Stormwater Program Administrator

Proposal for Engineering Services

November 22, 2016

Prepared For:

Radnor Township

Stephen Norcini, P.E.
Director of Public Works and Engineering
Radnor Township
301 Iven Avenue
Wayne, PA 19087

Prepared By:

Borton-Lawson
3897 Adler Place
Bethlehem, PA 18017

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November 22, 2016

Stephen Norcini, P.E.
Director of Public Works and Engineering
Radnor Township
301 Iven Avenue
Wayne, PA 19087

RE: Radnor Township Stormwater Program Administrator

BL No.: 2016-2405-002

Dear Mr. Norcini:

Borton-Lawson greatly appreciates the opportunity to provide you our proposal for Stormwater Program Administrator. The proposal is based on the Request for Proposals for Stormwater Program Administrator, dated November 2016.

Our qualifications show, Borton-Lawson is ready to provide Stormwater Program Administration and Engineering services to Radnor Township. Our experienced engineering professionals are skilled in all aspects of stormwater management including the development of numerous watershed and county based Act 167 Stormwater Management Plans as well as the implementation of the Municipal Separate Storm Sewer System (MS4) program. Our extensive experience in the development of watershed and river models allows us to understand how stormwater flows through a watershed and effectively design solutions to address the root cause of stormwater and flood management problems.

Our extensive experience working on stormwater management planning for Delaware, Chester, and Bucks Counties has allowed us develop an understanding of the many challenges municipalities are facing with respect to stormwater problems and the need for a knowledgeable team of experts to provide stormwater engineering services. We believe our knowledge of stormwater management and municipal engineering experience is of value to Radnor Township. We look forward to the opportunity to discuss your needs.

Thank you for considering our firm. If you should have any questions, please do not hesitate to contact me at 484.821.0470, Ext. 2108 or via email at bkutz@borton-lawson.com.

Sincerely,

Leonard J. Smith, II, P.E.
Drainage Discipline Manager

Brian E. Kutz, P.E.
Land Planning & Design Service Leader

Bethlehem
Harrisburg
Pittsburgh
State College
Wilkes-Barre

BETHLEHEM
3897 Adler Place
Bethlehem, PA 18017

Phone: 484.821.0470
Fax: 484.821.0474

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I. Statement of Understanding

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Township of Radnor Pennsylvania

A. Radnor Township and Stormwater Management

Located in Northern Delaware County, Radnor Township is part of the greater metropolitan Philadelphia area, with much of the Township generally centered about the US Route 30, Mainline Corridor. Over the last 50 years, this portion of the county has experienced intense and rapid growth. Whereas comprehensive stormwater management, managed on a watershed basis, was not implemented prior to the turn of the century, this intense growth without effective stormwater management, became a precursor to many of the stormwater problems currently experienced in the Township.

Radnor Township contains four major watersheds, the Darby Creek in the west, the Gulph Creek in the North, Meadowbrook Run in the southeast and the Ithan Creek in the central portion of the watershed. The Gulph Creek watershed flows to the northeast into the Schuylkill River, while the remaining portions of the Township flow into the Darby Creek and toward the south.

Although development has caused stormwater-related problems throughout the Township, the most acute problems appear concentrated in the Ithan Creek Watershed. Ordinarily the upper portion of watersheds, do not experience intense stormwater runoff problems. However, the combination of the aged drainage infrastructure in the Wayne Area along with the rapid and dense growth have resulted in frequent and significant problems.

Uncontrolled stormwater runoff and ineffective stormwater management can result in a host of problems, some more obvious than others, but each can have significant deleterious effects on water resources. These problems include flooding, erosion, sedimentation, streambank stability, groundwater recharge, water quality, and thermal impacts. A cursory review of the nature of the problems within the Township indicates most of the documented problems relate to flooding of streets and homes. It is understandable that the Township desires to improve the living conditions within the township by addressing some of these issues, but it is important to understand the interconnectivity of the watershed before moving forward with projects. Without a holistic approach to the watershed and the resolution of these problems, correcting one problem can easily transfer the problem to a different location, or cause a different problem elsewhere in the Township.

To begin to address stormwater related problems in the watershed, the Township has undertaken several studies to identify, evaluate, and rank problems. These studies identified an assortment of different project types to begin to address stormwater related problems within the Township. Typical projects on the Master List of projects include:

- Culvert Replacements
- Culvert Analyses
- Stormwater Ordinance Updates
- Storm Sewer Replacements
- Storm Sewer Cleaning
- Regional Detention/Retention
- MS4 Compliance
- Rain Gardens

Based on our experience, we are confident that you will agree that Borton-Lawson is very familiar with these types of projects and has completed many projects of similar nature throughout Pennsylvania.

It is understood that Radnor Township desires to be a leader in stormwater management and prefers to implement green infrastructure solutions to stormwater related problems wherever possible. As such, whenever possible, preference should be given to solutions using bioretention, infiltration, stormwater wetlands, porous pavement, green roofs, rain gardens, natural stream channel design, etc. Typically, it is preferred to treat stormwater as close to its point of origin as possible. However, in certain instances achieving the stormwater management objective may be unobtainable without regional controls, which should be reserved for large problems, with significant impacts, that cannot otherwise be controlled with smaller facilities.

In 2014 Radnor Township implemented a stormwater fee to finance the Stormwater Management Fund in order to start to address the most pressing stormwater issues in the Township. It is understood the fee is based on lot size for single family residential properties, and on impervious area for other developed

properties. Therefore, it is imperative to track, document, assess and reassess development within the Township to ensure the appropriate fees are charged and to continue to finance the Stormwater Fund.

The Stormwater Fund will finance a consultant to administer the stormwater program in the Township as well as fund capital improvement projects to address the stormwater problems. It is understood that there may be small special projects that arise, which may be assigned to the Stormwater Program Administrator (SPA) to complete; however, large capital improvement projects will be designed using a separate requests for proposals which the SPA will not be permitted to pursue.

B. Scope of Services

The Stormwater Program Administrator (SPA) will administer the Stormwater Program in conjunction with Township Staff, the Stormwater Management Advisory Committee (SWMAC), and the Board of Commissioners including the following:

- Assessment
- Design
- Regulatory Compliance
- MS4 Permit Compliance
- Capital Projects

In order to assist Radnor Township on improving the living conditions in the Township, specifically those issues related to stormwater, and to further facilitate the desire of the Township to be on the cutting edge of stormwater management, Borton-Lawson is prepared to provide the following scope of services in response to Radnor Townships Request for Proposal for an SPA.

1. Development of Requests for Proposals

The Township's Stormwater Fund is specifically intended to fund projects related to correcting the most pressing stormwater problems in the Township. It is understood that most of these projects will be completed using independent contractors, separate from the SPA position. To support the Township in completing specific projects, Borton-Lawson will prepare Requests for Proposals, related to stormwater projects, present the proposals to the Township for approval, revise the proposals at the direction of the Township, develop appropriate selection criteria for selecting a consultant, and present proposals to the appropriate Township Committees.

Whereas the number of projects associated with this task is undefined per the SPA request for proposal, **the fees associated with this work, are not included in the retainer fees provided with this scope of work**. However, for small-project proposals, with a value of products and services of less than twenty-thousand dollars ($20,000), Borton-Lawson anticipates completing the aforementioned RFP and associated work for an estimated Lump Sum Fee of approximately eighteen-hundred dollars ($1,800) per each small-project proposal.

2. Workshop & Planning Charrettes

As part of the Scope of work for this project, Borton-Lawson will organize and lead up to a maximum of three (3) design workshops or planning charrettes with the public, Stormwater Management Action Committee (SWMAC), and Township Staff to facilitate proactively addressing stormwater problems in the Township. A major component of our work developing Act 167 Stormwater Management Plans across the state required, coordination with municipal engineers, municipal engineers committees, and the public through implementation workshops. Therefore, we intend to capitalize on our work experience to complete this portion of the scope of work. Prior to the meeting, Borton-Lawson will coordinate with the Township to identify the purpose and content of the meetings, notify respective parties of the workshop schedule and purpose, prepare presentations and/or handouts to facilitate discussion, and follow-up with respective parties, as needed to complete the objectives of the workshops. For this portion of the scope it is assumed that each event will not last more than two (2) hours.

3. Stormwater Project Coordination

The Township's Stormwater Program is not a new program but the continuation of a multi-year effort to address stormwater problems in the watershed. The overall program will consist of many projects, some in the planning process, some in construction, some in design, and yet others on hold until more urgent

projects, with higher priority, are completed. Borton-Lawson will work with Township to maintain and manage their list of stormwater projects.

As part of the Project Coordination task, Borton-Lawson will review payment requests to ensure that any work, services or product to be paid for under the Stormwater Fund, fulfills the terms of the contract used to authorize or purchase the work, services or product, and is paid for with the appropriate funds. Borton-Lawson will monitor the Fund and provide the Township timely notifications of any significant divergence from programmed expenditures.

Lastly, to supplement the services provided under Task 1, Borton-Lawson will review responses to the Township's request for proposals against the proposal specific selection criteria, rank respondents, and provide the Township with an indiscriminate, logical and justified award recommendation for each proposal prepared as part of Task 1.

4. Stormwater Fund Coordination

Most, if not all of the stormwater improvement projects undertaken by the Township are expected to be paid for from the Township's Stormwater Fund. Therefore, it is very important to maintain accurate billing information with respect to the use of the land (Single Family Residential or Other Developed Properties) and the amount of impervious surface in the case of Other Developed Properties. Borton-Lawson will assist the Township in maintaining and updating its database used to assign the stormwater fee based on changes in ownership of parcels, changes in use of the property, and changes in impervious area. It is anticipated that this work will be initiated by building permits, grading permits, requests for Subdivision and Land Development Approvals, and certain zoning approvals such as lot consolidations. Geographic Information Systems (GIS) will be used to geospatially track and coordinate changes to the Stormwater Fee. The use of GIS, aerial Imagery, land development plans, building permits and as-built plans will all be used by Borton-Lawson to help the Township resolve disputes related to the assigned Stormwater Fee. It is assumed that the all base data used to update the GIS for the Township associated with this task will be provided by the Township.

5. GIS Program Administration

Borton-Lawson has been using GIS for years to complete both rudimentary tasks, such as map making, and complex analyses used to evaluate watershed hydrology and land use. As such, we are prepared to provide support to the Township's GIS services with updates necessary to complete the Stormwater Program Administrator (SPA) duties.

6. SWMAC/Commissioners Meetings

It is understood that the overall purpose of this position is to provide the Township with technical, analytical and managerial duties with respect to stormwater related problems in township and projects related to the Stormwater Fund. In order to keep Township Officials and the Stormwater Management Advisory Committee (SWMAC) informed of stormwater issues and the Fund, Borton-Lawson will attend up to twelve (12) SWMAC meetings and up to four (4) Board of Commissioners Meetings. During these meetings Borton-Lawson is prepared to update the respective participants on all matters related to the services contained in this proposal and provide technical guidance related to stormwater issues in the Township.

7. Fieldview Stormwater Problems

It is recognized that unforeseen circumstances can be expected to occur within the Township which may require experienced consultation from our team of stormwater experts. Therefore, members of our team are available and prepared to conduct both scheduled and unscheduled field investigations, of unforeseen circumstances creating stormwater related problems within the Township, as needed and on a moments notice. As part of these meetings Borton-Lawson is prepared to provide a cursory rapid assessment of the problems as they arise, so that the Township may make quick decisions on the significance, urgency, potential effects, and magnitude of costs of their inactivity or activity. This scope of work assumes this task will require no more than twenty-four (24) to complete. If no fieldviews are required, the time allocated to the fieldview of stormwater problems in this task may be reassigned to additional meetings

with the Township on stormwater related issues, as discussed in Task 6 above.

8. Stormwater Problem Area Analysis

As conditions in the Township change and new projects are identified, it will be necessary to provide a preliminary assessment of new problems, and potentially a reassessment formerly identified problems. Borton-Lawson is very familiar with and comfortable with assessing an array of stormwater problems and their potential effects. To support the Township in assessing problems, Borton-Lawson will, on a case-by-case basis, use its modeling experience, its experience with regulatory agencies and its construction experience to conduct alternatives analyses and feasibility studies; develop preliminary and realistic construction cost assessments to help the Township program costs: and prepare detailed specifications to define the required work and materials. To further assist the Township in construction of the assigned projects Borton-Lawson will provide the requisite construction oversight of the individual projects, which depending on the complexity and nature of the project may include construction inspection as well.

As the number of projects, type of projects and extent of services required to complete this portion of the scope of work is undefined, **the fees necessary to complete this part of the scope of services are not included in the fee for this proposal**. Fees to complete this work will be provided to the Township for consideration at the time the projects are assigned.

9. MS4 Planning

An important part of maintaining the Township's stormwater drainage system is keeping up with the MS4 permit requirements. Borton-Lawson has experience helping several of our current municipal clients maintain their drainage systems by assisting them with their MS4 reporting requirements. However, recent changes to the MS4 program will require additional planning and reporting requirements not previously required of municipalities. With this said Borton-Lawson is prepared to help the Township staff and the SWMAC maintain and update their existing reporting and plan activities, conduct new analyses and provide information to comply with new MS4 regulatory requirements.

The Radnor Township municipal separate storm sewer system operates under the NPDES General Permit No. PAG130102. The NPDES General Permit for stormwater discharges from MS4 facilities requires the Township to operate a stormwater management program (SWMP) to address the minimum control measures (MCMs).

On June 4, 2016, the PADEP published a final, renewed NPDES General Permit for stormwater discharges from municipal separate storm sewer systems (PAG-13). Significant differences between the renewed 2018 General Permit and the previous 2013 General Permit include changes to:

- Annual Reports
- Pollutant Reduction Plans (PRPs)
- Pollutant Control Measures (PCMs)
- Eligibility Criteria
- Authorized Non-Stormwater Discharges

Most notable of the changes is that for the 2018 General Permit submission new or updated PRPs are required for MS4s that discharge to local surface waters impaired by nutrients and/or sediment. The 2018 General Permit includes specific pollutant load reduction requirements.

The tables provided on the next page list surface waters that receive either directly, or within five miles downstream, stormwater discharges from the Radnor Township MS4 and are considered impaired. The MS4 requirements for each of systems discharging to impaired waters varies but at a minimum must provide pollutant control measures that address:

Appendix B: Pathogens (e.g. Fecal Coliform) in stormwater discharges to impaired waters:

Appendix C: Organic compounds (e.g. PCB) in stormwater discharges to impaired waters:

Appendix E: Nutrients (e.g. Nitrogen and Phosphorus) and/or sediment (e.g. inorganic solids) in stormwater discharges to impaired waters.

I. STATEMENT OF UNDERSTANDING

Impaired Downstream Waters	Requirement(s)	Other Cause(s) of Impairment
Gulph Creek	Appendix E-Siltation (5)	Water/Flow Variability (4c)
Browns Run	Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)
Darby Creek	Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)
Cobbs Creek	Appendix B-Pathogens (5), Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)
Foxes Run	Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)
Camp Run	Appendix C-PCB (5)	Cause Unknown (5), Water/Flow Variability (4c)
Finn Run	Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)
Abrahams Run	Appendix C-PCB (5)	Cause Unknown (5), Water/Flow Variability (4c)
Valley Run	Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)
Schuylkill River	Appendix C-PCB (4a)	

Impaired Downstream Waters	Requirement(s)	Other Cause(s) of Impairment
Doom Run	Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)
Julip Run	Appendix C-PCB (5)	Cause Unknown (5), Water/Flow Variability (4c)
Miles Run	Appendix C-PCB (5)	Cause Unknown (5), Water/Flow Variability (4c)
Kirks Run	Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)
Little Darby Creek	Appendix C-PCB (5)	Cause Unknown (5), Water/Flow Variability (4c)
Mill Creek	Appendix E-Nutrients, Siltation (5)	Water/Flow Variability (4c)
Saw Mill Run	Appendix C-PCB (5)	Cause Unknown (5), Water/Flow Variability (4c)
Meadowbrook Run	Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)
Hardings Run	Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)
Ithan Creek	Appendix C-PCB (5), Appendix E-Siltation (5)	Cause Unknown (5), Other Habitat Alterations, Water/Flow Variability (4c)

The requirements applicable to Radnor Township relating to the remediation of impaired waters are as follows:

The Township must implement Pollutant Control Measures (PCMs) for waters impaired by Pathogens and follow Appendix B in discharges to:

- Cobbs Creek

The Township must implement Pollutant Control Measures (PCMs) for waters impaired by priority organic compounds (e.g. Polychlorinated Biphenyls (PCBs)) and follow Appendix C in discharges to:

- Browns Run
- Darby Creek
- Cobbs Creek
- Foxes Run
- Camp Run
- Finn Run
- Abrahams Run
- Valley Run
- Schuylkill River
- Doom Run
- Julip Run
- Miles Run
- Kirks Run
- Little Darby Creek
- Saw Mill Run
- Meadowbrook Run
- Hardings Run
- Ithan Creek

Radnor Township must submit a Pollutant Reduction Plan for reducing sediment (siltation) and follow Appendix E of the permit in discharges to:

- Gulph Creek
- Browns Run
- Darby Creek
- Cobbs Creek
- Foxes Run
- Finn Run
- Valley Run
- Doom Run
- Kirks Run
- Mill Creek (nutrients and siltation)
- Meadowbrook Run
- Hardings Run
- Ithan Creek

Since the scope of work and the individual components of the MS4 program which the Township will require assistance with are undefined and the amount of work required to satisfy the new regulatory requirements may be significant, **the fees necessary to complete this part of the scope of services are not included in the fee for this proposal**. Fees to complete this work will be provided to the Township for consideration at the time the projects are assigned.

10. MS4 GIS Coordination

It is understood that the Township is in the process of cleaning, televising and inspecting its storm sewers. To help the Township maintain accurate records with respect to MS4 requirements and its drainage system, Borton-Lawson will use its GIS capabilities to document the location, type of work and extent of maintenance completed on storm sewers owned by the Township. For the purposes of this scope of work it is assumed the effort associated with this task will be minimal and not require more than twelve (12) hours of work.

11. Maintenance of Master Stormwater Project List

It is understood that the Township maintains a list of currently active and prospective future stormwater projects. Borton-Lawson will help the Township maintain its list of both active and inactive stormwater projects by updating the Master List on a monthly basis to account for changes in project costs (including expenses), project duration and priority of work. Borton-Lawson will coordinate with the Township Commissioners and SWMAC to keep its Master List of projects up to date and inform the Finance Department of all changes to the list in order to effectively budget for current and future projects.

12. SWMAC Administration

In relation to Task 6, Borton-Lawson will coordinate with the Township to provide an agenda for all SWMAC Meetings, prior to the start of the meeting, prepare appropriate handouts for subject matter related to the agenda items, and record meeting minutes of issues discussed at the meeting.

On the Friday prior to each SWMAC Borton-Lawson will prepare and issue a monthly status report, using a standard format, which will include updates on budget, finance, updates on the Master List of projects, a list

of new resident concerns and the status of current projects.

Both the status report and meeting minutes will be distributed electronically. It is anticipated that all handouts for any given meeting will not consist of more than ten total (10) pages, and no more than fifty (50) black and white copies of the handouts will be required for any given meeting.

13. Stormwater Fund (Assessment of Program Costs)

Associated with Task 11, Borton-Lawson will notify the Township of any "at-risk" active projects that are trending to significantly diverge from planned and programmed costs. To mitigate the impact of these costs on existing projects, Borton-Lawson will suggest to the Township changes to active and prospective projects to minimize the impact of the at-risk projects. Borton-Lawson will notify the Township of suggested changes that should be applied to the costs of future prospective projects to effectively plan for future expenditures for inactive projects based on trends identified with active projects. If the Township concurs with the suggested alterations to the programed costs for active and inactive projects, Borton-Lawson will update the Master List accordingly. Borton-Lawson will verify that current funding levels are appropriate to pay for active projects and inform the Township of suggested changes to the Stormwater Fee or program necessary to maintain a healthy program into the future. The project costs maintained on the Master List of Stormwater Projects will be used by Borton-Lawson to provide annual program costs to the Township Staff when developing the next year's annual budget.

II. Qualifications

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Township of Radnor Pennsylvania

A. Firm Introduction

Borton-Lawson Engineering Inc. (Borton-Lawson) is a multi-disciplined, Pennsylvania-based, ENR Top 500 engineering and architectural design firm. With 160 employees and five offices located throughout Pennsylvania (Lehigh Valley, Wilkes-Barre, Pittsburgh, State College and Harrisburg) Borton-Lawson is strategically located to conveniently assist most of our clients with an assortment of engineering needs. Our organization is structured to support clients in the government, oil and gas, energy, healthcare, education, industrial, and transportation market sectors. In addition to an assortment of private land development, industrial and institutional clients, we have extensive experience routinely working on both large and small projects for local and county governments, as well as state agencies.

Over the past 28 years Borton-Lawson has established a professional reputation based on a commitment to project excellence and innovative solutions. Our commitment to making our Client's Vision a Reality has resulted in some of the region's most impressive and award-winning projects.

Borton-Lawson's Lehigh Valley office is located in Bethlehem, approximately 60 minutes from the Township's municipal building. Our Bethlehem office has over 30 professionals experienced in various disciplines, with each of the company's major disciplines represented in the office. Most importantly, the Bethlehem office is the home of our water resources service with 12 engineers that have extensive experience with stormwater management and are dedicated to stormwater solutions. Furthermore, an additional 130 skilled professionals located company-wide supplement the Bethlehem office.

Borton-Lawson employees use Dell laptops and desktop computers. Workstations include Precision T3610s and T3500s with Xeon processors, 12-16 GB RAM, solid state drives, and 2-4 GB 3D video cards, supported by Dell servers. All computer systems are equipped with the latest industry software and are able to complete designs using multiple CAD platforms, Geographic Information Systems and many varied and complex engineering software applications. In addition, Borton-Lawson utilizes Canon and HP multi-function printers and wide format printers for local printing and scanning. We are committed to implementing the latest technology, including 3D modeling and advanced software to better serve our clients, improve collaboration, and maintain a high level of security.

Over the years, Borton-Lawson has completed several projects in the vicinity of Radnor Township, Including the Darby-Creek Act 167 Plan of Delaware County, the Valley Creek Act 167 Plan for Chester County and the Trout Creek Watershed Study and BMP Analysis for Tredyffrin Township. The same personnel that successfully completed those projects remain with the company and are available to assist Radnor Township with its Stormwater Program Administration. Borton-Lawson does not have any current projects within Radnor Township.

As a full service multi-disciplined engineering firm, Borton-Lawson employs a wide array of engineers and technical staff includings civil, transportation, electrical, structural, and mechanical, engineers; landscape architects, environmental specialists and surveyors. It is anticipated that most of the disciplines will not be needed for the Radnor Township Stormwater Program Administration. However, based on the nature of the prospective work there may be a limited need to provide technical support on certain assignments with personnel from Borton-Lawson's other disciplines (e.g. survey and environmental). Borton-Lawson's work load remains strong but given the size of our firm and the flexibility of our organization, the firm has ample capacity to provide multiple staff on a regular basis to complete the scope of work for the Radnor Township's Stormwater Administrator Postion.

B. Commitment to Our Clients

Clients are at the core of our service. It is this ideology that sets us apart from the rest. Borton-Lawson crafts solutions around clients' unique visions to create strategies that promote transparency in production, and collaboration among stakeholders.

Guided by this ideology we develop plans to define project goals and objectives, to specify tasks and milestones, to manage resources and talent, and to associate budgets and timelines for completion. This process helps identify design alternatives, and other

valued added solutions, which safeguard timelines, budgets, and the quality of design.

With carefully planned milestones and controls, Borton-Lawson helps clients stay on the critical path to a successful project completion.

To demonstrate this commitment to you Borton-Lawson will:

Serve as a professional agent to the Township and work with the public to maximize understanding and optimization of benefits.

Commit to the public health, safety, and welfare.

Respond to the needs of the Township.

Adapt to the numerous types of project challenges and to the diverse needs of the Township and community.

Be Proactive and use design concepts which consider constructability, risk and uncertainty, and long term operation and maintenance.

Aggressively pursue viable cost-effective solutions without impacting the primary objectives.

Advance Our Teams Knowledge of the Township's stormwater issues at a rapid rate.

Be Technically Superior as a team of professionals who know stormwater management and provide designs sensitive to the community while meeting all objectives of the Township.

Commit to Multi Criteria Decision Analysis (MCDA) to evaluate projects in an open and transparent way.

Borton-Lawson's client focus, passion for quality, commitment to project deliverables and dedicated service is evidenced by our broad spectrum of clients, some who have chosen our services for the first time and others whom we have served for years.

C. Borton-Lawson Advantage

Borton-Lawson is ready to provide stormwater engineering services to Radnor Township. The experienced engineering professionals at Borton-Lawson are skilled in all aspects of stormwater management. With our completion of numerous stormwater related projects in Delaware and Chester Counties we thoroughly understand Radnor Township's need for a knowledgeable team of experts to provide stormwater engineering services. We are prepared to provide the highest quality deliverables within the timeframe necessary to meet and exceed Township's needs.

Stormwater Experience: Our skilled staff has completed numerous watershed and county based Act 167 Stormwater Management Plans across Pennsylvania. The most recent studies were completed in Chester, Delaware, and Luzerne Counties. Our extensive experience in the development of watershed and river models allows us to understand how stormwater flows through a watershed and effectively design solutions to address the root cause of stormwater and flood management problems.

Municipal Experience: Borton-Lawson has a long history of working with municipalities. We have represented 37 municipalities in Luzerne and Northampton Counties in various capacities. Our municipal engineering capabilities include, but not limited to, Municipal Separate Storm Sewer Systems (MS4) compliance, grant writing, design and construction services for municipal projects, stream restoration and flood mitigation, and the development and implementation of stormwater management ordinances.

Regulatory Experience: Borton-Lawson has a successful record of accomplishment working with county, state, and federal regulatory agencies. Our approach includes proactively engaging regulatory agencies early-on and considering them as stakeholders in the project.

Construction Experience: In addition to our capabilities of studying problems and designing solutions, we are experienced with the construction of complex drainage, stormwater management, and flood mitigation projects. Our construction experience provides us with an awareness of potential construction issues that others may overlook during design.

To assist the Township with addressing its stormwater needs, Borton-Lawson proposes a four step process to help the township manage it stormwater program.

1. Identify – Engage Township personnel and residents in order to keep Township Records and Officials up to date on the location, magnitude, and frequency of stormwater related problems.

2. Prioritize – Maintain, refine and/or develop a methodology that is tailored to the Township to help the Township and its residents systematically rank problem areas and prioritize which problems should be addressed first. This approach allows the Township to methodically allocate finite resources in a logical, indiscriminate manner.

3. Understand the Cause – Use existing data and engineering tools (e.g. hydrologic and hydraulic models) to fully understand the magnitude and cause of stormwater problems. Some problems may be obvious and simple to address but the most severe problems are often caused by several factors that require thorough analysis and careful understanding to fully comprehend the complexity of the problems.

4. Resolve – Investigate and explore potential solutions using the most appropriate engineering tools to eliminate, mitigate or remediate problems. Assist the Township in selecting the preferred solution. Design and permit the preferred solution. Communicate and disseminate information to the public to educate the public on the impacts, limitations, and effectiveness of the preferred solution. Facilitate and oversee construction.

D. Firm's Ability & Knowledge

Borton-Lawson has a strong background in providing stormwater management and municipal engineering services to local government. Our firm's ability and knowledge is a follows:

Principal Stormwater Engineer and Municipal Experience

The Principal Stormwater Engineer for the project will be Leonard J. Smith II, PE. Mr. Smith is the manager of Borton-Lawson's Drainage Discipline and has been with the company for eleven years. He earned a Master's Degree in Water Resources and Environmental Engineering from Villanova University and has 17 years of experience working on an array of issues associated with stormwater management, drainage design, flooding, bridge design, erosion control, and permitting. He has managed projects working directly with several municipalities and county governments across eastern Pennsylvania seeking to address many different types of water resource issues. Brian E. Kutz, PE, of Borton Lawson's Land Planning and Design Division will support Mr. Smith with his knowledge of municipal ordinances, site design, stormwater management and municipal functions related to engineering. Mr. Smith's and Mr. Kutz's experience, and that of Borton-Lawson's other key staff, provide a wealth of knowledge and experience from their work with many municipal and county governments across Pennsylvania, such as the City of Easton, Borough of Nazareth, Tredyffrin Township, City of Wilkes-Barre, Paradise Township, Berks County, Chester County, Delaware County, Lehigh County, Luzerne County, and Northampton County.

Stormwater Management for Local projects

With the completion of over 30 watershed studies, dozens of bridge replacements, and many flood studies, Borton-Lawson is widely recognized as a leader in the field of stormwater management, flood mitigation, and drainage design. Borton-Lawson has attained this reputation by hiring experts in the field of stormwater management, several possessing advanced degrees in water resources. Recognizing a strong need for water resource engineering Borton-Lawson, since its creation more than 25-years ago, was focused on providing its clients with engineers skilled at analyzing problems, planning projects, and designing solutions to a variety of stormwater related needs of our clients. Although other divisions within the company, such as the Land Planning and Design are skilled at stormwater management for site design, Borton-Lawson's Drainage Discipline is exclusively dedicated to working on projects dealing with water resources. The members of this group are well versed at selecting the appropriate hydrologic and or hydraulic model (HEC-1, HEC-2, HEC-RAS, HEC-HMS, XP-SWMM, HY-8, etc.) to achieve the objectives of each study or design. Combining the strengths of Borton-Lawson's Drainage Discipline with the skills of the engineers in its Land Planning Division makes Borton-Lawson equally skilled at evaluating and designing projects as small as a bioretention for an urban parcel or as large as a 23-square mile hydrologic model for a watershed, such as the Valley Creek.

Stormwater Capital Improvement Planning

Borton-Lawson has worked on various aspects of capital funding projects for several of our clients, including the Luzerne Flood Protection Authority with the Hicks Creek/ Abrahams Creek Project, and with

Tredyffin Township with the Trout Creek Project. Typically these projects begin with an alternatives analysis to evaluate the effectiveness and impacts of several feasible approaches to the project. The alternatives analysis is followed by a cost benefit analysis to help select the preferred alternative. Project with a high cost to benefit ratio are typically not advanced further. Once a preferred alternative is selected all of the costs for the municipality to own and operate a facility are considered. These costs include property acquisition, design, construction, maintenance, and repairs. Once facility costs are determined a present value of future costs analysis is completed to determine the funds necessary for the project.

In the case of Tredyffrin Township, a large regional stormwater basin was conceptually evaluated for a commercial area in the Township to better control stormwater runoff in the center of the watershed, to improve flooding conditions and stream channel erosion along the downstream tributary. Although the Township decided not to pursue the project, the performance information was used by the Township to create a stormwater overlay district in the central portion of the watershed, and assign performance criteria for developers seeking limited relief from certain aspects of the Township's Zoning Ordinance.

Design, Permitting, and Bidding of Stormwater projects

Borton-Lawson has extensive experience working on design, permitting and bidding of stormwater projects. These projects vary in size and scope ranging from small site designs for land developments to very large transportation facilities for PennDOT, and from special stormwater management projects for our municipal clients to new management facilities designed for existing campus expansions. Possibly the largest recent project we have completed is the South Valley Parkway Project which is a new limited access highway in Luzerne County. This project spanned three watersheds, required 17 structural stormwater management facilities, several infiltration basins, four stormwater filters, numerous vegetated channels, three stream crossings, one waterway relocation, one wetland mitigation facility, a Joint Permit, and a NPDES permit. Design, permitting, and preparation of bid documents for this project was the responsibility of Borton-Lawson.

We have a proven history of regularly and successfully working with Local County Conservation Districts, Pennsylvania Department of Environmental Protection, Pennsylvania Fish and Boat Commission, Federal Emergency Management Agency and the Army Corps of Engineers. We are equally comfortable with obtaining Pennsylvania Chapter 105 and 106 authorizations for projects as we are with obtaining Nation Wide Waterway Permits and NPDES Permits. Whether working for our Municipal clients or for PennDOT most of our projects require preparation of bid packages and clear concise contract documents to minimize complications during construction.

One of the great strengths of Borton-Lawson is that we have extensive experience planning, solving, designing, permitting, bidding, and constructing projects. This experience helps us understand and avoid complications that slow down projects and add expense.

Identifying, Prioritizing, and Addressing Local Flood Control Projects

A recently completed and very complex project designed by Borton-Lawson that exemplifies our firm's experience with flood controls was the Bloomsburg Flood Protection Project in Columbia County. This critically important project required the design and permitting of a 1-mile long earthen levee and floodwall to protect several properties in the Town of Bloomsburg from two sources of flooding, the Susquehanna River and the Fishing Creek. Initially the project was planned to be two separate and distinct systems. However, Borton-Lawson used value engineering principles to develop a better design, combining both systems into a single flood protection facility that improved performance and maintained project costs similar to the original estimate. Successful completion of this project required close coordination between nearly all of Borton-Lawson's disciplines (e.g. Drainage, Survey, Structural, Electrical, Environmental, Water/ Waste Water, Civil and Transportation). Throughout the design and construction Borton-Lawson used value engineering to guide the design and prioritize the needs of the project, interests of the community, and desires of the project stakeholders. The project required careful analysis and design dealing with the relocation of numerous existing utilities; the selection of the appropriate wall/levee configuration to address both flood protection and aesthetics; the construction of a pump station to evacuate interior drainage, the protection and mitigation of existing wetlands, the design of gate-closures to maintain access (pedestrian, roadway and rail), and constructability issues involving

constructing the wall/levee around an operational manufacturing facility and the Bloomsburg Fair.

Although the Bloomsburg Flood Protection project is the most recent example of Borton-Lawson's experience with flood control projects, it is not our only experience. For more than two decades Borton-Lawson has been involved with the maintenance, repair, expansion, and upgrading of the Wyoming Valley Levee System that protects the city of Wilkes-Barre and its surrounding communities from flooding from the Susquehanna River. Over the years Borton-Lawson has engaged in a variety of projects along the Levee, involving pump stations, interior drainage, pressure conduits, and structural design that helped Borton-Lawson gain sufficient experience to be selected for the Bloomsburg Flood Protection project.

Regulatory Water Quality Requirements

Borton-Lawson's experience in Municipal Separate Storm Sewer System (MS4) has included work with several municipalities in the area over the past several years. At its root, the firm has been responsible for the continual development of Stormwater Management Programs (SWMPs) that fulfill the requirements of the six Minimum Control Measures (MCMs) as required by PA DEP and the EPA to maintain coverage under a General or Individual NPDES permit for stormwater discharge. Fulfillment of the MCMs requires development and implementation of written program plans, including the Public Education & Outreach Program (PEOP), Public Involvement/Participation Program (PIPP), Illicit Discharge Detection & Elimination (IDD&E) Program, Pollution Prevention/Good Housekeeping Program (PPGHP), and the Chesapeake Bay Pollution Reduction Plan (CBPRP), that address Best Management Practices (BMPs) necessitated under the SWMP, all of which Borton-Lawson has produced and maintained for our MS4 clients.

We pride ourselves in not only on knowing the current MS4 regulations, but also by staying ahead of the curve through preparation for upcoming updates and requirements to the NPDES MS4 Program. In 2018, PA DEP will be rolling out its new Permit and every MS4 municipality will be required to apply for coverage under the new Permit by submittal of an administratively complete and acceptable Notice of Intent (NOI). Borton-Lawson has been preparing for this change through review of the Draft 2018 Requirements and by attending training in both February and March of 2015 (and will do so again in June and July of 2016). Some of the new requirements for 2018 include the expansion of the CBPRP to include Pollutant Control Measures (PCMs) and Pollutant Reduction Plans (PRPs) for the specific management and reduction of Metals (e.g., Iron, Manganese, and Aluminum), AMD, Pathogens (e.g., Fecal Coliform), Priority Organic Compounds (e.g., PCBs and pesticides), and nutrients (e.g., nitrogen, phosphorus, and sediment).

Firms Experience with Grants

Borton-Lawson has worked on several projects involving different aspects of grants. The Bloomsburg Flood Protection was partially funded with a grant, and although Borton-Lawson did not apply for the funding we were aware of the performance requirements, and the design limitations of the grant funding. Borton-Lawson is currently working with the City of Wilkes-Barre exploring grant opportunities to fund reconstruction of a floodwall along the Solomon Creek. To support the City in its exploration of alternative funding sources for the project Borton-Lawson is investigating the feasibility of different wall configurations to achieve the performance objectives of the grant.

Borton-Lawson also completed several projects for Paradise Township, Monroe County using Growing Greener Funding to design stormwater management facilities at several sites and develop a variable width riparian buffer for the Township. Also related to grants, the end result of the Trout Creek Study conducted for Tredyffrin Township was the creation of plans, specifications and cost estimates for two stormwater management facilities to be used by the Township to obtain a grant to construct the facilities. Borton-Lawson provides technical assistance, project descriptions, alternatives analyses, project costs and cost-benefit analyses to support grant applications prepared for our clients.

Green Infrastructure

Borton-Lawson is committed to designing green infrastructure wherever appropriate. A good example of the firm's experience with green infrastructure is the Sullivan Park project in the City of Easton. With the Sullivan Park Stormwater Wetland Project in Easton, Borton-Lawson worked with Bushkill Creek Stream Conservancy, and the City of Easton to complete the design of a stormwater wetland facility in the College Hill section of the City. The project was designed to

alleviate channel erosion and drainage problems downslope of the park. Concept designs for the facility were initially developed by Lafayette College Engineering Students. Borton-Lawson was hired after completion of the concept plans to finalize the design.

Upon starting the project, Borton-Lawson quickly identified an existing wetland in the park that prohibited full implementation of the student's concept plans without impacting the existing wetland. Instead of proceeding with the concept design and the loss of the wetland Borton-Lawson redesigned the facility, around the existing wetlands, to preserve the wetlands and yet achieve the same stormwater management performance objectives. As part of its redesign, Borton-Lawson incorporated a forebay, benching, permanent pool, aeration device, extended flow path, and extended detention to improve water quality of the effluent from the facility. To achieve a natural looking facility, Borton-Lawson prepared a landscaping plan utilizing native plant species with the overall objective of using the park not just to achieve its stormwater management objectives but to also improve environmental awareness and augment existing habitat. This project was later recognized as the DCNR 2014 Green Park award winner.

Similar to the green infrastructure used on the Sullivan Park project, Borton-Lawson has comparable experience implementing green infrastructure design in waterways. On the Interstate 95/I-276 Project in Bucks County and the South Valley Parkway, in Luzerne County, Borton-Lawson used natural stream channel design methods on relocated channels with natural materials (field stone, boulders, live fascines, fiber roles, J-hooks, rock vanes, etc.) instead of hard armoring methods, such as, rip-rap, gabion baskets or paved channels, to stabilize the channels, improve water quality and enhance the aquatic habitat. Although not suitable for every location, Borton-Lawson is committed to using natural channel design methods where preferred by the client and in those locations where the materials will remain stable.

III. Services Summaries & References

Borton Lawson
ENGINEERING | ARCHITECTURE

Township of Radnor Pennsylvania

Municipal Separate Storm Sewer Systems (MS4)

Borton-Lawson's experience with Municipal Separate Storm Sewer Systems (MS4) has included work with several municipalities in the area over the past several years. At its root, the firm has been responsible for the continual development of Stormwater Management Programs (SWMPs) that fulfill the requirements of the six Minimum Control Measures (MCMs) as required by PA DEP and the EPA to maintain coverage under a General or Individual NPDES permit for stormwater discharge. Fulfillment of the MCMs requires development and implementation of written program plans, including the Public Education & Outreach Program (PEOP), Public Involvement/Participation Program (PIPP), Illicit Discharge Detection & Elimination (IDD&E) Program, Pollution Prevention/Good Housekeeping Program (PPGHP), and the Chesapeake Bay Pollution Reduction Plan (CBPRP), that address Best Management Practices (BMPs) necessitated under the SWMP, all of which Borton-Lawson has produced and maintained for our MS4 clients.

Additionally, the firm reports the yearly progress of the SWMP within the MS4 Annual Reports and is involved in the continuous management of the SWMP, which includes coordination for public education and involvement, illicit discharge monitoring, and design of stormwater BMPs among others, in collaboration with the municipalities to maintain good standing with PA DEP and the EPA. Finally, Borton-Lawson provides general consultation for MS4 solutions to daily issues our clients are faced with, regular coordination with DEP, preparation of stormwater mapping (such as Stormwater Outfall and Landuse Mapping), MS4 Educational Seminars, and Stormwater BMP Grant submittals.

The company prides itself not only on knowing the current MS4 regulations, but also by staying ahead of the curve through preparation for upcoming updates and requirements to the NPDES MS4 Program. In 2018, PA DEP will be rolling out its new Permit and every MS4 municipality will be required to apply for coverage under the new Permit by submittal of an administratively complete and acceptable Notice of Intent (NOI). Borton-Lawson has been preparing for this change through review of the Draft 2018 Requirements and by attending training in both February and March of 2015 (and will do so again in June and July of 2016).

Some of the new requirements for 2018 include the expansion of the CBPRP to include Pollutant Control Measures (PCMs) and Pollutant Reduction Plans (PRPs) for the specific management and reduction of Metals (e.g., Iron, Manganese, and Aluminum), AMD, Pathogens (e.g., Fecal Coliform), Priority Organic Compounds (e.g., PCBs and pesticides), and nutrients (e.g., nitrogen, phosphorus, and sediment).

MS4 Clients:

Plains Township, Luzerne County, PA - MS4 SWMP, including PEOP, PIPP, IDD&E, PPGHP, and CBPRP, and Annual Report submissions.

Kingston Township, Luzerne County, PA – MS4 SWMP, including PEOP, PIPP, IDD&E, PPGHP, and CBPRP, and Annual Report submissions.

Fairview Township, Luzerne County, PA – MS4 SWMP, including PEOP, PIPP, IDD&E, PPGHP, and CBPRP, and Annual Report submissions.

Kingston Borough, Luzerne County, PA – MS4 Annual Report submissions and CBPRP.

Hanover Township, Luzerne County, PA – MS4 Annual Report and PEOP, PIPP, IDD&E, PPGHP, and CBPRP.

Harveys Lake Borough, Luzerne County, PA – MS4 Annual Report submissions and general consultation.

Larksville Borough, Luzerne County, PA – MS4 Annual Report submissions and CBPRP. Assistance and guidance with preparation of MS4 Program with Wilkes University students.

Nazareth Borough, Northampton County, PA – MS4 Annual Report submissions and permit renewal packages every five (5) years. Additionally, an overall stormwater mapping plan was prepared and outfall discharges were monitored.

Client Contact Information:

Plains Township:
126 N Main Street
Plains, PA 18705
Primary Contact: Patricia Sluhocki
Municipal Secretary
Phone: (570) 829-3439
Email: plainspslu@comcast.net

Kingston Township:
180 East Center Street
Shavertown, PA 18708
Primary Contact: Kathleen Sebastian
Township Manager
Phone: (570) 696-3809
Email: ksebastian@kingstontownship.com

Fairview Township:
65 Shady Tree Drive
Mountain Top, PA 18707
Primary Contact: Russ Marhold
Fairview Township Supervisor
Phone: (570) 974-9676
Email: rmarhold@aol.com

The Municipality of Kingston:
500 Wyoming Avenue
Kingston, PA 18704
Primary Contact 1: Julie Norton
Municipal Secretary
Primary Contact 2: Adam Gober
Director of DPW
Phone: (570) 288-4576
Email: JNorton@kingstonpa.org

Hanover Township:
1267 Sans Souci Parkway
Hanover Township, PA 18706
Primary Contact: Samuel T. Guesto, Jr.
Township Manager
Phone: (570) 825-1271
Email: Sguesto@Hanovertownship.org

Tredyffrin Township: Trout Creek Watershed Study and Stormwater Best Management Practices Analysis

Berwyn, PA

Stephen Burgo, P.E., Tredyffrin Township Engineer
Tredyffrin Township
1100 Duportail Road
Berwyn, PA 19312
(610) 408-3617

Borton-Lawson worked closely with Tredyffrin Township officials to prepare a hydrologic study and hydraulic analysis of the Trout Creek watershed to identify, prioritize and evaluate the application of conceptual stormwater Best Management Practices (BMPs) within the watershed. The intent of the study was to identify opportunistic and strategic locations within the watershed where BMPs could be constructed to improve stormwater problems in the watershed. Sites varied in location and size from bioretention islands in commercial parking lots to rain gardens in residential areas; from underground infiltration basins installed beneath parking lots to large regional detention and retention facilities in commercial areas of the Township. The performance of the proposed BMPs was evaluated using the Trout Creek Hydrologic Model created specifically for the project.

In Phase II of the project, preliminary designs, for two conceptual BMPs evaluated during Phase I of the project, were developed for construction. The preliminary design package included an existing conditions plan; grading plan; erosion and sediment pollution control plan, construction details plan and a post construction stormwater management plan. Preliminary designs of both BMPs were designed to be compliant with Title 25, Chapter 102 Regulations of the PA Code, Chapter 181 of the Code of Tredyffrin Township; and NPDES permit requirements.

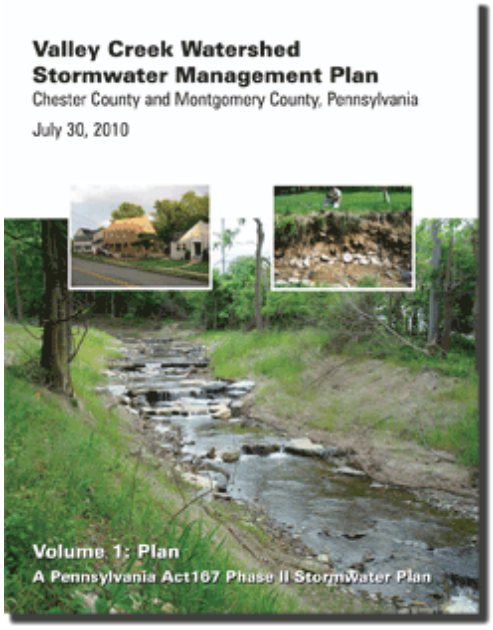
Chester County Water Resources Authority: Valley Creek Act 167 Phase II Plan

Chester County, PA

Janet Bowers, Executive Director
Chester County Water Resources Authority
60 Westhouse Road, Suite 260
West Chester, PA 19380
(610) 344-5400

The Valley Creek Watershed Act 167 Stormwater Management Plan was developed to comply with the requirements of the Pennsylvania Stormwater Management Act. Unlike other Act 167 Stormwater Management Plans, the Valley Creek Plan is unique because it was developed as an integrated stormwater management plan. The Valley Creek Watershed, over the past four decades, has been the subject of numerous scientific studies, in which many of these studies collected data, presented findings, developed conclusions and identified recommendations on ways to restore and preserve the watershed. Many of these studies focused on one particular aspect or portion of the High Quality Watershed and did not attempt to incorporate the findings into a consistent stormwater management strategy that could be applied equitably by the municipalities throughout the watershed. As an integrated stormwater management plan, the Valley Creek Act 167 Plan was developed to do just this. The Valley Creek Plan expanded upon the data, conclusions and recommendations contained in previous studies with supplemental data and analyses to develop a uniform and effective approach to stormwater management for the watershed.

The standards and criteria developed for the plan were supported by many complex and unique stormwater analyses, which are not typical of most stormwater management plans, to test the veracity of the stormwater management standards developed to address: groundwater recharge, streambank erosion, flood control, local drainage and water quality. Each of these standards was the modified and adjusted in negotiations with PennDOT to develop a similar set of standards that would be applied to state transportation projects.



With the mouth of the watershed located in the Valley Forge National Park, the Valley Creek Watershed has national, regional and local significance. Therefore, the plan development required significant input from the public and municipal representatives.

As part of the plan development and to help homeowners with the construction and implementation of stormwater management controls for small construction projects, such as residential additions, patios and driveway expansions, a Small Projects Manual was developed. This manual simplified stormwater management for small projects and put stormwater management into layman's terms to make implementation easy.

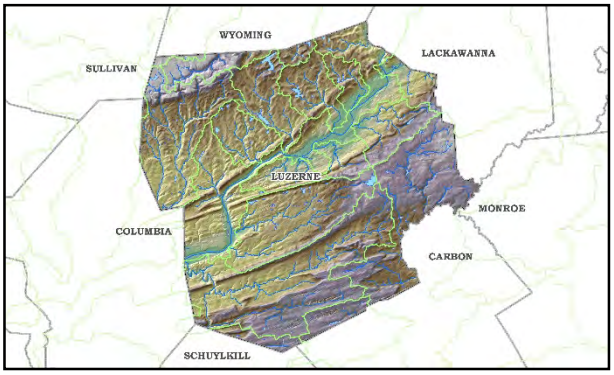
"I would like to take this opportunity to personally commend Borton-Lawson and its staff for the excellent work, product and engineering support provided to us for the Valley Creek Act 167 Stormwater Management Plan. This project was a very long and difficult project, complicated by many policy and technical issues. During the completion of the Plan, Borton-Lawson staff provided excellent engineering advice, efficient and effective engineering analyses and support, very responsive input, timely delivery, and quality product."

- Janet Bower, Executive Director Chester County Water resource Authority

Luzerne County Planning Commission: Luzerne County-wide Act 167 Phase II Stormwater Management Plan

Wilkes-Barre, PA

Nancy Snee, Senior Planner
Luzerne County Planning Commission
200 North River Street
Wilkes-Barre, PA 18711
(570) 825-1564



Borton-Lawson was responsible for developing the County-wide Act 167 Stormwater Management Plan for Luzerne County, PA. Borton-Lawson developed the Phase I Scope of Study in the spring of 2008, and began the Phase II planning process in the fall. Luzerne County experiences annual flooding issues in several areas throughout the County, and as a result, a detailed stormwater problem area analysis was conducted as part of this Plan in several watersheds. In the Abrahams Creek, Hicks Creek, and Nescopeck Creek, and Toby Creek watersheds, stormwater problem areas were evaluated through site visits, field data collection, and engineering calculations, and potential solutions were recommended to be pursued. Furthermore, additional hydrologic modeling of these watersheds was utilized for the development of specific stormwater management standards and criteria.

The Plan is guided by the needs of the County and its municipalities, and local involvement including stakeholder input through Planning Advisory Committee (PAC) meetings and an inventory of County characteristics using Geographic Information System (GIS) technology compatible with the County's GIS system, is a crucial component of this County-wide Act 167 Plan.

One of the key results of the planning effort was a single-purpose stormwater ordinance that incorporated standards and criteria for water quality control from small projects, and provided guidance for homeowners to implement backyard BMPs.

"On behalf of DEP's Act 167 Program, please accept our recognition and appreciation for the excellent job your team has done on the Luzerne County Act 167 Stormwater Management Plan. The Plan overall is excellent."

- Barry Newman, PADEP Chief of Stormwater Planning

City of Easton: Sullivan Park Stormwater Wetland Facility

Easton, PA

David Hopkins, Public Works Director
City of Easton
123 South Third Street
Easton, PA 18042
(610) 250-6683

Borton-Lawson worked closely with the City of Easton, Lafayette College and the Bushkill Creek Stream Conservancy to resolve a neighborhood drainage problem in the College Hill section of the city for this project. An existing unnamed tributary flowing through the western side of the park, was regularly overwhelmed with flow from the upstream watershed, which caused the water to surcharge the top of the channel and flood properties downstream of the park.

The conceptual design for the project was prepared by Lafayette College Engineering Students to mitigate drainage problems downstream of the park. Borton-Lawson was hired to complete the design and obtain regulatory approvals for the project. However, as part of its work Borton-Lawson discovered several site constraints that were not considered during the conceptual design which adversely impacted implementation of the project. Borton-Lawson then identified several mitigation options to address the site constraints and after identifying the most viable solution, completed the redesign and permitting of the facility. The modified facility was designed to collect

stormwater from the unnamed tributary, divert it to a stormwater wetland to manage rate and quality of the stormwater runoff and then return the water to the same unnamed tributary downstream of the park at a reduced flow thus improving drainage downstream of the park.

Sullivan Park was the recipient of DCNR's 2014 Green Park Award, which recognized the use of sustainable and green practices in making the park a place where people can enjoy natural resources.

Borton-Lawson completed the following tasks as part of the stormwater design:

- Identified and assessed existing wetlands and springs on the park property;
- Evaluated a range of potential stormwater Best Management Practices (BMPs) for implementation in the park;
- Assessed potential problems with the preliminary design including the potential for mosquito problems and West Nile Virus, changes in the recreational value of the park, and child safety regarding standing water in the wet portion of the basin;
- Evaluated and recommended an appropriate pump to aerate water in the wet pond area of the basin to minimize mosquito populations and improve the health of constructed wetlands;
- Identified wetland features that improved the aquatic and wildlife value of the park;
- Recommended design features such as viewing platforms, walkways, athletic amenities and other design elements that would enhance the recreational, educational, and aesthetic value of the constructed wetland in the park.

Luzerne County Flood Protection Authority: Hicks Creek and Abrahams Creek Flood Mitigation Detailed Feasibility Analysis

Exeter, Forty-Fort, Swoyersville, and West Wyoming Boroughs, PA

James Brozena, Executive Director
Luzerne County Flood Protection Authority
65 Reichard Street
Wilkes-Barre, PA 18711
(570) 825-2600

Borton-Lawson completed a comprehensive study of the flooding and drainage problems in the Hicks Creek and Abrahams Creek watersheds for the Luzerne County Flood Protection Authority. This multi-year, multi-faceted project was initiated by the Authority to better understand and identify solutions to chronic water related problems in the boroughs of Forty Fort, Swoyersville, West Wyoming, Wyoming and Swoyersville. Both of these watersheds outlet to the Susquehanna River which is protected by the Wyoming Valley Levee System. While this levee system protects the town from the Susquehanna River during times of high water; it creates interior flooding during periods in which the gates that allow Hicks Creek and Abrahams Creek to discharge to the Susquehanna River are closed. Borton-Lawson worked closely with the Authority, borough officials, watershed groups and residents in the area to complete three major components for the project.

Watershed Analyses:
Investigated mitigation measures to reduce surface flooding within the watersheds by providing reservoir storage in the upper watershed; restoring and stabilizing stream alignments; connecting low points in the lower portion of the watershed, that are often subject to flooding, to allow water to readily drain away from flood prone areas. The analysis evaluated the hydrologic/hydraulic and economic feasibility of adjusting the watershed topography to reduce flooding within the five boroughs.

Undiverted Abrahams Creek Study:
Evaluated stormwater problems in the watershed, identified by the county-wide Act 167 Stormwater Plan to identify potential solutions to the flooding in the watershed. The Undiverted Abrahams Creek was once part of the Abrahams creek watershed but was separated from the upper portion of the watershed with the placement of the levee. Borton-Lawson used hydrologic and hydraulic models of the watershed to develop a long-term strategy for mitigating flooding impacts from the Undiverted Abrahams Creek which were partially compounded by a series of flood factors associated with the levee and low terrain.

Groundwater Study Implementation:
Completed a groundwater study to analyze the response of the water table to the nearby Susquehanna River and watershed flooding. Automated and manual piezometers and staff gages were installed in the Hicks Creek, Abrahams Creek, and the Undiverted Abrahams Creek watersheds to evaluate the depth and response of groundwater to the river. The results of this analysis were incorporated into the dynamic hydrologic and hydraulic models used to evaluate the flood mitigation alternatives in the watersheds.

Bloomsburg SEDA Council of Governments: Bloomsburg Flood Management Project

Bloomsburg, PA

The Bloomsburg Flood Protection Project was originally configured as two separate systems to protect two large manufacturing facilities in Bloomsburg, PA – Autoneum North America and Windsor Quality Foods. Borton-Lawson proposed a U-shaped system that was about 3000 feet shorter in length that would protect both facilities, while also providing an opportunity to extend the wall in future to protect parts of the community to the east if more funding became available. The proposal was accepted by the two industries, Columbia County and the Town of Bloomsburg.

Borton-Lawson completed design of the 5600 lineal foot flood protection system in a little over a year due to the urgency in protecting more than 800 jobs. The project was complicated by the lack of eminent domain for more than 50 parcels requiring easements or takes. This required extensive public participation throughout the process. Other challenges included: wetland impacts requiring permitting from the Army Corps Of Engineering; major utility relocations; roadway realignments; a large stormwater pumping station; and a major crossing of two railroad lines, which required extensive design coordination with SEDA-COG Rail Authority.

SEDA-COG provided invaluable assistance with the administration of the project and real estate negotiations. The project is now out for construction bids, with the hope of it being awarded in early 2015.

Below are some project statistics:
System designed to Storm Lee Elevation (482.5) + 1.5-foot = 484.0 (Gage Reading – 34.25)

H-Pile Walls:
- Maximum Height – 13.5 feet
- 3,400 CY Slurry Trench- Seepage Cutoff
- 270 H-Piles, 32-feet long each

Levees:
- Maximum Levee Height – 16 feet

Roads/Access:
- 4,400 LF Road Reconstruction
- 2,800 LF Access Road Construction
- 7 Closure Structures

Railroad:
- 2 Switch relocations
- 2 Track realignments
- 2 Closure Structures

Sanitary Sewers:

- Sewer Relocations
- 3 Sanitary Sewers Pump Stations
- 6 Sanitary Sewers Control Structures
- 190 feet Replacement -1 of main interceptor sewers

Stormwater:

- 4 Stormwater Control Structures
- Snyder's Run Diversion
- One 30,000 GPM Stormwater Pumping Station

Electric:

- Avoidance of 69kV Electric line relocation
- Advance relocation of electric/telephone/communication distribution along West 5th Street

City of Wilkes-Barre
Solomon Creek Flood Protection Project

Wilkes-Barre, PA

City of Wilkes-Barre
40 East Market Street
Wilkes-Barre, PA 18711

Solomon Creek is a channelized waterway complete with a mix of concrete walls, earthen embankments, and overlapping bridges. The creek often floods and has caused significant damage to residential and commercial districts in the area, most recently in 1996.

Borton-Lawson performed a feasibility study to determine the best solution to periodic flooding, which according to detailed Hydraulic & Hydrologic (H&H) analyses were less than a 10-year event. Ten alternatives were investigated and three were carried forward for a detailed economic evaluation and benefits-to-cost analysis. Borton-Lawson coordinated with the U.S. Army Corps of Engineers (USACE), Baltimore District, the Pennsylvania Department of Transportation (PennDOT) and City of Wilkes-Barre to develop a solution with minimal impact on the surrounding community.

After detailed analysis, Borton-Lawson recommended redesign of the creek to a 48 foot-wide concrete U-channel with stop logs, construct an upstream detention basin and replace four deficient bridge structures. This recommendation fulfilled the goal of a 100-year level of protection.

Physical Setting: Geology and soils, hydrology, water quality, air quality, prime and unique farmland, American heritage rivers initiative, floodplain management, hazardous, toxic and radioactive waste, wetlands, terrestrial resources, rare, threatened, and endangered species, social and economic setting evaluation, cultural resources overview and recreation were considered.

Problem Identification: Major floods, recent flood damage surveys, flood damage estimates, average annual flood damages, needs and opportunities, study objectives and goals were identified.

Alternative Evaluations: Plan formulation rationale, management measures and preliminary plans, conclusions from preliminary screening, final array of alternatives, risk and uncertainty, basis for final alternatives, optimization and incremental analysis, alternatives 1 and 2 final analysis and recommendations were made.

Project components included design of levees and floodwalls, closure structures, bridge relocations, analysis and redesign of interior drainage facilities, utility coordination and relocations, interior flooding, induced flooding, environmental considerations, cultural considerations, acquisitions and relocations.

Project Management Plan included design, construction, and operations and maintenance considerations, emergency operations requirements, economic effects, project construction costs, annual costs, operation and maintenance costs, benefits/cost ratio and net benefits, effects of floods exceeding project design, sensitivity of cost contingencies, environmental compliance, project implementation, project schedule, public involvement and agency coordination.

The project's unique feature, a removable bridge parapet, can be quickly reconfigured from a bridge railing to a floodgate. A steel box railing was designed on hinges to allow the Emergency Management teams to swing the railings across the roadway. According to the USACE, this system was the first of its kind in the US.

IV. Execution and Resumes

Borton Lawson
ENGINEERING | ARCHITECTURE

Township of Radnor Pennsylvania

IV. EXECUTION AND RESUMES

Borton-Lawson crafts solutions around clients' unique visions to create strategies that promote transparency in production, and collaboration among stakeholders.

Guided by this ideology we develop plans to define project goals and objectives, to specify tasks and milestones, to manage resources and talent, and to associate budgets and timelines for completion. This process helps identify design alternatives, and other valued added solutions, which safeguard timelines, budgets, and the quality of design.

With carefully planned milestones and controls, Borton-Lawson helps you to stay on the critical path to a successful project completion.

PROJECT DEFINITION

Identify Client Initiatives/Needs
⬇
Define Scope of Work
⬇
List Work Tasks
⬇
Assign Staff
⬇
Define Schedule
⬇
Derive Fee

PROJECT EXECUTION

Notice to Proceed Issued
⬇
Derive Project Plan with Client
⬇
Project Kickoff
⬇
Create Deliverables
⬇
QC by Technical Staff
⬇
QA by Project Manager
⬇
Issue Deliverables
⬇
Project Closeout

RESULTS

Project Definition

Our approach is to focus on quality by using a project delivery process that yields predictive results. The same professional staff that defines the project then executes the project. This project delivery process establishes an early understanding of client needs that are then used to develop a customized solution.

Project Execution

The path to a successful project starts with defining its details. Client needs are identified and, when coupled with our expertise, used to develop an optimal solution. The solution is further refined into a detailed scope of work containing specifics on how client needs will be met. The solution is memorialized in a project specific work plan that is championed through project completion.

All deliverables are rigorously reviewed by multiple professionals starting with a self-review by all who initially created the work product. A quality control review is then performed by senior professionals for technical accuracy, coordination, and clarity. Finally, a quality assurance review is performed by the project manager, from a client perspective, to verify all client needs are embodied in the deliverables.

Results

Borton-Lawson does not simply sell services. We align ourselves with our clients by first obtaining their input. Services are then customized to provide solutions that meet specific client needs.

Borton-Lawson developed a management plan for the distribution of work assignments associated with the Township Stormwater Program Administrator Project. The general framework for this plan is located under the Teaming Arrangement/Organization Chart of the proposal. The organizational chart lists the team of dedicated professionals who will provide services to the Township.

The following key staff will lead our team:

Leonard J. Smith, II, PE
Principal Stormwater Engineer/Primary Point-of-Contact

Phone: (484) 821-0470 x 2232
lsmith@borton-lawson.com

The Principal Stormwater Engineer for the Township will be Leonard J. Smith II, P.E. Mr. Smith is the manager of Borton-Lawson's Drainage Discipline and has been with the company for eleven years. He earned a Master's Degree in Water Resources and Environmental Engineering from Villanova University and has 17 years of experience working on an array of issues associated with stormwater management, drainage design, flooding, bridge design, erosion control, and permitting. He has managed projects working directly with several municipalities and county governments across southeastern Pennsylvania seeking to address many different types of water resource issues.

Mr. Smith is skilled in all aspects of engineering related to stormwater management including watershed modeling, floodplain regulation, natural stream channel design, and bridge and culvert replacement. He has worked with municipalities to secure grants, understands the permitting process, and has planned and designed new stormwater management systems.

Brian E. Kutz, PE, MBA

Project Manager/
Secondary Point-of-Contact

Phone: (484) 821-0470 x 2108
bkutz@borton-lawson.com

Brian E. Kutz, P.E. will support Mr. Smith with his knowledge of municipal ordinances, site design, stormwater management and his familiarity with Bethlehem Township. Mr. Kutz is the land planning & design services leader for the Lehigh Valley. His primary responsibilities include project management, preliminary and final design of engineering tasks, resource coordination, and Quality Control/Quality Assurance (QA/QC). He is keenly aware of the challenges faced in the Lehigh Valley and is experienced in solving complex problems requiring close coordination with local, state, and regulatory agencies.

With over 12 years of experience in completing site engineering design and obtaining municipal approvals. Responsibilities have included, but not limited to, site feasibility studies, grading, erosion and sediment pollution control designs, stormwater management and post construction stormwater management designs, roadway reconstruction and utility designs, and hydrologic and hydraulic analysis for culvert and bridge replacements. He has worked or collaborated with agencies such as local municipalities and conservation districts, Pennsylvania Department of Transportation, Pennsylvania Department of Environmental Protection, New Jersey Department of Environmental Protection, and Norfolk Southern.

In addition to Mr. Smith and Mr. Kutz, the following staff will provide added depth and expertise:

Aaron M. Sisler, PE

Senior Civil Engineer/Municipal Engineer

Phone: (484) 821-0470 x 2105
asisler@borton-lawson.com

Mr. Sisler is a Senior Civil Engineer with more than 14 years of civil engineering experience. The past 8 years of experience has been focused on land development, subdivision, and municipal engineering. During this time, he worked in the capacity of a design engineer and project manager in both private and municipal stormwater projects.

Mr. Sisler has acted as the primary liaison between senior management, design professionals, township officials, regulatory agencies, developers, and contractors related to the approvals for residential and commercial development projects. He has a thorough understanding of the permitting process for both local (land development) and state approvals (NPDES and E&S), and has worked on municipal stormwater upgrades to address flooding along public roads. His experience extends to stormwater collection and detention systems for large campuses.

Stephen D. Boone, EIT

Senior Water Resources Specialist

Phone: (484) 821-0470 x 2133
sboone@borton-lawson.com

Mr. Boone specializes in water resources engineering with experience in watershed and hydrologic analyses, stormwater management and watershed planning, flood studies, stream and bridge hydraulics, and hazard mitigation planning. He has conducted several stormwater management and watershed studies as part of Pennsylvania's Act 167 Stormwater

Management program, with an emphasis on working with project stakeholders to identify stormwater issues in a community and developing practical and implementable stormwater management measures at the local level.

Mr. Boone has completed several All-Hazard Mitigation Plans as a risk assessment specialist, in which hazards posing a risk to communities such as flooding, winter weather, land subsidence, drought, wildfires, and others, were identified and evaluated in order to develop corresponding mitigation measures for the communities to implement.

Schedule Management

Regardless of the size of the assignment issued by the Township, schedule will be of utmost importance. Project schedules for larger assignments will be created using project management software starting with the required deliverables needed to complete the project and working backwards to develop the activities (tasks) and major milestones that make up the project's Work Breakdown Structure (WBS).

- Activity definition will identify the specific tasks which must be performed to complete each deliverable.
- Activity sequencing will be used to determine the order of work tasks and assign relationships between project activities.
- Activity duration estimating will be used to calculate the number of work periods required to complete work packages.
- Resource estimating will be used to assign resources to work packages in order to complete schedule development.

Once a preliminary schedule is developed, it will be reviewed by the team for resource assignment. The Township will then review, provide comment, and approve the schedule when in final form.

Roles and responsibilities for schedule development are as follows:

Principal Stormwater Engineer/Project Manager:

Facilitate work package definition, sequencing, and resource coordination with the project team.

- Create the project schedule.
- Validate the schedule with the project team and Township.
- Obtain schedule approval from the Township and baseline the schedule.

Project Team:

Participate in work package definition, sequencing, duration, and resource estimating.

- Review and validate the proposed schedule and perform assigned activities once the schedule is approved.
- Participate in reviews of the proposed schedule and approve the final schedule before it is base lined.

Township:

Review/comment on the proposed schedule and assists in its validation.

Quality Management

All members of the team will play a role in quality management. It is imperative that the team ensures that work is completed at an adequate level of quality from individual work to final project deliverables.

Roles and responsibilities for quality are as follows:

Township:

Approve quality standards. Review deliverables for compliance with quality standards expectations. Sign off/comment on project deliverables.

Principal Stormwater Engineer:

Quality management throughout the duration of the project including implementation of the Quality Management Plan and ensuring all tasks, processes, and documentation are compliant with the plan. Work with the project's quality specialists to establish acceptable quality standards. Communicating and tracking all quality standards to the project team and Township.

Quality Specialists:

Develop and implement the Quality Management Plan. Recommend tools and methodologies for tracking quality and standards to establish acceptable quality levels. Create and maintain Quality Control and Assurance Logs throughout the project.

Quality control for the Project will utilize tools and methodologies for ensuring that all project deliverables comply with approved quality standards. To meet deliverable requirements and expectations, we must implement a formal process in which quality standards are measured and accepted.

The Principal Stormwater Engineer will ensure all quality standards and quality control activities are met throughout the project. The Quality Specialists will assist the Principal Stormwater Engineer in verifying that all quality standards are met for each deliverable. If any changes are proposed and approved by the Township, the Principal Stormwater Engineer is responsible for communicating the changes to the project team and updating all project plans and documentation.

Quality assurance will ensure that standards are in place to maximize project efficiency and minimize waste.

The following Quality Specialists will be assigned to the Township to ensure QA/QC:

- Leonard J. Smith, II, P.E. – H&H/E&S/Permitting
- Brian E. Kutz, P.E. – Civil/Municipal

Risk Management

The approach for managing risks includes a methodical process by which the project team identifies, scores, and ranks the various risks. Every effort will be made to proactively identify risks ahead of time in order to implement a mitigation strategy.

For larger assignments a risk management requirement will be incorporated into the project specifications for construction. This will include risk scenarios related to safety and possible negative impacts to the project schedule and existing infrastructure. From a design standpoint, the most likely impact risks will be added to the project schedules to ensure that the necessary steps to implement the mitigation response are taken at the appropriate time during the schedule.

Communications Management

The Communications Management Plan sets the communication framework. It will serve as a guide for communication throughout the life of the projects and will be updated as communication requirements change. It defines the roles of the project team members, includes a communications matrix, sets communication conduct for meetings and other forms of communication.

The Principal Stormwater Engineer will take the lead in ensuring effective communications and develop a communications matrix with the Township. The communications matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it, and to whom to communicate.

Communications Conduct:

Meetings

The Principal Stormwater Engineer will distribute a meeting agenda at least two (2) days prior to any scheduled meeting and all participants are expected to review the agenda and request changes prior to the meeting. During all project meetings the Principal Stormwater Engineer will ensure that the group adheres to the agenda and a recorder will take all notes for distribution to the team upon completion of the meeting. It is imperative that all participants arrive to each meeting on time and all cell phones should be turned off or set to vibrate mode to minimize distractions. Meeting minutes will be distributed no later than 48 hours after each meeting is completed.

Email

All email pertaining to the Projects will be professional, clear, and provide brief communication. Email will be distributed to the correct project participants in accordance with the communication matrix above based on its content. All attachments will be provided in one of the organization's standard software programs and adhere to established company formats. If the email is to bring an issue forward then it should discuss what the issue is, provide a brief background on the issue, and provide a recommendation to correct the issue. The principal Stormwater Engineer will be included on any email pertaining to the projects.

Informal Communications

While informal communication is a part of every project and is necessary for successful project completion, any issues, concerns, or updates that arise from informal discussion between team members must be communicated to the Principal Stormwater Engineer so the appropriate action may be taken.

Leonard J. Smith, II, P.E.

Drainage Discipline Manager/Senior Water Resource Engineer

EDUCATION

B.S. in Chemistry and Biology
Messiah College

M.S. in Water Resources and Environmental Engineering
Villanova University

PROFESSIONAL LICENSE(S)

Professional Engineer, PA

Mr. Smith is the Drainage Discipline Manager and Senior Water Resource Engineer responsible for hydrologic and hydraulic modeling for highway river crossings, stream channel modeling, watershed assessments, stormwater management, drainage design and permitting. He is proficient in the use of HEC-RAS, HEC-HMS, HY-8, Arc-GIS, VTPSUM, Hydroflow and other stormwater modeling tools.

RELEVANT EXPERIENCE

PennDOT Drainage Manual Author/Training, Harrisburg, PA
Project Engineer responsible for writing and reviewing several Chapters of the PennDOT Drainage Manual. Subject matter included hydrology, hydraulics, stormwater management, highway drainage and construction management. Conducted training for PennDOT employees and design consultants on the PennDOT Drainage Manual. Presented training sessions on erosion control, culverts and stormwater best management practices. As part of the Chapter on Hydrology, Borton-Lawson developed new Rainfall Intensity-Duration-Frequency (IDF) curves, updating the 1986 version, Version 3 Atlas 14 data released by NOAA in August of 2006. These rainfall curves used for all PennDOT projects throughout the Commonwealth of Pennsylvania.

Act 167 Stormwater Management Plan, Valley Creek Watershed, Chester County, PA
Project Manager, responsible for the development of the Valley Creek Act 167 plan. Prepared hydrologic and hydraulic calculations for a 23 square mile watershed located in Chester County, Pennsylvania. Assisted in the development of stormwater management standards and criteria for inclusion in a model stormwater management ordinance which was adopted by municipalities in the watershed to control stormwater runoff from future development. Assessed and evaluated problem areas and obstructions for potential causes and means to resolve problems. Participated in Watershed Planning Advisory Committee meetings which oversaw the development of the plan. Assisted in the writing of the plan documenting the findings of the study.

Luzerne County Act 167 Stormwater Management Plan, Luzerne County, PA
Project Engineer managing the development of the Luzerne County Act 167 Stormwater Management Plan. Oversaw the development of a hydrologic models of the Nescopeck Creek, Hicks Creek, Abrahams Creek and Toby Creek watersheds located in northeastern, Pennsylvania. Assisted in the development of stormwater management standards and criteria established to manage post construction stormwater runoff in the watersheds. Assisted in the identification, assessment and evaluation of problem areas and obstructions for potential causes and means to resolve problems. Participated in the writing of the plan documenting the findings of the study.

Trout Creek Watershed BMP Retrofit Project, Chester County, PA
Project Manager responsible for the development of a hydrologic model of the Trout Creek Watershed, a 9 square mile watershed, in Tredyffrin Township. Worked with municipal engineering staff to review technical data for the watershed and compile a list of potential retrofit locations. Completed a field view of the problem areas and oversaw hydrologic and hydraulic calculations evaluating potential stormwater retrofit projects in the Township where existing and proposed stormwater management facilities could be altered to address current stormwater management problems in the watershed.

Hicks Creek / Abrahams Creek Flood Mitigation Study, Luzerne County, PA
Project Engineer, responsible for developing of a hydraulic model to assess existing flooding and evaluate problem areas in Exeter Borough. Proposed and evaluated several alternatives to resolve or mitigate existing flooding problems along the creek. Participated in public meetings for the project and proposed solutions to existing flooding.

PennDOT District 4-0, SR 3046 (South Valley Parkway), Luzerne County, PA
Oversaw the development of a post construction stormwater management plan, erosion and sediment pollution control plan, drainage system design, hydrologic and hydraulic analysis and Chapter 105 Permits and NPDES Permits for a 3 mile segment of new limited access highway in Hanover Township and Nanticoke Borough. Directed the development of a technical approach to achieving the projects post construction stormwater runoff controls in an area with difficult topography and significant site constraints using a combination of structural and nonstructural best management practices to obtain an NPDES permit for the project. Engaged and coordinated with the regulatory agencies responsible providing regulatory approval for the project and developed a hydrologic hydraulic analysis for the crossing of three watercourse by the proposed roadway alignment.

PennDOT District 5-0, SR 1002 (Main Street) Bridge, Northampton County, PA
Project Engineer responsible for the development of hydrologic and hydraulic computations for the replacement of a three-span, bridge over the Bushkill Creek in Tatamy. Completed hydrologic calculations and modeled stream hydraulics using HEC-RAS. Compared new water surface elevations with historic HEC-2 data prepared by FEMA. Prepared scour computations and developed scour counter measures to stabilize the inlet and outlet of the culvert. Modeled temporary staging using HEC-RAS which was needed to construct the replacement bridge.

PennDOT District 6-0, I95/I276 Interchange Project, Bucks County, PA
Project Engineer responsible for hydraulic computations assessing the impact of the highway widening on a parallel segment of the Mill Creek. Completed an alternatives analysis assessing the hydraulic performance of potential flood mitigation measures. Prepared a Letter of Map Revision to FEMA for the relocation of a 500-foot segment of the waterway to mitigate the impact of the Turnpike Widening on flooding.

Sullivan Park Stormwater Management Wetlands, Easton, PA
Project Manager, responsible for the design of a stormwater wetland for the City of Easton to alleviate drainage problems and function as an educational tool to increase environmental awareness. Completed hydrologic and hydraulic calculations supporting the design of the stormwater wetland. Prepared a grading plan, landscaping plan, erosion and sediment pollution control plan and engineer's cost estimate for the proposed improvements.

Brian E. Kutz, P.E., MBA

Land Planning & Design Services Leader

EDUCATION

Bachelor of Science, Civil Engineering
The Pennsylvania State University
University Park, PA

Master of Business Administration
Lehigh University
Bethlehem, PA

PROFESSIONAL LICENSE(S)

Professional Engineer PA, NJ

PROFESSIONAL AFFILIATIONS

Vice President, Lehigh Valley Chapter Pennsylvania Society of Professional Engineers

Alternate State Director, Lehigh Valley Chapter Pennsylvania Society of Professional Engineers

Lehigh Valley Council, Urban Land Institute

Mr. Kutz is the land planning & design services leader for the Lehigh Valley. His primary responsibilities include project management, preliminary and final design of engineering tasks, resource coordination, and Quality Control/Quality Assurance (QA/QC). He is keenly aware of the challenges faced in the Lehigh Valley and is experienced in solving complex problems requiring close coordination with local, state, and regulatory agencies.

Mr. Kutz has more than ten years of experience in completing site engineering design and obtaining municipal approvals. Responsibilities have included, but not limited to, site feasibility studies, grading, erosion and sediment pollution control designs, stormwater management and post construction stormwater management designs, roadway reconstruction and utility designs, and hydrologic and hydraulic analysis for culvert and bridge replacements. He has worked or collaborated with agencies such as local municipalities and conservation districts, Pennsylvania Department of Transportation, Pennsylvania Department of Environmental Protection, New Jersey Department of Environmental Protection, and Norfolk Southern.

RELEVANT EXPERIENCE

People First Federal Credit Union, Bethlehem Township, Northampton County, PA

The People First Federal Credit Union project consisted of the re-development of a previously developed site. The site design was especially challenging due to the combination of stormwater management requirements, underlying limestone bedrock, and possible sinkhole formations. Mr. Kutz contributed to the project by the leading the team through the land development approval process and serving as the principal project engineer. Mr. Kutz worked closely with local officials, the local conservation district, and the site contractor to develop a plan to obtain land development approval. He also led the site design, which included grading design, stormwater management analysis design, post construction storm water management analysis design, erosion and sediment pollution control design, as wells as obtained a low volume PennDOT Highway Occupancy Permit, PPL right-of-way encroachment permit, and all municipal approvals. In addition, a zoning variance was pursued and granted.

Borough of Pen Argyl Roadway Reconstruction, Northampton County, PA

Through the Community Development Block Grant program, the borough of Pen Argyl had the opportunity to reconstruct portions of their roadway system that were deteriorating. Mr. Kutz worked closely with local officials to develop roadway reconstruction plans that not only addressed the concerns of the deteriorating pavement structure but also the stormwater management

issues. The stormwater management improvements consisted of adjusting the roadway and associated sidewalk grading, as well as upgrading the storm sewer system to improve drainage. In addition, Mr. Kutz was cognizant of the ADA accessibility requirements and ensured that the driveway aprons and curb ramps were designed in accordance with the latest ADA accessibility guidelines.

Geisinger Health System, Montour and Luzerne Counties, PA
In support of Geisinger's healthcare campus facilities, Mr. Kutz has provided project management and engineering services for multiple campus master planning and land development projects. The projects include new buildings, building additions, roadway and parking lot reconfigurations, utility infrastructure upgrades, and associated site improvements. In addition Mr. Kutz has developed operation and maintenance manuals for each of the post construction stormwater management facilities.

New England Avenue, City of Allentown, Lehigh County, PA
Mr. Kutz performed the land development design for the new, over one mile long, highway project along the former New England Railroad right-of-way in the City of Allentown. The project, owned by the City of Allentown and designed to Pennsylvania Department of Transportation (PennDOT) standards, will serve as a major arterial road extending from Hanover Avenue to American Parkway. The American Parkway is proposed to extend from its current terminus near Front Street on the western side of the Lehigh River to a new interchange with Airport Road. The tasks included stormwater management analysis design, post construction storm water management analysis design, erosion and sediment pollution control design, and a Hydrologic Engineering Center – River Analysis System (HEC-RAS) analysis.

Aaron M. Sisler, P.E.

Senior Civil Engineer

EDUCATION

BS, Civil Engineering
Pennsylvania State University
University Park, PA

PROFESSIONAL LICENSE(S)

Professional Engineer PA

Mr. Sisler is a Senior Civil Engineer with more than 12 years of civil engineering experience. The past 8 years of experience has been focused on land development, subdivision, and municipal engineering. During this time, he worked in the capacity of a design engineer and project manager in both private and municipal stormwater projects.

Mr. Sisler has acted as the primary liaison between senior management, design professionals, township officials, regulatory agencies, developers, and contractors related to the approvals for residential and commercial development projects. He has a thorough understanding of the permitting process for both local (land development) and state approvals (NPDES and E&S), and has worked on municipal stormwater upgrades to address flooding along public roads. His experience extends to stormwater collection and detention systems for large campuses.

RELEVANT EXPERIENCE

Pocono Township Engineer, Monroe County, PA
Municipal Engineer responsible for land development and subdivision plan reviews, stormwater reviews for Act 167 compliance, and site inspections on approved Township Land Development projects to ensure they have been constructed in accordance with approved plans. Acted as Project Design Engineer for municipal capital improvement projects, including roadway improvements, stormwater upgrades, and recreational projects.

Nazareth Borough Engineer, Northampton County, PA
Municipal Engineer responsible for land development and subdivision plan reviews, and stormwater reviews for Act 167 compliance. Prepare annual reports and permit renewals for the Borough's MS4. Acted as Project Design Engineer for municipal capital improvement projects, including roadway improvements, stormwater upgrades, and recreational projects.

Barrett Township Engineer, Monroe County, PA
Municipal Engineer responsible for land development and subdivision plan reviews, stormwater reviews for Act 167 compliance, and site inspections to ensure they have been constructed in accordance with approved plans. Acted as Project Design Engineer for roadway improvements, stormwater upgrades, and recreational projects.

Borton Lawson
ENGINEERING
ARCHITECTURE

Stephen D. Boone

Water Resources Engineer

EDUCATION

MS, Water Resources Engineering/Hydrology, University of Colorado

BS, Civil and Environmental Engineering, University of Pittsburgh

PROFESSIONAL LICENSE(S)

Engineer-in-Training, PA

Mr. Boone specializes in water resources engineering with experience in watershed and hydrologic analyses, stormwater management and watershed planning, flood studies, stream and bridge hydraulics, and hazard mitigation planning. He has conducted several stormwater management and watershed studies as part of Pennsylvania's Act 167 Stormwater Management program, with an emphasis on working with project stakeholders to identify stormwater issues in a community and developing practical and implementable stormwater management measures at the local level.

Mr. Boone has completed several All-Hazard Mitigation Plans as a risk assessment specialist, in which hazards posing a risk to communities such as flooding, winter weather, land subsidence, drought, wildfires, and others, were identified and evaluated in order to develop corresponding mitigation measures for the communities to implement.

RELEVANT EXPERIENCE

Bloomsburg Flood Protection Project, Columbia County, PA

Project Engineer responsible for hydrologic and hydraulic evaluation and sizing of a 30,000 gallons per minute stormwater pump station and pressure culvert as part of the interior flood control measures associated with the $29 Million Bloomsburg Flood Protection Project in Bloomsburg, PA. Developed a sequence of construction for contractor staging, major project components, and implementation of erosion control measures. As part of the aggressive permitting schedule, prepared components of the application for Joint 105/404 authorization to address interior flood control, stormwater management, and erosion and sediment pollution control. The Borton-Lawson team designed and permitted a cost-effective project in a one year timeframe.

Luzerne County: Act 167 Stormwater Management Plan, Luzerne County Planning Commission, Wilkes-Barre, PA

Lead Engineer responsible for oversight of hydrologic modeling, problem area analysis, plan report development, and ordinance preparation. This project involved the development of a County-wide Act 167 Stormwater Management Plan for Luzerne County, PA, including stakeholder input through Planning Advisory Committee (PAC) meetings and an inventory of County characteristics using Geographic Information System (GIS) technology compatible with the County's GIS system. Multiple watersheds were hydrologically evaluated and modeled to determine specific stormwater management criteria for controlling stormwater runoff peak rate, volume, and water quality. Prepared the Act 167 Model Ordinance for Luzerne County, and developed recommended controls for homeowners and municipalities to implement in order to meet the requirements of the ordinance. Worked closely with the PA Department of

Environmental Protection, Chief of Stormwater Management Division to develop ordinance requirements suitable to both the County and the DEP.

Lackawanna and Luzerne Counties: Joint County All-Hazards Mitigation Plan
Risk Assessment Analyst and GIS Analyst responsible for performing a hazard identification and risk assessment (HIRA), vulnerability assessment, critical facility inventory and hazard vulnerability analyses, and GIS mapping as part of the Joint-County Hazard Mitigation Plan. Evaluated the potential risk to municipalities posed by a variety of hazards including flooding, abandoned mine subsidence, and wildfires, by evaluating the spatial relationship between structures and critical facilities to the hazard areas in a GIS. As part of the analysis, structures and critical facilities were overlain with flood and abandoned mine areas, and a query was created based on Census block and tract data to determine the potential economic exposure and vulnerability to the hazards for each municipality in the study area. To facilitate local participation and garner knowledge from the public, Mr. Boone hosted a Municipal Mitigation Workshop in order to meet with municipal representatives to identify hazard areas and develop potential mitigation projects to address local hazard mitigation needs.

PennDOT District 4-0, S.R. 3046, Section 301 South Valley Parkway, Luzerne County, PA
Water Resource Specialist responsible for designing stormwater management and conveyance facilities for approximately 4 miles of new roadway consistent with NPDES II stormwater management requirements. Work included completion of Alternate Alignment Studies, Needs Study, environmental inventories for development of an EA Document and all preliminary and final design activities for submission of the PS&E package. Other significant activities included extensive public involvement during the alternatives development stages of the EA Document preparation. This included Open House style Public Meetings with attendance in excess of 200 people and conception and implementation of a Project Advisory Committee (PAC). The committee was comprised of members of the general public impacted by the project. The members were charged with the role of reviewing project alternatives and impact assessments and making recommendations for revisions and selection of the preferred alternative. Also included extensive VEACTT sessions to right size the project. The project includes a full service interchange with SR 29 which is a freeway facility, and two other interchange/access points through the four (4) mile corridor, one of which is a diamond interchange. Total estimated construction cost is $42 million.

PennDOT Drainage Design Manual Phase I, Gannett Fleming, Harrisburg, PA
Water Resource Specialist responsible for report preparation. Completed a preliminary engineering assessment of resource information available for inclusion in the Pennsylvania Highway Drainage Manual. Borton-Lawson completed an engineering assessment of resource information available for inclusion in the Pennsylvania Highway Drainage Manual. As part of Chapter 7 development, Borton-Lawson developed new Rainfall Intensity-Duration-Frequency (IDF) curves, updating the 1986 version, Version 3 Atlas 14 data released by NOAA in August of 2006 and GIS. These rainfall curves will now be the data utilized for all new PennDOT projects throughout the Commonwealth of Pennsylvania.

PennDOT District 2-0, S.R. 3001-A01, Preliminary Engineering, Clearfield County, PA

Water Resource Specialist responsible for H&H modeling of Chest Creek and hydraulic sizing of bridge opening, and H&H report preparation. Borton-Lawson was responsible for the preliminary design of this 160' bridge replacement project.

PennDOT District 4-0, S.R. 118 Emergency Bridge Replacement Design, Luzerne County, PA
Water Resource Specialist responsible for H&H modeling of Hunlock Creek and hydraulic sizing of bridge opening, and H&H report preparation. The project consisted of a 60'-0" single span prestressed spread box beam superstructure supported by integral pile caps. The project included half-width staged construction to minimize potential environmental impacts to Huntington Creek and its surrounding wetlands. Close coordination with PennDOT Central Office was necessary to get approval for non-standard pile caps. The conceptual TS&L submission was completed within three weeks. Project cost was $148,245.

PennDOT District 2-0, S.R. 0850 Section A06 Bridge Design, Juniata County, PA
Water Resource Specialist responsible for H&H modeling of Laurel Run and hydraulic sizing of bridge opening, and H&H report preparation.

North Penn Water Authority Well-Head Protection Plan, North Penn Water Authority, Lansdale, PA
Water Resource Specialist responsible for developing contingency plans. Borton-Lawson was retained by six water supply authorities who supply potable drinking water to the eight municipality region in Upper Bucks County locally known as the Pennridge Area to complete separate Source Water Protection Plans for the water authority drinking water sources located in this area.

Cambria County Conservation District, Stonycreek River Act 167 Phase II Plan, Ebensburg, PA
Water Resource Specialist responsible for performing a Phase II Review and development of an Act 167 Stormwater Management Plan for the Stonycreek River Watershed, located in Cambria and Somerset Counties, PA.

Chester County Water Resources Authority, East Valley Creek Act 167 Phase II Plan, Chester County, PA
Water Resource Speci*alist* responsible for performing hydrologic and hydraulic analyses and watershed modeling. Provided an integrated stormwater management study for the East Valley Creek Watershed. Activities included defining the framework for accomplishing various elements of the plan, scheduling of time, defining the budget, progress reporting procedures and formats, and finalizing the work schedule. It also included the preparation for and holding of the Phase II start-up meeting with the DEP, Chester and Montgomery Counties. Borton-Lawson aided the Chester County Water Resource Authority, West Chester, PA in preparing a Phase II of the East Valley Creek Act 167 Plan and accomplishing the technical and non-technical components of the Plan.

Eric Yang, Ph.D., E.I.T

Senior Water Resource Engineer

EDUCATION

Ph. D., Civil Engineering (Groundwater Hydrology), University of Alabama

M.S. E., Environmental Engineering, University of Alabama

M.S., Computer Science, Texas A&M University-Commence

B.E., Hydraulic Engineering, Feng Chia University, Taiwan

PROFESSIONAL LICENSE(S)

Engineer-In-Training (EIT), AL

Eric Yang is a Senior Water Resources Specialist that performs hydraulic and hydrology studies for various types of projects including watershed-wide stormwater management modeling, stream channel modeling, highway river crossings, stormwater management site design, drainage design, wellhead protection and groundwater modeling. He works on complex assignments which require the development of new and/or improved techniques and procedures. He is proficient in the use of HEC-RAS, HEC-HMS, HY-8, Arc-GIS, VTPSUM, Hydroflow, SWMM and other stormwater modeling tools.

RELEVANT EXPERIENCE

Valley Creek Act 167 Phase II Plan, Chester County Water Resources Authority, Chester County, PA

Responsible for performing hydrologic watershed modeling to provide an integrated stormwater management study for the Valley Creek Watershed. Activities included developing the hydrologic model to evaluate the stormwater discharges at various locations through the watershed, performing hydrologic model calibration and design event analysis, assisted in developing the stormwater management standards and criteria for the model stormwater ordinance, assisted in the assessment and evaluation of problem areas and obstructions for potential causes and means to resolve problems and assisted in the writing of the plan.

Trout Creek Watershed study and Stormwater Best Management Practice Analysis, Tredyffrin Township, PA

Responsible for hydrologic model development and hydraulic calculations of the watershed. Activities includes developing a HEC-HMS hydrologic model of the watershed, evaluating potential stormwater retrofit projects, identifying where existing and proposed stormwater management facility could be modified to address existing stormwater management problems in the watershed, and prioritizing, evaluating and ranking conceptual stormwater BMP retrofits.

Act 167 Stormwater Management Plan, Crum Creek Watershed, Chester County, Delaware County, PA

Responsible for creating a hydrologic model of the watershed and assisted in the development of the stormwater management strategies for implementation within the watershed. Activities included collection of watershed-wide stormwater data, development of the watershed hydrologic model and stormwater runoff analysis using ArcGIS and HEC-HMS, hydrologic model calibration and design event analysis, identification of stormwater management strategies and assisted in plan report preparation.

Act 167 Stormwater Management Plan, Darby-Cobbs Creek Watershed, Delaware County, PA
Responsible for creating a hydrologic model of the watershed and assisted in the development of the stormwater management strategies for implementation within the watershed. Activities included collection of watershed-wide stormwater data, development of the watershed hydrologic model and stormwater runoff analysis using ArcGIS and HEC-HMS, hydrologic model calibration and design event analysis, identification of stormwater management strategies and assisted in plan report preparation.

Act 167 stormwater Management Plan, Neshaminy Creek Watershed, Bucks County, PA
Responsible for the development of the hydrological model and assisted in the development of the stormwater management strategies. Activities includes collection of watershed wide stormwater data, developing of the watershed hydrologic model and stormwater runoff analysis through ArcGIS analysis and HEC-HMS hydrologic modeling, performing hydrologic model calibration and design event runs assisted in the development of the stormwater management strategies and assisted in plan report preparation.

Act 167 Stormwater Management Plan, Tookany/Tacony-Frankford Watershed, Philadelphia, PA
Responsible for collecting of hydrologic data, performing hydrologic and hydraulic analysis to model runs and reviewing the watershed SWMM model that was developed by the Philadelphia Water Department. The SWMM model was used to perform hydrograph routing, which was utilized to isolate portions of the watershed to develop specific stormwater management standards and criteria.

Act 167 Stormwater Management Plan, Tributaries to the Schuylkill River Watershed in Berks County, Berks County, PA
Responsible for the development of the hydrological model and assisted in the development of the stormwater management strategies. Activities includes collection of watershed wide stormwater data, developing of the watershed hydrologic model and stormwater runoff analysis through ArcGIS analysis and HEC-HMS hydrologic modeling, performing hydrologic model calibration and design event runs assisted in the development of the stormwater management strategies and assisted in plan report preparation.

Bloomsburg Flood Protection Project, Columbia County Commission, Columbia County, PA
Responsible for performing hydrological and hydraulic analysis for the design of a 1- mile long flood protection system along the Susquehanna River and Fishing Creek. The project was developed to provide flood protection to the western side of Bloomsburg, where two large manufacturing facilities (Autoneum and the former Windsor Foods) are located, in order to protect these major regional employers and significant contributors to the economic base of the community from future damage associated with flooding. The project was sponsored by Columbia County and administered by the SEDA-Council of Governments.

V. Organizational Chart

V. ORGANIZATIONAL CHART

Based on the size of the project, the projected needs of the Township and the ample resources of Borton-Lawson staff in our Lehigh Valley office, Borton-Lawson will complete the proposed work solely using its own staff. As such, Borton-Lawson will not team with any other engineering firms or organizations.

Borton-Lawson plans on staffing the project with three teams; Municipal, Watershed and GIS Analysis (see project organization chart for teams and staffing). Each of these teams have extensive stormwater experience. However, the spectrums where they apply that experience our slightly different. The Municipal team is more focused on stormwater applications at a single site or in a campus/community setting, the Water Resource team is focused on stormwater applications involving systemic analysis of extensive, interconnected drainage areas and watersheds, while the GIS team is focused on large watersheds in which GIS is required to complete the analyses.

The table to the right provides a list of the services identified in the RFP by the township and indicates the team that will take the primary responsibility in completed the task assigned by the Township. Although each of the teams is fully capable of completing the requisite services required by the township, the specialty areas of each of the teams ensures that the township will receive the best services Borton-Lawson has to offer.

In addition to the inherent redundancy in this approach with multiple teams, another advantage of having multiple teams is that the teams will be able to provide independent quality checks of deliverables prior to sending to the Township for review.

Service	Team		
	Municipal	Water Resource	GIS Analysis
1. Development of Request for Proposals	●		
2. Workshops and Planning Charrettes		●	
3. Stormwater Project Coordination	ϕ	ϕ	
4. Stormwater Fund Coordination		ϕ	
5. GIS Program Administration		ϕ	ϕ
6. SWMAC/Commissioners Meetings		●	
7. Fieldview Stormwater Problems		●	
8. Stormwater Problem Area Analysis	ϕ	ϕ	
9. MS4 Planning	ϕ	ϕ	
10. MS4 GIS Coordination		ϕ	ϕ
11. Maintenance of Master Stormwater Project List		●	
12. SWMAC Administration		●	
13. Stormwater Fund Assessment	ϕ	ϕ	

●Primary Responsibility Φ Shared Responsibility

Organizational Chart

Prepared for: Radnor Township
Request for Proposals: Stormwater Program Administrator

Township of Radnor Pennsylvania

Borton Lawson ENGINEERING | ARCHITECTURE

Principal Stormwater Engineer/
Primary Point-of Contact
Leonard J. Smith II, PE

Project Manager/
Secondary Point-of-Contact
Brian E. Kutz, PE

QA/QC

H&H - Leonard Smith, PE
Civil - Brian Kutz, PE

SWMAC/BOC Coordination

Leonard Smith, PE
Brian Kutz, PE

Municipal Service Team

Brian Kutz, PE
Civil Manager

Aaron Sisler, PE
Sr. Civil/Municipal Engineer

David Wieller, PE
Sr. Wastewater Engineer

Brian Palmiter, EIT
MS4 Specialist

Samuel Stiner, RLA
Landscape Architect

Jeremy Reigle, EIT
Sr. Civil Designer

Matthew Belmer, EIT
Civil Designer

Kenneth Perst
Sr. CAD Designer

Keith Walsh
Civil Designer

Stormwater Analysis Team

Leonard Smith, PE
Drainage Manager

Steve Boone, EIT
Sr. Water Resources Specialist

Eric Yang, Ph.D., EIT
Sr. Water Resources Specialist

Philip Karahoca, EIT
Water Resources Specialist

Robert Foster, EIT
Water Resources Specialist

Clint Sorber, EIT
Water Resources Specialist

GIS Analysis Team

Eric Yang, PhD
Sr. Water Resources Specialist

Clint Sorber, EIT
Water Resources Specialist

VI. Annual Report

Borton Lawson
ENGINEERING | ARCHITECTURE

Township of Radnor Pennsylvania

Borton-Lawson Engineering, Inc.

Financial Statements and
Supplementary Information

December 31, 2015 and 2014

BAKER TILLY

Candor. Insight. Results.

Borton-Lawson Engineering, Inc.

Table of Contents
December 31, 2015 and 2014

Baker Tilly Virchow Krause, LLP
46 Public Sq, Ste 400
Wilkes-Barre, PA 18701-2609
tel 570 820 0100
tel 800 267 9405
fax 888 264 9617
bakertilly.com

Accountants' Compilation Report

Stockholders
Borton-Lawson Engineering, Inc.

Management is responsible for the accompanying financial statements of Borton-Lawson Engineering, Inc. (the "Company"), which comprise the balance sheet as of December 31, 2015 and the related statements of income, changes in stockholders' equity, and cash flows for the year then ended, and the related notes to the financial statements in accordance with accounting principles generally accepted in the Unites States of America. We have performed a compilation engagement in accordance with Statements on Standards for Accounting and Review Services promulgated by the Accounting and Review Services Committee of the AICPA. We did not audit or review the financial statements nor were we required to perform any procedures to verify the accuracy or the completeness of the information provided by management. Accordingly, we do not express an opinion, a conclusion, nor provide any form of assurance on these financial statements.

The supplementary information on page 12 is presented for purposes of additional analysis and is not a required part of the basic financial statements. The information is the representation of management. The 2015 information was subject to our compilation engagement; however, we have not audited or reviewed the information and, accordingly, do not express an opinion, a conclusion, nor provide any assurance on such information.

The financial statements and supplementary information of Borton-Lawson Engineering, Inc. as of December 31, 2014, were compiled by other accountants whose report dated January 29, 2015, stated that they have not audited or reviewed the 2014 financial statements and supplementary information and, accordingly, do not express an opinion or provide any assurance about whether the financial statements and supplementary information are in accordance with accounting principles generally accepted in the United States of America.

Baker Tilly Virchow Krause, LLP

Wilkes-Barre, Pennsylvania
February 16, 2016

Borton-Lawson Engineering Inc.

Balance Sheet
December 31, 2015 and 2014

	2015	2014
Assets		
Current Assets		
Cash and cash equivalents	$ 2,379,012	$ 2,503,322
Accounts receivable, net	4,108,675	3,994,888
Prepaid expenses and other current assets	720,577	675,735
Total current assets	7,208,264	7,173,945
Property and Equipment, Net	1,207,056	1,523,658
Goodwill, Net	172,374	193,921
Covenant Not to Compete, Net	16,667	66,667
Total assets	$ 8,604,361	$ 8,958,191
Liabilities and Stockholders' Equity		
Current Liabilities		
Short-term note payable	$ 36,802	$ 32,224
Current portion of long-term debt	97,544	176,199
Accounts payable	763,606	350,509
Other current liabilities	1,363,630	1,178,511
Deferred income	153,248	10,765
Total current liabilities	2,414,830	1,748,208
Long-Term Debt	95,595	160,698
Total liabilities	2,510,425	1,908,906
Stockholders' Equity	6,093,936	7,049,285
Total liabilities and stockholders' equity	$ 8,604,361	$ 8,958,191

See notes to financial statements

Borton-Lawson Engineering Inc.

Statement of Income
Years Ended December 31, 2015 and 2014

	2015	2014
Net Sales	$ 24,656,901	$ 22,629,130
Cost of Sales	10,745,371	9,582,086
Gross profit	13,911,530	13,047,044
Selling, General and Administrative Expenses	12,531,662	11,914,618
Income from operations	1,379,868	1,132,426
Other Income (Expense)		
Miscellaneous	4,123	850
Gain on sale of property and equipment	4,547	1,196
Interest expense	(10,987)	(17,337)
Total other expense, net	(2,317)	(15,291)
Net income	$ 1,377,551	$ 1,117,135

See notes to financial statements

Borton-Lawson Engineering Inc.

Statement of Changes in Stockholders' Equity
Years Ended December 31, 2015 and 2014

	Common Stock (a)	Additional Paid-in Capital	Retained Earnings	Total
Balance, December 31, 2013	$ 2,028	$ 265,262	$ 6,160,890	$ 6,428,180
Net Income	-	-	1,117,135	1,117,135
Distributions	-	-	(496,030)	(496,030)
Balance, December 31, 2014	2,028	265,262	6,781,995	7,049,285
Net Income	-	-	1,377,551	1,377,551
Distributions	-	-	(2,332,900)	(2,332,900)
Balance, December 31, 2015	$ 2,028	$ 265,262	$ 5,826,646	$ 6,093,936

(a) Common stock - $0.10 par value, 100,000 shares authorized, 20,282 shares issued and outstanding at December 31, 2015 and 2014.

See notes to financial statements

Borton-Lawson Engineering Inc.

Statement of Cash Flows
Years Ended December 31, 2015 and 2014

	2015	2014
Cash Flows from Operating Activities		
Net income	$ 1,377,551	$ 1,117,135
Adjustments to reconcile net income to net cash provided by operating activities:		
Parent company stock compensation	145,631	184,920
Depreciation and amortization	488,491	597,993
(Gain) on sale of property and equipment	(4,547)	(1,196)
Bad debts expense	2,537	49,293
Change in assets and liabilities:		
Accounts receivable	(116,324)	1,232,283
Prepaid expenses and other current assets	(190,472)	(111,641)
Accounts payable, trade	413,097	(416,586)
Accrued expenses	185,119	665,658
Deferred income	142,483	(58,676)
Net cash provided by operating activities	2,443,566	3,259,183
Cash Flows from Investing Activities		
Purchase of property and equipment	(148,795)	(455,826)
Proceeds from sale of equipment	53,000	-
Net cash used in investing activities	(95,795)	(455,826)
Cash Flows from Financing Activities		
Net change in short-term note payable	4,578	383
Proceeds from long-term debt	46,725	287,540
Principal repayments of long-term debt	(190,484)	(368,514)
Principal repayments of line of credit	-	(500,000)
Distributions	(2,332,900)	(496,030)
Net cash used in financing activities	(2,472,081)	(1,076,621)
Net (decrease) increase in cash	(124,310)	1,726,736
Cash and Cash Equivalents, Beginning	2,503,322	776,586
Cash and Cash Equivalents, Ending	$ 2,379,012	$ 2,503,322
Supplementary Cash Flows Information		
Interest paid	$ 10,987	$ 17,337

See notes to financial statements

1. Nature of Operations and Summary of Significant Accounting Policies

Nature of Operations and Organization

Borton-Lawson Engineering, Inc. (the "Company") is a personal service corporation which was incorporated in the Commonwealth of Pennsylvania in 1988. Effective January 1, 2012, the Company is a wholly-owned subsidiary of Borton-Lawson Holding Co., Inc. (BLH). The Company operates throughout locations in Pennsylvania. The Company performs architectural and engineering services for local, state and federal governmental agencies and commercial and institutional entities primarily located in the northeastern United States.

Subsequent Events

The company evaluated subsequent events for recognition or disclosure through February 16, 2016, the date the financial statements were available to be issued.

Revenue Recognition

Revenue is recognized as the services are provided. Unbilled accounts receivable represents revenue earned as of year-end but not billed to the client as of year-end.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions. These estimates and assumptions affect the reported amount of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates.

Accounts Receivable, Trade

Accounts receivable, trade are reported at net realizable value. Accounts are written-off when they are determined to be uncollectible based on management's assessment of individual accounts. The allowance for doubtful accounts is based on historical losses and financial stability of the customer base.

Accounts receivable at December 31, 2015 and 2014 are as follows:

	2015	2014
Billed	$ 2,823,873	$ 2,392,590
Unbilled	1,509,572	1,880,405
Related party	65,517	172,937
Total	4,398,962	4,445,932
Less allowance for doubtful accounts	290,287	451,044
Accounts receivable, net	$ 4,108,675	$ 3,994,888

Property and Equipment

Property and equipment are carried at cost, net of accumulated depreciation. Depreciation and amortization are provided using straight-line and accelerated methods over the shorter of estimated useful lives or lease term of the property. Depreciation expense was $416,945 in 2015 and $526,446 in 2014.

Advertising

Advertising costs are expensed as incurred and were $42,635 in 2015 and $53,524 in 2014.

Income Taxes

BLH elected to be taxed as an S corporation. This election requires the stockholders to report the taxable income of BLH on their personal tax returns and to pay taxes personally on such reportable amounts. The Company is included in the tax return of BLH.

Since such tax liabilities, if any, are the responsibility of the stockholders of BLH, the Company does not provide for income taxes in its financial statements.

BLH's federal and state income tax returns are no longer subject to examination by federal or state taxing authorities for years before 2012.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of those acquired net assets. Goodwill is subject to periodic amortization on the straight-line basis over 10 years. Goodwill is net of accumulated amortization of $43,094 at December 31, 2015 and $21,547 at December 31, 2014. Amortization expense was $21,547 in 2015 and 2014. Estimated amortization expense is $21,547 for each of the next five years. Goodwill is reviewed for impairment when a triggering event occurs that indicated the fair value of the entity may be below its carrying value. There were no impairment losses in 2015 or 2014.

New Accounting Pronouncement

The Company adopted the Accounting Standards Update 2014-07, *Consolidation (Topic 810): Applying Variable Interest Entities Guidance to Common Control Leasing Arrangements,* (the "ASU"), which allows entities to elect an accounting alternative within accounting principles generally accepted in the United States of America. In accordance with the ASU, a lessor entity need not be evaluated for consideration as a variable interest entity if certain criteria are met (common control, a leasing arrangement, and substantially all activity between the entities relates to leasing activities). This alternative is an accounting policy election that the Company has made that will be applied to all current and future lessor entities under common control that meet the requirements of the ASU.

Reclassifications

Certain items in the 2014 financial statements were reclassified to conform to the 2015 reporting format.

2. Property and Equipment

The principal categories of property and equipment are as follows:

	2015	2014
Leasehold improvements	$ 183,745	$ 170,989
Equipment	2,691,656	2,778,890
Automobiles	640,515	705,252
Total	3,515,916	3,655,131
Less accumulated depreciation	2,308,860	2,131,473
Property and equipment, net	$ 1,207,056	$ 1,523,658

3. Line of Credit

The Company has an available a line-of-credit allowing it to borrow up to $2,000,000, which renews annually. Borrowings under this arrangement bear interest at Libor plus 2.40% with a floor of 3.25% (3.25% at December 31, 2015). The line of credit is secured by the Company's accounts receivable.

There were no borrowings outstanding at December 31, 2015 or 2014.

4. Long-Term Debt

	2015	2014
M&T Bank		
Payable in monthly installments of $2,809 plus interest at the prime rate (3.50% at December 21, 2015), due May 2017 and secured by company deposits, instruments or other property of the Company in the possession of the bank.	$ 47,762	$ 81,477
Payable in monthly installments of $424 plus interest at prime rate (3.50% at December 31, 2015), maturing June 2020, secured by equipment.	22,909	-
First National Community Bank		
Term notes payable in equal monthly installments of $6,597, including interest rates ranging from 3.69% to 4.44%, maturing at various dates through February 2019; secured by equipment.	49,884	138,607

	2015	2014
Ally Financial		
Term notes payable in equal monthly installments of $3,183, including interest rates ranging from 3.90% to 3.99%, maturing December 2019; secured by equipment.	$ 58,953	$ 91,926
Acura Financial Services		
Term note payable in equal monthly installments of $916, including interest at .90%, maturing March 2017; secured by equipment.	13,631	24,442
Notes paid in 2015	-	445
Total	193,139	336,897
Less current maturities	97,544	176,199
Long-term debt	$ 95,595	$ 160,698

The future principal payments required on long-term debt at December 31, 2015 are as follows:

Years ending December 31:	
2016	$ 97,544
2017	47,396
2018	24,498
2019	22,558
2020	1,143
Total	$ 193,139

5. Short-Term Note Payable

The company is obligated to AFCO Credit Corp for short-term installment note payable used to fund the annual insurance premiums. The note is payable in 9 monthly installments of $18,476 which includes interest at 3.25% and is due March 2016. This note is secured by equipment.

6. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities at December 31 are as follows:

	2015	2014
Employee bonuses	$ 1,000,000	$ 850,000
Salaries and wages	230,334	216,428
Sales tax payable	318	1,240
Other	132,978	110,843
Total	$ 1,363,630	$ 1,178,511

7. Profit Sharing Plan

The Company maintains a 401(k) profit sharing plan covering substantially all employees. The annual contribution, which is at the discretion of the Stockholders and is funded annually, amounted to $464,248 and $398,115 in 2015 and 2014, respectively.

8. Operating Leases

The Company leases its facilities under operating leases expiring at various dates through 2024. Minimum annual rentals under these leases are as follows:

Years Ending December 31:	Related Party	Other	Total
2016	$ 611,682	$ 198,896	$ 810,578
2017	611,682	29,899	641,581
2018	611,682	-	611,682
2019	611,682	-	611,682
2020	611,682	-	611,682
Thereafter	2,446,728	-	2,446,728
Total	$ 5,505,138	$ 228,795	$ 5,733,933

Rent expense for these leases was $883,301 in 2015 and $884,270 in 2014 of which $614,047 in 2015 was to a related party. There was no rent to related parties in 2014.

The Company also leases office equipment under operating leases expiring at various dates through October 2020. Minimum annual rentals under these leases are as follows:

2016	$	218,536
2017		172,856
2018		40,062
2019		38,386
2020		16,274
Total	$	486,114

Rent expense for these leases was $217,468 in 2015 and $194,288 in 2014.

9. Related Party Transactions

The Company provides professional services to Borton-Lawson Architecture, Inc., a company related through common ownership and control, of $546,152 in 2015 and $691,842 in 2014. Accounts receivable were $65,517 at December 31, 2015 and $172,937 at December 31, 2014.

The Company leases its Wilkes-Barre, Pennsylvania facility from a partnership controlled by BLH's majority stockholder. Rent expense was $614,047 in 2015. The lease provides for monthly payments of $49,795 through December 31, 2024 at which time the Company has the option to renew the lease.

10. Concentrations

Revenue to one customer was approximately 25% and 23% of total revenues in 2015 and 2014, respectively. The Company has amount due from this unrelated customer of approximately 4% and 7% of outstanding accounts receivable at December 31, 2015 and 2014, respectively.

11. Credit Risks

The Company maintains its cash and cash equivalents in a financial institution. The Company generally has amounts on deposit in excess of the insured limit.

The Company provides professional services to customers. Trade credit is provided to these customers in the normal course of business.

Borton-Lawson Engineering Inc.

Schedule of Operating Expenses
Years Ended December 31, 2015 and 2014

	2015	2014
Salaries and wages	$ 6,103,715	$ 5,630,645
Rent	1,100,769	1,078,558
Payroll taxes	1,077,490	977,583
Employee benefits	1,020,025	949,670
Depreciation and amortization	488,491	597,993
Pension plan contributions and fees	467,190	400,615
Computer	424,412	425,146
Professional fees	278,287	245,608
General insurance	248,171	215,953
Telephone and internet	210,738	234,905
Travel and entertainment	164,404	191,764
Office supplies and expense	153,046	127,155
Restricted stock	145,631	184,920
Seminars	139,005	140,819
Dues and licenses	114,247	95,056
Printing and reproductions	74,936	68,003
Vehicle expense	71,473	39,997
General taxes	53,859	46,066
Contributions	47,977	53,725
Repairs and maintenance	46,819	56,375
Advertising and promotion	42,635	53,524
Director's fee	29,000	26,500
Utilities	20,160	20,340
Postage and delivery	6,645	4,405
Bad debt expense	2,537	49,293
Total selling, general and administrative expenses	$ 12,531,662	$ 11,914,618

VII. Evidence of Insurance

Borton Lawson
ENGINEERING | ARCHITECTURE

Township of Radnor Pennsylvania

BORTO-1 OP ID: JK

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 12/17/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Wilson H. Flock, Inc. 464 Wyoming Ave. PO Box 4096 Wyoming, PA 18644 William F. Flock, Jr.	CONTACT NAME: William F. Flock, Jr. PHONE (A/C, No, Ext): 570-693-1710 FAX (A/C, No): 570-693-4180 E-MAIL ADDRESS:
INSURED Borton-Lawson Engineering, Inc 613 Baltimore Dr Ste 300 Wilkes Barre, PA 18702	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Travelers Property & Casualty INSURER B : Travelers Cas & Surety Co INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC OTHER:			6807A756907	01/01/2016	01/01/2017	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ $ $ $ $ $	1,000,000 300,000 10,000 1,000,000 2,000,000 2,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS			BA7A74731A	01/01/2016	01/01/2017	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ $ $ $	1,000,000
A	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED X RETENTION $ 10000			CUP1B601783	01/01/2016	01/01/2017	EACH OCCURRENCE AGGREGATE	$ $	5,000,000 5,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		UB3805T435	01/01/2016	01/01/2017	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $	1,000,000 1,000,000 1,000,000
B	Crime Coverage			105536167	01/01/2016	01/01/2017	limit of insurance		250,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

BORTO01

Borton Lawson Engineering, Inc
613 Baltimore Dr. Suite 300
Wilkes Barre, PA 18702

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

William F Flock Jr.

BORTENG-01 DGARCIA

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
6/1/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
Ames & Gough 8300 Greensboro Drive Suite 980 McLean, VA 22102	PHONE (A/C, No, Ext): (703) 827-2277	FAX (A/C, No): (703) 827-2279
	E-MAIL ADDRESS: admin@amesgough.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : Beazley Insurance Company, Inc.	37540
INSURED	INSURER B :	
Borton-Lawson Engineering, Inc. 613 Baltimore Drive Suite 300 Wilkes-Barre, PA 18702-7903	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	CLAIMS-MADE OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS / NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N / A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	Professional			V15TO8150901	06/02/2015	06/02/2016	Per Claim	3,000,000
A	Liability			V15TO8150901	06/02/2015	06/02/2016	Aggregate	5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

EVIDENCE OF COVERAGE

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

VIII. Compensation

VIII. COMPENSATION

A. Annual Fee

Borton-Lawson proposes a total annual compensation of seventy one thousand five hundred dollars ($71,500) to complete Scope of Services 2-7 and 10-13 of this proposal for 2017. The aforementioned fee includes all labor and direct (out-of-pocket) costs for the project.

All tasks associated with Scope of Services 1 and, 8-9 are excluded from the fixed price of the retainer and will be provided under a separate agreement with the Township or an addendum to the original agreement, for an additional fee once the scope of services for these sections is more clearly defined by the Township.

The amount of the annual compensation is subject to the negotiations and changes in the scope of work. It is understood that the project will be awarded for a total contract length of term of two (2) years, with the Township given the option to extend the length of the contract for one (1) additional year beyond the initial two-year agreement. Annual fees for subsequent years of the contract after the first year will be provided to the Township at a later date and will also be subject to negotiations.

B. Fixed Price Retainer

This total annual fee for 2017, which includes both direct costs and labor fees for various labor categories completing the work will be invoiced to the Township and paid to Borton-Lawson in twelve (12) monthly installments.

C. Hourly Rates

Borton-Lawson's Municipal Rate Schedule which shows the range of billing rates based on employee classification for 2017 is provided with this proposal. In addition to billings for professional services other direct costs (out of pocket expenses) necessary to complete the project will include print, reproduction and transportation costs. A list of standard unit costs charged by Borton-Lawson for printing and copying is provided with the proposal. Travel costs will be charged to the township to complete the work based on standard IRS approved rate for mileage and costs associated with tolls and parking will be applied to the project, based on actual costs incurred, without markup. Direct costs for printing and reproduction, as noted in the scope of work are included in the lump sum fee for the project as well as estimated costs associated with transportation.

D. Billing Frequency

Radnor Township will be billed on a monthly basis for the work associated with this proposal using an invoice format that is agreeable to the township. A potential sample invoice is provided with this proposal which can be amended to include any information the Township requires, including the Township's specific project number, to accurately track and pay for the project. If supplemental information such as a brief status report using a standard format is required by the township, this will also be provided by Borton-Lawson with the invoice, upon request by the Township.

E. 2018 Adjustments to Compensation

The billing rate table provided is based on estimated billing rates for 2017. Borton-Lawson annually adjusts its billing rates at the end of each year for work to be completed the subsequent year, and although the rates for 2018 are not available at this time it is anticipated the billing rates for the calendar year 2018 will increase approximately four percent (4%).

HOURLY RATE SCHEDULE

JANUARY 2017

No. – 2016-010

Classification		Rate
1.	Clerical/Administrative	$57
2.	Jr. Designer/Jr. CAD Professional	$62-$65
3.	Designer/CAD Professional	$62-$79
4.	Senior Designer/Senior CAD Professional	$84-$110
5.	Survey Assistant/Associate Inspector	$61-$70
6.	Survey Professional/Inspector	$70-$83
7.	Senior Surveyor/Senior Inspector	$92-$124
8.	Staff Professional	$71-$89
9.	Senior Staff Professional	$75-$106
10.	Project Professional	$92-$121
11.	Senior Project Professional	$105-$141
12.	Senior Technical Professional	$133-$185
13.	Senior Professional	$169-$200
A.	Robotic Survey Instrument	$42/hr
B.	3D Scanner	$2,060/day
C.	All-Terrain Vehicle (ATV)	$50/day
D.	Boat	$250/day

(a) Reimbursable expenses, such as travel, printing, express mail, and other project consumables will be billed at cost without markup.

(b) Mileage for personal or company vehicles will be invoiced at the IRS mileage rate in effect during the period of performance.

(c) Special services requiring outside Professionals are billed at cost plus an administrative cost of ten percent (10%).

(d) Litigation, expert witness, and all other legal and court related appearances will have a minimum eight hour charge per day and a minimum overall fee of $2,000.00 per case.

(e) Overtime, Holidays and/or Sundays, when requested may be billed at a 1.5 times the rates listed above. PM will notify the client prior to these charges being implemented.

Printing Price List

Size	Black & White	Color
8.5 x 11	$ .12	.90
8.5 x 14	.15	.90
11 x 17	.20	1.35

Foamcore:

20x30	$ 2.85
24x36	4.12
30x40	5.33
30x42	5.57
32x40	5.70
40x60	10.60
48x96	18.34

Size	Bond	Mylar	Color Ink
8.5 x 11	$ .50	$ .75	$ 1.00
11 x 17	.75	1.50	2.00
12 x 18	.95	3.25	4.50
22 x 34	1.10	5.25	7.00
24 x 36	1.20	6.50	9.00
30 x 42	1.80	9.50	13.50
34 x 44	2.40	11.50	16.20

Miscellaneous:

Clear Cover	$ 1.00
5-Tab Colored/TOC	3.50
8-Tab Colored/TOC	5.00
5-Tab White Divider	7.50
8-Tab White Divider	9.00
1” – 3 ring view binder	6.35
Cover Stock	.12
Binding	1.00
Pocket Dividers	1.00
Back Cover	1.00
9 x 12 envelopes	.08
9 x 12 redi-strip envelope	.15
#10 blank envelopes	.08
5160 labels (per sheet)	.05

Borton Lawson Engineering, Inc.
613 Baltimore Drive, Suite 300
Wilkes-Barre, PA
18702

INVOICE

Radnor Township
301 Ivan Ave
Wayne, PA 19087

Date: November 21, 2016
Invoice No: 2016-2337-009 - 0000002
PO # 4502028160

Project 2016-2337-009 Radnor Township – sample invoice

Professional Services from September 24, 2016 to October 28, 2016

Item	Contract Amount	Percent Billed	Billed To Date	Previously Billed	Current Billed
Sample Invoice	1,200.00	16.67	200.00	100.00	100.00
Total Fee	1,200.00		200.00	100.00	100.00
	Total Fee			**100.00**	
			Total this Phase	**100.00**	
			Total this Invoice	**$100.00**	

If you have any questions about this invoice, please contact:
Ruth Lemanowicz, (570) 821-1994 ext. 1222, RLemanowicz@borton-lawson.com

Thank you for your business!

Invoices are due and payable upon receipt. Please make check payable to Borton-Lawson Engineering, Inc.

Labor Detail

Monday, November 21, 2016
9:49:20 AM

Borton Lawson Engineering, Inc. Transactions for 11/1/2016 through 11/15/2016

Show Unposted		Date	Regular Hours	Total Ovt Hrs	Total Hours	Regular Billing	Tot. Ovt Billing	Total Billing
Project: 2016-2237-00 Sample								
Project Number: 2016-2237-002 Sample								
Phase Number: 700-003 E&S NPDES Permit Submission								
Activity Code Level 1: DS Design								
00556	Kutz, Brian	11/1/2016	1.00		1.00	134.25		134.25
Total for 700-003			**1.00**		**1.00**	**134.25**		**134.25**
Phase Number: 700-005 Agency Comment Responses								
Activity Code Level 1: DS Design								
u 00519	Belmer, Matthew	11/14/2016	4.00		4.00	352.56		352.56
u 00519	Belmer, Matthew	11/15/2016	1.00		1.00	88.14		
88.14 u 00556	Kutz, Brian	11/14/2016	1.00		1.00	134.25		134.25
u 00556	Kutz, Brian	11/15/2016	4.00		4.00	537.00		537.00
Total for DS			**10.00**		**10.00**	**1,111.95**		**1,111.95**
Activity Code Level 1: GL General								
u 00652	Walsh, Keith	11/14/2016	8.00		8.00	655.92		655.92
u 00652	Walsh, Keith	11/15/2016	9.00		9.00	737.91		737.91
Total for GL			**17.00**		**17.00**	**1,393.83**		**1,393.83**
Total for 700-005			**27.00**		**27.00**	**2,505.78**		**2,505.78**
Total for 2016-2237-002			**28.00**		**28.00**	**2,640.03**		**2,640.03**
Total for 2016-2237-00			**28.00**		**28.00**	**2,640.03**		**2,640.03**
Final Totals			**28.00**		**28.00**	**2,640.03**		**2,640.03**