Region 2000 Services Authority

Location
Haberer Bldg.
47 Courthouse Lane
Rustburg, VA 24588

Date | Time
June 23, 2016
2:00 p.m.

AGENDA

1. **Welcome**……...……..……...….Kim Payne, *Chair*

2. **Public Comment Period**……....Kim Payne, *Chair*

   Individuals who wish to address the Board should place their names on the sign-up sheet prior to the start of the meeting. Speakers will be heard in the order in which they signed up.

3. **Approval of Minutes: April 27, 2016**…….....……...…..….Kim Payne, *Chair*
   (See Attachment 3)

4. **Strategic Planning Working Group Report**……...…….……..
   ……..Bob White, *Deputy Director of Planning, Region 2000 Local Government Council*
   (See Attachment 4a, 4b and 4c)

   The Working Group considering future solid waste management beyond 2030 has prepared its recommendation for moving forward. The Working Group will present this for the members' discussion and guidance. A memo putting forth the Working Group's recommendation is attached.

   Recommended Action: The Working Group recommends the Service Authority authorize the Solid Waste Management 2030 evaluation.

5. **Review of Position Description for the Landfill Working Field Supervisor**.……
   ……..Clarke Gibson, *Director, Region 2000 Services Authority*
   (See Attachment 5)

6. **Presentation of Odor Complaint Map**……..……..
   ……..……Clarke Gibson, *Director, Region 2000 Services Authority*
   (See Attachment 6)

   The attached map compiles odor complaint data for the period of September 4, 2015 – May 23, 2016. The Region 2000 Services Authority installed the vapor phase odor neutralization system on March 17, 2016. For the 67day period prior to March 17, 2016 compared to the

67 day including and following March 17, 2016 to May 23, 2016, the Authority observed a 37% decrease in odor complaints.

7. **Review of Suggested Meeting Schedule**……..……..….Gary Christie

August 24, 2016
October 26, 2016
January 25, 2017
March 22, 2017
May 24, 2017
July 27, 2017
September 28, 2017
November 30, 2017

8. **Closed Session on Personnel**

Motion to Convene Closed Session:
I move that the Authority go into closed session in accordance with the Section 2.2-3711(a)(3), Code of Virginia, to discuss the annual evaluation of the Region 2000 Services Authority's Director.

Motion to Return to Open Session:
I move that the Authority return to open session pursuant to Section 2.2-3712.D and certify that only those business matters lawfully identified in the motion to go into closed session and exempt from the open meeting requirements of the Freedom of Information Act were heard, discussed or considered in a closed session.

9. **Adjourn**

Region 2000 Services Authority

Location
Haberer Bldg.
47 Courthouse Lane
Rustburg, VA 24588

Date | Time
April 27, 2016
2:00 p.m.

DRAFT MINUTES

Board Members Present

Susan Adams.....Appomattox County
Steve Carter ..... Nelson County
Kim Payne, *Chair* .....City of Lynchburg
Frank Rogers..... Campbell County

Others

Robert Arthur .....Region 2000
Emmie Boley .....Region 2000
Gary Christie.....Region 2000
Robert Dick..... SCS Engineers
Clarke Gibson .....Region 2000
Larry Hall.....Region 2000
Gaynelle Hart .....City of Lynchburg
Brendan Hefty.....Hefty, Wiley, & Gore
Lynn Klappich .....Draper Aden Assoc.
Rosalie Majerus .....Region 2000
Candy McGarry ..... Nelson County
Matt Perkins.....Region 2000
Alice Rockefeller .....Appomattox County
John Spencer .....Appomattox County
Clif Tweedy ..... Campbell County
Ashlie Walter ..... News and Advance
Felicia West .....Region 2000

1. Welcome

Kim Payne welcomed attendees and called the meeting to order at 2:04 pm.

2. Public Comment Period

Nina Thomas, speaking on behalf of her husband and herself, provided comments related to the draft property value protection plan. Mrs. Thomas suggested the County's Landfill Overlay not be used, that the distance should begin from the edge of the property rather than the middle and that it go at least 2,000 feet. She suggested looking at the concepts of

bands which would provide additional compensation for property owners closer to the landfill, perhaps using an amount value percentage for each band.

Mrs. Thomas suggested that property transfers within a family not count to eliminate the use of the plan for that parcel. Mrs. Thomas recommended the Authority allocate at least $500,000 for the first year of the program with at least $200,000 added to the fund each year.

Leilani Padilla of Barringer Drive, speaking on behalf of her husband and herself, noted she agreed with the comments submitted by Mrs. Thomas. Mrs. Padilla suggested that the distance of the properties included in the Plan should be measured from the landfill's boundaries. She suggested that the Plan area not necessarily be a circle, but reach out from the border an agreed upon distance.

Mrs. Padilla suggested that the County Planning Commission be incorporated into the Property Protection Planning process and that the compensation be measured as a percentage formula and not a fixed amount.

Mr. Eric Barringer of Hollins Court commented that the statements of the Property Protection Plan are too vague. Mr. Barringer suggested using the tax assessment instead of an appraisal. He said that the use of the County's landfill overlay district was not adequate. He encouraged the Authority to consider a band type system saying that one mile from the landfill has the greatest economic impact and two miles would have less economic impact.

Jon Hardie noted that there have been severe negative impacts by the landfill on the neighborhood community. Mr. Hardie stated that the operations have not been run well and that there is a lack of true collaboration since there has been no involvement of citizen groups. Mr. Hardie said that ideas have been thrown out in a very unorganized manner and the Authority needs more relations with local citizens.

3. Approval of Minutes: January 27, 2016 & March 28, 2016

Upon a motion by Frank Rogers to approve the minutes of January 27, 2016 and March 28, 2016 as presented, duly seconded by Steve Carter, this motion passed unanimously.

4. Financial Report & FY 17 Budget Consideration

Rosalie Majerus presented the year-to-date financial report. Majerus noted member tonnage is 3.8% over planned, contract tonnage is below planned, and market tonnage is greater than planned which results in overall tonnage tracking slightly under budget. Cost of Service is higher than budgeted mostly due to the costs associated with odor control and mitigation, efforts related to the haul road, and wood waste grinding that was performed twice this year. Majerus also noted that excess revenue is currently lower than 25% of budget. Majerus noted the City of Lynchburg has begun to repay costs associated with the closure of the Concord Turnpike facility. Majerus also reviewed the additional Schedules contained in the financial packet.

Steve Carter asked about the status of the Phase IV construction and its projected costs. Clarke Gibson noted the project is underway and expects the majority of the contingency funds will not be used. Gibson noted there has been one change-order for approximately $30,000.

Carter also asked about the wood waste grinding noting the line item was zeroed out. Majerus and Gibson noted that wood waste grinding has been done twice this year. This overage will be absorbed by a reduction in other operating costs.

Rosalie Majerus briefed the Board on the FY 17 proposed budget noting the tonnage projection remains the same as the current year, market tonnage has been increased to absorb the previously separate contract tonnage. Both the member and market tipping fees remain the same as the current year.

Clarke Gibson briefed the Board on the expenditures noted in the FY 17 proposed budget. Highlights included a 2% employee salary increase and the addition of two positions.

Several Authority members suggested that the Assistant Operations Manager position be modified to reflect a "working foreman" or "field superintendent" to reflect that this is to be a working position with some supervisory responsibilities instead of a purely supervisory one.

Gibson assured the Board the position was intended to be a working field supervisor and not an office position. He noted that staff would reconstruct the job description to reinforce the field duty aspect and remove 'manager' from the title and replacing with superintendent or other similar term.

Gibson reviewed the proposed Environmental Technician position. He noted this position is necessary because the increased responsibilities have outgrown the single existing position handling this work. We now have two landfills to monitor, increased environmental controls, regulatory requirements, and the increased odor remediation efforts. Gibson noted the position would be doing field work such as system upkeep and maintenance of the odor mitigation components, sample collection, and gas probe sampling and monitoring.

Upon a motion by Frank Rogers to approve the budget as presented excepting not authorizing the Assistant Operations Manager position until the Board reviews and authorizes a revised job description. This motion was duly seconded by Susan Adams, the motion carried by a vote of 3 to 1 with Steve Carter voting against. Carter stated for the record that Nelson County is in opposition to excess revenue.

5. Gas Collection Contract

Brendan Hefty, of Hefty, Wiley & Gore, P.C., noted they have prepared a comprehensive agreement with SCS Engineers to design and build a landfill gas collection system for the not-to-exceed price of $957,280 with an option for gas monitoring up to two-years post project completion. Hefty noted that project completion date is expected to be December 15, 2016.

Kim Payne asked how the system would be paid for. Rosalie Majerus indicated it would be paid with May 2015 Bond funds.

Frank Rogers asked for clarification on how the gas collection system would be implemented as it relates to the necessary construction of new gas collection wells. Gibson reviewed the existing infrastructure and how it will be incorporated into the new system, as well as what measures are being taken in the Phase III and what will likely happen in Phase IV.

Steve Carter asked Gibson to reiterate the regulatory requirements related to odor control. Gibson noted there have been meaningful improvements in odor control with the odor mitigation equipment and the larger flare. Gibson commented that the new gas collection system will make even more improvements in odor control, but that it would not remove 100% of the odors. Gibson responded that the Authority is several years away from any regulatory requirement to implement a gas collection system.

Upon a motion by Frank Roger that the Board approve a Comprehensive Agreement with SCS Engineers to design and build a landfill gas collection system at the Livestock Road Facility in the amount of $957,280 for the initial design and construction, and authorize the Director of Solid Waste to execute the Agreement in a form acceptable to the Authority's attorney, duly seconded by Kim Payne, this motion carried by a 3 to 1 vote with Steve Carter voting against. Mr. Carter explained that he was opposed to paying for it with bond funds when other funds are available to pay for it outright. He noted that his vote is not against the installation of system.

6. Air Quality Monitoring Report

Clarke Gibson noted a request from the concerned citizen's group to perform more air quality testing in and around the landfill. Gibson contacted Robert Dick of SCS Engineers to prepare a proposal for such testing. Gibson noted that associated costs with this current air quality testing proposal is not incorporated into the FY 17 budget.

Mr. Dick provided a brief overview of past testing efforts and provided an extensive overview of the current proposal for air quality testing. Dick noted the proposal is structured into three tasks. Task One involves sampling the landfill gas for targeted compounds, expanding the group of compounds to be tested along with setting up monitoring stations within the facility boundary. Dick noted that once data from the samples of extracted landfill gas and the air quality samples has been evaluated, the Board could decide to proceed with the additional tasks noted in the proposal. Task Two involves testing off-site locations for identified constituents. Task Three involves setting up a continuous air monitoring station down-wind of the active landfill cell in an effort to collect additional data.

Kim Payne asked if municipal landfills produce gases in concentrations that present significant health concerns. Dick noted that neither the EPA, the Department of Health nor the DEQ has established any requirements for municipal solid waste landfill facilities to perform any ambient air testing as it relates to public health standards. Dick noted it was his professional opinion that, though some extreme example may be found, municipal landfills gas emissions do not pose a risk to public health.

Dick noted the reason for doing additional on-site monitoring was simply a reaction to a request by the community.

Payne asked Jon Hardie what outcome the concerned citizen's group would expect from further testing? Hardie noted what hasn't been determined is what those odors are and the effect they may have on the health of people in the community along what long-term effects they may have, if any.

Dick noted the proposal was structured to identify a wide range of constituents that are known to potentially have adverse impacts to public health. However, this it is not a comprehensive list. Additionally, in light of Task One of the current proposal, Dick noted some of the same compounds evaluated in previous odor studies may be known to also pose risks to health at certain concentrations. The current proposal would evaluate those from the health risk standpoint rather than as an odor producer as in previous studies.

Steve Carter asked if it would be more effective to conduct testing after the gas extraction system is in place rather than doing air quality testing now. Dick noted it depended on the objective – getting a representation of the system now when some gas collection is taking place or getting a representation of the system when the full gas extraction system is operational.

Upon a motion by Frank Rogers to authorize staff to engage SCS Engineers in the completion of Task One in the amount of $16,000 as submitted in their most current air quality monitoring proposal, duly seconded by Susan Adams, this motion passed unanimously.

7. Property Protection Program

Gary Christie introduced the draft property value protection program with changes and suggestions that were added from past discussions with the Board.

Kim Payne suggested the Board defer any action on this matter for sixty days to obtain additional input and suggestions from the community. He desires the program to be done correctly, fairly, to be sustainable and affordable.

Frank Rogers indicated he appreciated staff's efforts so far and looks forward to the citizen group's proposal. Rogers also asked if more consideration should be given to homeowners who lived in the area before the operation of the landfill versus those who moved in after the operations began.

Payne noted it would be helpful to identify the guiding principles for this process and what guidelines will be formulated to provide a better outcome for everyone. Payne noted the citizen's comments made today were of great value.

Christie noted he will continue to work with all parties to revise the draft and bring it back to the Board at the appropriate time.

8. Citizen Representative

Gary Christie presented an initial draft of roles and responsibilities for a citizen representative on the Board. Kim Payne indicated the citizen's group should be given time to review the recommendations. Staff is to bring the recommendations back for Board consideration at the appropriate time.

The Board agreed, by consensus, the draft document should be shared with the citizen's group for their input. Also, to allow time for the citizen's group to compile a list of names who would volunteer for the role. These would be presented to the Board for further review. Frank Rogers, indicated there could be other groups who may wish to offer candidates for this role also.

Steve Carter stated Nelson County is opposed to the concept of a citizen representative appointment. He noted that although the Board of Supervisors for Nelson County is being lobbied monthly by a citizen's group who are concerned about the Atlantic Coast Pipeline, the Board is not appointing a citizen to their Board as an advisor.

9. Report from Director

a) Clarke Gibson reviewed the tonnage report noting it is following a similar pattern from the prior year.

b) Gibson reviewed the odor neutralization report noting on March 17th, the odor vapor neutralization system was installed. This is a pressurized system that disperses vapor into the air and can be used year-round. Gibson noted there has been a reduction in odor complaints since that time. However, odor neutralization is a multifaceted approach and other factors may have contributed to the reduction in complaints.

Payne asked staff to develop a graph showing instances of odor complaints and the location of those occurrences. This would be a valuable tool to assess the complaints. Gibson noted they have experienced roughly a 50% reduction in complaints since the vapor system was installed.

Gibson also noted the landfill had begun a trial rental of a larger "odor cannon" on the working face of the landfill. The cannon disperses a water-based mist on to the working-face in an effort to neutralize odors. Gibson feels this measure is also helping with controlling odors. Gibson recommended purchasing this unit. The vendor has agreed to credit the first two month's rental fees against the purchase price. Gibson noted the purchase of this unit was included in the FY17 budget.

The Board agreed to the purchase of the "odor cannon" that is currently being rented.

c) Clarke Gibson noted there were no deficiencies reported from the DEQ Quarterly Inspection Report at the Livestock Road facility.

Gibson expressed there were no deficiencies that needed correction from DEQ's last report as well. He reported the Livestock Road facility has not had a deficiency since it began operation.

d) Clarke Gibson reported the Authority had self-reported the results of the gas monitoring at the Concord Turnpike Facility to DEQ. Gibson noted the gas collection system was installed by a third-party who also owns the gas rights at Concord Turnpike. Gibson reported that, in conjunction with DEQ and the third-party company, steps are being taken to address the concerns, either by repairing or replacing faulty equipment. SCS Engineers is also working with the Authority to ensure the issues are adequately corrected.

e) Gibson provided an update to the CY 2015 Recycling Program Activities. He indicated since operations began in 2008, an increase in the recycling rate has been indicated each year despite a reduction in what could be included in the report.

Kim Payne asked what the next step would be if the region were to take the recycling program to the next level. Gibson noted it would need to consider implementing new programs as well as increased community educational opportunities. Payne noted he would like to see the next step be an evaluation program designed to keep organics out of the landfill. Organics cause odors. He suggested composting household organics.

Payne asked staff to report the impact every 1% increase in the recycling rate has on the tonnage. Gibson noted he could calculate that information and present it to the Board.

f) Gary Christie noted staff would soon be ready to offer suggestions in the strategic planning process. Christie noted they would be ready sooner than the July meeting if the Board is interested in an earlier special meeting to hear the staff presentation.

Christie noted that all the counties would be involved in the process as well other jurisdictions will be invited.

Kim Payne suggested that the Board consider meeting bi-monthly, instead of quarterly, in view of all the work that is going on at the landfill and the many considerations that require decisions. Frank Rogers and Steve Carter support the idea of more frequent meetings.

Upon a motion by Susan Adams for the Services Authority Board to move to bi-monthly meetings, duly seconded by Frank Rogers, this motion carried unanimously.

Staff will coordinate a date that is suitable to each Board member's schedule looking towards the end of June or some other suitable time.

g) Clarke Gibson noted he recently spoke at the concerned citizen's meeting giving an update on odor mitigation efforts. He has been invited back to future meetings and expressed his appreciation with being involved.

10. Election of FY 17 Officers

Kim Payne submitted for the Board's approval the following list of officers:

Chair – Frank Rogers, Campbell County
Vice Chair – Lynchburg Representative
Treasurer – Susan Adams, Appomattox County
Secretary – Gary Christie, Region 2000

Upon a motion by Steve Carter to approve the officers for the period of July 1, 2016 – June 30, 2017 as presented, duly seconded by Susan Adams, this motion passed unanimously.

11. Recognition and Appreciation of Kim Payne

Kim Payne commented that what this Board does in building communities, is what he has had the pleasure of being part of. He feels there is a strong commitment to the citizens in having their concerns resolved. Payne noted he enjoyed serving with the Board and the staff.

Frank Rogers thanked Kim Payne for his leadership to the Board. The Board has greatly benefitted from his dedication to service and thanked him for his support to the Authority and to the County.

Steve Carter noted he appreciated working with such an outstanding individual as Kim Payne.

Susan Adams noted that she also appreciated Kim Payne's service and wished she had had more time to work with him.

Adjourn

There being no further business before the Board, Kim Payne adjourned this meeting of the Region 2000 Services Authority at 4:02 pm.

Signed: _____

By: _____ Date: _____

To: Region 2000 Service Authority

From: Bob White, Project Manager, Working Group: Solid Waste Management 2030

Subject: Recommendation for Accomplishing the Solid Waste Management 2030 Effort

Date: June 16, 2016

The following presents the Working Group: Solid Waste Management 2030 recommendation for identifying and analyzing options and recommending the best solution for regional solid waste management beyond the current site's life cycle. The Working Group is requesting the Service Authority's approval to move forward.

At this time the existing Livestock Road Landfill is expected to be filled by 2030. Permitting and development of waste management facilities can take up to ten years to accomplish. The Service Authority must determine its next approach waste management approach in the near future to ensure it's prepared for the existing facility's closure.

The Executive Director formed a Working Group to determine and recommend an approach for undertaking this evaluation. The Working Group consists of the following:

Alice Rockefeller, Appomattox County

Clif Tweedy, Campbell County

Gaynelle Hart, Lynchburg City

Candy McGarry, Nelson County

Clarke Gibson, Region 2000 Service Authority

Bob White, Region 2000 Local Government Council, Project Manager

The following discussion addresses guiding principles, evaluation process, Service Authority review, discussion and guidance, regional community involvement, Working Group membership, logistics and decision-making, general timeline, technical assistance, and initial tasking.

Guiding Principles

The following principles were identified to guide the process:

- Open-Minded: to options and to diverse perspectives
- Responsible: to our regional community, to our environment, and to our future
- Transparency: in approach and in decision-making

Evaluation Process

The following tasks were identified to accomplish the evaluation:

Task 1: Determine the solid waste management options available to the Service Authority beyond the current facility's capacity

- The waste management options hierarchy must include consideration of recycling, reuse, resource recovery (waste to energy), incineration, and landfilling, or combinations thereof

Task 2: Beyond cost, determine the benefits' criteria needed to be taken into account as part of the options' evaluation?

- Relative weighting must also be identified

Task 3: Conduct a high-level planning (fatal flaw) analysis, determining options appropriate for further detailed analysis, and, more importantly, to be eliminated

Task 4: Identify the costs and benefits of each selected option

- The result of this effort will be separate listings of the costs and benefits of each identified option
- The purpose of this step is to allow review and discussion of cost approach and option benefits analysis prior to final Cost/Benefit Analysis and ranking

Task 5: Accomplish the Cost/Benefit Analysis, ranking the identified options

Task 6: Based on the above provide a recommendation to the Service Authority

Task 7: Draft a final report documenting the above

Service Authority Review, Discussion, and Guidance

Upon completion of each task the Working Group will review with the Service Authority its findings, conclusions, and recommendations. Additionally, the Working Group will provide the scope of work, timeline, and cost for the next task, as appropriate. The Authority will then offer discussion and guidance on moving forward.

Regional Community Involvement Plan

Regional community involvement will be accomplished throughout the evaluation process. This is to ensure the most informed decision is made for future solid waste management. A detailed approach for each task will be provided as each is recommended to the Authority. The following tools will be used.

Website Outreach

A project website will be set up as one of the first steps. The project website will act as the main repository for project information and primary means of disseminating that information to the public. The website will provide background information about the project, list announcements and the study's progress, answer common questions, inform the public about ways to

participate, and act as an online library for plan documents. For public input, the website content will include simple forms and surveys to gather public comments on the project at key junctures. There will also be a mechanism for people to ask questions through the website, which the Working Group will periodically review and use to update a Frequently Asked Questions page. Completed reports, meeting materials, and summaries of input will be periodically posted on the project website.

Informational Forum

One regional Informational Forum will be held during the initial tasking of this project in order to provide general community information on solid waste issues, constraints in the region, and options for the future. An additional Informational Forum may be held at a later phase of the project as well, for example, at the stage of evaluating potential options in order to give further community information on technical issues and tradeoffs.

Focus group

1. A Focus Group will be used at key steps in the project to garner input and reactions to the study recommendations as they are developed.
2. The purpose of the Focus Group is to take the pulse of various sectors of the community with respect to key issues in this project and to provide input to the Working Group on the matters of consideration.
3. Guidance will be given by consultant team as to whom to invite and which interests typically should be represented (e.g. homeowners, business owners, preservation groups, chamber of commerce, etc.). It is important to include a diversity of perspectives.
4. Each locality representative on the Working Group will work with their leaders to identify up to 15 members that represent key community interests.

Informational Interviews

1. Informational Interviews will be used primarily at the outset of the project but could also be brought in at key steps in the project to provide additional information to the Working Group.
2. The purpose of the Informational Interviews is to provide technical or organizational information to the Working Group as they conduct the project. Unlike the Focus Group, the purpose of the interviews is not intended primarily for input on issues of community interest, but is intended to gather information relevant to conducting the project. For example, a homeowner would typically share their concerns and input as a representative in a Focus Group, whereas a county planner would share their information typically in an Informational Interview.
3. Guidance will be given by Working Group members and by the Consultant Team on potential interviewees and which agencies, industries or entities typically should be

represented (e.g. waste haulers, large institutions, large industrial enterprises, recyclers, local government representatives, etc.).

4. The members of the Working Group and the Consultant Team will collectively identify a list of about 15 interviewees that represent key technical resources in the project area.
5. The interviews will be conducted either in person or via a phone call.

Services Authority Meetings

At key junctures of the project, the Working Group will report to the Authority on themes and key concerns that are emerging through the community involvement effort. Raw data from the involvement will also be provided.

Working Group Membership

Membership will consist of the current members identified above.

Working Group Meeting Logistics

Meeting locations will be at the Council's offices. Dates and times will be during normal working hours.

Working Group Decision Making

The Working Group will use a consensus decision making process. Consensus decision making works to achieve a collaborative discussion and outcome for the group as a whole. The emphasis is in reaching a reasonable decision by all, even if it is not an individual's preferred option, i.e. a decision everyone can live with.

General Timeline

The effort is expected to take between 18 and 24 months from study initiation.

Technical Assistance

Draper Aden Associates will lead the consulting team and provide engineering support. Joining Draper Aden Associates on the consultant team are Renaissance Planning-community involvement and website support, Burns & McDonnell-financial analysis, waste to energy, and regional recycling, and Coker Composting and Consulting-composting. The consultants' Statement of Qualifications is attached.

Initial Tasking

The initial tasking will accomplish Tasks 1 and 2. The time and materials/not to exceed cost is $68,100. The proposed contract with Draper Aden Associates with the scope of work and timeline are attached.

Recommendation

The Working Group recommends the Service Authority authorize the Solid Waste Management 2030 evaluation, as discussed above.

Attachments

- Solid Waste Management 2030 (consultants') Statement of Qualifications
- Draper Aden Associates' proposal

Draper Aden Associates
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June 10, 2016
(Revision 1)

Mr. Bob White
Deputy Director of Planning and Core Services
Region 2000 Local Government Council
828 Main Street, 12th Floor
Lynchburg, VA 24504

RE: Region 2000 Local Government Council/Services Authority
Solid Waste Management - 2030
Task 1 – Determine options and Task 2 – Determine benefits' criteria
Draper Aden Associates Project No.: B09107-00

Dear Mr. White:

Draper Aden Associates appreciates the opportunity to present to the Region 2000 Services Authority (Authority) through the Local Government Council this proposal for engineering services relative to future solid waste management planning for the Region. The Region currently consists of the City of Lynchburg and the Counties of Appomattox, Campbell and Nelson. This proposal is submitted under the terms of the Master Services Agreement for general engineering services dated July 29, 2013 and replaces all previous proposals provided relative to this topic.

This proposal is prepared based on our discussions with the Working Group, the outline provided to us which summarized the vision for the project, our knowledge of solid waste management planning through our participation in the development of the Region's VDEQ Solid Waste Management Plan and our understanding of the interest by the Region in a robust community involvement process. It addresses Tasks 1 and 2 as identified in the referenced outline as follows:

- ***Task 1: Determine the solid waste management options available to the Service Authority beyond the current facility's capacity.***
  - *The waste management hierarchy must include consideration of recycling, reuse, resource recovery (waste to energy), incineration and landfilling or combinations thereof.*

- ***Task 2: Beyond cost, determine the benefits' criteria needed to be taken into account as part of the options' evaluation.***
  - *Relative weighting should be identified*

For the overall project, our team will include subconsultants who will assist with the community involvement component of this project and subconsultants who will provide technical information on solid waste management as may be needed. For Task 1 and Task 2 we will only use Renaissance Planning for work on the community involvement plan. The subconsultants by expertise include the following:

- **Renaissance Planning:** Community involvement; website development and management
- **Burns & McDonnell:** Waste to energy; regional recycling
- **Coker Composting and Consulting:** Composting

Draper Aden Associates will provide focus on existing conditions, landfill disposal, transfer of waste, serve as the overall project manager for the various components of the project as well as compile all information as gathered for submittal to the Working Group and/or others. Together we are identifying this group including Draper Aden Associates as the ***Consultant Team.*** However, for Tasks 1 and 2, the ***Consultant Team*** will only consist of Draper Aden Associates and Renaissance Planning

It is our understanding that the Working Group will consist of a representative from each member jurisdiction, Mr. Clarke Gibson, Director, Region 2000 Services Authority and yourself acting as the project manager. The Working Group will serve to provide background on individual member programs, insights into key themes and evaluation criteria, topics for surveys, feedback on the website, surveys or draft reports, and assist with the selection of Focus Group members and development of mailing lists as appropriate for dissemination of information. The Working Group will also assist with interviews. The Working Group has already been meeting on a regular basis to initiate discussions on this project.

For the purpose of this proposal, and because the community involvement will be woven throughout the project and not associated with a specific task, we have broken it out as a separate item in this proposal.

I. SCOPE OF WORK

Based on our current understanding of the project as outlined above, the services to be provided by the project team are outlined below.

COMMUNITY INVOLVEMENT PLAN – TASKS 1 AND 2

The Community Involvement Plan for Tasks 1 and 2 is included as Attachment 1. The plan outlines the tools to be used for outreach to the community. Final recommendations developed for Tasks 1 and 2 will be developed in part from information obtained from the community via the various methods outlined in the attachment and in part from technical information collected and provided by the Consulting Team.

ENGINEERING SUPPORT - TASKS 1 AND 2

Task 1 – Determine the solid waste options available to the Authority beyond the current facility's capacity.

The Working Group has already discussed that options should be developed and considered in the context of the solid waste hierarchy. The VDEQ's hierarchy as outlined under 9VAC20-130-30 lists the elements as follows:

- Source reduction
- Reuse
- Recycling
- Resource recovery (waste to energy)
- Incineration; and
- Landfilling

Options should be categorized in accordance with the chosen hierarchy, but options should not be pre-selected based on this hierarchy as the planning process is initiated. Thus, landfilling, of necessity, must continue to be an option although it is at the bottom of the hierarchy.

Prior to initiating development of various options, the Consultant Team (primarily Draper Aden Associates) working together with the Working Group will assemble baseline information on tonnages (by locality, by sector, by material type), demographics (population and projected population growth), current recycling and yard waste programs, current operating costs for the Authority's and members' existing solid waste programs, existing private recycling or composting operations within the Region or within a selected radius of the Region, member recycling or waste diversion programs, and other information that may be helpful for future planning. We have assumed assistance with the coordination and compilation of baseline information will be provided by the Authority, Local Government Council and Working Group.

In addition, the interests or concerns of the Working Group will be assessed relative to the existing system. The community involvement process will be initiated concurrently with the initiation of Task 1.

Solid waste disposal options will be finalized after the Informational Forum and after input from the Focus Group meeting and individual interviews. After discussions with the Working Group and Authority, a memorandum summarizing the chosen options will be prepared for posting on the website.

This task will be considered complete upon identification of the options to be evaluated and preparation of a report summarizing this effort.

Task 2 – Establish benefits' criteria establishing goals and themes

As we have discussed, the Authority and Local Government Council would like to create an approach for this planning process that is transparent, standardized and objective. Under this task, the

Working Group and Consultant Team would develop the themes and criteria against which the options would be ranked and compared.

To meet the objectives of this task, the Working Group and Consultant Team must ultimately develop goals for the regional project out of which themes will be identified under which comparison criteria will be established. The community involvement process will be key in assessing the concerns and interests of the community which will help shape the conversations on the goals/themes and criteria. It is hoped that through the Focus Groups, Informational Forum, survey response and individual interviews that input will be received that will shape the final establishment of the basis for comparison.

This Task will be considered complete upon establishment of the goals, themes, and indicators for the planning process with the preparation of report summarizing the effort under Task 2.

Level of effort for Tasks 1 and 2

Tasks 1 and 2 will be completed concurrently with the Community Involvement process. It is difficult to separate the meetings and effort between the two tasks. Thus, for the fee we have combined the efforts. Engineering efforts in support of Tasks 1 and 2 will include but are not limited to:

- Development of base line information on existing solid waste activities, by Region, by locality, by operations including collections and recycling.
- Preparation of information for and attendance at key meetings.
- Preparation of draft report(s) for review by Working Group
- Preparation of final reports(s) for posting on website.
- Support of Community Involvement Plan by processing information gathered during the process, attending key meetings and forum, assisting with interviews as appropriate as well as provision of technical information.

Assumed meetings: For Draper Aden Associates, our meeting attendance will include a total of four (4) meetings and four (4) conference calls with the Working Group, one (1) Focus Group meeting, preparation for and attendance at the Informational Forum and assistance with preparation for the interviews as appropriate. Draper Aden Associates will not charge its time for attendance at Authority meetings as it is likely that it will be at the meetings on other business. The assumptions made by Renaissance relative to their level of effort is included in their fee estimate in Attachment 4.

II. SCHEDULE

The table below outlines our proposed schedule from issue of notice to proceed (assumed to be the Authority meeting scheduled for June 23, 2016. It should be noted that the actual schedule will be a function of the number of meetings and timeliness of scheduling them, time for the Working Group to review and comment on information provided and community involvement. The goal is to finalize Tasks 1 and 2 by November 2016 for presentation to the Authority in early December. The activities below do not include all activities required for successful completion of these tasks but includes the key ones.

MONTH	KEY ACTIVITIES
July	• Develop website and identify possible content and/or links. • Collect baseline information on existing operations for Authority and member programs. • Working Group members to work with their locality to identify potential Focus Group invitees and individuals to interview. • Working Group to consider mailing lists that may exist or links to inform public of project.
August	• Working Group meeting to review information prepared in July. Determine target groups for email. • Activate website. Include short simple survey to assess interest. • Develop instructional information for Focus Groups. • Prepare for Informational Forum; send out invitations, press releases etc. • Authority meeting to discuss progress on project.
September	• Working Group meeting to review information prepared in August. • Member jurisdictions send out invitations to potential Focus Group members. Provide instructional information. • Send out invitations to Informational Forum. • Hold Informational Forum. • Schedule and hold Focus Group meetings and individual interviews. • Develop Survey to assess interest in criteria • Conduct interviews
October	• Working Group meeting to review information prepared in September. • Determine final options and criteria for assessment of options • Prepare draft summary information for review and comment by Working Group. • Authority meeting to discuss preliminary findings.
November	• Working Group meeting to review information prepared in October and comments on draft documents. • Finalize documents and submit to Authority for review and comment.
December	• Authority meeting to discuss final information. • Present proposal for next task(s)

III. BUDGET

The project as described herein will be completed as a time and materials/not to exceed basis of ***$68,100*** in accordance with the Master Agreement between the Region 2000 Services Authority and Draper Aden Associates. This includes the contractual markup on subconsultants of 10%. Attachment 2 illustrates the breakout of this fee by activity and by consultant. While the fees are broken out by activities, fees could not be broken out by task given the overlapping nature of the work. Attachment 3 provides an hourly fee schedule for Draper Aden Associates and Attachment 4 provides an hourly fee schedule for Renaissance Planning.

IV. DELIVERABLES

Deliverables for this project are identified under the tasks above or in the various attachments.

V. ASSUMPTIONS

The following assumptions were used in preparing this proposal:

- The Working Group will be actively engaged in the planning process as outlined above and provided direction and comments in a timely and thorough manner.
- Additional meetings not specifically included above will be billed in addition to the fee estimate presented herein.

Draper Aden Associates appreciates the opportunity to submit this proposal and we look forward to working with you on this project. Please do not hesitate to contact us should you have any questions.

Sincerely,
DRAPER ADEN ASSOCIATES

Michael D. Lawless, CPG, PG
Vice President

ATTACHMENTS:

Attachment 1 – Community involvement plan
Attachment 2 – Summary of fees
Attachment 3 – Draper Aden Associates – Hourly fee schedule
Attachment 4 – Renaissance Planning – Hourly fee schedule

cc: Mr. Vladimir Gavrilovic, Renaissance Planning
Ms. Lynn Klappich, CSI CCCA, Draper Aden Associates

ATTACHMENT 1 – Revision 1 – 6/9/16
Region 2000 Solid Waste Management 2030
Community Involvement Plan –
Phases 1 & 2 Implementation Activities
Prepared by Renaissance Planning

Website Outreach

1. The Working Group and Consulting Team will work together on the format and content for the project website. The website will stand alone from the Region 2000 Service Authority website, but the latter will include a prominent link to the former.
2. The Consulting Team will set up and manage the project website and will provide content on the project purpose, points of contact, schedule, and background information.
3. The Consulting Team will develop an interactive web-based survey on the website to gather broad public input on attitudes, issues, and concerns about solid waste in the region. The survey results will be summarized according to each locality and included as ongoing survey results on the website.
4. The Consulting Team will prepare an option for the public to submit questions to the Working Group that will inform a Frequently Asked Questions page on the website.
5. The Consulting Team will prepare an option for the public to provide their contact information so they can receive project updates.
6. Draper Aden Associates will process the information and data obtained from the website, and will provide technical content for posting as approved by the Working Group.

Contact Database

1. The Consulting Team will work with the Working Group to develop an initial list of contacts that will include elected officials, staff, and other people that may be interested in the project. The website, information forum, and survey questions will be promoted through this database.
2. The Consulting Team will add to this database through the website and attendees as the Informational Forum.

Informational Forum

1. The Working Group and Consulting Team will work together on the format and schedule for the Informational Forum.
2. The envisioned format is two 1-hour meetings (or slightly longer in duration) conducted the same day (one in afternoon and one in the evening) for interested parties. The content will be an overview of current activities and brief descriptions of the probable key options for solid waste management (e.g. composting, material recovery facilities (MSW and CDD), WTE, and transfer) Specific information on landfill design or operation will probably be included in the presentation on current activities.

3. The Working Group will assist in outreach to each of their respective communities for the Forum by providing contact info and forwarding email announcements and flyers on the Informational Forum.
4. The Consulting Team will provide promotional materials and organize the Informational Forum.
5. The Consulting Team will prepare presentations and staff the Informational Forum.
6. Although the Informational Forum is not intended primarily as an opportunity for community input, there will be an opportunity to submit input on comment forms and the Consulting Team will provide a summary of any input received at the Informational Forum.
7. Draper Aden Associates will make the presentation. The assistance from other technical Consultant Team members (Burns and McDonnell/Coker Composting) will not be required for this presentation.

Focus Groups

1. The Focus Group meeting will follow the Informational Forum.
2. Working Group members agree to organize Focus Groups in their respective localities or appoint an assistant point of contact to help with the organization. Each locality will determine how best to establish their Focus Group. The Consulting Team will provide suggestions on possible entities to be included.
3. The Consulting Team will develop a Focus Group Instruction packet which describes the overall project, purpose of the Focus Group, instructions for setting them up, and general protocols for meetings.
4. The Consulting Team will work with contacts in each locality and give them instructions to set up the Focus Group.
5. The Working Group will schedule first Focus Group meeting which will be held in a central location (probably Lynchburg).
6. The Consulting Team will conduct one Focus Group meeting with the concept of the format to be:
    - 15 minutes – presentation by Consultant Team on project background, purpose and overview.
    - 30 minute – breakout sessions by locality; during these sessions the Focus Group of each locality will have an opportunity to discuss key concerns or issues which may become the basis for themes for the criteria or insights into options.
    - 30 minutes – Focus Groups to make brief presentations on their discussions to the larger group.
    - 15 minutes – wrap up and next steps.
7. Focus Group input to be summarized as “common themes” for each locality on the website.

Informational Interviews

1. Working Group members and the Consulting Team will collectively identify a list of up to 15 interviewees that represent key technical resources in the project area. After the list is prepared, the Working Group will determine if any of the interviews are best conducted by a

member or members of the Working Group instead of the Consulting Team. The Working Group will provide all contact information.

2. The Consulting Team will prepare a series of questions that parties could use during the interviews.
3. The Consulting Team and/or members of the Working Group will work with contacts to set up interview schedule.
4. The Consulting Team and/or members of the Working Group will conduct up to 15 Informational Interview meetings with interviewees. Some interviewees may be interviewed together if their expertise areas are related and compatible.
5. The Consulting Team and/or members of the Working Group will work with a list of general questions but will be flexible depending on the technical area of expertise of each interviewee.
6. About half will be in person and half will be over the phone, depending on the preference and availability of the interviewee.
7. At the end of each interview, a summary of the questions/responses/comments provided by the interviewee will be prepared by the Interviewee for submittal to the Consultant Team or Working Group.
8. Informational Interview material to be summarized as "Interview Summaries" on the website.

Project Working Group Meetings

1. Working Group members will meet on a regular basis and will work with the Consulting Team to initiate the study and accomplish the deliverables of Tasks 1 & 2 as set forth in the Project Scope.
2. The Consulting Team will meet with the Working Group up to 4 times to complete Tasks 1 & 2 according to the Project Scope.
3. The Consulting Team will participate in up to 4 conference calls with the Working Group to complete Tasks 1 & 2 according to the Project Scope.

Services Authority Meetings

1. The Working Group and Consulting Team will provide a briefing on this project to the Services Authority at their June 23rd meeting and at up to 4 additional meetings.

ATTACHMENT 2

REGION 2000 - SOLID WASTE PLANNING - 2030					
SUMMARY OF CONSULTANT FEES - Revision 1					
6/10/2016					
ACTIVITY	**DAA**	**RENAISSANCE**	**BURNS AND MCDONNELL**	**COKER**	**TOTAL**
Background information development	$4,340				$4,340
Website development and support/data base	$1,700	$5,722			$7,422
Working group meetings	$9,850	$5,349			$15,199
Information forum	$3,730	$511			$4,241
Focus group meeting	$3,390	$2,861			$6,251
Interviews	$680	$2,810			$3,490
Service authority meetings (4) and preparation	$0	$2,584			$2,584
General support	$2,560	$4,870			$7,430
Review data/assist with development of information	$8,210				$8,210
Document preparation	$5,490				$5,490
Expenses - Renaissance only - others included		$844			$844
SUBTOTAL	***$39,950***	***$25,551***	***$0***	***$0***	***$65,501***
Subconsultant markup (10%)		$2,555			
TOTAL	**$39,950**	**$28,106**			**$68,056**

ATTACHMENT 3
REGION 2000 SERVICES AUTHORITY
STRATEGIC PLAN - TASKS 1 AND 2

REGION 2000 SERVICES AUTHORITY								
LONG RANGE STRATEGIC PLAN - FUTURE SOLID WASTE MANAGEMENT OPTIONS								
TASKS 1 AND 2								
9-Jun-16								
Travel included in meetings.								
Draper Aden Associates	**Personnel**							**SUBTOTAL**
Activity	**Principal**	**Program Manager I**	**Program Manager II**	**Staff Proj Admin**	**Clerical**	**Reimb**	**Total**	
2015 Standard Hourly Rates (thru 12/31/15)	**235**	**170**	**170**	**75**	**75**			
Initials of individuals if known	**MDL**	**KB**	**LPK**	**RE**	**LK**			
COLLECT AND PREPARE BACKGROUND INFORMATION	4		20				$ 4,340	$ 4,340
WEBSITE SUPPORT			10				$ 1,700	$ 1,700
WORKING GROUP MEETINGS								
Meeting 1	4		4			$ 150	$ 1,770	
Meeting 2	4					$ 150	$ 1,090	
Meeting 3	4					$ 150	$ 1,090	
Meeting 4	4		4			$ 150	$ 1,770	
Conference calls (4) @ 1.5 hours each	6		6				$ 2,430	
Preparation or follow up for meetings or calls			10				$ 1,700	$ 9,850
INFORMATIONAL FORUM - Two 1-hour meetings/same day								
Cooridination and preparation	2		10				$ 2,170	
Two 1-hour meetings - Afternoon and PM	6					$ 150	$ 1,560	
Coker Composting + markup							$ -	
Burns and McDonnell + markup							$ -	
Followup							$ -	$ 3,730
FOCUS GROUPS								
Focus Group - Central location - evening (2 hours + prep/followup)	8		8			$ 150	$ 3,390	$ 3,390
ASSIST WITH INTERVIEWS (Preparation only)			4				$ 680	$ 680
REVIEW DATA/ASSIST WITH DEVELOPMENT OF OPTIONS AND CRITERIA	6		40				$ 8,210	$ 8,210
DOCUMENT PREPARATION	6		24				$ 5,490	$ 5,490
AUTHORITY MEETINGS - no charge							$ -	
General support services			8	8	8		$ 2,560	$ 2,560
							$ -	
Subtotal	54	0	148	8	8		$ 39,050	$ -
Labor Cost	$ 12,690	$ -	$ 25,160	$ 600	$ 600		$ 39,050	
Reimbursables						$ 900	$ 900	
TOTAL							$ 39,950	$ 39,950

SOLID WASTE MANAGEMENT 2030 PLAN - REGION 2000 SERVICES AUTHORITY

Date: 06/09/16
Project Mgr. MC
Project No: **DRAFT SCOPING WORKSHEET**

Role:	Renaissance			Total Hours	Labor Cost	Total Cost
	Principal (VG)	Proj. Mgr. (MC)	Planner (JG)			
	$210.30	$127.73	$98.41			
Task 1 & 2						
Initial Website Development & Content Updates	1	12	32	**45**	$ 4,892	$ 4,892
Set up Contacts Database	1	1	5	**7**	$ 830	$ 830
Assist in organizing and promoting Informational Forum	0	4	0	**4**	$ 511	$ 511
Organize and Facilitate Focus Group Meeting	5	8	8	**21**	$ 2,861	$ 2,861
Organize and Assist in up to 8 Informational Interviews	0	22	0	**22**	$ 2,810	$ 2,810
Participate in 4 Project Working Group Meetings	4	24	0	**28**	$ 3,907	$ 3,907
Participate in 4 Project Working Group Conference Calls	2	8	0	**10**	$ 1,442	$ 1,442
Participate in 2 Region 2000 Services Authority Board Meetings	4	4	0	**8**	$ 1,352	$ 1,352
Provide Summaries of Community Input prior to each Board Meeting	1	8	0	**9**	$ 1,232	$ 1,232
General Project Coordination	4	30	2	**36**	$ 4,870	$ 4,870
Total Hours:	**22**	**121**	**47**	190		
Loaded Labor $:	4,627	15,455	4,625	24,707	**$ 24,707**	**$ 24,707**

Direct Expenses	***Units***	***Rate***	***Total***
Air Travel	0	$0	$ -
Mileage	1100	$ 0.54	$ 594
Lodging	0	$ 94.00	$ -
Per diem	0	$ 59.00	$ -
Mailing/Delivery	0	$0	$ -
Other (Website and survey provider fees)	1	$250	$ 250
Total			$ 844

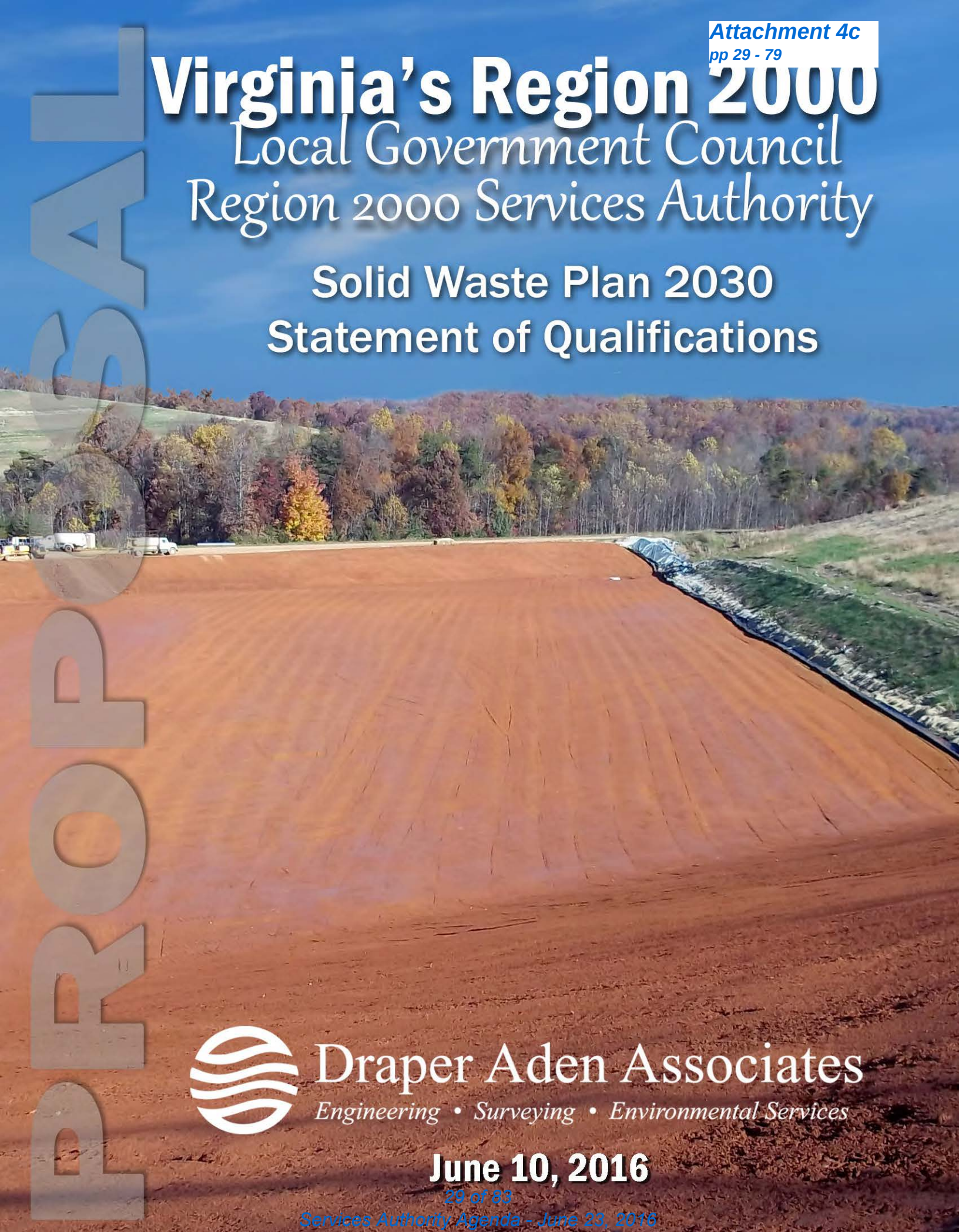
Total Labor:	**$ 24,707**
Direct Expenses:	$ 844
Total Expenses:	**$ 844**
Total Cost:	**$ 25,551**

Assumptions – Renaissance – Modified Community Involvement plan
6/10/16

- **Informational Forum:** Assumes RPG will provide guidance on the format, and promotion of the Forum via website and flyer. DAA or other team members will develop the content and staff the event.
- **Focus Groups:** Assumes Renaissance will prepare the instruction packet and assist in facilitating the event and summarize the outputs. VG and MC attend the event. Assumes that DAA or others will prepare the introductory presentation.
- **Informational Interviews:** Assumes Renaissance will help facilitate up to 8 interviews with the remainder to be facilitated by Working Group or other consultant team members. Assumes 1 Renaissance staff person will participate in each. Assumes 2 full days for in person interviews (likely 4 in a day, requiring 2 trips). Assumes 6 total hours to summarize findings. Assumes Working Group will take a lead in scheduling and logistics. Assumes DAA will assist in the drafting of questions.
- **Project Working Group Meetings:** Assumes 4 hours for each (2 hour meeting with 2 hours travel). Assumes VG attends 1, MC attends all 4. Assumes MC spends 2-4 hours prior to each meeting prepping materials for discussion
- **Project Working Groups Conference Calls:** Assumes 2 hours for each. VG attends 1 and MC attends all 4
- **Services Authority Board Meetings:** Assumes MC attends 1 and VG attends 1
- **Summaries:** Assumes MC prepares a brief memo summarizing themes emerging through involvement activities prior to each meeting. Also assumes MC provides raw data on inptu received to date.
- **Mileage:** Assumes driving to 4 Working Group Meetings, 2 Services Authority Board meetings, 1 Informational Forum, and 2 times for Informational Interviews. Driving distance is 68 miles each way (136 per trip)
- **General Project Coordination:** Assumes Renaissance staff will be involved in coordinating the input from community involvement with technical deliverables.

Virginia's Region 2000
Local Government Council
Region 2000 Services Authority

Solid Waste Plan 2030
Statement of Qualifications



PROPOSAL

Draper Aden Associates
Engineering • Surveying • Environmental Services

June 10, 2016

ARCHITECT – ENGINEER QUALIFICATIONS

PART I – CONTRACT-SPECIFIC QUALIFICATIONS

A. CONTRACT INFORMATION

1. TITLE AND LOCATION *(City and State)*	Professional Engineering Services for the Region 2000 Services Authority; Campbell County, Virginia	
2. PUBLIC NOTICE DATE	June 10, 2016	3. SOLICITATION OR PROJECT NUMBER

B. ARCHITECT-ENGINEER POINT OF CONTACT

4. NAME AND TITLE	Michael Lawless, PG, Executive Vice President		
5. NAME OF FIRM	Draper Aden Associates		
6. TELEPHONE NUMBER 540-552-0444	7. FAX NUMBER 540-552-0291	mlawless@daa.com	

C. PROPOSED TEAM

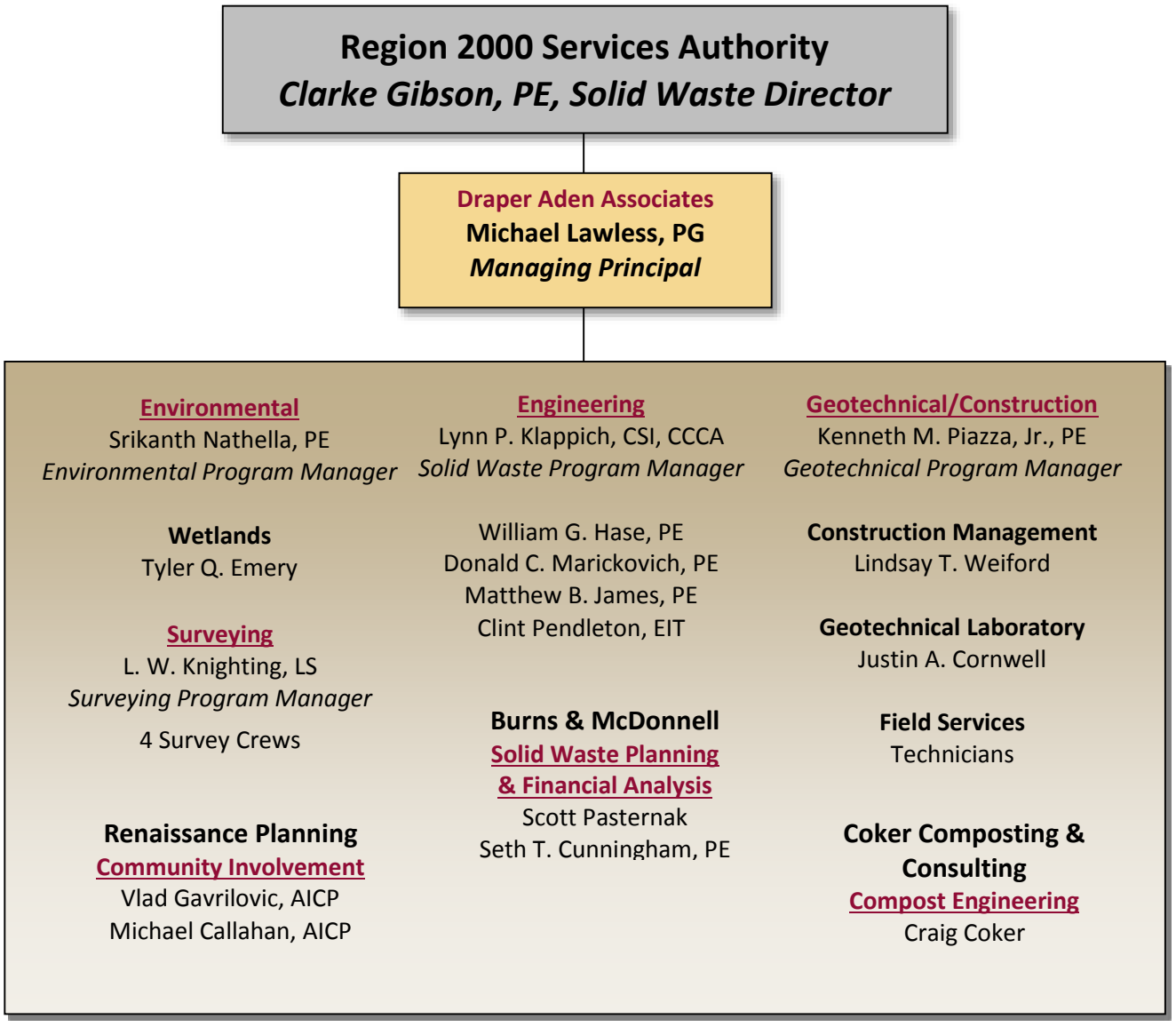
(Complete this section for the prime contractor and all key subcontractors.)

	(Check) PRIME	(Check) J-V PARTNER	(Check) SUBCONTRACTOR	9. FIRM NAME	10. ADDRESS	11. ROLE IN THIS CONTRACT
a.	■			Draper Aden Associates ☐ CHECK IF BRANCH OFFICE	2206 South Main Street Blacksburg, VA 24060	Prime Engineer
b.			■	Burns and McDonnell ☐ CHECK IF BRANCH OFFICE	8911 N. Capital of Texas Hwy Bldg. 3, Ste. 3100 Austin, TX 78759	Solid Waste Planning & Financial Analysis
c.			■	Coker Composting & Consulting ☐ CHECK IF BRANCH OFFICE	2186 Mountain Pass Rd. Troutville, VA 24175	Compost Engineering
d.			■	Renaissance Planning ☐ CHECK IF BRANCH OFFICE	455 Second St., SE, Ste. 300 Charlottesville, VA 22902	Community Involvement
e.				☐ CHECK IF BRANCH OFFICE		
f.				☐ CHECK IF BRANCH OFFICE		

D. ORGANIZATIONAL CHART OF PROPOSED TEAM ☒ *(Attached)*

STANDARD FORM 330 (1/2004) PAGE 1

DRAPER ADEN ASSOCIATES
PROPOSED PROJECT TEAM ORGANIZATION CHART



E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS PROJECT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Lynn P. Klappich, CSI, CCCA	**Solid Waste Program Manager**	33	25

15. FIRM NAME AND LOCATION *(City and State)* **Draper Aden Associates, Blacksburg, Virginia**

16. EDUCATION *(DEGREE AND SPECIALIZATION)*

- M.S./1980/Environmental Science and Engineering
- B.A./1977/Geology

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

18. OTHER PROFESSIONAL QUALIFICAITONS *(Publications, Organizations, Training, Awards, etc.)*

Training

- Certified Construction Contracts Administrator
- CSI

Organizations

- Southwest Virginia Solid Waste Management Association

Organizations, continued

- National Recycling Coalition
- Virginia Recycling Coalition
- Solid Waste Association of North America

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **Consulting Services, Virginia's Region 2000 Local Government Council/Region 2000 Services Authority, Lynchburg, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2006-present; CONSTRUCTION *(If applicable)*: 2008-present

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☑ Check if project performed with current firm

Project manager for all efforts relative to the solid waste program for the Region 2000 Services Authority (see detailed project description on SF 330, Section F, page 23).

b.

(1) TITLE AND LOCATION *(City and State)*: **Consulting Services, Appomattox County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2006-present; CONSTRUCTION *(If applicable)*: 2006-2009

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☑ Check if project performed with current firm

Project manager for all effort relative to the Appomattox County solid waste program including the following:

- Preparation and submittal of Part B application for Cells J and K and closure documents for Cell 1
- Assistance with evaluation of regional membership; recommended that County join Region 2000
- Bidding and construction phase services for Cell I closure and upgrade to convenience centers

c.

(1) TITLE AND LOCATION *(City and State)*: **Consulting Services, Amherst County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 1999-present; CONSTRUCTION *(If applicable)*:

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☑ Check if project performed with current firm

Project manager for all effort relative to the Appomattox County solid waste program including the following:

- Preparation and submittal of major Permit Amendment which combined Trench A and B; second amendment in progress
- Preparation and submittal of operational amendments as required by DEQ
- Bidding and construction phase services for partial closure Trench A, cell construction and convenience centers
- Ongoing operational and planning assistance as requested by County.

d.

(1) TITLE AND LOCATION *(City and State)*: **Consulting Services Carroll-Grayson-Galax Solid Waste Authority, Carroll County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*: Ongoing

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☑ Check if project performed with current firm

Project manager for all efforts relative to the CGGSWA solid waste program (see detailed project description on SF 330, Section F, page 26).

e.

(1) TITLE AND LOCATION *(City and State)*: **Consulting Services, Fauquier County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*: Ongoing

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☑ Check if project performed with current firm

Project manager for all efforts relative to the Fauquier County solid waste program including the following:

- Developed master plan for facility after evaluation of multiple options; plan is updated every several years and schedules modified as appropriate
- Bidding and construction phase services for cell construction; supported VRA financing
- Operational support including major financial evaluations, life expectancy analyses, aerial and field survey support, annual budgeting and tipping fee evaluations, financial assurance, beneficial use demonstrations, sampling and analysis of fines generated by mining operations, annual DEQ report on mining operations

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS PROJECT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
William G. Hase, PE	**Senior Project Engineer**	30	24

15. FIRM NAME AND LOCATION *(City and State)* **Draper Aden Associates, Richmond, Virginia**

16. EDUCATION *(DEGREE AND SPECIALIZATION)*

- B.S./1981/Civil Engineering

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

- Virginia, North Carolina/Professional Engineer

18. OTHER PROFESSIONAL QUALIFICAITONS *(Publications, Organizations, Training, Awards, etc.)*

Organizations:

- SWANA, Old Dominion Chapter
- SWANA Chapter Technical Committee

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **Nottoway County Sanitary Landfill, Nottoway, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2013 | CONSTRUCTION *(If applicable)*: N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Manager. Design and major permit modification of landfill liner and final cover design. Includes alternate liner and alternate final cover design. Ongoing engineering support services in all aspects of solid waste management.

b.

(1) TITLE AND LOCATION *(City and State)*: **Bear Island Paper WB Industrial Landfill, Ashland, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2013 | CONSTRUCTION *(If applicable)*: 2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Manager. Design of construction plans and documents for new landfill cell, including erosion and sediment control plan, provide bidding services and construction phase services. Ongoing engineering support services in all aspects of solid waste management.

c.

(1) TITLE AND LOCATION *(City and State)*: **Fauquier County Sanitary Landfill, Warrenton, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2013 | CONSTRUCTION *(If applicable)*: 2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Manager. Design of construction plans and documents, including site plans and erosion and sediment control plans, provide bidding services and construction quality assurance services for new landfill cell. Ongoing engineering support services in all aspects of solid waste management.

d.

(1) TITLE AND LOCATION *(City and State)*: **Orange County Sanitary Landfill, Orange, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2012 | CONSTRUCTION *(If applicable)*: 2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Manager. Design and permitting of new landfill, design of construction plans and documents, including site plans and erosion and sediment control plans, provide bidding services and construction quality assurance services for new landfill cell. Ongoing engineering support services in all aspects of solid waste management.

e.

(1) TITLE AND LOCATION *(City and State)*: **Spotsylvania County Solid Waste Division, Spotsylvania, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2013 | CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Manager. Various tasks including design of construction plans and documents for stormwater management improvements, planning assistance for landfill expansion, obtain termination of landfill gas monitoring at two closed landfills, update post-closure care plan at closed landfill, update operations manual for active landfill, permit modification to replace leachate holding basins with tanks. Ongoing engineering support services in all aspects of solid waste management.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS PROJECT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Donald C. Marickovich, PE	**Senior Design Engineer**	33	21

15. FIRM NAME AND LOCATION *(City and State)* **Draper Aden Associates, Blacksburg, Virginia**

16. EDUCATION *(DEGREE AND SPECIALIZATION)*

- M.S./1990/Environmental Engineering
- B.S./1976/Physics

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

- Virginia/Professional Engineer

18. OTHER PROFESSIONAL QUALIFICAITONS *(Publications, Organizations, Training, Awards, etc.)*

Organizations:

- American Water Works Association

Certifications:

- 40-Hour OSHA Hazardous Waste Health and Safety Training

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **Gas Collection System, Springfield Road Landfill, Henrico County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*: 2010

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Engineer. Expansion of landfill gas collection system, including the installation of 19 gas wells and 3,000 LF of HDPE piping. Monitoring, operation and maintenance of the 124 gas well collection system and the blower flare station, which provides landfill gas to a gas-to-energy plant.

b.

(1) TITLE AND LOCATION *(City and State)*: **Landfill Programs Gas Management, Various Facilities in Virginia**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*: N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Engineer. Implementation and coordination of the gas management programs at 15 area landfills, including gas monitoring, remediation, Title V compliance, and Tier 2 testing.

c.

(1) TITLE AND LOCATION *(City and State)*: **Gas Collection system, Tazewell LFG Development, LLC, Tazewell County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Engineer. Design of an active gas collection system consisting of 14 gas wells, 2,500 LF of HDPE piping and an 800 cubic-foot per minute blower flare station. The collection system will eventually provide the landfill gas to a treatment plant to create pipeline quality gas.

d.

(1) TITLE AND LOCATION *(City and State)*: **Landfill Gas Collection Systems, Roanoke Valley Resource Authority, Roanoke, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*: 2007

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Engineer for the installation and operation of gas collection system expansion at the Rutrough Road landfill. Gas monitoring, operations assistance, and remediation activities, including monitoring and adjusting gas collection system well fields at the Smith Gap and Rutrough Road landfills.

e.

(1) TITLE AND LOCATION *(City and State)*: **Gas Collection System, Livingston Landfill #2, Spotsylvania County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*: 2010

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Engineer. Design, bidding and installation of a gas collection system, including 2,700 LF of HDPE piping and an 800-cubic foot per minute blower flare station.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS PROJECT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Matthew B. James, PE	**Design Engineer**	3	4

15. FIRM NAME AND LOCATION *(City and State)* **Draper Aden Associates, Blacksburg, Virginia**

16. EDUCATION *(DEGREE AND SPECIALIZATION)*

- M.S./2010/Civil Engineering
- B.S./2007/Civil Engineering

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

- Virginia/Professional Engineer

18. OTHER PROFESSIONAL QUALIFICAITONS *(Publications, Organizations, Training, Awards, etc.)*

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **Solid Waste Facilities, Region 2000, Campbell County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2012 | CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Engineer. Responsible for site work and stormwater management design. Project included new office, scales and scale house, and maintenance facility for Region 2000 operations at the Campbell County landfill. Supported bidding and providing construction phase services (review of shop submittals, response to RFI's, progress meetings, etc.)

b.

(1) TITLE AND LOCATION *(City and State)*: **Transfer Station, Rockbridge County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2011 | CONSTRUCTION *(If applicable)*: N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Engineer. Site engineering design including stormwater management for a transfer station for Rockbridge County.

c.

(1) TITLE AND LOCATION *(City and State)*: **City of Galax Stormwater Management Program Development, Galax, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing | CONSTRUCTION *(If applicable)*:

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Engineer. Currently developing draft budget and staffing plans and ordinances for and facilitating meetings to obtain feedback. Future work includes the development of final budget and staffing plans and ordinances, an Administrative Guidance Manual for plan review, inspections, maintenance and enforcement; educational programs/presentations to the Council and staff; and a stormwater utility fee feasibility study.

d.

(1) TITLE AND LOCATION *(City and State)*: **Bland County Commerce Park Development, Bland County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2012 | CONSTRUCTION *(If applicable)*:

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Staff Engineer. Prepared construction documents for a 22-acre proposed commerce park, including access road, utility extension, grading, and stormwater management design. This project included Federal EDA and VDOT Industrial Access funding.

e.

(1) TITLE AND LOCATION *(City and State)*: **Stormwater Management Master Plan, Radford University, Radford, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2012 | CONSTRUCTION *(If applicable)*:

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Engineer. Prepared a preliminary stormwater management master plan for the Radford University campus for the buildings slated to begin construction within the next 5 to 6 years. This effort also included a review and analysis of the University's existing stormwater management facilities with respect to the new Virginia stormwater management ordinance.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS PROJECT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Kenneth M. Piazza, Jr., PE	**Geotechnical Program Manager**	23	20

15. FIRM NAME AND LOCATION *(City and State)* **Draper Aden Associates, Richmond, Virginia**

16. EDUCATION ***(DEGREE AND SPECIALIZATION)***

- B.S./1990/Civil and Environmental Engineering

17. CURRENT PROFESSIONAL REGISTRATION ***(STATE AND DISCIPLINE)***

- Virginia/Professional Engineer

18. OTHER PROFESSIONAL QUALIFICATIONS ***(Publications, Organizations, Training, Awards, etc.)***

- VDOT Field Certification - Concrete Radiological Health and Safety Training
- OSHA 24-hr Safety Training

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **Northampton Landfill Closure, Northampton County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2009 | CONSTRUCTION *(If applicable)*: 2009

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Certifying Engineer. Quality Control and Quality Assurance oversight of construction of a 12.5-acre landfill closure. Responsibilities included overseeing of construction of compacted soil layer, HDPE liner and drainage layer, and compiling the quality assurance data for the certification report.

b.

(1) TITLE AND LOCATION *(City and State)*: **Livingston Landfill Cell 5, Spotsylvania County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2011 | CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Certifying Engineer. Providing Quality Assurance for construction of new 6-acre cell (double synthetic liner system).

c.

(1) TITLE AND LOCATION *(City and State)*: **Livestock Road Regional Landfill Cells 6/7, Campbell County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2012 | CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Certifying Engineer overseeing Quality Control and Quality Assurance of construction of a 9-acre landfill cell (Subtitle D composite liner system).

d.

(1) TITLE AND LOCATION *(City and State)*: **Fauquier County Landfill Cell 1, Fauquier County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2010 | CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Certifying Engineer. Quality Control and Quality Assurance Oversight for construction of a new, 7-acre landfill cell. Responsibilities included overseeing of construction of compacted soil liner, HDPE liner, drainage layer and a leachate collection system and compiling the quality assurance data for the certification report.

e.

(1) TITLE AND LOCATION *(City and State)*: **Orange County Landfill Cell 1, Orange County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2013 | CONSTRUCTION *(If applicable)*: 2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Certifying Engineer. Construction of a new 8-acre landfill cell with an alternate (GCL) liner system.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS PROJECT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Lindsay T. Weiford	**CQA Project Manager**	26	21

15. FIRM NAME AND LOCATION *(City and State)* **Draper Aden Associates, Richmond, Virginia**

16. EDUCATION *(DEGREE AND SPECIALIZATION)*

- Completing Civil Engineering Degree through TeleTechNet/Old Dominion University
- Civil Engineering Studies - Surveying/1988-1992/Virginia Tech
- Civil Engineering Technology Studies/1987-1992/New River Community College
- Civil Engineering Studies - Surveying/1984-1987/Old Dominion University

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

18. OTHER PROFESSIONAL QUALIFICAITONS *(Publications, Organizations, Training, Awards, etc.)*

Certifications

40-Hour OSHA Hazardous Waste Training
Virginia Department of Transportation: Concrete Certification
Humboldt: Hydraulic Conductivity and Triaxial Shear Certification
Radiation Safety Officer Training
Nuclear Radiation Safety Training

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **Northampton Landfill Closure, Northampton County, VA**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES 2009; CONSTRUCTION *(If applicable)* 2009

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

CQA Project Manager for the construction of a 12.5-acre landfill closure. Responsibilities included overseeing of construction of compacted soil layer, HDPE liner and drainage layer, and compiling the quality assurance data for the certification report.

b.

(1) TITLE AND LOCATION *(City and State)*: **Livingston Landfill Cell 5, Spotsylvania County, VA**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES 2011; CONSTRUCTION *(If applicable)* 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

CQA Project Manager for the construction of new 6-acre cell (double synthetic liner system).

c.

(1) TITLE AND LOCATION *(City and State)*: **Livestock Road Regional Landfill Cells 6/7, Campbell County, VA**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES 2012; CONSTRUCTION *(If applicable)* 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

CQA Project Manager for the construction of a 9-acre landfill cell (Subtitle D composite liner system).

d.

(1) TITLE AND LOCATION *(City and State)*: **Fauquier County Landfill Cell 1, Fauquier County, VA**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES 2010; CONSTRUCTION *(If applicable)* 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

CQA Project Manager for the construction of a new, 7-acre landfill cell. Responsibilities included overseeing of construction of compacted soil liner, HDPE liner, drainage layer and a leachate collection system and compiling the quality assurance data for the certification report.

e.

(1) TITLE AND LOCATION *(City and State)*: **Orange County Landfill Cell 1, Orange County, VA**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES 2013; CONSTRUCTION *(If applicable)* 2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

CQA Project Manager. Construction of a new 8-acre landfill cell with an alternate (GCL) liner system.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS PROJECT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Justin A. Cornwell	**Geotechnical Laboratory Manager**	11	11

15. FIRM NAME AND LOCATION *(City and State)* **Draper Aden Associates, Richmond, Virginia**

16. EDUCATION *(DEGREE AND SPECIALIZATION)*

- B.S./2001/Economics

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

Certifications

- ACI, concrete Field Testing Certification
- VDOT Soils and Asphalt
- Nuclear Radiation Safety Training
- GSI-ISP Certification

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **Northampton Landfill Closure, Northampton County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2009; CONSTRUCTION *(If applicable)*: 2009

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

CQA Laboratory Manager for the construction of a 12.5-acre landfill closure. Responsibilities included overseeing of construction of compacted soil layer, HDPE liner and drainage layer, and compiling the quality assurance data for the certification report.

b.

(1) TITLE AND LOCATION *(City and State)*: **Livingston Landfill Cell 5, Spotsylvania County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2011; CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

CQA Laboratory Manager for the construction of new 6-acre cell (double synthetic liner system)..

c.

(1) TITLE AND LOCATION *(City and State)*: **Livestock Road Regional Landfill Cells 6/7, Campbell County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2012; CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

CQA Laboratory Manager for the construction of a 9-acre landfill cell (Subtitle D composite liner system).

d.

(1) TITLE AND LOCATION *(City and State)*: **Fauquier County Landfill Cell 1, Fauquier County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2010; CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

CQA Laboratory Manager for the construction of a new, 7-acre landfill cell. Responsibilities included overseeing of construction of compacted soil liner, HDPE liner, drainage layer and a leachate collection system and compiling the quality assurance data for the certification report.

e.

(1) TITLE AND LOCATION *(City and State)*: **Orange County Landfill Cell 1, Orange County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2013; CONSTRUCTION *(If applicable)*: 2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

CQA Laboratory Manager for the construction of a new 8-acre landfill cell with an alternate (GCL) liner system.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS PROJECT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Srikanth Nathella, PE	**Environmental Program Manager**	23	19

15. FIRM NAME AND LOCATION *(City and State)* **Draper Aden Associates, Blacksburg, Virginia**

16. EDUCATION *(DEGREE AND SPECIALIZATION)*

- M.S./Environmental Engineering
- B.S./Major Area - Chemical Engineering

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

- Virginia/Professional Engineer

18. OTHER PROFESSIONAL QUALIFICAITONS *(Publications, Organizations, Training, Awards, etc.)*

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*
Groundwater Monitoring Services, Concord Turnpike Regional Landfill and Livestock Road Regional Landfill, Region 2000 Services Authority, Lynchburg, VA

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
1996 - Present	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Program Manager. Ongoing groundwater monitoring program at the Authority's two landfill facilities.

b.

(1) TITLE AND LOCATION *(City and State)*
Groundwater Monitoring Program, Roanoke Valley Resource Authority, Roanoke, VA

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
1997 – Present	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Manager. Groundwater programs for both the Smith Gap and Rutrough Road landfills. Project Manager over the last 16 years for these projects; managed and executed various aspects of both projects including meeting Assessment and Detection monitoring program requirements, addressed DEQ comments and other regulatory issues; performed alternate source demonstration, performed environmental impact characterizations, technology assessments, fate and transport modeling and risk assessment, corrective action planning and design, surface water monitoring and residential sampling and analysis, and other applicable tasks.

c.

(1) TITLE AND LOCATION *(City and State)*
Groundwater Monitoring Program, Spotsylvania County, VA

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
1985 - Present	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Manager. Groundwater program for the last 14 years for the County's Berkeley Landfill; managed and executed various aspects of both projects including meeting Phase I & Phase II monitoring program requirements, addressed DEQ comments and other regulatory issues; performed environmental impact characterizations, technology assessments, risk assessment, corrective action planning and design, surface water monitoring and other applicable tasks.

d.

(1) TITLE AND LOCATION *(City and State)*
Groundwater Monitoring Program, Town of Wytheville, VA

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
1996 - Present	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Manager. Groundwater program for the last 16 years for the Town's closed landfill; managed and executed various aspects of the project including meeting Assessment monitoring program requirements, addressed DEQ comments and other regulatory issues; performed environmental impact characterizations, technology assessments, risk assessment, corrective action planning and design, surface water monitoring and other applicable tasks.

e.

(1) TITLE AND LOCATION *(City and State)*
Termination of Post-closure Care, Craig County, VA

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
2009	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Manager. Groundwater program for the last 16 years for the County's closed landfill; managed and executed various aspects of the project including meeting Detection monitoring program requirements, successfully completed several alternate source demonstrations, prepared a termination of post-closure care request following the 10-year mandatory monitoring period; successfully obtained DEQ's draft approval for the termination of post-closure care.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS PROJECT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Tyler Q. Emery	**Field Services**	11	6

15. FIRM NAME AND LOCATION *(City and State)* **Draper Aden Associates, Blacksburg, Virginia**

16. EDUCATION *(DEGREE AND SPECIALIZATION)*

- B.S./2007/Environmental Science

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

18. OTHER PROFESSIONAL QUALIFICAITONS *(Publications, Organizations, Training, Awards, etc.)*

Continuing Education

- The Complete Ground Water Sampling Field Course
- HAZWOPER - 40 (29 CFR 1910.120), Confined Space Entry Operations (29 CFR 1910.146)
- OSHA 8-hour Refresher
- Scope, Extent and Effect of EAP's New "All Appropriate Inquire Standard" for Due Diligence

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **Groundwater Monitoring Services, Concord Turnpike Regional Landfill and Livestock Road Regional Landfill, Region 2000 Services Authority, Lynchburg, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 1996 - Present; CONSTRUCTION *(If applicable)*: N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Technician. Ongoing groundwater monitoring program at the Authority's two landfill facilities.

b.

(1) TITLE AND LOCATION *(City and State)*: **Smith Gap and Rutrough Road Landfills, Roanoke Valley Resource Authority, Roanoke, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*:

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Technician. Sample active gas extraction system and adjust according to individual well needs to improve gas extraction efficiency and flare performance. Observe and log gas vent well installation and placement with drilling companies.

c.

(1) TITLE AND LOCATION *(City and State)*: **Montgomery County Landfill, Montgomery County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*:

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Technician. Sample groundwater monitoring wells for closed municipal solid waste landfill.

d.

(1) TITLE AND LOCATION *(City and State)*: **Industrial Client, Radford, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*:

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Technician. Low-flow groundwater sampling of hazardous and solid waste units.

e.

(1) TITLE AND LOCATION *(City and State)*: **Smyth County Landfill, Smyth County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing; CONSTRUCTION *(If applicable)*:

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Project Technician. Sample active gas extraction system and adjust according to individual well needs to improve gas extraction efficiency and flare performance. Observe and log gas vent well installation and placement with drilling companies.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS PROJECT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
L.W. Knighting, LS	**Survey Manager**	38	15

15. FIRM NAME AND LOCATION *(City and State)* **Draper Aden Associates, Blacksburg, Virginia**

16. EDUCATION *(DEGREE AND SPECIALIZATION)*

- B.S./Forestry and Wildlife

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

- Virginia, West Virginia/Professional Land Surveyor

18. OTHER PROFESSIONAL QUALIFICAITONS *(Publications, Organizations, Training, Awards, etc.)*

- Training:
- Topcon Total Stations
- Wild T-2 Total Station
- Wildsoft (Software and Data Collection)
- TDS Data Collection

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **Region 2000 Services Authority, Campbell County Landfill Water and Sewer Improvements, Campbell County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2012 | CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Survey Manager. Surveying for the addition of public water and sewer service to the old Campbell County Landfill prior to re-commissioning in 2012.

b.

(1) TITLE AND LOCATION *(City and State)*: **Topographic mapping, boundary surveys, construction stake-outs, and CQA surveying for landfill cell development or closures at various landfills in Virginia (listed below)**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing, as needed | CONSTRUCTION *(If applicable)*:

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Survey Manager:

- City of Lynchburg
- Rockbridge County
- Floyd County
- Montgomery County
- Rockingham County
- Giles County
- Spotsylvania County
- Nelson County
- Cloyd's Mountain, Pulaski County
- Peter's Mountain, Covington
- Thomas Brothers, Roanoke County

c.

(1) TITLE AND LOCATION *(City and State)*: **New River Valley Commerce Park, Pulaski County, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2009 | CONSTRUCTION *(If applicable)*: 2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Survey Manager. Surveying for 5,600 LF of 12-inch sewer force main and 7,000 LF of 12-inch water main and related appurtenances.

d.

(1) TITLE AND LOCATION *(City and State)*: **Baskerville Water and Sewer Infrastructure Improvements, Pulaski County, Virginia**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2011 | CONSTRUCTION *(If applicable)*: 2011

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

Survey Manager. Surveying and subsurface utility location for design of water and sewer infrastructure improvements in the Baskerville Community.

e.

(1) TITLE AND LOCATION *(City and State)*: **FY 2011 Collection System Improvements, Western Virginia Water Authority, Roanoke, VA**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: Ongoing | CONSTRUCTION *(If applicable)*: Ongoing

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

☑ Check if project performed with current firm

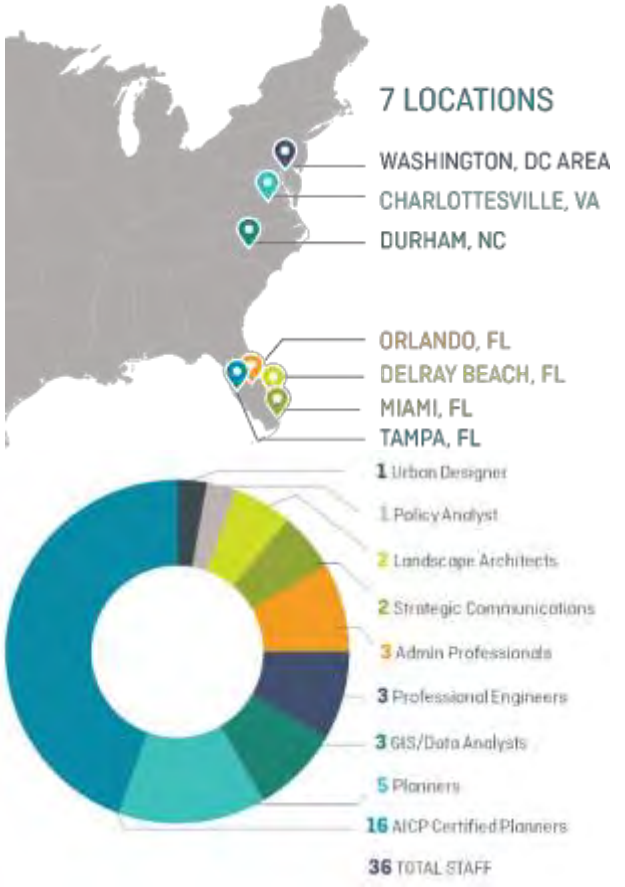
Survey Manager. Surveying for the design of the Authority's 2011 collection systems improvements. The project consists of nine sanitary sewer rehabilitation projects, eight small sanitary sewer replacement projects, and seven large sanitary sewer projects.

RENAISSANCE PLANNING

Renaissance Planning is a planning, design, and policy analysis consulting firm of city planners specializing in the integration of transportation, land use, urban design, technology, and economic and environmental considerations to create cities that work. We have a staff of 36 people including a nearby Virginia office in Charlottesville. We believe in the power of integrated planning to help enhance connections between people, place and opportunity.

We apply strategic communications and outreach techniques aimed at building consensus and empowering communities to act on their plans. This requires a collaborative team of professionals with skills and expertise in a diverse range of disciplines including engineering, planning, urban design, environmental science, economics and communications. From regions to streetscapes, from rural towns to big cities – we understand the challenges communities face.

WHO WE ARE



CONSENSUS BUILDING & FACILITATION

Throughout our 17 years, we have accumulated an extensive array of experience providing, we have been providing community engagement and facilitation support across the nation. Renaissance is skilled and experienced at working with citizens and stakeholders to achieve well-informed, inclusive decisions about a wide range of planning issues. We are particularly skilled at making technical information accessible and understandable to people at a variety of levels.

Community Participation & Outreach

We fundamentally believe that planning must reflect a spirit of meaningful input from the public based on a dialogue about hopes, opportunities and challenges, and preferences.

For large projects, we have created and employed a **Plan Information Network (PIN)** that identifies not just which groups need to be notified and invited to participate, but how best to communicate with them. The PIN establishes a liaison between a representative of the community group or organization and the project. We develop information and materials that the community liaison can distribute to his or her community and follow their protocols to get materials to them. This PIN has proven very effective at getting more than people to attend workshops. We used this method for the **Tallahassee Bicycle and Pedestrian Master Plan** and more than 100 people at our workshops.

In addition to the PIN, we have often produced and distributed informational **newsletters** at key milestones for the Community Development Department or a CRA to reproduce and distribute.

We are very used to cultivating positive local media involvement in our projects. If appropriate, we have created press kits and granted one-on-one interviews with the press.

We have had good success in building **project websites** and working with clients to provide planning reports, maps, and other relevant text and graphics in appropriate formats to be uploaded by the client and linked to their web page.

For example, we led community involvement for the **Central Virginia Long-Range Transportation Plan**. This entailed setting up a project website, running social media sites to keep the public informed and to gather input, and public meetings throughout the region. Public input helped shape the evaluation criteria and weighting that the MPO used to select transportation projects.

Fauquier County is in the midst of a year-long strategic planning effort called **Fauquier Community Conversations**. Renaissance is leading the public workshop and outreach effort for this project, which entails a website, surveys, and a series of 4 large community-wide meetings to affirm the community vision and identify steps for achieving it.

Top: Fauquier Community Conversations website. Bottom: "Livable Frederick" online survey.

Our team is also currently leading a visioning and comprehensive planning effort for Frederick County, Maryland dubbed **"Livable Frederick."** The county is dealing with a contentious dynamic between pro-development advocates and those wanting to preserve the historic/rural underbelly of this county. The county came together with the help of Renaissance to garner extensive community and stakeholder participation by strategically combining the best of both traditional and online public engagement techniques. We employed digital engagement because it delivered an outlet for public input that people could engage with on their own schedules, and it allowed more voices to be heard. We created an extensive survey (~15 min to complete) and in the two weeks it's been live, the county has already received 600 responses and is on track to receive 3,000. We also set up displays in public locations, such as libraries that allow for in-person engagement through writing thoughts in a vision book and completing survey.

Consensus-Building

An especially effective tool for building community consensus, the **charrette** is an intensive workshop at which all those involved in decision-making gather together for a few hours to collectively identify goals, major issues, define potential problems and constraints, brainstorm solutions, and then prepare on-the-spot plans, sketches, and illustrations. Alternative plan concepts are available for instant analysis and critique by workshop/charrette participants.

We plan with the community, not for it.

We have a proven track record of successfully using this technique for problem solving and find it not only a practical approach to avoid last-minute obstacles and "deal-breakers" in the public process but one that has proven to be extremely productive and engaging for all participants. Most recently in **Dover, Delaware**, Renaissance planners and designers conducted a five day charrette that included public officials, stakeholder groups, the local historic board and residents. The charrette produced a downtown master plan for the city with a proposed multimodal transit center as a driving element of the plan. The project was labeled a success locally and

Equitable Development and Sustainable Design Technical Assistance workshop and rendering.

Renaissance was asked to follow-up the plan with form-based code training for local planners to proceed with implementing it.

Renaissance recently completed the **Equitable Development and Sustainable Design Technical Assistance for Macon, GA**. The Macon Arts Alliance (MAA) engaged community leaders and local residents to build a coalition of support for the redevelopment of Macon's Mill Hill neighborhood. Renaissance led a team of specialists and conducted a three-day design workshop and a series of organizational meetings with stakeholders to develop the concept plan for the Mill Hill residential block and Arts Alley, a specific site in the Arts Village. Our team created a strategy to connect both community members and visitors to the site. During the workshop, we emphasized ways that spaces could accommodate these groups and encourage interactions among them and generated viable concepts for structuring the ownership and governance of the Mill Hill artists-in-residence and Arts Alley, and the structure and function of local community development organizations.

One of the tools we have found very useful for a wide range of projects is to conduct a series of **stakeholder interviews** and/or **focus group discussions** with community or stakeholder representatives. Having one-on-one interviews with key leaders can help define expectations and understand some of the history and context of the project or plan area. Focus groups help define issues, needs and guiding principle as well as getting community leaders actively involved in a process. The discussion is facilitated and comments recorded on flip charts.

Renaissance believes strongly in the value of collaborative planning that connects technical disciplines with meaningful public participation to address challenges facing our communities in a comprehensive way.

Community walking tours. Local Foods, Local Places Program & Building Blocks, EPA.

Finally, we always work to structure our **community workshops** so that each one presents an inviting format that encourages participation. We have used open houses, structured small group break-out discussions, and panel discussion formats effectively on similar projects. Each workshop and public involvement activity should be closely linked with the technical activities and provide clear direction for the next step in the process. Community workshops are a part of most projects we undertake. Renaissance led the application of land use screening for the **Broad Street Bus Rapid Transit Alternatives Analysis/Environmental Assessment.** As part of a multi-disciplinary team, Renaissance supported the public engagement component of this study for the Virginia Department of Rail and Public Transportation (DRPT).

Renaissance is leading a technical assistance program: **Local Foods, Local Places** as part of a contract with the U.S. Environmental Protection Agency's Office of Sustainable Communities. Our expert

facilitators lead a presentation of best practices, an onsite workshop and development of an action plan to support implementation of projects (i.e. farmer's markets, community gardens, downtown revitalization plans, food hubs, educational initiatives and small business incubators). We have also led four rounds of EPA's **Building Blocks** program. Our work includes technical assistance and refinement of staff capacity building tools for Walkability and Complete Streets, Preferred Growth Areas, Sustainable Design and Development, Rural and Small Town Smart Growth, Infill Development, Equitable Development, Bikeshare Planning, and Flood Resiliency. Since 2011, we have worked with more than 70 communities on Building Blocks projects nationwide. Renaissance is currently working on another round of Building Blocks projects in 2016.

VLAD GAVRILOVIC, AICP
PRINCIPAL

EXPERIENCE
30 Years

EDUCATION
Master of Urban and Environmental Planning, University of Virginia

Bachelor of Architecture, University of Illinois

AFFILIATIONS
American Institute of Certified Planners, No. 91410

University of Virginia, Department of Planning, Adjunct Faculty, Instructor in Environmental Planning and Design, 2000-2003

George Washington University, CCEW Division of Landscape Design, Instructor in Design Theory, 1992-1995

American Federation of Garden Clubs Certification Program, Instructor in Urban Design History, 1997-8

SUMMARY

Vlad Gavrilovic is a principal with Renaissance and has over 30 years of experience in the integration of land use, urban design and transportation planning practice. He has managed a wide variety of complex projects throughout his career and has designed innovative and context sensitive solutions for communities throughout the country. His experience includes land use and transportation planning, multi-modal transportation design, urban design, environmental planning, and facilitation, public involvement and consensus building.

Vlad's work has included projects for a wide variety of state, regional and local government clients, including state transportation agencies, regional planning organizations and MPOs, and localities at a wide variety of scales. He has served on the American Institute of Architects Committee of the Environment, and has taught planning and design at George Washington University and the University of Virginia. He has a particular focus on the development of integrated solutions that cross the boundaries of professional disciplines such as transportation planning, urban design, community planning, and economic development to address the challenges of modern society as it deals with the built and natural environments.

STATEWIDE PLANNING

VTRANS Statewide Transportation Policy Plan Updates – Virginia Office of Intermodal Planning & Investment

For the Statewide Transportation Plan, Vlad led a team developing the overall communications and input process that included innovative web-based stakeholder meeting formats. As an update of Virginia's transportation policy plan, VTrans has propelled the Commonwealth toward new directions including more multimodal and performance-based transportation planning. Renaissance not only developed the helped visualize and explain the State's new Performance Based Planning Framework but conducted the Transportation Needs Assessment for two MPO regions as part of VTrans.

VSTP Statewide Surface Transportation Plan Updates – Virginia Office of Intermodal Planning & Investment

The Virginia Surface Transportation Plan is a summary of the State's intermodal policies, programs and projects. Vlad led a Renaissance team providing strategic support for the plan in several areas, including designing and leading a public participation program that included focus group meetings, regional planning forums, a statewide planning summit, and public input conducted on the project Web site. In addition, Renaissance researched and developed a new element of the statewide plan focused on regional accessibility.

RENAISSANCE PLANNING

Multimodal System Design Guidelines – Virginia Department of Rail and Public Transportation, Richmond, VA

Renaissance Planning Group worked with DRPT for over two years to prepare statewide guidelines for multimodal planning and design. The project involved looking at existing conditions statewide and working with a 30-member steering committee to assess the range of place types and potential corridor typologies. The guidelines address a range of land use, urban design, transportation and public space design considerations and were adopted as an addition to VDOT's statewide Road Design manual in 2013. Vlad served as the overall project manager of an interdisciplinary team including engineers, planners and designers that are developing this first-of-its kind guidebook for Virginia.

Project DTO – Enhancing Downtown Orlando – City of Orlando, Florida

Project DTO is a visioning process to create a 10-year vision plan for Downtown Orlando, accompanied with a Community Redevelopment Agency plan update and strategic marketing plan. To develop the Vision Plan, the City created nine committees covering various topics areas that were comprised of downtown stakeholders tasked with assessing their topic area and creating a Findings of Need report. Vlad served as urban design consultant to the project team for parts of the vision plan, especially helping visualize the design concepts in user-friendly formats for public review.

Transportation Efficient Land Use and Design Guide for Virginia – Virginia Department of Transportation

Vlad was part of a team of consultants selected by VDOT and OIPI to develop an award winning innovative guidebook for local governments called the Transportation Efficient Land Use and Design Guide (TELUD). The guidebook showcased more efficient ways of planning for growth and change, from both a land use and transportation perspective and received awards from both APA Virginia and ULI Richmond.

TRANSPORTATION PLANNING

Local Government Assistance for Urban Development Areas – Virginia Department of Transportation

Renaissance was one of four teams selected by the Virginia Department of Transportation to assist 35 high-growth localities statewide that had been required to adopt Urban Development Areas under State legislation. Vlad led a 5-firm team on the project that included creating comprehensive planning, zoning and subdivision revisions to foster smart growth and developing detailed area plans that demonstrate efficient transportation and land use planning.

Central Virginia 2035 and 2040 Long Range Transportation Plan Updates – Region 2000, Lynchburg, Virginia

Vlad served as a Resource Principal for the scenario and land use modeling analysis for the 2035 Central Virginia Long Range

Transportation Plan Update. For the most recent 2040 update, Vlad has lead a team that has developed a new performance-based prioritization framework for the MPO that complies with both federal and state legislation on performance based planning.

URBAN DESIGN

Zoning Ordinance Rewrite – City of Norfolk, Virginia

Renaissance is part of a multidisciplinary group of consultants that has been engaged to rewrite, update and modernize the ordinance that was last comprehensively re-written in 1992, and bring it in line with a recent comprehensive plan update. Renaissance is leading the physical form, community design and landscape aspects, as well as graphic visualization and support of the community engagement strategy. The 3-year process to restructure and modernize the zoning ordinance is a key aspect of both economic development and resilience for the city. Norfolk is the second most vulnerable city to sea level rise in the United States and has established resilience as a key policy directive for the future. Vlad serves as the Renaissance project manager.

Norfolk Urban Development Area - Virginia Office of Intermodal Planning & Investment

As part of a statewide grant program to encourage transportation-efficient urban design, Vlad is leading a design team to help the City of Norfolk, Virginia envision a new future for an old suburban mall and retail strip development. The area is the site of a potential new light rail stop and Renaissance is preparing a design vision for a new Transit Oriented Development centered on the old mall, with a phased development strategy that gradually transitions the area from a retail-only area to a mixed-use urban center.

MIKE CALLAHAN, AICP
PROJECT MANAGER

EXPERIENCE
8 Years

EDUCATION
Master of City & Regional Planning – University of North Carolina, Chapel Hill

Bachelor of Arts, Journalism & Mass Communication – University of North Carolina, Chapel Hill

REGISTRATIONS
American Institute of Certified Planners, No. 027143

SUMMARY

Mike is a project manager with Renaissance. Mike is a strong facilitator and communicator with expertise is translating complex technical analyses into plain speak common language for policy makers and the public alike. He has a broad range of experience in transportation planning, land use planning, public outreach, writing, and facilitation. His planning experience spans six years during which he has worked with a broad array of clients across the United States including federal agencies, state departments of transportation, metropolitan planning organizations, and dozens of local governments.

COMMUNITY PLANNING ASSISTANCE

Local Foods, Local Places – U.S. Environmental Protection Agency

Local Foods, Local Places is a new U.S. EPA technical assistance program that helps communities strengthen their local economies, improve access to fresh and healthy foods, and revitalize historic neighborhoods and downtowns all by strengthening the local food system. Renaissance Planning Group provides this assistance under its IDIQ contract with U.S. EPA. Mike is managing the delivery of technical assistance through the program to 13 communities throughout the United States in the spring and summer of 2015. Mike plays a key role in the program through planning for workshops in each community, facilitating the workshops, developing case studies to share with the communities, preparing an action plan for each community, and client management.

Sustainable Communities Building Blocks Technical Assistance – U.S. Environmental Protection Agency

Building Blocks is an EPA program that provides quick and targeted technical assistance during a two-day workshop to communities across the country to help them implement a wide range of smart growth strategies. As part of Renaissance Planning's IDIQ contract with U.S. EPA, Mike has supported the delivery of the Building Blocks program for three topics - Walkability Audit, Complete Streets, and Sustainable Strategies for Small Towns and Rural Areas. Mike's work entailed coordination on workshop logistics, workshop preparation, facilitation, and preparing a Next Steps Action Plan for each community. Mike is supporting the development of a new Building Blocks program in 2015 – Infill Development for Distressed Cities – and helping refine the Sustainable Strategies for Small Towns and Rural Areas tool. The outcome of each Building Blocks delivery is a Next Steps Action Plan that outlines strategies to advance actions identified by the community.

Sustainable Communities in Appalachia – U.S. Environmental Protection Agency

EPA hired Renaissance Planning through its IDIQ contract to develop this pilot program. The program helped small towns throughout Appalachia develop strategic plans for improving livability and revitalizing their historic downtowns. Mike helped develop the program from scratch and provided on the ground consultation in eight

communities. Mike supported all elements of the program including coordination on workshop logistics, workshop facilitation, existing conditions research, case study development, and preparation of a Next Steps Action Plan for each of the eight communities in which he worked. EPA viewed the pilot as a success and teamed up with five other federal agencies to expand the program with a focus on local food systems. Renaissance is providing technical assistance to 26 communities nationwide through the new program, called Local Foods, Local Places, in 2015.

FACILITATION AND PUBLIC INVOLVEMENT

Central Virginia Long-Range Transportation Plan, Central Virginia Metropolitan Planning Organization

Mike supported the Renaissance team working on the long-range transportation plan update for the Central Virginia MPO, which is based in Lynchburg, VA. Mike maintained the project's MindMixer public involvement website, preparing for and helping facilitate public meetings, contributing ideas for performance measures and performance-based project evaluation criteria, and conducting research on how other Virginia MPOs use performance measures to study the economic impacts of transportation plans and projects. This work led the Central Virginia MPO to develop its first set of performance-based project evaluation criteria.

VTRANS Statewide Transportation Policy Plan Updates – Virginia Office of Intermodal Planning & Investment (OIPO)

VTrans is Virginia's long-range statewide multimodal policy plan. It lays out the vision and goals for transportation in Virginia. Mike supported OIPI's public outreach efforts for VTrans in 2014. Mike arranged a statewide forum led by OIPI from Richmond with four separate locations around the state connected via GoTo Meeting. In addition to organizing the statewide forum, Mike helped facilitate the discussion at the Roanoke, VA site. The meeting gathered critical input from planners and transportation providers on the state's transportation goals and vision.

Vision and Strategic Plan –City of Sanford, Florida

Mike managed public outreach for the City of Sanford, Florida's Vision and Strategic Plan project, Imagine Sanford. Mike managed the project's MindMixer public involvement website, developed the public involvement plan, maintained project contacts, and developed project communications. Mike also organized focus group discussions. The project yielded a new vision and strategic plan with broad support.

Envision Front Royal –Front Royal, Virginia

Renaissance helped the Town of Front Royal in 2013 create a vision for its future. Mike supported Front Royal's efforts by setting up and maintaining a MindMixer public involvement website, summarizing public input, synthesizing this input into four themes that became the framework for the vision, and helping facilitate a community meeting. The vision became the foundation of the town's comprehensive plan update.

Craig S. Coker

Coker Composting & Consulting

Mr. Coker has over 35 years of technical experience in the environmental science and engineering fields associated with recycling food scraps and other organics through composting or anaerobic digestion. Mr. Coker has provided these consulting services to private companies, local governments and solid waste authorities since 2005. Mr. Coker has worked in municipal and state government developing organics recycling programs and infrastructure. He has participated in numerous regulatory development activities and is widely recognized as an authority in the recycling of organic materials.

His prior experience includes three years as an Environmental Engineer in County Government managing biosolids composting projects, three years' experience as the Organics Recycling Coordinator for North Carolina developing new organics diversion projects facilities, six years' experience operating aerated static pile composting facilities for private companies, and 25 years consulting engineering experience for municipal governments in biosolids and solid waste management.

Mr. Coker has worked on ten composting facility projects in Virginia since 2005, including air, solid waste and storm water permitting efforts. He has worked on ten aerated static pile facility projects in his career, and five solid waste anaerobic digestion projects since 2011.

EDUCATION

MS, Environmental Engineering, George Washington University, 1980

BS, Environmental Science, University of Virginia, 1975

PROFESSIONAL LICENSES & CERTIFICATIONS

Class 2 Waste Management Facility Operator, Virginia

Nutrient Management Planner, Virginia

INDUSTRY TENURE

35+ Years

COKER
COMPOSTING AND CONSULTING

COMPOSTING INFRASTRUCTURE DEVELOPMENT EXPERIENCE

"State of Composting in the U.S.". *Institute for Local Self Reliance, Washington, DC*
Co-author of a comprehensive look at the state of composting of organic wastes in the U.S. in 2014, which included an explanation of what composting is and why it is important; summarized model programs, technologies and systems; and provided a national and state-by-state snapshot of activities, infrastructure needed, and policy opportunities. It concluded with recommendations on how to grow composting in the U.S.

Compost Regulations Working Group, *Maryland Dept. of the Environment, Baltimore, MD*
Participated, from 2011 – 2013, in a 30-person multi-stakeholder group assembled by the MD DOE to help them rewrite the regulations governing solid waste composting by examining how other jurisdictions were regulating this industry and by adapting the Model Compost Rule of the U.S. Composting Council to Maryland.

Compost Regulations Working Group, *South Carolina Dept. of Health and Environmental Control, Columbia, SC*
Participated, from 2008 – 2014, in a multiple person stakeholder group assembled by the SC DHEC to help them rewrite the regulations governing solid waste composting by examining how other jurisdictions were regulating this industry and by adapting the Model Compost Rule of the U.S. Composting Council to South Carolina.

Compost Operations Storm Water Advisory Group, *North Carolina Dept. of Environment & Natural Resources, Raleigh, NC*
Participated, from 2009 – 2011, in a multiple person stakeholder group assembled by the NC DENR to help them rewrite the regulations governing permitting of storm water management discharges from solid waste composting facilities.

Prior Infrastructure Development Experience, *Various Positions*

- Organics Recycling Coordinator, NCDENR, 1997-2001
- Technical Advisor, NYC Citizens Advisory Committee for Beneficial Reuse of Sewage Sludge, 1991-1994
- Technical Advisor, Citizens Advisory Committees in Montgomery County, MD (1980-1984) – Dickerson Interim Compost Facility, Rock Run Advanced Wastewater Treatment Plant, Shady Grove MSW Incinerator

ORGANICS RECYCLING PROJECT EXPERIENCE

Industrial Residuals Composting Facility, *Royal Oak Farm LLC, Evington VA*
Work (2005-present) has included: site evaluation, composting process design (recipe development, sizing, layout) for 75,000 ton/year food scraps and industrial residuals composting facility in Central Virginia based on use of turned windrows, all waste management and storm water management permitting with VA DEQ, oversight of local engineering firm for site plan preparation, oversight of construction contractors, development of Operations Plan and Health-and-Safety Plan, conduct of operator training, odor control troubleshooting, and operations support.

Ecomaine Solid Waste Authority, Organics Recycling Feasibility Study, *Portland, Maine*
This 2012-2013 project was a comprehensive evaluation of source-separated food scraps recycling alternatives at a solid waste authority anchored by a 550 ton/day Waste-to-Energy plant and a 35,000 ton/year dual-stream Materials Recovery Facility. The study evaluated: waste generation rates for food scraps, yard trimmings and vegetative debris, collection system alternatives, processing technology alternatives (anaerobic digestion and aerobic composting only), alternative siting evaluations, product market evaluations for biogas and compost, permitting and approval assessments, facility planning-level cost estimates, and preparation of a final report.

Kenai Peninsula Borough, Organics Recycling Feasibility Study, *Kenai, Alaska*
This 2012-2013 project was a comprehensive evaluation of food scraps recycling alternatives at a largely rural borough (county) in Alaska. The study evaluated: waste generation rates for food scraps, yard trimmings and vegetative debris, expansion of the current solid waste convenience centers for drop-off of source-separated organic solid wastes, alternative aerobic composting (aerated static pile and in-vessel) and anaerobic digestion (dry fermentation) technologies, alternative sites for decentralized processing facilities, product markets for biogas and compost, permitting and approval requirements, projected capital and operating costs, and nine different alternative configurations (both centralized and decentralized) using a weighted-matrix criteria assessment.

City of Edmond, Composting Feasibility Study, *Edmond, Oklahoma*
This project consisted of a comprehensive feasibility study (2009-2010) of options for composting source-separated organic solid waste in Edmond, Oklahoma, a suburban city of 80,000 north of Oklahoma City. The study evaluated potential feedstocks to a composting facility (yard trimmings, food scraps, and biosolids), alternative composting configurations (windrow, aerated static pile and in-vessel), alternative siting evaluations (on City-owned land), product market evaluations for compost, public education and outreach needs, permitting and approval requirements, preparation of detailed capital and operating cost estimates, and presentations to stakeholders, interested citizens and City Council.

Incorporating Food Scraps into Yard Waste Composting Facilities. *ILSR, Washington, DC*
These two 2011 projects, one at the Balls Ford Rd. Composting Facility in Prince William County, VA and the other at the Atkinson Way Composting Facility in Newport News, VA examined the design, operations and permitting implications of accepting source-separated organics (mostly food scraps) at two existing yard waste composting facilities in Virginia.

Yard Waste Composting Facility, *Spotsylvania County, Livingston, VA*
This project involved providing process design support, equipment evaluations, and economic *pro formas* to the County's solid waste engineering consultant and County staff for a 10,000 ton/year yard waste composting facility at the County landfill.

Yard Waste Composting Facility, *City of Portsmouth, VA*
This project involved providing process design support, equipment evaluations, and VA DEQ permit applications to the City's solid waste engineering consultant and City staff for a 20,000 ton/year yard waste composting facility at the Craney Island landfill.

Food Scraps Composting Facility, *Black Bear Composting ,* *Crimora, VA*
Work has included siting evaluation and selection (2010), permitting applications and support (2010-2011), process and site design (2011), operations support and troubleshooting (2012-present) for a 4,000 ton/yr turned windrow composting facility processing food scraps from schools and residences.

Rotary Drum Composting Facility, *Virginia Commonwealth University, Richmond, VA*
Work included evaluation of technical feasibility and permitting implications for a rotary drum composting facility at VCU handling campus food scraps (2011).

Biosolids Extended Aerated Static Pile Composting Facility, *McGill Environmental Systems, Waverly, VA*
This work effort (2004-2006) included site evaluation and selection, obtaining a permit from the VA Dept. of Health, preparing a New Source Review Potential to Emit analysis, and assisting in the preliminary design of this 80,000 ton/year facility.

Process and Site Design for Windrow & ASP Composting Facility, *Blue Hen Organics LLC, Frankford, DE*

Since 2007, this project has included composting facility permitting and composting process and site design for an initial 30,000 ton/year yard trimmings and greenwaste windrow composting facility. In 2010, the facility was designed to handle source-separated food scraps and poultry industry residuals using a forced-draft aerated static pile composting approach prior to windrow composting.

Organics Recycling Facility, *Alachua County, FL*
This 2015 project involved evaluating gasification and digestion technologies for the organics-rich fraction of solid waste arising from a proposed mixed-waste materials recovery facility.

Randy's Sanitation, Anaerobic Digestion Feasibility Study, *Delano, MN*
This project evaluated anaerobic digestion options for a private solid waste hauler serving the western Minneapolis/St. Paul region in 2012. The feedstocks evaluated included the fines fraction from a mixed-waste Materials Recovery Facility, animal manures from nearby farms, and biosolids from nearby municipalities. This included the evaluation of solid waste AD technologies such as European dry fermentation.

More project descriptions are available at www.cokercompost.com

H. ADDITIONAL INFORMATION

30. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE AGENCY. ATTACH ADDITIONAL SHEETS AS NEEDED.

Draper Aden Associates is a consulting engineering firm with over 170 professionals and 41 years of experience in facilities planning and engineering design for municipalities, state agencies, cultural institutions, and private clients. Our offices are located in *Blacksburg (Corporate office)*, Charlottesville, Hampton Roads, and Richmond, Virginia. We provide a full range of services that support the solid waste management industry. Through our client advocacy and focus on the industry, we have become one of the leaders in Virginia from facility siting, to construction/operation, and to environmental monitoring and corrective action. We are recognized as promoting fair, technologically sound interpretations of environmental data to the VADEQ, and in the process we have saved our clients significant costs while being environmentally responsible and proactive.

Draper Aden Associates' trained professionals are experienced and knowledgeable in all areas critical to solid waste management and related services. Our experience and knowledge have enabled us to grow into one of the top engineering firms in the Mid-Atlantic. Engineering News-Record listed us as one of the Top 500 Design Firms in their April 2013 issue. Additionally, our company is ranked number 10 in Virginia Business magazine's 2012 List of Leaders for architectural and engineering firms in the Commonwealth.

In-House Teams

- Civil/Utilities Engineering
- Ecological Services
- **Environmental Services**
- Geotechnical Engineering
- Landscape Architecture
- Site Planning and Engineering
- Structural Engineering
- Subsurface Utility Engineering
- Surveying
- **Waste Resource Engineering**

CADD Systems

- 2012 Civil 3-D
- 2012 Architecture
- 2012 Revit
- 2011 Carlson Survey

Specialty Services

- Alternative Wastewater Treatment Systems
- Construction Administration & Inspection
- **Environmental/Computer Modeling**
- Field Services – Solid Waste & LFG Systems
- Funding Assistance
- Geographic Information Systems (GIS)
- **Geological/Hydrogeological Services**
- Ground Penetrating Radar (GPR)
- Materials Testing Laboratory
- Stormwater Management
- Sustainable Design/Low Impact Development
- Water Supply Planning

GIS Software

- ESRI ArcGIS™ Suite
- Innovyze's InfoNET™
- DHI's MIKE URBAN

I. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

31. SIGNATURE

32. DATE
July 1, 2013

33. NAME AND TITLE
Jeffrey T. Crate, PG, Vice President

Representative Landfill Projects

Draper Aden Associates
Engineering • Surveying • Environmental Services

Project	Activity																		
	Planning	Siting	Karst	Wetlands Delineation	Hydrogeologic Characterization	Boundary/Topographic Survey	Construction Surveying/As-Builts	Landfill Design/Permitting	Leachate Treatment	Closure	Landfill Gas Monitoring	Landfill Gas Remediation	Active Gas System Operations	Contract Bidding	Construction CQC Observation/Management	Construction CQA/Certification	Laboratory / Field Soils Testing	Operations Assistance	Groundwater Monitoring
Accomack County, VA, Bobtown LF					◆						◆								◆
Accomack County, VA, Northern Landfill #2					◆						◆								◆
Accomack County, VA, Southern Landfill					◆						◆								◆
Adolph Coors Brewery, Rockingham County, VA*		◆																	
AEGIS Waste Solutions, Brunswick Co., VA	◆	◆		◆	◆	◆	◆	◆		◆					◆	◆	◆	◆	
Albermarle, NC (Ground Improvement Technologies)															◆	◆	◆		
Albemarle County, VA																			
Alliant Techsystems RCRA Facilities, Radford, VA			◆		◆					◆									◆
Amherst County, VA - Closed Landfill					◆	◆					◆								◆
Amherst County, VA - Current Landfill				◆	◆	◆	◆	◆		◆	◆			◆	◆	◆	◆	◆	◆
Appomattox County, VA								◆		◆	◆	◆	◆					◆	◆
Atlantic Waste Services, VA				◆															
Augusta County SA, VA - Jollivue Landfill #1				◆	◆	◆	◆	◆	◆	◆	◆			◆	◆	◆	◆	◆	◆
Augusta County SA, VA - Jollivue Landfill #2	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆			◆	◆	◆	◆		◆
Bandy & Sons, Roanoke, VA								◆											
Bear Island Paper Company, Ashland, VA						◆	◆		◆					◆	◆	◆	◆		◆
Bedford County, VA - Landfill #1					◆	◆	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Bedford County, VA - Landfill #2	◆	◆		◆	◆	◆	◆	◆		◆	◆			◆	◆	◆	◆	◆	◆
Berkeley County Regional Solid Waste Authority, SC (Ground Improvement Technologies)															◆	◆	◆		
Bi-County Solid Waste Authority, TN			◆					◆		◆	◆			◆					◆
Bingham & Taylor, Culpeper County, VA*										◆									
Botetourt County, VA New Landfill Facility	◆	◆	◆		◆	◆													
Botetourt County, VA Landfill #1			◆			◆	◆			◆				◆	◆	◆		◆	
Botetourt County, VA Landfill #2	◆		◆		◆	◆	◆	◆		◆				◆	◆		◆		
Bowater Southern, Calhoun, TN - General Mill Landfill					◆														◆
Bowater Southern, Calhoun, TN - Recycle Landfill					◆														◆
Brunswick County, VA					◆	◆	◆			◆	◆			◆	◆	◆	◆	◆	◆
BWX, Lynchburg, VA					◆	◆				◆				◆	◆	◆	◆		
Caroline County, VA	◆			◆	◆	◆	◆	◆		◆	◆	◆		◆	◆	◆	◆	◆	◆
Carroll-Grayson-Galax Solid Waste Authority (Permit 508/605)	◆			◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

Representative Landfill Projects

Draper Aden Associates
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Project	Activity																		
	Planning	Siting	Karst	Wetlands Delineation	Hydrogeologic Characterization	Boundary/Topographic Survey	Construction Surveying/As-Builts	Landfill Design/Permitting	Leachate Treatment	Closure	Landfill Gas Monitoring	Landfill Gas Remediation	Active Gas System Operations	Contract Bidding	Construction CQC Observation/Management	Construction CQA/Certification	Laboratory / Field Soils Testing	Operations Assistance	Groundwater Monitoring
Carter County, TN Landfill #1	◆		◆		◆	◆	◆	◆		◆							◆	◆	◆
Carter County, TN Landfill #2	◆	◆	◆		◆												◆		
Catawba County, NC														◆	◆	◆			
CELCO, Inc., Pearisburg, VA	◆				◆	◆	◆		◆	◆	◆				◆	◆	◆		
Chapel Hill, NC - Landfill #2	◆			◆	◆	◆	◆	◆	◆	◆				◆	◆	◆	◆		◆
Chapel Hill, NC - Landfill #1					◆	◆	◆	◆		◆	◆			◆	◆	◆	◆	◆	◆
Charlotte Pipe Company, Mecklinburg County, NC*	◆	◆			◆			◆		◆				◆	◆				◆
Cheatham County, TN										◆	◆			◆	◆	◆		◆	◆
Cherokee County, NC (Ground Improvement Technologies)															◆	◆	◆		
Chesterfield County, VA - Lawless Landfill						◆				◆									
Chesterfield County, VA - Bon Air Landfill						◆													◆
Chesterfield County, VA - Chester Landfill						◆				◆									◆
Chesterfield County, VA - Fort Darling Landfill						◆													◆
Chesterfield County, VA - Northern Area Landfill	◆	◆				◆													◆
Cleveland County, NC (Ground Improvement Technologies)															◆	◆	◆		
Coastal Regional Solid Waste Authority, Newbern, NC															◆	◆	◆		
Confidential Manufacturing Company, Petersburg, VA	◆	◆																	
Covington, VA	◆				◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Craig County, VA	◆				◆	◆				◆					◆			◆	◆
Culpeper County, VA - Landfill #2	◆			◆	◆	◆				◆									
Cumberland County, VA - Madison Landfill				◆	◆	◆	◆	◆		◆	◆							◆	◆
Cumberland County, VA - Randolph Landfill				◆	◆	◆	◆	◆		◆	◆							◆	◆
Dinwiddie County, VA - Landfill #2	◆			◆	◆	◆		◆		◆	◆			◆	◆	◆	◆	◆	◆
Disposabest Landfill, Weaver, VA	◆				◆	◆	◆	◆		◆								◆	◆
DuPont Corporation, Chesterfield County, VA*								◆											
Eastman Chemical Company, Kingsport, TN															◆	◆	◆		
EDS, Inc. Buchanan County, VA	◆	◆		◆	◆			◆		◆									
EDS, Inc. Florida	◆	◆																	
Emporia Foundry, Emporia, VA and Florence, NJ*	◆				◆			◆		◆									◆
Fairfax County, VA, I-66 Landfill								◆							◆	◆	◆		
Fairfax County, VA, I-95 Landfill					◆			◆		◆				◆	◆	◆	◆		◆
Fauquier County, VA - Permit 149				◆	◆	◆	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Fauquier County, VA - Permit 575	◆	◆		◆	◆	◆	◆	◆	◆	◆				◆	◆	◆	◆	◆	◆

Representative Landfill Projects

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Project	Activity																		
	Planning	Siting	Karst	Wetlands Delineation	Hydrogeologic Characterization	Boundary/Topographic Survey	Construction Surveying/As-Builts	Landfill Design/Permitting	Leachate Treatment	Closure	Landfill Gas Monitoring	Landfill Gas Remediation	Active Gas System Operations	Contract Bidding	Construction CQC Observation/Management	Construction CQA/Certification	Laboratory / Field Soils Testing	Operations Assistance	Groundwater Monitoring
Fayette County, WV	◆					◆		◆		◆								◆	
Fentress County, TN	◆		◆		◆			◆		◆				◆	◆	◆		◆	◆
First Piedmont Corp., Danville, VA				◆	◆	◆	◆	◆	◆	◆					◆	◆	◆	◆	◆
Floyd County, VA	◆	◆			◆	◆	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Fluvanna County, VA					◆	◆	◆	◆		◆	◆			◆	◆	◆	◆	◆	◆
Fort Pickett, VA, Landfill											◆								◆
Franklin County, VA	◆																		
Georgia Pacific Corporation, Princeton, WV	◆	◆																	
Giles County, VA - Landfill #1			◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Goochland County, VA					◆						◆							◆	◆
Grayson County, VA	◆	◆			◆														
Greeneville/Greene County, TN	◆		◆		◆	◆	◆	◆			◆	◆		◆	◆			◆	◆
Greensboro, NC															◆	◆	◆		
Greif Brothers/Virginia Fibre, Amherst, VA																			◆
Griffin Pipe Company, VA*					◆			◆		◆					◆			◆	
Harrisonburg, VA	◆	◆	◆	◆	◆	◆	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Hazardous Waste Landfill, SC*					◆			◆											◆
Henrico County, VA - Landfill #1				◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Henrico County, VA - Landfill #2	◆			◆	◆	◆	◆	◆	◆	◆	◆		◆	◆	◆	◆	◆	◆	◆
Henry County, VA	◆																		
Hickman County, TN	◆		◆		◆					◆								◆	◆
Hohenwald, TN										◆				◆	◆	◆		◆	
Holly Landfill, Suffolk, VA						◆				◆									
Hopewell, VA				◆	◆	◆	◆	◆		◆	◆			◆	◆	◆	◆	◆	◆
Humphreys County, TN	◆	◆						◆											
Intermet Foundries, Lynchburg, VA				◆	◆	◆		◆	◆	◆	◆			◆	◆	◆	◆	◆	◆
James City County, VA				◆	◆	◆		◆		◆									◆
Johnson City, TN			◆		◆						◆	◆							
Kim Stan Landfill (VADEQ), VA						◆	◆			◆				◆	◆				
King George County, VA	◆	◆		◆	◆	◆	◆	◆		◆								◆	◆
Lawrence County, TN	◆	◆			◆	◆		◆		◆					◆		◆	◆	
Loudoun County, VA	◆																		◆
Love Hazardous Waste Landfill, Buchanan County, VA*					◆					◆									

Representative Landfill Projects

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Project	Activity																		
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Lynchburg, VA - Landfill #1					◆	◆	◆			◆	◆			◆	◆	◆	◆	◆	◆
Lynchburg, VA - Landfill #2	◆	◆		◆	◆	◆	◆	◆		◆			◆	◆	◆	◆	◆	◆	◆
Mathews County, VA				◆	◆	◆				◆	◆								◆
McDowell County, WV				◆	◆	◆		◆		◆					◆			◆	
Monongalia County, WV	◆					◆		◆		◆									
Monroe/Summers Counties, WV	◆	◆		◆	◆	◆		◆	◆	◆								◆	◆
Montgomery County, VA - Mid County Landfill	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆		◆	◆	◆	◆	◆	◆
Montgomery County, VA - Thompson Landfill			◆		◆	◆				◆	◆								◆
Nelson County, VA	◆			◆	◆	◆	◆			◆	◆			◆	◆	◆	◆	◆	◆
New Bern, NC (Ground Improvement Technologies)															◆	◆	◆		
New River Resource Authority													◆						
New Kent County, VA	◆				◆			◆											
Norfolk, VA - Campostella Landfill						◆	◆			◆	◆	◆		◆	◆	◆			◆
Northampton County, VA	◆	◆		◆	◆		◆	◆	◆	◆	◆			◆	◆	◆	◆	◆	
Northumberland County, VA	◆	◆		◆	◆														
Nottoway County, VA - Landfill #1				◆	◆	◆		◆		◆	◆				◆	◆	◆	◆	◆
Nottoway County, VA - Landfill #2	◆			◆	◆	◆	◆	◆			◆			◆	◆	◆	◆	◆	◆
Oceana Naval Air Base, VA					◆	◆					◆								◆
Orange County, VA	◆				◆	◆	◆	◆		◆	◆	◆		◆	◆	◆	◆	◆	◆
Page County											◆	◆					◆		◆
Peck Iron & Metal Company, Richmond, VA*	◆				◆			◆		◆									
Peters Mountain Landfill Board, Covington, VA	◆			◆	◆	◆	◆	◆		◆	◆	◆		◆	◆	◆	◆	◆	◆
Petersburg, VA				◆	◆	◆	◆	◆		◆	◆	◆		◆	◆	◆	◆	◆	◆
Potomac Landfill, Inc., Prince William County, VA	◆				◆	◆	◆	◆		◆							◆	◆	◆
Prince William County, VA - Independent Hall Landfill	◆				◆	◆	◆			◆				◆	◆	◆	◆	◆	
Pulaski County, VA - Cloyd's Mt. Landfill					◆	◆	◆	◆	◆	◆	◆	◆		◆	◆	◆		◆	◆
Radford Army Ammunition Plant, Radford, VA			◆		◆					◆									◆
Rappahannock Regional Solid Waste Authority, Stafford, VA															◆	◆	◆		
Region 2000 Services Authority	◆	◆		◆	◆	◆	◆	◆	◆	◆				◆	◆	◆	◆	◆	◆
Richmond, VA, East Richmond Road Landfill	◆				◆	◆	◆	◆			◆	◆		◆	◆	◆		◆	
Rivanna Solid Waste Authority, VA	◆																		
Roanoke Valley Resource Authority, VA - Smith Gap Landfill					◆						◆		◆		◆	◆	◆		◆

Representative Landfill Projects

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Project	Activity																		
	Planning	Siting	Karst	Wetlands Delineation	Hydrogeologic Characterization	Boundary/Topographic Survey	Construction Surveying/As-Builts	Landfill Design/Permitting	Leachate Treatment	Closure	Landfill Gas Monitoring	Landfill Gas Remediation	Active Gas System Operations	Contract Bidding	Construction CQC Observation/Management	Construction CQA/Certification	Laboratory / Field Soils Testing	Operations Assistance	Groundwater Monitoring
Roanoke Valley Resource Authority, VA - Rutrough Road Landfill					◆	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆		◆
Rocco Inc., Dinwiddie County, VA	◆	◆																	
Rockbridge County, VA	◆	◆	◆	◆	◆	◆	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Rockingham County, VA			◆	◆	◆	◆		◆		◆			◆		◆		◆	◆	
Roy F Weston - Kingsport, TN															◆	◆	◆		
Rutherford County, TN	◆		◆		◆				◆	◆	◆			◆	◆			◆	◆
Sanders Lead, Troy, AL	◆							◆		◆								◆	◆
Saundersville, GA															◆	◆	◆		
Sevier Solid Waste, Inc., Sevierville, TN	◆	◆	◆		◆	◆		◆		◆	◆	◆		◆		◆	◆	◆	◆
SEPSA Landfill, VA										◆					◆	◆	◆		
Shoosmith Brothers Landfill, Chester, VA				◆							◆	◆							◆
Simons Hauling, Inc., VA	◆			◆	◆	◆		◆	◆	◆	◆							◆	◆
Smyth County, VA	◆		◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Spotsylvania County, VA - Chancellor Landfill #1					◆	◆	◆		◆	◆	◆			◆	◆	◆		◆	◆
Spotsylvania County, VA - Chancellor Landfill #2	◆				◆	◆	◆	◆	◆	◆	◆			◆	◆	◆			◆
Spotsylvania County, VA - Livingston Landfill #1				◆	◆	◆	◆	◆	◆	◆	◆			◆	◆	◆		◆	◆
Spotsylvania County, VA - Livingston Landfill #2	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆		◆	◆	◆	◆	◆		◆
Spotsylvania County, VA - Berkeley Landfill	◆			◆	◆	◆	◆			◆	◆			◆	◆	◆	◆	◆	◆
Steiner-Liff Metals, Nashville, TN	◆	◆																	
Stump Dump, Inc., Fairfax, VA					◆	◆	◆	◆		◆							◆	◆	◆
Suffolk, VA				◆							◆								◆
Surry County, VA				◆	◆	◆	◆	◆	◆	◆	◆	◆		◆	◆	◆	◆	◆	◆
Tazewell County (Thompson & Litton)													◆						
Thomas Brothers Landfill, Roanoke, VA					◆			◆											
U.S. DOE, ERWM, Portsmouth, OH*										◆									
U.S. Reduction Co., Henrietta, MO*	◆	◆																	
U. S. Reduction Co., Anniston, AL*	◆	◆								◆								◆	
U. S. Reduction Co., East Chicago, IN*	◆	◆						◆										◆	
U. S. Reduction Co., Russellville, AL*	◆									◆	◆				◆			◆	
USA Waste Services, Bethel Landfill Hampton, VA																	◆		

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USA Waste Services, King George County Landfill, King George, VA*	◆							◆		◆	◆					◆		◆	
USA Waste, Amelia County , VA*						◆	◆										◆	◆	
USA Waste, Charles City County, VA							◆										◆		
Virginia Castings (aka Intermet Radford)																			
Virginia Fibre Corporation, Amherst, VA*	◆				◆			◆		◆				◆					◆
Virginia Power Company, Bremo Bluff and Dutch Gap Facilities, VA*	◆				◆														
Washington County, VA	◆	◆	◆		◆	◆	◆	◆		◆	◆	◆	◆	◆	◆	◆		◆	◆
Waste Management of Virginia, Middle Peninsula Landfill and Recycling Facility, VA																	◆		
Waste Services of America, Decatur, TN	◆	◆		◆	◆			◆											
Waste Services of America, Dyersburg, TN	◆	◆		◆	◆			◆											
Watauga County, NC	◆			◆	◆	◆	◆	◆	◆	◆	◆			◆	◆	◆	◆	◆	◆
Waynesboro, VA	◆				◆	◆		◆		◆	◆	◆							◆
Weaver Landfill, Inc., Lunenburg, VA					◆	◆	◆	◆		◆							◆		◆
Wheelabrator Frye, Bedford County, VA*										◆									
Wilson County, TN	◆		◆		◆	◆		◆	◆	◆					◆			◆	◆
Winston-Salem, NC - Hanes Mill Landfill															◆	◆	◆		
Wyoming County, WV	◆				◆	◆		◆		◆				◆	◆			◆	
Wythe/Bland Counties, VA	◆	◆			◆	◆		◆											◆
Wytheville, VA			◆		◆	◆	◆	◆		◆	◆			◆	◆	◆	◆	◆	◆

*Individual Experience

STATEMENT OF QUALIFICATIONS
FOR

REGION 2000

2016

BURNS McDONNELL

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BURNS & MCDONNELL OVERVIEW

Being 100 percent employee-owned means that everyone has an ownership stake in the success of our clients, and all team members are driven to find remarkable solutions.

We are a fully integrated engineering, architecture, construction, environmental and consulting firm with a multidisciplinary staff of more than 5,300 professionals worldwide. With annual revenues of $2.5 billion, we have large-firm resources but small-firm responsiveness. Because we are relationship-focused and dedicated to creating amazing success for our clients, we have a 90 percent repeat-business rate and client partnerships that span multiple decades. Clients appreciated our entrepreneurial ambition.

Our Region 2000 Experience Demonstrates Commitment to Your Success

We are very familiar with Region 2000 and its member communities and are committed to continuing our long-term relationship.

Our history with Region 2000 dates back to 2004 when Scott Pasternak and Seth Cunningham worked with the Region 2000 Services Commission and multiple cities and counties to evaluate the feasibility to establish a regional solid waste authority. Because we have worked closely with Region 2000, we can instantly mobilize a team familiar with the key solid waste issues facing the region. Below is a list of prior projects for Region 2000 that were led by Scott Pasternak and Seth Cunningham at Burns and McDonnell and their prior firm (R. W. Beck).

REGION 2000 PROJECTS
Regional Solid Waste Management Analysis (2005)
Regional Solid Waste Management Financial, Operational and Regulatory Analysis (2006)
Alternative Landfill Evaluation (2006)
Regional Authority Formation (2007 – 2008)
Financial Inventory and Annual Budget (2009)
Regional Solid Waste Management Plan (2009)
On-going Financial, Planning and Operational Services (2010 – present)
Review of Unsolicited Landfill Gas to Energy Proposal (2016)

Corporate Structure & Services

Burns & McDonnell addresses the full life cycle of a project, which means we find unique and cost-effective solutions to meet your needs. We are divided into 11 global practices, which are integrated seamlessly to bring you the breadth and depth of knowledge and skills you need. The following is a list of Burns & McDonnell global practices:

- Aviation & Federal
- Business & Technology Services
- Construction/Design-Build
- Energy
- Environmental (includes Solid Waste Management)
- Environmental Studies & Permitting
- Global Facilities
- Process & Industrial
- Transmission & Distribution
- Transportation
- Water

Commitment to Excellence

Quality Control

We provide complete, consistent and high-quality services. Our project teams accomplish this through skill and dedication and by following our Quality Assurance/Quality Control (QA/QC) Program. Providing instructions as well as checks and balances, our QA/QC program is based on more than 100 years of successful projects and elements of industry-recognized quality assurance standards and best practices. Our team performs risk reviews to identify, assess and develop plans to mitigate risks and create project instructions, which include scope and responsibilities, schedule and budgets, and project-specific requirements. We build six-step internal quality reviews into project schedules that involve regular coordination meetings and evaluations by experienced professionals at strategic milestones throughout the project.

On-Time Delivery

We are known for staying on schedule. In the words of one client: **"The project for which we contracted was completed on time and within the budget despite difficulties by us (the client) to provide the necessary inputs and guidance in a timely manner. Overall, very good work."**

Client Satisfaction

For the third consecutive year, we are the only Engineering News-Record Top 100 Design Firm to win the Premier Award for Client Satisfaction from the Professional Services Management Journal. The Net Promoter Score indicates whether a client would recommend the firm to colleagues. We received a score of 81 percent, well above the AEC market sector average of 56 percent.

Employee Ownership

We are committed to our employee-owners as much as we are committed to our clients. We are a company where success is shared and celebrated by all. That's why we're proud to be ranked No. 18 on FORTUNE magazine's list of the 100 Best Companies to Work For. Along with regional recognition from numerous media outlets, these honors reflect the pride we take in our work every day.

PSMJ's PREMIER AWARD FOR CLIENT SATISFACTION 2010 • 2011 • 2012 • 2013 • 2014

Independence Ensures No Conflict of Interest

We provide independent, business-focused consulting, combining technical knowledge with business acumen. We strive to maintain our independence from privately held and publicly traded solid waste and recycling companies to ensure that we will not have a conflict of interest when providing franchising and procurement consulting services. Our independence guarantees an unbiased assessment and, ultimately, recommendations that serve your best interests.

EXPERIENCE AND CLIENT REFERENCES

Managing Solid Waste Now, for the Future

Since 1970, the Burns & McDonnell Solid Waste and Resource Recovery Practice has successfully completed numerous projects on a wide range of recycling and solid waste issues. We assist local and regional governmental entities with municipal solid waste and recycling planning. Several key staff joined our firm from SAIC (previously R. W. Beck). While they were with SAIC/R. W. Beck, they led a number of projects similar to the proposed Region 2000 project. The same staff who provided consulting services for these projects will lead your project.

SOLID WASTE AND RESOURCE RECOVERY EXPERTISE

- Procurement, Franchising and Contracting
- Ordinance Review and Development
- Solid Waste Management Planning
- Waste Minimization and Recycling
- Operations Reviews
- Public Involvement
- Stakeholder Outreach
- Public Opinion Surveys
- Economic and Financial Analysis
- Implementation and Transition Assistance

From reduction, recycling and reuse to energy and material recovery, solid waste management is more dynamic and more visible than ever before. Our full-spectrum of services combines our business-focused consulting along with solid waste and recycling planning and engineering experience. With experience gained on hundreds of solid waste projects nationwide, we have an extensive understanding of the technical, financial, regulatory, environmental and social issues surrounding recycling.

Below are representative samples of projects that were completed by our Project Team. **Projects listed in blue are further described in the Project Description Subsection.**

Integrated Solid Waste and Recycling Planning

Solid waste management and resource recovery requires cost-effective, innovative approaches in the context of sustainable materials management. Our team provides a full spectrum of solid waste and resource recovery consulting services that combines our business-focused approach with our facility planning, engineering and construction experience.

We have proven experience assisting clients with their facility planning and engineering challenges including transfer stations, single-stream recycling, mixed waste processing, construction and demolition recycling, household hazardous waste, energy from waste, composting, and landfill facilities.

With informed insight and proven experience, we help address leading edge resource recovery issues, such as today's single-stream recycling programs fueled by the need to meet high-diversion goals, balanced with cost considerations. We have helped numerous communities evaluate, plan and implement solid waste and resource recovery facilities and associated programs as part of their integrated solid waste management systems. By applying our engineering and business experience, we provide our clients with cost-effective solutions. Representative project team experience includes:

- **Region 2000, VA:** Regional Solid Waste Management Plan
- **City of Denton, TX:** Comprehensive Plan
- **Campbell County, WY:** Landfill Strategic Plan
- **City of Phoenix, AZ:** Redistricting Plan
- **City of Roswell, GA:** Strategic Plan
- **City of San Antonio, TX:** Integrated Solid Waste Plan to Achieve Zero Waste
- **State of Colorado:** Integrated Solid Waste and Materials Management Plan
- **City of Sheridan, WY:** Comprehensive Solid Waste Plan
- **State of Minnesota:** Integrated Solid Waste Plan
- **Mid-America Regional Council (Kansas City):** Sustainability Solid Waste Management Options
- **Fort Bliss, TX:** Solid Waste and Recycling Strategic and Business Plan

Public Involvement and Stakeholder Outreach

Communities are very interested in not only what solid waste and recycling services are provided, but also how the services are provided and who is providing the services. Recognizing this, Burns & McDonnell strongly recommends receiving input and feedback from the public and other stakeholders prior to implementing changes to solid waste and recycling programs. We receive this feedback by working with the local governments to develop and conduct tailored outreach to gather insight regarding the current or proposed program. We typically conduct telephone and/or internet surveys, individual interviews, group interviews, focus groups and/or public meetings. In some instances, Burns & McDonnell recommends aggregating the information so participants can remain anonymous, which promotes involvement. Representative projects include:

- **City of Salina, KS:** Telephone survey, interviews and focus groups to evaluate potential residential solid waste and recycling program changes
- **City of Tulsa, OK:** Focus group interviews and presentations to the TARE Board regarding changes to the residential solid waste and recycling program
- **City of Sioux Falls, SD:** Stakeholder meetings to gain perspective on multi-hauler residential system
- **City of Sedona, AZ:** Telephone survey, interviews and focus groups to evaluate potential residential solid waste and recycling program changes
- **City of Owasso, OK:** Focus group interviews and presentations to the City Council regarding potential changes to the residential recycling program
- **Gwinnett County, GA:** Telephone survey, interviews and focus groups to evaluate potential residential solid waste and recycling program changes from an open multi-hauler to a franchised system
- **City of West University, TX:** Telephone survey, interviews and focus groups to evaluate potential residential solid waste and recycling program changes
- **Colorado Department of Public Health and Environment:** 10 stakeholder meetings across the State to seek input on multiple issues, including municipal franchising for communities with multiple haulers
- **City of Cedar Park, TX**: Provided extensive implementation assistance following decision to change solid waste providers
- **City of Dallas, TX**: Implementation plan for resource recovery facility that has resulted in the City building a $20 million MRF via a public-private partnership

Financial Studies

Burns & McDonnell is a leading provider of financial studies and analyses, and we have developed a broad variety of financial models that allow solid waste clients to evaluate multiple options. We apply this analysis to evaluate potential options for improving efficiency. We have completed studies for clients that are the direct service provider and for local governments that contract with private companies. A representative listing of clients for Project Team members follows:

North Slope Borough, AK
City of Little Rock, AR
City of Coolidge, AZ
City of Casa Grande, AZ
City of Glendale, AZ
City of Phoenix, AZ
City of Tempe, AZ
City of Tucson, AZ
City of Olathe, KS
Johnson County, KS
City of Grand Forks, ND
City of Oklahoma City, OK
City of Bartlesville, OK
City of Tulsa, OK
City of Grand Forks, ND
City of Austin, TX
City of Big Spring, TX
City of College Station, TX
City of Corpus Christi, TX
City of Dallas, TX
City of Denton, TX
City of El Paso, TX
City of Garland, TX
City of Lufkin, TX
State of Colorado
Fort Bliss, TX
Region 2000, VA
City of Sheridan, WY

Recycling and Waste Diversion

The City of Denton, Texas is operating a C&D recycling system. C&D recycling is a key component of a plan that Burns & McDonnell developed for the City in 2016.

Aligning with the needs of our clients, we continue to support the evolution of the industry, such as today's single-stream recycling programs fueled by the need to meet high diversion goals and cost considerations. As a leading recycling consultant, our firm has assisted communities and businesses in designing, implementing and evaluating sustainable solid waste programs – from residential curbside and drop-off recycling programs to major industrial waste reduction policies. Working with some of the most sophisticated integrated solid waste management systems in the country, our professionals bring notable experience ranging from an understanding of recyclable materials marketing to collection, processing and economic impacts of recycling. We assist communities in getting to the next level of recycling, including recent programs focusing on organic materials management, construction and demolition materials recycling and evaluating mixed waste processing.

Representative project team experience includes:

- **Fort Bliss, TX:** Recycling Plan and Composting Feasibility Study
- **State of Minnesota:** Recycling and Solid Waste Infrastructure Needs Assessment
- **Texas Commission on Environmental Quality:** Economic Impacts of Recycling Study
- **City of Salina, KS:** Recycling Feasibility Study
- **City of Bozeman, MT:** Recycling Feasibility Study

Waste Characterization Studies

Understanding the volume and character of solid waste is fundamental in selecting and designing appropriate components of a solid waste management system. Burns & McDonnell has conducted numerous studies, and has well-developed methodologies for completing these analyses. Many of our waste characterization studies have been conducted to assist clients with specifically evaluating the feasibility of solid waste management technologies. We have established successful procedures and tools for conducting waste composition studies covering four major elements: background information, protocol design, field study, and analysis. Our procedures for data collection have proven to be efficient and safe. Our assessments have been demonstrated to be statistically sound, and procedures and tools are well established. Representative project team experience includes:

Waste sorting team at work in 2015 in Minnesota.

- **Fort Bliss, TX:** Waste Characterization Study
- **Campbell County, WY:** Waste Characterization Study
- **States of Georgia, Minnesota and Iowa:** Statewide Waste Characterization Studies
- **City of Dallas**: Residential and Commercial Waste Characterization Study
- **North Texas Municipal Water District**: Construction and Demolition Debris Waste Characterization Study

Project Descriptions

This section provides information on representative projects that were highlighted in **blue** in the prior section. All of the following projects were completed by the project team proposed for this study. In some case, these projects were completed while some of the project team was employed at prior firms.

CLIENT / PROJECT / LOCATION	SUMMARY
Region 2000, VA *Multiple Solid Waste and Recycling Studies:* - *Regional Solid Waste Management Analysis* - *Regional Solid Waste Financial, Operational and Regulatory Analysis* - *Regional Authority Staffing Implementation Plan and Schedule* - *Regional Solid Waste Management Plan* - *Ongoing Financial Analysis and Support*	▶ Purpose: Members of the Burns & McDonnell Project Team have provided analysis support since 2004 for the formation of the Region 2000 Services Authority to cost effectively manage solid waste disposal on a regional basis. ▶ Key Issues: Multiple communities within Virginia's Region 2000 Partnership were managing individual solid waste disposal facilities. Region 2000 sought to evaluate more cost effective methods to manage solid waste on a regional basis. Members of the Burns & McDonnell Project Team evaluated several options, including: joint use of existing facilities; waste-to-energy; and the use of a transfer station to haul material outside the region. After determining that joint use of existing facilities was the preferred approach, Region 2000 directed members of the Project Team to develop a detail financial, operational and regulatory plan for the regional disposal system to support the creation of the Region 2000 Services Authority. Since the creation of the Authority, Project Team members have provide ongoing financial and planning support for the Authority, including the creation of a Regional Solid Waste Management Plan, financial analysis in support of debt financing for the Authority, and ongoing pro forma financial analysis for budget planning. ▶ Success: Members of the Burns & McDonnell Project Team have been an integral part of the team behind the formation of the Region 2000 Services Authority, which has provided cost effective management of solid waste for communities in the region since 2008.
City of Roswell, GA *Solid Waste and Recycling Plan*	▶ Purpose: Burns & McDonnell is presently assisting the City with developing a business plan for the Solid Waste Division (Plan) to plan for the short term and long term future of the Division. ▶ Key Issues: Burns & McDonnell has facilitated workshops with the Solid Waste Division and other key City departments such as Community Relations and Finance. To date, we have developed the following key objectives for the Plan (1) Continue to Promote "Customer Delight" Culture; (2) Develop and Implement a Stable and Sustainable Financial Structure; (3) Provide High Level of Service through Effective Operations and Facilities; (4) Enhance Collaboration within the Solid Waste Division, Public Works Department and City; and (5) Increase Public Awareness and Knowledge of Recycling and Other Services Provided by Solid Waste Division ▶ Success: Burns & McDonnell will assist the City in prioritizing and estimated the costs associated with key tactics to achieve the Plan objectives.
City of Denton, TX *Solid Waste and Recycling Plan*	▶ Purpose: At the forefront of multiple solid waste and resource recovery issues, the City of Denton is a leader within Texas and nationally with regard to its collection, recovery and disposal programs. In 2015, the City recognized the need to develop a solid waste and recycling strategic plan (Plan) to meet to the long term needs of the Solid Waste and Recycling Department and to complement the citywide strategic plan.

	▶ **Key Issues:** The planning processing being implemented by Burns & McDonnell involves input and facilitated discussions to develop an action-oriented road map that will help the City achieve its mission. Key objectives for the Plan included: (1) Recycling and waste minimization must increase with an emphasis on commercial customers, including multi-family; (2) Maximize airspace utilization as the City continues to transition from its dependence on landfills to resource recovery; (3) A strong safety focus must be evident in all that we do; (4) Collections and facility operations must increase efficiency; and (5) Operations must evolve to address growth of community. ▶ **Stakeholder Engagement:** This plan includes extensive stakeholder engagement with the public via open houses and presentations to City Council and the utility board. ▶ **Success:** The draft Plan has been completed and Burns & McDonnell is working with City staff to complete the final Plan. Once the Plan is finalized it will provide a long-term road map for the City's Solid Waste and Recycling Department.
City of Tulsa, OK *Residential Solid Waste and Recycling Planning, Procurement and Implementation*	▶ **Purpose:** A combination of City forces and a consortium of approximately 40 haulers provided residential refuse services. The system resulted in residents receiving varying levels of service, inequitable rates and subscription-based recycling. ▶ **Initial Evaluation and Implementation Plan:** In 2009, we evaluated multiple residential collection, processing and disposal alternatives. Based on the preferred recommendation, we developed a detailed implementation plan, which successfully facilitated the City's change to a new collection system. ▶ **Stakeholder Engagement:** Process included multiple meetings with haulers and the utility board. ▶ **Success:** City implemented new program with one franchise hauler that provided uniform service, citywide recycling and consistent rates.
City of El Paso, TX *Comprehensive Solid Waste Plan* *Strategic Solid Waste Plans*	▶ **Purpose:** Need to evaluate its long-term disposal needs, our team developed a solid waste master plan for the City, as well as strategic plan. ▶ **Stakeholder Engagement:** Process included multiple meetings with city staff, city council and the public on a wide range of solid waste topics. ▶ **Success:** The City has been recognized multiple times for its solid waste and recycling program. Based on our financial and technical evaluation, the City was able to make key decisions regarding the future of its landfill.
City of Phoenix, AZ *Solid Waste Service Area Redistricting Plan*	▶ **Purpose:** Since the City competes with the private sector to service specific districts within the City, the City recognized the need to remain competitive in the managed competition process and to respond to the service impacts of population growth. ▶ **Key Issues:** Members of our team collaborated with the City of Phoenix to develop a solid waste service area redistricting plan. Based on extensive analysis, we determined the number and specific boundaries for new service areas and redistricting. ▶ **Stakeholder Engagement:** Multiple workshops with project task force, private hauler interviews and City Council meetings. ▶ **Success:** The City increased the number of districts from six to 10 with broad support from the City Council and minimal issues with customers or private

	haulers. Based on our implementation plan, the City implemented the needed changes in an effective manner.
Colorado Department of Public Health and Environment (CDPHE) *Integrated Solid Waste & Materials Management Plan (ISWMMP)*	▶ **Purpose:** The 2016 ISWMP will replace the 1990 plan. The 2016 ISWMP comprehensively addresses current and future needs of solid waste and materials management in Colorado. ▶ **Key Issues:** Key aspects of the ISWMP address (1) shifting the construct from merely waste disposal to sustainable materials management; (2) addressing both state and local efforts towards the reduction of volume and toxicity of the waste stream; (3) striving to achieve realistic goals for source reduction, recycling, composting and similar waste diversion practices at the state and local levels; and (4) evaluating the current status of waste disposal and diversion opportunities ▶ **Stakeholder Engagement:** Conducted 10 meetings across the state of seek input for the development of the plan, which included a survey of participants. ▶ **Success:** Results and recommendations within the ISWMP will guide CDPHE and stakeholders to develop short term and long term goals best suited for developing cost effective and environmentally protective waste management and waste diversion systems.
City of Salina, KS *Solid Waste and Recycling Plan*	▶ **Purpose:** In a community where the City and private haulers provide residential refuse and recycling services, the City sought to evaluate the feasibility of single-stream recycling and fully automated collection. ▶ **Key Issues:** City commission intent for the open system to continue while the City seeks to provide/require citywide recycling services. ▶ **Stakeholder Engagement:** Multiple workshops with project task force, telephone survey of customers, private hauler interviews and City Council meetings. ▶ **Success:** Following receipt of the initial study, the City is moving forward with a business plan focused on the detailed implementation issues.
City of Sheridan, WY *Solid Waste Strategic Planning*	▶ **Purpose:** Based on a number of solid waste and diversion challenges, the City recognized the need to develop an integrated solid waste mater plan (ISWMP) and a landfill master plan. ▶ **Key Issues:** The ISWMP addresses solid waste disposal, construction and demolition debris disposal, recycling and diversion, and municipal collection. The ISWMP also evaluated the feasibility of regionalization with two adjacent counties. ▶ **Success:** The plans will provide strategic guidance for the city for the next 30 years.
Campbell County, WY *Multiple Solid Waste and Recycling Studies:* - *Integrated Solid Waste Management Plan* - *Solid Waste Strategic Plan*	▶ **Purpose:** Assess the County's current and future solid waste and recycling needs and the costs involved. ▶ **Key Issues:** A growing population due to boom in energy services in area; changing waste types and volumes due to growth in energy industry; accurately pinpointing population's desire to recycle; identifying most efficient approach to facility design and location. ▶ **Focus on Compliance:** The landfill master plan evaluated compliance issues with regard to state and federal laws and regulations.

- *Solid Waste Rate Study*	▶ **Success:** The plans will provide strategic guidance for the city for the next 30 years.
Fremont County Solid Waste Disposal District, WY	▶ **Purpose:** The District operates four landfills, two transfer stations, seven low-hazard/low-volume transfer stations, and three recycling centers throughout Fremont County. This scope of work is part of a long-term objective to create a more efficient, financially stable, and environmentally sound District that will meet the waste disposal needs of the County citizens. The project includes: Facility Capacity Audits; Technical Engineering Assistance; and CIP model Review and Updates. ▶ **Key Issues:** Need to implement operational changes to improve the efficiency of the facilities and reduce overall expenses. ▶ **Success:** Improved the District's operations and long-term financial sustainability.
Fort Bliss, TX *Multiple Solid Waste and Recycling Studies:*	▶ **Purpose:** Since 2009, members of the Burns & McDonnell team have advised Fort Bliss regarding multiple solid waste and recycling issues. ▶ **Key Issues:** The primary driver for Fort Bliss was to achieve the 50 percent recycling rate mandated via Executive Orders 13423 and 13514. Along with the need to increase recycling, Fort Bliss also recognized the need to operate in a more efficient and cost-effective manner. ▶ **Success:** Since we started working with Fort Bliss in 2009, the Post has increased its recycling rate from 13 percent to 45 percent in 2015.
Minnesota Department of Military Affairs (Camp Ripley) *Waste Characterization Study*	▶ **Purpose:** Complete a waste characterization study of the facility's municipal solid waste (MSW) utilizing a study approach that is consistent with industry best management practices that provides accurate reliable results. ▶ **Key Issues:** The primary study objective was to provide a baseline of the quantities and types of solid waste materials generated annually in the context of seasonal fluctuations due to the monthly variation in the number of personnel provided training. ▶ **Success:** The results of the study are being used by the DMA to identify opportunities for diversion through source reduction, reuse, recycling, composting and other higher use value methods.
Minnesota Pollution Control Agency *Statewide Waste Characterization Study*	▶ **Purpose:** Complete a statewide waste characterization study in 2013 to compare to the 2000 statewide results to assess any waste stream changes. ▶ **Key Issues:** With an interest to increase recycling in the state, the study sought to estimate the quantities of materials disposed by material type for each of the individual facilities, as well as on a statewide basis. ▶ **Success:** The project was completed on a fast track basis within a five month timeframe. The project results were used to support solid waste and resource recovery planning on a regional and statewide basis.
State of Minnesota *Recycling and Solid Waste Infrastructure Needs Assessment*	▶ **Purpose:** Assess Minnesota's recycling and solid waste infrastructure needs. ▶ **Key Issues:** There was a need to assess the existing infrastructure, including private paper and metal recyclers, large privately-owned single-stream materials recovery facilities (MRFs), and scores of smaller multi-stream MRFs throughout Minnesota.

	▶ **Success:** Provided an understanding of the amount of available processing capacity, types of processing equipment typically being used in the industry, where the majority of the recyclables were being processed, where MRFs are marketing their materials, and the flow of recyclables from collection to end markets.
State of Texas *Study on the Economic Impacts of Recycling*	▶ **Purpose:** This 2016 statewide study will update a 2013 project that documented the quantity of material being recycled in Texas. The 2016 study will also evaluate challenges and opportunities to increase recycling in rural areas of Texas. ▶ **Key Issues:** In addition to estimating the recycling rate and quantifying the value of recycling, the study is also addressing challenges associated with making recycling successful in rural areas of the state. ▶ **Success:** The 2016 is on-going, and will build on the success from the 2013 Texas Recycling Data Initiative.
City of Sioux Falls, SD *C&D Materials Recovery Facility Feasibility Study*	▶ **Purpose:** Project team members conducted a Construction and Demolition (C&D) Materials Recovery Facility (MRF) Feasibility Study to determine if it is viable to recycle materials within the existing C&D waste stream. ▶ **Key Issues:** The City needed to understand the feasibility for recycling C&D based on the capital and operational costs, as well we the material stream. ▶ **Success:** The City is currently funding the design and construction of a C&D material recovery facility in their 5-year capital budget.
North Central Texas Council of Governments, Texas *Multiple Solid Waste and Recycling Studies*	▶ **Purpose:** As a region of more than six million people, comprising a range of rural, suburban and urban areas, this 16 county region has focused on implementing best management practices for a range of solid waste and recycling issues. ▶ **Key Issues:** Since 2001, project team members have worked with NCTCOG to address multiple issues on construction and demolition, rural recycling, recycling contracting, disposal capacity and commercial recycling. ▶ **Success:** Recommendations from our planning studies have been integrated into the on-going regional implementation plan to increase recycling.
North Texas Municipal Water District *C&D Feasibility and Characterization Study*	▶ **Purpose:** Seeking to increase recycling and to understand the feasibility of C&D recycling, project team members were retained to complete a C&D feasibility and characterization study. ▶ **Key Issues:** Representing five cities, the District needed to understand the costs and revenue associated with a C&D recycling facility. ▶ **Success:** Based on our analysis, the District has a comprehensive understanding of the economics and diversion potential for C&D recycling.
City of Bozeman, MT *Recycling and Transfer Station Feasibility Study*	▶ Purpose: Evaluated the feasibility for the City to implement a new recycling program and build and operate a transfer station. ▶ Key Issues: While the City had an interest in implementing a new recycling program, the City was concerned about the cost due to the relatively isolated location of Bozeman relative to recycling processing facilities and end markets.

	▶ Success: The study provided the City with an understanding of the costs associated with a recycling program.
Cochise County, AZ *Recycling Feasibility Study*	▶ **Purpose:** Evaluated the financial and operational performance of the county's solid waste and recycling system. ▶ **Key Issues:** Given the expansive size of the County, it operates a solid waste system of multiple transfer stations, landfills and recycling facilities. The County needed to better understand the feasibility of recycling options. ▶ **Success:** The study provided the County with an understanding of the operational and financial performance of its system.

Client References

We continuously attract and maintain a diversified staff of professionals with exceptional skills, dedication and talent. We have built our reputation by providing clients with solutions that are based on sound principles, economic feasibility, and innovative thinking without losing sight of budget and schedule considerations and constraints.

Below is a list of references we encourage you to contact for more insight on our project performance and dedication. These references have worked with us on numerous projects and can provide you with honest feedback about our work and services. We contacted these references to let them know they may hear from you.

Colorado Integrated Solid Waste and Materials Management Plan
Wolf Kray
Environmental Protection Specialist
CDPHE
Materials Management Unit
303.692.3337
wolfgang.kray@state.co.us

Solid Waste Planning and Implementation for the City of Salina, KS
Jim Teutsch
Operations Manager
(785) 309-5750
jim.teutsch@salina.org

Solid Waste Planning and Implementation for the City of Tulsa, OK
Mr. Eric Lee. P. E.
Water Administrator
(formerly Solid Waste Administrator)
(918) 596-9580
elee@cityoftulsa.org

Multiple Solid Waste and Recycling Studies for Fort Bliss
Lilia Linhart
Solid Waste Compliance/QRP Manager
Fort Bliss Directorate of Public Works
915.568.5724
lilia.a.lenhart.civ@mail.mil

TEAM MEMBERS

Burns & McDonnell provides a project team with "hands-on" experience with solid waste and recycling planning. Successful completion of this project will require a team that not only has public outreach and technical expertise, but is also effective in the financial and operational analyses of solid waste systems. ***To meet these diverse needs, the individuals proposed for this project have been selected based on their specific experience providing a full range of solid waste planning and stakeholder engagement services to local, regional and state governmental clients.***

Scott Pasternak

Education: BA, Government with Honors; MS, Community and Regional Planning, University of Texas at Austin

23 years of Experience

Scott Pasternak leads Burns & McDonnell's Solid Waste and Resource Recovery Planning Practice. Since the 1990's he has worked with local and regional governments to solve challenging technical and financial solid waste management and recycling issues. Over this time period, he has completed hundreds of projects for clients across the United States. Prior to joining Burns & McDonnell, he was a national leader within Leidos/SAIC's (formerly R. W. Beck) Solid Waste Practice from 2000 to 2013. From 1995 to 2000, he was a solid waste planner for the Texas Commission on Environmental Quality (TCEQ). He is the Vice-Director for SWANA's Planning and Management Division.

- **Solid Waste and Recycling Planning:** Completed more than 40 solid waste and recycling plans and studies for clients in the states of Virginia, Georgia, Colorado, Arizona, Oklahoma, Texas, Kansas and New Mexico. Along with Seth Cunningham, he has led multiple solid waste planning studies for Region 2000. He is presently leading the developing of statewide recycling and solid waste planning studies for the states of Colorado and Texas. The Colorado plan is focused on addressing regulatory compliance and developing implementable strategies to increase recycling across the state.
- **Stakeholder Engagement:** He has completed solid waste and recycling planning studies and/or surveys for the cities of Salina, Sedona, San Antonio, Dallas, El Paso, West University Place and Phoenix. These projects have required substantial stakeholder involvement, including City Council, industry and public meetings. For example, he facilitated a series of focus group discussions in developing the 10 year, solid waste plan for the City of San Antonio (with a goal of a 60 percent recycling rate). He led efforts to obtain feedback from multiple haulers and the Tulsa Authority for the Recovery of Energy (TARE) the City of Tulsa as a part of efforts for Tulsa to evaluate its residential solid waste collection system.
- **Financial/Cost of Service:** More than 50 financial feasibility and cost of service studies for solid waste clients. Representative clients have included the cities of Denton, Huntsville, Irving, Oklahoma City, Dallas, El Paso, Tulsa, Phoenix, Tucson, Olathe, Corpus Christi, San Antonio and Austin. All of these projects have included the development of complex Excel-based models.
- **Collection and Facility Operational Reviews:** Nationally recognized for conducting operational reviews focused on reducing costs and increasing operational efficiencies, often resulting in multi-million dollar benefits to clients. Operations addressed have included residential refuse, recycling and bulk collection, as well as facilities such as transfer stations, MRFs and landfills. Many projects have addressed evaluating multiple collection system options. Representative projects have included clients in the following states: Oklahoma (Tulsa, Owasso, Bartlesville and Norman), Texas (Austin, Corpus Christi, Dallas, Denton, San Antonio, Irving, El Paso, Killeen, Fort Worth, North Texas Municipal Water District, Midland and Victoria), and other states (Glendale (AZ), Fayetteville (AR), Phoenix, Shreveport, Tempe and Olathe).

Seth Cunningham, PE

Education: BS, Mechanical Engineering; MBA Finance

18 years of Experience

Seth Cunningham is an experienced Project Manager for financial and operational recycling and solid waste consulting engagements, serving clients across the United States. Possessing both business and engineering degrees, Seth is able to provide clients creative, yet fiscally responsible, solutions to technical problems. With his unique background and diverse skill set, he is able to bridge the information gap that often exists between the business and technical side of the operation. Seth has gained a thorough understanding of waste and recycling issues through his management of projects that have addressed a range of solid waste management practices, including landfills, transfer stations, composting, material recovery facilities, collection (refuse, recycling, green waste, brush/bulky), and waste to energy. He is presently the Technology Committee Chair for the Collection and Transfer Technical Division for the Solid Waste Association of North America. Key experience includes:

- **Solid Waste and Recycling Planning:** Completed more than 20 solid waste and recycling plans and studies for clients in the states of Virginia, Colorado, Arizona, Oklahoma, Texas, Kansas and New Mexico. Along with Scott Pasternak, he has led multiple solid waste planning studies for Region 2000. He is presently working on the financial analysis portion of statewide recycling and solid waste planning studies for the states of Colorado and Texas.
- **Program Evaluation and Procurements:** Seth has evaluated many solid waste and recycling systems for local governments in the U. S. For example, Seth had a key role in assisting the City of Tulsa with efforts to transition to its current residential and refuse recycling system. He specifically had a lead role advising the City during the residential solid waste and recycling feasibility project. He has also guided a number of municipal clients through the procurement process for the selection of collection, landfill, and recycling services. Within the past five years, representative clients have included the cities of Bastrop (TX), Edmond (OK), Dallas, Olathe (KS), Little Rock, El Paso, Coppell (TX) and Victoria (TX).
- **Collection and Facility Operational Reviews:** Conducted a range of collection and solid waste facility operational reviews that were focused on streamlining existing operations, introducing new cost-effective programs, and increasing revenue opportunities. Operations addressed have included residential refuse, recycling and bulk collection, as well as facilities such as transfer stations, MRFs and landfills. Representative projects have included clients in the following states: Arizona (Tempe, Phoenix, Pima County, Cochise County and Glendale); Oklahoma (Tulsa and Bartlesville), Texas (Dallas, Denton, El Paso, Garland, Lufkin, North Texas Municipal Water District, and Victoria), and other nearby states (Little Rock, AR; Fayetteville, AR; and Shreveport, LA).
- **Financial/Cost of Service*:*** Provided financial feasibility and analysis services to over 30 clients covered a range of collection, landfill, transfer station, recycling facility and other solid waste services. Representative clients have included the cities of Tulsa, Bartlesville, Austin, Dallas, Denton, North Texas Municipal Water District, Phoenix, El Paso, Tempe, and Santa Fe. All of these projects have included the development of complex Excel-based models.
- **Recycling Program Assessment:** Seth managed a significant number of recycling and waste minimization studies focused evaluating recycling collection and processing infrastructure options for clients, representing a range of geographies and rural and urban areas. This experience provides a tremendous understanding of recycling issues across many areas of the country. Clients have included Tulsa, Bartlesville, Olathe, Austin, Bastrop, Big Spring, Dallas, Denton, El Paso, Fort Worth, H-GAC, Lufkin, Eastland County, Midland, NCTCOG, North Texas Municipal Water District, and Victoria. He is presently leading the economic modeling for a statewide plan for the Colorado Department of Health and the Environment that is focused on evaluating the costs and funding options for recycling infrastructure, including rural areas.

Robert W. Craggs

Education: Juris Doctorate in Law; MA, Urban and Regional Planning, Emphasis: Environmental Policy and Planning; BA, Political Science and Public Administration

26 years of Experience

Robert Craggs serves as the Solid Waste and Resource Recovery Practice Manager. With more than 26 years of industry experience, Bob has assisted local and state governments throughout the United States address various solid waste and resource recovery challenges. His technical and legal background provides a unique perspective assisting clients with franchising and procurement projects ranging from refuse collection to materials recovery facility development. Bob presently serves as the Planning and Management Technical Division Director on SWANA's International Board.

- **Solid Waste and Recycling Planning:** Completed more than 50 solid waste and recycling planning studies for clients in the states of Wyoming, Arizona, Texas, Oklahoma, South Dakota, North Dakota, Wisconsin, Washington, California, Wisconsin and Minnesota. He recently completed a statewide recycling study to characterize the Minnesota recycling infrastructure and measure the quantities of materials recycled on a statewide basis. He also recently led the development of a solid waste strategic plan for the City of Sheridan, Wyoming, characterizing its existing solid waste management program and evaluating an array of program options.
- **Stakeholder Engagement:** Led many projects that have required substantial public involvement, including City Council workshops, public meetings, focus groups and solid waste advisory committees. In addition, provided substantial experience designing and implementing stakeholder engagement programs. For example, he led a facilitated process with multiple solid waste hauling companies to determine a flow fee for the City of Oklahoma City. He also facilitated the drafting of the Sustainability Master Plan for the City of Sioux Falls that included evaluating its open, competitive residential collection system utilizing a number of City Council workshops, hauler task force meetings, and public meetings.
- **Economics and Financial:** Completed numerous solid waste cost of service studies for local governments throughout the United States. He is presently leading a solid waste cost of service study for the City of Sheridan, Wyoming for their refuse collection, recycling, composting, and landfill disposal programs.
- **Waste Minimization and Recycling**: Provided technical expertise for many recycling and waste minimization studies for local governments throughout the United States for more than two decades including such clients as City of Phoenix (AZ), McLeod County (MN), City of Minneapolis (MN), Sioux Falls (SD), Ramsey County (MN), City and County of Honolulu (HI), Kauai County (HI), Kansas City (MO) and San Antonio (TX).

Veronica Roof, JD

Education: BBA, Finance; Juris Doctorate of Law (JD)

12 years of Experience

Veronica Roof, a legally trained environmental consultant, has focused her career on assisting state and local governments with solid waste management and resource recovery objectives. Veronica has managed studies and developed reduction strategies on behalf of local, state agencies, and federal military installations nationwide. She is a licensed attorney in the State of Georgia and a member of the Environmental Law Section and Local Government Section of the State Bar of Georgia. Veronica was a speaker for SWANA's WASTECON 2015 conference and has been a speaker for SWANA's state conferences in Texas, Georgia and North Carolina. Veronica currently serves as the Program Committee Chair for the Solid Waste Association of North America (SWANA) Communication, Education & Marketing Technical Division. Key experience include:

- **Solid Waste and Recycling Planning:** Veronica played a key role in developing solid waste and recycling plans. Representative clients have included Region 2000 and the cities of Roswell (GA), Tulsa, Sedona (AZ), Missouri City (TX), Queen Creek (AZ) and Gwinnett County (GA). She has also led solid waste and recycling procurements for clients such as the cities of Missouri City (TX), Lewisville (TX), Tulsa Authority for the Recovery of Energy (OK), El Paso (TX), Coppell (TX), Georgetown (TX), Cedar Park (TX), The Woodlands (TX), Hollywood (FL), Queen Creek (AZ), Davie (FL) and Weston (FL). For the North Central Texas Council of Governments (NCTCOG), she was the co-author of the Recycling Contract Negotiations Guidebook, which focused on residential collection procurement.
- **Stakeholder Engagement:** Veronica has led solid waste and recycling surveys to evaluate the impact of program changes. She currently is assisting the City of Sedona in evaluating implementing a City-wide program. She developed the survey instrument to understand the community's current recycling practices, demand for recycling services, as well as opinion as to cost impacts and other considerations. She also assisted Gwinnett County in evaluating a County-wide program. As part of the study for Gwinnett County, Veronica developed and administered a telephone and internet survey as well as facilitated public meetings. Veronica has also surveyed local governments to understand solid waste and recycling services and costs. In addition, she has conducted surveys related to construction and demolition waste generation and commercial recycling.
- **Recycling Program Assessment:** Veronica has conducted recycling and waste minimization studies focused on evaluating recycling collection and processing infrastructure options for clients. Currently, Veronica is assisting the City of Sedona with evaluating transitioning to a city-wide program. Residents in Sedona receive a spectrum of recycling services including curb sort, single-stream and mixed waste processing. Veronica's experience with a range of recycling processes provides beneficial knowledge when evaluating recycling programs.
- **Collection and Facility Operational Reviews:** Evaluated viability of expanding municipal services to include services such as residential brush and bulky waste and commercial solid waste and recycling services. Conducted operational reviews of municipal services as well as privately provided services. Operations reviews have included solid waste and recycling collection services and recycling processing services. Within the past three years, she has evaluated commercial collection issues for clients such as the cities of Midland, Corpus Christi, and Sugar Land.
- **Financial/Cost of Service:** Conducted financial feasibility and cost of service studies to assist clients with solid waste management financial planning. Managed complex Excel-based models to develop long term rate structure. Developed rate structures to ensure recovery of costs of service, provide scheduled and level rate increases, encourage diversion, and other local objectives. Within the past three years, she has completed financial feasibility and cost of service studies for the cities of Tempe, Corpus Christi, El Paso, and Midland.

Virginia's Region 2000 Partnership
Classification Description

Classification Title: Working Field Supervisor
Department: Services Authority
Supervisor: Solid Waste Operations Manager
Pay Grade: 112
FLSA Status: Non-Exempt

General Statement of Job

The Landfill Working Field Supervisor performs routine manual duties usually following well-defined procedures including providing a services to customers disposing their waste and trash and operating various other types of equipment. Provides direction and routine supervision to other Landfill Operators as required. Problems encountered are simple to general in nature.

Specific Duties and Responsibilities

Essential Functions:

Responsible for workface operation to ensure compliance with operations plan and solid waste management regulations.

Periodically operates heavy construction equipment and haul trucks based on workload demands and ensures safe operation of heavy equipment

Provides direction and routine supervision to other Landfill Operators

Remain in the field on a daily basis to ensue daily operations are running smoothly, efficiently and that all solid waste is processed as quickly as possible to minimize odors and blowing litter.

Perform final grading and temporary closure operations as directed by Operations Manager when required

Place soil or alternative daily cover over compacted waste when required

Monitor landfill for illegal and/or hazardous waste and assists with waste screening.

Repair road surfaces when conditions warrant.

Operate and perform routine/major maintenance and repairs on heavy equipment as required.

Enforce procedures to ensure compliance with all environmental laws, regulations, and facility permits that are applicable to landfill operations, including leachate management, storm water management, erosion and sediment control management and landfill gas management. This includes all local, state and federal laws and regulations governing the operation of solid waste facilities.

Perform daily inspections of grounds to ensure property is maintained in a safe, clean and professional manner.

Reads and interprets construction plans to ensure that landfill is constructed to Department of Environmental Quality approved engineering plans.

Assist with Storm Water Pollution Prevention Plan.

Perform grounds maintenance duties as required.

Other duties to provide direct or indirect service to the Authority members or customers may be assigned.

Attend meetings as required.

Study applicable service manuals and participate in technical training and certification programs to stay abreast of technological changes.

Responsible for maintaining correct elevations and site layout using surveying equipment and computer systems.

Maintains compliance with Erosion and Sediment Control (ESC) Permits and Virginia Stormwater Management Program (VSMP) requirements.

Supervises the handling of special waste.

Maintains records relating to landfill operations, equipment maintenance, and time and material records.

Assume responsibility in the absence of the Solid Waste Operations Manager.

Studies regulatory manuals and participates in Waste Management Facilities training courses.

Perform other duties to provide direct or indirect service to the Service Authority members or customers as assigned.

When unusual situations occur and /or a local official declares a State of Emergency, all Service Authority employees may be required to accept and perform special assignments as needed to ensure appropriate service delivery.

Knowledge, Skills, and Abilities:

Exhibit basic computer skills for maintaining equipment and inventory records.

Ability to prioritize and complete projects in a timely manner.

Ability to listens and get clarification and instruction.

Ability to speak in a clear and precise manner concerning what is required and clearly passes on information.

Exhibit new skills and translates prior experience into new skills based on new information.

Demonstrate management, supervisory and leadership skills.

Exhibit common courtesy and basic communication skills to work within a team environment.

Ability to focus on solving conflict.

Volunteer readily and seek increased responsibility.

Ability to follow through, resolve and seek feedback regarding questions, requests and/or complaints in a timely manner.

Ability to understand implications of decisions.

Education and Experience

Minimum of five (5) years' experience in sanitary landfill operations or in heavy civil construction industry, with a minimum of three years supervisory experience in sanitary landfill or other heavy civil construction projects.

Graduation from an accredited college with an Associate's Degree in Construction management, Environmental Science, or related degree may be considered in lieu of some experience.

Advanced study and certification in various technical, environmental, and operational aspects of sanitary landfill development, operation, monitoring, and closure preferred.

Valid driver's license issued by the Commonwealth of Virginia and acceptable driving record;

Ability to acquire and retain commercial driver's license (Class B) within 180 days;

Certification as Class II Waste Facility Operator by the Commonwealth of Virginia within eighteen (18) months.

Certification as a Virginia ESC Program Administrator within eighteen (18) months.

Relevant background check must be completed and approved.

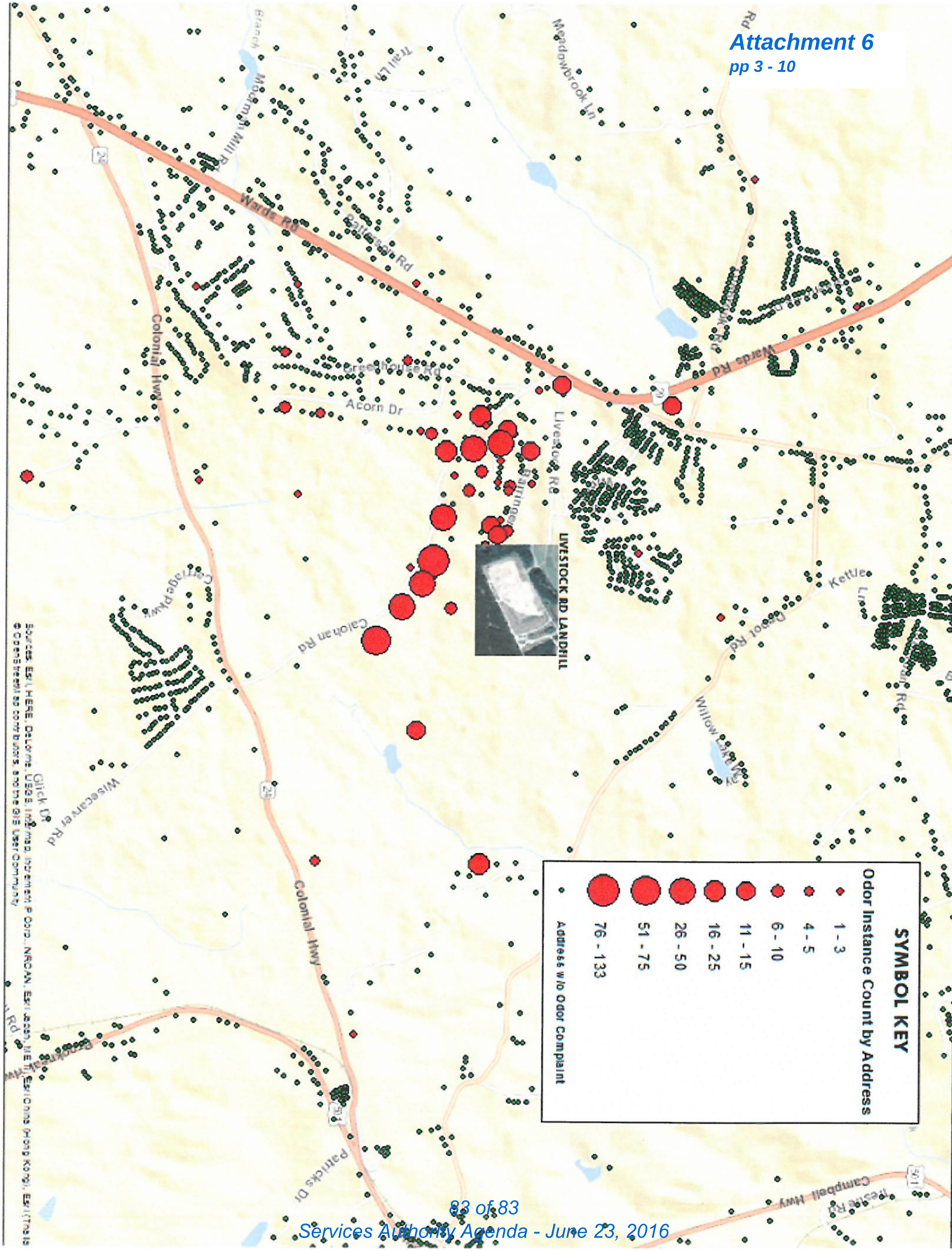
Physical Conditions and Work Environment

The work is performed mainly outdoors where the job requires exposure to the weather conditions and hazardous conditions. The noise level of the working environment is loud. Work involves a high degree of physical strain. Ability to stoop, crouch, walk, push, pull, lift and carry up to 50 pound loads over rough terrain climb on and off large equipment and work in all weather conditions.

Date Drafted: June 15, 2016

Date Approved:

Date Amended:


SYMBOL KEY
Odor Instance Count by Address
1 - 3
4 - 5
6 - 10
11 - 15
16 - 25
26 - 50
51 - 75
76 - 133
Address w/o Odor Complaint
LIVESTOCK RD LANDFILL
Wards Rd
Colonial Hwy
Livestock Rd
Greenhouse Rd
Acorn Dr
Calohan Rd
Carriage Pkwy
Wisecarver Rd
Glick Dr
Patricks Dr
Campbell Hwy
Willow Lake Way
Depot Rd
Kettle Ln
Meadowbrook Ln
Trail Ln
Patterson Rd
Barringer