Abby Kelley Foster Charter Public School
10 New Bond Street Worcester, MA 01606
Phone: (508) 854-8400 Fax: (508) 854-8484
www.akfcs.org

Facilities and Finance Committee Meeting Agenda-DIGITAL MEETING

Friday, February 17, 2023, 8:00 a.m.

https://akfcs-org.zoom.us/j/92769937958?pwd=OFJSaHNTZnlhMzNaY3NkYnRlL3NTUT09

Meeting ID: 927 6993 7958 **Passcode**: 134789

By phone: +1 929 205 6099 **Meeting ID**: 927 6993 7958

I. Call to Order- Mr. Adam Beaudry

II. Introductions/Attendance Recorded

III. Review of the January 20, 2023, Meeting Minutes

a. **Motion:** To accept the January 20, 2023, Meeting Minutes

IV. CD/Investment Update- Ms. Alisha Carpino

V. Long-term Facilities Planning Proposal- Ms. Heidi Paluk

VI. WBDC/Aby Kelley Proposal Update- Ms. Heidi Paluk

VII. Facilities Report- Mr. Andrew Cruickshank

VIII. IT Report- Mr. Gabriel Beltran

IX. Timely Topics as Identified by the Chair and/or ED

X. Upcoming Facilities & Finance Committee Meeting(s):

a. Friday, March 17, 2023

b. Friday, April 14, 2023

c. Thursday, April 20, 2023- Budget Meeting

XI. Adjournment

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Facilities and Finance Committee Meeting Minutes -DRAFT

Friday, January 20, 2023, 8:00 a.m.

https://akfcs-org.zoom.us/j/97134289470?pwd=a3BjWUxnR1dLQXhFYlo2cVVYVTNIUT09

Meeting ID: 971 3428 9470 **Passcode**: 472863

By phone: 13052241968 **Meeting ID**: 971 3428 9470

The meeting was called to order by Ms. Zagabe-Ndiku. The attendance was recorded and is attached. Ms. Zagabe-Ndiku asked the Committee to review the Meeting Minutes from the December 16, 2022 meeting. One minor correction was noted. Upon its review, Ms. Zagabe-Ndiku asked for a motion to approve the minutes from the December 16, 2022, Facilities and Finance Meeting with the edit. Mr. Royce made the motion, and Mr. Beaudry seconded it. The committee unanimously approved the minutes.

Guest Speaker

Ms. Erica Brown, MPCSA

Ms. Erica Brown from the MPCSA provided a presentation on building a school budget and the suggested ways to build it. Ms. Brown spoke on how tuition is calculated and provided a spreadsheet that could be used to determine the foundation rate. Suggestions and tips were also provided on how to budget for the school with that information. Ms. Brown explained that a calculation shows the amount Worcester county must spend on public education. Depending on where a student comes from, it would determine if an above foundation rate per pupil would apply, but this does not apply to Worcester as they are not spending as much on education.

Ms. Brown explained that budgets are created based on understanding the financial risks involved. Enrollment, tied to budget creation, is experiencing a statewide challenge that should be factored into the budget. Ms. Brown spoke on the need to create a nest egg that could be used for emergencies and fill gaps for that year. Ms. Brown also spoke on the need to ensure that schools are not underspending on education services to conserve and instead invest monies into academic recovery. Carrying a large surplus could potentially result in having to return the funds to the City of Worcester.

Mr. Royce inquired about additional training being provided by MPCSA, and it was noted that other trainings were being created and information would be sent out. Committee members thanked Ms. Brown for her time.

Mr. Ryan Kittredge

Clearpath Financial Partners

Mr. Kittredge provided investment allocation information for the proposed 5.5 million dollars from Abby Kelley. Mr. Kittredge provided a general explanation of the various allocations, penalties, allocations and how they may benefit the school. Money markets, CDs, and treasury-backed monies were discussed, with Mr. Kittredge encouraging committee members to look at all options for the investment. It was noted that there might be better options than placing all funds in a one-year CD as other factors, such as inflation, affect those monies.

Mr. Kittregde explained that he would create an executive summary of each of the guaranteed options, money markets, CDs, and treasuries, along with his recommendations. This summary will show the diversification options, the penalties, and the timeline information and will be sent out on Monday.

Financial Report

Ms. Carpino provided the financial report, noting that the actual tuition and transportation payments are $337,779 above the budgeted amount. Projected tuition has been decreased by $86,792 due to a 10% decrease in low-income and a reduced seat count of four (4). COVID funding is still under budget due to the MTRS monies taken at once last year. The Nutrition department is currently $17,775 over budget, with revenue being $90,443 over budget due to higher student participation. Salaries are currently $773,656 under budget because of open positions within the district.

No change was made from Blue Cross Blue Shield as the renewal was completed at a 0% increase. Expenses for benefits and other fixed charges are currently under the budgeted amount of $188,801 because of this no-cost renewal. It was noted that salaries for instructional teachers are under budget by $300,000 due to

teachers that are out on leave and having their wages paid for by a third-party company. At the end of December, the balance shows $1.8 million positively. The FY'23 Debt Service Coverage Ratio is 1.83:1, compared to a required ratio of 1.15:1.

Facilities Update

Mr.Cruickshank provided a brief update, noting the continued work on the middle and high school roofs by Centimark. The middle school Stucco portion of the work has been completed, helping to eliminate several issues. The CMMS system is slowly being rolled out to maintenance members and will be shared with the district soon. EDS Mechanical & McIntyre Electrical has completed the Elementary school cafeteria HVAC installation. Camera installations in the middle are still taking place, and a vendor is being worked with to install the outer cameras.

A meeting was held with VIP landscaping regarding the potholes in the high school, and a proposal was submitted for that work. The gym floor logo in the high school is still being worked on, and discussions are taking place for refinishing the activity center floors.

Ms. Zagabe called for a motion to adjourn the meeting at 9:25 a.m. Ms. Blue made the motion, and Mr. Beaudry seconded it. Roll call was taken, and the committee voted unanimously to end the meeting.

QPD LLC

C/O Bob Baldwin
375 Acorn Park Drive, #2307
Belmont, MA 02478

February 10, 2023

Heidi M. Paluk
Executive Director
Abby Kelley Foster Charter Public School
10 New Bond Street
Worcester, MA 01606

Dear Heidi:

Following up on our meeting and discussions to date, we are pleased to present a proposal to provide continued real estate advisory services related to the future plans for the Abby Kelley Foster (AKF) school campus. The scope of services envisioned in this proposal is limited to the initial strategizing, planning, analysis, and feasibility. Once a plan has been established, we can revisit the role of QPD going forward during the plan execution phase.

Following are proposed terms:

Client: Abby Kelley Foster Charter Public School,
10 New Bond Street, Worcester, MA 01606
Heidi Paluk, Executive Director
Patrick Royce, Board Treasurer

Consultant: QPD LLC, 375 Acorn Park Drive, #2307, Belmont, MA 02478

Objective: Client's objective is to enhance school operations, financial stability and educational opportunities at its Worcester campus by potentially implementing improvements to its currently owned buildings, constructing new facilities within the campus, acquiring or leasing additional property, and/or partnering with neighboring property owners and developers.

This proposal addresses only the initial stage of the process, which comprises a facilities master plan development. At the completion of the proposed engagement, AKF should be prepared to begin fully executing upon the first

phases of the plan.

Scope of Services: QPD will provide strategic advisory services that guide AKF through the process of defining and prioritizing its needs, identifying opportunities and constraints, identifying potential solutions for each need, evaluating conceptual feasibility of solutions, assessing financial capacity and outlining a prioritized development process. QPD will meet with AKF regularly, visit the site numerous times, and make a PowerPoint presentation to the Finance/Facilities Committee and the Board (in May or June).

1. **Planning:** QPD will coordinate and advise upon the planning effort for the campus, which will require significant participation from AKF. QPD advice will be primarily related to execution logistics, future opportunities, risks, financial feasibility, permitting feasibility, and prioritization.

2. **Physical Property**: QPD will manage consultants to perform limited property due diligence and existing conditions surveys for buildings and grounds as prioritized for improvement or re-use.

3. **Process Timeline**: QPD will create a conceptual development schedule in Gantt format which can be used to inform the development process and guide decision making.

4. **Financial**: In order to assess financial feasibility and implications of various facilities plan options, QPD will evaluate AKF's long-term operating pro forma to assess financial capacity to execute on the facilities plan, identifying equity gaps in preliminary total project uses to guide and prioritize implementation.

Follow Up: Following completion of this engagement, QPD will be available to assist with or manage the implementation of the project provided that an Owner's Project Manager is engaged to directly perform the majority of the tasks.

Team: Bob Baldwin and Lindsay Richard

Term: Term of enagement is approximately four months, commencing by March 1, 2023 and ending by June 30, 2023. Depending on the pace of the work in tandem with AKF's school straegic plan work, QPD will target the May or June board meeting for final presentation.

Compensation: Fixed fee of $18,000 payable in four even equal monthly payments of $4,500 per month.

Thank you for the opportunity to make this proposal. We are happy to discuss at your convenience.

Sincerely,

Robert H. Baldwin, Jr.
Managing Principal

Lindsay Richard
Principal

ACCEPTED BY:

_____ Date: _____
Name:
Title:

OHI Engineering, Inc.
Engineers & Environmental Scientists

44 Wood Avenue
Mansfield, MA 02048
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Fax (508) 339-3140
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January 30, 2023

Ms. Heidi Paluk, Executive Director
Abby Kelley Foster Charter Public School
10 New Bond Street
Worcester, MA 01606

RE: Response to Request for Proposal
Engineering and Environmental Assistance
Proposed Greenwood Neighborhood Redevelopment

Dear Ms. Paluk:

OHI Engineering, Inc. (OHI) is pleased to provide this response to the request for proposal issued by the Abby Kelley Foster Charter Public School (AKFCPS) relative to assisting AKFCPS with the potential impacts associated with the proposed redevelopment of the former Saint-Gobain (SG) properties by New Garden Park, Inc./Worcester Business Development Corporation (NGP/WBDC).

PROJECT UNDERSTANDING

Approximately 51-acres of the former SG Worcester campus, including 45 buildings of which 40 are currently vacant, was recently conveyed to NGP/WBDC. As shown on the attached Figure 1, the conveyed properties essentially surround the AKFCPS properties. NGP/WBDC has indicated that it intends to redevelop Worcester's Greenwood neighborhood, which includes the former SG campus. According to NGP/WBDC, the project will include building demolition, infrastructure upgrades, and reintroduction of public roadways.

The AKFCPS properties were also formerly part of the SG Worcester campus and were acquired by AKFCPS in 2008 (High School) and 2010. There are significant utility and access interconnections between the AKFCPS properties and the former SG campus that may not be fully understood. OHI has been addressing environmental, civil engineering, geotechnical, and safety issues related to the AKFCPS properties and their former uses since 2018.

OHI has had extensive involvement in addressing these environmental issues, and has significant institutional knowledge of the AKFCPS properties, and the surrounding lands now or formerly owned by SG as well as SG (formerly Norton Abrasives) operations and infrastructure. OHI has institutional knowledge of local civil engineering, geotechnical and environmental concerns and the historical uses of the surrounding area. OHI's environmental and engineering expertise provides high-quality services to ensure that AKFCPS' interests and concerns with the potential NGP/WBDC redevelopment are professionally expressed. OHI also has experience meeting with AKFCPS Stakeholders and working in close cooperation with AKFCPS legal counsel.

We understand that the NGP/WBDC will prepare a Master Plan for redevelopment of the SG campus. The Master Plan is anticipated to only provide a broad overview of the types of uses, parking, access, and stormwater. NGP/WBDC provided summary reports to the Massachusetts Department of Environmental Protection (MassDEP) summarizing much of their environmental investigations and OHI has begun reviewing these reports as they relate to ongoing environmental investigations and compliance work for the High School. OHI anticipates NGP/WBDC will lay out pad sites or parcels in their Master Plan that will later be offered to private entities for development/re-development. Each of these will require additional review as the details of their use and construction will not be available until developed.

PROJECT TEAM

James R. Borrebach, P.E., L.S.P. will serve as the Principal in Charge. Mr. Borrebach has 40 years of professional consulting experience in engineering and environmental sciences. He is a registered Professional Engineer and Licensed Site Professional in Massachusetts and has direct experience with the AKFCPS campus.

Brian G. Snow, P.G., L.S.P., L.E.P. will serve as manager of environmental aspects of the work. Mr. Snow has 30 years of professional consulting experience in environmental sciences. He has direct experience with the AKFCPS campus while serving as the Licensed Site Professional (LSP) of Record for the work being conducted by AKFCPS relative to the Massachusetts Contingency Plan (MCP).

Scott Rolfe will serve as manager of engineering aspects of the work. Mr. Rolfe has 50 years of experience in engineering and survey, site planning, and permitting services. Mr. Rolfe has direct experience on the AKFCPS campus.

Mr. K.E. Hazarvartian, PhD, P.E. will provide traffic and transportation review services. Mr. Hazarvartian has over 30 years of traffic/transportation related consulting experience.

OccuHealth, Inc. will provide construction safety review services. OccuHealth has provided services on the AKFCPS campus and is aware of its setting and implications associated with demolition, air quality, dust, and general safety concerns. OccuHealth worked with OHI for years resolving several indoor air quality concerns at each of the AKFCPS buildings. Mr. David Fisher of Fisher Design Group will provide planning and landscape architecture review services.

OHI has worked with all of our team members on multiple projects and is well familiar with their specific qualifications and capabilities. Additional information regarding the qualifications of team members is attached.

SUGGESTED SERVICES

Task 1 – Prepare Existing Conditions Plan

In an effort to evaluate potential impacts of redevelopment on the AKFCPS properties, OHI recommends that an Existing Conditions Plan be prepared. The plan should show building locations, topography, above ground and underground utilities, utility easements, etc. OHI intends to utilize R.E. Cameron & Associates, Inc. to prepare the overall plan.

The purpose of preparing an existing conditions (EC) plan, representative of the "current" site conditions, is to provide team members with an opportunity of being intimately knowledgeable of virtually all aspects of the site relative to dimension, area, grade, site distance, utility proximity, watershed analysis, to name a few.

Essentially, the EC plan lets you experience site criteria, without physically being there. Plan content is a necessity for all team members to analyse any potential impact of future adjacent development, whether it be noise, dust, stormwater, vibration or interruption of utilities and operation. Having the ability to establish direct comparison relative to utility infrastructure alone is reasonable justification for an EC plan. A rebuttal to any proposed work or procedure will likely require plan data to bolster the point.

The benefits of having a current and accurate EC plan also extends to future site modifications, permitting and maintenance. Building and/or site modifications frequently require plan submission to the municipality to show compliance with current zoning regulations, building code and environmental concerns. Accurate dimensional estimates can also be compiled for purposes of providing accurate area calculations for items such as paving, snow removal or utility line maintenance.

The EC plan will also be useful in assisting AKFCPS' legal team in establishing/correcting any easements or access plans that may later become necessary. Rubin and Rudman, LLP, (R&R) had previously provided a review of utility easements and utility connection permissions. Utility connections have been and remain a concern for AKFCPS, which is elevated by the transfer of ownership to a new entity NGP/WBDC. SG and NGP/WBDC have significantly different legal liabilities, which OHI through its work with R&R understand.

Task 2 – Master Plan Engineering Review and Assistance

Upon receipt of Masterplan submissions from the NGP/WBDC, OHI will assess and report on any potential engineering related impacts to a specific AKFCPS facility (or combination thereof). Potential impingements may include short/long term access restrictions (due to demolition and excavation), utility shutoff/upgrades, easement negotiation, roadway and walk repair/upgrade, etc. OHI will utilize its considerable experience working in the Site area to draw attention to site-specific concerns. OHI will also analyze and report as to long term phased work, seasonal related construction ramifications and posture of temporary and final conditions. Opinions and recommendations will be forwarded to AKFCPS upon completion. Information acquired with the performance of this task will be shared and coordinated with all other team members.

Task 3 – Master Plan Traffic and Transportation Review and Assistance

Upon receipt of Masterplan submissions from the NGP/WBDC, OHI's Traffic Engineer (TE) will review studies and designs related to transportation-impact, access and parking. The TE will report on any potential traffic related impacts to an existing time/flow pattern associated with an AKFCPS facility (or combination thereof). These reviews could involve Site visits, assessment of current conditions at various time intervals, identification of likely impact relative to time location, intensity and potential future impacts. Opinions and recommendations will be forwarded to AKFCPS upon completion. Information acquired with the performance of this task will be shared and coordinated with all other team members in an effort to assure validity to all aspects of the requested Master Plan Review. As needed, OHI will also utilize the TE to review and consult on individual pad site/parcel reconstructions as they occur. Construction activities and normal facility operations are likely to present specifically different concerns, especially as they relate to AKFCPS bus/drop off/pick up windows.

Task 4 – Master Plan Environmental Review and Assistance

OHI will review the Master Plan with specific attention to environmental concerns. OHI notes that due to the size and scope of the project that the Master Plan covers, OHI expects that individual lots that are later developed will include plans, data, and challenges that will require further review and assistance, beyond this task. Environmental issues are present in multiple categories, including Massachusetts Contingency Plan (MCP) (soil, groundwater, vapor intrusion concerns), Wetland and waterways (Weasel Brook, Floodplains), Massachusetts Environmental Policy Act (MEPA), Building conditions (asbestos, lead, PCBs) and related demolition/disposals, water discharges and airborne dust, vapor, etc, during remediation, demolition, construction periods. Several of these tasks are expected to interact/impact engineering and traffic tasks. Many on-going AKFCPS issues including flooding from Weasel Brook and settling related to peat and poorly compacted fill may also be affected by NGP/WBDC re-development.

The property acquired by the NGP/WBDC was characterized by a series of subsurface investigations prior to 2023, including soil and groundwater sampling. Much this work was included in the Immediate Response Action Plan for Release Tracking Number (RTN) 2-22147 for 1 New Bond Street, Building 417, by BETA, Group, Inc. (BETA) in January 2023. This report is currently being reviewed by OHI as part of the AKFCPS High School property investigations and reporting for the High School and OHI will have completed some of this work as part of other ongoing work for AKFCPS.

MCP concerns will include subsurface investigations and MCP reports for NGP/WBDC property and surrounding properties. As OHI has completed investigations at all of the AKFCPS properties and reviewed most of the reports for surrounding properties, OHI possesses significant institutional knowledge of the history of environmental concerns in the Site vicinity.

OHI will review the relevant sections of the Master Plan and provide a review letter summarizing specific concerns. As noted, the Master Plan tends to be more of a summary document that touches briefly on many items. The Master Plan does not specify the exact parcel use, environmental conditions, remediation plan, demolition/reconstruction plan,

construction plan or permitting plan. These details are likely to include the majority of information necessary to determine the extent to which each parcel development may/may not impact AKFCPS. OHI also expects that as the parcels are demolished and redeveloped, new contamination issues are likely to materialize.

Task 5 – Meetings & Coordination

OHI will meet and coordinate with the Client and municipal agents, commissions, or boards to present and discuss the project as it pertains to the above scope items. This task includes, but is not limited to phone calls, email communication and meeting attendance and items not traditionally included in the scopes above and are necessary, requested by client or client's counsel. OHI has included a total of thirty (30) hours for this task as a budget item. *Any time accrued beyond the allotted hours will be billed at time and expenses per the attached Standard Fee Schedule. For larger scopes that can be readily defined, OHI will submit task descriptions and estimates.*

BUDGET

Services will be provided on an as-needed/as-requested basis after consultation with AKFCPS and are presented as estimates. The final fee will be highly dependent on the exact scope of work, and the tasks assigned by AKFCPS. A suggested budget is provided below:

Task 1 – Prepare Existing Conditions Plan	$ 20,000
Task 2 – Master Plan Engineering Review and Assistance	$ 15,000
Task 3 – Master Plan Traffic and Transportation Review and Assistance	$ 10,000
Task 4 – Master Plan Environmental Review and Assistance	$ 15,000
Task 5 – Meetings & Coordination	$ 5,000
Total Recommended Budget	$ 65,000

The recommended budget is intended as a guide only to anticipated fees and is not to be construed as a limitation on the fees to be charged pursuant to this contract. It is understood and agreed that many unforeseen factors that cannot be fully anticipated at this time may influence the final fee associated with this contract. Invoicing will be based on the attached Fee Schedule.

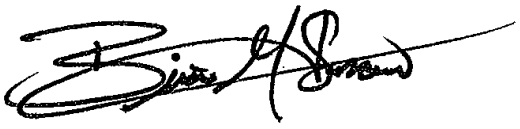
SCHEDULE

Work will be scheduled upon receiving the signed proposal. As the execution of much of the scope is based on the timing of the Master Plan, other parties, and the scheduling needs of AKFCPS, OHI's schedule will revolve around these needs.

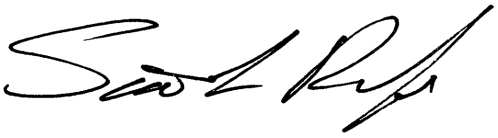
SUMMARY

The OHI Team appreciates the opportunity to submit our response to the Request for Proposals issued by ACFCPS. We would be pleased to meet with you at your convenience to discuss the project, and our qualifications. Please do not hesitate to contact us should you have questions or comments regarding this matter.

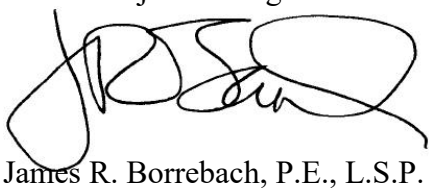
Very truly yours,
OHI ENGINEERING, INC.



Brian G. Snow, PG, L.S.P., L.E.P.
Senior Project Manager

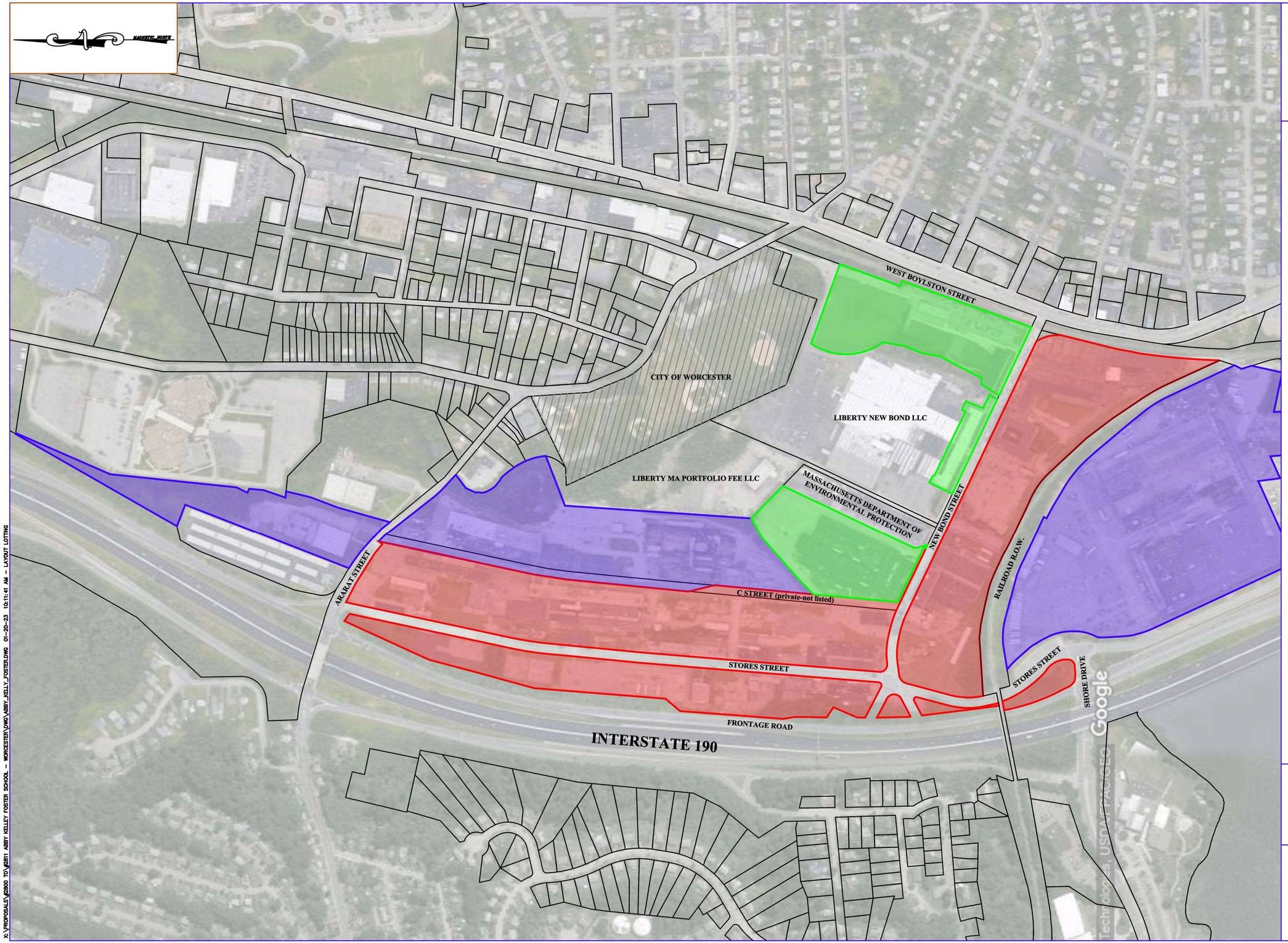


Scott L. Rolfe
Engineering Operations Manager



James R. Borrebach, P.E., L.S.P.
Principal

Attachments: Figure 1
Qualifications
Fee Schedule



OHI

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ABBY KELLEY FOSTER

NEW GARDEN PARK

SAINT-GOBAIN

GRAPHIC SCALE

200 0 100 200 400

(IN FEET)
1 inch = 200 feet

FIGURE 1

EXISTING LAYOUT
WORCESTER, MA

ABBY KELLEY FOSTER
NEW BOND STREET
WORCESTER, MA

X:\PROPOSALS\2800 TO\2811 ABBY KELLEY FOSTER SCHOOL - WORCESTER\DWG\ABBY_KELLY_FOSTER.DWG 01-26-23 10:11:41 AM - LAYOUT LOTTING

OHI Engineering, Inc.
Engineers & Environmental Scientists

ABBY KELLEY FOSTER CHARTER SCHOOL
PROJECT TEAM

PRINCIPAL IN CHARGE
JAMES R. BORREBACH, P.E, L.S.P.

ENVIRONMENTAL MANAGER
BRIAN G. SNOW, PG, L.S.P., L.E.P

ENGINEERING MANAGER
SCOTT ROLFE

TRAFFIC/TRANSPORTATION
TEPP LLC

STORMWATER/ENGINEERING
William Blais

HEALTH AND SAFETY
OccuHealth, Inc.

PLANNING AND LANDSCAPE
Fisher Design Group

OHI Engineering, Inc.
Engineers & Environmental Scientists
www.ohiengineering.com

ABOUT THE COMPANY

OHI Engineering, Inc. was founded to provide comprehensive environmental and engineering services to industrial/commercial, public and private sector clients.

Mission

- Create and develop a consulting firm based on the client's needs and expectations
- Consistently deliver more than expected while treating our clients and employees as we ourselves would like to be treated
- Build long-term relationships with our clients and employees based on results, not promises
- Deliver turnkey solutions designed to save our clients time, money and effort

Staff Qualifications

- Licensed Site Professionals
- Licensed Environmental Professionals
- Professional Engineers
- Professional Geologists
- Waste Water Treatment Plant Operators
- Staff average over 18+ years' Professional Environmental Experience

Services

- Licensed Site Professional (LSP) services under the Massachusetts Contingency Plan
- Environmental Assessment of potential soil, ground water, sediment, surface water and indoor air contamination
- Design, installation, operation and maintenance of soil and ground water remediation systems
- Underground storage tank removals, installations and compliance
- Soil borings, materials testing and geotechnical evaluations and hydrogeologic studies for infiltration basins
- Litigation support and expert witness services
- Engineering for storm water system, sewer and septic system design and environmental permitting
- Environmental construction oversight, monitoring and management

Client Sectors

- Industrial/Commercial
- Municipal and Government
- Banks and Lenders
- Contractors
- Consulting Firms
- Energy

Amherst, MA
(413) 835-0780

Mansfield, MA
(508) 339-3929

Chester, VT
(802) 885-1909

OHI Engineering, Inc.
Engineers & Environmental Scientists

www.ohiengineering.com

Specialties

Our staff is comprised of Civil Engineers, Geologists, Hydrogeologists and Mechanical Engineers with an average of more than 18 years of professional environmental consulting experience.

Licensed Site Professional Services

- Over 50 years combined experience
- Regulatory reporting and compliance
- Sudden releases emergency response
- Immediate Response Actions, Release Abatement Measures, Utility-related Abatement Measures
- Phase II Comprehensive Site Assessments
- Phase III Remedial Action Plans
- Feasibility studies and pilot testing
- Public Involvement Plans and support services
- Risk Assessment and Site Closure

Remediation Services

- Evaluation and remediation of chlorinated solvents from drycleaners and industrial facilities
- Soil excavation, treatment and disposal
- Soil vapor extraction, dual phase extraction, non-aqueous phase liquid extraction
- In-Situ Chemical Oxidation, bioremediation
- Sub-slab depressurization and indoor air treatment systems

Environmental Assessments

- Phase I and Transaction Screens for property transactions
- Subsurface Investigations
- Groundwater monitoring
- Indoor air quality studies

Engineering

- Stormwater design and evaluation
- Geotechnical Evaluations
- Sewer/Waste water disposal systems
- Remediation Design
- Wastewater treatment operations

Construction Services

- Stormwater Pollution Prevention Plans, Dewatering Plans, Soil Management Plans and Conservation Commission Permitting
- Excavation oversight, stockpile sampling and disposal, dust monitoring
- Erosion control monitoring, reporting and compliance
- NPDES Construction General Permits and Remediation General Permits

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Client List

Municipal/Government

City of Revere
Town of Wrentham
Fitchburg State College
Medway School District
New Bedford Housing Authority
Silver Lake Regional Schools
US Army

Consulting Firms

Atlantic Design Engineers
Bartlett Nuclear
Design Partnership of Cambridge
Doucet and Associates
GDP Group
Hatch Mott MacDonald
Jewel Corp.
McArdle Gannon Associates
New England Environmental
ProTerra Design Group
SGC Engineering
Strategic Environmental
STV, Inc.
SW Cole, Inc.

Contractors

Argus Construction
Boro Sand and Stone
Bovis Lend Lease
Cardi Corporation
Clean Harbors
Dowling Corporation
Geologic Earth Exploration
J&J Contractors
Paolini Construction
Peterson Builders
R&D Development
Triumvirate Environmental
Walsh Corporation

Banks and Lenders

Bank of Canton
Key Bank
Bank of Mansfield
Middlesex Savings Bank
SEED Corp.
Coastal Heritage Bank

Utilities

Exelon Corporation
National Grid
New England Gas Co.
Rowley Municipal Light Plant
US Tower
Vermont Electric

Industrial/Commercial

Altus Pharmaceuticals
Ashley Ford
Cambridge Plating Company
Churchill Forge Properties
CRE Management
Draka Cableteq
Dunham Realty
Framingham Ford
GFI Partners
Independence Mall
Helping Hands of America
INCOM
Mount St. Mary's Abbey
Paul's Auto Service
PVI Capital
Rodman Ford
Spotless Cleaners
Surf Cleaners
Techo-Bloc
Townsend Ford
United Housing Management
Wayland Cleaners
Water Solutions Group

OHI Engineering, Inc.
Engineers & Environmental Scientists

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Project Profile – Phase I & II Environmental Site Assessments

Services Provided by OHI

- Environmental Site Assessments of industrial and commercial properties. The assessments are completed in accordance with ASTM standard practices.
- Facilities range from small commercial properties to large multi-story factories.
- Environmental Site Assessments are typically performed as the due diligence component of a property transaction.
- Sampling and analysis of soil and/or groundwater may be required to resolve potential recognized environmental conditions.
- Typically involve a review of historical records, town files, state files, and a site visit.
- Potential recognized environmental conditions are identified and resolved through further evaluation.

Typical OHI Assessment Projects

- Large-scale solar power development project involved environmental records review, site assessment and subsurface investigation.
- Multi-unit portfolios of low and moderate income housing developments to support refinancing through US Housing and Urban Development involved environmental records review, site assessment, asbestos evaluations, lead-based paint evaluations, radon studies with mitigation, and subsurface investigation.
- Cellular telephone facilities permitting support involved environmental records review, site assessment and subsurface and geotechnical investigations.
- Historic industrial mill building investigation involved environmental records review, site assessment and subsurface investigations, along with soil management planning for excavation, removal and disposal of impacted soil during redevelopment.

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Case Study - Phase I & II Environmental Site Assessment

Project Description

- Standard property transaction due diligence Phase I & II Environmental Site Assessment.
- Completed background research, records review, and site inspection, then proposed a site-specific subsurface investigation focused on potential environmental concerns.
- This property had been a car dealership from 1928 through the 1960s, then a truck repair facility until 1993, and then a machine shop through to the present.
- Environmental records indicated three historic petroleum USTs were installed in 1963. Fire department records indicated two USTs were removed in 1986.
- Four heating oil ASTs were active and present in the current building.
- Petroleum-impacted soil was discovered behind the building.

Services Provided by OHI

- Preparation of ASTM Phase I-II Environmental Site Assessment Report for bank financing.
- Coordination of subcontracted drilling personnel for monitoring well installation.
- Preparation of Bill-of-Lading for petroleum-impacted soil transport to recycling facility.
- On-Site LSP supervision and confirmatory soil sample collection for Immediate Response Action petroleum-impacted soil excavation.
- Preparation and filing of IRA Completion and Permanent Solution site closure documentation with MassDEP.

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Case Study
Environmental Site Assessment
Property Portfolio

Project Description

- Refinancing of four multi-unit affordable housing portfolios through US Housing and Urban Development.
- Portfolios located in greater Boston area consistedof 72 individual properties containing several hundred apartments.
- Work was conducted on an expedited basis to meet refinancing schedule requirements.
- Additional assessment and mitigation measures were undertaken at several properties to address issues identified during the work.

Services Provided by OHI

- Prepare Environmental Site Assessment for four property portfolios consisting of 72 properties containing several hundred apartments. The ESA was prepared in accordance with American Society of Testing and Materials (ASTM) E-1527-13 protocols, and to meet requirements of the US HUD.
- Assessments included asbestos evaluations in typical apartments and common spaces concentrating on heating systems. Abatement plans were developed and remediation work was coordinated for those locations where asbestos was identified that required abatement.
- Assessments included radon evaluations of tpical apartment and common spaces concentration on lowest level apartment and basements. Design and installation of radon mitigation systems was overseen where radon concentrations exceeded EPA recommended criteria.
- Subsurface investigations were completed where appropriate given historical use of the area

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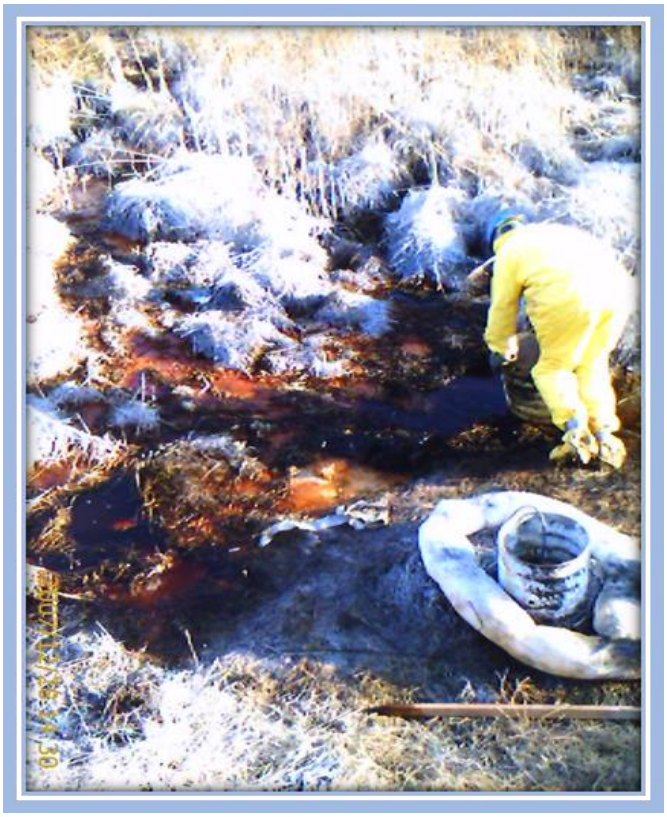
Case Study - Emergency Response
Southeastern Massachusetts

Project Description

- Sudden release of 4,000 gallons of ferric chloride used forpH adjustment at a wastewater treatment plant.
- Release occurred during major rainfall event, which caused significant dispersal into the plant's stormwater control system to a detention pond and into adkacent wetlands.
- Subsequent freezing temperatures added significant difficulty to response efforts.
- Pavement, structures, and other infrastructure were affected by the very acidic liquid (pH<1).
- Over 250 cubic yards of impacted soil and 300,000 gallons of impacted surface water were removed, treated and appropriately disposed.
- The area was neutralized using hydrated lime. Approximately 2,000 gallons of hydrated lime were required to stabilize the ferric chloride.
- The detention basin required significant remediation complicating stormwater management during remediation efforts.



Services Provided by OHI

- Licensed Site Professional (LSP) services to maintain compliance with the Massachusetts Contingency Plan.
- Coordination with Federal, State, and Local Regulatory officials during and after initial emergency response actions.
- Preparation of regulatory filings submitted to the MassDEP and local Conservation Commission.
- Design, implementation, and oversight of remedial measures to collect, treat, and stabilize the area affected by the release.
- Long-term monitoring to ensure that the environment had been restored to pre-release conditions and preparation of a Class A-1 Response Action Outcome (RAO) Statement.

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Case Study – Enforcement Support
New Bedford Housing Authority
PCBs and Coal Ash

Project Description

- US Environmental Protection Agency (EPA) issued a Notice of Potential Liability and Invitation to Perform or Finance Proposed Cleanup Activities for the Parker Street Waste Site to the New Bedford Housing Authority (NBHA). EPA proposed removing 3+ feet of soil from the entirety of a 52 building public housing complex at a cost of over $20 Million.
- MassDEP and Public Interest Groups also pressured NBHA to remediate.
- The property is impacted with urban fill material containing coal ash placed at the site in the late 1800s and early 1900s. The parcels were taken by eminent domain in approximately 1950 by NBHA for housing.
- The top foot of loam at the site is uncontaminated. Heavy metals and Polycyclic Aromatic Hydrocarbons (PAHs) impacts are present in soil at depths of 1-8 feet.

Services Provided by OHI

- Advised NBHA to legally challenge EPA and MassDEP and to contract a qualified Environmental Attorney.
- Performed detailed historical research and reviewed comprehensive soil sampling sets by EPA. Reviewed Parker Street Waste Site documents and data. Definiteively proved the property is not in the Parker Street Waste Site. Proved filling of site occured prior to the Parker Street Waste Site Contamination.
- Coordinated with NBHA, HUD, EPA, MassDEP, City of New Bedford, and Public Interest Groups.
- Prepared and together with counsel successfully argued regulatory exemptions from MassDEP regulation under the MCP and convinced EPA to accept financial liability for response actions. Saved $20 Million dollars for NBHA.

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Case Study
Dry Cleaners and Chlorinated Solvent Sites

Project Description

- OHI has provided assessment and remediation services at numerous current and former dry cleaners and at Sites where chlorinated solvents have been released.
- Assessments have included soil, groundwater, sub-slab soil gas, indoor air, sediment and surface water sampling and laboratory analysis.
- Remediation measures have included soil excavation and disposal, multi-phase extraction, soil vapor extraction, in-situ oxidation, and sub-slab depressurization.

Services Provided by OHI

- Prepare Notices of Intent for work near wetland areas.
- Preparation and submittal of design plans and support calculations for remediation systems.
- Licensed Site Professional services in Massachusetts.
- Design, implementation, and monitoring for remediation systems.
- Site specific risk assessments.
- Preparation and submittal of regulatory reports.
- Public Involvement Activities.

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Case Study
Assessment, Remediation & Redevelopment for Reuse
Boston

Project Description

- The project involved demolition, assessment and remediation at 130,000-barrel (5,000,000-gallon) above-ground storage tank.
- A release of #6 oil exceeding 200,000 gallons occurred in the 1990s.
- OHI provided Licensed Site Professional services involving soil borings, groundwater evaluation, and remediation design and implementation.
- After tank demolition, petroleum-impacted soil was excavated and disposed off-Site and an engineered barrier was constructed.
- OHI prepared and implemented a Public Involvement Plan as requested by area residents.
- OHI coordinated with USEPA for RCRA Corrective Action reqruiements resulting in achievement of "Construction Complete" designation.

Services Provided by OHI

- Licensed Site Professional Services.
- Filing a Notice of Intent with the City of Boston.
- Site Assessment consisting of over 50 soil borings and 15 monitoring wells with soil and groundwater sampling and analysis.
- Preparation and submittal of design plans and support calculations for the remediation design. Oversight of the demolition, disposal, and construction process.
- Preparation of documents for submittal to the MassDEP.
- Prepare and implement a Public Involvement Plan.
- Resolved RCRA Corrective Action process.

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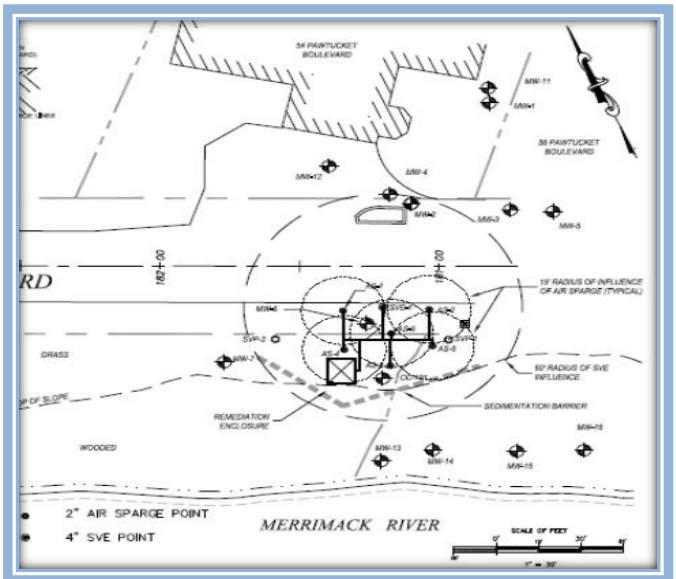
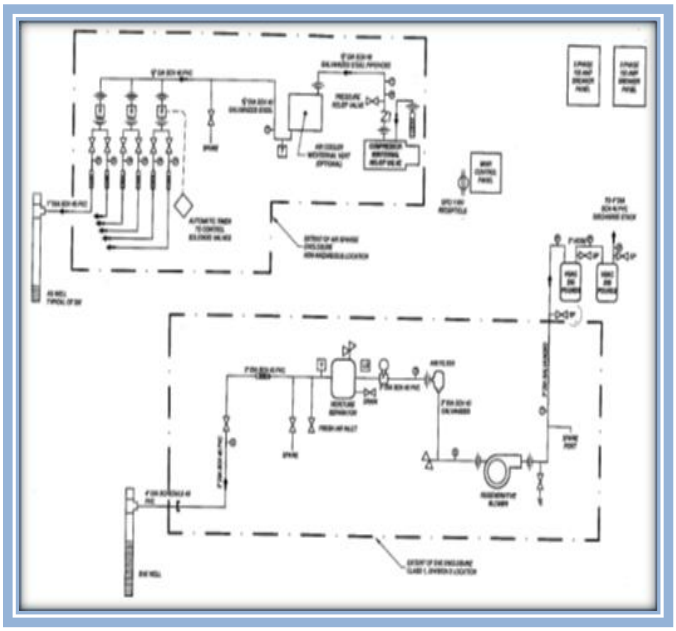
Case Study
Air Sparge and Soil Vapor Extraction System
Gas Station Tyngsboro, MA

Project Description

- Gasoline Plum Impacting Zone A of a Class A Surface Drinking Water Source as well as within 500 feet of multiple Private Drinking Water Supply Wells.
- Residual Volatile Petroleum Hydrocarbons (VPH) in soil and groundwater.
- Impacts to 3 properties and state highway (MassDOT).





Services Provided by OHI

- Conducted Soil Vapor Extraction (SVE) and Air Sparge (AS) Pilot Test. The test was conducted in 15 inches of water column (IWC) steps. Vacuum influence measurements were collected in 12 points at 15 minute intervals. Depth to groundwater was also measured to evaluate mounding. SVE influence was measured at 60+ feet at 30 IWC and 50 Cubic Feet per Minute (CFM). Soil gas measurements were utilized to evaluate sparged contaminants.
- The design included 6 AS points and one SVE point. Permits were obtained from MASSDOT and the Tyngsborough Conservation Commission.
- OHI also provided litigation support for pending litigation and negotiated access agreements to install equipment.

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Case Study
Environmental Remediation
In Situ Chemical Oxidation

Project Description

- OHI has designed and implemented In-Situ Chemical Oxidation remediation programs at numerous releases of chlorinated solvents and petroleum.
- Facilities include dry cleaners with releases of Tetrachloroethene, metal working facilities with releases of Trichloroethene, and service stations with releases of gasoline, diesel fuel and fuel oil.
- Oxidants have included persulfates, permanganates, hydrogen peroxide, and proprietary formulations.
- Injections conducted near potential sensitive receptors including daycares, schools, and residences requiring on-site monitoring of subsurface temperatures, suh-slab soil gas, and indoor air.

Services Provided by OHI

- Design and permitting of injection program.
- Bench scale tests and full scale pilot tests.
- Injection well design and installation oversight and management.
- Design and oversight of field injections activities.
- Monitoring and reporting to maintain regulatory compliance.

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Case Study – Remediation Services
Lexington, Massachusetts

Project Description

- Vacant property was formerly used as a greenhouse. The greenhouses, which had been previously demolished, were painted with lead-based paint.
- Our Client desired to remove residual lead-based paint impacted soil prior to proceeeding with future development options.
- The impacted area extended into a Bordering Vegetated Wetland necessitating approximately 2,600 square feet of wetland disturbance and replication of the disturbed area.
- Approximately 750 cubic yards of soil were removed and disposed off-Site at an in-State landfill.

Services Provided by OHI

- Preparation of Notice of Intent and Wetland Replication Plans, presentation to and approval from the local Conservation Commission. Prepare Construction Stormwater Pollution Prevention Plan.
- On-site soil screening of lead impacted soils using an XRF Meter to help control the extent of excavation both horizontally and vertically.
- Collection of stockpile samples and post-excavation samples for laboratory characterization. Preparation of MassDEP Material Shipping Records for transportation and disposal of excess excavated soil.
- Long-term monitoring of wetland replication area.

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OHI Engineering, Inc.
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James R. Borrebach, PE, LSP
Principal

Education

Worcester Polytechnic Institute, 1982, B.S., Civil Engineering

Certifications

Certified OSHA 40 Hour Hazardous Waste Site Operations (CFR 1910.120)
Certified OSHA 24 Hour Emergency Site Specialist (CFR 1910.120)
Certified 8 Hour Site Supervisor (CFR 1910.120)

Licensure

Licensed Site Professional (LSP) in Massachusetts
Registered Professional Engineer in Massachusetts, Vermont, and Rhode Island

Qualifications

Mr. Borrebach has over thirty-five years of professional experience in civil and environmental engineering and science and is the President and Founder of OHI Engineering, Inc. His expertise includes: environmental site assessments; hazardous waste site investigations; site remediation and cleanup design, permitting and installation; environmental monitoring and management of Underground Storage Tank removals; hydrogeologic investigations and permit filings under numerous state and local development and environmental statutes. His expertise also includes: engineering site design for residential, commercial and industrial projects, storm water control system evaluation and design, design of retaining walls, sewer systems and water supply systems. He is a Licensed Site Professional in Massachusetts, and a registered Professional Engineer in Massachusetts Rhode Island and Vermont.

He has served as the Licensed Site Professional (LSP) of record for numerous response situations where the release of oil and hazardous materials required the implementation of sound response actions in compliance with the Massachusetts Contingency Plan (MCP). The releases included: releases of gasoline and fuel oil from underground and above ground storage tanks at commercial and industrial facilities, power plants and residences; historical releases of oil and hazardous materials (OHM) at industrial, commercial, and petroleum facilities; accidental spills of petroleum and industrial chemicals; releases of industrial chemicals due to fire; and, impacted soil handling and disposal encountered during building, road and infrastructure construction projects. Mr. Borrebach has served as the Public Participation Plan coordinator for “PIP” sites in Massachusetts and consulted with municipal agencies for public communication regarding a “PIP” Site. He is familiar with the requirements of the Massachusetts Wetlands Protection Act and has conducted response actions at several project sites that required authorization of local Conservation Commissions. He has extensive experience extending over his entire career in coordinating, attending and presenting at public meetings and hearings

Mr. Borrebach has designed and implemented site clean ups involving: excavation of contaminated soil; soil vapor extraction and air sparging; on-site soil treatment using

thermal desorption, asphalt encapsulation, and bioremediation; groundwater pump and treat systems; in-situ chemical oxidation, and dual phase extraction.

Mr. Borrebach has been involved in providing environmental reviews, assessments, remediation feasibility studies and closure reports for Underground Storage Tank removal projects at gasoline stations, industrial facilities, manufacturing companies and residences. His responsibilities included verifying soil and groundwater conditions through field screening techniques, developing and implementing remedial measures, and submittal of closure reports while ensuring compliance with local, state and federal regulations, and in coordination with owners, permitting agencies and contractors.

He has prepared hundreds of environmental site assessments in Massachusetts, Rhode Island, Connecticut, New York and Maine in compliance with ASTM standards or client specifications. The projects were completed for private parties, public entities and, small and large lending institutions.

Project Experience

Power Plant Oil Storage Tank Site
Mr. Borrebach served as the Licensed Site Professional for a historic release of approximately 200,000-gallons of #6-fuel oil from a 130,000 barrel (5,500,000 gallon) above ground storage tank at a power generating facility. He designed and implemented a soil and groundwater assessment program, prepared submittals to the appropriate environmental agencies, helped craft a Public Involvement Plan (PIP) and took a lead role in extensive public involvement program including regular meetings with the public and local governmental authorities, designed and provided construction oversight of the remediation plan involving soil excavation and construction of an engineered barrier, coordinated the RCRA 2020 Corrective Action Audit process that has resulted in a Construction Complete determination and achieved RCRA Termination in mid-2016, and participated in document review for property transactions/sale.

PCB Transformer Oil Release
Mr. Borrebach was the Licensed Site Professional of Record for a release of approximately 600 gallons of PCB-containing transformer oil that occurred during decommissioning of an industrial power plant site. The oil was released in close proximity to a major river in Massachusetts. Shortly after release, a large sheen was noted on the river, and immediate response actions were undertaken to place booms in the river to contain the sheen. The released oil moved onto a nearby beach and impacted the beach and the beach grasses. The release also affected soil in the vicinity of the vault system, sheet piling and piles along the riverfront. Another significant concern was the presence of shell fishing beds further downstream from the release. Assessment and remediation of the release included soil excavation, cleaning and removal of the vault system, and remediation of the affected beachfront. A Site Specific Risk Assessment was prepared as impacts extended to surface water and sediments. The Risk Assessment showed that the remediation was successful in achieving a condition of no significant risk to human health, welfare, safety and the environment. Closure reports were prepared and submitted to the EPA and to the Massachusetts DEP. Work at the site was regulated by both the USEPA under TOSCA and the Massachusetts Department of Environmental Protection.

Industrial Chlorinated Solvent Site
Mr. Borrebach was responsible for the assessment of an industrial property where high concentrations of chlorinated solvents were discovered. He designed and implemented a remedial system pilot test and installed a dual phase extraction system for the simultaneous removal of soil vapor and groundwater. The design resulted in a groundwater extraction rate that was increased by a factor of ten over that achieved by a typical groundwater extraction well. The design included retrofitting existing monitoring wells to serve as extraction wells thereby resulting in a significant cost savings for system installation. Mr. Borrebach prepared the Release Abatement Measure Plan (RAM Plan), Phase 1 Initial Site Investigation Report, and Tier Classification submittals for the Site in compliance with the Massachusetts Contingency Plan. Groundwater analyses indicated a reduction in dissolved Chlorinated solvents of over ninety (90) percent after the first three months of system operation.

Residential Heating Oil Release
Mr. Borrebach was the Licensed Site Professional of record for a release of over two hundred gallons of residential heating oil at an ocean front residence in Osterville, Massachusetts. Soils, both outside and underneath the residence were impacted by the release. Mr. Borrebach was responsible for developing a structural shoring system to support the three story residence while excavation was conducted underneath the foundation of the residence. An area of the foundation of over thirty linear feet was exposed during the excavation work with no impact to the stability of the structure. Localized groundwater extraction and treatment was also conducted. Remaining oil concentrations were reduced to the point where a Class A-2 Response Action Outcome was achieved.

Solvent Releases at Dry Cleaners
Mr. Borrebach is the LSP-of-record for several releases of tetrachloroethene (PCE) at dry cleaning facilities in Massachusetts. The releases have impacted residential homes, day care facilities, schools, churches, and commercial and industrial facilities. The releases have affected soil, ground water, surface water, and indoor air. Remedial measures implemented to address the releases have included soil excavation & disposal, ground water treatment, on-site chemical oxidation, sub slab depressurization systems, soil vapor extraction systems, and, in some cases, were required to abate imminent Hazards. Site-specific Risk Assessments have been prepared to develop clean up requirements and for Site closure purposes.

Geotechnical Evaluations – Power Distribution Infrastructure
Mr. Borrebach was the Engineer of record for several geotechnical investigations conducted at electrical substations and switchyards. The investigations were conducted to provide evaluate soil conditions, evaluate local conditions of subsidence, and provide engineering design criteria for foundations, pads, and other proposed infrastructure. Evaluations were conducted in Massachusetts, Rhode Island and Vermont.

Elderly Housing Redevelopment
Mr. Borrebach served as Project Principal for redevelopment of former greenhouses to elderly housing. Lead paint impacts were remediated by excavation and off-Site disposal of impacted soil. An X-Ray Fluorescence (XRF) meter was used to provide real-time assessment of metal concentrations in soil thereby reducing the extent of soil excavated. He was the Principal-In-Charge of site survey, engineering and geotechnical evaluations for a new 49-unit elderly housing project.

OHI Engineering, Inc.
Engineers & Environmental Scientists

Brian G. Snow, PG, LSP, LEP
Senior Project Manager

Education

Framingham State College, B.S. Earth Science, 1992
Framingham State College, M.A. Business Administration, 2000

Certifications

Certified OSHA 40 Hour Hazardous Waste Site Operations (CFR 1910.120)
Certified 8 Hour Site Supervisor (CFR 1910.120)

Licensure

Licensed Site Professional (LSP) in Massachusetts
Licensed Environmental Professional (LEP) in Connecticut
Licensed Professional Geologist in New Hampshire, New York and Tennessee
Massachusetts Waste Water Treatment Plant Operator Grade I-2

Affiliations

Massachusetts Licensed Site Professional Organization
Town of Medway, MA Conservation Commission
Massachusetts Notary Public
Massachusetts Association of Conservation Commissioners

Qualifications

Mr. Snow has over twenty three years of professional experience in environmental engineering and science. His expertise includes: site investigation, bedrock investigations, drinking water treatment, construction support and permitting, remedial design, remediation system construction, operation and decommissioning, remedial additive injections, property assessments, indoor air investigation, litigation support, insurance support, cost assessment, lifecycle costing, compliance assistance, reimbursement support, risk assessment, and regulatory closure.

He has served as the Licensed Site Professional (LSP) of record for numerous response situations where the release of oil and hazardous materials required the implementation of sound response actions in compliance with the Massachusetts Contingency Plan (MCP). The releases included: releases of gasoline and fuel oil from underground and above ground storage tanks at commercial and industrial facilities, power plants and residences; historical releases of oil and hazardous materials (OHM) at petroleum, landfills, commercial and industrial facilities; spills of petroleum and industrial chemicals from transportation accidents; and, releases of industrial chemicals due to fire.

Mr. Snow has directed and completed Immediate Response Actions with associated plans and Response Action Outcome Statements at more than fifty petroleum contaminated sites. He has designed and implemented site clean ups involving: excavation of contaminated soil; soil vapor extraction; on-site soil treatment using thermal desorption, asphalt encapsulation, and bioremediation; groundwater pump and treat systems; in-situ chemical oxidation, and dual phase extraction.

He has prepared hundreds of environmental site assessments in Massachusetts, New Hampshire, Rhode Island, Connecticut, New York, Maine and several other states in compliance with ASTM standards or client specifications. The projects were completed for private parties, public entities and, small and large lending institutions.

Project Experience

Gasoline Release- Impact to Indoor Air at Day Care Center and Groundwater Impacts to Zone A of a Drinking Water Supply

Mr. Snow served as the Senior Project Manager and LSP for a project on the north shore (Massachusetts) where petroleum vapors were detected in a daycare adjacent to the client's property. The project was also within the Zone A of a Class A surface water body. The project included the redesign and re-installation of an existing air sparge and soil vapor extraction system. During the previous consultant's initial indoor air assessment and risk assessments, an Imminent Hazard (IH) was identified. At the client's request, updated indoor air assessment and risk assessment was conducted and revised conclusions to more accurately evaluate risk posed by the release. Subsequent investigations of vapor intrusion pathways included the installation of soil gas probes under and around the daycare at various depths, and sampling of indoor air, soil gas, groundwater, and soil. Numerous IH and substantial hazard evaluations were also completed using Method 3 Risk Characterization. A sulfur hexafluoride tracer gas study was conducted in order to determine the migration pathway of contaminants to the daycare. Contaminants not related to the disposal site were ruled out and attributed to the other remaining businesses in the daycare building. Mr. Snow prepared Immediate Response Action (IRA) Plans, IRA Status Reports, an IRA Completion report, Phase I, II, III, IV, and V documents including a Remedy Operating Status Opinion for the site. His work included design of the Phase II investigation, a pilot test, additional remedial components and demonstrated vacuum influence and source control. He also provided support for litigation related to the indoor air impacts and to previous parties contributing to the release(s).

PCB and Metals Impacts to Commercial Property

Mr. Snow was the Senior Project Manager and LSP for a former industrial site in western Massachusetts. The site was impacted with PCBs, metals and petroleum products. A previous consulting firm conducted an ASTM Phase I for the owner prior to the purchase stating that the parcel was not likely impacted. Subsequently a second ASTM Phase I was conducted by a potential purchaser, leading to an ASTM Phase II Investigation. The property had been historically used for industrial purposes, was adjacent to multiple rail lines and had a former rail spur and siding. He designed an MCP Phase II investigation to delineate the PCBs and metals. Since the project was not in compliance with MCP

deadlines, revised deadlines were negotiated with the MassDEP and penalties were avoided. Impacts at the site extended beyond the property borders, requiring access to multiple parcels including property owned by the power company and the city. The project also included legal support with regard to potential suits against prior owners/occupants and the first consultant. The project included multiple meetings with counsel, opposing counsel, and the MassDEP to gain access and determine damages.

Petroleum Release – Retail Gasoline Station
Mr. Snow served as the Senior Project Manager and LSP for an emergency response in Lowell, Massachusetts. An owner of a restaurant complained to the Fire Department about petroleum vapors in the basement of their building. Mr. Snow met the Fire Department, Police Department, MassDEP, and Water and Sewer Department at the site. He determined the source of the release was a nearby gasoline station. A carbon filtration system was installed in the basement of the restaurant as well as a series of monitoring wells and soil gas probes. A soil vapor extraction system (SVES) pilot test was completed and a temporary SVES was installed to provide vacuum control and abate an IH condition created by an explosive condition in the sewer lines. The temporary SVES was operational on the second day after the complaint. Follow-up work included the preparation of MCP deliverables, correspondence with the MassDEP and Fire Department as well as the permanent design and install of the SVES and migration pathway assessment.

Remedial Additive Injections - Various Dry Cleaners, Plating Shop, Machine Shops, Gasoline Stations and Residences
Mr. Snow has directed the application of numerous remedial additives at petroleum and chlorinated solvent sites. Many of these sites include challenging injection environments including in basements below residential buildings, operation of multiple remediation systems, and indoor air concerns. Mr. Snow has completed chemical oxidation projects using various oxidizers. Examples of remedial additives utilized include Regenesis products (HRC, HRC Advance, Regenox Part A and Part B, PerSulfox, ORC) and FMC Products (Klosur – Persulfate with multiple catalysts and stabilizers). Mr. Snow has also utilized numerous Persulfate Products, pH adjusters, catalysts and hydrogen peroxide combinations. Mr. Snow has utilized microbe nutrient injections as well as surfactants. A recent HRC project includes reductions of total chlorinated VOCs (PCE source) in the source area by 95% in the last two years reaching state standard in the majority of impacted wells. A Recent Regenox project include a 72% reduction in chlorinated VOCs in groundwater was over the last year.

US Army Reserve Command – CERCLA and RCRA Corrective Action Management
Mr. Snow was the contract manager for CERCLA and RCRA Corrective Action Programs for the the US Army Reserve Command in New England. Duties including managing interactions between the US Army Corps of Engineers, US Army Reserve Command, US EPA, and State Departments of Environmental Protection. Projects included assessment and remediation of UST and surface petroleum releases, firing range releases and remediation, maintenance shops, former Nike Missile facilities, former shore battery and command and control structures and bunkers, former Army Airfield, radar/radio tower sites, and heavy equipment use/storage areas. UST compliance was

also managed in this position. Mr. Snow prepared budgets for all activities, prepared government estimates, created investigation and remediation scopes and supervised contractors (through appropriate Army and Corps of Engineers personnel). Mr. Snow briefed and collaborated with command staff, Judge Advocate Staff, Safety Staff, Center base personnel, and Public Affairs Personnel.

Manufactured Gas Plant and Ink Plant
Mr. Snow managed the MCP Phase I and Phase II Investigations of a commercial property formerly containing a Manufactured Gas Plant (MGP) and Ink Manufacturing facility. The property also contained various commercial activities with USTs and other petroleum use. The investigations included the delineation of coal tar impacts, cyanide impacts, petroleum impacts and metals impacts to soil at concentrations in excess 100,000 mg/Kg. Property use and building locations were traced back to the mid 1800's. Remedial plans include in-situ stabilization, engineered barrios, and use restrictions. The project was designated a Public Involvement Plan (PIP) site by MassDEP. The project also included litigation support.

Industrial Landfill and Process Water Ponds with PCB spill to Surface Water
Mr. Snow managed the MCP Phase I and Phase II Investigations of a commercial property including the former industrial waste landfill and process water ponds for a large rubber manufacturing plant. Drums of oil and hazardous materials were discovered in the waste within the landfill. Waste was observed in the ponds. The property was impacted with heavy metals, petroleum products and PCBs. A historic release of over 1,000 gallons of 6,000+ ppm PCB oil to the pond system impacted the ponds and drainage upgradient and down gradient. Mr. Snow's assessment included historical research at multiple libraries, maps, documentaries, file reviews at federal, state, and local agencies. The investigation included engineering calculations of stormwater inflow, outflow and sedimentation rates. Sediment thicknesses were established by various had borings, and tile probe locations as was water depths throughout the ponds. Litigation support included presentations and supporting documentation before attorneys representing multiple parties. .Evaluations of past releases, environmental reports and remediation projects for dozens of releases and multiple parcels was completed to evaluate potential sources. Coordination with EPA, TSCA, MassDEP, US Army Corps of Engineers, GSA, DPW, Conservations Commission, abutting property owners, and attorneys were included in the project.

OHI Engineering, Inc.
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Scott L. Rolfe
Engineering Operations Manager

Education

Continuing Education and Coursework at:
Wentworth Institute of Technology
Northeastern University
Boston Architectural Center
Harvard Graduate School of Design

Qualifications

Mr. Rolfe has devoted his entire career to project design, engineering and permitting. His expertise includes: management of engineering site design for residential, commercial and industrial projects; stormwater control system evaluation and design; and, field survey. He is adept at taking projects from conception, through design and permitting, and construction.

Experience

Scott has been working in the land surveying and civil engineering field over forty-nine years. Having attended classes with MALSCE, Wentworth Institute of Technology, Northeastern University, Boston Architectural Center and Harvard Graduate School of Design, pertaining to survey mathematics, engineering graphics, landscape design and computer operation, Scott has applied his knowledge and experience within the architectural, surveying, civil engineering and land planning fields.

The early days found Scott working the field as a rodman and survey crew chief, along with corresponding drafting responsibilities. He maintained ownership of a land development services company and has functioned as a director of operations, office manager and senior project manager with a perseverant focus on client relationship.

Scott offers the benefits of his experience as associated with all aspects of planning, design, permitting and client representation within numerous municipalities, and carries extensive knowledge relating to residential, commercial, municipal and industrial development.

OHI Engineering, Inc.
Engineers & Environmental Scientists

Douglas C. Morrison
Senior Project Manager

Education

University of New Hampshire, B.S. Geology, 1981
University of Colorado, Graduate Studies in Geology, 1982

Certifications

Certified OSHA 40 Hour Hazardous Waste Site Operations (CFR 1910.120)
Certified 8 Hour Site Supervisor (CFR 1910.120)
Certified OSHA Level A, B (CFR 1910.120)
Certified OSHA Confined Space (CFR 1910.120)
Certified for use of Portable Gas Chromatograph

Affiliations

Massachusetts Licensed Site Professional Organization, Associate Member
Massachusetts Association of Land Surveyors and Civil Engineers
American Congress on Surveying and Mapping
National Water Well Association

Qualifications

Mr. Morrison has over thirty years' experience on environmental engineering and construction projects throughout the continental United States. Mr. Morrison serves as a Senior Project Manager for OHI Engineering, Inc. He is responsible for the coordination and management of the Company's on-site project operations. He has extensive Construction Management experience at power generating facilities, major pipeline utilities, and commercial, industrial and private projects. Mr. Morrison's duties involve the coordination and supervision of field investigation, sampling, Immediate Response Actions, Release Abatement Measures and remedial activities for waste disposal sites managed under the MCP in Massachusetts and under waste site cleanup regulations in all New England states. He has demonstrated his knowledge of the Massachusetts Contingency Plan (MCP) requirements by preparing Response Action Outcome Statements, Phase I through Phase V reports, Release Abatement Measures, and the filing of Activity and Use Limitations. Mr. Morrison has significant experience in completing Hazardous Waste Site cleanup operations in New York, New Jersey, Kentucky and Florida, serving as the on-site project manager for large-scale remedial projects.

Project Experience

Power Plant Oil Storage Tank Site
Mr. Morrison served as the Senior Project Manager for a historic release of approximately 200,000-gallons of #6-fuel oil from a 130,000 barrel (5,500,000 gallon) above ground storage tank at a power generating facility. He was the senior manager for

the soil and groundwater assessment program, prepared submittals to the appropriate environmental agencies, designed and provided construction oversight of the remediation plan involving soil excavation and construction of an engineered barrier, assisted in coordinating the RCRA 2020 Corrective Action Audit process that has resulted in a Construction Complete determination and achieved RCRA Termination, and participated in document review for property transactions/sale

New England Peaking Generation Stations
Mr. Morrison serves as Senior Project Manager for facilities management at three New England peaking generation stations. Services include engineering, management and construction of drainage improvement projects, utility installation including water mains, sewer laterals, commercial septic systems and fire hydrants along with major paving construction projects. Part of these services also include management and construction oversight of plant decommissioning projects with respect to transformers, UST's, AST's and associated piping. Services also include adherence with the Massachusetts Contingency Plan (MCP) for compliance and remediation under the MCP. These services to include geophysical and geotechnical investigations and report preparation and applicable permitting.

National Grid
Mr. Morrison served as Senior Project Manager for geotechnical investigations at substations throughout Maine, New Hampshire, Massachusetts and Rhode Island. Investigations included the management of permitting, drilling subcontractors, sample collection and laboratory analysis along with report preparation for foundation design. Responsibilities also included management and oversight of health and safety procedures in the electrical transmission industry and adherence to corporate safety policy.

Fibersense Technology Corporation - Boeing Corporation
Mr. Morrison served as the Project Manager for the assessment and design phase for a sensitive laboratory and, due to the confidence the client gained in the preliminary phase, was awarded the Construction Management oversight for the testing laboratory construction.

Initial assessment provided a geophysical baseline of the subsurface environment, correlating the natural "noise" conditions of the site, as they would relate to gyro testing and production and construction of the instrument foundation pier. The geotechnical investigation determined the depth of the overburden, depth to bedrock and profile of the bedrock surface for pier construction methods and design. The investigation included a geophysical survey of the Site to confirm the Site's natural sensitivity in relation to interference from highways, high-speed commuter train systems, the foundation of the building and other relevant factors.

A 20 foot long by 13 foot wide and seven foot deep excavation was manually chiseled and hand excavated out of bedrock utilizing air hammers and rock splitting tools. The instrument foundation pier was then hand built within extremely close allowable tolerances in four separate concrete pours, all of which were reinforced with steel rebar. Specially designed vibration isolation barriers were part of the construction process, and provided the ability to dampen the natural background "noise" of the Site. Post construction testing indicated that the instrument foundation pier was successfully constructed within very restrictive tolerances.

Once the testing piers were certified, he managed the construction phase for the new testing laboratory. Management included the coordination with the Fibersense engineers and approved subcontractors for the completion of the testing facility. Currently there are approximately 15 piers in the country that are constructed to the specifications of the Fibersense pier.

Former Solid Waste Dumpsite
Project Manager for an extensive Geotechical subsurface investigation at a State listed solid waste dumpsite. Project involved delineation of concrete reinforced fill material as placed within the native organic depositional environment. Historically, the site had many excavation/fill events with the concrete waste material being mixed with former lake deposits consisting of organics/peat and timbers. Due to the difficult drilling conditions, a variety of techniques were used to accomplish the project design goals.

The end result of the geotechnical phase was a foundation design with a variety of cost saving options for development of the property as a high-rise condominium complex. Due to a variety of techniques used at the site to delineate the subsurface environment, substantial construction cost savings were implemented in the design-phase to reengineer the fill material as a structural base for foundation construction.

Major Petroleum Bulk Storage Facilities
Mr. Morrison served as the Project Geologist responsible for the coordination and management of project operations for major oil company retail facilities and active bulk terminals in eastern Massachusetts and Rhode Island. Responsibilities have included design of monitoring well placement and construction; well log and soil interpretation, water quality sampling and monitoring; aquifer evaluation; data control and graphics preparation for detailed waste site disposal and hydrogeologic investigation reports. Mr. Morrison has been involved in all aspects of remedial system design from soil vent and sparging tests to aquifer pump tests and final implementation, as well as subcontractor coordination of the associated remedial systems.

Mr. Morrison has been responsible for the project management of underground storage tank (UST) removal operations throughout New York, Massachusetts, Rhode Island, and Vermont. His duties on these projects included the coordination of subcontractors, and supervision of field operations, data collection and management of the preparation of final closure reports for submittal to appropriate state regulators.

Mr. Morrison has played a critical role in the performance of comprehensive hydrogeologic investigations and environmental site assessments for major national oil companies to assess the presence and evaluate the extent of petroleum hydrocarbon contamination. Duties on these projects included identifying and evaluating possible source areas, and identifying potential receptors of migrating contamination. Site history research and environmental assessment activities at these sites have included: review of current and historic property use; the characterization of subsurface soil; development of site-specific media sampling plans; preparation of the design and supervision of the installation of groundwater monitoring wells; soil and groundwater sampling; sample handling and coordination of appropriate laboratory analyses.

Comprehensive Environmental Site Investigations - Fuel Oil Terminal
Mr. Morrison served as the Project Geologist for a comprehensive site assessment at a major New England fuel oil terminal. His responsibilities included the coordination and implementation of all on-site field activities for petroleum plume delineation. The

investigation included the installation of 38 groundwater monitoring wells (both in bedrock and in overburden), performance of test pits, and implementation of extensive soil gas surveys with mobile lab gas chromatography (GC) analyses. The project also involved the decommissioning and excavation/removal of over 500 miles of underground petroleum pipelines on terminal property and along rights of ways. Other investigation duties included: surface water and soil sampling; complete site survey and data collection for map preparation; bedrock mapping and fracture trace analyses; extensive file and record reviews of both state and federal records; preparation of groundwater contour, bedrock, and subsurface utility plans (both historic and current), surficial topography maps and contaminant isopleth maps.

Site Remediation, Camden, New Jersey
Mr. Morrison served as the Construction Manager for soil remediation of an impacted site in Camden, New Jersey. The project involved the excavation, treatment and disposal of approximately 32,000 tons of impacted soil. Mr. Morrison coordinated all aspects of the engineering of the project for thermal destruction of the soils, resulting in reduced permitting requirements when compared to on-site treatment. The use of the off-site treatment facility resulted in a cost savings of approximately $250,000 when compared to methods proposed by other consultants involved in the project. The project had been in litigation since 1984 and implementing strategic methodology and management approach enabled site closure under NJDEPE regulations.

OHI Engineering, Inc.
Engineers & Environmental Scientists

Lyons Witten, PG, LSP
Senior Project Manager

Education

University of Colorado, B.A. Geology, 1983
University of Massachusetts, M.S. Geology, 1994

Certifications

Certified OSHA 40 Hour Hazardous Waste Site Operations (CFR 1910.120), 1986
OSHA 8 Hour HAZWOPER Annual Refresher, 1987 to present
OSHA HAZWOPER Supervisor's Course, 2002 and 2012
Amtrak Contractor Employee Safety Training, Certificate No. 1456

Licensure

Professional Geologist in New Hampshire
Licensed Site Professional (LSP) in Massachusetts

Qualifications

Mr. Witten has over thirty years of professional experience in groundwater- and hazardous waste-related projects. His expertise includes: Phase I and II hazardous waste site investigations; management of Underground Storage Tank removals; site remediation including remedial system design, permitting, and installation; and permit filings under numerous state environmental statutes. He has overseen hundreds of assessment and remediation projects that included in-situ chemical oxidation, pump and treat, vapor extraction, excavation, stabilization, and bioremediation remedies. He has experience in numerous projects for both public and private clients that involve the interaction of water supply wells and hazardous waste sites.

He has served as the Licensed Site Professional (LSP) of record for numerous response situations where the release of oil and hazardous materials required the implementation of sound response actions in compliance with the Massachusetts Contingency Plan (MCP), many which also involved the Wetlands Protection Act and required authorization of local Conservation Commissions. The releases included: releases of gasoline and fuel oil from underground and above ground storage tanks at residential, commercial, and industrial facilities; historical releases of oil and hazardous materials (OHM) at industrial, commercial, and petroleum facilities; and historical releases of heavy metals at former industrial facilities.

Mr. Witten has also completed numerous water supply projects that involved field investigation and permitting for new and expanded water supply sources, pump tests, computer modeling of small-scale and town-wide aquifer systems, and Site-specific mapping of aquifer materials for various permitting needs. His expertise in this area lies in field testing, permitting, and computer modeling.

He has prepared hundreds of environmental site assessments in Massachusetts, Vermont, Connecticut, New York, New Hampshire and Maryland in compliance with ASTM standards or client specifications. The projects were completed for private parties, public entities and, small and large lending institutions.

Mr. Witten has served on a Planning Board, been a Town Meeting Member, and has extensive experience in coordinating, attending and presenting at public meetings and hearings.

Project Experience

Hydraulic Fluid Release
LSP-of-Record for cleanup of this long-term release of hydraulic oil from two industrial air compressors. The units discharged a mixture of oil and condensate to the ground surface for up to 30 years. Impacted soil was excavated and recycled into asphalt. Groundwater had not been impacted. The remediation was conducted under the Limited Removal Action clause of the MCP, allowing remediation to be completed without formal notification to the DEP.

Remedial Feasibility Investigation (RFI) Site
Conducted soil and groundwater sampling, developed new monitoring wells, conducted slug and pump tests, and assisted with waste management during a RCRA remedial feasibility investigation (RFI) at a large Connecticut defense manufacturing facility.

PCB Investigation Site
Project Hydrogeologist on a petroleum remediation site involving Underground Storage Tank removals, product recovery by pump and treat methods, and PCB contamination. This relatively simple remediation project for a private food service industry client was complicated by cross-contamination of a monitoring well with PCBs by another contractor. The project revolved around an investigation of all possible sources of the PCBs at the historically industrial Site to rule out an on-site source prior to the client seeking restitution from the responsible contractor. Restitution from the contractor was achieved.

Former Plating Facility Investigation
LSP-of-Record on this remediation project for a private landowner. Multiple field investigations lead up to the preparation of a MCP Phase II and III report for the Site that delineated the extent of contamination both along a river bank and within the boundaries of a former industrial landfill at the Site. Portions of this Site were closed using a Permanent Solution including an Activity and Use Limitation (AUL) while portions were closed using a Temporary Solution with an AUL.

Cell Towers
Project Manager for ESA and geotechnical evaluations of soil for foundation and site work design at proposed cell tower and solar array facilities across New England for the last 18 years. Clients included several different cell tower and solar energy developers. Projects ranged from single sites to groups of six to eight at a time.

Underground Storage Tank Removal Site
Project Hydrogeologist on a redevelopment project for a private developer. The project involved removal of 27 Underground Storage Tanks, five buildings including two truck garages, and the recycling of 5,000 cubic yards of petroleum- and metals-contaminated soil. Contracts were held with both the Site owner and the potential purchaser, and the project resulted in the award of the first two Form Four permits ever issued by the Connecticut Department of Environmental Protection.

Industrial Chlorinated Solvent Disposal Site
Project Hydrogeologist for a private industrial client with chlorinated solvent contamination resulting from leaking buried drums. Coordinated the quarterly sampling of private drinking water wells in the vicinity of the Site, and completed an Immediate Response Action with associated plans for the installation of point-of-entry carbon filters at several of these homes. Completed the field program for a Phase II Comprehensive Site Investigation of the Site.

Former Dry Cleaning Facility
LSP-of-Record for a private dry cleaner at a re-developed property. Chlorinated solvents were found under the new building and have been remediated using reductive dechlorination in combination with a soil-vapor extraction system and changes to the on-site HVAC system to provide positive pressure to the new building. Phase II, III, IV, and Phase V Status Reports have been prepared for this Site.

Landfill Monitoring and Expansion
Managed and designed quarterly groundwater and soil sampling programs for landfills and sewage treatment plants. Mr. Witten conducted quarterly sampling at the Ravenbrook Landfill in North Carver, Massachusetts during a four-year period, and conducted subsurface geotechnical and hydrologic investigations for two expansions of this landfill.

Septic System Mounding Analyses
Mr. Witten designed, calibrated and utilized site-specific VisualMODFLOW models to estimate the height of groundwater mounding under proposed large septic systems (>10,000 gpd). These Hydrologic Mounding Analyses are preceded by soil and groundwater sampling programs to characterize the subsurface materials, slug or pump tests to determine hydraulic conductivity, and a literature search to collect relevant published information. The groundwater flow model can also be used as a contaminant transport model to estimate concentrations of contaminants (nitrate) at the downgradient property line or nearest critical environmental resource. The Hydrologic Mounding Analysis reports are submitted in support of the Groundwater Discharge Permit Application for the system.

Site Development ESA and Geotechnical Studies
Mr. Witten has completed numerous comprehensive re-development strategy projects involving Environmental Site Assessments, geotechnical evaluations of soil for foundation and site work design, and the interaction of client's re-development goals with the limitations posed by Site permitting and contamination issues.

Water Supply Projects

Water Management Act & NPDES Permit
Mr. Witten determined the best location for additional irrigation wells for a private farmer, oversaw the installation of the new wells, and applied for and received a Water Management Act Permit for four times the farm's original WMA withdrawal. A corresponding NPDES discharge permit application was prepared and approved by EPA.

New Source Approval - Private
Mr. Witten supervised the installation of a proposed public water supply well for a private client in Wrentham, Massachusetts, conducted required sampling, and completed a New Source Approval submittal to the DEP. This project involved interaction with the engineer designing the proposed development and associated on-site septic system, and modeling the septic system mound on the water table using VisualMODFLOW. Mr. Witten was also on a team that prepared a New Source Approval submittal to the DEP for a series of irrigation wells for a proposed golf course in Hingham, Massachusetts.

New Source Approval - Public
Mr. Witten has supervised the installation of numerous test wells in the search for a proposed public water supply wells in the Town of Dudley, MA. He was involved in the permitting of a new water supply well for the Town of Kingston, MA, demonstrating via a computer model that this well location was outside the actual limits of the Jones River Basin, an area closed to further withdrawals by DEP.

Zone II Delineation
Mr. Witten delineated Zone II boundaries for the protection of two municipal water supply wells in the Town of Lanesborough, Massachusetts. This project involved determination of the vertical and horizontal extent of the principal aquifer using classic geologic field investigation and seismic refraction survey techniques, the installation of monitoring wells and stream-bed peizometers, and the formulation of a MODFLOW computer model to simulate the aquifer under pumping and non-pumping conditions.

Aquifer Land Acquisition Study
This study for the Towns of Easthampton and Southampton was funded under the Massachusetts Ch. 286 Aquifer Land Acquisition (ALA) Program. The study delineated Zones II and III of the Hendrick Street and Nonotuck Park Well fields, addressed the impact of potential contaminant sources on the Easthampton Aquifer, and recommended strategic properties for acquisition to further protect this drinking water resource.

Water Supply Protection
Mr. Witten has employed several strategies for the protection of public and private water supplies including: delineation of Zone II boundaries for the protection of municipal water supplies, design hypothetical subdivision layouts for appraisals and the APR Farm Program, and completion of nitrogen loading analyses for proposed developments. Mr. Witten is also a member of his local town Aquifer Protection Committee.

Hydrologic Assessment of Duxbury Landfills
A hydrogeologic contaminant study was conducted to evaluate potential groundwater quality impacts from the Duxbury, Massachusetts landfill sites. The two landfills are situated directly upgradient of one of the Town's drinking water supply wells. The project objective was to define the hydrogeology and to determine the leachate plume's chemical composition, document its vertical and horizontal extent within the aquifer, and therefore to estimate its eventual impacts to the well.

OHI Engineering, Inc.
Engineers & Environmental Scientists

Jared Kelly
Project Engineer

Education

University of Massachusetts – Amherst, B.S. Astrophysics, 2005
University of Massachusetts – Amherst, B.S. Mathematics, 2005
University of Massachusetts – Dartmouth, M.S. Mechanical Engineering, 2014

Certifications

Engineer in Training
Certified OSHA 40 Hour Hazardous Waste Site Operations (CFR 1910.120)
Holder of Transportation Worker Identification Credential (TWIC) Card
First Aid and CPR
Smith Defensive Driving Certification
Qualified Preparer of Stormwater Pollution Prevention Plans
Qualified Compliance Inspector of Stormwater (QCIS)

Qualifications

Mr. Kelly has eight years of stormwater erosion control experience in geotechnical and civil construction projects and serves as a Project Engineer/Erosion Control Specialist for OHI Engineering, Inc. Mr. Kelly is a qualified preparer of Stormwater Pollution Prevention Plans, Qualified Compliance Inspector of Stormwater (QCIS), and has authored many Erosion and Sedimentation Control (ESCP) plans for large construction projects. He provides site-specific stormwater runoff assessment, project Stormwater Pollution Prevention Plan and electronic Notice of Intent preparation, erosion control and best management practice recommendation and implementation oversight, and erosion control site inspections for National Pollution Discharge Elimination System (NPDES) certification under the EPA Construction and Multi-Sector General Permit (CGP and MSGP) programs.

Mr. Kelly has authored SWPPPs and ECSPs for many large Massachusetts Department of Transportation (MassDOT) contracts and is current in the updated language of the 2017 CGP. His project management experience includes serving as Environmental Compliance Manager for construction of the Massachusetts Water Resources Authority's Spot Pond Water Storage Facility; a +$50 million design/build project. During the project, which spanned three years, Mr. Kelly was responsible for weekly stormwater compliance recommendations, monthly compliance inspections, preparation of monthly and annual summary reports, and coordination with the General Contractor and federal/state/municipal regulatory agencies.

Statement of Qualifications for
OccuHealth, Inc.

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OccuHealth, Inc.

Thank you for considering OccuHealth, Inc. as a partner in helping you achieve your environmental, health, and safety objectives. OccuHealth, Inc. (OCCUHEALTH) is a well-established and respected consulting firm in the New England region. The enclosed qualification is intended solely for your use and is offered to provide you with insight into the consultancy and how its staff and services can add value to your organization by addressing your environmental, health, and safety risks.

At A Glance:

Company:	OccuHealth, Inc.
Staff:	Combination of professional and technical staff
Incorporated:	1989

Address:	44 Wood Avenue, Mansfield, MA 02048
Phone:	(508) 339-9119, (800) 729-1035
Fax:	(508) 339-2893

Website: www.occuhealth.com

The Beginning:

In 1986 Mr. Thomas E. Hamilton (President and Founder) recognized that the New England region was in need of a consulting firm that could offer valuable, timely, and cost effective engineering solutions for industries dealing with Environmental, Health, and Safety issues. Since the company's initial inception in 1986 and incorporation in 1989, Mr. Hamilton has focused on ensuring client needs are met by acquiring, developing, and maintaining some of the best professionals the region has to offer.

The Present:

OCCUHEALTH has expanded its professional services by assembling a talented, experienced staff. This has given OCCUHEALTH a competitive advantage over other regional consulting firms as we have expertise in diversified subjects that will assist you in all functional aspects of your EH&S program.

The Future:

OCCUHEALTH's plan for future success involves maintaining the goodwill we have established over that last 30 years of service and building on our customer base with prospects like you. OCCUHEALTH continues to acquire key talent and has the infrastructure in place to expand as our customers and industry demand.

Core Values:

Our staff is bound by a common thread to provide the best possible work product for our customers. In addition, all senior level staff maintain professional credentials which bind them to a set of ethical standards and/or codes of professional conduct. Inherent to each of these is:

- Respect – our clients are treated as an extension of our staff. Each member of our staff is treated with the utmost respect.
- Honesty – much of the work we provide is done under extreme confidence and trust between our staff and our clients which ensures mutual success. Open and honest business practice is guaranteed.
- Integrity – OCCUHEALTH's success has been driven by our goodwill. Many of our decisions and recommendations can profoundly affects the health and safety of the employee or the environment. These are decisions that OCCUHEALTH does not make lightly.
- Competency – All too often we see competitors trying to provide a variety of services and expertise that they don't have. OCCUHEALTH is confident we can address almost any issue as it relates to EH&S; however, if a project involves a skill set that is outside of our competencies we will work with you to identify the best and most competent alternative. OCCUHEALTH would rather not offer you a service then provide you one of poor quality.

OCCUHEALTH's Key to Success:

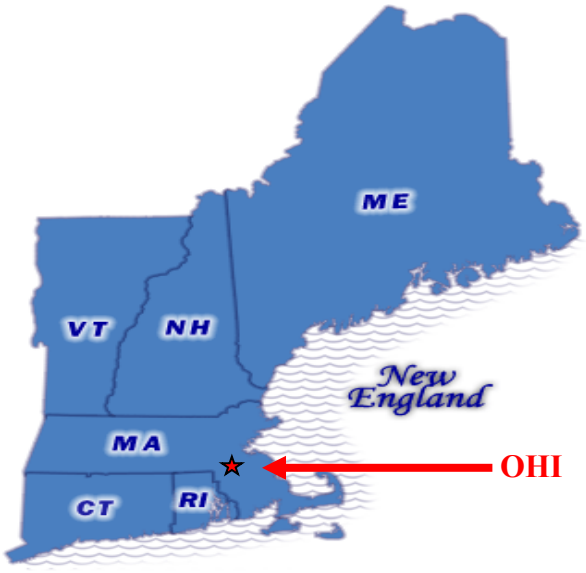
Staff – A firm is nothing without its staff. OCCUHEALTH works hard to acquire and keep the best talent in the region. Our technical staff consists of:

- Registered Professional Engineers
- Certified Project Manager
- Certified Industrial Hygienists
- Certified Safety Professional
- Toxic Use Reduction Planner
- Certified Environmental Safety & Health Trainer

OccuHealth, Inc.

Location – OCCUHEALTH is strategically located in Mansfield, Massachusetts to ensure prompt on site support to major New England cities including:

- Boston, MA
- Worcester, MA
- Providence, RI
- Groton/New London, CT
- Hartford, Ct
- Portsmouth, NH



Value – OCCUHEALTH understands the importance of operating lean. Our clients are expected to acquire staff, products, and services that are as cost sensitive as possible. As such, there is no reason why OCCUHEALTH shouldn't be expected to do the same on our customers' behalf. Our rates are highly competitive, especially when the cost vs. staff experience is considered. You will find our rates to be comparable or less than our competitors and there is no reason it shouldn't be.

Our success and commitment to our clients is also highlighted in the A+ rating we have ranked with the Better Business Bureau:

BBB ACCREDITED BUSINESS

OccuHealth, Inc.

The *Health & Safety Division* of OCCUHEALTH works to provide comprehensive solutions to protect the health and safety of your employees, visitors, and contractors. This is critical to ensure both regulatory compliance and reduction in workers compensation.

Our Services are comprehensive and include:

Indoor Air Quality Assessments / Surveys

Air quality is one of the most important factors in keeping employees healthy and productive at work. Our services can determine the cause of an air quality problem or help prevent it before it occurs. Investigations and monitoring for comfort parameters like carbon dioxide, carbon monoxide, temperature and relative humidity or testing for allergens, or VOCs from building materials are just some of the capabilities we offer.

Indoor Microbial Assessments

Microbial contaminates such as fungi (mold) and bacteria can cause a variety of health problems in the workplace. Besides irritation and discomfort, certain types of mold can actually be hazardous to health. OHI is fully equipped to identify the root cause of your particular issue and ensure a fast and efficient solution. Our services include identification and assessment of any existing or potential problems and issues, remediation plan development and design, and post-remediation testing for verification.

Industrial Hygiene Surveys

Recognizing workplace hazards can be challenging, and implementing engineering, administrative, and personal protective equipment controls to address these hazards can be a daunting task. This is where the science of Industrial Hygiene can help. OCCUHEALTH's industrial hygienist are devoted to anticipating, recognizing, evaluating, preventing, and controlling environmental factors and stresses present in the workplace. These factors and stresses have the ability to cause sickness, impair health and well being, or cause discomfort among workers and the general public. We have the capability of evaluating all chemical, physical, and biological hazards that may be present in the work place.

Occupational Safety & Health Program Development & Support

Every work situation is different as are the needs of our clients. Whether you need a written Lockout / Tagout Program developed or simply need compliance driven Bloodborne Pathogen training, OCCUHEALTH can deliver. Our staff is experienced in the nuances of both Construction & General Industry regulations and we will pass our knowledge on to you.

Health & Safety Auditing

One of the most effective and valuable approaches to ensuring the safety and health of your organization is through auditing. Our auditing approach is as dynamic as you are. We can conduct a key findings assessment targeting certain aspects of your Health and Safety program or we can conduct a comprehensive audit of your entire facility through a three tiered approach of Interviews/Questionaires, Written Program Review/Verification, and Safety Walkthrough. Either way, the deliverable is a prioritized list of how and where to focus your resources for success.

Some firms will just offer a list of problems that you as the client are left to deal with on your own. OCCUHEALTH has leveraged itself in the New England region to not only identify problems but also implement cost effective solutions.

Health & Safety Training

OCCUHEALTH takes our responsibility as educators very seriously. Our training programs meet or exceed all regulatory standards. We also constantly review and update our training programs to be topical and relevant to current health and safety issues. Our training programs encompass the requirements of the Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and Department of Transportation (DOT) as well as state specific requirements for both occupational safety and environmental protection.

OCCUHEALTH understands that you have a business to run, which is why we have offer online, computer based training (CBT) to meet your individual needs and resource restraints.

OCCUHEALTH's *Environmental Division* consists of engineers and scientists devoted to ensuring your organization complies with all applicable regulatory requirements that have been developed to protect the environment.

Environmental Permitting

OCCUHEALTH is knowledgeable in all aspects of air permitting to ensure compliance. Our services include emissions calculations, analysis of air dispersion modeling, stack testing oversight and analysis, document preparation, and negotiations with regulatory agencies.

OccuHealth, Inc.

OccuHealth, Inc routinely provided ongoing industrial hygiene, IAQ, biosafety, and training support to some of the world's largest biotechnology and pharmaceutical clients. OCCUHEALTH performed an engineering validation of process equipment containment using a surrogate material. The values of surrogates are they are relatively benign in nature and analytical costs for air and surface sampling are less expensive. Our assessment of one particular engineering control revealed that adequate containment to a high potency active pharmaceutical ingredient (API) could be achieved with existing engineering, administrative, and personal protective equipment (PPE) controls. This resulted in $2.5 million in retrofit cost savings and allowed continued research and development of the API without delays.

OccuHealth, Inc. was called upon to review and prepare a research and development pharmaceutical facility for an impending state laboratory inspection. OCCUHEALTH identified and resolved gaps in both their training records and verification of lab safety equipment prior to the site inspection. This ensured the labs which worked with etiological agents and labs maintaining clinical laboratory certifications were re-licensed by the state. Immediate and timely identification and resolution of issues prevented closures/delays in the use of client lab spaces.

A manufacturing subsidiary of a national corporation was involved with a Corporate EHS audit which identified broad-based EHS deficiencies that the subsidiary needed to rectify within 18 months. The company quickly identified that they did not possess the in-house talent to address the deficiencies in the prescribed timeframe. OCCUHEALTH was tasked with integrating into their organization and providing part-time EHS support for an 18 month period to establish a best-in-class EHS program that could then be transitioned to internal staff to maintain. OCCUHEALTH accomplished this feat within budget and ahead of schedule which was well-received by shareholders and corporate.

Frequent and unexpected relocations can present unique challenges such as how to properly remove waste, clean areas for re-occupancy, and demonstrate the safety to stakeholders. One project for an academic institution required OCCUHEALTH to develop a strategy and criteria for demonstrating the cleanliness of a biosafety level 2 laboratory that was to be vacated. OCCUHEALTH used a combination of remediation approaches common in mold cleanup with analytical technologies used to evaluate adenosine triphosphate (ATP) levels to quickly and efficiently review areas that were clean and areas needing additional attention. ATP levels were used as a surrogate of biological activity. This provided quick and timely feedback to cleaning crews which reduced laboratory down time and satisfied the concerns of stakeholders.

OccuHealth, Inc.

An international, high tech manufacturing company decided to improve its due diligence and address stakeholder concerns regarding health and safety by working towards the achievement of the Occupational Health and Safety Assessment Series 18001 Management Certification for Health & Safety. This firm partnered with OCCUHEALTH to help establish the framework that was critical in their OHSAS 18001 certification. OCCUHEALTH was then retained to help two additional manufacturing sites achieve the international health and safety management certification

A prestigious private university was experiencing unpleasant odors in a faculty dorm where tenured professors lived. Assessments performed by other firms occurred for approximately 2 years with no identification of the source. It was determined that the university had spent $80,000 with other firms before they contacted OCCUHEALTH. Through the use of smoke generating technologies, OCCUHEALTH determined that waste drains had dried allowing sewer-like odors to re-enter the apartment building. OCCUHEALTH's cumulative costs for identifying the issue was less than $5,000. OCCUHEALTH then helped establish a maintenance program for the university and no complaints have been received since.

Section 6: Partial Client List

Our value added services have benefitted many clients in a variety of industries. Below is a list of specific clients we have assisted in the past and many we continue to work with today:

- Towns / Cities / Municipalities:
  - Boston, MA:
  - Pittsfield, MA
  - Cambridge, MA
  - Rochester, NH
  - Framingham, MA
  - Marion, MA
  - Needham, MA
  - Oak Bluffs, MA
  - Barnstable MA
- Property Management
  - Aspen Square
  - Blue Mountain
  - Hingham Woods
  - ING Clarion Realty Services
  - Millennium Partners
  - MB Management
  - Trammell Crow
  - State Street Corporation Realty Services
  - Spaulding & Slye
  - United Housing
- Education / Academia
  - Public School Systems for:
    - Massachusetts
      - Amherst
      - Attleboro
      - Burlington
      - Cambridge
      - Canton
      - Carver
      - Cranston
      - Lowell
      - Harvard
      - Norwood
      - Peabody
      - Plymouth
      - Wareham
    - Rhode Island
      - Lincoln
      - North Smithfield
      - Providence, RI

- Colleges / Universities
  - Salem State College
  - University of Massachusetts
    - Amherst
    - Dartmouth
  - University of New Hampshire
  - University of Massachusetts Medical School
  - University of Rhode Island
  - Rhode Island School of Design
  - Boston College
  - Brown University
  - Curry College
  - Berklee College of Music
  - Harvard University
- Manufacturing
  - Applied Biosystems
  - Babs Foundry
  - Draka Cableteq
  - EMC Corporation
  - Factory Five Racing
  - Hasbro
  - Senior Operations
  - Waste Management
  - Lista International Corp.
- Healthcare / Medical
  - Beth Israel Deaconess Med Center
  - Cape Cod Hospital
  - Cooley Dickinson Hospital
  - Falmouth Hospital
  - Faulkner Hospital
  - U Mass Memorial Medical Center
  - Memorial Hospital of R.I.
- Biotechnology / Pharmaceutical
  - Astra Zeneca
  - GE Healthcare Biosciences Corp.
  - Pfizer, Inc.
  - Serono
  - Charles River Laboratories
  - Rhodes Technologies

- Utilities
  - Bay State Gas
  - Boston Gas Company
  - Boston Edison Company
  - NiSource
  - New England Gas
- Construction
  - CWC Construction
  - Modern Continental/Obayashi
  - P. Gioioso & Son, Inc.
  - RF Walsh Company
  - Thorndike Construction
  - Thoughtforms
  - Gilbane
- Insurance
  - Amica
  - The Andover Companies
  - Chubb
  - Fireman's Fund
  - Liberty Mutual
  - NLC Insurance
  - The Hanover Insurance Co.
  - State Farm
  - Safety Insurance
- State Agencies
  - Massachusetts Div of Capital Asset Management
  - Massachusetts Water Resources Authority
  - County of Plymouth - Correctional Facility, Mass Department of Correction
  - Mass Turnpike Authority
- Legal
  - Clark, Hunt & Embry
  - Devine, Millimet & Branch
  - Parker, Anker & Horstmann
  - Sulloway & Hollis
  - Shepard S. Johnson, Jr. & Assoc.
  - Vetter & White

Key Staff Qualifications / Profiles

THOMAS E. HAMILTON, CIH
President & Founder

EDUCATION:
B.S. Metallurgical Engineering, Michigan Technological University

CERTIFICATIONS / PROFESSIONAL CREDENTIALS:
Certified Industrial Hygienist

PROFESSIONAL MEMBERSHIPS:
American Industrial Hygiene Association
New England American Industrial Hygiene Association
American Society of Heating, Refrigerating, and Air Conditioning Engineers

EXPERIENCE:

Mr. Hamilton is President and Founder of OccuHealth, Inc., and has been certified in the Comprehensive Practice of Industrial Hygiene since 1980. Mr. Hamilton's years of experience within the engineering and industrial health community provide him with a unique and unparalleled background for evaluating and developing workable solutions to the highly-complex and multi-faceted health and safety problems that confront industry today.

Mr. Hamilton is regarded as a subject matter expert on issues pertaining to indoor air quality and resolving "sick building syndrome". He has also been qualified as an expert witness in the area of mold and mold remediation. His experience has allowed him to become well versed in the areas of indoor air quality and odor forensics.

Mr. Hamilton frequently serves as a value added resource to a company's corporate department on decisions that impact an organization's health and safety business risks. Mr. Hamilton not only participates in problem identification, but he also offers resolutions, previously not considered, which often yield a more streamlined approach. He does this work because he passionately cares about the well being of clients, employees, the general public, and a client's bottom line.

His extensive experience in the field of industrial hygiene includes 16 years with W.R. Grace & Co. where his career culminated in directing the Corporate Industrial Hygiene Program for the Industrial Chemicals Group, which was the largest division within the company. He developed programs to address critical issues including exposure monitoring, noise, hearing conservation, ventilation design, OSHA compliance, and indoor air quality.

A. DAVID SCARCHILLI, MS, PE, BCEE
Vice President

EDUCATION:
M.S. Environmental Engineering, Rensselaer Polytechnic Institute
B.S. Civil Sanitary Engineering, Northeastern University

CERTIFICATIONS / PROFESSIONAL CREDENTIALS:
Registered Professional Engineer - Massachusetts
Board Certified Environmental Engineer, Air Pollution Control

PROFESSIONAL MEMBERSHIPS:
Air and Waste Management Association
Academy of Environmental Engineers

EXPERIENCE:

Mr. Scarchilli is Vice President at OCCUHEALTH with more than 35 years of experience in environmental engineering. Mr. Scarchilli specializes in assisting clients achieve environmental regulatory compliance and maintaining safe and healthy indoor environments. His fields of expertise include environmental auditing, industrial ventilation design, and air quality assessment and management.

He has conducted environmental audits at domestic and international facilities, both as a member of in-house audit teams and as an independent consultant where his audit objectives included both regulatory compliance and environmental management systems. Mr. Scarchilli served as a member of the U.SS Technical Advisory Group (TAG) to ISO/TC 207 on Environmental Management, i.e. ISO 14000 during the Draft International Standard comment period.

Mr. Scarchilli has designed, installed and tested industrial ventilation systems for the control of both particulate and vapor contaminants. OCCUHEALTH was presented with the Honor Award for Design Excellence by the Boston Society of Architects (BSA) and the American Institute of Architects, with a Citation for Design for Mr. Scarchilli's work at Simons Rock College of Bard. Mr. Scarchilli authored a chapter entitled "Evaluating Ventilation Systems," which is found in the book *The Occupational Environment: it's Evaluation, Control, & Management*, published by the American Industrial Hygiene Association.

Mr. Scarchilli's air quality assessment and management experience includes preparation and submittal of permit applications including qualification and quantification of point source and fugitive emissions, and evaluation of air pollution control technology options. He has extensive professional experience conducting indoor air quality assessments and making recommendations for improvements.

MICHAEL J. BURNS, PE
Senior Project Manager

EDUCATION:
B.S. Mechanical Engineering, Northeastern University

CERTIFICATIONS / PROFESSIONAL CREDENTIALS:
Registered Professional Engineer – Massachusetts
Certified Toxics Use Reduction Planner – General Practice

PROFESSIONAL MEMBERSHIPS:
American Society of Mechanical Engineers
Toxics Use Reduction Planners Association

EXPERIENCE:

With more than 22 years of experience, Mr. Burns has dealt with a wide range of EHS issues ranging from environmental compliance reporting and auditing to industrial hygiene surveys and indoor air quality investigations. He has been applying his expertise at OCCUHEALTH for the last 15 years with much of his work in support of EHS compliance in the biotechnology and pharmaceutical industries.

Mr. Burns' experience includes health and safety risk assessments in the pharmaceutical research & development industry, occupational exposure banding (OEB), noise and industrial hygiene surveys and engineering verifications of containment equipment and engineering control systems.

He has developed a variety of facility-specific environmental management and compliance plans for industry and public utilities. These documents include: Massachusetts Toxics Use Reduction Act (TURA) Plans, Stormwater Pollution Prevention Plans, Spill Prevention Control and Countermeasure (SPCC) Plans, Environmental Protection Agency (EPA) TIER II Reports, EPA Form R Reports and TURA Form S reports.

Mr. Burns' work requires frequent interaction with all levels of personnel from plant operators and upper management to public officials and regulatory agencies.

Prior to joining OCCUHEALTH, Mr. Burns worked in the environmental field with a national consulting firm that specialized in indoor air quality investigations, industrial hygiene surveys, asbestos and lead management services, and environmental compliance in both the public and private sectors.

TEPP LLC

TRANSPORTATION ENGINEERING, PLANNING AND POLICY

BROCHURE

93 Stiles Road, Suite 201, Salem, New Hampshire 03079 USA
800 Turnpike Street, Suite 300, North Andover, Massachusetts 01845 USA
Phone (603) 212-9133 and Fax (603) 226-4108
Email tepp@teppllc.com and Web www.teppllc.com

TEPP LLC provides a full range of effective transportation engineering, planning and policy services for its clients.

Since 1991, TEPP LLC has enjoyed many long-term relationships. Teams include various levels of government, land developers, institutions, civil/site engineers, architects, surveyors, attorneys and community organizations.

SERVICES

TEPP LLC services include:

- traffic operations studies and design for intersections, highways and corridors
- traffic i-mpact and access studies, permitting and testimony regarding land developments
- transportation peer review
- multi-modal transportation engineering, planning and policy
- parking studies and design
- newly evolved areas such as context sensitive solutions, design for all users and innovative intersections
- accident investigations, expert testimony and litigation support

APPROACH

TEPP LLC emphasizes:

- proactively assessing and understanding client and project needs
- communicating effectively
- responding rapidly and effectively
- seeking practical and at times creative solutions
- taking a multidisciplinary team approach while maintaining a focus on transportation

TEPP

ABOUT US

TEPP LLC has conducted hundreds of projects throughout New England. We bring experience from other regions of the country, and have complementary credentials and education such as:

- Professional Engineer licenses and Professional Traffic Operations Engineer certification
- degrees up to the doctorate
- continuing professional development
- affiliation with the Institute of Transportation Engineers, Transportation Research Board, American Society of Civil Engineers and Society of American Military Engineers

REPRESENTATIVE PROJECTS

Spit Brook Road/East Dunstable Road	Nashua NH	Corridor Study
Massachusetts Route 38	Tewksbury MA	Signalized Intersection Design
Sixth Street/Sixth Street Connector	Dover NH	Signalized Intersection Design
Broken Ground School	Concord NH	Traffic Assessment
New Hampshire Route 25/3A	Plymouth NH	Signalized Intersection Design
Massachusetts Route 28	Brockton MA	Signalized Intersection Design
Great Plain Avenue	Wellesley MA	Bicycle Facility Planning and Design
Natick Center	Natick MA	Parking Study
Downtown Area	Everett MA	Parking Study
Babson College	Wellesley MA	Parking Study
Falmouth Hospital	Falmouth MA	Traffic Impact and Access Study Parking Study Cape Cod Commission
Wal-Mart Supercenter	Plymouth NH	Traffic Impact and Access Study
Thornwood mixed-use redevelopment	Dover NH	Traffic Impact and Access Study Road Improvements Design
St. Vincent Hospital redevelopment	Worcester MA	Traffic Impact Analysis
Huntington Common Elderly Residential	Kennebunk ME	Traffic Impact and Access Study
Hannaford Supermarkets	New Hampshire Massachusetts	Traffic Impact and Access Studies Driveway Permits Massachusetts Environmental Policy Act
Peer Review	Massachusetts	Franklin, Framingham, Greenfield, Hopedale, Methuen, Newton, Tewksbury, Weymouth, Wilmington and Wrentham
	New Hampshire	Allenstown, Alton, Auburn, Candia, Hooksett, Merrimack, Newmarket and Northwood

TEPP LLC TRANSPORTATION ENGINEERING, PLANNING AND POLICY

RÉSUMÉ

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800 Turnpike Street, Suite 300, North Andover, Massachusetts 01845 USA
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Email tepp@teppllc.com and Web www.teppllc.com

KIM ERIC HAZARVARTIAN, Ph.D., P.E., PTOE
PRINCIPAL

EDUCATION

- Bachelor of Science in Civil Engineering, University of Kansas
- Master of Science in Civil Engineering, University of Kansas
- Doctor of Philosophy, University of Massachusetts Amherst
- Courses, Northeastern University, Old Dominion University, Air Force Institute of Technology, University of Lowell

CREDENTIALS

- Professional Engineer, Maine, Massachusetts, New Hampshire, Vermont; other states available by reciprocity
- Certified Professional Traffic Operations Engineer

AFFILIATIONS

- Institute of Transportation Engineers, Fellow of the Institute, Past International Director, District One Past Chairman, New England Section Past President, New Hampshire Chapter Past President, District One and New England Section Distinguished Service Awards
- Transportation Research Board
- American Society of Civil Engineers
- Society of American Military Engineers
- Chi Epsilon National Civil Engineering Honor Society
- Sigma Xi Scientific Research Society

Hazarvartian is TEPP LLC Principal and has been active in transportation and civil engineering since 1981, with experience in many states and overseas. He specializes in transportation impacts of land developments, traffic operations, traffic safety, litigation support and expert testimony, with consulting, government-sector and academic experience. In additional to technical expertise, he brings extensive knowledge in procedures and policies of governmental permitting and approval of land developments and transportation improvements. Hazarvartian also has experience with military installations.

Hazarvartian's extensive teaching experience has been primarily at the college and professional level, on such topics as civil engineering, traffic and transportation engineering and planning and traffic impacts of development. Hazarvartian has published on a wide variety of transportation engineering topics including the preparation of traffic impact and access studies, trip generation and the use of computers in transportation engineering. His articles have appeared in publications of the Institute of Transportation Engineers, the American Society of Civil Engineers, and the Transportation Research Board.

TRANSPORTATION IMPACTS OF LAND DEVELOPMENTS

Transportation impacts of land developments include traffic impact and access studies, with municipal, regional or state review; state driveway and traffic control signal permits; and extensive process related to the Massachusetts Environmental Policy Act and Cape Cod Commission. Hazarvartian's representative projects as part of the developer team include:

Braemoor Woods Residential Development, Salem NH
Richardi Reservoir Residential Development, Braintree MA
Gillette Distribution Center, Devens MA
USA Springs Water Bottling Plant, Nottingham NH
Boston Sports Club, Wellesley MA
Allston Center Mixed-Use Redevelopment, Boston MA
CVS/Pharmacy, Londonderry NH
Wellington Circle Plaza Redevelopment, Medford MA
Huntington Common Senior Housing, Kennebunk ME
Discount Supercenter, Plymouth NH
Baker Mills Conversion, Boston MA
Integrated Solid Waste Management Facility, Bourne MA
Citizens Bank, NH Locations
The Works Heath and Fitness Center, Somersworth NH
Shaw's Supermarket, North Conway NH
Babson College Various Projects, Wellesley/Needham MA
Valvoline Instant Oil Change, NH and MA Locations
Digital Federal Credit Union, Tyngsborough MA
Wise Living Senior Housing Projects, Cape Cod MA
The Home Depot, North Windham ME
128 Marketplace Commercial Redevelopment, Reading MA
Gasoline Station and Convenience Store, South Berwick ME
Mill Run Place Mixed-Use Development, Groton MA
Loudon Road/TJMaxx Shopping Center, Concord NH
Southern New Hampshire Medical Center, Nashua NH
St. Vincent Hospital Redevelopment, Worcester MA
Veterinary Clinic, Dover NH
Hannaford Supermarkets, NH and MA Locations
Enterprise Park Mixed-Use Development, Marshfield MA
Super Stop & Shop Supermarket, Brockton MA

TRANSPORTATION REVIEWS

Hazarvartian's representative reviews of transportation impacts of land development or transportation initiatives, on behalf of municipalities or community organizations, include:

Pleasant Valley Street Residential Development, Methuen MA
Southern New Hampshire University, Hooksett NH
Whistle Stop Estates, Georgetown MA
Ipswich Co-Operative Bank, Rowley MA
Cumberland Farms Gasoline Station and Convenience Store, Plaistow NH
Heartbreak Farm Residential Development, Ipswich MA
648 Old West Central Street Commercial Redevelopment, Franklin MA
Retail Center and Industrial Park, Rowley MA
CVS/Pharmacy, Framingham MA
Honey Dew Donuts, Wrentham MA
Regency Center Shopping Center, Merrimack NH
Recreation Fields, Merrimack NH
Hotel Expansion and Water Park, Merrimack NH
Super Stop & Shop Supermarket, Newton MA
Needham Street/Highland Avenue Corridor, Newton MA
Live! Casino Massachusetts, Leominster MA
840 East Street Residential Development, Tewksbury MA

PLANNING, STUDY AND DESIGN OF TRANSPORTATION FACILITIES

Hazarvartian has been involved with the planning, study and design of road systems, intersections and traffic control signals for motor vehicles, bicycles and pedestrians and has also been involved in other transportation modes. Examples follow.

Great Plain Avenue Bicycle Facility Study and Concept Plan, Wellesley MA
Massachusetts Route 132 Corridor Simulation and Animation, Hyannis MA
Sixth Street/Sixth Street Connector Intersection Traffic/Signal Design, Dover NH
Spit Brook Road and East Dunstable Road Corridor Study, Nashua NH
New Hampshire Route 9 Intersections Traffic/Signal Design, Concord NH
New Hampshire Route 25 Intersections Traffic/Signal Design, Plymouth NH
Massachusetts Route 28 Intersections Traffic/Signal Design, Brockton MA
Main Street/Forest Street Intersection Railroad Preemption Traffic/Signal Design, Wakefield MA
Walkers Brook Drive/General Avenue Intersection Traffic/Signal Design, Reading MA
Fort Leonard Wood MO, Major Planning and Design Study
Hunter Army Airfield GA, Major Planning and Design Study
Misawa Air Base, Japan, Major Planning and Design Study
Patrick Air Force Base FL, Major Planning and Design Study
Barksdale Air Force Base LA Airfield Pavement Repair, Full Design
Dam Neck Naval Reservation VA, Gate-Area Operations Study
K.I. Sawyer AFB MI, Gate-Area Design

PARKING STUDIES AND DESIGN

Parking studies include assessing parking demand and supply, with solutions such as the planning of new parking facilities or the reduction of demand through management. Representative projects follow.

Concord Family YMCA, Concord NH
Babson College, Wellesley MA
Downtown Everett, Everett MA
Natick Center, Natick MA
Falmouth Hospital, Falmouth MA
Cloverleaf Center Shopping Center, Natick MA
Patrick Air Force Base FL
Southern New Hampshire Medical Center, Nashua NH
Staples Shopping Center, Nashua NH
Burger King, Merrimack NH
Washington Street Developments, Wellesley MA

LITIGATION SUPPORT AND EXPERT TESTIMONY

Hazarvartian's litigation support and expert testimony has involved research, analysis, expert opinions and expert testimony related to accidents; traffic operations and safety; and appeals of municipal development approvals. Representative cases follow.

Airport Curbside Operations, Warwick RI
The Outlet Center Site Circulation, South Burlington VT
Intersection Design Safety, North Andover MA
U.S. Route 7 Design, South Burlington VT
Hannaford Supermarket, Lowell MA
Groveland Fairways, Groveland MA
Rite-Aid Pharmacy, Henniker NH

David W Fisher

978.996.5713 m | dfisher430@comcast.net

PROFESSIONAL REGISTRATION

Commonwealth of Massachusetts
Registered Landscape Architect No. 937

AFFILIATIONS

Director of Design, CC at Play, 2012-2017
Former Chair, Concord Zoning Board of Appeals
Member and Design Director, The Robbins House, Concord, MA

SUMMARY OF QUALIFICATIONS

- Self motivated and organized professional, skilled in managing and leading "in-house" and consultant teams to achieve project goals.
- Clear communicator and team builder with strong commitment to mentoring others
- Dedicated team player, with creative problem solving skills at all organizational levels.
- Vision-oriented, committed to developing and maintaining excellent client relations.
- Fluent in MA Wetlands design, planting, construction

PROFESSIONAL EXPERIENCE

Dec. 2011 to Present — Fisher Design Group, LLP., Concord, MA: Owner

- Providing Project Management for additions and renovations to numerous small to large scale residential landscape projects in the greater Boston metropolitan area.
- Providing design and construction documentation for commercial, day care, municipal, healthcare and senior living projects.
- Providing wetland permitting and construction review services.

1985 to 2011 — Levi + Wong Design Associates, Inc., Concord, MA: Senior Associate/Project Manager
Larson Associates, Inc., Arlington, MA: Project Manger
Keyes Associates, Inc., Waltham, MA: Landscape Architectural Department Manager
Akira Yamashita and Associates, Boston, MA: Landscape Architect/Urban Designer

Pre 1985 — National Park Service, Golden, CO
Office of Coastal Zone Management, Boston, MA
Department of Environmental Management, Wetlands Restriction Program Boston, MA
Department of Natural Resources, Concord, MA

EDUCATION

Master of Landscape Architecture (MLA, 1985)
The University of Michigan, Ann Arbor, Michigan
Bachelor of Science, Environmental Design (BS, 1975)
The University of Massachusetts, Amherst, MA

RELATED SKILLS

Proficient in Microsoft Word, Microsoft Excel,
Proficient in ArchiCAD (Graphisoft CAD)
Knowledgable in AutoCAD
Proficient in Microsoft Power Point
Experienced in contract review, project budgeting and tracking

REPRESENTATIVE LIST OF PROJECTS

PUBLIC

The Robbins House, Concord, MA (FDG)
Site Design for historic property, signage, outdoor improvements coordination with National Park Service
Building relocation planning and implementation

Carlisle Honor Roll, Carlisle, MA (FDG)
Design and Construction Management for Honor Roll Monument on Historic Carlisle Town Common

Boxborough Veteran's Memorial, Boxborough, MA (FDG)
Design and Construction Management for Veteran's Memorial Monument and Relocation of WW1 Boulder monument.

Alcott Elementary School Outdoor Classroom, Concord, MA (FDG)
Design and Construction Management for Outdoor Classroom

Robbins Memorial Town Hall, Arlington, MA (FDG)
Design Services for Interior Renovations to historic structure

COMMERCIAL

One Brookline Place, Brookline, MA (FDG)
Landscape renovation and ADA accessibility improvements at medical office building

788 Boston Post Road, Groton, MA (FDG)
Landscape renovation and ADA accessibility upgrades. ConTech drainage planting design.
New vestibules, ramps, stairs, plazas, lighting and plantings

460 Totten Pond Road, Waltham, MA (LWDA)
Landscape renovation and ADA accessibility upgrades
New vestibules, ramps, stairs, plazas, lighting and plantings

Buildings 1800, 1900 and 2000, Westborough, MA (LWDA)
Landscape renovation and ADA accessibility upgrades
New vestibules, ramps, stairs, plazas, lighting and plantings

HEALTHCARE AND SENIOR LIVING

New England Rehabilitation Hospital, Woburn, MA (LWDA)
Design Services for Renovations to Inpatient Rehabilitation Wings
Design Services for Renovations to Entry Lobby Atrium (Study)

Braintree Rehabilitation Hospital, Braintree, MA (LWDA)
Design Services for Renovations to Inpatient Rehabilitation Wings and Outpatient Clinic

The Gables at Winchester, Winchester, MA (LWDA)
Design Services for extensive exterior renovations to patio spaces, parking

Edgewood Retirement Community, North Andover, MA (LWDA)
Design Services for Addition to existing facility

D'Youville Senior Care, Lowell, MA (LWDA)
Design Services for New Assisted Living Center and Hospice Facility

Mary Anne Morse Nursing Home, Natick, MA (LWDA)
Design Services for New Assisted Living Facility

Watertown Senior Center, Watertown, MA (FDG)
Design Services for New Construction

URBAN DESIGN & MASTER PLANNING

Hamaoka Golf Village, Shizuoka Prefecture, Japan (AYA)
Design study to develop 500 acres of hillside, wooded land for luxury condominiums, hotel and guest cottages, spa, conference facilities and two 18-hole golf courses.

Marina Kawage, Mie Prefecture, Japan (AYA)
New marina and clubhouse development on what once was agricultural land (rice paddies). The clubhouse and marina was completed in 1993.

WGBH Long-Range Master Plan, Cambridge, MA

Charles River Upper Basin Master Plan, Cambridge & Boston, MA
Logan Airport/Bird Island Flats, Tunnel Portal & Interchange Design, Boston, MA
S. Boston/Third Harbor Tunnel, Tunnel Portal & Highway Design, Boston, MA
Service/Admin. Complex-Third Harbor Tunnel, Design, Boston, MA
Vent Buildings #6 & 7, Third Harbor Tunnel, Design, Boston, MA

WETLAND RELATED

Concord Carlisle at Play, Concord, MA (FDG)
Vice President, CC at Play, Director of Design. Directed 3 phase renovation/addition project including: 2 baseball fields, 2 softball fields, 6 tennis courts, synthetic turf field, multi-purpose field, lighting, irrigation at the Concord Carlisle Regional High School. Oversaw wetland design, construction and response to emergency flooding and repair.

Brookhaven at Lexington, Lexington, MA (FDG)
Design Services for new 43 unit assisted living building and extensive exterior renovations to existing assisted living facility including patio spaces, green roof, accessible walkways, plantings, parking and circulation. Wetland plantings, stormwater basin plantings and construction administration.

Carleton Willard Village, Bedford, MA (FDG)
Design Services for planting and buffering for Zoning Board of Appeals. Buffer planting and drainage area planting design and construction administration.

Residential Projects: Newton, Concord, Carlisle, Newton, Sudbury, Weston, Natick, Holliston
Notice of Intent, RDA filings, presentations and construction services. Design Services for extensive exterior renovations including outdoor kitchens, patios, lighting, swimming pools, hot tubs, pergolas, etc.

OTHER

Primrose at Natick Day Care Center, Natick, MA (FDG)
Design Services for site planning and design services for new day care complex in Natick, MA including exterior landscape improvements including accessibility, parking, circulation, play areas and planting.

Joanne Langione Dance Center, Newton, MA (FDG)
Design Services for extensive exterior landscape renovations including accessibility, parking, circulation.

K-12 & HIGHER ED

University of Rhode Island, RI, Center for Coastal Studies, Coastal Design Institute
Acton Boxborough Regional High School, Acton, MA
Barnstable High School, Barnstable, MA
Trottier Middle School, Town of Southborough, MA
Chenery Middle School, Belmont, MA
Trum Field, Somerville, MA
West Taunton Athletic Complex, Taunton, MA
Mansfield High School, Mansfield, MA
Pembroke High School, Pembroke, MA

PUBLICATIONS

Perceptual Landscape Evaluation: A Framework for Coastal Sand Dune "Protection and Land Use Control". April, 1985. Unpublished Masters Thesis, University of Michigan, Ann Arbor.
Preliminary Resource Assessment for Wilderness Study Areas Contained in H.R.-1214. U.S.D.I., N.P.S., Rocky Mountain Regional Office, 1984.
Long Range Capital Outlay Plan. Div. of Forests and Parks, Office of Planning and Program Dev. Dept. of Environmental Management, June, 1982.
Northeast Sector Swimming Study. Dept. of Environmental Management, May, 1981.
An Atlas of Coastal Resources, Volumes I & II. Office of Coastal Zone Management, June, 1977.
Open Space Plan, Town of Concord. Dept. of Natural Resources, Spring, 1977.

OHI Engineering, Inc.
Engineers & Environmental Scientists

44 Wood Avenue
Mansfield, MA 02048
(508) 339-3929

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2023 FEE SCHEDULE

Principal PE/LSP	$ 195/hour
Senior Project Manager Environmental/PG/LEP/LSP	$ 175/hour
Senior Project Manager Environmental	$ 170/hour
Engineering Operations Manager	$ 170/hour
Senior Project Manager – Engineering	$ 160/hour
Project Engineer/Scientist	$ 145/hour
Senior Survey Technician	$ 135/hour
Staff Engineer/Scientist	$ 120/hour
Engineer/Scientist I	$ 95/hour
CAD Drafter	$ 90/hour
Environmental Technician	$ 90/hour
Clerical	$ 70/hour

Services of Others

OHI will occasionally engage the specialized services of subconsultants and subcontractors to participate in a project. The cost of such services plus a 15% service charge shall be invoiced to the Client.

Reimbursable Expenses

Reimbursable expenses will be invoiced to the Client at cost plus a 15% service charge.

Equipment

Photoionization Detector	$80/day
Particle Counter/DustTrak	$80/day
4-Gas Meter	$80/day
Peristaltic Pump & Battery Pack	$55/day
Oil/Water Interface Probe	$55/day
Water Level Meter	$40/day
Hammer Drill and Bits	$225/day
Hand Auger	$75/day
Service Vehicle	$150/day
Field Filtration Materials	$30/sample
Groundwater Sampling Materials	$30/well
Anemometer	$80/day
PPE (Level D)	$55/day
XRF Meter	$3,000/week

Plots - B&W	$0.70/sf
Plots – Color	$3.00/sf
Plots – Rendering	$6.50/sf
Presentation Board	$12.00 each
Copies – B&W Letter	$0.15 each
Copies – B&W Ledger	$0.35 each
Copies – Color Letter	$0.35 each
Copies – Color Ledger	$0.70 each
Report Bindings – Letter	$12.00 each
Report Bindings – Ledger	$16.00 each
Large Format Digital Scan	$11.00 each
Robotic Total Station	$350/day

Note: We reserve the right to modify the Professional Fee Schedule at any time during the current year

Abby Kelley Foster Charter School
Facilities & Finance Committee / Board of Trustees

Facilities Department – Monthly Report February 2023

AKFCS Facilities Department:

Full rollout of the new CMMS System (Jira)
The platform to support all IT, Facilities, and Janitorial requests were rolled out. The system is more user-friendly, allows the requester to interact with the assigned tech/team member, and also provides graphs and metrics to both Gabriel and I, so we can see where the need is greatest.

Grants, bids, and notices:
I have been working with Heidi, Alisha, and Michelle on an energy grant bid document, which will allow us to update the 42 ES fan coil units to be more energy efficient and allow us, in principle, to get these units onto an interface along with the boilers and chiller to allow for easier use and access to troubleshooting.

Ongoing work regarding a door safety/security grant. In principle, we are looking to move away from the keycode system and towards an encrypted keyfob system. This will mean upgrading the buffer zone entry doors and frames and placing keyfob systems on each entry door at HS, MS (inclusive of the buffer zone and BRM entry doors), and ES. We are also looking at upgrading the HS entry doors along with the ES entry doors.

Again, along with Heidi and Alisha's help have been creating a Cure Notice to send to our current Janitorial vendor, who is not meeting their obligation per their contract. I believe the Notice is in the hands of our Lawyer before it gets issued to the vendor.

Upgrading of Vendors:
Regarding Patrick's question in the November meeting, I have been looking at our vendors and how we can strengthen relationships or bring back vendors with historic site knowledge. We now have a preferred vendor for Electrical work, and they have the capacity and expertise to provide the level of service befitting our district.

I am looking to schedule a meeting with our old vendor for the HVAC systems.

Also, as a part of this, we are working towards streamlining our monitoring systems for Fire Suppression and Security systems. We currently utilize 3 companies/entities for overseeing those 2 systems. During the recent very cold snap, the monitoring system failed us. The WFD called to tear into us about not letting them know about a particular system that failed. During that conversation, it was relayed that they actually monitor that building and should have been letting us know about the system failure. They have corrected the protocols, and we shouldn't see this repeated.
We are currently working with 2 vendors to look at our options for the Elevator contracts and potentially upgrading equipment as needed.

ES installation of Interior and Exterior security cameras:
We have now completed the interior portion of the project. We are utilizing Renaud for the exterior part, and they should start and finish this during the February vacation week.

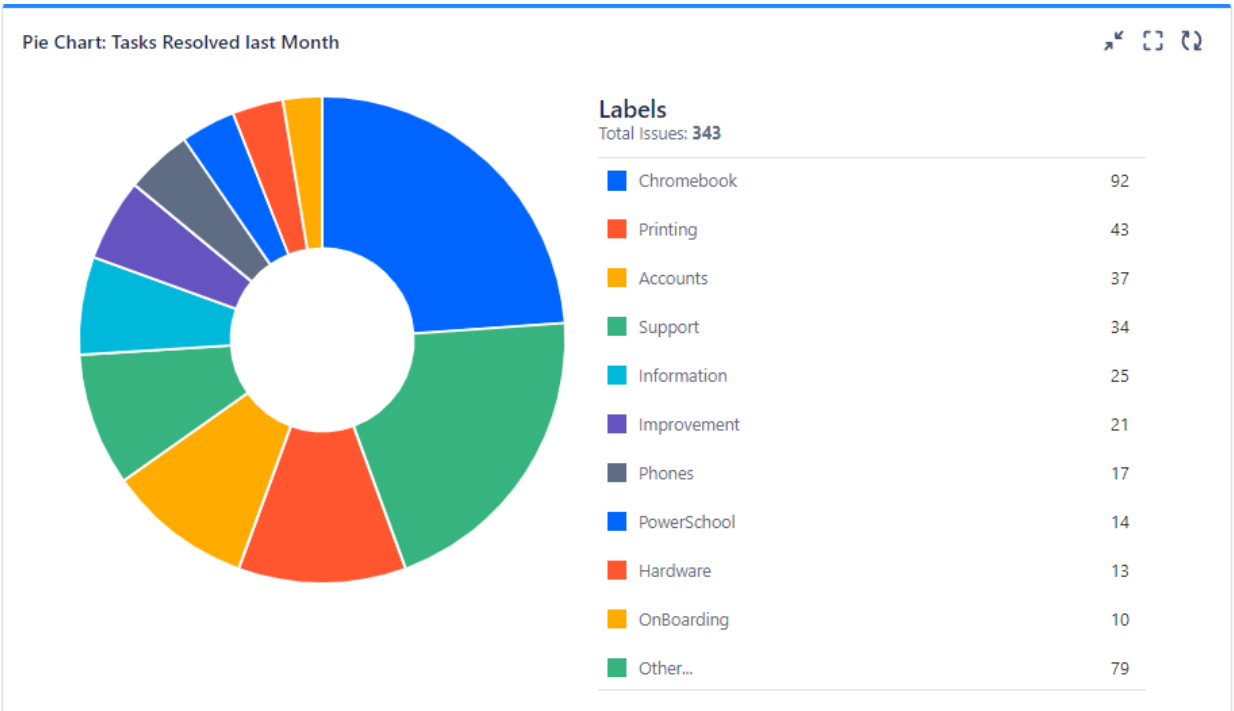
ES Basement storm door installation:
I will be meeting with Bluesky on 2/17/23 to go over the details of the installation of the doors during the February vacation week.

Projects for February vacation week:
As well as the installation of the Storm Doors and Exterior Camera project at ES. We have upgraded the Activity Center doors and frames, front and rear entry. The installation of a Fire suppression system in the recently purchased freezers at Elementary schools. HVAC bid walks, trying to set up a meeting with O'Briens to discuss our playground at Elementary school.

New Hires in the team:
We welcomed Irma into our team on 2/06. Irma applied to be part of our Daytime custodian team, having previously worked at MS through our current Janitorial vendor. I also have an interview scheduled for another Maintenance tech for the day shift next week.

IT Updates 2/2023

- Last Months more common Issues
    - 343 Resolved tasks (not including alerts)
    - Top 3 categories
        - Chromebooks (Break-fix)
        - Printing
        - Account related issues



- IT Projects
    - Powerschool Implementation
        - More Data Imports
            1. We have a working System!
            2. Data is limited but importing continues every week
        - Enrollment and Lottery Update
    - New Surveillance Camera Server Installation
    - Setup a new Storage System for Data redundancy and backup
    - IT Portal is Live
        - Facilities and IT requests can be done from this page
        - Increase visibility of our main issues, better planning, reports etc.

- A few examples of day to day work
    - IT Support

        - Student Chromebook Inventory
        - Replace chromebook Screen
        - Change Projector bulb
    - System Admin
        - Setup new network Jacks for Copier in ES Basement
        - Troubleshoot cameras and server issues
        - Upgraded fiber cables on HS Switches
    - Database Admin
        - Populated and Student data for the new system
        - Met and lead SIS Implementation meetings
        - GPO policy edits related to Printers
    - Teamwork
        - Firewall implementations to secure network
        - Improve monitoring systems and notifications
        - Improvements for our Surveillance systems
        - Implement processes and procedures