




SOLICITATION, OFFER, AND AWARD			1. Caption: Solid Waste Management Consulting Services			Page of Pages 1 39	
2. Contract Number		3. Solicitation Number Doc97300		4. Type of Solicitation <input type="checkbox"/> Sealed Bid (IFB) <input checked="" type="checkbox"/> Sealed Proposals (RFP) <input type="checkbox"/> Sole Source <input type="checkbox"/> Human Care Agreements <input type="checkbox"/> Emergency		5. Date Issued 2/28/13	
						6. Type of Market <input checked="" type="checkbox"/> Open <input type="checkbox"/> Set Aside <input type="checkbox"/> Open with Sub-Contracting Set Aside	
7. Issued By: Office of Contracting and Procurement (OCP) Transportation and Specialty Equipment Commodity Group 2000 14 th Street, NW, 6 th Floor Washington, DC 20009				8. Address Offer to: Submit electronically through OCP E-Sourcing Process			
NOTE: In sealed bid solicitations "offer" and offeror" means "bid" and "bidder"							
SOLICITATION							
9. Offers must be received in the E-Sourcing system prior to the event closing date and time.							
CAUTION: Late Submissions, Modifications and Withdrawals: See 27 DCMR chapters 15 & 16 as applicable. All offers are subject to all terms & conditions contained in this solicitation.							
10. For Information Contact		A. Name Adele Smith		B. Telephone (Area Code) (Number) (Ext) 202 671-2389			C. E-mail Address Adele.Smith@dc.gov
OFFER							
11. Acknowledgement of Amendments (The offeror acknowledges receipt of amendments to the SOLICITATION):		Amendment Number	Date	Amendment Number	Date		
		1	3/11/2013	4	3/22/2013		
		2	3/18/2013				
		3	3/15/2013				
12A. Name and Address of Offeror		HDR Engineering, Inc. 100 M Street, Suite 305 Washington, DC 20003-3517			13. Name and Title of Person Authorized to Sign Offer/Contract Kevin De Lange, Senior Vice President		
12B. Telephone (Area Code) (Number) (Ext) (202) 594-3268		<input type="checkbox"/>	12C. Check if remittance address is different from above - Refer to Section G		14. Signature 		18. Offer Date 4/4/2013
AWARD (TO BE COMPLETED BY GOVERNMENT)							
19. Accepted as to Items Numbered			20. Amount		21. Accounting and Appropriation		
22. Name of Contracting Officer (Type or Print) Gena Johnson			23. Signature of Contracting Officer (District of Columbia)			24. Award Date	
		Government of the District of Columbia				Office of Contracting & Procurement	

TECHNICAL APPROACH

The HDR Team has developed the following technical approach to the work, which provides a structure for data gathering, analysis, and communication of findings and recommendations to provide Solid Waste Management Consulting Services, as requested in Solicitation Doc97300. Our team has implemented major components of this scope to successfully deliver sustainable, cost-effective integrated solid waste management solutions to many local governments across North America, including the cities of New York, Chicago, and Los Angeles. We believe our team is well suited to partner with the District in the evaluation and development of sound approaches to achieving its goals for the solid waste management system. The HDR Team brings:

National Expertise in Solid Waste, Recycling and Zero Waste Planning and Implementation. Since 1990, HDR has worked with communities such as Los Angeles, San Francisco and Austin, TX to plan and implement programs to achieve high diversion rates. We have developed cutting edge programs to divert waste from disposal, including collection program design and procurement, food scrap composting and organics management, commercial technical assistance in waste prevention and recycling, and producer responsibility initiatives for products and packaging.

Proven Tools for Evaluating a Project's Triple Bottom Line. HDR's Sustainable Return on Investment (SROI) evaluation framework measures not only the financial benefits of proposed projects, but also the broader social and environmental impacts. HDR's SROI tool was applied in the recent expansion of the Honolulu H-Power WTE Facility.

Unmatched Waste-to-Energy (WTE)/Waste Conversion Technology Experience. HDR has led alternative technology assessments for the waste management needs of numerous large cities and municipalities throughout North America, including a month-long tour of leading WTE and waste conversion facilities in Europe, Asia and the Middle East. HDR has also played a major role in the implementation of more than 53 waste combustion facilities and is assisting the Northeast Maryland Waste Disposal Authority with the development of the proposed Frederick County, MD WTE Facility, as well as the Durham York WTE Facility outside of Toronto, Canada that is currently under construction.

Meaningful, Local CBE/DBE Participation. The HDR Team features CBE contributions from PEER Consultants, P.C. and Capitol Services Management, Inc. as well as DBE participation from PRR – all of whom will support this project from their Washington, D.C. office locations. HDR has successfully partnered with these firms on similar engagement in the past and will utilize their local experience and relationships to add value to this program.

Our scope has been developed to provide a basis for the price proposal. However, the HDR Team remains open to modifying our approach upon further discussion with the District to better meet budgetary and/or project needs.



HDR assisted the City of Los Angeles in the development of its Zero Waste Plan has played a key role in helping the client reach its diversion goal of 70 percent by 2013.



HDR provided a range of engineering services, including SROI, for the development and construction of the H-Power WTE Facility expansion in Honolulu, HI.

A: Define Three to Five Alternative Integrated Solid Waste Management Scenarios

Task 1 – Project Initiation & Kick-Off Meeting

The HDR Team will meet with the District's project management team to gather the necessary data, formalize the lines of communication between the HDR Team and appropriate District personnel, coordinate the project schedule with other members of the project team and ensure that the project objectives are clearly defined and understood by all parties. We will use this meeting to review the project scope, schedule, goals, and objectives. Management and communications protocols will be discussed along with processes and procedures designed to ensure the timely delivery of data and quality deliverables. We will also obtain and assess as much data as is available prior to the kick off meeting, and be prepared to discuss initial questions about the data to make this initial meeting more productive.

The HDR Team anticipates meeting with the District's Contract Administrator and DPW management staff on a monthly basis to review status, deliverables (including any drafts), scheduling issues and corrective measures, and other matters that must be addressed to ensure smooth delivery of the project. The schedule for these monthly status meetings will also be discussed at the kick-off meeting. It is anticipated that these monthly meetings can be accomplished with conference calls and video conferencing for desktop viewing, such as Skype.

HDR Team Responsibilities

- Prepare and provide a draft project schedule plan, electronic and hard copy, within 1 week of contract award
- Prepare and provide final project schedule plan, electronic and hard copy, within 2 weeks of contract award
- Prepare and provide a written data request prior to the meeting, via email
- Assess data received prior to kick off meeting
- Prepare agenda prior to meeting
- Up to three key personnel will attend the kick off meeting
- Provide kick off meeting notes
- Attend monthly status meetings, via phone and video conferencing

District Responsibilities

- Review and provide comment on draft project schedule plan
- Arrange for a meeting place for the kick off meeting
- Invite appropriate District personnel
- Review agenda prior to kick off meeting
- Provide available data request items (electronic format preferred)
- Review and provide comment on kick off meeting notes
- Attend monthly status meetings

Task 2 – Baseline Understanding, Needs Assessment and Potential Strategies Identification

In order to conduct a review of existing solid waste management infrastructure, services, and methods, the HDR Team will conduct a thorough review of plans, policies, previous studies, and datasets relevant to the development of the baseline, needs assessment, and initial strategies brainstorming.

This task will include a needs assessment, and provide a better understanding of the current situation in the District. We anticipate establishing and assessing the District's long-term waste management requirements, including reviewing waste quantity and composition estimates and long-term waste generation projections. We anticipate this task will also include the review of relevant ordinances, the Mayor's Sustainable DC Plan, and other documents relevant to understanding current and future needs, challenges and opportunities of the District's solid waste management system.

We will be able to begin to develop the basic outline of the scenarios components, including an overview of current policies, programs and infrastructure, as well as future needs. This will also allow the project team to begin to develop a broad overview of potential new strategies for policies, programs, and infrastructure. Identification of potential alternative strategies in this task will inform future tasks.

HDR Team Responsibilities

- Review and analyze data
- Prepare and provide a brief summary report of our understanding of key components of the system, via email, including the needs assessment and potential alternative strategies

District Responsibilities

- Provide timely delivery of requested data items
- Provide timely responses to clarifying questions
- Provide timely review of needs assessment and potential alternative strategies

Task 3 – Visioning Workshop

When communicating with the public the most important goal is to develop and maintain trust and credibility. Therefore, the most effective way to build support for the study is to engage champions/stakeholders to advocate to their peers, friends and neighborhoods.

To begin to build consensus and identify challenges and opportunities with key stakeholders, the HDR Team recommends coordinating with key stakeholders early in the process, and often. For this task, the team will develop a stakeholder matrix to identify and segment influencers for the project. This matrix will rank and prioritize stakeholders to determine their level of involvement in solid waste management and understand their attitudes, needs, and preferences. This can be done by conducting executive interviews with trusted community members and leaders including the local ANCs (Advisory Neighborhood Commission) and civic associations as they tend to rank highest on trust and credibility scales with citizens and decision makers.

HDR Team will lead a visioning workshop with District staff and other key stakeholders identified by the project team. We recommend including potential

jurisdictional partners, including the Metropolitan Washington Council of Governments (COG's Go Recycle and Clean Air Partners' programs) and the US EPA Office of Solid Waste as well as representatives from private sector stakeholders such as haulers and processors in this visioning workshop in order to allow those who will be affected by the alternatives be a part of the process early and throughout. In addition, the HDR Team recommends inviting local environmental groups and associations and community based groups to ensure that all valued input is represented as their role in solid waste management systems/protocols may change.

During the workshop, participants will identify and prioritize goals and objectives for the project, discuss guiding principles, review past and related long-range planning efforts, and explore factors likely to affect the District's waste management operations over the long term. We will discuss a vision that lays the groundwork for alternative scenarios, while keeping in mind the need for realistic and financially responsible methods of implementation. We anticipate the visioning may include potential alternative strategies for generation, collection, transfer, processing and disposal; providing a vision for the full spectrum of the District's solid waste management system. In addition, we will use the session to gain consensus on appropriate measures of success for the communications and identify and prioritize potential risks and challenges, including technical risks and knowledge gaps which must be addressed through communications as it could impact outreach. The HDR Team will use the interaction with key stakeholders to establish an effective database/listserv for ongoing communications and information dissemination. An additional product from this interaction will be the creation of a 20-member Solid Waste Management Coordination Group to assist with the facilitation and implementation of new solid waste management operations.

HDR Team Responsibilities

- Develop stakeholder matrix
- Conduct executive interviews with up to 20 stakeholders (including ANC environmental committee chairs)
- Executive interview summary
- Prepare and provide workshop materials, based on previous tasks, via email
- Up to three key personnel will facilitate the workshop
- Prepare and provide meeting notes, via email
- Develop city-wide stakeholders database/listserv for ongoing communications
- Identify a small contingent of key stakeholders that will make-up a Solid Waste Management Coordination Group

District Responsibilities

- Provide timely review of stakeholder matrix and input on workshop materials
- Work with the HDR Team to identify and invite key stakeholders
- Provide a meeting place to hold the workshop
- Provide timely review of meeting notes

Task 4 – Preliminary Comparative Analysis Research

Based on results of the visioning session, the HDR Team will prepare a preliminary comparative analysis, ***keeping in mind the triple bottom line of sustainability***, highlighting innovative practices for meeting future demand for solid waste management services.

The HDR Team will work with the District to identify the best alternative strategies believed to be realistic for implementation in the District, including strategies for recycling, composting, and residuals processing. These “short-listed” strategies will be compared to the District’s current system, including a comparative analysis of available waste management technologies, facilities, and processes (developed in more detail under Task 7, below); impact on waste diversion and disposal; impacts on energy conservation and/or generation; other benefits and constraints; and alignment with the Mayor’s Sustainable DC Plan and District’s goals. The HDR Team and the District will work together to use the comparative analysis to determine which strategies are potentially feasible in the District to be crafted into scenarios, focusing on those strategies with potential to best capture the embedded energy and economic value of the District’s waste stream.

HDR Team Responsibilities

- High-level research of relevant metrics for potential alternative strategies
- Provide a matrix style summary of the strategies, the results of research on relevant metrics, compared to the baseline of the District’s current system, via email
- Facilitate a conference call to discuss the results of the comparative analysis, and determine strategies for inclusion in the alternative scenarios

District Responsibilities

- Provide timely input and approval on which metrics should be reviewed for each strategy
- Provide timely review of the matrix style summary
- Participate in conference call to discuss results, and determine strategies for inclusion in the alternative scenarios

Task 5 – Alternative Scenarios Development

The HDR Team will meet with District personnel to determine which of the ‘short-list’ of viable strategies are most appropriate for further refinement and incorporation into the final three to five scenarios.

The HDR Team will develop an alternative scenarios report, incorporating the results of the previous tasks. We will work with the District to develop the basic format of the report. We anticipate the basic framework of the report will include: an executive summary; overview of the current situation and potential alternatives from task 2; summary of the Visioning Workshop from task 3; summary of the preliminary comparative analysis from task 4; and a clear description of the final three to five alternative integrated solid waste management scenarios that capture the energy and imbedded value of the managed material streams. It is anticipated that each of these scenarios will include recycling, composting, and residuals processing components.



HDR Team Responsibilities

- Facilitate a meeting to discuss the 'short-list' of viable strategies, and develop three to five alternative scenarios
- Prepare and provide a draft alternative scenarios report, via email
- Incorporate District personnel feedback into the scenarios report, and provide via email

District Responsibilities

- Participate in the meeting to discuss the 'short-list' strategies and develop three to five alternative scenarios
- Provide timely review and comment on the draft report, consolidate comments from multiple reviewers into one document

B: Develop an Evaluation Strategy and Framework to Quantitatively Compare the Investments Required by Each of the Scenarios

Task 6 – Strategy and Framework Initiation & Kick-Off Meeting

The HDR Team will work with District personnel to develop a comprehensive evaluation framework to quantitatively compare investments across goals for recycling diversion, capturing embedded energy, and other related aspects of the Mayor's Sustainable DC plan. We will adapt our proven evaluation process to meet the strategic, triple bottom line objectives of financial, environmental and societal goals.

The process of developing a framework involves evaluations of the physical, natural, and financial aspects of the current system and alternatives. Our analysis will not only consider the technical feasibility of these options, but also financial, social and environmental impacts to develop scenarios that have a better chance of being implemented and still meet the District's goals. HDR has recently and successfully used our analysis tool for other clients looking at their long-term waste processing and disposal options. Integrated analyses will be conducted on technology, financial impacts, and a market assessment, discussed in future tasks. In addition, we will apply HDR's Sustainable Return on Investment (SROI) tool to identify and prioritize the scenario(s) that generates the best value for the District. SROI applies best practices in economic analysis to assess a wide range of project impacts in monetary terms. SROI will estimate the value of each alternative scenario in meeting objectives of the District, related to waste, transportation, energy, environment, jobs, and other relevant goals. Altogether, this evaluation framework will identify the scenarios that are technically feasible, financially affordable, acceptable to the community, and desirable overall.

The HDR Team will facilitate a meeting with District personnel to finalize the evaluation strategy and framework.

HDR Team Responsibilities

- Facilitate a meeting to discuss specific financial, environmental, and societal objectives to be included in the evaluation
- Develop a framework for establishing performance metrics, and economic valuation standards for each objective

- Formulate framework into a tool for evaluating multiple scenarios

District Responsibilities

- Participate in the meeting to discuss and decide upon evaluation criteria
- Provide timely review and comment on the draft and final framework

C: Identify the Relevant Physical, Natural and Financial Assets Needed for and Used by Each Alternative Scenario

Task 7 – Technology Review

The HDR Team will work with the District to identify alternative waste disposal and conversion technologies that would be integrated into the three (3) to five (5) solid waste management scenarios developed in Tasks 4 and 5. The objective of this task is to consider the various classes of available technologies (composting, waste-to-energy, gasification, landfill, etc.), while remaining realistic with respect to the appropriateness of these technologies and options for the District. The HDR Team intends to highlight characteristics of many possible technologies and landfill options for each scenario, including a baseline or “status quo” scenario that considers the District’s current disposal contracts, while screening and providing more detail on those technologies with the highest probability of implementation for the management of post-recycled residuals.

Prior to refining the list of technologies and initiating this analysis, Task 6 will include working with the District to discuss various issues that will help focus our review and the development of the screening process for technologies and system options. The alternative waste management technologies scenarios that are reviewed during this task will inform HDR’s SROI analysis tool.

HDR Team Responsibilities

- Establish the methodology and criteria to evaluate waste disposal technology classes and systems taking into account District specific “key issues” and objectives
- Establish a list of available waste disposal technology classes (e.g. landfill, composting, conventional waste-to-energy, gasification, anaerobic digestion, plasma arc)
- Screen technologies to identify waste processing technology classes that have the highest probability of being implemented as part of the development of up to five (5) alternative integrated waste management system options under Tasks 4 and 5
- For the “short-list” of technologies identified after screening, develop a range of estimates for probable capital and operating costs, as well as quantities of marketable (e.g. energy, recyclables) and unmarketable (e.g. residue, ash, etc.) by-products, that will be used as inputs in the Financial Analysis under Task 9.



District Responsibilities

- Participate in meeting to discuss technology and system option screening methodology
- Provide the HDR Team with existing waste quantity and long-term projection data
- Provide timely review and comments on long and short list of technology options and on the waste management system alternatives

Task 8 – Market Assessment

The HDR Team will prepare a brief overview of existing and anticipated market conditions for waste and energy related private investment, as well as opportunities for collaboration with other public jurisdictions. This assessment will include looking at markets for both energy and waste material oriented opportunities and industries that might be feasible partners for the District. The market analysis, in addition to looking at end use possibilities for waste products, and potentially energy, will examine the range of possible participation options of other public and private parties. The results of the market assessment may be used to inform the SROI process, as appropriate.

HDR Team Responsibilities

- Prepare and provide a draft summary report of market assessment findings, via email
- Participate in a conference call to discuss the market assessment
- Finalize and provide the summary market assessment report, via email

District Responsibilities

- Provide timely review of draft summary report
- Participate in conference call to discuss the market assessment

Task 9 – Financial Review

We will conduct a financial analysis of each scenario in a consistent and transparent framework. Key aspects of this task include collection and review of the City's historical financial data on current waste management practices. We will supplement this data with our detailed understanding of local market conditions. The HDR Team will use this data to estimate current and future costs of capital, operations and maintenance associated with each scenario. We will also develop a risk-based forecast of these costs, which can be used to quantify the variability in lifecycle costs. The HDR Team will apply these costs in a risk-based lifecycle cost tool to determine the likely range of costs of each scenario. The results of this analysis will determine which scenario provides the most cost-effective option for the District that accounts for upside and downside risks of higher and lower lifecycle costs.

HDR Team Responsibilities

- Assemble and analyze costs on capital, operations and maintenance for each option
- Evaluate risk and uncertainty in each of the key cost dimensions



- Develop a risk-based lifecycle cost comparison of each scenario to determine the option that is the most cost-effective from a financial perspective.

District Responsibilities

- Provide HDR Team with historical cost data
- Provide timely review and comment on the draft and final cost analysis

D: Input the Data Derived from Baseline and Alternatives into the Analytical Framework to Determine a Basis of Comparison and Evaluate the Results

Task 10 – Running SROI

The HDR-developed Sustainable Return on Investment (SROI) tool will perform an enhanced form of a benefit-cost analysis (BCA) for each scenario. To evaluate the full value these scenarios, SROI will compute financial costs and benefits incurred by the District, in addition to the monetized value of different environmental and societal impacts. We will use SROI to compute the value of changes in energy and environmental impacts associated with each stage of waste management from waste collection, transfer, materials recovery, treatment, and final disposal. Across these different activities, the SROI tool will apply monetary values for the total impacts on greenhouse gas emissions; criteria air contaminant emissions; and waste hauling-related traffic congestion, safety, and other impacts. The analysis will account for the upstream and downstream impacts and benefits associated with the scenarios.

The SROI analysis will produce several dollar-based performance metrics, such as net present value (NPV), benefit-cost ratio (BCR), and internal rate of return. The results will show both the measures of a financial return on investment (FROI) as well as the SROI. By showing environmental and societal benefits of SROI in monetary terms, they can be directly compared with the FROI. As a result, it would be possible to readily compare a project that is highly cost-effective from a financial perspective alone, to one that generates substantial environmental benefits.

HDR Responsibilities

- Adapt and apply SROI tool to waste management scenarios
- Compute results and present preliminary findings through a PowerPoint presentation
- Convene meeting with the District on results of SROI
- Prepare technical memo for the District.

District Responsibilities

- Review and comment on SROI results in meeting
- Review and comment on SROI results in technical memo

E: Identify Siting, Regulatory, Institutional and Legal Requirements for Each Alternative Scenario

Task 11 – Identify Siting, Regulatory, Institutional and Legal Requirements for Each Alternative

Once the alternative scenarios have been evaluated and prioritized using SROI, the HDR Team will identify siting, regulatory, institutional, and legal requirements for each alternative. We assume that alternatives will primarily involve the District of Columbia, the state of Maryland, and the Commonwealth of Virginia.

Siting. For alternatives that propose the use of new sites, the HDR Team will work with the District to identify existing and projected land uses. Using a 'short-list' of potential sites, the HDR Team will evaluate the advantages and disadvantages of up to three (3) proposed sites.

Regulatory. There are numerous potential regulatory constraints that will be evaluated. There will be regulatory requirements for storing, transporting and disposing of solid waste materials. The HDR Team will review the District's current operations for conformance with the District's and participating states rules and regulations. Proposed sites may impact navigable waterways, tidal and/or non-tidal wetlands, forested areas, or historical sites. The HDR Team will review each alternative and prepare a matrix that presents:

- Permits required
- Issuing agency
- Application submittal requirements
- Earliest submission of application
- Processing time
- Permit application fee.

Institutional. The HDR Team will identify institutional arrangements that must be in place for each alternative.

Legal. The HDR Team will conduct a review of the present legal authorities of the District and the affected state to perform the functions identified in the alternatives. Based on this review, the HDR Team will identify apparent gaps in existing rules, regulations, and ordinances.

HDR Team Responsibilities

- The HDR Team will prepare an executive summary that present findings, conclusions and recommendations

District Responsibilities

- Provide short-list of potential sites associated with each alternative
- Review and comment on executive summary

Task 12 – Public Participation Plan

The HDR Team will develop a Public Involvement Plan (PIP) that will guide communications and public involvement integral to achieving the vision and goals of the project. The team will draw upon the outcomes from the research, stakeholder executive interviews, visioning session and guidance from DCDPW to identify outreach tools and tactics to achieve PIP goals and objectives.

The PIP plan will address outreach mechanisms that will increase community engagement over the course of the study and mitigate community sensitivity to service fee variance, concerns over regional air quality, and other issues that may be important to the screening process. A schedule/ master timeline for each scheduled outreach activity will be included in the PIP. The schedule will ensure that everyone understands their role and works together to accomplish objectives. The master schedule will be easy to follow and accessible to everyone involved in the project.

Optional outreach tactics that can be incorporated in the PIP, if desired by the District, include:

- Project website
- Database (update it frequently, using public meeting and open house sign-up sheets, e-mail correspondence (via MailChimp), and other public contacts)
- Electronic open houses and workshops
- Online surveys, and other electronic data collection tools
- Social Media Tools
- Resident dialogue sessions/focus groups
- Briefings and community meetings with neighborhood, environmental, recreational, and marine groups and at regularly scheduled community and business organization meetings
- Stakeholder briefings throughout duration of the project to report back on project progress and public feedback (includes one-on-ones with ANC's or a mailer update depending on resources)

HDR Team Responsibilities

- Deliver PIP plan and schedule/master timeline (assumes two reviews by DCDPW)
- Prioritize outreach activities based on resources

District Responsibilities

- Review and approval of PIP plan and timeline

Public Involvement tasks anticipated for this project include:

- Task 1:** Development of Public Involvement Plan
- Task 2:** Identification of stakeholders
- Task 3:** Communication of small group meetings
- Task 4:** Facilitation of pre-project survey
- Task 5:** Establishment and facilitation of a 24/7 information hotline
- Task 6:** Creation of periodic (monthly) newsletters
- Task 7:** Conduct at least four (4) public meetings and ANC meetings, trade/business group meetings
- Task 8:** Facilitation of direct mail campaigns to advertise for upcoming meeting(s)
- Task 9:** Documentation of community workstations and comments
- Task 10:** Create visual aids
- Task 11:** Creation and maintenance of stakeholder database
- Task 12:** Evaluation of outreach program
- Task 13:** Coordination of council/agency briefings, as necessary

Task 13 – Public Participation Implementation

The basic tenet of our public involvement philosophy is that public participation is more than just a hearing or one meeting near the end of the project development process. The proposed Visioning Workshop (Task 3) will enable the public involvement process to start early and remain a continuing part of the project development process.

Today, more than ever, citizens expect a say in decisions that affect their lives. Furthermore, laws and regulations often require public participation, shared decision-making, openness, and public disclosure via town meetings, citizen advisory panels, and/or other forms of public forums. The HDR Team proposes to utilize Option Year 1 of the contract to execute the implementation of the PIP. This approach will enable the HDR Team to effectively communicate the findings of the Final Report to the public.

The HDR Team seeks to formulate and implement a comprehensive community public/stakeholder outreach strategy that will maximize community participation in the multi-stakeholder planning process. The HDR Team's public involvement strategy aims to achieve the following four (4) objectives:

- 1) **Identify the public.** The HDR Team will create an inventory of elected officials, community leaders, neighborhood and school organizations, businesses, church groups, ethnic organizations, homeowners associations, environmental or cultural organizations, special interest groups and civil rights groups. Additionally, the HDR Team will assist the client in the development of the formula for crafting the advisory committee.
- 2) **Inform the public.** In the first month of implementation of the PIP, the team will meet with DCDPW to identify the appropriate marketing collateral to promote the project and refine the messaging. Additionally, the HDR Team will distribute transportation plans, agendas and brochures to stakeholders through traditional distribution channels that include phone banking, hand distribution and regular mail as well as non-traditional methods that include listserv distribution, website publishing, and e-newsletters. Careful consideration will be taken to develop stakeholder appropriate collateral to include larger print for the vision impaired, signers for the hearing impaired, written documentation written to a six grade reading level to ensure maximum penetration for low literate stakeholders, as well as foreign language translations and interpreters.
- 3) **Familiarize the public with the project.** The HDR Team will arrange, as necessary, TV or radio appearances, create CDs, DVDs or digital audio files, publish newsletters, maintain and update web-based FAQ's, and presentations specific to the project.
- 4) **Involve the public.** The HDR Team utilizes participation in public meetings and facilitation of steering committees, public hearings, briefings and workshops. Our project team will participate in established community events and community meetings. At each appearance, the HDR Team will create and present interactive workshops, surveys and comment forms to solicit input from community stakeholders. Community meetings will be held at stakeholder appropriate times (for business owner after normal business hours; for resident after their normal work day) to garner the highest participation possible.

A major focus of the implementation of the PIP is to keep stakeholders in the study area including Advisory Neighborhood Commissions (ANCs), neighborhood and civic organizations, business associations, property owners and investor, and faith-based and non-profit organizations informed of meetings, assist the planning team in maintaining records of meetings, and serve as the public meeting facilitator/moderator. The HDR Team will utilize CSMT's extensive stakeholder database and long term relationships within the community to effectively drive this implementation. Our team will:

Publicize Project, Activities, and Accomplishments

A number of forums exist to present information from submitting articles for print media to personal appearances. We will utilize 1) posters and flyers in prominent locations; 2) Newsletters, both print and electronic; 3) Internet; 4) Print and Broadcast Media; 5) Informal conversations; 6) On-line postings, and finally 7) Roving briefings of standing community and neighborhood organizations.

Cultivate Relationships and Build Trust

As a result of our public engagement efforts, HDR team members have cultivated a public engagement brand – “DC GET INVOLVED”. The “DC GET Involved” moniker has a web presence as community members have become comfortable with the use of the internet to garner the most up to date information about major economic development initiatives as well as utilizing the engagement hotline for answers to questions that arise during non- business hours.

Develop Clear Communications

The HDR Team will develop communications for the neighborhoods impacted by this project, as determined by our finding and with guidance from the Distric. Experience teaches us that we must keep the communications clear, print materials in appropriate languages, and take advantage of various types of media include local and minority newspapers.

Maintain an Outreach Environment

The HDR Team will continuously identify processes that will help provide universal services to the stakeholders. When scheduling community meetings or roving briefings, we are persistent in making sure the following issues are accounted for:

- Parking is adequate and ramp accessible
- Assistive listening devices are available and signs are marked in Braille
- Documents are translated into language appropriately
- Sign language interpreters are available
- Real-time documentation of stakeholder comments and questions
- Adequate facilitation of meeting to ensure stakeholder accommodation

Monitor the Plan and Follow-Up

The HDR Team will periodically review the diversity level of the current project stakeholders to the potential participants of the target area. Our objective is to effectively maintain established relationships while also cultivating new ones. As a

team, we will continue to evaluate activities and determine what worked and what didn't. Our feedback about the effectiveness of the campaign will be documented.

Facilitate Public Meetings

As per the Amendment 1 of the RFP, the HDR Team will attend and facilitate up to five (5) public meetings. The HDR Team has also allotted for attendance and assistance at up to four (4) "other" events as dictated by the District as project progresses in Option Year 1. Generating substantial community meeting public involvement is a key for soliciting quality feedback from stakeholders. The HDR Team will facilitate public meetings by:

- 1) Identifying and confirming host facilities are convenient and accessible to stakeholders.
- 2) Marketing to stakeholders that include flyer distribution, email contact, listserv contact, phone banking, mass mailer, and announcements one month prior to community meeting.
- 3) Meeting Preparation to include agenda preparation, workstation setup, parking lot monitoring, handout reproduction and collating, directional signs, registration forms, survey and evaluation creation, and resource boards.
- 4) Stakeholder Documentation that includes providing training staff who provide audio-visual support to project staff, take notes, prepare workstations, record stakeholder questions, ensure proper registration and follow-up to database, prepare refreshments, setup and break down facility, and prepare formal reports at the conclusion of each activity.

Optional Public Engagement Tools

In addition to traditional public meetings, the HDR Team is able to support DCDPW with various solutions that can enhance the reach of the project's public involvement effort. These solutions include:

E-Open House/Webinar:

Public meetings tend to draw the usual suspects, despite broad and sophisticated efforts to alert and engage the public. People lead busy lives and have multiple obligations, so it is increasingly difficult to get them to attend a public meeting. The team recognizes this and offers multiple strategies for informing and engaging a broader segment of the population.

For busy people who are unable to make it to a public meeting or open house, we recommend supplementing outreach with electronic open houses (E-Open House). Like an in-person open house, E-Open House participants are able to log-on, review materials, watch a webcast presentation, contribute questions, and receive answers at any time. We believe that E-Open Houses are a great outreach tool, but because many people still do not have access to the internet we recommend electronic tools only as a supplement to in-person open houses, not a substitute.

Focus Groups:

We recommend conducting focus groups with stakeholders identified in Task 3, to identify needs, preferences, issues, and concerns of residents who may be affected by this project. This information will be valuable in developing marketing messages and collateral, and outreach strategies. Focus groups will also be a good opportunity to test marketing materials with a variety of audiences.

HDR Team Responsibilities

- Promote and facilitate up to 5 public meetings
- Draft schedule of public meetings
- Prepare marketing collateral and visual aids as identified above (includes: display materials for community events and public meetings)
- Technology for E-Open House/Webinars (optional)
- Recruitment screener for Stakeholder Focus Groups (optional)
- Final reports and summaries from meetings

District Responsibilities

- Review and approval of PIP plan and timeline
- Approval of schedule for public meetings
- Approval of marketing materials for public meetings

E: Final Report

Task 14 – Evaluation and Final Report

The HDR Team will take the results of Task 1 through 12 and prepare a Final Report. The report will summarize our evaluation of each alternative and any identified siting, regulatory, institutional and legal requirements for each alternative. The Final Report will also include the HDR Team's recommendations for further investigation and next steps for implementation of the preferred scenario(s).

HDR Team Responsibilities

- Prepare a Draft Final Report to the District
- Participate in a one-day meeting with the District to present our findings in the Final Report and to discuss their comments and concerns regarding our recommendations
- Finalize Report based on comments and recommendations received by District

District Responsibilities

- Review and comment on the Draft Report in a timely manner
- Participate in one-day meeting to discuss Draft Report with the HDR Team



Project Management Plan

The successful completion of any project begins with the establishment of a highly experienced and qualified project team. HDR is proposing its “A” Team for this very important project. Our project team will be led by **Ms. Allison Trulock** as **Project Manager**. Ms. Trulock possesses more than 16 years of solid waste and project management experience with a focus in strategic planning efforts and options evaluations for communities across the East Coast. Ms. Trulock will serve as the District’s point-of-contact for this project and will coordinate communications with the Contract Officer, Contract Administrator and assigned DPW management.

The HDR Team features a stable of technical advisors who are engaged in solid waste planning and implementation projects across North America on a daily basis. These key individuals bring distinguished technical expertise from various solid waste management disciplines, possessing the “know-how” to produce quality work products for the District. Our technical advisor team includes:

Robin Davidov – Solid Waste Management Systems Management

Ms. Davidov is the former Executive Director of the Northeast Maryland Waste Disposal Authority. She brings more than 30 years of experience in procuring, permitting, financing, construction and operation of successful waste management systems including organics composting, waste-to-energy (WTE) and solar projects. Ms. Davidov developed and financed a waste-by-rail transportation system in Montgomery County, MD. She has negotiated renewable energy contracts and REC sales agreements within the PJM system. Her unique experience in developing award winning projects for the District’s neighboring jurisdictions makes her well qualified to assist the District during this assignment. Ms. Davidov is an active member of SWANA and has held numerous leadership positions, including President of the U.S. Conference of Mayor’s Municipal Waste Management Association.

Ruth Abbe – Recycling/Zero Waste Planning

Ms. Abbe is an HDR vice president and senior management consultant with more than 22 years of experience in recycling and composting program and facility development. She is working with municipalities across the country to develop the social infrastructure and physical infrastructure to achieve high diversion goals, including Austin, Texas, Dallas, Texas, Los Angeles, California, Mecklenburg County, North Carolina, Northampton, Massachusetts, King County, Washington, and San Francisco, California. She has expertise in organics and commercial technical assistance, facility and collection procurement, contract negotiation, program planning, financial analysis and stakeholder engagement. She is current assisting the U.S. EPA in identifying models and developing tools for communities in sustainable materials management.

Janine Ralph – Organics Processing & Marketing

Ms. Ralph has more than 19 years of experience providing municipalities across North America with solid waste management planning services to optimize their waste management systems, considering the unique needs of each community. Ms. Ralph previously held the position of Manager of Waste Policy and Planning at the Region of Niagara where she was responsible for implementation and assessment of pilot organics recycling programs and the design of the current organics recycling system serving over 400,000 residents. Ms. Ralph has extensive knowledge of organics materials processing technologies and the development of long term municipal waste management plans. She has been responsible for the completion of organics feasibility studies for both aerobic and anaerobic processes, market research and business plans

through her work for various municipal clients including (but not limited to) the City of Toronto, City of Ottawa, Region of Halton, and Region of Peel. Each of these projects was intended to address management of residential food and yard waste organics, serving populations of over 500,000. Ms. Ralph currently serves as co-leader of HDR's Organics Recycling Group and is providing national leadership throughout HDR on this rapidly transformative area of solid waste management.

Bruce Howie, PE – Waste-to-Energy/Waste Conversion Technologies

Mr. Howie serves as HDR's international practice leader for Energy from Waste Consulting Services. In his role, he is responsible for bringing HDR's world-class waste-to-energy and waste conversion technology expertise to support solid and industrial waste projects. He brings over 15 years of experience with the design, permitting, construction, and operations and maintenance of facilities that convert solid waste into energy and useful by-products. He is currently guiding HDR's clients with the implementation of three active, green field WTE projects in Frederick, Maryland, Durham Region, Ontario, and Peel Region, Ontario.

Robert Rella, PE – Transfer Station & Material Recovery Facilities

Mr. Rella serves as HDR's national practice leader for solid waste facilities. In this role, he provides technical oversight and support to solid waste facilities projects. For the last 24 years, he has managed and been involved in the development, refurbishment, and expansion of more than 25 transfer stations and numerous solid waste facilities.

Ashley Evans, PE, LEED AP – Landfill Evaluation & Compliance

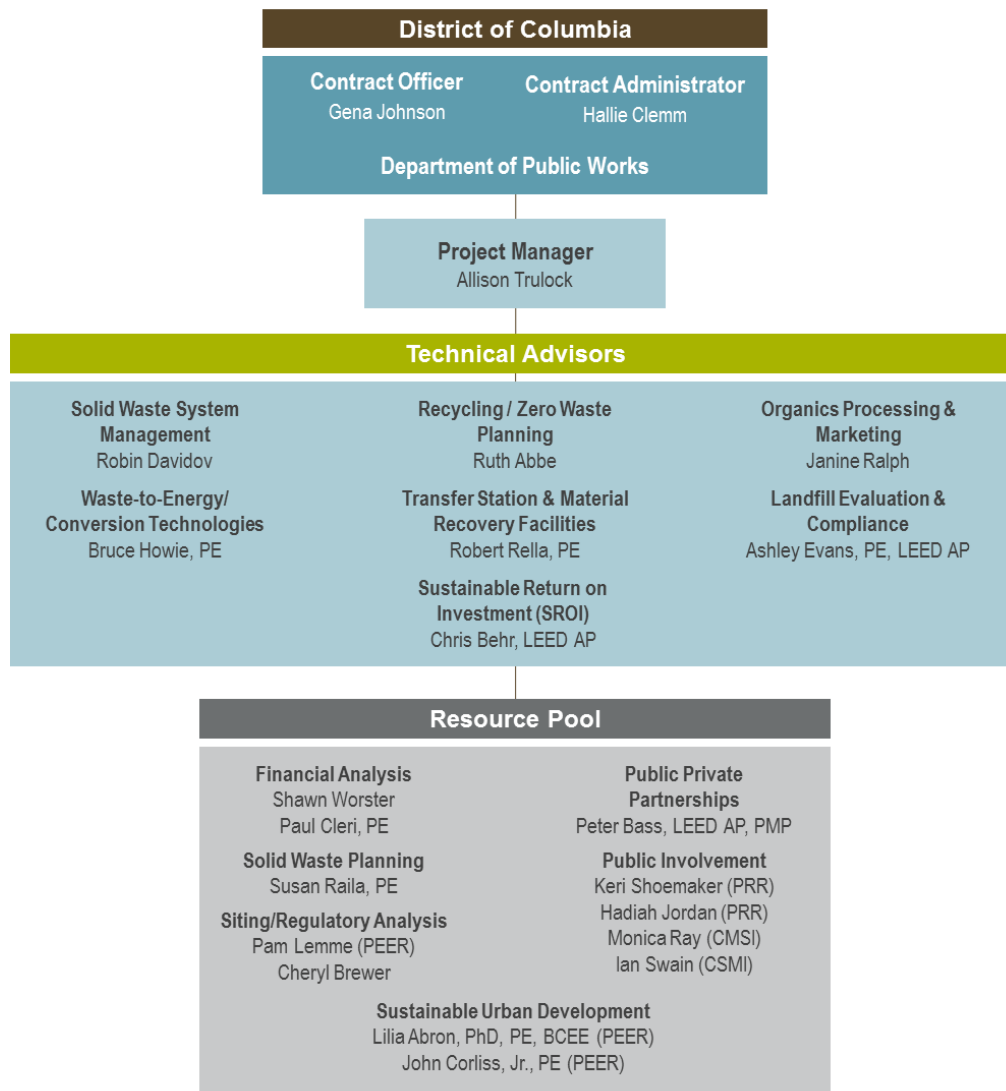
Ms. Evans is an environmental engineer specializing in solid waste management and facilities design. She is experienced in landfill cell design, landfill closure design, landfill facilities design, landfill gas design, compliance monitoring, corrective measures evaluations, and stormwater control systems. Ms. Evans has also prepared contract documents, performed bidding assistance, and CQA services. She also has experience in design of commercial and residential site developments, community planning, design of stormwater, potable water and sewer systems, and implementing leak detection and repair programs.

Christopher Behr, LEED AP – Sustainable Return on Investment (SROI)

Mr. Behr is an economist and engineer with over 10 years of experience in evaluating infrastructure investments and environmental impacts. His project experience includes cost-benefit models and risk analyses of municipal infrastructure. Mr. Behr has successfully applied diverse analytical tools such as cost-benefit analyses, cost-risk analyses, environmental valuation, and statistics to a wide range of public infrastructure projects.

The HDR team is also supported by the talent available in its Resource Pool. These professionals will be available to provide meaningful insight throughout the course of the project. It is also important to note that Ms. Trulock will have access to HDR's network of more than 200 dedicated solid waste professionals at any point during this project. The organization chart below outlines our project team structure. Resumes for each individual are appended to this document.

Team Organization

*Subcontracting Plan*

As demonstrated in our attached Subcontracting Plan, HDR is fully-committed to meeting the District's requirement to subcontract at least 35% of the project fees to qualified CBE and DBE firms. Our corporate culture mirrors the purpose of the District's Department of Small and Local Business Development program. As a firm, we have historically integrated small business programs into our own corporate contracts as well as those of our clients.

We have supplemented our team's technical expertise with professionals from three reputable, local firms listed on the following pages.

PEER Consultants, P.C. | CBE/DBE

A full-service sustainable development, environmental engineering and civil engineering consulting firm, PEER Consultants, P.C. (PEER) is headquartered in Washington, DC. Founded in 1978, PEER is owned and managed by Lilia A. Abron, Ph.D., PE, BCEE, a chemical and environmental engineer. PEER is a certified DBE/MBE/WBE/SLBE in the District of Columbia with an excellent reputation in the delivery of quality work products locally, regionally, nationally, and internationally.

The Washington Business Journal has ranked PEER as one of the largest environmental firms in the Washington Metropolitan Area. This recognition affirms their ability to provide solutions to complex environmental problems through the integrated application of planning, engineering and science. The company provides professional services for the restoration, maintenance and enhancement of the physical environment – air, land and water.

Additionally, *HDR and PEER worked together to develop the Solid Waste Management Plan for Orange County, FL several years ago*. A representative sampling of PEER's experience is provided below.

Comprehensive Solid Waste Management Plan, Washington, DC

PEER provided technical assistance to the District of Columbia for the development of an integrated solid waste management plan through the year 2010. The plan addressed the environmental, social, financial and political impacts of solid waste management alternatives. The plan recommended a strategy which applied the most environmentally sound and cost-effective waste management techniques which reduced discarded volume, to minimize the waste stream to the landfill or incineration, to increase reuse of materials, and to market recyclable materials. The work required the review of the current solid waste management plan, analysis/characterization of existing solid waste and sludge management systems and programs, and the identification and evaluation of integrated solid waste management component options.

District of Columbia Sustainable Energy Utility, Washington, DC

PEER is a teaming partner responsible for the planning and implementation of the performance-based DC SEU contract. This contract is defined by the Clean and Affordable Energy Act of 2008 (CAEA), and calls for the design and implementation of programs that will comply with 6 enumerated benchmarks. The energy reduction programs are being implemented across four core market areas: Low-income Multifamily (LIMF) Services, Commercial and Institutional (C&I) Services, Single-Family Residential Retrofit, and Renewable Energy Services. The programs bring economic development opportunities into the DC “green” industry by fostering green collar jobs.



Biosolids and Yard Waste Management Study, Orange County, FL

PEER, as a subconsultant to HDR, reviewed and analyzed proposed compost and landfill gas regulations and analyzed the market potential for yard waste composts. These tasks were part of a detailed study for biosolids and yard waste management for Orange County, Florida.



PRR | DBE

PRR is nationally recognized for the ability to generate consensus around challenging public issues, PRR facilitates partnerships between communities and public agencies to develop and implement solutions that work for the real world. Founded in 1981, PRR offers a full range of communication capabilities and technical expertise in public opinion research, public policy, and facilitation to ensure effective and on-going communications with the public. PRR's 50-member, award-winning team has directed hundreds of public involvement, community relations, social marketing, research, and media relations programs. PRR specializes in projects encompassing a wide variety of environmental, transportation, health care, and land use issues.

PRR has provided public involvement, public relations, and marketing services on solid waste and related projects for wastewater, combined sewer overflow treatment, and municipal recycling efforts. In the DC metro region, PRR is working with the Metropolitan Washington Council of Governments to provide marketing, advertising and public outreach support for COG's commercial and residential recycling program called Go Recycle. In Washington state, our public involvement staff is currently providing public involvement and communication services on Seattle Public Utilities' Combined Sewer Overflow Program, and King County's Barton Green Stormwater Infrastructure and Kirkland Pump Station projects.

PRR has offices in Seattle, Washington and Washington, DC and is a certified DBE in the District. ***Currently, HDR is successfully working with PRR in a similar capacity on the DC Streetcar Program for DDOT.***

Capitol Services Management, Inc. (CSMI) | CBE

CSMI is a CBE firm founded in 1985 and headquartered in Washington, DC. The firm brings extensive local experience in public policy and program analysis, political analysis, public opinion analysis, and government and public relations. CSMI has demonstrated expertise when it comes to handling complex projects and diverse stakeholder groups.

The HDR Team will utilize CSMI's strengths in facilitating public involvement programs in the local market. ***CSMI is currently supporting HDR and PRR in the public participation process for the DC Streetcar Program for DDOT.***

Technical Expertise

For more than 40 years, HDR has been an innovative leader in developing solid waste management systems and facilities for municipalities across North America. We have been involved in all aspects of evaluating, planning, designing, and procuring both traditional and trend-setting facilities, including landfills, transfer stations, and material and resource recovery facilities. HDR has been ranked either No. 1 or 2 by Engineering News Record (ENR) over the past five years in solid waste management. Hundreds of communities look to HDR for assistance, ranging from small rural hamlets to the nation's giants, including New York City, Chicago, and Los Angeles. HDR has assisted them in their efforts to develop highly efficient, integrated, and sustainable solid waste management systems. From solid waste collection to waste transfer, processing and disposal, HDR has been responsible for facilities that handle one in every ten tons of solid waste nationwide.

The firm has been responsible for more than 53 municipal waste combustion facilities, 140 recycling programs, 50 material recovery and composting facilities, 160 transfer stations, and 350 landfills. Recently, HDR principals have been coordinating with solid waste professionals across North America and in Europe to advance the concept of Integrated Waste Management with reuse, recycling, and reduction followed by advanced thermal conversion of the leftover waste. HDR shares the philosophy *No Wasted Resources*SM with clients across the United States because we view waste as more than an inevitable by-product of our lives.

We take a life-cycle approach to processes and systems that help clients eliminate inefficiencies and improve environmental performance in solid waste management programs. HDR solutions include cost-effective, socially, and environmentally acceptable integration of appropriate technologies to reduce, recycle, reuse, prevent, and divert waste to the greatest extent possible.

Firm Experience

HDR understands that waste management is not a one-size-fits-all industry. We know that what works in one community, might not be the right solution for another. HDR is a one-stop shop for integrated waste management solutions tailored to the unique needs of each client and each community.

The depth of technical expertise and sound science that led to the emergence of HDR as an early leader in waste-to-energy has expanded in the decades since we entered this market. Today, we lead the industry as a source for innovative ideas and strategies for diversion-based, sustainable waste management systems.

Solid Waste, Recycling and Zero Waste Planning

As populations increase and we continue to generate waste while our waste management infrastructure ages, waste resource planning is an increasingly important issue. The variety of systems and techniques to manage waste resources varies greatly across the country. Whether looking for innovative ways to minimize waste creation, divert waste or design an environmentally friendly disposal system, HDR has the capability and experience to identify innovative waste management solutions for the District.

As we move closer to managing waste as a resource, HDR has become a leader in developing and shaping "zero-waste" planning. This concept recognizes that waste is not inevitable and establishes diversion and prevention goals for manufacturers,



HDR

2 TOP 20 SOLID WASTE

residents and businesses tailored to the unique needs of each community. HDR is a leader in evaluating the applicability of emerging technologies and designing sustainable landfill systems and waste-to-energy facilities.

Key Projects

Solid Waste Integrated Resource Plan, Zero Waste Master Plan, Los Angeles, CA

The City of Los Angeles is striving to accelerate diversion goals to 70 percent diversion by 2013, to add materials and curbside collection programs, and to convert the City's 700+ collection trucks to clean-burning liquefied natural gas. HDR is assisting the City in developing its Solid Waste Integrated Resources Plan that is envisioned to be the City's 20-year zero solid waste master plan. The process includes a multi-phase approach that involves the following project elements:

Advisory Committees. This plan includes perhaps the most extensive public involvement process ever employed for a solid waste management plan. Our process includes house meetings, stakeholder and advisory committees, multiple public workshops in each Council District, Citywide Conferences and coordinated media and public information program. This phase was completed May 2008 and resulted in more than 250 community involvement sessions and two city-wide programs.

Financial Planning Analysis. This project includes extensive financial planning with robust decision economics to ensure the affordability and the ability to finance recommendations. The team is reviewing and assessing pertinent information and documents pertaining to the current and projected budgets and long-term financial plans, including projected revenues and expenses. Our team is researching and assessing the cost and viability of options for management of residual materials.

Regulatory/Policy Planning. This project is the development of a sustainable, affordable strategic solid waste resources plan. Our team is reviewing and documenting the history, key regulatory features, and key policies undertaken by the city in the past while carefully monitoring the current and pending State and Federal regulations and legislation. Through this collection of information, we are evaluating potential impacts on the City's planned programs and facilities.

Innovative Technology. HDR's engineers are thoroughly researching all aspects of these technologies and facilities including operating performance, air emissions, facility availability, energy and residual byproducts, and capital and operating costs. Other than state-of-the-art WTE technologies, HDR is evaluating other emerging conversion technologies that have yet to be proven in the U.S. HDR is committed to learning what alternatives have been established as commercially viable in other parts of the world. During the summer 2008, a group of HDR solid waste professionals accompanied representatives from the City of Los Angeles on a month-long tour of various solid waste conversion facilities around the world. In an effort to bring state-of-the-art emerging conversion technology solution the City of Los Angeles, HDR visited operating solid waste gasification, plasma torch, anaerobic digestion, thermal conversion (WTE), and advanced recycling facilities worldwide.

Strategic Planning. The multi-year program culminates in a long-term strategic plan to guide the City's waste management policies, programs and facility development. The team is assisting the City in the development of a stakeholder input and decision-making process, conducting research and presenting information, facilitating the evaluation of options, and producing a plan that is practical and visionary.

Implementation Plan. The team will produce an action plan detailing the steps which include recycling, reuse and waste reduction, diversion infrastructure, applicable

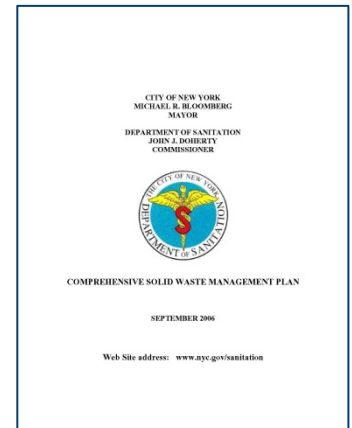


conversion technologies, and residual management utilization to meet the City's solid waste management goals.

New York City Department of Sanitation (DSNY) Program Management and Planning, Citywide, NY

Under its original (1994) and current (2001) Professional Services Agreements with the New York City Department of Sanitation, HDR continues to provide a wide variety of engineering, science, management planning and economic services. HDR was also responsible for the related planning, environmental analysis, cost estimating and economic analysis, facility planning and pre-construction services related to facilities valued over \$750 million. These services include:

- Updating and modifying the City's original October 1992 Comprehensive Solid Waste Management Plan (1992 Plan) for the 1996 Comprehensive Solid Waste Management Plan.
- Developing a new waste transfer infrastructure to access remote disposal locations as a result of the legislatively mandated closure of the Fresh Kills Landfill. Further, HDR prepared the 1998 Draft Solid Waste Management Plan Modification.
- Conducting the 1997 Staten Island Study and the Lower Diversion District Study to assess waste capture and diversion rates, and compare current waste composition samples with the 1990 Waste Composition Study database.
- Developing conceptual site plan for a multi-use Department facility located on a 25-acre site at Spring Creek on the Brooklyn/Queens border.
- Designing, monitoring and evaluating the results of a pilot test to measure the recovery of recyclables in waste generated in Brooklyn District 8, a low diversion district, by means of mixed waste processing. As part of the analysis, HDR estimated the incremental cost of mixed waste process with and without the Curbside Program in low diversion districts.
- Preparing the Waste Management Plan Modification EIS and the environmental analyses of 17 site-specific export transfer station alternatives, ranging from capacities of 900-tpd to 8,000-tpd. In addition, HDR prepared conceptual designs for the remaining ten alternatives.
- Developing an economic analysis of the Department's Curbside Recycling Program & Export Program.
- Estimating the cost of solid waste export through FY 2002. Twenty-eight scenarios were considered reflecting various combinations of export options from the City's five boroughs.
- Preparing an EIS to support the Department's new Solid Waste Management Plan (SWMP) that included long-term export of the Department-managed waste out of the City by barge or rail.
- Commercial Waste Management Study. HDR prepared a Commercial Waste Management Study to meet the requirements set forth in New York City Local Law 74.
- Preparing the detailed design and associated permit application documents for this 1,200-tpd truck-to-rail transfer station for export of Department-



managed MSW, generated on Staten Island from a site at the Fresh Kills landfill.

- Developing an RFP issued by DSNY in March 2012, seeking proposals from developers who would design, construct and operate under a 20-year service contract “new and emerging technologies”.

City of Austin Resource Recovery Waste Master Plan, Austin, TX

The City of Austin adopted its Zero Waste Strategic Plan in 2009, which set a goal of 20 percent reduction in per capita generation by 2012 and Zero Waste by 2040. HDR assisted the City in developing the Austin Resource Recovery Master Plan. Tasks for the Master Plan included research on best practices for regionalization, public-private partnerships, producer take-back programs, and local market development. In addition, HDR developed a Needs Assessment, which evaluated 30 existing initiatives and 28 new initiatives for increasing the City’s diversion rate. Programs evaluated for the Needs Assessment included food scrap diversion, mandatory recycling and composting, construction and demolition debris recycling, enhancements to the litter abatement program, and updates to the City’s climate action plan. HDR developed an implementation plan for scheduling new diversion programs and facilities through 2050 for additional diversion. From the implementation plan a funding plan to cover the cost of programs and facilities as they were projected to be developed was created. Modeling of the predicted required rates was conducted with several alternative scenarios analyzed. A draft Master Plan was developed and delivered to the City. HDR supported the City in finalizing the plan, which was produced by the Austin Resource Recovery Department.



Miami-Dade County Solid Waste Management Master Plan, Miami-Dade Public Works & Waste Management Department, Miami, FL

In June, 2009 HDR was retained by Miami-Dade County, Florida to prepare a long-term Solid Waste Master Plan for the Department of Solid Waste Management (DSWM). With a population of over 2.5 million, the DSWM has the daunting task of collecting and disposing of nearly 2 million tons per year of municipal solid waste. The importance and urgency of this study for the County is heightened by their two landfills (South Dade Class I Landfill and North Dade Class III Landfill) both nearing capacity and their three transfer stations (North-East, Central and West) and waste-to-energy plant (Resources Recovery Facility), all built in the late 1970 s and early 1980 s, soon to be in need of repair or replacement.

The stated goal of the Solid Waste Master Plan is to identify and develop activities, programs, facilities and technologies that will provide sustainability, resource conservation, source reduction, recycling, diversion, disposal and collection options for the next generation of County residents.

This maximum 3-year project is divided into two phases. Phase I, which began in early June, 2009 consists of evaluating all aspects of DSWMs facilities and programs and identifying future needs; performing a Waste Composition Study; determining solid waste generation rates and making projections; defining regulatory and policy issues; evaluating the department s financial program and identifying issues; identifying preliminary alternatives; and performing a fatal flaw analysis. Another significant Phase I task is the establishment and conduct of a citizen Solid Waste Advisory Committee and facilitation of a public input and advisory process.

Specific tasks for Phase II will depend in large measure on the results of the Phase I effort, but in general, will consist of a detailed analysis of alternatives identified in

Phase I, including a facilities and programs plan, implementation strategies, and cost projections. The public information and advisory process will continue throughout Phase II, which will culminate with the preparation of the long-term Solid Waste Master Plan.

Mecklenburg County Solid Waste Management Plan, Mecklenburg County, NC

Historically, Mecklenburg County handled triennial updates to their State-required ten-year Solid Waste Management Plan (SWMP) using internal staff. For the 2012 SWMP update, the County desired to bring in an outside consultant to assist with going beyond what the State requires, to reach further for waste reduction and recycling initiatives in the County. In October of 2011, Mecklenburg County retained HDR to assist the County in the 2012 triennial update to the SWMP. Mecklenburg County desires to not only be an exemplary solid waste management program in North Carolina, but nationally.

This SWMP update project included the traditional elements of assessing and recommending the current and future policies, programs and infrastructure, but also added a public outreach and communication element that was more inclusive and intensive than the County had historically endeavored for these SWMP updates. HDR facilitated a 3-day charrette in order to obtain input from local residents and businesses. A steering committee was formed, including members from all seven municipalities located in the County, as well as other members from the community. HDR also facilitated monthly steering committee meetings. Once the charrette was complete, HDR drafted the updated SWMP, including descriptions of current and historical system components, an assessment of those components, and recommendations for increasing waste diversion and recycling in the County for the next ten years.

Solid Waste System Master Plan and Implementation, Salinas Valley Solid Waste Authority, CA

HDR is currently developing a 75 percent diversion plan for the Salinas Valley Solid Waste Authority which will identify the programs and facilities needed to reach the Authority's goal of 75 percent diversion by 2015. We are also conducting an alternatives analysis to identify 50 years of disposal capacity for the Authority through maximizing diversion, utilizing remaining capacity at existing Authority landfills, identifying alternative landfills outside of the Authority, developing alternative technologies to reduce the volume of residual wastes, and, potentially, developing new landfill capacity within the Authority region.

Strategic Planning. HDR managed the negotiations process that led to the formation of the Authority, including developing the joint powers agreement, inter-agency agreements, and property transfer documents. HDR was then hired to evaluate the Authority's existing resources and determine the most cost-effective future solid waste management system for long-term disposal capacity assurance. This work led to a successful \$9 million bond issue to finance recommended capital improvements. HDR defined and analyzed 13 scenarios for long-term disposal capacity for the Authority using various combinations of existing, expanded and closed facilities. We prepared 30-year life cycle cost analyses for each scenario, including construction, operation, maintenance, closure and post-closure costs; evaluated each scenario against key environmental constraints/issues, identified key policy and institutional issues for each scenario, and provided final recommendations to the Authority Board.



HDR's Project Manager Allison Trulock (right) and Zero Waste Planning Lead Ruth Abbe (left) facilitate charrette sessions for solid waste master plans.



Public Workshops. As a component to our work for the Authority in planning and developing new landfill capacity in Monterey County, HDR served as staff to the Landfill Siting Task Force comprised of governmental officials, businesses entities, and the general public and conducted a series of public meetings and workshops in the siting area for concerned stakeholders. Our responsibilities included scheduling the public workshops, developing the PowerPoint presentations and handouts, facilitating the workshops by providing an overview of the objectives of each meeting, coordinating the agenda, and presenting each issue to the public and Task Force members.

Facility Design & Permitting. HDR also provided supporting permitting and engineering services to the Authority on an ongoing basis including: preparing Joint Technical Documents and solid waste facility permit/waste discharge applications for three landfills, preparing and/or managing CEQA compliance for various solid waste projects, performing construction management for liner installation at the Crazy Horse and Johnson Canyon Road landfills, preparing landfill gas collection system designs for the Lewis Road, Johnson Canyon Road, and Jolon Road landfills, preparing leachate collection and removal system designs for the Johnson Canyon Road landfill, and conceptual design, site selection and cost estimates for two transfer stations (N&S) with varying levels of recycling. As a result, the Authority has approved a forty year-long term disposal capacity plan for the region.

Recycling Technical Assistance/ Collection Procurement. HDR prepared new base year studies for each of the member cities to document compliance with AB 939. A component of this project included AB 939 enhanced services providing recycling technical assistance to businesses within the Authority service areas. HDR has assisted four of the member cities to procure new solid waste, recycling and green waste collection services, including developing the Request for Proposals and draft franchise agreements, evaluating the proposals and making recommendations to the City Councils.

Solid Waste and Recycling Strategic Plan, City of Coral Springs, FL

The City of Coral Springs, FL selected HDR to develop a solid waste and recycling strategic plan. The goal of the plan is to identify the most effective strategies for the City to meet the State of Florida's 75% Recycling Goal over the next ten years. The study has been divided into three phases.

Phase I of the project included a waste composition study, development of baseline recycling rates for the City, and best practices research to identify new and innovative strategies for waste reduction and recycling. Phase I was completed in October 2011, and revealed that the City's current overall recycling rate for FY10 was 10.6%. The City's single family recycling rate was 9.1%; multi-family was 5.7%; and commercial was 22.6%.

Strategies explored in Phase 2 included organics (yard waste and food scraps) recycling for residential and commercial customers; ways to increase recycling participation on for curbside recycling (including PAY-T and incentive programs); ways to increase commercial recycling; and strategies for increasing diversion and recycling of C&D debris. Phase 2 also included customer surveys and stakeholder workshops designed to brainstorm strategies and identify potential obstacles; collection procurement assistance; ordinance review and revisions; financial analyses; and implementation planning assistance. Phase 2 was completed in November 2012.

"As a member of the Broward County Resource Recovery Board's Technical Advisory Committee, Coral Springs staff observed the detailed work performed by HDR for Broward County, which influenced our decision to select the firm for our strategic plan."

- Rich Michaud
City of Coral Springs

Phase 3 of the study includes drafting the final Solid Waste and Recycling Strategic Plan document including an implementation plan. It will also include assistance with education and outreach to address changes in the City's solid waste management system.

Sustainable Return on Investment (SROI) Analysis

A key resource to our project team is HDR's Decision Economics practice with offices in Washington, D.C. The Decision Economics team has an extensive track record of work in providing consulting services to industry and governments in the United States, Canada, and throughout the world. We have earned an international reputation for technical excellence and quality service, particularly in the market areas of economic development analysis, waste management evaluation, transportation and infrastructure, information technology, environment and natural resources. Our staff includes economists, econometricians, financial analysts, transportation planners and modelers, engineers and statisticians. Our professionals bring to each assignment an innovative and practical approach coupled with state-of-the-art analytical techniques.

HDR is helping clients sort and prioritize projects based on long-term sustainability and funding eligibility. To make these tough decisions and determine the "best case" for project success, we have developed proven tools that are part of HDR's Sustainable Return on Investment (SROI) process. Using this approach, organizations are positioning themselves to develop projects and programs that provide economic social and environmental value, backed by business cases that are "green", transparent and accountable.

Key Projects

SROI Analysis and Economic Impact Study of Waste-to-Energy vs. Recycling, City and County of Honolulu, HI

Under contract to the City and County of Honolulu, HI, HDR was selected to produce a cost-benefit analysis and Economic Impact Assessment (EIA) to assist in deciding the optimal disposition of curbside collected co-mingled recyclables. HDR used its Sustainable Return on Investment (SROI) framework to determine the full triple bottom line impact of the proposed local waste-to-energy expansion (H-POWER), as compared to the status quo of shipping the recyclables to China for material recovery. The SROI analysis helped the City and County determine the best reuse option for the material from society's perspective by including not only the financial or net "cash" benefits of the project, but also incorporating the value of broader social and environmental impacts. This analysis also looked at the material sub-component level to allow the City and County to make optimal disposition/reuse decisions. As part of this evaluation, the complete waste disposition process was considered including differences in collection, sorting, packaging and shipping of the materials under each alternative. Finally, the analysis analyzed the local employment impacts related to the H-POWER expansion. Armed with the findings of the SROI analysis and economic impact study, the City and County of Honolulu decided to move forward with the expansion of its H-Power WTE facility.





SROI-Lite Analysis of Waste-to-Energy Market Study, City of Omaha, NE

HDR was engaged to provide a SROI-Lite analysis of the WTE market for the City of Omaha. This report compared the economic and environmental performance of four proposed waste management facilities using the SROI-Lite analysis framework. SROI-Lite is a streamlined version of HDR's Sustainable Return on Investment (SROI) analysis – a more robust process.

As part of this study, HDR analyzed four potential waste treatment facilities. The four alternatives are:

- Mass Burn Waste-to-Energy
- Refuse Derived Fuel Waste-to-Energy, with combustion in waterwall furnace
- Refuse Derived Fuel Waste-to-Energy, with combustion in fluidized bed
- Anaerobic Digestion

The four alternatives were measured relative to a base case option. The base case involved most of the solid waste being landfilled, with some glass and yard waste being recycled and composted, respectively. The benefits and costs associated with each alternative were expressed in each cost and benefit category shows the alternative's value above and beyond that of the base case. The application of SROI-Lite monetized only the environmental and social impacts related to energy and water conservation initiatives. The analysis was based over a period of 20 years for each of the four analyses, and a 3% real discount rate was used. Outputs were split into two scenarios:

- Financial Return on Investment (FROI) metrics includes only the cash impacts to the City of Omaha.
- Sustainable Return on Investment (SROI) metrics includes the cash impacts of the FROI plus the external non-cash impacts that affect society (greenhouse gases (GHGs) and criteria air contaminants (CACs)).

The financial return for each alternative varied around the break-even point. The mean Net Present Values (NPV) for the three waste-to-energy alternatives were determined to be greater than zero due to revenues associated with the city's composting facility.

SROI of Boston ARRA Investments, Boston Redevelopment Authority

For the Boston Redevelopment Authority (BRA), HDR led the development and application of an SROI model to evaluate the sustainability benefits of Boston's Federal stimulus-funded investments across housing, transportation, and other City departments. Sustainability impacts are measured primarily in terms of energy efficiency, water conservation, and environmental effects of projects such as new solar panels, bike lanes, improved traffic intersections, and public building renovations. The analysis also examined near-term and long-term job creation benefits, reduced emissions, and cost savings for public buildings. HDR worked actively with the BRA to:

- 1) Structure the SROI model and analysis to allow Boston to evaluate the sustainability benefits of investments across each City department;
- 2) Obtain the data inputs necessary to assess sustainability benefits, including outreach to City departments to help estimate changes in energy consumption, operating and maintenance costs, and emissions;

- 3) Develop and apply an SROI model to Boston's current Federal stimulus-funded investments; and
- 4) Document and communicate the sustainability results of the SROI analysis.

The final summary report of this analysis is being hailed by Vice President Biden's office as a national best practice for estimating and communicating near-term and long-term return on investment of public investments.

SROI Evaluation of Campus Sustainability Investments, John Hopkins University, Baltimore, MD

Johns Hopkins University (JHU) sought LEED certification for several of its facilities, and hired HDR to achieve this standard for four existing laboratory buildings. As part of this effort, HDR calculated the projects' Sustainable Return on Investment (SROI). The SROI analysis not only helped in achieving LEED credits, such as innovation, but will also help explain the full value of the University's sustainable initiative to its stakeholders.

HDR produced a comprehensive set of sustainable output metrics for JHU. The initiatives included: efficient lighting, variable air volume systems, heat recovery wheels, recycling program, grey water system, and low-flow fixtures. Risk analysis and Monte Carlo simulation techniques were used to account for uncertainty in both the input values and model parameters. All projections were expressed as probability distributions (a range of possible outcomes and the probability of each outcome). Finally, each element was developed or converted into monetary values to estimate the overall impacts in comparable financial terms.

The benefits in this case included traditional cash benefits such as the savings on utility bills, as well as non-cash benefits such as increased health and productivity, reduced chemical pollutants, reduced greenhouse gasses and reduced waste production. The SROI analysis demonstrated that JHU's sustainability initiatives, when fully-valued, provided significant benefits compared to its investment costs.

Corpus Christi Community Sustainability Visioning & Energy Efficiency Conservation Strategy, City of Corpus Christi, TX

Seeking to maximize federal ARRA funding opportunities and improve local energy management, the City of Corpus Christi retained HDR to lead the development of an energy efficiency initiative and associated projects. HDR prepared and submitted the City's formula grant application for an Energy Efficiency Conservation Block Grant (EECBG) that secured an initial allocation of \$250,000. This initial funding was used to support the development of the City's Energy Efficiency Conservation Strategy (EECS), required to secure over \$2.5 million in additional federal funding.

Working on a quick 120-day schedule mandated by the Department of Energy (DOE), HDR prepared the City's EECS which included the development of an energy and emission baseline and initiation of a comprehensive community sustainability visioning process. This provided a valid assessment of current energy costs and ideas on how to strategically address areas for improvement.

HDR also led the City's prioritization of projects through a series of workshops with city staff and community stakeholders. The list of final projects recommended to be completed with the City's EECBG funds included the preparation of a community-wide integrated sustainability master plan, signal timing studies and associated improvements, ESCO performance contracting and related building retrofits, and energy efficiency evaluation of the City's water treatment facilities.

HDR was recently selected by the City to provide consulting services for several of the EECBG implementation projects, including development of the City's Integrated Community Sustainability Plan.

Public Involvement

An extremely important part of any solid waste management planning effort is communication between the stakeholders, the community, District staff and the decision makers. We have enlisted the services of PRR and CSMI to develop and implement the public involvement strategy for this project. Both firms have been working closely with HDR in the execution of the public engagement plans for DDOT's DC Streetcar Program. Provided below is a representative listing of each firm's experience.

PRR's Key Projects

[Go Recycle! 2011 Media Campaign, Metropolitan Washington Council of Governments \(MWCOG\)](#)

Recycling is the most universally accepted green activity that Americans do every day. With at least 50 percent of all waste generated being in the workplace, focusing on recycling at work can yield big gains for the environment. The Metropolitan Washington Council of Governments (COG) launched the Go Recycle program that aims to help local businesses develop workplace recycling programs and to empower and educate local residents to extend their home recycling practices into the workplace.

PRR worked with COG's Go Recycle program to conduct a public awareness campaign that consisted of a regional radio and TV advertising campaign, social media and radio station promotions. Through two 60-second pre-recorded radio spots that used humor to affect behavior change, and a 15-second TV PSA, residents and businesses were directed to the Go Recycle website and the Go Recycle Facebook page for more information on recycling at work. Alex also redesigned the logo and website in 2011.

The Go Recycle media campaign ran for two weeks in January on local radio and TV stations in the metropolitan Washington, DC region. Funding for the annual campaign came from sponsors and included \$65,000 in monetary contributions. With the help of its sponsors the Go Recycle 2011 media campaign generated approximately 18.8 million impressions through radio and television media outreach, with an approximate advertising value of \$181,401.

[Clean Air Partners Brand & Marketing Plan, Metropolitan Washington Council of Governments \(MWCOG\)](#)

Clean Air Partners is a nonprofit public-private partnership committed to improving air quality in the Washington, D.C. and Baltimore region. Chartered by the Metropolitan Washington Council of Governments (MWCOG), Clean Air Partners educates the public on how to take action to reduce air pollution, especially during ozone season, which runs from May through September. Clean Air Partners contracted PRR to orchestrate a marketing and media campaign to raise awareness about air quality in the Washington-Baltimore regions and educate the public about easy and effective actions to reduce air pollution. They also tasked PRR to develop messaging and updated branding to mark the 10th Anniversary of Clean Air Partners.

PRR brought together key members of Clean Air Partners to attend a workshop that helped to define and prioritize goals for upcoming years. This workshop was attended by key stakeholders within the organization. We looked at the brand's past and

present success, developed a clear plan to continue to build on the science that made this brand credible, and updated it to look and feel like an “evergreen” program. After coming to program consensus, PRR developed a two-year marketing and communications plan.

PRR also worked with Clean Air Partners to negotiate a comprehensive radio advertising campaign targeting the Baltimore and Washington, D.C. markets. This advertising campaign included a tremendous amount of value-add. Clean Air Partners sponsors incorporated additional outreach to showcase their partnership with the program. PRR negotiated with WMATA to put the Clean Air Partners logo and website on over one million metro fare cards. WMATA also provided over \$60,000 worth of in-kind transit advertising to Clean Air Partners. We developed a new radio spot that set a new tone and feel for the brand and incorporated updated messaging. The radio spot won the Washington Area Broadcasters Association for the most creative commercial on air. The radio campaign’s budget was leveraged well over 300 percent, with a buy valued at over \$400,000.

After the website was re-branded we added the website address as the call to action to all media and outreach materials. After that, the website received over 3,000,000 hits in first three months and the number of people who signed up to receive Air Quality Forecast e-mails increased from 800 to more than 2,000.

With the updated print and radio advertising, as well as thorough updates to use of the Clean Air Partners brand, members and participants now have a clear vision of what the Clean Air Partners brand is and the value of partnerships, as well as receiving recognition for their program support. PRR also raised an additional \$60,000 in sponsorship dollars with the new brand in place.

DC Streetcar Program Management Team - Public Outreach, Marketing and Branding, District Department of Transportation (DDOT)

The District Department of Transportation (DDOT) has started construction on a new 37-mile streetcar line in DC that is expected to start revenue-service beginning the summer of 2013. The DC Streetcar will provide high-capacity, high-quality transit circulator service to District residents while catalyzing economic development.

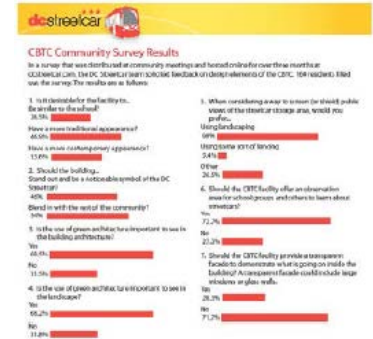
To successfully market the DC Streetcar to residents, DDOT hired PRR as a **sub-consultant to HDR** to provide branding and marketing support for implementation of the streetcar system. This work includes:

- Communications through a project website and social media-strengthening the Streetcar brand
- Launching the H Street/Benning Road Line and Car Barn Training Center (CBTC)
- Leading the Streetcar safety outreach program which will include the implementation of a Safety Outreach Plan
- Supporting the Union Station to Georgetown Waterfront Alternatives Analysis (AA) for the proposed extension of the Streetcar line by providing graphics support, website and social media support and stakeholder outreach in conjunction with several public meetings along the corridor
- Developing the Anacostia Line by creating all collateral material for those updates, as well as a brochure and giveaways for the H Street Festival

The DC Streetcar brand will help DDOT communicate key messages and benefits to the public, and will consist of a new identity that will be reflective in program collateral, advertisements, social media (Facebook, Twitter, YouTube and Flickr), project website, public outreach materials as well as corridor signage. PRR will assist DDOT in developing and implementing a “pre-launch” of the brand in January 2012 that will roll-out the brand to the business communities along the corridor and the community through an advertising and PR campaign, social media and a series of community events, safety fairs and public meetings.

CMSI's Projects

- DC Streetcar Program, DDOT, Washington DC (teamed with HDR and PRR)
- Hazard Elimination, DDOT – Southern Avenue & 13th, Southern Avenue & Naylor Road, Washington, DC
- DC Neighborhood Circulation Study/Adams Morgan Service Plan, DDOT(MTA)/WMATA, Washington, DC
- Poplar Point EIS, Deputy Mayor’s Office for Planning and Economic Development, Washington, DC
- Bellevue Small Area Plan, District Office of Planning, Washington, DC
- WMATA Southeastern Bus Garage Move, Washington, DC
- Union Station Intermodal Transportation Study, Washington, DC



Organics Management

Since 1917, HDR has provided programming, design, bidding, and construction administration services for over 75 new and upgraded organics processing facilities throughout the U.S. Our organics experience includes anaerobic digestion and other leading technologies as well as supporting infrastructure needs such as digester tanks, feedstock processing, biogas filtering/scrubbing facilities, odor and emission control, biogas storage facilities, fuel cells or internal combustion engines for electricity generation, and/ or liquid/solid waste effluent processing facilities.

Key Projects

City of Baltimore Composting Facility, Baltimore, MD

The Northeast Maryland Waste Disposal Authority (NMWDA) and the City of Baltimore (City) have used the Baltimore City Composting Facility (Facility) as an integral component of biosolids management for the City since 1988. The Facility is operated through a public-private partnership between NMWDA, the City, and Veolia Water North America (Veolia). The Facility has the capability of processing up to 210 wet tons per day of biosolids from the City’s Back River Wastewater Treatment Plant, and the in-vessel process produces a high organics compost that is successfully sold in the marketplace. HDR was retained by the NMWDA and the City to perform an assessment of the operating condition of the Facility and to prepare an estimate of the potential costs associated with capital and other life extension improvements at the Facility. As part of its assessment activities, HDR collects operating and maintenance data from the Facility, performs inspections of the Facility to observe the existing physical condition of major processing equipment, and conducts interviews with Veolia and Facility personnel.



Eastern Correctional Institution Cogeneration Facility, Maryland Environmental Service, Somerset County, MD

The Eastern Correctional Institution (ECI) is located on the eastern shore of near the town of Westover, Maryland. In order to assure an uninterrupted supply of electricity to this rural prison facility, the Maryland Division of Corrections had a twin boiler 2.3-2.5 MW generating plant constructed that is fueled with locally produced wood chips. The plant provides approximately 90% of the prison's electricity with the remainder being purchased from local electric utility company.

As a consultant to Maryland Environmental Services (MES), HDR has evaluated the feasibility of replacing the existing wood waste-fired boilers with alternative technologies for processing biomass (e.g. wood waste, poultry waste, sludge). The technologies evaluated by HDR have included modular-type combustion units, bubbling fluidized bed boiler, gasification and plasma arc technologies.

Food Waste-to-Energy Facility, Confidential Client, NY

As part of a design build team, HDR was responsible for coordinating and integrating the process/mechanical design of a food waste to energy facility which will take source separated food waste from the municipal waste stream and produce biogas and energy. HDR is the lead firm in obtaining the New York City industrial wastewater discharge permit and is coordinating all of the technology providers for the process and engineering design and construction documents as the Engineer of Record for the NYSDEC Permit 360 permit approach.

The food waste to energy processes included: waste receiving, de-sizing and segregation, wet anaerobic digestion with membrane bioreactor, decanter centrifuge dewatering, in-vessel aerobic compost tunnels composing curing and screening, odor control using biofilter system, and wastewater treatment using ammonia stripping and aerobic biological treatment. The anaerobic digestion process was designed to produce biogas with a methane content of 60 to 70% which will be used to fuel a combined heat and power facility. The treated wastewater from the digestion process will contain up to 3000 mg/L of ammonia nitrogen and requires pretreatment before discharge to the NYCDEP city sewer system and POTW.

Gills Onions Advanced Energy Recovery System, Gills Onions, Oxnard, CA

Gills Onions is the world's largest fresh-cut onion processor, with nearly a million pounds of onions passing through its Oxnard, California, plant each day. This process leaves behind the top, tail and skin of each onion, resulting in an average of 200,000 pounds of onion waste per day. This energy-intensive food production business created an annual power bill of more than \$1.4 million for Gills Onions.

With a long-standing commitment to achieving maximum levels of energy efficiency, waste reduction and water conservation through sustainable business practices and technology, Gills Onions set a goal of being a zero-waste facility by 2011 and reducing its environmental footprint, not to mention its electric bill.

The traditional practice of disposing onion waste via land application in agricultural fields led to odor problems, potential ground water contamination, plant disease, soil acidification and pests, while costing plant owners \$400,000 per year. Gills Onions deemed this practice unsustainable.

HDR Engineering, Inc. (HDR) worked with Gills Onions to produce energy from onion waste. The result is a system that generates power from biogas as the byproduct of anaerobic digestion of juice extracted from the waste. The resulting Advanced Energy Recovery System (AERS) generates 0.6 MW of clean electricity in two 300-



kW fuel cells and produces 20 tons per day of high-energy-value cattle feed with the result of drastically reducing the cost of power and eliminating the waste stream.

Organics Recycling Facility Conceptual Design and Economic Feasibility Study, Alachua County, FL

HDR was retained by Alachua County to evaluate the feasibility of a County owned and operated organics recycling facility. The evaluation included preparation of a conceptual site model, a conceptual operations plan, an evaluation of the permitting process, and a financial feasibility model. HDR developed the Organics Recycling Biomodule process specifically to utilize organic materials generated by the Alachua County free marketplace. By charging a lower cost than conventional landfilling, the project is expected to attract organics from local businesses, such as restaurants, grocery stores and landscaping services. The stabilized organic material produced can then be beneficially used locally. The Organic Recycling Biomodule is a low technology technique to process organic waste materials for biogas generation and utilization, and ultimately converts the remaining solids into compost. HDR created a site specific design based on anticipated organic waste flow rates, and presented operations considerations that involved materials handling, mixing, and biomodule filling. Also, as part of the detailed conceptual design, HDR proposed an odor control system consisting of a biofilter and/or carbon filter. HDR also utilized other environmental protection systems and operations that can be implemented to eliminate ground/surface water contamination and odor and gas emissions. HDR's conceptual technical approach involves the sequential application of anaerobic degradation, aerobic decomposition and waste mining within reusable biomodules. Final composting and curing of the excavated materials will be accomplished prior to the use of the stabilized material for organic soil amendment, land reclamation or similar beneficial uses. Biodegradation of the organic waste in the Organics Recycling Biomodule is enhanced through leachate re-circulation coupled with biogas collection in the anaerobic phase and air injection in the aerobic phase. The project is expected to realize sustainability by being reusable, thereby eliminating the need of new land for future incoming organic waste.

Food Waste and University Farm Manure Anaerobic Digester Feasibility Study, University of California-Davis, CA

The University of California Davis retained HDR to prepare a feasibility study of a high-solids anaerobic digester (AD) facility to convert University cafeteria waste, manures from campus animal farms and related organics to energy. The AD technology was initially developed at a facility at UCD using a two-phase, batch anaerobic digester based on bench-scale laboratory research efforts. The current goal is to develop a commercial-scale facility, based partially on a prior demonstration facility, but adding a pretreatment facility for a variety of feedstock materials, a digestate management program, effluent treatment system, etc. The initial research for the facility has been based on the treatment of pre- and post-consumer food wastes and manures. The project evaluated the feasibility of the facility in terms of identification of facility components, prepared cost estimates, and provided supporting assistance in issues such as feedstock pretreatment, digestate management, effluent management, etc.

Food Waste Composting Facility, City of Virginia Beach, VA

A Waste Management/Indoor Composting Facility (Facility) consisting of approximately 100 acres has been proposed as part of the Interfacility Traffic Area (ITA) and Vicinity Master Plan Study completed for the City of Virginia Beach (City). The Facility will consist of a 25-acre indoor composting facility, a 50-acre temporary



storm debris storage area, and a 25-acre transfer station. The City retained HDR to conduct a feasibility study to determine the most economically efficient and environmentally sound development of the Facility. The feasibility study is being funded by a grant from the Department of Energy and is primarily focused on the indoor composting operation. The development of the storm debris storage area is an immediate need of the City with the composting facility required within the next 2 to 3 years. The transfer station would need to be operational around 2018. HDR's approach to the feasibility study consists of two parts, the first being a fatal flaw analysis of the Waste Management Facility to determine the constraints that will be placed on the development of the site. The second part is an assessment of alternatives for each of the three components (storm debris storage, transfer station, composting) with emphasis on the indoor composting options.

Composting Facility Planning Study, Santa Cruz County, CA

HDR was retained to assist Santa Cruz County in preparation for developing a regional compost facility. Our efforts included preparing facility sizing based on a variety of possible tonnage throughput rates. We also prepared an economic model of the capital and operational cost of each component of the facility. The facility is a part of the County's Zero waste diversion program in preparation of the closure of the Buena Vista landfill. We evaluated several dozen potential sites, using criteria which we developed. Our analysis concluded identifying a preferred region which included a handful of potential sites. We are currently in the process of updating the County Board of Supervisors of our study. Our analysis is currently being used to solicit interest from the cities of Santa Cruz, Aptos, Watsonville and Capitola whereby each city will elect to participate on not in the on-going development of the facility.

Waste-to-Energy & Conversion Technologies

HDR has more than 40 years of experience in developing and implementing waste-to-energy projects. Our staff has more combined years of experience in waste-to-energy than any other firm in the marketplace today. By participating on global councils, HDR waste management experts keep pace with the most innovative and up-to-date technologies available from around the world and can help select the most appropriate technology for each application. HDR has been involved in the development of more than 53 operational waste-to-energy facilities. Our expertise ranges from feasibility studies through design, final construction and commissioning. We have retrofitted some of the earliest waste-to-energy facilities with advanced pollution control systems. We are proud that HDR's waste-to-energy projects surpass the strictest air quality and public safety requirements.

Key Projects

Northeast Maryland Waste Disposal Authority, Baltimore Maryland

HDR has been working for the Northeast Maryland Waste Disposal Authority (Authority) as its owner representative for design build projects since 1982. Under a five year indefinite delivery/indefinite quantity agreement, HDR is currently providing architecture and engineering services for infrastructure projects serving the City of Baltimore, Baltimore County, Harford County, Montgomery County and, more recently, Frederick and Carroll Counties. These projects are all sustainable energy projects where solid waste from residents of Maryland is combusted in state-of-the-art power plants to generate electricity and/or steam. The state of Maryland considers the electricity generated from these waste-to-energy facilities green, renewable energy. HDR has provided consulting services at the following facilities:

- Harford County Resource Recovery Steam Supply Facility
- Baltimore RESCO
- Frederick County WTE Facility, Frederick/Carroll County
- Montgomery County Resource Recovery Facility

Durham York Energy Centre, Regional Municipalities of Durham and York, Ontario, Canada

The Regions of Durham and York, Ontario (the “Regions”), located north and east of Toronto, have shipped the portion of their residentially generated solid waste remaining after significant source reduction, composting and recycling to Michigan landfills for years. Facing a forced border closure for waste shipments to Michigan, the Regions began exploring alternatives. In 2004, the Durham Regional Council directed staff to proceed with an Environmental Assessment (EA) to establish the first Energy-from-Waste (EFW) Facility to be built in Ontario in 20 years. The reason for this decision was to address the increasing difficulties in securing long term landfill capacity and the ever rising cost of the transportation of waste. The Regions completed and submitted the individual EA in the summer of 2009 for the selection of a “preferred” post-diversion, residual-waste processing system and a facility site.

In 2008, the Regions retained HDR to provide technical support during completion of the procurement process, including preparing the Request for Proposal, assisting in the evaluation of the proposals and selection of the preferred vendor and negotiations. HDR developed technical specifications and procurement related documents for the procurement of a vendor to design-build-operate and maintain a 140,000 metric-tonnes per year (500 tpd U.S.) EFW facility. These documents included a Basis of Design Conceptual Plan, detailed technical requirements, performance guarantees, proposal forms, acceptance-testing protocols and evaluation/selection criteria. In the fourth quarter of 2010, the Ontario Ministry of the Environment (“MOE”) approved the EA, which led to the signing of the Construction and Operations Agreement negotiated with the selected preferred vendor (Covanta). The Certificate of Approval (Operating Permit) for the facility was issued by the MOE in July of 2011, and the groundbreaking for the construction of the facility took place in August of 2011. HDR continues to provide support during the implementation phases of the Project and as the Owner’s Consultant is responsible for providing ongoing design review and construction monitoring support throughout the 40 month construction period.

Alexandria/Arlington WTE Facility, Alexandria, VA

The Alexandria/Arlington WTE Facility Trustees hired HDR to provide general engineering services during the retrofit of the air pollution control system in response to the more stringent requirements of the Clean Air Act Amendments of 2000. HDR provided essential data used in the contract negotiations for the retrofit, as well as in the drafting and implementation of the construction and service agreement amendments, finding ways to reduce costs to users. HDR also performed construction monitoring and design review.

HDR continues to serve the facility with bi-monthly monitoring and inspection services, providing advice on technical, administrative and financial aspects of continued successful WTE operation. For the past six years, HDR has also been serving as the Administrative Manager to the Board of Trustees, interfacing between the Trustees and Covanta, the facility operator. This work involves reviewing budgets, providing economic analyses to establish tip fees, trust fund projections, technical



analyses, and administrating the Trustee interests in coordination of special projects such as ferrous recovery, radiation detection, and NOx studies. Most recently, HDR has been working with the Trustees to develop a new service agreement for the period between 2013 and 2025, when the facility will be a merchant facility, and to lay the groundwork for ensuring that the facility will be in good working condition once it reverts back to the City and County in 2025.

Alternative Conversion Technology Assessment, Review, and Testing, Salinas Valley Solid Waste Authority, CA

HDR helped the SVSWA assess the suitability of various technologies for meeting the Authority's goal of 75% reduction of landfill by 2015. In the first phase, we performed a technical, economic, environmental and greenhouse gas analysis of several methodologies, including gasification. HDR also assisted the SVSWA in issuing a Request for Qualifications (RFQ) and short-listed the best qualified respondents to meet the SVSWA's goals.

We worked closely with SVSWA Staff and a Commission of local elected officials to evaluate specific municipal waste conversion technologies. This included a literature review, several trips to visit operating facilities in the US and Europe, and discussions with system vendors. The objective of this phase was to go beyond what has been done in studies done for other communities that rely heavily on vendor supplied information. Our approach involved detailed examination of the thermodynamics, mass and energy balances, operating histories, actual emission data and cost information from operating plants worldwide. The Commission is now recommending that the SVSWA move ahead in negotiations with the two vendors that appear to best meet the SVSWA's goals and objectives.

Alternative Technology Evaluation & Site Selection Study City of Los Angeles Bureau of Sanitation, CA

The City of Los Angeles Bureau of Sanitation (BOS) presently disposes of approximately 3,600 tonnes per day of municipal solid waste (MSW) in local landfills. The BOS is exploring MSW alternative treatment technologies capable of processing refuse material collected from residential customers. The City contracted with HDR to assist in the evaluation of proposals and in the siting and permitting of an alternative technology partner to process the refuse and produce energy or other useful products.

The City retained HDR to provide assistance to the City in the analysis of various alternative technologies for processing mixed municipal wastes. Desiring to divert residential MSW materials from the landfill, the city solicited vendors to provide waste processing of 1,000 tonnes per day of MSW to be diverted from disposal. The solicitation also included a lesser tonnage expectation of 200 tonnes per day under an 'emerging' technology category. The proposed technologies included modern WTE, gasification, plasma arc, mixed Materials Recovery sorting, anaerobic digestion, composting, and biomass incineration.

During the summer of 2008, a group of HDR solid waste professionals accompanied representatives from the City of Los Angeles on a month-long tour of various solid waste conversion facilities around the world. Following the world tour of conversion technologies, HDR performed a thorough analysis of each vendor's proposed technology. The work included an independent analysis of each proposed facility's mass balance, thermodynamics, economics, credibility, viability, diversion capacity, operational history, engineering design and relative environmental impact. Five different economic methods were developed to illustrate the calculated service fee, reflecting variables such as revenues from electricity, recyclables, and products, as well

as expenses such as debt period, emission reduction credit costs, which were required by the local air quality agency. The review effort also included preparation of toxic air contaminant, criteria air pollutant and GHG analysis of each of the vendor's proposals. The work included development of a variety of comparative tools to facilitate side-by-side evaluation and ranking of the various vendors. HDR presented the analysis to the city's evaluation team which included academicians in addition to County management of two existing WTE facilities and city staff. The city is entering a negotiation phase with an emerging technology vendor (i.e., anaerobic digester).

Concurrently, HDR assisted the city in selecting a site by preparing a Geographic Information System (GIS) based model that screened all of the properties within the city according to a series of criterion which HDR developed in concert with the city BOS and planning staff as well as input from stakeholders and environmental groups. The criteria included logistical issues such as proximity to major highways, and neighborhoods, but also included qualitative metrics such as environmental justice and air quality. HDR continues to assist the city in the implementation process.

RFP for Waste Conversion Technology - Solid Waste Engineering Services, New York City Department of Sanitation (DSNY), NY

HDR has been the New York City Department of Sanitation's (DSNY) solid waste program management consultant since 1994. During that time we have provided the city with a broad range of engineering, planning, procurement and economic analysis support, including the development of a solid waste management plan for long-term export and disposal of their waste, a supporting FEIS, transfer station design, and compost facility design.

Recently, HDR was asked to assist DSNY in the procurement of an alternative conversion technology for the processing and disposal of a portion of the city's waste. This assignment will include the development of an RFP, proposal evaluations and contract negotiations.

Transfer Stations & Material Recovery Facilities

HDR has designed and engineered more than 160 transfer station and material recovery facility projects across North America. This extensive experience has brought us national recognition and awards for our innovative designs that incorporate LEED™ concepts with the latest in recycling technologies. From evaluating system needs to developing alternatives tailored for the community through final design of solid waste facilities, HDR has experienced staff to support transfer station projects of any size.

Key Projects

Staten Island Transfer Station, New York City Department of Sanitation, NY

On April 17, 2007, when New York Mayor Michael Bloomberg opened the Staten Island rail line, a local official dubbed the event a "golden spike" announcement. While the original 1869 golden spike event in Utah launched a new era of mobility for people, the opening of the Staten Island Railroad marked the beginning of a new era in waste management for the City of New York.

The Staten Island Transfer Station is the first of several proposed new facilities owned and operated by New York City to become operational. A program for long term export of municipal waste was authorized as part of a comprehensive Solid Waste Management Plan (SWMP) developed for the New York City Department of Sanitation with assistance from HDR. Under the plan, a series of facilities will



transport waste outside the area by rail, by barge or a combination of transportation options.

As a key element of the New York SWMP, the Staten Island Transfer Station was designed by HDR to process up to 1,200 tons per day of Staten Island's residential and institutional waste. Waste delivered by the Department of Sanitation is processed inside the nearly 80,000-square-foot facility using compactors to load leak-proof intermodal containers. Four containers are loaded onto each flatbed rail car for transport to a landfill outside the area.

As New York City's solid waste management consultant of choice, HDR supported construction of the Staten Island Transfer Station by preparing the permit application and detailed design documents for the facility, which included the transfer station itself as well as administration and maintenance buildings and an on-site rail spur.

Additional HDR work included developing a wetlands mitigation plan for a rail bridge crossing, oversight of geotechnical and surveying work, construction monitoring and design support.

Puente Hills Materials Recovery Facility & Transfer Station, Los Angeles County Sanitation District (LACSD), Whittier, CA

With its landfills near capacity, the Sanitation Districts of Los Angeles County (LACSD) were forced to rethink waste management for more than 5 million customers and 78 cities in suburban Los Angeles. Its solution: preserving landfill space now and developing waste-by-rail for future disposal. For both, LACSD built the \$37 million Puente Hills Material Recovery Facility, a 4,400 tons-per-day waste transfer station and the recipient of a 2006 Solid Waste Association of North America Gold Excellence Award. The MRF was designed to process 35 tons per hour of select loads of commercial waste. LACSD also floor sorts materials like wood, metal and carpets for recovery.

Puente Hills, designed by JRMA and HDR, was built for efficiency and adaptability. Waste is separated into landfill-bound refuse or recyclables, which are sent off to be remanufactured. When all LACSD landfills are closed, Puente Hills MRF will turn exclusively to waste-by-rail, sorting and shipping refuse to the Mesquite Landfill, a facility now under construction in the desert 200 miles outside of Los Angeles. Even with a cavernous 210,000 square-foot processing floor, PHMRF was built to conserve resources. The structure was manufactured with recycled materials including translucent panels, steel, carpet and backing, and 500 skylights were installed to reduce demand for artificial illumination. Water for ground maintenance or non-potable fixtures comes from reused or reclaimed supplies. An 8-foot wall and 12,000-square-foot administrative building obscure the production center, and trucks only unload inside to reduce noise and environmental pollution. Transfer truck loading is done at the rear of the MRF to spare neighbors the clatter. Dust and odors, inside and out, are controlled by vents, minimal openings, misting systems and rapid roll doors. The whole building is clad in tones consistent with its neighborhood.

The client originally specified that HDR design the facility for 1,000 tpd with provisions to expand in two future phases to ultimately achieve the full 4,400 tpd capacity. HDR did a cost-benefit analysis that showed the least life cycle cost alternative was to build the full 4,400 tpd facility initially and eliminate the phased build out. Not only did this save the Districts significant monies, but bids came in below budget resulting in additional cost savings.





Prince George's County Materials Recovery Facility – Prince George's County, Maryland

HDR assisted Prince George's County Department of Environmental Resources in developing a material recovery facility. The facility included a 150-tpd material recovery process for recovering and baling commingled recyclable containers and a 250-tpd material recovery process for recovering and baling various grades of recovered paper and paper products. HDR provided services in writing the Service Agreement, Construction Agreement and Performance specifications, permitting and environmental regulatory issues. A third party vendor (New England CRInc and The Maguire Group, Inc.), designed, built and operated the plant. HDR acted as the construction administrator as the material recovery facility was built and tested. The plant employs state-of-the-art equipment (Bezner) to sort, process and bale up to 150 tons of various plastic, ferrous and aluminum containers per day. Recovered glass was color sorted by hand and the crushed cullet was returned to local bottle manufacturers or used as aggregate for civil construction projects. The plant also hand-sorted up to 250 tons of mixed paper into office grade, grade 8 mixed newsprint, kraft paper, magazines, phonebooks and corrugated cardboard bales. The 55,000- square-foot structure for the recycling tip floor and processing area is combined with a two-story administration and visitors' center. The structure employs glass blocks, split-face stone, and colorful exterior framing to create a unique visual appeal. HDR helped the County determine the feasibility of building and owning the Recycling Plant. HDR worked with the staff to evaluate different ownership schemes, operation plans and conceptual designs. HDR assisted staff in choosing a location for the plant (on Ritchie Road) and worked on permit requirements and environmental constraints for several alternative locations.

Implementation Experience

One of the distinguishing factors of the HDR Team is its ability to guide the implementation of complex solid waste management plans. Major U.S. cities such as Los Angeles and New York have benefitted from HDR's technical expertise to deliver a broad range waste management solutions. From citywide waste diversion programs and composting facilities to WTE facilities and solar landfill covers, HDR has helped communities face their solid waste concerns through the implementation of cost effective and environmentally sound solutions. The following matrix provides a representative listing of HDR's implementation experience.

	Solid Waste Management Planning	Zero Waste Planning	Financial Analysis	SROI Analysis	Engineering Design	Environmental	Construction Administration	Organics Processing/Composting	Material Recovery Facility/ Transfer Station	WTE Facility
City of Los Angeles, CA	X	X	X		X	X	X		X	
City of New York, NY	X		X		X	X	X	X	X	
Northeast Maryland Waste Disposal Authority, MD			X		X	X	X	X	X	
Regional Municipalities of Durham and York, Ontario			X		X	X	X			X
Region of Peel, Ontario	X		X		X		X	X		X
City and County of Honolulu	X		X	X	X	X	X			
City of Denver, CO	X	X	X			X				X
Miami-Dade County, FL	X		X	X		X				
Alexandria/Arlington, VA			X		X	X				X
Lee County, FL	X		X		X	X			X	X
City of Omaha, NE	X			X		X				
City of Phoenix, AZ					X	X	X		X	
Mecklenburg County, NC	X	X								

Past Performance

More than 80% of HDR's business is derived from existing clients, a clear indication of client satisfaction and confidence. The following pages contain letters of references from industry professionals whom have benefited from HDR's expertise in the field of solid waste consulting services. They represent the major metropolitan communities of New York City, Charlotte-Mecklenburg County, and Miami-Dade County respectively.



ATTACHMENT A – LETTERS OF REFERENCE



sanitation

HARRY SZARPANSKI, P.E.
Deputy Commissioner

Bureau of Long Term Export
44 Beaver Street, 12th Floor
New York, NY 10004
Telephone: (212) 437-4500
Fax: (212) 269-0788

March 22, 2013

Susan J Raila, P.E.
Henningson, Durham & Richardson Inc.
500 Seventh Avenue
New York, NY 10018-4502

Re: HDR's Services in Support of the Implementation of the City's Solid Waste Management Plan

Dear Ms. Raila:

The New York City Department of Sanitation Bureau of Long Term Export is pleased to provide this letter of recommendation to Henningson Durham & Richardson, Architecture and Engineering, P.C. (HDR, Inc.).

HDR has been providing consulting services to the Department since 1994, supporting us in the implementation of the City's solid waste management plan, including providing planning, procurement, negotiations, environmental and other analytic services. They are an integral and trusted member of the City's team and we have found them to be a very competent and responsive firm. I would be happy to be a point of contact for any reference inquiries, and can be contacted directly at the number above.

Very truly yours,

Harry Szarpanski

www.nyc.gov/sanitation

KEEP NYC CLEAN



REDUCE, REUSE, RECYCLE



DON'T LITTER



printed on paper with no less than 30% post consumer Recycled material



MECKLENBURG COUNTY
Land Use & Environmental Services Agency
Solid Waste

March 26, 2013

Robert J. Rella, PE
HDR Engineering, Inc.
440 S. Church Street – Suite 1000
Charlotte, NC 28202

Re: Mecklenburg County Solid Waste Management Plan and Ongoing Solid Waste Consulting Services

Dear Mr. Rella:

The Mecklenburg County Solid Waste Division would like to acknowledge the excellent services provided by HDR Engineering, Inc. (HDR) on the above referenced project. The County has been very pleased with the responsiveness of the project team and the quality of the consulting services provided by your firm. Thank you for a job well done.

While this was my most recent experience with HDR, my relationship with your firm goes back over 25 years when I was in charge of the Sanitation Division for the City of Philadelphia. Then HDR guided Philadelphia in its solid waste planning and the development of a waste-to-energy project.

Please feel free to share this letter with other interested parties or to use Mecklenburg County as a reference on future projects. I would be happy to be a point of contact for any reference inquiries.

Sincerely,

A handwritten signature in black ink that reads "Bruce Gledhill". The signature is written in a cursive style.

Bruce Gledhill, PE
Director, Solid Waste
Mecklenburg County Land Use and Environmental Services Agency

PEOPLE · PRIDE · PROGRESS · PARTNERSHIP

700 North Tryon Street · Charlotte, North Carolina 28202 · (704) 336-4304 Fax (704) 336-4314
www.wipeoutwaste.com



miamidade.gov

Public Works and Waste Management

2525 NW 62nd Street • Suite 5100

Miami, Florida 33147

T 305-514-6666

111 NW 1st Street • Suite 1610

Miami, Florida 33128

T 305-375-2960

March 29, 2013

Brenda S. Clark, P.E.
HDR Engineering, Inc.
5310 NW 33rd Avenue, Suite 212
Ft. Lauderdale, Florida 33309

**Re: Miami-Dade County 50 Year Solid Waste Management Master Plan
(Contract No. E08-SWM-01)**

Dear Ms. Clark:

The Miami-Dade County Public Works and Waste Management Department (PWWM) would like to acknowledge the excellent services provided by HDR Engineering, Inc. (HDR) on the above referenced project. Since 2009 HDR has provided the PWWM with consulting services, including but not limited to: management of a public input process through a solid waste advisory committee (SWAC), establishment of a policy framework to guide decision making, evaluation of existing system conditions, projection of future solid waste management needs, evaluation of alternatives, and development of alternative solid waste management scenarios, including capacity and financial impacts, as well as a sustainable return on investment analysis. Miami-Dade County has been very pleased with the responsiveness and quality of the consulting services provided by your firm thus far and anticipates a successful outcome as we complete the project in the coming months. Thank you for a job well done.

Please feel free to share this letter with other interested parties or to use Miami-Dade County as a reference on future projects. I would be happy to be a point of contact for any reference inquiries and can be reached at 305.514.6623.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Mauriello", written in a cursive style.

Paul Mauriello, AICP

Assistant Director for Waste Operations

C: Kathleen Woods-Richardson, Director, PWWM



ATTACHMENT B – RESUMES

EDUCATION

Bachelor of Science, Political Science and Economics, Florida State University, 1996

PROFESSIONAL AFFILIATIONS

- Solid Waste Association of North America (SWANA), Collection and Transfer Technical Division Director
- Recycle Florida Today (RFT), Member
- American Public Works Association, Member

HDR TENURE

5 Years

INDUSTRY TENURE

16 Years



www.hdrinc.com

Experience Overview

Ms. Trulock is a Senior Project Manager with extensive experience in the solid waste and recycling industry. Ms. Trulock specializes in solid waste and recyclables collection options evaluations and efficiency studies, strategic planning, procurement assistance, and ordinance review and development. Ms. Trulock's options evaluation experience includes evaluating the potential for legal challenge, financial analyses, impact on rate payers and level of service, and administrative complexity of implementing changes to systems. Her collection efficiency experience includes route observations and balancing, benchmarking, cost analysis and public/stakeholder outreach. Her procurement experience includes assisting communities in drafting procurement documents, developing selection criteria, benchmarking, evaluating proposals and developing presentations. A number of her assignments have involved participation in collaborative processes and the use of her facilitation skills.

Ms. Trulock has developed, reviewed and revised comprehensive solid waste and zoning ordinances for numerous communities. In addition, Ms. Trulock is experienced with managing national and regional data collection projects and related general database design activities

Relevant Project Experience

Business Improvement Services, City of Raleigh, NC. Ms. Trulock is currently serving as Project Manager to the City of Raleigh Solid Waste Services (SWS) Department. The SWS Department provides garbage collection and disposal, yard waste management, and recycling services for a population in excess of 400,000. The City has recently established the SWS Department as an enterprise fund, though currently the general fund is supplementing the enterprise fund with roughly \$11 million. With a goal of transitioning SWS into a self-sustaining enterprise fund in the next five years, SWS recently retained HDR to assist in evaluating every aspect of the SWS Department, including operations, personnel, organization structure, user fees, other financial aspects, and impacts on customers. The efforts associated with this project include short term and long term efforts. The short term efforts involve financial modeling, benchmarking and an organizational review. The long term efforts include the development of a public relations and outreach program as well as a long term strategic plan.

Collection System Privatization Feasibility, City of Hialeah, FL. Ms. Trulock is currently serving as Project Manager to the City of Hialeah for evaluating the feasibility of privatizing the City's collection system. The first task includes a financial feasibility analysis for privatizing the collection system, and includes a cost of service financial model. The financial model will also be used to project anticipated private sector rates, as compared to the City's base case. Depending on the results of the financial modeling and comparisons, HDR will assist the City with a procurement process for selecting a private hauler to provide the City's collection services.

Solid Waste Management Plan Update, Mecklenburg County, NC. Ms. Trulock served as Project Manager to Mecklenburg County for the triennial solid waste management plan update for the ten-year solid waste management plan (2012-2022). The project included extensive public outreach and stakeholder input, assessment of current conditions, development of potential strategies, development of waste reduction goals, and recommendations for reaching the waste reduction goals. The SWMP was completed and approved

by the County commission as well as all seven municipal jurisdictions in the County, and has been submitted to the State of North Carolina Department of Environment and Natural Resources.

Cost of Service Study – City of Richardson, TX. Ms. Trulock served as task lead on this cost of service study for Richardson, as part of a larger solid waste management planning effort. The cost of service study included modeling the current solid waste system, developing solid waste system projected revenues, projected expenses, review of the City's five year CIP, and development of projected financial comparison results.

Collection System Benchmarking, City of Hialeah, FL. Ms. Trulock served as the Project Manager for the City of Hialeah on a benchmarking effort in order to understand the financial metrics of the City's solid waste system as compared to other communities.

Solid Waste and Recycling Strategic Plan, City of Coral Springs, FL. Ms. Trulock is currently serving as the Project Manager to the City of Coral Springs for the development of a Solid Waste & Recycling Strategic Plan, the goal of which is to identify the most effective strategies for the City to meet the State of Florida's 75% Recycling Goal over the next ten years. Phase I of the project includes a waste composition study, development of baseline recycling rates for the City, and best practices research to identify new and innovative strategies for waste reduction and recycling. Subsequent phases of the project will include customer surveys, stakeholder workshop facilitation, procurement assistance, ordinance review and revisions, financial analyses and implementation planning assistance.

Comparative Analysis of Solid Waste Program – Alachua County, FL. As task lead, Ms. Trulock researched publicly available financial information to assist in developing certain performance metrics, or financial ratios, for each solid waste facility/operation considered. Financial ratios can generally be categorized according to the financial aspect(s) being measured. The project also included an analysis of planned capital improvement projects and their impact on tipping fee projections. Financial scenarios were calculated to evaluate potential impacts of tipping fee variations on cash and near cash reserves.

Solid Waste Integrated Resource Plan (SWIRP), Orange County, FL. Ms. Trulock served as Project Manager. In order to meet future goals and solid waste challenges, the County developed a Solid Waste Integrated Resource Plan (SWIRP), using allocated American Recovery and Reinvestment Act funds. This project is one of many projects funded by the Energy Efficiency and Conservation Block Grant Program administered by the Department of Energy. The intent of this activity was to develop a course of action to ensure that Orange County residents and visitors manage solid waste in the most sustainable manner. The goal of this SWIRP was to serve as a strategic planning tool for the management of Target Waste Types generated within or transported into the County. HDR was recently selected by the County to develop a SWIRP that addressed "the unique regulatory framework, governance goals, market conditions, growth trends, and stakeholder feedback in Orange County." The project was kicked-off in September 2010 and was completed in September of 2012.

EDUCATION

Strategic Public Sector Negotiations Course,
John F. Kennedy School of Government at
Harvard University, 2001

Coursework in Finance, Loyola College, 1987

Masters in Regional Planning (Traineeship in
Environmental Health), University of
Pennsylvania, 1978

BA, Biology, Windham College, 1974

PROFESSIONAL AFFILIATIONS

- Planning and Management Technical Division
Program Committee, SWANA Annual
Conference, August, 2012
- Past President and Board of Trustees, U.S.
Conference of Mayors' Municipal Waste
Management Association
- Governor of Maryland, Advisory Panel on Solid
Waste; Advisory Panel on Recycling; Advisory
Panel on Dredge Spoil Disposal and Recycling
- Past Board Member, Maryland Recycling
Network
- Past Board Member, Solid Waste Association
of North America, Md.-Del. Chapter
- Past Member of the Johns Hopkins University
Advisory Panel: Graduate Environmental
Engineering Program

INDUSTRY TENURE

31 Years



www.hdrinc.com

Experience Overview

Ms. Davidov is the former Executive Director of the Northeast Maryland Waste Disposal Authority and one of a very few public sector waste management professionals to have developed, financed and managed three award winning waste-to-energy projects, four landfill gas-to-energy projects and two solar projects. She is now assisting public sector clients with asset management, public-private partnerships, contract negotiations, energy sales negotiations, new project development and innovative recovery projects. Ms. Davidov assists clients with managing a project from the planning stage through procurement, contract negotiation, permitting, financing, construction and operation. She advises clients on the recovery of energy and resources from a broad spectrum of wastes; including organic, e-waste, C&D and metals. Ms. Davidov is highly regarded by her peers and in 2010, she was elected President of the U.S. Conference of Mayor's Municipal Waste Management Association.

Relevant Project Experience

Northeast Maryland Waste Disposal Authority

- Executive Director | 1996-Retired October 2011
- Deputy Director | 1995-1996
- Project Manager | 1987-1995
- Project Planner | 1981-1987

The Authority's members are Baltimore City and seven Counties in Maryland. The Authority provides planning, project management, financing, construction and operations of three waste-to-energy facilities, four landfill gas to energy projects and two solar projects (one constructed on a closed landfill). The Authority procures, negotiates and manages contracts for recycling and waste disposal. As the Executive Director, Ms. Davidov was responsible for managing a staff of 10 and over 1 million tons of waste and recyclables each year. Ms. Davidov's expertise includes the following:

City of Baltimore, Baltimore Refuse Energy Systems Company WTE

Facility, Baltimore, MD. Ms. Davidov led the end of contract negotiations between the City of Baltimore and the private owner of the waste-to-energy facility. Her leadership and strategy resulted in significant savings in waste disposal costs for the City. In addition, the City purchased 10 MW of renewable electricity at below market prices and is paid to accept ash residue.

Solid Waste and Recycling. Planning, Public Outreach, Project Development, Project Development, Contract Management

Waste-To-Energy Projects, Landfill Gas-to-Energy Projects, Solar

Projects. Development, Financing, Permitting, Permit Compliance, Construction Oversight, Operations, Revenue Enhancement, Marketing and Sales of Electricity and Recovered Metals, Ash Management, P&L, Inventory Controls, Reserve Funds, Contract Management, Change Order Management, Retrofitting, Regulatory Compliance

Renewable Energy Marketing. Sales of electricity, steam, landfill gas and renewable energy credits from renewable energy projects in a deregulated energy market (Maryland). Knowledge of PJM grid operations, interconnection agreements

ROBIN DAVIDOV

Solid Waste System Management

Regulatory Compliance. Responsible for obtaining and maintaining Federal and State environmental permits, including air, solid waste, discharge, storm water permits.

Public Education. Excellent public speaking and communication skills. Over 30 years experience in waste management and recycling education for residents, business owners, corporate leaders and elected officials.

Other. Renewable energy credit marketing (pioneer in selling renewable energy credits generated by waste-to-energy facilities), First solar project on closed landfill in Maryland, Development of first intermodal rail transportation of waste to a waste-to-energy project in Maryland; Negotiation of favorable settlements in Federal Anti-Trust suit (USA Waste and Waste Management Merger) and Bankruptcy (Covanta); Created the first B to B recycling website in Maryland.

Awards

Waste to Energy Gold Excellence Award, Solid Waste Association of North America, 2010

Best Marketing Program, Maryland Recycling Coalition, 2005

Composting Facility Silver Excellence, Solid Waste Association of North America, 2005

Outstanding Waste-to-Energy Facility of the Year, American Society of Mechanical Engineers Solid Waste Processing Division, 2000

Waste-to-Energy Gold Excellence in Municipal Solid Waste Management, Solid Waste Association of North America, 1998

Excellence in Environmental Engineering for Operations/Management Grand Prize, American Academy of Environmental Engineers, 1998

Outstanding Civil Engineering Project, National Capital Section of the American Society of Civil Engineers, 1997

EDUCATION

Bachelor of Arts, Philosophy and Fine Arts,
Amherst College, 1986

PROFESSIONAL AFFILIATIONS

- Zero Waste International Alliance, Planning Board
- Grassroots Recycling Network, Board of Directors
- Solid Waste Association of North American, Gold Rush Chapter Board of Directors
- Californians Against Waste, Board of Directors
- Northern California Recycling Association, Past President

HDR TENURE

22 Years

INDUSTRY TENURE

23 Years



www.hdrinc.com

Experience Overview

Ms. Abbe is an HDR vice president and senior management consultant with more than 22 years of experience in facility and collection procurement, contract negotiation, program planning, infrastructure development, and financial analysis. She is HDR's national practice leader in Zero Waste planning and Zero Waste infrastructure development. She has worked with more than 50 communities and private sector clients to plan and develop their recycling and solid waste management programs and facilities. She is familiar with state of the art collection and recovery equipment and specifications, collection routing methods, and financing plans. She has assisted jurisdictions in planning and implementing residential single-stream collection and residential and commercial food waste collection programs, including program planning, public outreach, technical assistance and employee training. She is assisting local communities in procuring state-of-the-art facilities for processing source-separated recycling, organics and post-source separated residual waste.

Relevant Project Experience

Solid Waste Integrated Resources Plan and Alternative Technology Analysis, City of Los Angeles, CA. Developing a long-range strategic plan for the City of Los Angeles Bureau of Sanitation. Conducted extensive stakeholder process to identify the guiding principles of the plan and the policies, programs and facilities needed to reach Zero Waste. Prepared a detailed facility plan identifying the number and capacity of facilities that will be needed including, resource recovery centers, material recovery facilities, composting and anaerobic digestion facilities, mixed material processing facilities, and alternative technologies for treating residual waste. Currently, developing a financial plan which includes a detailed rate model projecting the new program costs by year, diversion tons and cost benefits analysis of implementing new programs. Assisting the City in procuring an alternative technology facility for treating post-source separated residual waste. Conducted stakeholder meetings, evaluated proposals, and prepared citywide siting study.

Anaerobic Digestion Facility Procurement, Humboldt Waste Management Authority, CA. Assisting the Authority in procure a state-of-the-art anaerobic digestion facility for processing source-separated organic materials, including commercial and industrial food scraps. Developed Request for Proposals and business terms, assisting the Authority in technical evaluation of proposals and negotiations with selected vendor.

Evaluation of Landfill Diversion Options, Northampton, MA. Assisted the Town of Northampton to evaluate options for expanding diversion opportunities at its municipal landfill. Options included development of a resource recovery park, expanding reuse and recycling activities at the landfill site, and expanding diversion activities off-site. Analysis also included an evaluation of conversion technologies for processing municipal solid waste. Conversion technologies evaluated included anaerobic digestion, gasification, and other emerging technologies.

Expanding Reuse and Recycling at Transfer Stations, King County, WA.

Assisted King County in evaluating opportunities for increasing diversion at transfer stations owned and operated by the County. Documented reuse and recycling activities at high diversion transfer stations throughout the U.S. Identified best practices for diverting self-haul and construction and demolition material. Best practices included, resource recovery centers, processing all self-haul loads, processing all construction and demolition debris loads, economic and rate incentives, increased staffing to assist customers, and expanding outreach and education.

Local Solid Waste Management Plan, City of Dallas, TX. Supported the development of the City of Dallas Local Solid Waste Management Plan. Evaluated the City's options for long-range policy, program and facility development. The plan describes the policies and programs that could be implemented to achieve the City's goal of Zero Waste, with the interim steps of 40 percent diversion by 2020 and 60 percent by 2030. The City will consider implementing future policy and program initiatives such as increasing voluntary programs in the short term and future consideration of mandatory requirements and processing residuals waste.

Resource Recovery Department Master Plan, City of Austin, TX. Assisted the City in developing its Austin Resource Recovery Master Plan. Evaluated City programs, policies and facilities, private sector and other government programs, reclaimed/recycled materials markets, options for regulating service providers, and opportunities for regional cooperation. Prepared needs assessment, economic analysis, funding and financial plan, and an implementation timeline as part of the Master Plan. Conducted stakeholder outreach and public workshops. Supported the City in the development of the final Master Plan, which was adopted by the City Council in December 2011.

Solid Waste Management Plan Update, Mecklenburg County, NC.

Supported the development of the Mecklenburg County for the triennial solid waste management plan update for the ten-year solid waste management plan (2012-2022). The project included extensive public outreach and stakeholder input, assessment of current conditions, development of potential strategies, development of waste reduction goals, and recommendations for reaching the waste reduction goals. The SWMP was completed and approved by the County commission as well as all seven municipal jurisdictions in the County, and has been submitted to the State of North Carolina Department of Environment and Natural Resources.

Long Range Resource Recovery Facility Plan, County of Santa Cruz, CA.

Project Manager. Conducted a stakeholder outreach process to engage public support for new "zero waste transfer station". Facilitated public meetings in each supervisorial district. Developed a long range plan for the development of resource recovery facilities for the County including: organics composting facility, construction and demolition facility, materials recovery facility and transfer station, and potential alternative technology for residual waste reduction.

Food Waste Program Analysis, City of San Jose, CA. Evaluated the City's food waste diversion program. Conducted waste generator audits, visual sorts at compost facilities, and interviews with program managers and generators. Developed recommendations to increase diversion while retaining revenues.

EDUCATION

B.Sc. (Honours), Biochemistry, Queens University, Kingston, Ontario, 1989

Manager of Landfill Operations Certification, 1995

Niagara Region Leadership Initiative, Certification, 2004

INDUSTRY TENURE

19 Years

Experience Overview

Janine Ralph has more than 19 years of experience in environmental assessments, environmental planning, strategic planning, policy initiatives and approvals processes, for waste and energy projects. Through her project work she has been involved in the successful completion of individual environmental assessments and waste management planning processes on behalf of both public and private sector clients. Ms. Ralph's waste experience encompasses a range of activities from feasibility planning through to leading procurement processes for design, build and operations contracts. Her energy experience is focused on the renewable energy sector, with a focus on biomass and alternative fuels. She has been responsible for leading the development and implementation of consultation and communications programs for various planning initiatives for energy, waste and other projects. This has included acting as liaison with the public, various ministries (provincial and federal), municipalities and other agencies to ensure that potential concerns have been identified and addressed in both environmental assessments and other approvals processes. Recent major projects include alternative fuels assessments, waste and energy technology assessments, the development and implementation of procurement processes for facility operations and collection, and organic system design and implementation.

HDR Project Experience

Expert Witness, Organics Contract Arbitration, City of Ottawa, Ontario.

Expert Witness. Ms. Ralph has been retained as an expert witness, providing advice and research to the legal team retained by the City of Ottawa in regards to an arbitration process related to the City's current contract for source separated organics processing.

City of Ottawa, Organic Program Review. Project Manager. This work involved a review of the waste generation rates and material composition of the curbside residential waste stream based on seasonal audits undertaken in the City during 2011 along with review of audit results from other municipal programs. This review was used as the basis for determining the potential range in organic material capture rates and potential tonnages for a full suite of organic materials including compostable paper fibres, food residuals, yard waste, pet waste and sanitary paper products. Various scenarios were examined for the potential effect on the organics capture rates including use of film or biodegradable plastic bags and various combinations of material streams. It was determined that the City could employ various techniques to increase organics recovery from the current quantity (78 kg/HHD, or 55,000 metric tonnes per year) up to 152 kg/HHS or 87,000 metric tonnes per year.

Halton Region Organics Study. Senior Technical Advisor. The Region of Halton provides approximately 450,000 residents with weekly curbside pick-up of organic materials (mostly food residuals), separate collection of leaf and yard waste (green waste), weekly collection of single stream recyclables and bi-weekly collection of the remaining garbage. Ms. Ralph provided technical advice and senior review services during this study, including key guidance on the development of the comparative evaluation methodology and led the completion of the financial analysis of the options. The preferred approaches resulting from this study were to pursue a joint initiative with the City of Hamilton to expand its current composting plant or if that does not prove viable, to develop a new Regionally owned composting plant. The outcome of this study was approved by Halton Regional Council in the summer of 2012.



Region of Peel, Assessment of Long Term Organic Material Processing Options Study.

Senior Technical Advisor. The Region of Peel provides 1.16 million residents with weekly curbside pick-up of organic materials (mostly food residuals), separate collection of leaf and yard waste (green waste), weekly collection of single stream recyclables and bi-weekly collection of the remaining garbage. The Region processes the organic materials (30,000 metric tonnes per year) and a portion of the leaf and yard waste (30,000 metric tonnes per year) at the Peel Integrated Waste Management Facility (using the Christiaens aerobic composting tunnel technology). The Region retained services to select a long-term processing system, capable of managing projected materials over a 30-year timeframe. This study examined various organics processing technologies (aerobic and anaerobic) and implementation scenarios for the development of new processing capacity including various methods of integration of new capacity with the current composting capacity. Ms. Ralph provided technical advice and senior review services during this study, including key guidance on the organic material projections over the operating period, development and application of the comparative evaluation methodology leading to the selection of short-listed approaches and led the completion of the financial analysis of the options. The Region is currently considering the options identified in this study.

Source Separated Organics Project, City of Ottawa, Ontario. Project Manager. The City launched its curbside green bin program in January 2010, collecting primarily food and yard waste (green waste) materials from single family households across the majority of the municipality. Ms. Ralph led the consulting team responsible for reviewing, assessing and securing the processing capacity to manage this material stream. Following successful identification of qualified technology vendors, Ms. Ralph led the consulting team in the development, issuance and evaluation of the subsequent RFP for SSO processing capacity (including detailed technical specifications) issued to the short-listed vendors. As part of this project, the City also chose to review and evaluate potential technologies suitable to manage residual garbage. Ms. Ralph led an REOI process which identified and reviewed the potential application of alternative residual processing technologies for the City, and developed recommendations for an update to the City's Integrated Waste Management Master Plan as well as recommendations for the collection of household organics. As a result of this process, the City of Ottawa awarded a Design/Build/Own/Operate/Maintain contract for 80,000 metric tonnes of processing capacity in late 2007. This facility was fully permitted, constructed and operational as of January 2010.

Source Separated Organics Planning Study, City of Toronto, Ontario.

Task Lead. This project had the fundamental objective of identifying appropriate technologies and sites for new organics processing capacity to address the materials collected in the City's Green Bin program. The work involved screening and evaluating technologies and sites to meet the City processing goals and objectives, formulating and evaluating processing systems, conceptual design of the preferred system elements, identifying a procurement strategy and development of a product marketing plan. A portion of the project work involved facility tours of modern anaerobic digestion and composting facilities located across the EU. The study recommended development of a network of two to three wet anaerobic digestion facilities, phased in across the City, including expansion of the current City-owned plant. That expansion is currently underway.

EDUCATION

Master of Science, Chemical Engineering,
Pennsylvania State University, 1999

Bachelor of Science, Chemical Engineering
(Minor: Environmental Engineering, Manhattan
College, 1997

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer

- Maryland
- California

Hazardous Waste Operations and Emergency
Response – 29 CFR 1910.120 (e), (3), (8)

- 40-hour training
- 8-hour refresher

Confined Space Entry Certified

HDR TENURE

13 Years

INDUSTRY TENURE

16 Years



www.hdrinc.com

Experience Overview

Mr. Howie is a Vice President and Professional Associate in HDR's Waste Management Market Sector. He serves as the Section Manager for HDR's Waste Facilities Engineering Group in the Northeast. He is responsible for overall coordination of the group's efforts in the design, permitting and management of waste facilities, including waste-to-energy facilities, transfer stations and recycling facilities. Mr. Howie has more than 13 years of experience with process and mechanical design, preparing procurements, and monitoring the operations and maintenance of various types of municipal waste facilities, including retrofits and expansions of existing facilities as well as greenfield facility procurement and implementation.

Relevant Project Experience

NMWDA, Frederick and Carroll Counties Solid Waste Processing Facility, MD. Mr. Howie is currently the Project Manager responsible for assisting the client with the development of a 1,360 ton-per-day waste-to-energy facility that will serve Frederick and Carroll Counties in Maryland. Mr. Howie's responsibilities include coordinating the technology assessment efforts, developing the performance-based specifications for the new facility(ies), performing environmental assessments of the potential sites, developing procurement documents and reviewing the final proposals and costs. Mr. Howie has also provided technical assistance during County Commissioner and other public meetings during the approval process for the facility.

NMWDA, Harford County Resource Recovery Facility, Joppa, MD. Mr. Howie was the Assistant Project Manager responsible for coordinating the design review, construction monitoring and acceptance testing of an air pollution control retrofit at this 360-tpd waste-to-energy facility. He has also been involved in the development of the Construction Agreement between the client and the contractor performing the retrofit work, as well as lead HDR's independent engineer's assessment of the existing facility for the procurement of revenue bonds to finance the retrofit. He performed technology and cost assessments, and participated in client meetings to discuss the various design issues related to the retrofit. Mr. Howie was also involved in the evaluation of design alternatives for expanding the facility capacity to include an additional unit. As part of this effort, he traveled to Minnesota and Canada with the client to perform plant tours and interviews at various types of waste-to-energy facilities to perform an assessment of the operations and maintenance associated with the different types of technologies that were proposed for the expansion.

NMWDA, Montgomery County RRF DeNOx System Evaluation, MD.

Mr. Howie coordinated HDR's efforts with reviewing proposals provided by Covanta Energy, Inc. and Fuel Tech, Inc. for lowering the emissions from oxides of nitrogen from the Montgomery County Resource Recovery Facility. Mr. Howie's responsibilities included attending a presentation given by one of the vendors, researching existing applications of each of the technologies, and preparing a brief Technical Memo of HDR's findings and recommendations.

Baltimore Refuse Energy Systems Company (BRESKO), MD. Mr. Howie served as the Lead Project Engineer responsible for reviewing the design, construction and acceptance testing of upgrades to the facility's APC System in order to comply with the EPA's new Emission Guidelines for Municipal Waste Combustors.

Maryland Environmental Service, Eastern Correctional Institution (ECI) Cogeneration Facility, Princess Anne, MD.

The ECI Facility uses wood waste-fired boilers to produce steam and electricity for the nearby Eastern Shore Correctional Facility. Mr. Howie serves as the Project Manager who was responsible for evaluating the short- and long-term options for improving the operations of the ECI's two existing wood-fired boilers. The facility improvements looked at improving the boilers flexibility with handling a variety of biomass feedstocks, and reducing boiler fouling. Mr. Howie currently leads HDR's evaluation of the feasibility of replacing the existing wood waste-fired boilers with alternative technologies for processing biomass (e.g. wood waste, poultry waste, sludge) at the existing ECI Facility. The technologies evaluated by HDR have included modular-type combustion units, bubbling fluidized bed boiler, gasification and plasma arc technologies.

Durham/York Regions EFW Development Project, Ontario, CN. Mr. Howie is currently the Lead Technical Manager responsible for coordinating the efforts related to developing a 480 tpd EFW Facility for the Regions of Durham and York, including selection of the type and number of processing lines, flue gas treatment equipment, power block equipment and the turbine-generator. As part of this effort Mr. Howie is also developing the emission limits, technical specifications and capital and operating costs for the EFW facility. He also routinely participates in meetings with the Joint Waste Management Group (JWVG) to develop the RFP for the EFW Facility, and has participated in Council meetings and meetings with the Ministries of Environment and Energy.

Peel Region EFW Facility Condition and Fair Market Value Assessment, Ontario, CN. Mr. Howie is currently the Technical Lead responsible for coordinating HDR efforts related to performing a technical and financial evaluation of the existing condition of the 200,000 ton-per-year EFW Facility in Brampton, Ontario. This assessment will focus on the facility's ability to reliably and efficiently operate for the life of proposed 5-year and 15-year contract extensions. In addition, Mr. Howie is providing technical support to the preparation of a Fair Market Value Assessment of the EFW.

City of Los Angeles, California, Bureau of Sanitation. Mr. Howie is part of the evaluation team responsible for analyzing proposals from various technology vendors, and the final selection of a site for a 900 tonne-per-day Alternative Technology Facility(ies) to process the City of L.A.'s residual waste.

World Waste Technologies, Inc., San Diego, CA. Mr. Howie was part of the evaluation team responsible for analyzing the technical, environmental and financial attributes and risks associated with three different emerging gasification technologies that the client was interested in purchasing. Mr. Howie was responsible for performing a due diligence of the technical and environmental data associated with each technology, and performing a walk-through of the vendor's pilot facilities.

Salinas Valley Solid Waste Authority (SVSWA) Conversion Technology Evaluation, Johnson Canyon, CA. Mr. Howie is assisting with the technical and financial evaluation of responses from alternative technology vendors including plasma gasification, gasification, pyrolysis, anaerobic digestion, waste-to-energy, MSW composting, and biofuel technologies. Participated in plant tours of one of the short-listed gasification vendors on behalf of the municipality.

EDUCATION

Master of Science, Civil Engineering (Geotechnical/Civil Engineering), Manhattan College, 1987

Bachelor of Science, Civil Engineering, Manhattan College, 1979

PROFESSIONAL REGISTRATIONS

Professional Engineer

- Florida
- Georgia
- Indiana
- Maryland
- New Jersey
- New York
- North Carolina
- Pennsylvania
- South Carolina

PROFESSIONAL AFFILIATIONS

- Solid Waste Association of North America (SWANA), Member
- Society of American Military Engineers (SAME), Member

HDR TENURE

22 Years

INDUSTRY TENURE

32 Years



www.hdrinc.com

Experience Overview

Mr. Rella is a National Practice Leader for HDR's Solid Waste Facilities Design Program. He is experienced in all aspects of planning, engineering, design, and construction of power generating, commercial, industrial, and public facilities. His project experience includes project management; project feasibility studies; Engineer-of-Record evaluations; project financing; site evaluations and testing; engineering analysis and design; contract negotiations; proposal evaluations; value engineering; and quality control.

Relevant Project Experience

Dekalb County, GA. Project Director. Provided technical consultation and design support for the County's 1,700 ton per day Central Transfer Station. This facility is a LEED-certified, 40,000 sq ft transfer station facility and adjacent 21,000 sq ft administration/office building, which won a 2010 SWANA Gold Excellence Award. HDR also studied the economic impact of services provided by the County for solid waste collection.

City of New York Department of Sanitation, New York, NY. Task Leader for the design and construction of a 16-tpd food waste composting facility. Responsibilities included coordinating all interdisciplinary activities, permitting, client interface, and overall management for the production of technical specifications and construction drawings.

In addition, served as Design Leader for the 2400 ton per day transfer station facility constructed at the Fresh Kills Landfill. The facility included an intermodal rail haul facility and associated ancillary structures. Responsibilities included coordination of interdisciplinary activities, client interface and management for the production of related technical specifications and construction drawings.

City of High Point, NC. Project Manager. Performed a process study of the Material Recovery Facility (MRF) and made recommendations for upgrading the facility (equipment, conveyors, balers, etc.) or other processing options. Project activities involve evaluating current practices, recommending various options of modernizing/upgrading, determining possible capital costs, processing rates, and potential operational costs savings.

Askew Nixon Ferguson Architects, Inc., Memphis Area Transit Authority (MATA), Memphis, TN. Project Manager. HDR performed a site visit and prepared a condition assessment report regarding MATA's existing Levee Road facilities. The purpose of this study was to assist MATA in determining whether to secure property at another location and build a new Operations and Maintenance (O&M) facility or commit to remain at the existing facility and make necessary improvements.

Dutchess County Resource Recovery Authority, Poughkeepsie, NY. Project Manager providing consulting services for the design of modifications to the resource recovery facility (RRF), bottom ash and flyash system modifications, expansion of existing administration building, development and evaluation of materials recovery facility (MRF), design and construction monitoring of MRF building repairs and equipment installation, monitoring RRF facility performance, and miscellaneous tasks to support the Agency's facilities.

ROBERT J. RELLA, PE

Transfer Station & Material Recovery Facilities

Miami-Dade County, FL. Project Team lead for transfer station review associated with performing a detailed field review of existing transfer station facilities and provided technical memorandum addressing current facility condition, overview of operations, potential for expansion, and facility and operational modifications for potential increased processing capacity to handle future growth.

Southeastern PublicService Authority, VA. Project Principal. Landfill development and operations, steam plant modifications and operations, and RDF facility modifications and operations. Projects include landfill expansion and development, transfer station upgrade and maintenance, transfer station design and construction, citizen drop-off center design, combustion facility maintenance and retrofit, and facility maintenance.

Charleston County, SC. Project Principal for five-year contract to provide permitting, engineering design, and construction administration for solid waste projects for the Charleston County Solid Waste Department. HDR also provided engineering support services to Kessler Consulting, Inc. for the Charleston County Green for Green Plan Study Plan.

City of Greensboro, NC. Project Director. Assisted HDR's Project Manager in the development and implementation of the City's overall solid waste management plan, including the development and design of a new 900 tpd solid waste transfer station. In addition, efforts include planning, permitting, design, construction monitoring, financial analysis, and feasibility evaluations associated with solid waste collection and disposal.

City of Winston-Salem, North Carolina. Project Principal. Overseeing all project services associated with the implementation of expansion of the City's solid waste disposal facilities. HDR's efforts include planning, permitting, design, construction monitoring, financial analysis, and feasibility evaluations.

Lee County, Florida - MRF Expansion. Project Director for the facility expansion design converting their former dual stream Recovered Material Processing Facility (MRF) to a single stream arrangement. HDR provided design, permitting and construction observation and reporting services. This project included performance specifications and contracts for process equipment modifications, and engineering/design/construction administration for the construction of an expanded tipping floor, new access roadways, new bale storage and expanded maintenance bays.

Alachua County, FL. Project Manager. Evaluated three conceptual approaches to converting the existing transfer station into a mixed-waste processing facility. The evaluation included the development of conceptual modifications to the transfer station, an assessment of equipment and staffing requirements, waste processing and operation requirements, opinions of cost for construction, and estimating the annual diversion potential from landfilling. HDR developed a feasibility report detailing the most cost effective strategy.

EDUCATION

Bachelor of Science, Environmental Engineering,
University of Florida, 2005

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer

- Florida
- Georgia

LEED Accredited Professional

HDR TENURE

8 Years

INDUSTRY TENURE

10 Years



www.hdrinc.com

Experience Overview

Ms. Evans is an environmental engineer specializing in solid waste management and facilities design. She is experienced in landfill cell design, landfill closure design, landfill facilities design, landfill gas design, compliance monitoring, corrective measures evaluations, and stormwater control systems. Mrs. Evans has also prepared contract documents, performed bidding assistance, and CQA services. She also has experience in design of community planning, commercial and residential site developments, design of stormwater, potable water and sewer systems, and implementing leak detection and repair programs. Ms. Evans has ten years of engineering and project management experience.

Relevant Project Experience

Coxwell Resource Recovery and Recycling Facility, Jacksonville, FL.

Ms. Evans was the Project Manager responsible for performing a review of the Owner's proposed design basis and finalizing the design to a permit and construction level. HDR developed the permit documents which included an Operations Plan, Environmental Monitoring Plan, Closure Plan, Site Life Analysis, Volume Capacity Calculations, Financial Assurance Calculations and Staff Training. During the permitting, HDR provided assistance, attended meetings with regulators, and prepared formal responses to the questions developed by the regulators. Ms. Evans also performed site inspections and provided Final Construction Certification Assistance for the Owner.

DeKalb County Central Transfer Station, Decatur, GA. Ms. Evans was the Task Manager/Engineer responsible for the site design, grading plan, and stormwater control of a transfer station with an administration building and welding shop facility. Transfer Station was designed for 4,500 tons per day utilizing an open top loading of transfer trailers design. The design package also incorporated the demolition on an existing incinerator facility and an environmental study for groundwater and contaminated soils investigations for the 10-acre site. The transfer station supports 165 employees with offices, conference rooms, viewing gallery, cafeteria, and an elevator. Also assisted with bidding and construction oversight. As a LEED Accredited Professional, Ms. Evans also provided certification of the Civil Site Credits which allowed the Transfer Station to achieve LEED Certified Certification.

Animal Crematory, Decatur, GA. Ms. Evans was the Task Manager/Project Engineer responsible for the site design, grading plan, and stormwater control of an animal crematory. Design entailed two incinerator, three freezers, vehicle scale, stormwater pond to treat runoff and three phase erosion control plans. Performed permitting, bidding and provided construction assistance.

Solid Waste Rate Study and Collection Feasibility Study for the City of Macclenny, Macclenny, FL. Ms. Evans was the Project Manager responsible for the preparation of solid waste collection rate study. Rate study evaluated current costs of solid waste program, disposal fees, cost of future improvements and maintenance, potential population growth, process improvements to determine collection rates for residential and commercial customers.

CNG Feasibility Study for the City of Macclenny, FL. Ms. Evans was the Project Manager responsible for a study which compared alternatives for converting the city's waste collection fleet to use CNG vehicles.

ASHLEY EVANS, PE, LEED AP

Landfill Evaluation & Compliance

City of White Springs Impact Fee Study, White Springs, FL. Ms. Evans was the Project Manager responsible for the development of an impact fee study to evaluate the capital costs of the water, wastewater, law enforcement, emergency management, and recreation/parks. Impact fees were determined for single-family residential new developments as well as commercial and out-of-city limit developments. Met with town staff and mayor to present study and answer questions in preparation of commissioner's meeting and implementation.

Anne Arundel County, Capital Project Program, Annapolis, MD. Ms. Evans is the project manager overseeing budgeting, planning, engineering design, and construction of all solid waste capital improvement projects for the County of Anne Arundel. Due to the County's rapidly growing workload of capital project, consultants are used to assist with program management and project management. Ms. Evans works as an agent for the County in the same capacity as the County's in-house project management bureau. Projects currently managed by Ms. Evans include: Landfill Gas Extraction System for the Landfill Gas-to-Energy Facility; Scale House Renovation; Upgrades to the Millersville Convenience Center, Improvements to the Sudley citizen's drop off area; Cell 9 Waste Disposal Permitting and Construction, and Cell 8 Closure Design.

Winfield Solid Waste Facility - Cell Design, Permitting, Construction Documents, Permit Renewal, Lake City, FL. Ms. Evans was the Project Manager responsible for multiple projects at the Winfield Solid Waste Facility. The Facility consists of an existing 30-acre MSW Landfill, an 8-acre C&D Landfill, waste tire recycling facility, and citizen recycling center. Initially, Ashley managed a team which prepared and submitted a permit renewal for the entire existing facility. This project included significant modifications to the sites Operations Plan and CQA Plan as well as financial assurance calculations for the facility, remaining capacity calculations, and leachate recirculation. Shortly following, her team prepared and submitted an expansion permit add approximately 9 acres to the existing MSW Landfill. Following the permit approval, she led a team to prepare the construction bid documents for the new cell.

Central County Solid Waste Disposal Complex - LFG Design, Permitting, Bidding Assistance, CQA Oversight, Title V Compliance Reporting, and Tier 2 Sampling. Sarasota County, FL. Ms. Evans was the Task Manger/Engineer responsible for the development of a master plan layout which included 5 sequences for phasing construction of a LFGCS for 120 acres. Designed and permitted a landfill gas extraction system for the first phase (a 55-acre cell) and a gas control unit to destruct landfill gas from 120 acres. The design provided transitions enhancement for facilitate a future LFGTE project. Worked closely with regulators to streamline comments and approvals for the solid waste and air permitting. Prepared bid documents, assisted county with RFP, and provided CQA for the first phase of the LFGCS and gas facility. Performed Title V annual submission requirements by the FDEP for the site including Annual Statement of Compliance, Major Air Pollution Source Annual Emission Fee Form and Annual Operating Report. Perform Tier 2 sampling and final report from landfill gas data collected and submittal to the state regulatory agency.

EDUCATION

Master of Science, Civil Engineering, Cornell University, 2001

Master of Science, Natural Resource Economics, University of WI Madison, 1994

Bachelor of Arts, Economics/Finance, University of Vermont, 1990

PROFESSIONAL REGISTRATIONS

LEED Accredited Professional

HDR TENURE

7 Years

INDUSTRY TENURE

20 Years

Experience Overview

Christopher Behr is an economist and engineer with 20 years of experience in evaluating infrastructure investments. Recent work has focused on a variety of transportation infrastructure systems, including those connected to seaports. These projects have included assessments of construction cost and schedule risks as well as cost-benefit analysis. Other skills he has employed on projects include life cycle cost assessment, environmental valuation, and statistics. Often his projects include workshops in which he facilitates discussions on topics spanning technical engineering solutions and economic forecasts.

Relevant Project Experience

Sustainability Analysis of Green Design, Air Force Center for Engineering and the Environment. Principal Economist. Developing financial and sustainable value metrics to assist installation commanders plan efficiency investments in line with Department of Defense sustainability goals for waste, water, energy, and air pollution. Tool has been tested in several military installations in various parts of the U.S. Work is contributing to a decision support tool.

Economic Benefits of Smart Growth. EPA, Sustainable Communities Partnership. Project manager. Leading a comprehensive assessment of livability indicators in small and large communities across the U.S. to assess linkages with development patterns and economic development. The results aim to resolve key uncertainties about the economic benefits of sustainable community strategies by: 1) identifying policy-attributable indicators that can be easily quantified/observe; and 2) providing theoretical and/or empirical evidence that positive economic, environmental, and social outcomes (i.e., job creation, business attraction, increased productivity, reduced pollution, improved affordability) are associated with higher/lower values of these indicators.

Benefit-Cost Analysis Guidelines Development, US Department of Transportation / Office of the Secretary. Project Manager. Leading the effort to develop and improve guidance to states and localities regarding the application of Benefit-Cost Analyses (BCA) on transportation projects. The guidance is intended to have a direct influence on raising the consistency and quality of BCAs submitted for TIGER applications. In this project, HDR is developing guidelines on several key topics that are common in BCAs, with special focus on sustainability, livability and agglomeration.

Least Cost Planning – Oregon Department of Transportation.

Environmental Stewardship Team Lead. Developing an economics framework regarding performance indicators associated with air pollution, water quality, energy/greenhouse gas emissions, and ecological resources. A final set of performance indicators, including these environmental impacts, will be formulated into a tool to help regional planning organizations prioritize transportation projects against life cycle costs and benefits.



Cost-Effectiveness of Urban Stormwater Controls, NYC Department Economic Development, NY. Senior Economist. Developed a methodology for assessing the cost-effectiveness of incorporating low impact development (LID) systems into the city's plans for reducing combined sewer overflows (CSOs). The analytical method included a hydrologic assessment of the contribution of LID to reducing CSOs using real rainfall data. LID costs were evaluated on a life-cycle basis and compared against conventional infrastructure. Results include cost-effectiveness curves that identified the public and private investments.

Sustainable Places Analytical Tool (SPT), City of Austin, TX. Principal Economist. Supporting the city of Austin in its HUD Sustainable Communities Regional Planning Grant to develop a more effective municipal infrastructure planning tool. The Tool include both existing planning platforms and incorporate customized features that will include a number of elements in the HDR's Sustainable Return on Investment (SROI) framework that accounts for sustainable life cycle costs and benefits.

Triple Bottom Line Cost-Benefit Model, King County, WA. Principal Economist. Developed cost-benefit and triple-bottom-line models for evaluating alternative drinking water supply sources. The cost-benefit model computes the total net present value of projects and the distribution of costs and benefits among stakeholders. The triple-bottom-line assesses the alternatives under multiple criteria for financial, environmental and social objectives.

Cost-Benefit Analysis of Design Alternatives for Northern Treatment Plant – Denver Metro Water District. Supported a Sustainable Return on Investment (SROI) analysis of the various design alternatives for a new water treatment plant in Denver, Colorado. The study quantified all of the triple bottom line costs and benefits that occur under various design alternatives. The SROI process helped justify the District's investment in green technologies and practices.

Risk Analysis and Management – Newtown Creek Wastewater Treatment Plant, New York City Department of Environmental Protection, NY. Project Manager. Leading a risk analysis of construction at new treatment facilities at the Newtown Creek Wastewater Treatment Plant, in New York City. This plant is one of the largest facilities in New York City and is under a consent order to implement upgrades within a specified time-frame. This cost risk analysis has been conducted in the context and developed uncertainty ranges for statistical forecasts of escalation, the impact of limited bidders, and critical cost line items and event risks.

Education

Master of Science, Health Services Administration,
Harvard University, 1979

Master of Science, Engineering Management,
Northeastern University, 1978

Bachelor of Engineering, Mechanical Engineering (with
Distinction), McGill University, 1973

Professional Affiliations

Solid Waste Association of North America (SWANA)

American Society of Mechanical Engineers, Materials
and Energy Recovery Division past Chairman

HDR Tenure

9 Years

Industry Tenure

30 Years



www.hdrinc.com

Experience Overview

Mr. Worster has over 30 years of successful implementation-oriented project development, management consulting and executive management in the integrated solid waste management sector, including serving as the Executive Director of the North East Solid Waste Committee representing a regional consortium of 23 municipalities delivering their solid waste to a 1,500 TPD Wheelabrator owned energy from waste facility. His recent activities have included assisting public sector clients involved in regional waste to energy projects with transitioning at the end of term. He is a skilled manager of project teams consisting of engineers, environmental specialists, scientists, financial analysts, attorneys, and public and media relations specialists involved in the development, implementation and management of energy and environmental projects. He has interacted routinely with key stakeholders involved in environmentally, economically and politically sensitive projects, including federal, state and local elected officials and regulators, the media and non-governmental organizations.

Relevant Project Experience

Region of Peel, Brampton EFW End of Term Options Assessment, Brampton, Ontario, Canada. Mr. Worster serves as the Project Manager of the HDR team providing consulting services to the Region of Peel in its review of the Region's alternatives as its long term disposal contract with Algonquin Power Energy from Waste Facility comes to an end. HDR's activities include assisting the Region in their review of the ongoing role of the existing Algonquin Power Energy from Waste Facility and in reviewing potential treatment/disposal alternatives for the waste remaining after source reduction, reuse, recycling and composting. Technology options under review include out-of-Region landfilling, conventional (i.e. mass burn and refuse derived fuel options) and "emerging" conversion technologies, including mass plasma, gasification, and pyrolysis technologies.

County of Fairfax, Fairfax County Professional Engineering Services, Fairfax County, VA, Fairfax, VA. Mr. Worster has provided end-of-term negotiation and analytical support to the County's Negotiating Team as they address end-of-term issues regarding waste disposal services being furnished by Covanta. Mr. Worster evaluated and revised a financial model prepared by Covanta used to estimate costs and revenues associated with restructuring and extending the Service Agreement between Covanta and the County. The model examined the tipping fees and revenues to the vendor and costs to the County on a year to year and net present value basis.

The Regional Municipality of Durham, EFW Facility, Whitby, Ontario, Canada. Mr. Worster serves as the Project Manager of the HDR team providing consulting services to the Regional Municipality of Durham in procuring and implementing the first new energy from waste facility in Ontario in twenty years. This is a design/build/operate project, with an estimated capital cost in excess of \$230M. Mr. Worster provided support in the preparation of the request for proposals, the business case, development of emission limits, vendor selection, negotiations, and obtaining required regulatory approvals. The Notice to Proceed was issued to Covanta in August, 2011. Mr. Worster is HDR's project manager providing technical support throughout the construction, commissioning and acceptance testing of the Facility, anticipated in 2014.

New York City Department of Sanitation Mr. Worster is assisting the City in the implementation of its long term Solid Waste Management Plan. He is providing technical and analytical support during procurement and negotiation of the City's long term disposal program managing over 10,000 TPD. These public /private partnerships represent contract values totaling in excess of \$4 billion. Mr. Worster is also assisting the City in its current procurement of new and emerging solid waste management technology and assisted the City in its assessment of potential organic waste management opportunities at Hunt's Point.

The Harrisburg Authority, Harrisburg Resource Recovery Facility, Solid Waste Consulting Services, Harrisburg, PA. Mr. Worster was brought in to assist the Authority in its negotiations with Covanta regarding their assumption of operational responsibilities at the Harrisburg Facility in 2007/8. He assisted the Authority and its legal advisors in preparing and negotiating terms and conditions related to Covanta's assumption of operating responsibility for the Facility and provision of capital to fund required repairs/replacements.

Greater Bridgeport Regional Solid Waste, Greater Bridgeport Solid Waste Advisory Board, Bridgeport, CT. Mr. Worster served as the Assistant Project Manager of the HDR team, which provided consulting services to the Solid Waste Advisory Board. He assisted the municipalities to determine their needs, assess their system assets and options, and evaluate potential solid waste management alternatives as their existing EfW agreements came to an end. He has worked with the team in reviewing the status of seven existing transfer stations and two landfills, examining the costs associated with alternative disposal programs including developing a new waste to energy facility and long haul rail/truck to distant disposal locations, reviewing host community agreements, procuring transfer services and evaluating potential alternatives.

Bristol Resource Recovery Facility Operating Committee, Consulting Engineering Services, Bristol Resource Recovery Facility, CT. Project Manager. Mr. Worster served as the Project Manager on HDR's activities related to the development and implementation of the BRRFOC's long-term strategic plan. In 2007, HDR was brought in to assist the BRRFOC in assessing its options. Initial tasks include examining system options, regulatory and legislative issues, case studies of similar projects, review of objectives and development of implementation aspects of the plan.

Spokane Regional Solid Waste Disposal Pr, Waste-to-Energy Operator Procurement. HDR is provided services to the City of Spokane, WA for operator re-procurement upon expiration of the original facility O&M contract. Services include development of a new service agreement, contract negotiations, RFQ/RFP development, design documents, and evaluations for capital improvement projects to be implemented under the new agreement.

Town of Hempstead, New York Mr. Worster assisted the Town during its recent negotiations with Covanta regarding the provision of future long term disposal services upon expiration of the existing long term disposal agreement entered into in mid 1980s. The Town ultimately entered into a new 25 year contract with revised pricing and risk provisions.

EDUCATION

Master of Science, Engineering (Energy & Environmental Systems), Northeastern University, 1991

Bachelor of Science, Mechanical Engineering (Thermodynamics & Advanced Energy Systems), Northeastern University, 1981

PROFESSIONAL REGISTRATIONS

Professional Engineer

- California
- Connecticut
- Florida
- Massachusetts
- New Hampshire
- New York
- Washington

HDR TENURE

2 Year

INDUSTRY TENURE

30 Years



www.hdrinc.com

Experience Overview

Mr. Cleri is a senior project manager with background in energy from waste (EFW), renewable energy, and power projects, including feasibility and design, development, due diligence, construction monitoring, start-up, performance test monitoring, start-up, and operations. He has 30 years of engineering and project management experience in the energy industry and has worked on many EFW facilities, covering most EFW combustion technologies, and has worked on many wind energy farms, biofuels and ethanol facilities, fuel cell power projects, natural gas fired, simple cycle and combined cycle, combustion turbine power plants (IPPs), coal-fired power plants, integrated gasification combined cycle (IGCC) projects, internal combustion engine plants, combined heat and power (CH&P) plants, and district heating and cooling (DH&C) plants.

Mr. Cleri has experience in energy project development and project finance, including engineering evaluations of alternative configurations and analysis of overall project economics. He has provided mediation and negotiation services in energy generation, production, and commodity distribution. He has experience in environmental regulatory permitting and law. He has published articles in national and regional publications. He has been a guest speaker at industry conferences and teleconferences. He is also knowledgeable in pulp and paper energy systems and demand side energy conservation.

Relevant Project Experience

DSNY, Alternate Technical Procurement, New York, NY. As senior project engineer, Mr. Cleri provided technical assistance in the preparation of a request-for-proposals (RFP) for new and emerging solid waste technologies to be employed in the metro-New York City area using solid wastes collected by the DSNY. Mr. Cleri is now reviewing proposals submitted by respondents to the RFP.

The Regional Municipality of Durham, EFW Facility, Ontario, Canada. As senior project engineer, Mr. Cleri is providing technical assistance to the Regions of Durham and York and their financial consultants with regard to the conceptual design and development of a 140,000 ton-per-year EFW Facility. Mr. Cleri's work includes review of project design and specifications.

Region of Peel, Brampton EFW Facility, Brampton, Ontario, Canada. As senior project engineer, Mr. Cleri is providing technical assistance to the Region of Peel and its financial consultants with regard to the proposed life extension of an existing EFW facility or the conceptual design and development of a new 200,000 400,000 ton-per-year EFW Facility.

Northeast Maryland Waste Disposal Authority, Harford Waste-to-Energy Facility, Aberdeen Proving Ground, MD. Mr. Cleri is the project manager for a project for Harford County and the Northeast Maryland Waste Disposal Authority (NMWDA) whereby HDR is performing a reuse feasibility study of the Harford Waste-to-Energy Facility (HWTEF), which is approaching its contractual end of life. Because the HWTEF is situated on and presently provides thermal energy to the U.S. Army's Aberdeen Proving Ground (APG), Mr. Cleri is working closely with U.S. Army representatives and APG Command to identify reuse options that will continue to serve the needs of the APG and satisfy the U.S. Military's sustainability objectives as well as mission critical objectives.

Northeast Maryland Waste Disposal Authority, Baltimore Compost Facility, Baltimore, MD. As senior project engineer, Mr. Cleri provided technical assistance to the Northeast Maryland Waste Disposal Authority with regard to reviewing ongoing operations and maintenance of the Baltimore Compost Facility, which is a facility that generates agricultural-grade compost from organic wastes.

Northeast Maryland Waste Disposal Authority, Frederick Carroll Counties Waste-to-Energy Facility, MD. Mr. Cleri is the project manager for a feasibility study of exporting steam to potential offtakers for this newly proposed 1500 tons per day, EFW facility that generates electricity from MSW.

Brooklyn Cogeneration Partners, Brooklyn Naval Yard Power Plant, Brooklyn, NY. As senior project engineer, Mr. Cleri performed a technical and economic analysis of potential cooling water retrofit options that would technically and aesthetically be feasible at the Brooklyn Naval Yard Power Plant while also allowing the power plant to satisfy environmental regulatory requirements pursuant to federal cooling water discharge requirements.

Connecticut Resources Recovery Authority, Mid Connecticut Project, Hartford, CT. As senior project engineer, Mr. Cleri reviewed the condition, operations and maintenance (O&M) practices, the O&M budget, and the capital expenditure budget for, and provided other technical assistance to the Connecticut Resources Recovery Authority with regard to the Mid-Connecticut Project, which is a refuse-derived-fuel, EFW facility that generates electric power from pre-sorted MSW.

North Shore Towers Apartments Inc., Total Energy Plant, New York, NY. Mr. Cleri is the project manager assisting North Shore Tower Apartments with environmental regulatory permitting support for its Total Energy Plant, including renewal of its NYSDEC Title V Air Permit, preparation of a NOx RACT analysis, and other tasks as requested by the NYSDEC. One objective is to help NYSDEC staff to better comprehend the technologies employed at the Total Energy Plant.

Confidential Client, Confidential Biogas Energy Renewable Natural Gas Project, Fresno County, CA. Mr. Cleri was the project manager for a confidential client whereby HDR performed a technical fatal flaw, independent engineering review of the principal aspects of a proposed confidential renewable natural gas project, designed to be an anaerobic facility that would digest manure and organic food-processing residuals (substrate) to produce biofuel, after which the biofuel would be conditioned to pipeline grade gas using pressure swing adsorption technology, and then sold to a regional natural gas supplier/utility as a renewable biomethane. HDR's objective was to assist the client in identifying clear obstacles or faults in the preliminary project planning and design.

R. W. Beck, Incorporated / Science Applications International Corporation (SAIC). As a Senior Consultant, Mr. Cleri performed due-diligence consulting and feasibility/design engineering for power, renewable energy, and EFW projects for lenders, developers, owners/operators, and municipalities. A majority of Mr. Cleri's due-diligence work was in support of project finance, particularly non-recourse financing, and project development.

EDUCATION

Graduate Studies, Environmental Engineering,
University of Florida

Bachelor of Science, Environmental Engineering,
Rensselaer Polytechnic Institute, 1973

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer

- Illinois
- New York

HDR TENURE

15 Years

INDUSTRY TENURE

23 Years



www.hdrinc.com

Experience Overview

Ms. Raila is an environmental engineer specializing in solid waste management and planning and environmental analysis. She has managed a wide variety of municipal projects including various environmental studies, including those for landfills, recycling and WTE facilities. She has experience with both the municipal and private sectors, and has been involved with facility procurement and development, permitting, planning and project funding. She formerly served as the director of technical services for the NYC Department of Sanitation, and managed the EIS for the Brooklyn Navy Yard WTE facility as well as for the Fresh Kills Landfill. A sampling of relevant project experience includes:

HDR Project Experience

Alexandria/Arlington, Technical and Administrative Support for the WTE Board of Trustees, VA. Ms. Raila currently serves as the Project Manager for providing executive, technical and administrative support for the Alexandria/Arlington WTE Board of Trustees. In her role, she attends monthly trustee meetings, reviews payments, coordinates facility monitoring and reporting, manages project revenue and economic forecasts for the Trust Fund, and provides support on technical issues related to the operation and performance of the WTE facility, to meet the needs of the constituents of the City and County. She has managed the development of various financial scenarios, managed the WTE related portions of an Industrial Use Study for the City of Alexandria, as well the preparation of a brochure for the public on the WTE facility. She also addresses the technical and financial needs of various on-going projects at the WTE Facility, and is currently working with the Trustees to develop a plan for an end-of-term strategy, beginning in 2013, when the WTE facility becomes a merchant facility.

Fairfax County, Project Management Plan for WTE facility VA. Ms. Raila managed the development of a Project Management Plan for dealing with end-of-contract issues for the County's WTE facility. Alternatives considered include extension of the Service Agreement, facility purchase, renegotiation of a new Service Agreement and landfilling. She managed a number of technical tasks which resulted from that Plan, and included an assessment of costs for replacement of equipment at the existing facility, an evaluation of the vendor's financial model, and an evaluation of O&M and pass-through costs. She is currently working with the County on moving forward on negotiating a new contract with the Facility's operator.

DSNY, New York City Department of Sanitation, Implementation of the County's Solid Waste Management Plan, NY. Ms. Raila manages the on-going contracts for contract negotiations and technical support services for the implementation of the City's long-term strategy for solid waste management.

DSNY, New York City Department of Sanitation, Draft Environmental Impact Statement (DEIS) for Solid Waste Management Plan, NY. Ms. Raila coordinated the public scoping efforts for the DEIS for NYC Department of Sanitation's 20-year Solid Waste Management Plan, which included 10 scoping and 8 DEIS hearings in identified EJ areas. She identified issues and prepared the Response to Public Comments, as part of final project scoping. Ms. Raila was responsible for review of EIS documents and preparation of the Solid Waste Management Plan. She was also involved in proposal evaluation for private waste facility alternatives.

DSNY, DEIS for WTE Facility, Brooklyn, NY. As Director of Technical Services for the Department, Ms. Raila was responsible for managing the DEIS for the construction of a WTE facility in Brooklyn. She managed related studies including supplemental air analyses and peer review for dioxin analysis. In addition, Ms. Raila managed environmental analyses for the Fresh Kills Landfill on Staten Island.

Lee County, Solid Waste Plan Update, FL. Ms. Raila managed the plan update utilized by the County to determine future solid waste needs for each waste stream. Waste quantities were determined and projected for a 20 year period for processible and non-processible waste streams, as well as vegetative waste, C&D, recyclables and tires. Gaps were identified where current capabilities could not meet future demands for handling the materials. The update led to the recommendation of a resource recovery facility expansion and banning of C&D from existing County facilities. As part of the study, capital costs for the expansion were prepared.

Town of Wallingford, CT. Ms. Raila was the Project Manager for evaluating alternatives for the Town of Wallingford, after the current contract term between the CRRA and the vendor has ended.

Lee County, Rate Study & Engineer's Feasibility Report, FL. Ms. Raila managed the preparation of a rate study which included examining means of funding solid waste systems throughout the County. The existing mechanisms for funding the County's solid waste programs were examined, and problems identified. She assisted with the development of a commercial and residential waste quantification program to aid the County in developing waste assessment rates, enabling the County to lower its tip fee to a competitive rate.

Lee County, Materials Recovery Facility (MRF) Modernization and Relocation, FL. Ms. Raila managed the first phase of project to relocate the existing 200 tpd MRF to a site on the WTE property, including Basis of Design Report.

City of Newark Solid Waste Action Plan, Newark, NJ. Ms. Raila was the Project Leader for the City of Newark's solid waste action plan, evaluating the existing system, including collection, recycling and transport, in light of the City's growth and development. The project also examined revenue enhancement and code revision. Recommendations made will be utilized as a template for defining solid waste management in the future.

New York City Department of Sanitation, Landfill Consulting Services, NY. Ms. Raila was Project Manager for providing various landfill studies to the Bureau of Waste Disposal, including odor analyses, section surveys, evaluating odor control products by means of an odor panel, evaluating the use of alternatives as cover, and evaluating effective barge coverings for waste transport.

Hudson County Improvement Authority, Feasibility Analysis, NJ. Ms. Raila served as Project Leader in preparing a competitive tip fee analysis for the Authority's solid waste system.

EDUCATION

Master of Science, City Planning, University of California at Berkeley, 1970

Bachelor of Arts, Political Science/Economics, Yale University, 1968

PROFESSIONAL REGISTRATIONS

LEED Accredited Professional

Project Management Professional (PMP)

PROFESSIONAL AFFILIATIONS

- National Trust for Historic Preservation, Member, 1970-2007

HDR TENURE

7 Years

INDUSTRY TENURE

30+ Years



www.hdrinc.com

Experience Overview

Mr. Bass serves as Director of HDR's Development Advisory Services. His experience includes work on public-private partnerships (P3s), alternative delivery approaches, planning and implementation of community and transit oriented development, and large scale mixed use real estate projects. His recent work includes using locally based public-private partnerships to finance and implement streetcar systems; and business plan development for the Colorado Spaceport. Mr. Bass brings over 30 years of experience on large scale planning, and development projects and programs; and in feasibility analysis, transactions and program implementation. His experience and his professional inclinations lead him to specialize in finding solutions to problems that require multidisciplinary approaches and input from both private and public sector viewpoints. He has worked as advisor, manager, and principal on projects and programs in over 60 cities, 10 countries and for the World Bank, USAID and the Inter-American Development Bank. In addition, Mr. Bass has worked with many corporate, municipal and other public agency clients on a wide range of real estate development, transaction, planning and financing matters. He is also an expert at "highest and best" use analysis of sites and buildings, and optimizing leverage from real estate portfolios.

Relevant Project Experience

DDOT Streetcar System – Washington, DC: Task Co-leader on the development and implementation of the Finance Plan of the 22 mile \$1.5 billion modern streetcar system, and task advisor/reviewer on finance and institutional aspects of the procurement process including from RFQ through RFP. The procurement is expected to be a DBOM or P3 long term concession.

Colorado Spaceport – Denver, CO: Business Team Leader for the Licensing Application, Feasibility Studies and Business Plan development for the Colorado Spaceport project (existing Front Range Airport outside Denver) which is in the process of applying for an FAA license as a commercial horizontal launch spaceport facility. Responsible for market analysis, economic/feasibility studies and business plan development.

Atlanta Streetcar Expansion Strategy – Atlanta, GA: Task Leader (as Sr. Financial Analyst) of "Evaluation of Financing Options" and also supporting "Project Delivery Options", Business Plan development and advising on general strategy and program management matters for expansion of the current Downtown Streetcar (under construction) towards an eventual 60 mile system.

Streetcar Financing Studies - Austin, TX; Minneapolis, MN; Omaha, NE; Kansas City, MO; Salt Lake City, UT; Dallas, TX; Ft. Lauderdale, FL; and St. Louis, MO. Lead Advisor. Mr. Bass has advised on designing strategies for funding of streetcar systems in each of these localities, by examining the feasibility of using local resources derived from Tax Increment sources, special assessment districts, sale of land development rights, parking revenues and other local resources; and combining these resources with Federal and private money, often in the form of a P3.

Transit Oriented Development - Austin, Texas; Dallas, Texas; Omaha, Nebraska; Virginia Beach, Virginia. Lead Advisor Mr. Bass worked with a team of local and national consultants investigating the feasibility of establishing a transit oriented "Town Center" type development in Leander at the end of one of Capital Metro's Commuter Rail lines that opened in March, 2010. He has also, for Capital Metro, studied the economic and financial feasibility of a mixed use project (including 800 housing units) on 11 acres of its land at the second closest to downtown station on its rail line. He completed a major study of TOD potential on Parkland Hospital's 50 acre site, surrounding what will be the busiest station on Dallas' new light rail line, when it opens in late 2010.

Public-Private Partnerships for Facility Development/Redevelopment.

Lead Advisor. Mr. Bass advised two Community Redevelopment Agencies in Florida; a municipality in Florida; a transit district; and a hospital in Minneapolis on ways they can use their existing landholdings to create public private partnerships that help them obtain needed facilities in the context of value added mixed use "town center" type developments including housing, retail and other commercial uses in addition to the public facilities.

1st Nationwide Bank - Sacramento, CA. As National Real Estate Manager (five years) for this \$30 billion asset savings bank, was responsible for programming and satisfying the Bank's corporate real estate and facilities needs throughout the nation (22 states, 300+ buildings, 4 million SF). Among other responsibilities from 1989 to 1995, completed site search, feasibility and cost comparison analyses, and negotiated leases for new 100,000 SF headquarters in San Francisco, and a build-to-suit 300,000 SF operations campus in Sacramento.

Business Park Site Searches, Feasibility Studies, Financing and Negotiations, Kaiser Development Co., Oakland, CA. Three-year contracted management/advisory role to Kaiser Development (former subsidiary of Kaiser Aluminum) during 1980s on land acquisition and development of 10 large business/industrial parks in southern California. Land acquisitions ranged in value up to \$25 million and build out values of \$200 million. Role involved formulating financial models and plans, evaluating and initiating entitlement process, and recommendations to Kaiser Development on whether to pursue particular projects.

"Taming Tyson's Corner" Study: 2004-2005: Mr. Bass completed the economic and fiscal analysis parts of the "Taming Tyson's Corner" plan and study presented at the AIA's national conference "Communities on the Line" in Washington DC (Fall, 2004). This plan showed ways Tyson's might develop as a more balanced residential/commercial hub following introduction of 4 Metrorail stations and what some of the economic, financial and transportation impacts might be. See reports at www.tamingtysons.com

PEER
CONSULTANTS, P.C.

Est. 1978

CONTACT INFORMATION

PEER Consultants, P.C.
202 472060
abronl@peercpc.com

EDUCATION

Ph.D., Chemical Engineering,
University of Iowa
M.S., Environmental and Sanitary
Engineering, Washington University
B.S., Chemistry, LeMoyné College,
(Graduated with Distinction)

REGISTRATIONS & CERTIFICATIONS

Professional Engineer (DC)
Board Certified Environmental
Engineer (BCEE)

SPECIALIZED TRAINING

Greenhouse Gas Inventory and Audits
Preparation of Carbon Emission
Reduction Portfolio (tracking and
retirement)

AFFILIATIONS

Water Environment Federation
American Water Works Association
American Society of Chemical
Engineers
Federal Water Quality Administration

LILIA A. ABRON, PHD, PE, BCEE**Sr. Environmental Engineer/Energy Efficiency and Conservation Programs/Training, Education, Outreach**

Dr. Abron, the first African-American woman to earn a Doctorate in Chemical Engineering, has over 40 years of experience managing and directing domestic and international engagements for both federal and municipal clients. She is President, Chief Executive Officer and Founder of PEER Consultants, P.C. (PEER), an environmental engineering consulting firm founded in 1978 and one of the largest black, female-owned and operated, environmental engineering firms in the U.S. The company provides the full range of professional engineering services. Dr. Abron is also the President and Founder, of PEER Africa (Pty) Ltd., an innovative design-build, sustainable development company with offices in Johannesburg and Cape Town, South Africa. PEER Africa's mission is to develop innovative "best practice paradigms", that showcase environmentally sound and energy-efficient projects that contribute to the eradication of poverty, and promote and enhance sustainable economic development on the continent of Africa and other countries in the developing world with similar development goals. In 2000, Dr. Abron also founded PEER Global Environment Foundation, a not-for-profit corporation that raises funds through grants, contracts, and contributions for the planning and implementation of sustainable economic development projects in developing countries.

Dr. Abron's extensive and long standing experience on Washington, DC projects and her resulting abilities to understand the needs of the City for this work will be invaluable alternative are developed and discussions are held to determine the best alternative. She will serve as a valuable technical resource to the client and the team.

SELECTED EXPERIENCE**TEAMING PARTNER AND SR. MEMBER, DISTRICT OF COLUMBIA SUSTAINABLE ENERGY UTILITY**

The DC SEU is designed to help District households, businesses, and institutions save energy and money through comprehensive energy efficiency and renewable energy programs. The DC SEU exists to: create green jobs for District residents, stimulate the local economy, reduce energy use throughout the District, improve the efficiency of housing for low-income residents, reduce the growth of peak electricity demand, and increase renewable energy generating capacity. During its initial year (2011) the DC SEU spent 30% of its budget retrofitting 5,000 low-income units reducing energy consumption by 20% to 30%. Also provided training and education to unit residents to help them understand the importance of conserving energy in their daily lives. In 2012, focused on training and behavior change programs and expanded the direct install as part of their routine building maintenance programs with property managers of low-income units. As a senior member of the DC SEU team, primary responsibilities include:

- Plan and implement programs across all sectors to reduce energy use by 1%/capita/yr.
- Implement the Commercial Direct Install program, swapping high-energy usage appliances and fixtures for low-energy and water usage conservation devices in small commercial businesses. (Similar programs are instituted in low-income residential sectors as well.)
- Manage all community outreach and training to District residents, business owners, and all impacted communities of the DC SEU about how they can work together to bring a brighter energy future to the District.



ENERGY EFFICIENT, SUSTAINABLE HUMAN SETTLEMENTS, SOUTH AFRICA

Principle-In-Charge for design and implementing management for the installation of new energy-efficient, sustainable communities in poor to very poor townships in South Africa. All new residential and commercial construction incorporates the highest, affordable and appropriate standards of energy efficiency (i.e. passive-solar design principles), energy conservation (i.e. teaching residents to change energy use behavior patterns), sustainability, and security. PEER's expertise in planning and providing oversight and evaluation measurement and verification (EV&M) to residential and commercial retrofit projects results in achieving maximum levels of energy efficiency and sustainability – e.g. lighting and showerhead swaps; utilization of clean, safe, energy-efficient cook stoves; utilization of solar thermal hot water system; additional insulation (where possible); improved shading and insulation. The team has built or renovated over 5,000 homes in very poor communities throughout South Africa. Due to PEER's activism, the South African Government rewrote its codes and standards for building structures and communities in low-income markets entirely and financed the restructuring with government funds. PEER also performed a Green House Gas (GHG) baseline determination for traditional township housing and evaluated emissions for the new energy efficient homes. The savings of GHG emissions on the new houses have been quantified, monetized and are being traded on the carbon emission reductions markets worldwide.

PILOT GREEN LOAN PROGRAM, INTERNATIONAL

PEER conceived and managed a pilot Green Loan program funded by the Global Environmental Facility and the International Finance Cooperation. The loan provided bridge financing to finance energy efficient projects selected by PEER being performed by small, medium and micro-businesses/ESCOs seeking to deliver energy efficient housing, energy audits, renewable energy technologies, and sell energy efficient products and services in low income communities for low-income properties and facilities. That pilot program is similar to what is now being termed PACE programs. The difference however is that the loans are made to the contractors and not the beneficiaries of the services.

I/I AND SSES STUDY FOR WASHINGTON, DC.

Subcontractor project manager and senior environmental engineer for the preparation of the first I/I and SSES Study for Washington, DC. In 1980. Included flow monitoring, identification and documentation of exposed sewers and manholes, manhole inspection, quantification of inflow and infiltration, flow modeling and data management and analyses and well as interim and final report preparation.

CONSTRUCTION MANAGEMENT PROGRAM MANAGEMENT CONTRACT, WASHINGTON, DC

PEER Principal-in-Charge for the initial CM contract providing engineering design and construction management and inspection services for the Blue Plains WWTP in the mid 1990s. PEER has worked as a subcontractor or prime contractor on the CM work at Blue Plains from its early beginnings to the present. Dr. Abron's efforts and understanding of the needs of the program contributed to PEER's ability to continuously be involved with construction management and inspection and resident engineering services at the Blue Plains WWTP.

BLUE PLAINS INDUSTRIAL PRETREATMENT PROGRAM DEVELOPMENT, WASHINGTON, DC

PEER Program Manager for the development of the Blue Plains Industrial Pretreatment Program as it exists today. This program enabled Dr. Abron to obtain first hand knowledge of the industries in D.C. and their discharges to the District's sewer systems. This project also required extensive sampling of the flow in the District's sewer system and then a characterization of that flow.

WATER AND SEWER ASSET INVENTORY, WASHINGTON, DC

PEER Project Engineer and Program Manager for the establishment of the water and sewer fixed assets at 1983 and then reassessing them at 1985 and 1988. In order to perform this project, PEER had to inventory the entire sewer (combined and separated) system existing in D.C.

FEASIBILITY STUDY FOR THE BLUE PLAINS PLANT, WASHINGTON, DC

PEER Program Manager for the project which included the determination of delinquent water accounts and the preparation of lien documents; a review of the water billing complaints and customer service information and software and the preparation of recommendations to improve the system and the PEER Program Manager for the development of the existing water and wastewater rate structure.

PUBLIC PARTICIPATION AND OUTREACH

25 years of planning, managing and implementing public outreach programs of all types (print, meetings, seminars, electronic) in the Washington Metropolitan Area for the Washington Suburban Sanitary Commission, District of Columbia Department of Public Works and the Water and Sewer Authority, Washington, DC Sports and Entertainment Authority, Maryland National Capitol Park and Planning Commission and the Washington Metropolitan Transit Authority.

**CONTACT INFORMATION**

PEER Consultants, P.C.
781-238-8880
corlissj@peerpc.com

EDUCATION

M.S. Industrial Engineering, Purdue University
M.S. Public Policy & Administration, Krannert School of Management – Purdue University
B.S.E. Urban Systems, Purdue University

REGISTRATIONS & CERTIFICATIONS

Professional Engineer (MA)
ACEC Green Infrastructure & Sustainable Development
Lean/Six Sigma, Yellow Belt
Intro to Public Assistance (FEMA)

AFFILIATIONS

New England Water Environment Association/Water Environment Federation
Institute of Industrial Engineers (Sustainable Development Division President)
Project Management Institute

JOHN M. CORLISS, JR., PE

Urban Systems Engineer, Planner, Management Consultant, Sustainable Development Specialist

Mr. Corliss serves as the Director of A&E Services at PEER Consultants. A public sector problem solver, he has a keen understanding of the needs of government officials and a proven track record of successfully developing and positioning projects for success. Mr. Corliss is at his best working on multidisciplinary projects and his management, process, and team-building skills have led to numerous challenging assignments. With more than 30 years as a national and international government manager and consultant, he has led many infrastructure development and institutional strengthening projects from strategic planning and conceptual design through design and implementation.

SELECTED EXPERIENCE**NORFOLK STATE UNIVERSITY (NSU) NEW LIBRARY DESIGN AND CONSTRUCTION, AND OLD LIBRARY DEMOLITION, NORFOLK, VA**

Project manager for the site civil design and construction management for a new “centerpiece” library on the campus of Norfolk State University. A main utility corridor crosses the building site. This required the relocation telecommunication, water, drainage and sewer lines. The site was bisected by a city easement and drainage box culvert. Worked with the city to reconfigure the easement, design the relocated section of the box culvert and provide construction management services. Soil conditions required piers to support the building foundation. Also Project Manager for the pre demolition hazardous materials inspection of the adjacent existing library, the design of abatement plans and the monitoring of the abatement plan implementation. All site civil work had to be designed and sequenced to allow the continued operation of the existing library while the new library was under construction. The project received LEED Silver certification.

LONG-TERM COMMUNITY RECOVERY PLAN, METRO NASHVILLE / DAVIDSON COUNTY, TN

Project Manager of a team of two dozen engineers, scientists and planners evaluating the impact of the flood and developing projects that would place Nashville back on its pre-flood development path and do so in a sustainable and green manner. This 12-week project included extensive community participation (over 25 public opportunities to provide input, an online idea-gathering website, and over 25 working group meetings). From over 2,000 ideas, developed the 25 projects judged to have the highest recovery value, calculated budgets and identified funding sources. Developed seven “Complete Community Visions” showing how combinations of these projects at a neighborhood level could significantly affect the quality of life and economic prosperity. A sustainability/recovery value scorecard was developed to evaluate proposed recovery projects.

HURRICANE RELIEF LONG-TERM COMMUNITY RECOVERY PLANNING, ORLEANS, ALLEN & JEFFERSON DAVIS PARISHES, LA

Led interdisciplinary teams in intensive efforts to develop bottom up sustainable recovery plans to guide Orleans, Allen and Jefferson Davis Parishes’ recovery from the effects of hurricanes Katrina and Rita. Led public meetings and chaired working groups. Given success leading the Allen Parish team, was asked to simultaneously lead the Jefferson Davis team producing similar results in half the time. Once this was completed, was asked to lead an “all-star” team assigned to complete the Orleans Plan. The parish plans have been used in prioritizing funding and as input to a statewide Master Plan.



MASSACHUSETTS WATER RESOURCES AUTHORITY PERFORMANCE MEASUREMENT, BOSTON, MA

Responsible for developing monthly and quarterly performance measures for each Sewerage Division operating unit and working with department heads to compile measures on a monthly basis for senior management review and on a quarterly basis for Board of Directors review.

MASSACHUSETTS WATER RESOURCES AUTHORITY WASTEWATER TREATMENT PLAN METRIC BENCHMARKING, BOSTON, MA

Served as MWRA liaison with the Water Environment Research Foundation Benchmarking Wastewater Operations – Collection, Treatment and Biosolids Management project. Provided the WERF team with all requested information on MWRA wastewater operations. The resulting report presented a formula for assessing Wastewater Treatment Plant operating costs based on the specific characteristics of the plant. Using this model, performed a detailed assessment of the operating costs of the new Deer Island Wastewater Treatment Plant.

FEMA DISASTER RECOVERY GRANTS CONSULTING AND MANAGEMENT, SPRINGFIELD, MA

PEER Program manager and consultant reviewing the DevelopSpringfield Long-Term Recovery Plan and making recommendations on potential funding sources and reviewing all previously submitted FEMA project worksheets that had not been approved, providing new analysis, revising the documentation and resubmitting to FEMA. Successful in gaining hundreds of thousands in additional reimbursements to the City of Springfield.

NORFOLK STATE UNIVERSITY (NSU) MASTER PLAN, NORFOLK, VA

Project manager for the site civil aspects of the University Master Plan for Norfolk State University. Led the finalization of the underground utilities, drainage, environmental, transportation and parking aspects of the Master Plan.

NATIONAL SEWERAGE PROGRAM, BRITISH VIRGIN ISLANDS

Program Manager of a 30+ person multi-national team in the successful creation of 16-year, \$141m infrastructure development plan. Supervised an environmental assessment of dozens of proposed ocean outfall and effluent land application sites. Supported development of the facilities plan for the first project implemented under the plan.

WEST AFRICA WATER INITIATIVE (VARIOUS DOMESTIC AND INTERNATIONAL LOCATIONS)

Planning Consultant leading Strategic Planning workshops and co-authoring the partnership's Strategic Plan. Facilitated two Partners' Headquarters Meetings (New York and London), guiding the policy and planning efforts of 13 international and governmental organizations supporting improved health and economic development through the provision of wells and sanitation facilities in Ghana, Niger and Mali.

MASSACHUSETTS WATER RESOURCES AUTHORITY – PLANNING PROGRAM MANAGER, BOSTON, MA

Created the vision and oversaw the growth of a multi-disciplinary 12-person planning program for the US's second largest wastewater utility. In order to provide the MWRA with the capacity to perform in-house planning and analysis, proposed and managed the development of the Sewerage Analysis and Management System (SAMS). This computerized decision support system utilized a GIS interface to tie together digital images of design drawings and data base information on the characteristics of each pipe section and manhole including television inspection data. This information was then used to develop a hydraulic (SWMM) model of the MWRA interceptor system. The system also tied into environmental impact models to determine the affect of various strategies on receiving water quality.

MASSACHUSETTS WATER RESOURCES AUTHORITY (MWRA) STAFFING STUDY, BOSTON, MA

Management team for a project to evaluate 2011 staffing levels following a concerted 10 year effort to reduce staff. Objective is to determine if the existing distribution of staff is appropriate for the coming decade. The project includes interviewing MWRA program managers to gather information on organization, responsibilities, performance measures, current and future work load; metric benchmarking against other similar agencies and developing recommendations.

MASSACHUSETTS WATER RESOURCES AUTHORITY BENCHMARKING PROJECTS, BOSTON, MA

Led the Sewerage Division's Benchmarking and Competitiveness projects. Benchmarking included process mapping, quantitative benchmarking via phone survey of peer agencies and leading qualitative benchmarking to locations across the country. Business areas evaluated and improved included: CCTV Inspection, Pumping Station and Headworks Maintenance, Toxic Reduction and Control. The competitiveness study looked at the overall organization of the Authority and the 10-year projected staffing requirements.

MASSACHUSETTS WATER RESOURCES AUTHORITY COMPETITIVENESS STUDY, BOSTON, MA

Designed the study, wrote the scope of work, coordinated the consultant selection process and managed the initial phases of the study. Based on an extensive peer review, the study recommended a more than 15% reduction in staffing over five years and a revamped, highly participatory MWRA improvement program to help achieve these reductions without reducing the level or quality of services provided.



CONTACT INFORMATION
 PEER Consultants, P.C.
 202-779-0686
 lemme@peerpc.com

EDUCATION
 B.S. Civil Engineering, University of
 Arizona

REGISTRATIONS & CERTIFICATIONS
 Professional Engineer (MA, MI, VA, FL)
 Asbestos Inspector (VA)
 Asbestos Designer (VA)
 Asbestos Consultant (FL)
 OSHA 40-hour Safety Training
 EPA-Certified AHERA Building Inspector,
 Management Planner and Design
 Professional
 NIOSH 582 Airborne Asbestos
 Identification Course

AFFILIATIONS
 Michigan Society of Professional
 Engineers/National Society of
 Professional Engineers (Past President
 Detroit, MI and Miami Chapters)
 Michigan Water Environment
 Association/Water Environment
 Federation

PAMELA A. LEMME, PE

Sr. Environmental Engineer, Environmental Impacts/Environmental Permitting Specialist

Ms. Lemme serves as PEER's Director of Environmental Services and is a professional engineer with almost thirty years of experience in civil and environmental engineering. Her experience includes projects related to asbestos, hazardous materials/wastes and toxic wastes inspections and abatement; environmental assessments; environmental compliance audits; site/civil design; solid waste management; spill prevention, control, and countermeasures; wastewater collection/treatment; and water resources. Ms. Lemme has managed projects ranging in size from approximately a few hundred dollars for environmental studies to more than \$11 million for construction management. These projects included coordinating the efforts of civil, mechanical, and electrical engineers, and architects. Each of these projects was completed within the required timeframe and within or below their respective budgets. She has been responsible for conducting surveys to identify and document the presence of hazardous materials; collecting samples; preparing reports; making recommendations to building owners regarding operations and maintenance procedures; preparing plans and specifications for abatement; and directing personnel during asbestos removal surveillances.

SELECTED EXPERIENCE

COMPREHENSIVE SOLID WASTE MANAGEMENT PLAN, WASHINGTON, DC

Analyzed the characteristics of the District's waste stream from documents and data provided by the District; estimated annual tonnages projected over a twenty year period; reviewed landfill options available to the District; researched information to identify economic development opportunities in the solid waste industry, specifically those related to the waste reduction and recycling; assisted in providing background information for the development of other phases of the solid waste management plan; and, assisted in preparing the reports of the findings.

BIO-SOLIDS AND YARD WASTE MANAGEMENT STUDY, ORANGE COUNTY, FL

Reviewed and analyzed current and proposed compost and landfill gas regulations and analyzed the market potential for yard waste composts. Also performed a market assessment of bio-solids products use in the County.

LONG-TERM COMMUNITY RECOVERY PLAN, METRO NASHVILLE / DAVIDSON COUNTY, TN

Deputy Project Manager of a team of two dozen engineers, scientists and planners evaluating the impact of the flood and developing projects that would place Nashville back on its pre-flood development path and do so in a sustainable and green manner. This 12-week project included extensive community participation and resulted in the development of 25 high recovery value projects and seven "Complete Community Visions" showing how combinations of these projects at a neighborhood level could significantly affect the quality of life and economic prosperity. Responsible for the infrastructure, public safety and emergency preparedness aspects of the study as well as management administration and coordination.

NORFOLK STATE UNIVERSITY NEW LIBRARY DESIGN AND CONSTRUCTION, AND OLD LIBRARY DEMOLITION, NORFOLK, VA

Ms. Lemme is the lead engineer for the site/civil design of a new library at Norfolk State University. The site/civil design includes providing water, sewer and utility



connections; grading of the site; pavement design for sidewalks and driveways; rerouting of utilities; and relocation of 48-inch and 72-inch drainage box culvert and corresponding drainage easement.

JAIL EXPANSION FEASIBILITY STUDY, RICHMOND, VA

Performed Civil Engineering and Hazardous Materials assessments for the development of an expansion plan for the Richmond Jail. Services included an assessment of the adequacy of adjacent city utilities to support the proposed enlarged facility.

KENDALL INDIAN HAMMOCKS PARK, MIAMI, FL

Developed plans and specifications for water and sewer connections to a new field house and designed an access road for maintenance of the field house and fire rescue/emergency access to the fields.

NEW GENERAL AVIATION CENTER AT MIAMI INTERNATIONAL AIRPORT, MIAMI-DADE, FL

Engineer-of-record for the site civil design of the New General Aviation Center at Miami International Airport, FL. The design included water and sewer connections, stormwater drainage for landside and airside, grading/paving for parking and apron areas, and road access and drainage for the security access gates and main entrance to the site.. The concept for the General Aviation Center was to construct a 13,000 SF, one-story structure with airside and landside parking, and an apron with capacity for two DC-10s to house FAA, general aviation, USDA and other related operations.

MIAMI INTERNATIONAL AIRPORT AIRCRAFT WASH RACK, MIAM-DADE, FL

Project Manager and Engineer-of-Record for the redesign of a pump station and sewage collection system for an aircraft wash rack. The project consisted of reviewing existing site utility plans to determine the point of connection for the revised system; evaluating water usage for the design; and preparing design documents.

MIAMI-DADE AIRPORT HAZARDOUS REMOVAL ENGINEERING SERVICES, MIAMI-DADE, FL

Responsible for the direction and management of a rapid response for projects related to asbestos-containing materials and toxic wastes, such as PCBs, lead-based paint, and mercury lamps, during renovation and upgrades at the three county-owned airports.

DETROIT WASTEWATER TREATMENT PLANT SCUM INCINERATOR BUILDING AND SEVEN SCUM BUILDINGS RENOVATION, DETROIT, MI

Prepared abatement plans and specifications, and the maintenance of plant operations (MOPO) specifications. Abatement document preparation included reviewing existing hazardous materials inspection documents; conducting visual inspections to verify the presence of asbestos, lead-based paint, and other hazardous materials (such as incinerator ash, mercury lamps, and PCB ballasts); determining the extent of the renovation related hazardous materials abatement; and preparing the abatement specifications.

DEPARTMENT OF HOUSING RESIDENTIAL AND OFFICE BUILDINGS INSPECTION, WASHINGTON, DC

Managed the inspection of over 13 million sq. ft. of space, including supervision of field crews conducting the survey and sampling program; working closely with D.C. personnel to schedule field inspections and minimize disturbance to building occupants; preparing potential immediate hazardous reports to alert D.C. personnel to friable suspected asbestos-containing materials which were hazardous due to location and/or amount, and preparing final reports.

ECOLOGICAL AND ARCHEOLOGICAL INVESTIGATIONS (VARIOUS US LOCATIONS)

As project manager, performed or oversaw the work for more than fifty ESAs. Work included coordination with the client, ensuring quality control and conformance with the scope of work, and timeliness of the tasks. Projects included the Phase I ESAs for the Dixon Building and Centro Espanol located in Tampa, Florida, the Invesco Apartment Building in St. Petersburg, Florida, and confidential clients in New Jersey, Texas, Virginia, Maryland, Washington, D.C., North Carolina, Oklahoma, and New York (sites consisted of more than fifty residential, agricultural, commercial and retail properties). Also reviewed more than twenty-five ESA reports prepared by others for quality control and conformance to the required scope of work.

WALTER REED NATIONAL MILITARY MEDICAL CENTER NEW MEDICAL FACILITIES AND PARKING GARAGES, WASHINGTON, DC

As project manager, coordinated activities of field personnel inspecting the buildings to be renovated; generated an inspection report summarizing the findings; and prepared basis of design and design-build plans and specifications for the removal of hazardous materials. Coordinated preparation of design-build bid package documents with other disciplines, (structural, mechanical, electrical, and architectural). The work was performed in accordance with UFC 3-800-10N, Final Draft of Environmental Engineering for Facility Construction and UFC 1-300-07A, Design-Build Technical Requirements.

PENTAGON, WEDGE I (APPROX. 1.1 MILLION SQ. FT.) HAZARDOUS MATERIALS INSPECTION, ARLINGTON, VA

Coordinated field crews and conducting inspections to identify hazardous materials, including asbestos-containing materials, lead-based paint, PCB light ballasts, and mercury lamps.

PEER
CONSULTANTS, P.C.



Est. 1978

CONTACT INFORMATION

PEER Consultants, P.C.
865-483-3191
brewerc@peerpc.com

EDUCATION

B.S. Chemical Engineering, University of Tennessee

REGISTRATIONS & CERTIFICATIONS

40-hr. HazWoper Certification
Environmental Compliance Auditor Training
Photovoltaic System Design and Installation Certificate of Knowledge

CHERYL A. BREWER

Chemical Engineer, Environmental Scientist

Ms. Brewer is an experienced chemical engineer who has provided management and technical services for the ANG's Environmental Restoration Program for over 17 years. Ms. Brewer's primary expertise is in environmental investigation and remediation of soil and groundwater, regulatory and stakeholder liaising and negotiation, and data evaluation and reporting. She also provided management and in-field technical support in Mississippi for the cleanup of debris resulting from Hurricane Katrina.

SELECTED EXPERIENCE

COOS HEAD AIR NATIONAL GUARD (ANG) STATION REMEDIAL INVESTIGATION, COOS BAY, OR

Provided project management and in-field technical support for the investigation of nine sites. The work consisted of performing a soil and groundwater investigation to identify and delineate contaminants of potential concern. Prepared a remedial investigation report to document field investigation results, conclusions and recommendations. Performed a feasibility study to evaluate appropriate remedial alternatives. Provided technical expertise to the ANG and facilitated meetings with the Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians (current landowners), the Bureau of Indian Affairs and the Oregon DEQ.

NORTH BEND AIR NATIONAL GUARD (ANG) STATION SITE INVESTIGATION NORTH BEND, OR

Provided project management and in-field technical support. The work consisted of a soil investigation to identify and delineate contaminants of potential concern at four sites. Performed site reconnaissance to identify former dump areas. Prepared a Site Investigation report to document field investigation results, conclusions and recommendations.

COMBAT READINESS TRAINING CENTER CRTC INTERIM REMEDIAL ACTION OPERATIONS, GULFPORT, MS

Provided management and in-field technical support for the cleanup of debris resulting from Hurricane Katrina. Prepared the IRAO Work Plan. Coordinated mobilization of heavy equipment to the site. Oversaw the cleanup and removal of debris. Ensured the proper disposal of refuse and reviewed/signed waste manifests. Prepared the IRAO Report to document cleanup and disposal activities.

COMBAT READINESS TRAINING CENTER (CRTC) INTERIM REMEDIAL ACTION OPERATIONS ADDENDUM, GULFPORT, MS

The work consisted of the excavation and disposal of petroleum-impacted soil from a former bulk fuel storage area. Coordinated mobilization of equipment and personnel to the site. Oversaw excavation and backfill activities and maintained documentation for the disposal of petroleum-impacted soil. Collected confirmation soil samples from the excavation. The IRAO also included the investigation of shallow groundwater. Coordinated the mobilization of drilling equipment and personnel. Prepared an Interim Remedial Action Report to document field investigation results, conclusions and recommendations.

MCENTIRE AIR NATIONAL GUARD (ANG) STATION REMEDIAL ACTION CONSTRUCTION, EASTOVER, SC

Performed the remedial design and provided in-field technical support for the in-situ oxidation of TCE and TCE in groundwater. The process entailed injecting



sodium permanganate using direct-push technology, and conducting remedial performance monitoring. Two injection events and six rounds of groundwater performance monitoring were conducted over a period of two years. The system was successful in reducing chlorinated solvents to levels below the MCL.

Keri Shoemaker ■ Director of Capitol Region Office

Keri Shoemaker manages PRR's Capital Region practice in support of programs improving the environment, transportation and public health throughout the Mid-Atlantic region. With more than 14 years of experience in the communications industry, she excels at strategic planning, public relations, branding and marketing. Currently, she is leading the communications efforts for environmental and transportation projects such as the U.S. Environmental Protection Agency's (EPA) ENERGY STAR program, where she is implementing national consumer awareness campaigns for ENERGY STAR products and commercial buildings. Most recently, Keri has focused on overseeing the communications work for a public-private partnership in support of the Midtown/Downtown Tunnel Expansion Project in Hampton Roads, the first all-electronic tolling (AET) project in southern Virginia. Her work involves managing on-site staff; overseeing the toll marketing, branding, and public education campaigns; crisis communications; and research. With a background in broadcast news media, Keri is able to bring a unique perspective to the table by providing clients with high-level communications council and crisis communications management. She leads or has led campaigns for the Baltimore Metropolitan Council, Metropolitan Washington Council of Governments, District Department of Transportation, The Maryland-National Capital Park and Planning Commission, Maryland Department of Health and Mental Hygiene, Maryland State Highway Office and the Virginia Department of the Aging. In 2011, she was honored by the Public Relations Society of America (PRSA) for her work on EPA's ENERGY STAR National Building Competition. Keri is a member of PRSA, WTS and the Women's Council on Energy and the Environment in Washington, D.C.

EDUCATION

- B.A. Communications and Broadcasting, Washington State University, 1998

PROJECT EXPERIENCE

- **D.C. Streetcar Program Management** (Washington, D.C.)

District Department of Transportation - August 2011-present

The DDOT has started construction of a new streetcar line in Anacostia that is expected to start service by 2013, tracks have been laid on H Street and Benning Road for a second line, and planning is underway for additional segments across the city. As a subconsultant to HDR, PRR provides branding, marketing, web design/hosting/content development, graphics and outreach support for the DC Streetcar project. In addition to project manager duties, Keri has coordinated messaging and materials.

- **Purple Line Corridor Access Study** (Prince George's County, Maryland)

The Maryland-National Capital Park and Planning Commission - July 2011-present



1501 Fourth Avenue, Suite 550 Seattle, Washington 98101

T 206.623.0735 F 206.623.0781

SEATTLE • WASHINGTON DC

The Prince George's County Planning Department of The Maryland-National Capital Park and Planning Commission is conducting a comprehensive transit-oriented development study for the planned Purple Line light rail transit alignment and corridor within the County. The PRR team is developing and implementing a community outreach plan including full development of the project website, organizing a community outreach partners, and planning and facilitating eight public meetings. Keri conducts media relations, coordinates and facilitates meetings, and arranges for materials needed.

- **Go Recycle** (Washington, D.C. Metropolitan Region)

Metropolitan Washington Council of Governments • September 2007-present

Managed a regional radio advertising and TV PSA campaign for Go Recycle, a regional workplace recycling program supported by local government jurisdictions throughout the Greater Metropolitan Region, aimed at increasing public awareness of the environmental and cost saving benefits of recycling at work. Developed a sponsorship program that recruited several organizations to provide sponsorship dollars to pay for the annual advertising. The campaign generated more than seven million media impressions at an advertising value of \$117,000.

- **Clean Air Partners** (Washington, D.C. Region)

Metropolitan Washington Council of Governments • February 2005-present

Lead marketing and media relations efforts to educate residents in the Washington, D.C. and Baltimore region about the health and environmental impact of air pollution through the Clean Air Partners outreach program. Outreach efforts included the recruitment of area employers and individuals for membership and sponsorship opportunities, which paid for the annual advertising campaign; coordination of outreach kit materials; development and placement of radio, print and transit ads; execution of a Clean Air Pledge campaign that encourages residents to sign up for AirAlerts and take energy saving actions; and execution of a regional media relations campaign targeting meteorologists and both print and broadcast media about reporting the Air Quality Index (AQI), providing viewers and readers with simple action steps provided by Clean Air Partners to reduce air pollution, greenhouse gas emissions and protect the air on poor air quality days.

- **Plug-In To eCycling** (Nationwide)

U.S. Environmental Protection Agency • December 2007-June 2011

Launched campaign to promote the environmental benefits of electronics recycling through EPA's Plug-In To eCycling program which provides American consumers with resources on how to donate or safely recycling televisions, computers and cell phones. Conducted a planning workshop with EPA staff to identify goals and objectives for a two-year marketing and communications campaign. Facilitated partnerships with electronics manufacturers and retailers to participate in EPA's annual National Cell Phone Recycling Week. Pitched national media to cover stories in conjunction with the

cell phone recycling campaign. Currently working with EPA to conduct national media outreach to promote EPA's TV Recycling Challenge.

- **ENERGY STAR Commercial and Industrial Program Bring Your Green to Work Initiative**
(Nationwide)

U.S. Environmental Protection Agency - December 2007-present

Worked with EPA to streamline and unify messaging and develop a comprehensive media outreach strategy for the ENERGY STAR Commercial and Industrial Buildings (C&I) program which encourages building owners across the country to improve their properties' energy efficiency. Released a ranked list of U.S. cities with the highest number of ENERGY STAR energy-efficient buildings, helping to generate more than 10 million impressions with national media placements. Developed a national consumer-oriented campaign called Bring Your Green to Work (BYGTW), which helps employees to make simple energy saving changes in the workplace and put pressure on upper management to do the same. Created media outreach materials around the ENERGY STAR @ work tool, an interactive Web-based tool that highlights areas in the office where energy can be conserved. Pitched BYGTW and the ENERGY STAR @ work tool to a variety of national print, online and trade publications to garner awareness of the new initiative. With PRR's help, the ENERGY STAR C&I program has evolved from a complex, metric-steeped program to a vibrant, mainstream consumer program. Moreover, as a result of PRR's work in recent years, businesses and buildings pursuing the ENERGY STAR label have more than doubled and media coverage of the program has increased by 274 percent over the same period in 2007.

- **Landfill Methane Outreach Program (LMOP)** (Nationwide)

U.S. Environmental Protection Agency - March 2003-June 2003

Led the media outreach efforts for EPA's LMOP program, its partners and the issue of landfill gas (LFG) as a renewable energy source. Coordinated and pitched media to attend a ribbon cutting ceremony, recognizing NASA's Goddard Space Flight Center as the first federal facility to use LFG. Event gauged local and national media interest including a story that aired on CNN News the following weekend valued at \$15,000.

- **The Great Mercury Thermometer Exchange Program** (King County, WA)

King County - November 2002-February 2003

Created, pitched and executed a local media event to raise awareness about the health hazards of thermometers containing mercury and the importance of proper disposal. Planned a media event featuring a local family and pediatrician, created press materials, coordinated visuals and pitched local print and broadcast media. Stories about the program appeared in all major local daily newspapers, as well as several community publications. Broadcast stories appeared on all major

local news television programs along with two news-radio stations. The success of the program resulted in earned media valued at over \$68,000.

Hadiah S. Jordan ■ Associate

Hadiah Jordan has more than eight years of experience in community engagement and managing projects in transportation, economic development, needs assessment and environmental impact studies. Her expertise includes public information planning and outreach, environmental justice, and construction communications. Hadiah is an experienced facilitator, organizing stakeholder and advisory group meetings complemented by carefully designed outreach materials. Her recent projects include the Montgomery County Parks and Recreation Strategic and 2030 Vision Plans, Smithsonian National Museum of African American History and Culture Tier II EIS and Section 106 Evaluation, Prince George's County Parks and Recreation Needs Assessment Study, Downtown DC Business Improvement District Streetscape and Streetlight Project, Columbia Heights Streetscape Project, New York Avenue Corridor, South Capitol Street Gateway and Corridor Improvement Study and EIS, and Georgia Avenue Corridor. In her previous work as design and marketing manager for a nonprofit, she managed exhibit design, marketing materials, direct mail pieces and databases. Hadiah has served as an Advisory Neighborhood Commissioner and as a poll worker for the Election Assistance Commission in her Washington, D.C. community of Columbia Heights.

EDUCATION

- B.A. Journalism, Howard University, 1992

PROJECT EXPERIENCE

- **DC Streetcar Program Management Team** (Washington, D.C.)

District Department of Transportation • August 2011-present

Outreach and communications. The District Department of Transportation (DDOT) has started construction of a new streetcar line in Anacostia that is expected to start revenue-service by 2013, tracks have been laid on H Street and Benning Road for a second line, and planning is underway for additional segments across the city. As a subconsultant to HDR, PRR provides branding, marketing, web design/hosting/content development, graphics and outreach support for the DC Streetcar project. In addition to the outreach support, Hadiah has contributed to the development of the DC Streetcar safety outreach plan.

- **Purple Line Corridor Access Study** (Prince George's County, MD)

The Maryland-National Capital Park and Planning Commission • August 2011-present

The Prince George's County Planning Department of The Maryland-National Capital Park and Planning Commission is conducting a comprehensive transit-oriented development study of the planned Purple Line light rail transit alignment and corridor within Prince George's County. Hadiah



1501 Fourth Avenue, Suite 550 Seattle, Washington 98101

T 206.623.0735 F 206.623.0781

SEATTLE • WASHINGTON DC

manages the PRR team as they develop and implement a Community Outreach plan which includes developing a project website, designing a graphic identity and logo, drafting text for outreach materials, implementing and analyzing a public survey, and organizing and facilitating a series of nine workshops for the four stations in study.

- **St. Elizabeths Hospital East Campus Transportation Alternatives Environmental Assessment (EA)** (Washington, D.C.)

District Department of Transportation - March 2011-present

Hadiyah serves as public involvement lead for the East Campus transportation EA, coordinating NEPA requirements with the consulting team and DDOT. The challenge has been to engage the community at heightened levels than ever before, crossing demographic barriers and building trust. To address this challenge, PRR formed the Community Action Team of area residents who recommend and help implement public involvement activities. Hadiyah coordinates the NEPA project with the Office of Planning's East Campus Master Plan public involvement program, making this a seamless public improvement project with opportunities for meaningful public input. The public involvement tools used for this project include a project website, three public meetings, newspaper ads, flier, posters, emails, and an extensive stakeholder database.

- **Montgomery County Parks and Recreation Strategic and 2030 Vision Plans** (Montgomery County, MD)

Montgomery County Department of Parks - 2009-2010

While arranging logistics, facilitating and documenting 13 focus groups and six public meetings, Hadiyah provided reliable information from the public regarding current and projected needs, desires and perceptions of the Department of Parks' agency and facility strengths, weaknesses, opportunities and threats.

- **Parks and Recreation: 2010 & Beyond** (Prince George's County, MD)

M-NCPPC Department of Parks and Recreation - 2008-2009

As part of the team performing a needs assessment study to evaluate current recreation programs, parks, trails and open space, Hadiyah organized and conducted outreach for nine public meetings; facilitated 28 focus groups and provided a findings report; distributed flyers to county schools and churches; and built a county-wide facility and service inventory database of faith-based organizations.

- **Downtown DC BID Streetscape and Streetlight Project** (Washington, D.C.)

District Department of Transportation - 2009-2010

Funded by the 2009 American Recovery and Reinvestment Act (ARRA), this construction project upgraded and repaired streetscape amenities throughout the Downtown Business Improvement

District. As public information officer for the construction project, Hadiyah communicated upcoming construction activities and impacts to residents, businesses and property managers.

- **South Capitol Street Environmental Impact Statement** (Washington, D.C.)

District Department of Transportation • 2009

Proposed improvements from the South Capitol Gateway and Corridor Improvement Project had the potential to adversely affect historic resources, so the team brought in Hadiyah to coordinate public involvement and Section 106 meetings.

- **New York Avenue Corridor Study** (Washington, D.C.)

DC Office of Planning • 2003-2004

Hadiyah served as project manager for the multi-stakeholder review of the corridor's mixed residential, industrial, commercial, and government needs. This study addressed land use and transportation issues along New York Avenue from Mount Vernon to the intersection with the Baltimore-Washington Parkway. Hadiyah managed five public meetings and numerous one on one stakeholder meetings.

- **South Capitol Gateway and Corridor Improvement Study** (Washington, D.C.)

DC Office of Planning • 2003-2004

This project was responsible for developing the vision for the Anacostia Waterfront, which included transforming South Capitol Street from an urban highway into a grand gateway boulevard into Washington, DC. As part of this Congressionally-mandated, multi-agency project, Hadiyah led a dynamic public involvement process. The outcomes were a strong vision and guiding principles for the transportation, commercial, and residential improvements along the South Capitol corridor.

- **National Museum of African American History and Culture Tier II EIS & Section 106** (Washington, D.C.)

Smithsonian Institution • 2009-2010

In the early phase of the NMAAHC'S development, the Smithsonian conducted EIS and Section 106 public meetings. Hadiyah organized public outreach and all logistics for the public scoping meetings and hearings.