities to make monitoring easier and reduce data entry errors and (2) purchasing off-the-shelf software or mandating the standard use of the NYCDOT Computerized Engineer’s Estimate System software for capital construction projects to achieve uniformity in tracking payments.
Petroleum products derived from oil sands crude are estimated to have life-cycle emissions exceeding those from conventional oil and, under some interpretations of section 526 of the Energy Independence and Security Act of 2007, might be significantly restricted from government purchase. The Defense Energy Support Center (DESC), the principal purchaser of petroleum products for the U.S. military, wanted to examine the impacts of section 526 on its domestic bulk purchases of military fuels, specifically those that might be derived from Canadian oil sands recovered crude (COSRC). In this report, LMI found only four DESC suppliers that definitely have been processing COSRC, but we identified 15 others as probable or uncertain with respect to COSRC use, so that as many as 19 may already have been processing it. In the near future, up to 21 DESC suppliers may use COSRC, and 6 of them are openly planning to do so. If DESC is forced to purchase bulk oil product containing only minimal quantities of COSRC, the suppliers are likely to be fewer and the costs are likely to increase.

LMI created A Federal Leader’s Guide to Climate Change
Change because climate change will be one of the defining issues of this century. Those who lead agencies that are directly responsible for policy and science related to climate change will be joined by leaders of other agencies that, as significant emitters of greenhouse gases, will be called to action through executive orders, regulations, and laws. The guide offers a well-founded, unbiased, public, and nonpartisan introduction to the way that climate change will affect the operation of the federal government. It furnishes federal leaders a succinct, understandable, yet rigorous reference that explains specific issues and actions within the federal realm. It details the basic information leaders need when executing their responsibilities and illustrates actions through specific examples. The seven chapters of the guide address climate policy, the science of climate change, national and regional programs to curb greenhouse gases, carbon management, impacts of climate change on federal agencies, adaptation strategies, and international implications of climate change. The guide will broaden a federal leader's perspective on climate change and facilitate successful interaction with other agencies and governments to optimize the U.S. government’s response to this global challenge.

IR803R1 February 2009
Recommended Public Sector GHG Accounting and Reporting Protocol
Authors: J. Robert Hardison, Virginia A. Bostock, Michael E. Canes, Emil J. Dzuray, Stuart D. Funk, Rachael G. Jonassen, Julia A. Kalloz, Caroline A. Nelson, Fiorella Simoni De Cannon, Steven J. Stone, Lisa M. P. Watts, and Taylor Wilkerson
Client: LMI
Releasability: Client

LMI developed a concept and conducted an internally funded independent research and develop-
ment (IR&D) project with the purpose of proposing a public-sector version of *The GHG Protocol: A Corporate Accounting and Reporting Standard* (a formal partnership between the World Resources Institute and the World Business Council for Sustainable Development). This standalone document serves as a recommended modification to the corporate standard to provide clarifying guidance for greenhouse gas (GHG) accounting for public-sector activities. Public-sector operations entail certain unique elements (including organizational structures, operational controls, tools, freedom of information, and national security) not found in the private sector, and specific details unique to those operations must be agreed upon to ensure consistency in the resulting reported values. The public-sector protocol was developed through a multi-stakeholder process to garner input from experienced public-sector managers and GHG accounting experts across a range of organizations. It applies to operations at the federal, state, and local levels of government.

**NSF80T3 January 2009**

*NSF-Supported Observatories Administrative, Operations, and Maintenance Costs: Cost Comparison and Savings*

Authors: Jonathan P. Adams, Robert L. Crosslin, John L. Dettbarn, Douglas A. Gray, Alan Nabors, and David K. Shepherd

Client: National Science Foundation

Releasability: Client

The National Science Foundation (NSF) Division of Astronomical Sciences wanted an independent review of the administrative, operations, and maintenance (non-scientific) costs of NSF-supported observatories. These observatories are national assets that in many cases cannot or would not be replicated by academic institutions and other international organizations without the lead of
NSF. In this report, LMI found that the observatories manage their programs effectively on limited budgets. They show no large excess expenses in the nonscientific cost centers. On the contrary, because of long-term static budgets, most have had to cut back and become more efficient in the nonscientific areas. However, we found that small changes could be made to save money, including adopting the latest automated business systems, reducing travel costs via videoconferences, consolidating certain functions and services, eliminating unnecessary and excess infrastructure, and aggressively sharing and adopting “good ideas” among the observatory community. The astronomical science, and its funding, is the exciting part of observatory management and will always be foremost. Administration, infrastructure, and information technology management may not be interesting, or in the typical skill set of the astronomers leading these organizations, but they are critical functions necessary for success and cost-efficiency.
headquarters in Washington, DC, and commercial corporation headquarters, focusing on organizational structure and levels of effort (in terms of number of positions) by function. The study did not focus on the quality of the services or products and levels of effort, which are assumed adequate. We recommended no changes to the 40 positions comprising the top management level or program operations functions, currently comprising 776 headquarters positions. We recommended retention of the current level of 236 positions and the structure of the headquarters support functions. We found that the research and development arena offers opportunities for savings between Civil Works and Reclamation, which have similar missions.

ICF80T1 December 2008
Workforce Plan for the Department of Energy Office of Human Capital Management
Authors: Dave Bertrand, Coleen Chapman, Diana Kraus, Debra Krupa, Rick Lux, Mike Mahler, Leslie Page, Kiera Smith
Client: DOE
Releasability: Client

The Department of Energy (DOE) human resources organization is the Office of Human Capital Management (OHCM). As a part of an effort to improve its effectiveness, OHCM asked LMI to develop a workforce plan to ensure mission accomplishment in support of department initiatives and the President’s Management Agenda for FY08–11. This workforce plan documented the organizational, workforce, and competency analysis, as well as HCM strategic goals. It also provided the methods and strategies necessary to ensure the right skill sets in the workforce. The current workforce demographics and forecasts of a con-
continuing and increased demand for certain occupations call into question the adequacy of OHCM’s current pipeline for addressing anticipated future attrition in its leadership cadre. The mitigation strategies in the report are options for addressing these issues, including better recruitment and hiring, workforce planning, and retention and succession planning. Some should be pursued immediately, coupled with long-term actions incorporated into an OHCM human capital strategic plan.

SRI83TI December 2008


Authors: Lynn Masiello, Janet Burchard, Barbara Kelly, Amy Stone, and Tracy Urman

Client: U.S. Courts

Releasability: Client

In September 2007, the Executive Committee of the Judicial Conference of the United States requested that the Committee on Judicial Resources consider whether to recommend that the Judicial Conference repeal its cap on judicial executive salaries. The committee considered the issue of executive pay in depth and determined that further study of the issue was needed. The Administrative Office asked LMI to study executive compensation with an overall goal of defining and fairly compensating the U.S. Courts executive cadre. In this report, we documented the current state of executive position management and compensation, benchmarked external prevailing practices for designating and compensating executives in similar positions, analyzed the information, conducted an internal survey, and developed recommendations and options for position and compensation structures tailored to the unique needs of the courts.
MAN80C1 December 2008
Report to Congress: Physical Evaluation Board Processing
Authors: Timothy Williamson, Nathan Gannon, Suling Homsy, and Richard Keller
Client: OUSD(P&R)
Releasability: Client

Section 1615(e) of the National Defense Authorization Act for Fiscal Year 2008 requires the Secretary of Defense to submit a report on the number of instances during a 5-year period in which a disability rating assigned to a member of the Armed Forces by an informal DoD physical evaluation board (PEB) was reduced upon appeal and the reasons for such reduction. In this report, LMI helped DoD satisfy the requirements of Section 1615(e), providing Congress with information regarding specific aspects of the PEB process. The report conveys the results of an extensive review of all PEB cases finalized during the period of congressional interest. It identifies the number of cases where the final disability rating was reduced after the informal PEB and identifies the reasons for the downgrades. Of the cases that were appealed, less than 1 percent had a rating reduction, approximately 25 percent had a disability rating increase, 70 percent had no rating change, and the remaining 4 percent of service members were found fit for duty. During this 5-year period, a total of 106 cases had a disability rating reduction.

DES85T1 December 2008
Potential DoD Energy Savings from Increased Use of Simulators
Authors: Michael E. Canes, Clarence L. Walker, John A. Wilson, Michael D. Waters, and Monica M. DeAngelo
Client: DESC
Releasability: Client

In August 2007, the acting Under Secretary of De-
fense for Acquisition, Technology and Logistics requested a study of the potential for simulators to replace live training. The Joint Exercise and Training Division (J-7/JETD), which led the study, assembled a DoD Simulator Assessment Working Group. To produce an initial report quickly, it asked LMI to perform a “quick-look” study, to be followed by a more in-depth examination if justified. In this report, we recommended that each of the services closely examine the cost-effectiveness of adding simulator capability and of fully using the capability at hand. We also recommended that they strongly consider investment in simulator capability and use to ameliorate the impacts on operational readiness if live training is reduced. In addition, we recommended that the services undertake a more in-depth examination of the potential to conserve energy through expanded simulator use. Finally, we said they should review possible simulator technology upgrades to assess the potential for substitution of simulators for live training as these upgrades become available.

CM802C1 November 2008
Analysis of Medicare Advantage 2009 Plan Submittal Data
Author: Samuel J. Mallette
Client: CMS
Releasability: Client, Proprietary Data

In this report for the Centers for Medicare & Medicaid Services (CMS), LMI provides analysis of submittal data for policymakers and program personnel; shows plan offering and cost data statistics at national, state, metro area, and county levels; compares 2008 submittal data with prior years’ (2000–07) beginning-of-year submittal data; and shows the impact of benefit offerings on numbers of enrollees and eligible beneficiaries. The number of plans is now more than 3,400. Access to plans in the 50 states is 100 percent. Payment and
rebate (excess) values still vary substantially by county. Payment rates are rising more than costs. About 89 percent of eligibles will have access to a zero-premium drug plan (excludes special needs plans). We expect managed care enrollment to exceed 10 million in 2008.

The Department of Defense Education Activity (DoDEA) needed to recapitalize its school infrastructure and required funding well beyond the Military Construction (MILCON) funds currently budgeted. DoDEA decided to explore alternative funding methods to meet school construction requirements in lieu of MILCON funding and innovative methods to reduce school construction time and costs. Because there are no “one-size-fits-all” funding or construction alternatives, and many location-specific factors affect a preferred alternative, in this report LMI recommended that DoDEA adopt a “tool-box” approach to implementing alternatives to MILCON funding and construction alternatives. We also recommended that DoDEA test the tool box by selecting five pilot schools (two in Europe, one in the United States, and two in Asia) and conduct in-depth feasibility studies of those funding and construction tools. Lessons learned from these feasibility studies could be used to develop a framework.
and associated procedures to guide an improved DoDEA capital investment decision process.

DE732T2 October 2008

Construction Readiness of the National Synchrotron Light Source II Project: External Independent Review, Project No. 07 SC 06


Client: DOE
Releasability: Client

The Department of Energy Office of Engineering and Construction Management wanted to verify the readiness of the National Synchrotron Light Source-II project to proceed to construction, confirm the completeness and accuracy of the baseline, and recommend ways to improve project planning and execution. In this external independent review (EIR) report, LMI identified 7 major findings, 32 findings, and 22 observations with recommendations. These included 10 findings and 2 observations with recommendations that carry over recommendations from the Critical Decision–2 EIR that remained to be resolved. We found that the schedule had a significant number of systemic issues, which adversely impacted its logic and validity. These included 247 constraints, such as must start or must finish milestones; 663 open ends, meaning activities that are missing predecessors or successors; and multiple activities with more than 250 days of float, which indicated that logic may not be driving the schedule.
Approximately 10 million Medicare beneficiaries are enrolled in more than 4,700 risk-based Medicare Advantage managed-care health plans. The Centers for Medicare & Medicaid Services (CMS) computes its monthly payments to these plans using enrollee risk adjustment scores that are based on the plans’ reported enrollee health conditions. In 2008, CMS payments for managed-care health services totaled approximately $93 billion and its payments for drug coverage cost another $26 billion. Incorrect reporting of health conditions could result in overpayment or underpayment of billions of dollars to plans and compromise the effectiveness of the newly implemented risk payment model. For these reasons, CMS needs to ensure that reported health condition code data are correct, and LMI helps ensure that the data are accurate and relevant. In this report, we described the current state of our data monitoring and reporting efforts for CMS, including our concept of operations, analytical methods, analysis reports contained in the Risk Adjustment Monitoring System (RAMS) and Risk Adjustment System Analysis and Reporting Tool (RASART), which are analysis tools we developed for CMS, and future focus areas for monitoring risk data.
The National Nuclear Security Administration (NNSA) wanted to evaluate alternative strategies for making the nuclear weapons complex smaller, more agile, and less costly to operate. One potential modification to the overall NNSA footprint is a weapons surveillance and evaluation facility (WSF) at the Pantex Plant to address the surveillance and evaluation requirements for nuclear material components in a smaller nuclear weapons stockpile, while transitioning to much smaller facilities for plutonium and uranium fabrication. Along with TechSource, Inc., LMI conducted an independent business case analysis of the proposed construction and operation of WSF. In this report, we supported the decision to eventually construct a minimally sized WSF at Pantex to enhance NNSA’s nondestructive evaluation capability. However, before deciding to construct such a facility, we recommended undertaking a benchmark-driven program to translate computed tomography and 15-MeV technologies into effective production tools and better quantifying the amount of new space needed.