

Solid Waste Facilities, New London Public Works



Presented to:
New London Public Works Department
375 Main Street
New London, NH 03257

Presented by:
CMA
ENGINEERS
35 Bow Street
Portsmouth, NH 03801

SWMF - RFP



CMA ENGINEERS, INC.
CIVIL | ENVIRONMENTAL | STRUCTURAL

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May 26, 2017

Mr. Richard Lee
Director of Public Works
Town of New London
375 Main Street
New London, NH 03257

**Re: Request for Proposals
Solid Waste Management Facilities
CMA # P-2792**

Dear Richard:

CMA Engineers appreciates this opportunity to present the Town of New London with our proposal and approach for evaluating the Town's solid waste management facilities.

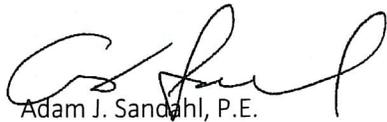
CMA Engineers is a civil, environmental, and structural consulting engineering firm formed in 1988 based in Portsmouth, NH. The firm has grown steadily over time, now with additional offices in Manchester, NH and Portland, ME. We specialize in working with municipalities in the planning, design, and implantation of a wide range of public works and other capital projects. We are fully experienced in all aspects of solid waste engineering for transfer station and recycling projects including facility evaluations, economic analyses, operational assistance, site evaluation, permitting, final design and construction period services.

We plan to manage this project from our Portsmouth office with Paul D. Schmidt, P.E. serving you as Project Manager. We have a strong understanding of the project goals with regard to evaluating your solid waste management facilities. In preparing this proposal, we developed an understanding of the project by carefully reviewing the Town's Request for Proposals, conducting an initial site visit, and reviewing other available information.

CMA Engineers is also capable of moving selected alternatives to final design and permitting, preparation of bidding documents, and providing construction services, including contract administration and resident services during the construction phase.

We look forward to the opportunity to discuss the project, and our proposal, with you in greater detail.
In the meantime, should you have any questions, please do not hesitate to contact us.

Very truly yours,
CMA ENGINEERS, INC.



Adam J. Sandahl, P.E.
Project Engineer



Paul D. Schmidt, P.E.
Project Manager

Enc.

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Project Understanding & Approach

Background



The Town of New London provides solid waste services for its residents and manages materials at four locations in town and is looking for long-term solutions to optimize their operations. The original transfer station buildings, located off Newport Road, were constructed over 35 years ago to serve a smaller population and to process a limited quantity of recyclables. The facility currently accepts common household recyclables and municipal solid waste. In addition to providing services to residents of New London, this facility also accepts significant wastes from commercial sources in Town. Although the facility has served the Town well for many years, improvements are necessary to increase capacity for the quantity of material managed, improve traffic patterns, and allow for consolidation of sites.

Beyond the Transfer Station, the Town manages a metals and leaf and yard waste drop-off site at the closed burn dump off Old Dump Road. Additionally, the Town is an NRRRA Host Community for Processed Glass Aggregate where processing occurs at the Shepherd Pit site off Mountain Road. Several common recyclable streams, bales from the transfer station, and electronic waste are also collected at the Highway Department Buildings off South Pleasant Street. Because of the space constraints at the Transfer Station and the need for storage at different sites, materials are handled several more times than they would be at an appropriately sized, consolidated site.



Based on our review of the Town's current facilities, the solid waste operation appears to be well managed, clean and well maintained. Creative solutions have been implemented for various problems. However, the facility and site constraints result in inefficient operations, poor residential traffic flow, and limited service (reduced drop-off hours at the metals and yard waste facilities at the closed burn dump). Significant traffic backups during busy times were described, which is consistent with observed site constraints. Access to the main drop-off area results in poor traffic patterns that can result in potentially dangerous conditions with residents regularly crossing traffic. A properly functioning solid facility should be user friendly from the customer's perspective and efficient from the operator's perspective. Despite the operator's best efforts, the existing facility meets neither of those goals.

The Town of New London is primarily a residential community of 4,500 residents with a charming downtown commercial area. Colby-Sawyer college, located downtown, increases the population by approximately 2,000 when school is in session.

A properly functioning solid facility should be user friendly from the customer's perspective and efficient from the operator's perspective.

The majority of the Town brings their trash and household recyclables to the transfer station, which is open to the public five days per week. Other residents and commercial areas of town subscribe to a curbside collection program where packer trucks deliver solid waste to the transfer station up to four times per week over two days. Over the past three years, the transfer station has consistently processed approximately 2,100 tons of municipal solid waste and 600 tons of household recyclables.

Project Understanding and Project Approach



The purpose of the evaluation is to provide the Town with the information it needs to make long-term decisions for managing its solid waste. The evaluation will include recommendations on whether the Town should upgrade existing facilities, invest in new facilities, or a combination of these.

To help gain a better understanding of the Town's current and future solid waste needs, CMA Engineers conducted preliminary site visits at all four solid waste sites, interviewed Richard Lee – Town Public Works Director, reviewed meeting minutes of the Town's Solid Waste Committee, and reviewed applicable sections of the Town's Annual Report. To gain further knowledge of the Town's solid waste

background, questions, and concerns, CMA Engineers will meet with the Town's Solid Waste Committee.

The two primary options that the Town is currently considering include upgrades at the current Transfer Station and the siting of a new facility at either the Shepherd Pit site or another in-town site to be determined. We agree with this approach.

The existing transfer station and recycling facility has site constraints that limit options for expansion at the existing site. Of primary importance is the need to improve the main trash and recyclables drop-off areas and improve traffic flow. In our experience, designation of drop-off parking spaces results in a better residential experience than drive through configurations. This is primarily due to avoiding crossing traffic leaving and avoiding the gaps in drive through due to variations in drop-off times. A reconfiguration of the drop-off area will be evaluated, either to improve the existing or to provide pull-in parking spaces. This

could potentially include a revised building façade to the recycling center to optimize drop-off/sorting times.

The materials storage and handling areas for the recycling facility will also be evaluated for potential improvements, but is constrained by several site parameters including the abutting Interstate right-of-way and surrounding wetland areas.



The site constraints beyond the currently developed land should be evaluated and confirmed. One possible expansion alternative is to reconfigure or replace the office building, which is currently underutilized but we understand has been left for visual impact purposes for abutting properties. While we understand, this may not be a viable alternative, the removal of the existing building with alternative methods of visual screening may provide the only option for true expansion of the existing facility.

Without significant expansion of the developed portion of the existing property, other solid waste operations currently conducted at the other sites cannot be consolidated at this site.

Based on our preliminary review, the Shepherd Pit site is a strong candidate to provide comprehensive consolidation of all the solid waste operations. We note the site does not currently have three phase power, which potentially could result in an increased cost for development. The scope of work includes layout of a new facility to meet current and future needs. This will be done in consideration of the Shepherd Pit site but could be applied to potential other sites which we understand the Town may want to consider. The scope of work does not include new site evaluations but that could be added as appropriate.

The Town also wishes to explore a possible cooperative venture with the adjacent towns of Andover and Wilmot. The scope of work below includes preliminary assessment of potential waste streams from these Towns and an evaluation of facility sizing impacts for the new facility option. We propose a straightforward approach to evaluate existing facilities, considerations for improvements to these facilities, and consolidation through construction of a new facility. This scope of work will provide a preliminary evaluation of alternatives at a conceptual design level, with estimates of capital costs to provide appropriate planning to assist the Town in determining project direction for management of solid waste.

Scope of Services

In conformance with the Request for Proposal, CMA Engineers will provide the following scope of services.

Task 1 – Site Visit and Data Gathering

CMA Engineers will meet with Town personnel to gain further understanding of the Town’s solid waste questions, concerns, and goals. Proposed activities for this Task will include:



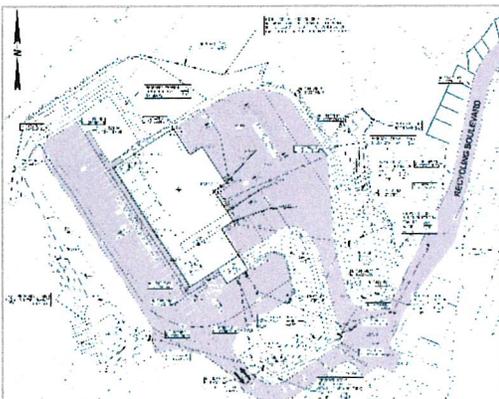
- Conduct a follow-up interview with the Town’s Public Works Director, members of the Town’s Solid Waste Committee, and other Town officials as appropriate (assumed to be one visit);
- Further review and tabularize available solid waste data from Town records and the Northeast Resource Recovery Association (NRRRA) report;
- Review the April 2016 NRRRA report which identified problems with the Town’s current facilities and made several recommendations for improvements, and;
- If necessary, conduct follow-up site visits of the four solid waste sites with Town Personnel.

Task 2 – Existing Conditions Figures

CMA Engineers will prepare existing conditions schematics of each of the four solid waste sites based on available mapping sources.

Task 3 – Transfer Station Evaluation

Evaluation of the current transfer station layout and development of a concept(s) to make best use of the site, including:



- Providing discussion and input on the traffic patterns, user convenience, and site safety at the Transfer Station;
- Reviewing and interpreting MSW and recycling data, provided by the Town, for the purposes of identifying facility sizing requirements and waste handling equipment needs;
- Preparing a conceptual layout of proposed Transfer Station improvements including site constraints such as wetlands and property lines, and;
- Providing a construction cost estimate of the proposed improvements.

Task 4 – New Site Evaluation

A conceptual site plan will be developed for the Shepherd Pit site (or another site designated by the Town), with the goal of consolidating many of the Town's solid waste operations at one facility. This task will also include:

- Discussion of potential site constraints including site access, lack of three-phase power, potential wetlands impacts, and on-going site operations;
- A conceptual layout plan of the proposed facility, and:
- Providing a construction cost estimate for the new facility.

Task 5 – Evaluation of Regional Opportunities

This task will consider the addition of Andover and Wilmot into a solid waste cooperative agreement to bring their MSW and solid waste to the new site concept developed in Task 4. Subtasks will include:



- Review of available tonnage information for Andover and Wilmot and determining an anticipated quantity of materials that would be received at the new facility;
- Determine whether the new facility, equipment, and traffic patterns are appropriately sized to accommodate the additional municipalities;
- Develop a conceptual layout plan highlighting necessary changes to accommodate the additional municipalities, and;
- Highlight issues associated with regionalization including cost-sharing, inter-municipal agreements, location considerations, and governance.

Task 6 – Project Meeting and Final Report

Attend a project meeting to review findings with Town representatives and to discuss possible next steps. A final report will be prepared that summarizes the findings of the evaluation and be the mechanism for presenting figures, cost estimates of alternatives, and recommendations.

Qualifications and Similar Projects

Municipal Experience and Commitment

OUR MISSION

CMA Engineers is a civil and environmental consulting engineering firm providing responsive engineering services of outstanding quality to select public and private sector clients on projects that are cost-effective, technically and environmentally sound, and innovative when appropriate. CMA Engineers is managed in a manner to assure a sustainable, ethical, and financially sound professional practice.

OUR VALUES

CMA Engineers shall place a very high value on excellent client service; hard work; quality; creativity; reliability; careful innovation; protection of public health, safety, and welfare; professionalism and integrity; sustainability, employee safety, professional and public service; and financial stability.

CMA Engineers, with offices in Portsmouth and Manchester, NH, and Portland, ME, has significant experience working on behalf of municipalities in New Hampshire to provide a wide range of services including project planning, project evaluations, public participation/planning charrettes, design, coordination with regulatory agencies, and construction administration. In addition to experience on a range of solid waste transfer station and recycling facilities,



which is detailed in further depth below and on the following pages, CMA Engineers is currently the design engineer for several lined landfills including the North Country Environmental Services (NCES) landfill in Bethlehem, the Mt. Carberry Landfill in Berlin and the now closed Franklin Secure Ash Landfill in Franklin. The depth, diversity, and versatile strength of the CMA Engineers team allows us to be responsive to the full range of project needs by allocating appropriate resources for specific assignments. We will work to fully understand the community's needs and objectives while developing a solid working relationship with the staff and stakeholders. Project goals and expectations will be clearly articulated, understood, and meet expressed needs and expectations. Effective communication is critical at all levels of interaction, including key staff, Town leaders, regulators, and stakeholder groups as appropriate.

Project Team & Client Service

As described below, CMA Engineers has assembled a highly-experienced team for this evaluation. Our Project Engineers have strong capabilities in addition to the capabilities of the Project Manager to help meet project needs. Some of the key elements of our team structure is as follows:

- ✓ The CMA Engineers' project manager works with the client to establish clear expectations of the work to be completed, schedules, and required effort and these are reflected in agreements with the client.
- ✓ CMA Engineers has numerous active projects at any given time. The firm organizes project teams to serve the needs of each project and maintains the schedule requirements of all projects. With the ongoing requirements of each client and project, CMA Engineers commits the resources necessary to meet each client's needs.

- ✓ We have successfully completed the engineering (planning, design, construction services) for over \$180 Million value of constructed public works projects of all types.
- ✓ Client responsiveness and service are the cornerstones of CMA Engineers commitment. We work closely with municipal public works officials, administrative staff, and elected officials to coordinate technical work with other project elements, including funding agency requirements, regulatory matters, legal considerations, and the municipal process.
- ✓ CMA Engineers has consistently met the needs of our municipal clients on all project assignments since the firm's inception in 1988.

Success is rooted in the effectiveness of the individuals dedicated to the work.

Representative Projects

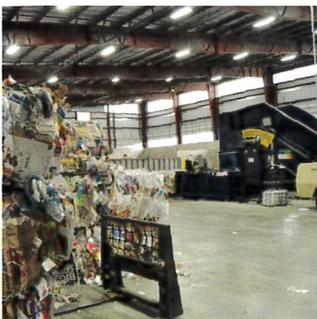
CMA Engineers is fully experienced in all aspects of solid waste engineering for transfer station and recycling projects including facility evaluations, economic analyses, operational assistance, site evaluation, permitting, final design and construction period services. Project summary sheets for multiple representative projects are included in the following pages, including the recently constructed Derry Transfer Station and Recycling Facility, and a current evaluation and design project for the Town of Gilford, which has many similar requirements needed by New London. We would be happy to discuss these projects in further detail at your request.



Solid Waste Transfer and Recycling Facility Derry, NH

CMA Engineers was the design engineer for Hutter Construction on the design/build for the Town of Derry, NH Transfer Station and Recycling Facility. The facility and site layout were designed to accommodate the Town's request for residential and limited commercial drop-off of source separated recyclables of municipal solid waste (MSW), baling of recyclables and transfer of MSW, plus office space. The facility was designed for flexibility to transfer recyclables should the Town change methods of management of recyclables in the future.

The site was designed to accommodate peak Saturday residential traffic, provide operations during construction, and to coordinate with other solid waste/recycling operations at the site including C&D, scrap metal, leaf and yard waste, and multiple special wastes. Preliminary layout of the facilities was completed in the fall of 2014 and final design was completed in May 2015 and construction was completed in January 2016.



SOLID WASTE

Client:

Hutter Constuction as
Design-Build Contractor
to the Town of Derry, NH

Engineering Services:

Permitting
Preliminary Design Layout
Final Design – Civil Site and
Structural
Limited Construction Services

Period of Service:

2014 - 2016

Key Personnel:

Paul Schmidt, P.E.
Project Manager

Bradley Sullivan, P.E.
Project Engineer

Adam Sandahl, P.E.
Project Engineer

Robert Grillo, P.E.
Geotechnical

Jason Gallant, P.E.
Structural

Project Construction Cost:

\$2,600,000

Project Contact

Mike Fowler
Public Works Director
Town of Derry
(603) 432-6144

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Solid Waste Transfer and Recycling Facility Evaluation Gilford, NH

CMA Engineers performed an evaluation of solid waste facility improvements to the Town of Gilford's existing solid waste management facilities. The evaluation provided alternative layouts and cost estimates designed to meet the Town's current and future solid waste needs. The planned improvements will include a new recycling building to provide source-separated management of recyclables, a new municipal solid waste compactor, and site improvements. The new facility will eliminate a two facility operation between the Town's current facility for management of recyclables and other wastes and shared use of the Laconia transfer station for solid waste and C&D material.

Building layouts incorporated a safe and effective traffic pattern for residential drop off and efficient management of waste and recyclables. In March, 2017, the Town voted to appropriate \$950,000 to design and construct a new 55' x 80' pre-engineered metal recycling building plus a new compactor for solid waste. CMA Engineers was retained to complete permitting and design of the new facility, with construction anticipated to begin in the fall of 2017.



Client:

Town of Gilford, NH

Engineering Services:

Operational Assistance
Facility Planning
Permitting
Design

Period of Service:

2016 - Present

Key Personnel:

Craig Musselman, P.E.
Principal

Paul Schmidt, P.E.
Project Manager

Adam Sandahl, P.E.
Project Engineer

Project Construction Cost:

\$700,000

Project Contact

Mr. Peter Nourse
Director of Public Works
(603) 527-4778

S O L I D W A S T E

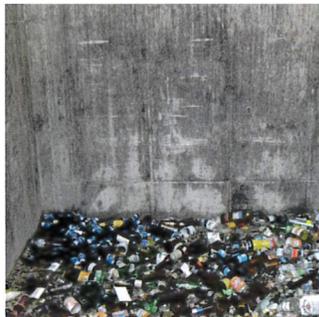
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Recycling Facility Lebanon, NH

CMA Engineers completed planning, permitting, design, and construction administration for a comprehensive recycling facility for the City of Lebanon, NH. The facility receives, stores, and processes source separated recyclables from residential drop-off with flexibility to also accept loads from small commercial haulers. Source separated recyclables are baled for maximum value with storage and transport capability. The facility also provides for collection, storage and transfer of scrap metal, bulky wastes, white goods, leaf and yard waste, waste oil and multiple universal wastes materials. A separate area is provided for residential drop-off of municipal solid waste and construction and demolition debris that is transported to the on-site Lebanon Landfill.

The design provided for relocation and replacement of older, inadequate facilities, integrated with the Lebanon Solid Waste Facilities that includes scales, maintenance garage and the Lebanon Lined Landfill. The facility was initially planned for use by Lebanon residents but was designed with flexibility that allowed a later change to accept materials from additional sources outside of Lebanon.



Client:

City of Lebanon, NH

Engineering Services:

Operational Assistance
Master Planning
Permitting
Design
Construction Services
Resident Services

Period of Service:

2004 - 2005

Key Personnel:

Craig Musselman, P.E.
Principal

Paul Schmidt, P.E.
Project Manager

Project Construction Cost:

\$1,300,000

Project Contact

Marc Morgan
Solid Waste Manager
(603) 298-6486

SOLID WASTE

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Merrimack Solid Waste Transfer Station

Solid Waste Transfer and Recycling Facility Merrimack, NH

Working closely with the Town of Merrimack, CMA Engineers permitted, designed, and administered construction of a solid waste transfer station for the Town. As the landfill in Merrimack ended its use, the transfer station was constructed at the same site. The entire project was completed on a fast track with conceptual design and permitting starting in April 2003 and construction completed in December 2003. The facility is heavily used for both residential and commercial deliveries of MSW. Site layout specifically accommodates peak Saturday traffic.

The facility includes a tipping floor and loading of large, open-top transfer trailers. A series of separate containers can also be loaded with construction/ demolition waste and other special waste for separate management. The Town had previously established an existing separate recycling facility and operation on the same site, and had scales for both the landfill and recycling facility. The transfer station was designed to fully integrate with the existing locations and site plans of the recycling facility and other site facilities, so that the entire solid waste facility layout functions well as a single complex.



Client:

Town of Merrimack, NH

Engineering Services:

Operations & Operational Assistance
Permitting
Design
Construction Services
Resident Services

Period of Service:

2003

Key Personnel:

William Straub, P.E.
Project Manager

Jack Kareckas, C.E.T
Resident Services

Robert Grillo, P.E.
Geotechnical

Project Construction Cost:

\$1.7 Million

Project Contact

Eileen Cabanel
Town Manager
(603) 424-2331

S O L I D W A S T E

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Transfer and Recycling Facility Farmington, NH

In 2009 - 2010, CMA Engineers worked with the Town of Farmington, NH in the planning, design, and construction of an integrated solid waste transfer station/recycling facility with management/transfer of C/D waste and universal wastes. The facility was designed to be co-located with a portion of the closed Farmington Landfill that was used many years ago as a burning dump.

The limited area available was accommodated with an efficient traffic pattern and layout with scales, and separate drop-off areas for each waste material and recyclables. Partially due to the limited space, recyclables are managed through a single-stream system, where all recyclables are mixed and collected in a solid waste compactor for transfer to a regional processing facility. The transfer/recycling facility is in partial operations, and went into full scale operations in May, 2012 as the adjacent municipal landfill ceases operations.



Client:

Town of Farmington, NH

Engineering Services:

Operations & Operational Assistance
Permitting
Design
Construction Services
Resident Services

Period of Service:

2009 - Present

Key Personnel:

William Straub, P.E.
Project Manager

Adam Sandahl, P.E.
Project Engineer

Robert Grillo, P.E.
*Geotechnical /
Project Engineer*

Project Construction Cost:

\$200,000

Project Contact

Dale Sprague
Director of Public Works
(603) 755-4883

S O L I D W A S T E

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Parks and Recreation Facilities Berlin, NH

CMA Engineers with Rob Doyle, RA, provided comprehensive planning, design and construction review for the City of Berlin Parks and Recreation Facilities. On a fixed budget from a land transfer that resulted in demolition of their cold storage facility, the City set out to replace the storage facility and install new public restrooms. Through a comprehensive siting and facilities evaluation by CMA Engineers, and innovative cost savings measures, the City was able to construct a new maintenance shop with cold storage and public restrooms at a new location, co-located with a City park and existing recreation facilities, plus a second new public restroom.

The City teamed with the Berlin High School Career & Technical Education Building Trades Program during construction. The Trades Program educates junior and senior high school students through real construction experience. The CMA Engineers team worked closely with the City and Trades program during design and construction to match and optimize capability of the Trades Program and to allow the City to serve as construction manager of other necessary specialty subcontractors to maximize value and ensure success of student involvement under the Trades Program. The project far exceeded initial expectations resulting in expanded and improved facilities and successful student involvement on high profile public facilities.



CIVIL/SITE DESIGN

Client:

City of Berlin, NH

Engineering Services:

Site Evaluation
Preliminary Design
Building & Site Design
Construction Services

Period of Service:

2014-2016

Key Personnel:

Craig Musselman, P.E.
Principal
Paul Schmidt, P.E.
Project Manager
Jason L. Gallant, P.E.
Structural
Robert E. Doyle, P.E., R.A.
Architect

Project Cost:

\$400,000

Project Contact:

James Wheeler
City Manager
603-752-5238
Michael Perreault,
Director of Public Work
603-752-8551

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Project Team & Schedule

Project Team

**CRAIG MUSSELMAN'S
HIGHLIGHTED EXPERIENCE:**
President of CMA Engineers
Principal.

CONCORD REGIONAL SOLID WASTE/
RESOURCE RECOVERY COOPERATIVE
Comprehensive Services
for over 30 years including
Franklin Ash Landfill and
Single Stream Recycling
Facility Evaluation

TOWN OF DERRY
Transfer Station and
Recycling Facility

ANDROSCOGGIN REGIONAL REFUSE
DISPOSAL DISTRICT (AVRRDD)
Materials Recycling Facility
and Mt. Carberry Landfill

MULTIPLE INTER- MUNICIPAL
AGREEMENTS

**PAUL SCHMIDT'S
HIGHLIGHTED EXPERIENCE:**
TOWN OF DERRY

Transfer Station and
Recycling Facility
AVRRDD

MT. CARBERRY LANDFILL
Comprehensive
Engineering, Wastewater
Siphon Project
Landfill Gas Operations
And Improvements

CITY OF LEBANON, NH
Transfer Station and
Recycling Facility

CMA Engineers has assembled a project team with experience in planning, design, and construction of significant solid waste projects in New Hampshire. Our experience includes a range of solid waste projects including transfer station, recycling and landfill projects as well as solid waste economics, design and construction phase services and contract administration. Resumes of the CMA Engineers project team are included in the following sections.

Principal-in-Charge

Craig Musselman, P.E, BCEE is the President of CMA Engineers and will serve as Principal-in-Charge. Mr. Musselman coordinates and directs the management of CMA Engineers. He has extensive experience in development of all types of projects, and in the municipal processes that support them, including financial, legal, and institutional aspects. In addition to his engineering career, he has served as a Selectman for the Town of Rye, NH for the past twelve years, and is an active participant and contributor to several national engineering organizations/societies, including ASCE, NSPE, ACEC and ABET. He is a licensed Professional Engineer in New Hampshire. He was selected as the NH Engineer of the Year by the New Hampshire Engineering Societies in 2004.

Project Manager

Paul D. Schmidt, P.E. is the proposed Project Manager for this project and as such will be responsible for the overall completion and design of the project. Mr. Schmidt is a senior project engineer with 23 years of experience in solid waste, water, and wastewater engineering projects. Mr. Schmidt has experience in all aspects of project development, including planning, economic evaluations, design, permitting, and construction administration. Mr. Schmidt received a BSCE from Clarkson University and an MS in Environmental Engineering from the University of Massachusetts. He is a licensed professional engineer in New Hampshire and Maine and was presented the Young Engineer of the Year Award by the New Hampshire Engineering Societies in 2006.

**ADAM SANDAHL'S
HIGHLIGHTED EXPERIENCE:**

TOWN OF DERRY

**Transfer Station and
Recycling Facility**

NCES

**Stage V Permitting and
Improvements**

**CONCORD REGIONAL SOLID WASTE/
RESOURCE RECOVERY COOPERATIVE**

**Single Stream Recycling
Facility**

**MIDCOAST SOLID WASTE
CORPORATION**

**Transfer Station
Improvement Evaluation**

**ADAM ROY'S
HIGHLIGHTED EXPERIENCE:**

NCES

Stage V Expansion

TOWN OF GILFORD

**Solid Waste Facilities
Evaluation**

CITY OF CLAREMONT

**Sidewalk and Rail Trail
Improvements**

TOWN OF ELIOT

**Road Management &
Funding Plan**

Project Engineer

Adam Sandahl, P.E. is a civil engineer with over fifteen years of experience in civil and environmental engineering projects. Mr. Sandahl has experience in all aspects of project development, including planning, economic evaluations, design, permitting, and construction administration. Adam served as project engineer including the concept layout of Derry Transfer Station project. Adam received a BS in Civil Engineering from the University of New Hampshire and an MS in Environmental Science from the University of Idaho.

Project Engineer

Adam Roy, E.I.T. has worked with CMA Engineers since 2012. Mr. Roy provides detailed project engineering on a wide variety of projects. He has assisted in the engineering on a variety of projects including the recent evaluation of the Town of Gilford's solid waste management facilities. He is experienced with permitting, design, preparation of construction drawings, construction inspection, economic planning and evaluations, and technical engineering reports. Adam received a BS in Civil Engineering from the University of New Hampshire.

EXPERTISE

- Civil and Municipal
- Water and Wastewater
- Solid Waste Management

EDUCATION

- University of Massachusetts, Bachelor of Science in Civil Engineering, 1973
- University of Massachusetts, Master of Science in Civil Engineering, 1974

PROFESSIONAL REGISTRATIONS

Professional Engineer:

- New Hampshire
- Maine
- Massachusetts

EXPERIENCE

Consulting: 42 years

CERTIFICATIONS

- Board Certified Environmental Engineer (BCEE), certified in both water/wastewater and solid waste, American Academy of Environmental Engineers and Scientists.
- ExW Certification – American Council of Engineering Companies – expert witness certification.

PROFESSIONAL AFFILIATIONS

National Society of Professional Engineers (NSPE), State and National

- American Society of Civil Engineers (ASCE)
- Water Environment Federation and American Water Works Association
- ABET (Accreditation Board for Engineering and Technology) Board of Directors
- American Public Works Association (APWA)

AWARDS

- ASCE Distinguished Member
- ASCE President's Medal
- Fellow, NSPE and ACEC
- NSPE President's Award
- New Hampshire Engineer of the Year

CIVIC ACTIVITIES:

Town of Rye Selectman – 2005 through present.

Craig N. Musselman, P.E

Principal/Project Manager

PROFESSIONAL PROFILE

Mr. Musselman is the President of CMA Engineers, Inc. and is a practicing civil engineer with over forty years experience in the planning, design, and construction administration of civil and environmental engineering projects. Mr. Musselman formed CMA Engineers, Inc. in 1988 as a start-up company. Prior to that time, he held positions as Vice President of Environmental Engineering for Kimball Chase Company in Portsmouth NH from 1982 through 1987. From 1975 through 1982 he was a project manager for Wright Pierce Engineers of Portsmouth and previously was a project engineer for O'Brien & Gere Engineers in North Carolina. He has extensive experience in the planning, design, and construction administration of a diverse range of projects including roadways; wastewater collection and treatment facilities; water distribution and treatment facilities; lined landfills; waste-to-energy plants; recycling facilities; public works facilities; sports stadiums; and industrial, residential, and commercial developments. Mr. Musselman also is responsible for the management of CMA Engineers.

Mr. Musselman is a leader in the engineering profession, with substantial ongoing involvement in national organizations regarding engineering licensure and education, as well as several prior State roles including leadership of NHSPE and service as chairman of the NH Board of Licensure for Professional Engineers. He is a member of the board of directors and the treasurer of ABET, the Accreditation Board for Engineering and Technology, which accredits university engineering programs globally. He serves as the chair of the American Society of Civil Engineers national Committee on Licensure.

He has spent most of his career based in Portsmouth, NH, has been active in numerous civic activities in the area, and is recognized as a civic and business leader. He has served as a member of the Board of Selectmen of the Town of Rye, NH for the past ten years.

In addition to his design capabilities and experience evidenced by his 41 year engineering career, Mr. Musselman's specialties in practice include the planning and evaluation of institutional, ownership and operation options for projects; the economic analysis of complex engineering projects; risk analysis; and the interpretation of construction contract documents.

CIVIL ENGINEERING PROJECTS

Mr. Musselman has served as the project engineer, project manager and principal in charge of the planning, design and construction administration of roadway, drainage, slope stability, riverbank stabilization, and site development projects.

Water Supply and Distribution

In the field of water supply and distribution, Mr. Musselman has designed and administered the construction of water treatment plants and distribution system improvements including watermain extensions, booster pumping stations and water storage tanks. He has prepared comprehensive water system master plans, and is experienced in the application and use of hydraulic modeling of public water systems

Wastewater Facilities Engineering

In the field of wastewater engineering, Mr. Musselman has served as the project engineer on the design and construction administration of new and upgraded wastewater treatment plants, sewers and pumping stations, infiltration/inflow analyses, and combined sewer overflow investigations. He led major public participation programs to successfully resolve long-standing public controversies in sewer construction projects in Rye, New Hampshire and Cape Elizabeth, Maine.

Solid Waste Facilities

Mr. Musselman has served as the project engineer, project manager and principal in charge of the planning, design, construction administration and operation of lined solid waste landfills, landfill closures, recycling facilities, transfer stations, and waste to energy facilities.

Intermunicipal Agreements

Mr. Musselman has significant experience in the formulation and administration of intermunicipal agreements among New Hampshire municipalities. As a consulting engineer, he helped create intermunicipal agreements for wastewater service between Rye and both Hampton and Portsmouth. As a Selectman, he has been involved in the twenty year expiration and renewal of those agreements. He has represented the Town of New Castle in intermunicipal agreement matters pertaining to both water and wastewater. He has been centrally involved in the formulation and long term administration of intermunicipal agreements for solid waste facilities among and on behalf of more than 100 New Hampshire municipalities.

SELECTED PUBLICATIONS

1. Musselman, Craig N.; Blog Articles on Engineering Licensure, National Society of Professional Engineers Website, 2009 through present. Current traffic level – 2,000+ articles read per week.
2. Musselman, Craig N.; Nelson, Jon D. and Phillips, Monte, L., "A Primer on Engineering Licensure in the United States" in proceedings of the American Society for Engineering Education Annual Conference, 2011, Vancouver, BC, Canada.
3. Musselman, Craig N., "Requiring a Master's Degree or its Equivalent as a Model Law Prerequisite for Licensure after 2020" in proceedings of the American Society for Engineering Education Annual Conference, 2009, Austin, TX.
4. Saffarzadeh, A.; Shimaoka T.; Wei Y.; Gardner KH and Musselman, CN, "Impacts of Natural Weathering on the Transformation/Neof ormation Processes in Landfilled MSWI Bottom Ash, A Geoenvironmental Perspective", 2011, in Waste Management, New York, NY.
5. Musselman, Craig N., "A Professional Engineer Serving in Local Elected Political Office, Personal Observations", 2008, American Society of Civil Engineers Journal of Leadership and Management in Engineering, Reston, VA.
6. Musselman, Craig N; Eighmy, TT; Gress, DL; Killeen, MP; and Preshner, JR; "Utilizing Waste to Energy Bottom Ash as an Aggregate Substitute in Asphalt Paving" in Proceedings of the Eighth International Conference on Municipal Solid Waste Combustor Ash Utilization, 1995, Arlington, VA.
7. Musselman, Craig N; Bidwell, JN; Carpenter, JE; Straub, WA; Preshner, JR; "Landfill Gas Generation at a Municipal Waste Combustor Ash Monofill - Franklin, NH" in:
 - Proceedings of Waste Tech '97, National Solid Wastes Management Association, 1997, Tempe, AZ.
 - Proceedings of the North American Waste to Energy Conference, 1997, Research Triangle Park, NC.
 - Proceedings of the Air and Waste Management Association's 90th Annual Meeting, 1997, Toronto, Canada.
 - Proceedings of "Sustainable Construction, Use of Incinerator Ash", March 2000, University of Dundee, Scotland.
8. Straub, William A; Musselman, CN; Allen, DM; and Sills, MA; "Overcoming Siting Constraints for a Municipal Landfill Expansion in an Urban Setting" in Proceedings of Wastecon 96, Solid Waste Association of North America; 1996, Portland, OR.
9. Musselman, Craig N; Shimaoka, T; Yanase, R; and Sills, MA; "Assessing the Behavior and Fate of Mercury in a Municipal Waste Combustor Ash Landfill" in Proceedings of the Eighth International Waste Conference, Sardinia 2001, Cagliari, Italy, October 2001.
10. Musselman, Craig N; Ryder, KH; and Slate, D; "Can Landfills, Birds and Airports Coexist?" in Waste Age Magazine; May 1998.

EXPERTISE

- Wastewater facilities design and construction
- General municipal engineering services and construction
- Economic evaluations
- Environmental site investigations, closures and remediation
- Municipal solid waste planning and facilities development

EDUCATION

- Clarkson University, BS Civil Engineering 1992
- University of Massachusetts, MS in Environmental Engineering 1994

PROFESSIONAL REGISTRATIONS

Professional Engineer:

- New Hampshire
- Maine
- Vermont

EXPERIENCE

Consulting 22 years

PROFESSIONAL AFFILIATIONS

- New Hampshire Society of Professional Engineers, Past President
- National Society of Professional Engineers
- American Society of Civil Engineers
- Water Environment Federation
- American Water Works Association

AWARDS

NH Young Engineer of the Year, 2006
40 under 40 leaders in NH, Union Leader, 2005

CMA
ENGINEERS
pursue excellence

Paul D. Schmidt, P.E.

Principal/Project Manager

PROFESSIONAL PROFILE

Mr. Schmidt is a Project Manager and Principal at CMA Engineers with 22 years of experience in a variety of civil and environmental projects. Mr. Schmidt has experience in all aspects of project development, including planning, economic evaluations, design, permitting, and construction administration. Mr. Schmidt has expertise in a wide range of civil and environmental project for municipal clients. Representative project include the following:

REPRESENTATIVE PROJECTS

Androscoggin Valley Regional Refuse Disposal District, Berlin, NH

Mr. Schmidt is responsible for comprehensive solid waste services for the Androscoggin Regional Refuse Disposal District, including planning, permitting, design, construction administration and operational assistance. Representative projects have included permitting of expansion of the Mt. Carberry Secure Solid Waste Landfill, expansion of landfill gas collection systems, landfill gas operations assistance, and general landfill operations assistance. Construction projects have included landfill gas expansion construction, complete rehabilitation of the leachate storage pond and extension of the leachate sewer for connection to the City of Berlin Wastewater Treatment Plant through a unique inverted siphon and force main. Mr. Schmidt has also assisted with planning, permitting and owner's representation of a design-build contract for construction of a landfill gas to industrial energy pipeline to the Gorham Paper Mill.

Concord Regional Solid Waste/Resource Recovery Cooperative, Concord, NH

Mr. Schmidt has served in many roles in comprehensive services to the Concord Regional Solid Waste/Resource Recovery Cooperative. Mr. Schmidt was part of a team responsible for negotiations of a \$100+ million extension of a solid waste contract for continued disposal at the Wheelabrator Concord Waste-to-Energy Facility, which included completion of complex financial models. Mr. Schmidt is also responsible for the construction administration and resident inspection of the \$1.4 million Phase IV expansion of the Cooperative's Secure Ash Residue Landfill constructed in 2005/2006 and the Phase V expansion completed in 2008/2009.

Mr. Schmidt was the project manager for the planning, permitting and design of a planned regional single stream recycling facility for the Concord Solid Waste Cooperative. Services provided included all aspects of project development including site design, permitting, assistance for procurement of recycling equipment, assistance for procurement of operations contract services, and evaluation of recycling operations for participating communities.

Town of Seabrook Wastewater Improvements, Seabrook NH

Mr. Schmidt represents the Town of Seabrook for a range of services for the Town's wastewater department. These include representing the Town in response to an Administrative Order from USEPA that required evaluations and recommendations for corrective actions related to multiple aspects of the wastewater facilities operation and maintenance. This work included an evaluation of the dechlorination facility and evaluations and development of a routine and preventive maintenance program for the Town. Recommended and completed improvements included the design and construction administration of improvements to the facility dechlorination system, including new pumping, monitoring, controls and SCADA operations of the facility, development of a comprehensive Long-Term Preventative Maintenance Program, add modifications to operational and staffing requirements. Mr. Schmidt has also been responsible for the design and construction oversight of a comprehensive SCADA upgrade for the Seabrook wastewater facilities including 19 remote pumping stations and the 1.8 MGD treatment facility.

Rye Line Pumping Station Rehabilitation, Portsmouth NH

Mr. Schmidt provided construction administration of the Rye Line Pumping Station in Portsmouth. Rehabilitation included increasing the capacity from 300 to 600 gpm, a new grinder, expansion of the wet well, a 450-square foot building expansion, new pumps and VFDs, new gas fired backup electric generator, replacement of the SCADA system, and full electrical, mechanical and structural design. The building design included modifications to the existing structure combined with a building expansion to increase the elevation of the access points to correct a chronic issues associated with flooding from the adjacent wetland. The facility receives flow from the southern side of US Route 1 in Portsmouth and some flow from the Town of Rye.

Lebanon Pumping Station, Lebanon NH

Mr. Schmidt managed the design and construction administration of improvements to an existing leachate pumping station for the Lebanon Landfill. Improvements included electrical upgrades and complete re-construction of the building housing for this Gorman-Rupp duplex suction lift pumping station. Building replacement was required to accommodate electrical upgrades and correct structural deficiencies of the existing structure. Electrical upgrades included installation of a backup electrical generator with automatic transfer switch plus improvements to monitoring and alarm functions

Lebanon Wastewater Treatment Facility, Lebanon NH

Mr. Schmidt served as project manager for completion of a comprehensive evaluation of plant improvements for upgrades to the 3.18 MGD City of Lebanon, NH Waste Water Treatment Plant including evaluations of secondary treatment, sludge handling processes and odor control improvements. This resulted in the design and construction of a \$1.1 million sludge handling upgrade including a new sludge storage and pumping facility and modifications to the existing sludge storage tank, to provide for separate storage of primary and secondary sludges. Work also included completion of a one-year, full scale pilot evaluation of changes to the secondary treatment process that resulted in resolution of a 27 year old sludge settling problem.

Waterville Valley Wastewater Facilities Evaluation, Waterville Valley NH

Mr. Schmidt was responsible for comprehensive facilities evaluations for the Town of Waterville Valley Wastewater Advanced Treatment Plant and collection system and the Town of Wakefield Wastewater Treatment Plant, collection system and sludge lagoons. Additional wastewater experience includes conceptual planning of a sewer extension for the Town of Rye, NH, and construction administration services for a sludge treatment upgrade at the Berlin, NH wastewater treatment plant.

SELECTED PUBLICATIONS

1. Schmidt, P.D., Tobiason, J.E., Edzwald, J.K. and Dunn, H., "DAF Treatment of a Reservoir Water Supply: Comparison with In-Line Direct Filtration and Control of Organic Matter", Water Science & Technology, Vol. 31, No. 3-4, pp.103-111, 1995.
2. Schmidt, P.D., Tobiason, J.E. and Edzwald, J.K., "DAF Treatment of a Reservoir Water Supply: Comparison with In-Line Direct Filtration and Control of Organic Matter", IAWQ-IWSA-AWWA Joint Specialized Conference on Flotation Processes in Water and Sludge Treatment, Orlando, Florida, USA, April 1994.
3. Schmidt, P.D., Tobiason, J.E., Edzwald, J.K. and Dunn H., "Dissolved Air Flotation for Drinking Water Treatment: Pilot Scale Investigation of Process Variables", American Water Works Association Annual Meeting, New York, New York, June 1994.

Adam J. Sandahl, P.E.

Senior Project Engineer

EXPERTISE

- General municipal engineering services and construction
- Drainage and site design
- Environmental site investigations, closures and remediation
- Environmental site permitting and compliance
- Solid waste planning and facilities design
- Economic evaluations

EDUCATION

- University of New Hampshire, B.S. Civil Engineering, 2002
- University of Idaho, MS Environmental Science, 2005

PROFESSIONAL REGISTRATIONS/CERTS.

- Professional Engineer:
- New Hampshire
 - Massachusetts

EXPERIENCE

Consulting 15 years

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers

CIVIC ACTIVITIES:

- Planning Board, Town of Bow NH

PROFESSIONAL PROFILE

Mr. Sandahl is a civil engineer with over fifteen years experience in civil and environmental engineering projects. Mr. Sandahl has experience in all aspects of project development, including planning, economic evaluations, design, permitting, and construction administration.

REPRESENTATIVE PROJECTS

Derry Transfer Station

Mr. Sandahl was one of the key design engineers for the Derry Transfer Station including the internal and external layout of the facility, preparation of the design drawings, technical specifications, and the stormwater design. Mr. Sandahl also prepared the New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain permit application.

North Country Environmental Services Stage V Permitting

Mr. Sandahl played an integral role in the design and permitting of the 8-acre Stage V expansion including preparation of the design drawings and a New Hampshire Department of Environmental Services (NHDES) Type I-A Permit Modification. The permit modification included revisions to the facility's Operating and Closure Plans, pre- and post-development stormwater models, leachate generation calculations and a detailed public benefit section.

North Country Environmental Services Eastern Slope Closure

Mr. Sandahl was part of a project team that designed the 5.5-acre Eastern Slope Closure at the NCES Landfill. Mr. Sandahl prepared NHDES permitting documents including an Alteration of Terrain permit application and the Type II Permit Modification to Solid Waste Facility Permit Application. Additionally, Mr. Sandahl was responsible for preparing a construction Stormwater Pollution Prevention Plan (SWPPP) in accordance with United States Environmental Protection Agency (USEPA) requirements.

Concord Cooperative Single Stream Recycling Evaluation

Mr. Sandahl completed detailed economic evaluations for a proposed single stream recycling facility to be constructed in Concord, New Hampshire that included evaluations of projected single stream material quantities, costs and revenue. Mr. Sandahl prepared economic analyses for individual Cooperative municipalities and several municipalities outside of the Cooperative that are interested in converting to single stream recycling. Mr. Sandahl was also involved in the evaluation of potential facilitiesites.

Concord Cooperative Single Stream Recycling Facility and Roadway Permitting and Design

Mr. Sandahl was a Project Engineer on a CMA Engineers design team responsible for the site design and permitting of a proposed 47,000 square foot single stream recycling facility in Concord, New Hampshire. He was also involved in the design of the associated 1,500-foot extension of Whitney Road, in Concord to access the proposed facility.

Midcoast Solid Waste Corporation Transfer Station Improvement Evaluation

Mr. Sandahl completed detailed economic and operations evaluation of Midcoast's solid waste transfer station in Rockport, Maine. Evaluations included operational changes at the facility's Construction and Demolition Debris landfill and alternatives to improve operations and residential/commercial traffic efficiency at the transfer station. Additional evaluations were performed to convert to curbside collection of MSW and recyclables and to expand the capacity of the transfer station. Mr. Sandahl also completed a carbon footprint analysis of the alternatives analyzed.

Contaminated Leather Waste Removal Project

Mr. Sandahl was the Project Engineer for the Applebee Road Tannery Waste Removal Project in Milton, New Hampshire. The project involved preparing a Soil Cleanup Plan, Site Safety Plan and a Sampling and Analysis Plan. Mr. Sandahl was involved in performing the site walkthrough to further characterize waste, quantity estimations, sampling, sampling result interpretation, correspondence with the United States Department of Environmental Protection Agency, preparing applicable site plans and bidding documents. Mr. Sandahl was also the Resident Engineer during construction.

Rockland Landfill Odor Abatement Project

Mr. Sandahl assisted in developing plans to mitigate odors at the Rockland Landfill in Rockland, Maine. The project involved analyzing concentrations of landfill contaminants in ambient air, developing a Facility Operating Plan, and a Facility Closure Plan in full compliance with Maine Department of Environmental Protection requirements.

Farmington Solid Waste

Mr. Sandahl was the Project Engineer for the Farmington Transfer Station and 13-acre landfill closure in Farmington, New Hampshire. Mr. Sandahl was involved in all aspects of the project including design and permitting, bidding, construction administration and was the project resident engineer. New Hampshire Department of Environmental Services (NHDES) permit applications prepared for the project included Solid Waste Facility Type II Permit Modification, Alteration of Terrain Permit, Shoreland Permit and Wetland Permit Applications.

Concord Cooperative Franklin Secure Residue Landfill Evaluations

Mr. Sandahl has assisted the Concord Cooperative in several evaluations at the landfill including investigations of elevated secondary leachate flow and elevated primary flow during significant storm events. He was also the Resident Engineer for the construction of the facility's leachate pretreatment system.

Concord Cooperative General Services

Mr. Sandahl has assisted the Concord Cooperative with their annual financial reconciliation with the Wheelabrator Concord Company for the past five years. Mr. Sandahl has also completed several other economic evaluations for the Cooperative including siting of alternate landfill facilities, tipping fee projections and long-term economic projections.

Newmarket Landfill Groundwater Management Zone

Mr. Sandahl assisted the Town of Newmarket, New Hampshire with modifying the landfill's Groundwater Management Zone (GMZ) after concentrations of 1,4-dioxane exceeded applicable groundwater quality levels at the landfill property line. As a result of the investigations, that included a detailed hydrological report and, homeowner sampling, the GMZ was expanded to properties to the north and south of the landfill.

Wakefield Transfer Station Upgrades

Mr. Sandahl has provided assistance with transfer station upgrade alternatives for the Town of Wakefield, New Hampshire. Economic analyses and proposed facility layouts were prepared for a source separated recycling facility with full baling operations and a separate layout to accommodate a dual stream recycling facility.

Wakefield Septage Facility Permitting

Mr. Sandahl was the Project Engineer for the design of a septage land application project at the Town of Wakefield, New Hampshire Wastewater Treatment Facility. The project involved preparing a wetland permit application, a septage facility permit application, design of landfill closure grades, preparation of a Facility Management Plan, a Facility Closure Plan and agronomic rate calculations.

EXPERTISE

- Drainage and site design
- Solid waste planning and facilities design

EDUCATION

BS Civil Engineering (2014) -
University of New Hampshire

PROFESSIONAL REGISTRATIONS/CERTS.

Engineer in Training:

- New Hampshire

EXPERIENCE

- Consulting 2 year

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers (ASCE)
- Solid Waste Association of North America (SWANA)

PROFESSIONAL PROFILE

Mr. Roy joined CMA Engineers, Inc. in April 2012 as an Intern Engineer. Following the completion of his Bachelor's degree at the University of New Hampshire, he continued with CMA Engineers as a Project Engineer. He is currently an engineer-in training under the state licensing. He has gained experience with permitting and design, preparation of construction drawings, construction inspection, economic planning and evaluations, and technical engineering reports.

REPRESENTATIVE PROJECTS

North Country Environmental Services - Bethlehem, NH

Project Engineer for the Stage V landfill expansion. Mr. Roy prepared preliminary and final design construction plans and contract documents for an eight acre secure landfill expansion. The project included site layout and design, earth gradation, landfill capacity calculations, and preparing construction cost estimates. In addition, he has provided ongoing assistance for construction administration, regulatory reporting, facility operations, and public relations.

Sagamore Avenue Reconstruction - Portsmouth, NH

Project Engineer for the complete restoration of Sagamore Avenue. The corridor is Route 1A and is a major gateway to the City from the seacoast area to the south. Between South Street and the bridge over Sagamore Creek, the roadway is 4,400 feet long, and has an average ADT of over 8,000. A major design criteria is "complete streets" treatment, which accommodates all users of the roadway (motorists, pedestrian, and bicyclists), replaces utilities as necessary, and incorporates sustainable stormwater management and treatment. Mr. Roy evaluated existing sewer lines to determine their condition and prepared construction plans and contract documents for the project. In addition he has provided construction administration assistance.

Eliot Road Management and Funding Plan - Eliot, ME

Project Engineer for the evaluation of the Town of Eliot's roadway network. The project focused on 36 miles of paved roadways owned and maintained by Eliot. The objectives included completing a full inventory of all Eliot's paved roadways, and documenting and summarizing the conditions of the system, including assigning Pavement Conditions Index (PCI) to each identifiable stretch or road. The projects applied GIS data-based methodology to characterize conditions, and evaluate alternatives for funding levels and alternative action plans. The end result was to recommend short and long term roadway management programs to maximize cost-effectiveness of pavement management in Eliot.

Verso Paper Special Waste Landfill- Jay, ME

Project Engineer for the Verso Paper Phase II Landfill Expansion. Mr. Roy prepared construction drawings and contract documents for the permitting of a six acre secure landfill expansion which is to be partially constructed over an existing unlined landfill. In addition to the landfill expansion, the project includes extending a complex, existing pump-and-treat groundwater collection system through a 30-foot tall landfill berm.

Landfill Post-Closure Monitoring throughout New Hampshire

Mr. Roy provides assistance with post-closure landfill monitoring and reporting for several closed landfills in New Hampshire. Work includes review of water quality and landfill gas data, performing site inspections, and report preparation.

Schedule

The following schedule for completing the tasks outlined in Section 2 is proposed:

Task 1 – Data Gathering	June 2017
Task 2 – Existing Conditions Figures	July 2017
Task 3 – Transfer Station Evaluation	July 2017
Task 4 – New Site Evaluation	July 2017
Task 5 – Evaluation of Regional Opportunities	July 2017
Task 6 – Project Meeting and Final Report	August 2017

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Budget

CMA Engineers has the technical resources available to deliver a high-quality project for the Town that meets implementation schedules. Our management approach includes a comprehensive assessment of all project requirements during the scoping phase of each assignment. The assessment identifies critical path project issues early; and allows for appropriate project planning.

Our project managers monitor changes in project scope that may be due to unforeseen conditions. Anticipation and identification of unexpected project developments, communication of these, and implementation of corrective measures are keys to successfully managing projects.

With every project, CMA Engineers provides cost effective designs that meet our client's project objectives.

Based on the scope of work outlined above, CMA Engineers proposes the following budget to complete Tasks 1 through 6.

Task 1 – Site Visit and Data Gathering	\$3,600
Task 2 – Existing Conditions Figures	\$1,700
Task 3 – Transfer Station Evaluation	\$5,000
Task 4 – New Site Evaluation	\$5,000
Task 5 – Evaluation of Regional Opportunities	\$3,800
<u>Task 6 – Review Meeting and Final Report</u>	<u>\$5,900</u>
TOTAL	\$25,000

A total of two meetings, including one at the start of the project and one at the end of the project, are included in the above scope and budget. Additional meetings can be provided as needed or requested at standard hourly rates.

Engineering fees are proposed to be assessed on the basis of actual time expended by assigned personnel at our standard hourly rates with the budgets established as presented above. CMA Engineers will monitor project requirements throughout the course of the project. If project circumstances result in project fees which may exceed the budgeted amount, CMA Engineers will review such circumstances with the Town prior to invoicing for such services.

Engineering fees are proposed to be assessed on the basis of CMA Engineers, Inc. standard rates. Engineering staff are invoiced at the rate of salary cost (wage rate plus 35% to cover statutory and customary fringe benefits) times a factor of 2.45. Principal time is invoiced at the lesser rate of \$175 for Craig Musselman. The fixed rate for Principal time is subject to annual inflationary adjustments. Expenses are invoiced at cost plus 10%, including mileage at the IRS reimbursable rate. CADD computer time is invoiced at \$9/hr. Any subconsultants that may be required (none anticipated for the initial scope of work) would be invoiced at cost plus 15%.