

September 19, 2016

Mayor Ecklund made a motion to hold an Executive Session; motion was seconded by Trustee Alfasi; and upon roll call was carried by a vote 4-0. Trustee Luisi was not present for the roll call.

Meeting of the Board of Trustees  
Called to Order at 8:00PM

The meeting opened with the salute to the flag and Pledge of Allegiance

Moment of Silence for the people who lost their lives in France by a truck driver attack and the people in Italy who lost their lives by an earthquake

#### **ROLL CALL**

|         |          |
|---------|----------|
| TRUSTEE | Giordano |
| TRUSTEE | Luisi    |
| TRUSTEE | Leo      |
| TRUSTEE | Alfasi   |
| MAYOR   | Ecklund  |

#### **APPOINTMENTS**

Mayor Ecklund motioned for the appointment of Vincent Pinto to the position of Police Sergeant effective October 3, 2016; motion was seconded by Trustee Leo; and upon roll call was carried by a vote 5-0.

The swearing in of Vincent Pinto to the position of Police Sergeant effective October 3, 2016  
Sergeant Pinto thanked the board, the police and his family.

**PRESENTATION** - none

**PUBLIC HEARINGS** -none

#### **ADOPTION OF MINUTES**

Trustee Leo made a motion to approve the minutes of the meeting of August 8, 2016; motion was seconded by Trustee Alfasi; and upon roll call, motion was carried by a vote 5-0.

Trustee Leo made a motion to approve the minutes of the meeting of August 25, 2016; motion was seconded by Trustee Alfasi; and upon roll call, motion was carried by a vote 5-0.

**CORRESPONDENCE**- none

#### **FIRST OPPORTUNITY TO ADDRESS THE BOARD ON AGENDA ITEMS**

#### **RESOLUTIONS**

- 1) Authorizing the Columbus Day Committee of Eastchester-Tuckahoe to use Depot Square for their annual Columbus Day Celebration & St. Pio Feast on September 23, 24 and 25, 2016; event hours on September 23 and 24 are from 5 p.m. to 11 p.m.

and on September 25 from noon to 8:00 p.m. In addition, authorizing the use of Village streets for two processions – September 23 the procession begins at Assumption Church 7:00 p.m. and ends at Depot Square; on September 25, the closing procession will leave Depot Square between 7:00 p.m. and 7:30 p.m. and end at the Assumption Church; Further authorization for use of the Tuckahoe Trolley on Friday, September 23 and again on Sunday, September 25 to transport participants to and from the church to Depot Square

Trustee Leo made a motion to approve resolution; motion was seconded by Trustee Luisi and upon roll call, motion was carried by a vote 5-0.

- 2) Authorizing the acceptance of the following donations in for work performed in the village in honor of SSGT Robert Charles Murray; \$500 from LTC Sam DiRienzo, \$500 from the Leroy Gregory American Legion Post 979, \$250 from Sally and Vito Pinto, \$25 from Joseph Gullotta, \$25 from Bob Foster

Trustee Leo made a motion to approve resolution; motion was seconded by Trustee Giordano and upon roll call, motion was carried by a vote 5-0.

- 3) Authorizing the appointment of a Department of Public Works Laborer

Trustee Luisi made a motion to approve resolution; motion was seconded by Trustee Leo and upon roll call, motion was carried by a vote 5-0.

- 4) Authoring the promotion of a Department of Public Works Laborer to the position of Motor Equipment Operator

Trustee Leo made a motion to approve resolution; motion was seconded by Trustee Giordano and upon roll call, motion was carried by a vote 5-0.

- 5) Authorizing the modification for the salaries of On-Street Parking Maintenance Person retroactive to June 1, 2016 to \$68,235

Trustee Leo made a motion to approve resolution; motion was seconded by Trustee Luisi and upon roll call, motion was carried by a vote 5-0.

- 6) Authorizing the renewal of the Limited Cabaret License for the following establishments: Angelina's of Tuckahoe, Tuck'd Away and Growlers for a period of one year from November 1, 2016 to October 31, 2017

Trustee Leo made a motion to approve resolution; motion was seconded by Trustee Luisi and upon roll call, motion was carried by a vote 5-0.

- 7) Authorizing the closure of Rose Avenue on October 22<sup>nd</sup> between 9 a.m. - 3:30 p.m. for Concordia Homecoming

Trustee Leo made a motion to approve resolution; motion was seconded by Trustee Giordano and upon roll call, motion was carried by a vote 5-0.

- 8) Approving a tax certiorari settlement for The Rivervue Condominium for assessment years 2008 through 2015, street address 1 Scarsdale Road, Section 36, Block 3, Lots 1.200 through 1.621 in the amount of \$80,572.87

Trustee Giordano made a motion to approve resolution; motion was seconded by Trustee Luisi and upon roll call, motion was carried by a vote 5-0.

- 9) Authorizing the Mayor to sign legal documents and acknowledgement of the compliance with all terms and conditions of a Master Contract for Grants Contract #TM15TO25 in accordance with all terms and conditions in the GUIDELINES for Non-Construction Projects \$50,000 and under dated May 9, 2016  
Trustee Alfasi made a motion to approve resolution; motion was seconded by Trustee Giordano and upon roll call, motion was carried by a vote 5-0.

10) Authorization of the following vehicles as surplus for sale:

- a. 2010 Mercury Mariner, Hybrid, VIN 4M2CN3K33AKJ14338
- b. 2007 Chevrolet Impala, VIN 2G1WS55R079159764

Trustee Leo made a motion to approve resolution; motion was seconded by Trustee Giordano and upon roll call, motion was carried by a vote 5-0.

- 11) Authorizing the approval of vouchers in the amount of \$516,298.03 consisting of Abstract #11 for \$111,245.18, Abstract #12 for \$296,080.62, Abstract #13 for \$2,707.34, Abstract #14 for \$95,604.98 and T&A for August for \$10,659.91. The three largest invoices paid were: (1) \$130,826.08 for NYS Employee's Health Insurance for the month of September 2016, (2) \$52,038.75 for Travelers Workers Compensation first payment and (3) \$36,270.25 for John Vance Motors new police car.  
Trustee Leo made a motion to approve resolution; motion was seconded by Trustee Giordano and upon roll call, motion was carried by a vote 5-0.

Trustee Leo made a motion to approve resolution; motion was seconded by Trustee Giordano and upon roll call, motion was carried by a vote 5-0.

## **DEPARTMENTAL REPORTS TO THE BOARD**

All the department heads congratulated Vincent Pinto and wished him best.

**DPW-** Frank DiMarco welcomed Jakeem Smith as a full time laborer.

**RECREATION-** John Galluzzi said the Road Race was dedicated to Stephen Quigley. He thanked Dylan Ecklund for his artwork and Ginger Crosby and Clare Gorman for their help.

**ADMINISTRATOR-** David Burke said the auditors will be here the week of October 10<sup>th</sup>. He congratulated Joseph Marzella on his MEO position.

## **MISCELLANEOUS BUSINESS**

Mayor Ecklund announced the following:

No Farmers' Market-September 25<sup>th</sup> due to Padre Pio Festival

Next Village Board meeting- October 24<sup>th</sup>

Village Offices closed- October 10<sup>th</sup> Columbus Day

## **BOARD OF TRUSTEES MEMBERS REPORTS**

**TRUSTEE GIORDANO**-Please check the website for upcoming Zoning and Planning meetings

**TRUSTEE LUISI**- October 22<sup>nd</sup> the History Committee will hold an open house. The Seniors' new renovated Fr. Fata Hall is light and airy. Thank you to Assumption for the cleanup. The Senior Bazaar is October 15<sup>th</sup> at Fr. Fata Hall from 9:30am-2:30pm. There will be a trip to Villa Roma on September 21<sup>st</sup>. On Sept. 24, Broken Bow will host a Zero K event from 2-5pm, at a cost of \$25.00 to benefit a sick 12 year old with a rare ailment.

**TRUSTEE LEO**- Gave upcoming children, baby and teen events at the Tuckahoe Library.

**TRUSTEE ALFASI**- On Sunday at 10:00AM there will be a ceremony at the Gold Star Mothers' monument.

**MAYOR ECKLOND**- Thanked Trustee Alfasi for being the only board member to run in the Road Race.

### **SECOND OPPORTUNITY TO ADDRESS THE BOARD**

Mayor Ecklund, in order to insure that all questions and concerns are addressed, permitted all residents and businesses approach the podium with their concerns and stated he would give his responses to their questions when the last speaker is done.

Thirteen people voiced their concerns.

Responses from the Village's outside consultants:

#### Chemical concerns:

Mike Musso, Environmental Engineer from the firm, HDR, Inc. said that we are in the range of par per million-par per billion. At federal superfund sites sometimes we see the same types of chemicals. We do not have that here. One of the things brought up was an LD50 number, the lethal dose of a chemical in 50% of test species, in what dose do you get death in animals. Clearly, we are thousands of times below that here. Mr. Musso understands the concern. It is really important that we have a robust method in place. This is not being rushed along. We heard that if this was approved last week, there would be shovels in the ground today. That is not true. The DEC and DOH feel that according to the testing done, they have a robust remedy. Attached are site management requirements. There will be more testing done. We are in the design phase. A decision document is issued. There will be about fifty soil samples or soil boring samples collected.

#### Tenting:

Mike Musso, Environmental Engineer from the firm, HDR, Inc. said that if the developer says that tenting it is what he is going to do, that goes a long way with your concerns. The Remedial Action Work Plan by the DEC and DOH section 10 has a contingency for tenting exceeding odor and vapor thresholds. There are instances to halt the work or stop work indefinitely or until the source of any odor is identified. There is a provision that tenting may be required. It is not a requirement right now based on the data we have and based on the predesign. The idea of dust suppression and odor suppression and community air monitoring.

The Cold Springs site is different than this site. It was a manufacturing site. Also, the site in the Bronx, it may have been a similar Manufacturing Gas Plant site.

Michael Bogin, Environmental Attorney from the firm Sive, Paget & Riesel, PC, explained that the DEC and DOH tenting has to do with odors, not concentration. It is called a nuisance odor issue. Coal tar, petroleum and diesel fuel odors will not kill you but they will make you sick. Asbestos needs to be contained. Tenting is mostly used to contain odors.

#### Empire Casino:

Claims made that lower Westchester requiring a certain hotel room count in order for the Yonkers Casino to be expanded was expressed by the public. The Mayor and Board had not heard this before.

#### Concordia College Dorms:

Village Counselor, Gary Gjertsen addressed the question regarding Concordia College having dorms at the site. He explained that the zoning on Marbledale Road would not allow the hotel to become a dormitory

#### Hotel Backs Out:

Trustee Giordano asked the process if the hotel backs out and another hotel wants to come in. Mr. Gjertsen responded that they would need a new site plan. Mayor Ecklund asked if after Planning Board approvals the owner decided to change hotel brand would he be able to make the change or must he go back to the Planning Board. Mr. Gjertsen said he would have to go back to Planning.

#### EAF form inaccurately or fraudulently completed:

Mr. Gjertsen said he could not comment on this at this time since he has not seen the document. Mr. Bogin said that it is the first document the applicant fills out to enter the Brownfield Program. Basically the applicant says that there will be no adverse environmental impact. The Planning Board did not accept it at face value. They recognized it and required the applicant to be a part of the Brownfield program. The Planning Board recognized that there would be at least one significant adverse impact. Melba Caliano, member of the Planning Board, for the record, was not at the September 15th meeting. The Mayor asked the representative of the Marbledale Road Coalition to please send a copy of the claim his organization sent to the DEC earlier today, regarding alleged fraudulent application claims by the developer, to the Village counselor.

#### Quarry Place Project:

Is the Quarry Place Project in conformity with the approved plans? Mr. Gjertsen said that they have their approval and it is the Building Department's job to make sure they are in compliance.

#### Powers of the Mayor and Board of Trustees:

The Mayor and Board shall not interfere with the Zoning and Planning Boards decisions. Mr. Gjertsen said our code clearly states that the Board of Trustees shall not interfere. Mayor Ecklund says it poses a significant ethical issue.

#### Rescind the Conditional Negative Declaration (CND):

In answer to the question of "should the Conditional Negative Declaration (CND) be rescinded and a full Environmental Impact Study (EIS) be performed on this project", Mr. Bogin stated that any study

under EIS would not nearly be as extensive as the study the DEC requires under the Brownfield Cleanup Program.

#### Full Environmental Study:

Mr. Bogin said that there may be terminology misused when saying full environmental study, a holistic look at the whole quarry not just the site. Mr. Bogin said he had spoken to the DEC about this. There is going to be a study of the entire quarry. The Planning Board cannot ask the developer to do a full FEIS. The study of the hotel site has taken place. It is a very thorough analysis. If you don't build on a toxic site it stays a toxic site. The idea of the Brownfield Program is to encourage using underutilized sites and putting them back to use. It gives an owner the ability to voluntarily take responsibility to clean it up to standard and put it to use in the community. That is the purpose of the Brownfield Program. The State of New York will let him voluntarily cleanup the site but will make him investigate offsite.

#### Height variance:

This site was before the Zoning Board and the Zoning Board granted a height variance. Mr. Gjertsen said the Zoning Board decision supported the five prong test.

#### Drilling Methods, underground flow, Dynamic Compaction:

Mike Musso said it is a foundation design issue, drilling piles and anchoring them into the bedrock. The developer needs to fill in the blanks. It is an open memo with options. There are a lot of if and thens. Ground water flow will be assessed before, during and into the future. The Dec will investigate the sites north and south of the hotel site. The DEC will choose their own contractor. There will be more testing for design data. We require deeper samples from borings. Some of the site will not be dug up but added to. We need to sample bedrock water not just the shallow water. Some could be seventy feet or more in the deepest area. We are developing and discussing this with the DEC. We need to see a final development design from the developer. When the piles are driven they will displace soil. Six to eight inch core will be into the ground where the soil will be pushed up into the core.

#### Quality and Competence of the Contractor:

Mike Musso placed a condition into the draft Planning Board resolution with documentation of experience will be furnished with a Brownfield Project or a DEC project whether it be a general contractor, manager sub- contractor and go to the Village Building Inspector where he can distribute these to technical consultants. It is something that is of interest to the Planning Board.

#### Brownfield Sites:

Mike Bogin explained that Brownfield sites were originally for depressed areas to help economically. The Brownfield cleanup gives additional tax credits if you voluntarily enter the program. There are many Brownfield projects in the most expensive areas in Manhattan, Brooklyn and Queens because for a period of time there was heavy industry contained in those areas. There is going to be an environmental easement on this site. If there is a belief that this owner or a future owner is not complying with longer term obligations at this site the Village will enforce it.

#### Control:

Mike Bogin explained that the Planning Board is not relinquishing control to the DEC. The Planning Board hired Mike Musso to make expert recommendations. He was hired in September 2015. Mike Musso has been developing work scopes and a time line. There are about eight or nine phases of

remediation. He has spoken with the Marbledale Road Coalition Environmental Engineer, Dr. Hughes, the Eastchester School Board Environmental Engineer Paul Ciminelli, the Bilwin Development, Inc. Environmental Engineer, Bill Canavan and the DEC weekly. Mayor Ecklund keeps up with this issue every single day. It is basically a full time job for our administrator. We are in contact with Eastchester Supervisor Colavita, Senator George Latimer, Assemblywoman Amy Paulin, County Legislator Sheila Marcotte and Bronxville Mayor Mary Marvin. It is our duty and responsibility to go the extra mile and keep them up-to-date.

#### Mayors comments:

Mayor Ecklund addressed the allegations that the Village Administration and other elected officials are not working as a group and claims that the Village hasn't been transparent regarding the project. The Village has been working on this application for two years now. I understand that there are many in the community that have only become aware of the project in the past month or two and I am very patient dealing with these folks who have just found out about it. We may not seem to be as upset about it but that is because we've been dealing with this application for 2 years now.

The Tuckahoe Village Administration, our State Assemblywoman, State Senator, Eastchester Town Board, Westchester County Legislator, Eastchester School Superintendent, and Bronxville Mayor are all working together to make sure the best practices are implemented to safeguard our mutual constituents.

I want to set the record straight on a memo I sent to the commissioner of the DEC in May of this year. At the time I disagreed with a request they had to defer action of the RAWP until a further investigation of areas outside of the BCP takes place. After a long discussion with the Village's Engineer and since the public review & comment period had been already closed (4/24/16) I requested that the DEC process my comments & the comments from the Village's Engineer and have them modify the RAWP for this BCP to incorporate these suggestions.

(They ultimately did make 3 major modifications to the RAWP):

1. Addition of a (SVE) Soil Vapor Extraction System to the site remedy.
2. Installation of groundwater monitoring wells prior to construction.
3. Proper characterization of soil to be regraded or excavated prior to initiation.

I have sent supplemental letter to the DEC in conjunction with Assemblywoman Paulin and Senator Latimer in support of additional testing and comments made by Paul Ciminelli of EcoSystems, Inc. and there will be another letter coming in support of some additional testing.

#### Experts:

The Village has hired, with Mr. Weinberg's escrow money, Mike Musso, Mike Bogin, Village Planner Frank Fish and Village Consultant Jim Pinto.

#### Explosives:

Mike Musso said there is there is no indication of any explosives.

#### Being informed:

Mayor Ecklund we have spent 4 hours here tonight keeping all informed and says all information is easily assessable on the Tuckahoe website. We may do a taped interview with our engineer. We may do

periodic mailings. We have an e-mail blast system. We may have a separate blast for just this issue. Mayor Ecklund said a master plan review is costly but a good idea. The applicant has done a terrible job in addressing all of the public comments. We have gotten the best of the best. The coalition has raised awareness. We are all working in this together.

**60 Day Clock:**

Mayor Ecklund explained that a 60 day clock started once the public hearing has closed and the issue must be voted on within the sixty days or it goes as is. This whole issue may be decided in court.

**ADJOURNMENT**

There being no further business, the Board unanimously voted to adjourn the meeting at 12:00A.M.

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Camille DiSalvo, Village



Laurel C. Gaffney, P.E.  
22 Joyce Rd.  
Eastchester, NY 10709

September 14, 2016

Village of Tuckahoe Planning Board  
65 Main St.  
Tuckahoe, NY 10707  
Attn: Chairperson Ann Marie Ciaramella

RE: Marbledale Road Marriott Springhill Suites Development

Dear Chairperson Ciaramella:

I am a resident of the Town of Eastchester, and I am writing this letter because I am deeply concerned for the welfare of our communities, in regards to the proposed development project on the Marbledale Road Quarry toxic waste site.

I am a licensed professional structural engineer with over 15 years of experience working on large building projects like the proposed Springhill Suites Marriott on Marbledale Road. Many of these projects are in New York City and the surrounding areas. I have first-hand experience working with developers, architects, and construction companies to bring these projects to fruition. A large part of my work involves the design of the foundation systems for these buildings; I read and review geotechnical reports and prepare structural foundation design drawings on an almost-daily basis.

I recently had a chance to review the geotechnical report and the site plans from this project, as well as the structural foundation design plans. I have attached portions of the geotechnical report that I find pertinent and concerning, and that I think you should carefully review. I urge you to take the time to read the sections highlighted in the dashed boxes. From my perspective as a structural engineer, I am deeply concerned about the construction of this project on a toxic landfill site. Based on the information at hand, it is clear to me that this site is not being tested or remediated in the way it should be to thoroughly protect the health and safety of the residents and children of Tuckahoe, Bronxville, and Eastchester. I am particularly concerned with the groundwater flow from the site, through Tuckahoe, and into the neighboring village of Bronxville.

The two most critical times that contaminants could enter the groundwater from a waste site are the first few years after a toxin is initially dumped, and later if that contaminated soil is disturbed and the groundwater patterns are changed. There is historical evidence that many contaminants were dumped deep into the Marbledale Road Quarry landfill, much deeper than the 15 foot depth that the DEC is currently requiring testing to. The project developer, Bilwin Development Associates, is proposing to build this structure on a drilled pile foundation system ("micropiles") down to bedrock at a depth of as much as **70 feet** into the ground, possibly deeper. There are approximately **180** piles shown on the foundation plans for the hotel structure alone, not including the restaurant structure. **Despite what the developer and some town officials are leading you to believe, these drilled piles are very disruptive to the soil and ground water, even if they are not the type of piles that are hammered into the ground.**

Drilled piles utilize a large drill bit to create a hole deep into the ground, in which a steel pipe pile is inserted and filled with rebar and concrete. This hole is drilled all the way down to bedrock, where the pile is socketed into place to carry the loads from the structure down to the rock. These piles are likely to go through significant amounts of groundwater at almost every location. The drilling of these holes will penetrate any pockets of contaminants that may be lurking under the ground. Some of these contaminants will likely get pushed deeper into the groundwater table as the drill bit advances downward, and much of it will be brought up to the surface, as the material in the hole is removed. Even worse, if the drill bit were to puncture an unknown drum of contaminants underground, the contents of that drum would then leak into the groundwater table.

**So I ask, if Bilwin Development has plans to drill piles down to bedrock, why is the DEC not requiring testing down to bedrock? The current work plan for the environmental testing is only requiring borings down to 15 feet. This makes NO sense.**

My other major concern is in regards to the geotechnical report's suggestion of using Deep Dynamic Compaction ("DDC") to consolidate the fill on the site. The report states that there could be upwards of two feet of soil settlement in the paved areas of the site, due to the "unstable" nature of the fill. DDC is an incredibly disruptive method of compacting soils, possibly even worse than installing driven piles. DDC involves taking a heavy weight, often many tons, and dropping it repeatedly on the ground, in order to compact and consolidate otherwise loose soils. DDC creates substantial ground vibrations, noise pollution, and dust. The ground vibrations could unsettle pockets of chemical waste, cause degraded drums to rupture and leak, and agitate contaminants back into the groundwater flowing through the site. While the use of DDC has major cost implications to the developer, **I highly recommend that the Planning Board confirm and get in writing that the developer will NOT use this method of compaction at any time during the project.**

The possible contamination of the groundwater from drilling piles and from the use of Deep Dynamic Compaction could have resounding long-term effects on the residents and children situated downstream of the groundwater flow, particularly through the Main Street area of Tuckahoe, down Midland Avenue into Bronxville, collecting in the low-lying area where Bronxville School is located, and finally dumping into the Bronx River watershed. This poses a threat to all of these neighborhoods, as contaminants and toxic vapors can leach from the groundwater into basements and up through the soil into residential yards and school fields.

The DEC has continually taken the stance that "any remediation is better than no remediation"; however, the only remediation currently planned is simply the removal or on-site treatment of contaminated soil that is excavated from the ground to make room for the building pile caps and grade beams. The rest of the site will be capped over, vented, and left behind to continue festering – but only *after* the construction has disturbed the contaminants in the soil and stirred up a potentially toxic mix with the groundwater. In the grand scheme of this project, the relatively small amount of soil that will be remediated doesn't compare to the very large amount of risk associated with disturbing the rest of the toxic waste site during construction.

I would like to state that I am not against the idea of developing the Marbledale Road site in the long-term. My career depends on development projects like this and I believe a hotel could be a great asset in our area; but in my professional opinion, the *only* correct way to do this project is to test and remediate the *entire* site first, before any construction begins. Furthermore, Bilwin Development needs

to provide the Village of Tuckahoe with a comprehensive construction schedule, detailing exactly when and how testing, remediation, construction, and monitoring will be coordinated on the site.

I also highly advise that the Planning Board require the developer to hire a general contractor with experience working on Brownfield Cleanup projects. The information at hand indicates that the general contractor currently on board for the project has zero experience working on Brownfield Cleanup sites that require environmental remediation, and that the developer is stating that the contractor will be trained on how to handle the remediation before construction begins. **In my mind, that is simply not good enough.** Would you, personally, ever hire a contractor with zero experience to work on your house? My guess is no. So why should the Village of Tuckahoe allow a contractor with zero relevant experience work on this project? As the lead agency for this development, I urge you as a responsible, moral member of the Planning Board to require that the developer hire a contractor who has a proven track record of experience working on Brownfield Cleanup sites.

On a final note, one thing that really struck a chord with me at the Tuckahoe Village Board of Trustees meeting on Tuesday, August 8, 2016, was when a representative from the New York State Department of Health commented that, "You are not unique... you are not in a unique situation." This statement may, sadly, be true. But while we may not be in a unique situation, I believe that our three villages are an incredibly unique community that **deserves a unique solution** from our local government – the Village of Tuckahoe Planning Board – for the health and safety of us all.

Thank you for your time and consideration in this matter.

Regards,



Laurel C. Gaffney, P.E.

Professional Engineer, New York State, License # 085505

Resident of Eastchester

Waverly School Parent



Enclosure: Selections from Carlin-Simpson Geotech Report\_20151211

**Stratum 1**  
Asphalt      The surface layer in boring B-3 consists of asphalt pavement that is approximately 0'3" in thickness.

**Stratum 2**  
Existing Fill      Beneath the asphalt and at the surface in the remaining borings is existing fill that generally consists of various layers of loose to dense brown, gray, or black coarse to fine SAND, little (to and) Silt, little (to some) coarse to fine Gravel or coarse to fine GRAVEL little (to some), coarse to fine Sand, trace Silt. Varying amounts of cobbles, boulders, and debris (i.e. asphalt, glass, metal, wood, rubber, concrete, ash, cinders, etc.) were mixed with the soil fill. Below the soil fill layers at borings B-1 and B-2, the fill consists of black ash and cinders with wood, glass, metals, and organics. Below the soil fill layers at boring B-3, the fill consists of miscellaneous debris with wood, concrete, rubber, metal, cobbles, and boulders. The existing fill was encountered to depths ranging from 19'0" to 71'6" beneath the existing ground surface.

**Stratum 3**  
Marble  
Bedrock      Below the existing fill is Marble bedrock. Borings B-1 through B-3 were terminated at rollerbit refusal on the probable bedrock surface at depths ranging from 56'0" to 71'6" beneath the existing ground surface.

At boring B-4, auger refusal was encountered at a depth of 19'0" below the ground surface and the upper 10'0" of the bedrock was cored. The core recoveries were 80% and 100% and the Rock Quality Designation (RQD) of the recovered cores were 25% and 80%. This indicates that the quality of the upper 5'0" of bedrock is poor but that it quickly transitions to good quality rock. The rock ranges from a shattered or very block and seamy condition to massive or moderately jointed condition.

### **Groundwater**

Observations for groundwater were made during sampling and upon completion of the drilling operations at each boring location. In auger drilling operations, water is not introduced into the boreholes, and the groundwater position can often be determined by observing water flowing into or out of the boreholes. Furthermore, visual observation of the soil samples retrieved during the auger drilling can often be used in evaluating the groundwater conditions.

Groundwater was encountered in borings B-1 and B-3 and depths of 22'0" (+113.0) and 20'0" (+119.0) below the existing ground surface, respectively. During the Remedial Investigation at the site by others, groundwater was encountered in nine (9) on-site monitoring wells at depths ranging from approximately 18'0" to 33'0" below the existing ground surface. These depths correlate to water levels ranging between elevation +111.7 and elevation +131.6. During construction, perched or trapped water should be expected in the existing fill stratum. Proper groundwater control measures will be required in the event that trapped water is encountered in the site excavations.

The highest groundwater observations are normally encountered in late winter and early spring, and our current groundwater observations are expected to be lower than the



seasonal maximum water table. Variations in the location of the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, and other factors not immediately apparent at the time of this exploration.

## **EVALUATION**

The proposed project will consist of a new hotel building, approximately 17,500 square feet in area, and a new restaurant building, approximately 6,400 square feet in area. We understand that the proposed construction will also include site retaining walls, asphalt paved driveways and parking areas, new underground utilities, and multiple subsurface stormwater management areas.

The following evaluation is preliminary in nature and has been generalized for the expected development. Given the subsurface conditions and the known history of the site, there are a number of concerns associated with the development of this site that require discussion among the design team. Specifically, there should be discussions regarding the following: 1) the overall approach for development of this site; 2) the remedial actions that are required for the site and how they will be incorporated into the overall site design; 3) the ground improvement measures that will be employed and the limitations of those measures; and 4) the expected settlements and the effect the settlement will have on the sidewalks, pavement, retaining walls, and utilities.

The recommendations within this report are intended for planning purposes only and are not intended for final design and construction. Once the above issues have been addressed by the design team, additional recommendations can be provided by Carlin-Simpson & Associates regarding the development of the site. In the event the site plans change, a copy of the new plans should be forwarded to our office so that we can review them along with the recommendations in this report and provide additional recommendations, if necessary.

The preliminary recommendations within this report are based on the Preliminary Grading and Utility Plan, which was prepared by SESI Consulting Engineers, P.C. and was dated 11/21/2014. According to this plan, the proposed finished floor elevation for the new hotel building is +140.5 and the proposed finished floor elevation for the new restaurant building is +152.0. Based on the existing and proposed grades in the building areas, a minor cut of less than 1'0" and a fill up to 7'6" will be required for the proposed hotel building. A fill ranging up to 3'6" will be required for the proposed restaurant building.

During this study, borings B-1 through B-3 were performed in the area of the proposed hotel building and boring B-4 was performed in the area of the proposed restaurant building. In each of the borings, existing fill with ash and debris (Stratum 2) was observed to depths ranging from 19'0" to 71'6" below the existing ground surface. Underlying the existing fill is Marble bedrock (Stratum 3), which was encountered in the borings at depths ranging from 19'0" to 71'6" below the existing ground surface. The existing fill, groundwater, and bedrock observations for each of the borings performed during this investigation are summarized in Table 1 below.

**Table 1 – Summary of Boring Data**

| Boring No. | Approximate Ground Surface Elevation | Observed Depth to Groundwater (Elevation) | Depth to Bottom of Existing Fill (Elevation) | Depth to Bedrock (Elevation) |
|------------|--------------------------------------|---|--|------------------------------|
| B-1        | +135.0                               | 22'0" (+113.0)                            | 56'0" (+79.0)                                | 56'0" (+79.0)                |
| B-2        | +136.5                               | Not Recorded                              | 66'0" (+70.5)                                | 66'0" (+70.5)                |
| B-3        | +139.0                               | 20'0" (+119.0)                            | 71'6" (+67.5)                                | 71'6" (+67.5)                |
| B-4        | +149.5                               | NE to 19'0"                               | 19'0" (+130.5)                               | 19'0" (+130.5)               |

NE – Not encountered

**Implications of Existing Fill**

The subject site consists of a former marble quarry that was later used as a landfill. The boring data indicates that existing fill with debris is present throughout the subject site. In general, the upper portion of the fill consists of Silty Gravelly Sand or Sandy Gravel with varying amounts of debris followed by layers of ash, cinders, and miscellaneous debris (Stratum 2). Where encountered in the test borings, the fill extended to depths ranging from 19'0" to 71'6" beneath the existing ground surface. These depths correspond to elevations ranging between approximately elevation +67.5 and elevation +130.5 as shown in Table 1 above. Based on the data from a recent Remedial Investigation at the site by others, the existing fill with debris extends to depths ranging from 16'0" to 85'0" below the ground surface. The available data indicates that the depth of the fill material is highly variable. The fill material may be shallower or deeper in unexplored areas of the site.

The existing fill with debris is not an acceptable bearing material for the new building foundations and floor slabs and could also be problematic for the proposed sidewalks, pavement, retaining walls, and utilities. The consistency and density of the fill material are not predictable. Certain areas may contain clean dense soils while other areas may contain very loose material, and/or debris, as shown by the boring data. In addition, the fill with debris and ash is unpredictable and is expected to settle. The amount of settlement will vary but is expected to be greater in areas where new fill is required to raise the site grades. The existing fill conditions create the possibility of intolerable differential settlements under loading.

To eliminate the potential for damaging differential settlements, the new building loads must be transferred to the marble bedrock beneath the existing fill strata. This could be achieved using a pile foundation system. Recommendations for the new buildings are discussed in a following section of this report.

Based on the existing conditions, the proposed sidewalks, pavement, retaining walls, and utilities will settle if no ground improvement methods are applied to the subgrade soils. The amount of settlement will vary depending on the thickness and composition of the debris fill as well as the amount of new fill required to raise grades. The amount of post-construction settlement could range from several inches to more than two feet in areas.

To reduce the potential for damaging differential settlements, ground improvement measures could be considered for the subject site. These measures could include Deep Dynamic Compaction (DDC) or partial removal and replacement of the fill and debris and installation of geogrid reinforcement and new compacted fill for subgrade stabilization.

#### **Deep Dynamic Compaction**

Deep Dynamic Compaction (DDC) is a ground improvement method used to densify the existing fill and debris in-place. The new sidewalks, pavement, retaining walls, and utilities could then be supported on the improved subsurface soils. By using DDC, the amount of post-construction settlement at the site would be reduced, but not eliminated.

DDC uses a large, heavy weight dropped from a crane to compact the soil. Repeated drops are used in a grid pattern to assure uniform densification of the soil layers. Multiple passes would be required across the site. The DDC method is typically capable of compacting fill up to 25 feet in thickness so the full depth of the fill and debris on the site would not be densified by the DDC operation. In addition, DDC may not be feasible in areas of the site that are in close proximity to the property lines, adjacent structures, and/or existing utilities.

We expect that the DDC would result in the existing site grades being lowered by approximately 2'0" to 4'0", and possibly more in areas. Therefore, imported fill material will be required to level the site and to raise grades to the planned subgrade elevations.

To check the effectiveness of the compaction process, additional test borings will be performed after DDC in the vicinity of the original borings. The second series of borings will demonstrate the degree and depth of the densified soil. Due to the temporary buildup of pore water pressure following DDC, it is recommended that the secondary boring program be delayed at least two (2) weeks after the compaction is completed.

New fill required to achieve the planned subgrade elevations shall be placed as compacted fill after the DDC has been completed. New compacted fill shall consist of either suitable on-site soil approved by Carlin-Simpson & Associates or imported sand and gravel. Imported fill shall contain less than 20% by weight passing a No. 200 sieve. The new fill shall be placed in one (1) foot layers and each layer shall be compacted to at least 92% of its Maximum Modified Dry Density (ASTM D-1557). Each layer shall be compacted, tested and approved before placing subsequent layers.

#### **Vibrations Due to Deep Dynamic Compaction**

Deep Dynamic Compaction (DDC) causes vibrations in the surrounding soil. The vibrations are transmitted through the ground with decreasing intensity as the distance from the impact point increases. This is very important when DDC is performed near existing structures or buried utilities. The subject site is bordered by existing structures to the east and west as well as Marbledale Road and a number of existing utilities to the east.

DDC generally results in frequencies around 5 to 12 Hz. Based on the U.S. Bureau of Mines recommendations, peak particle velocities should not exceed 0.5 in/sec for older

encountered during construction, these materials must be removed and replaced with new compacted fill.

In the event that water seepage is encountered in the utility trench excavations, the excavation should be extended a minimum of six (6) inches below the bottom of the pipe and a six (6) inch layer of 3/4-inch crushed stone shall be placed on the bearing soil to provide a firm base for support of the pipe. Sump pits and pumps should be adequate to keep the excavations dry.

After the utility is installed, the trench must be backfilled with compacted fill. The fill shall consist of suitable on-site soil or imported sand and gravel. Imported fill shall contain less than 20% by weight passing a No. 200 sieve. Large rock fragments, cobbles, and boulders must not be placed directly against the pipe. Controlled compacted fill shall be placed in one (1) foot layers and each layer shall be compacted to at least 92% of its Maximum Modified Dry Density (ASTM D-1557). The backfill must be free of topsoil, debris and large boulders.

The light poles and utility structures may require special subgrade preparation procedures and/or pile foundations. Subgrade preparation may involve the over-excavation of existing fill and the use of geogrid reinforcement below the structure. Once the light poles and utility structures have been designed and their locations have been determined, additional geotechnical design recommendations can be provided by Carlin-Simpson & Associates.

#### **New Buildings - Micropiles**

Based on the subsurface conditions, piles are required to support the new building foundations and the floor slab. For this project, drilled in-place grout-filled steel pipe piles (micropiles) can be used to support the new building foundations and the floor slabs. The piles shall consist of a shaft section of concrete or grout-filled pipe, extending to bedrock, with an uncased socket drilled into the bedrock and filled with concrete or grout. The project structural engineer shall determine the number of piles required and their locations.

The micropiles shall be designed by a micropile contractor to meet the specified loading conditions as shown on the structural drawings. The piles must also be designed and installed in accordance with the New York State Building Code. Center to center spacing shall be at least three times the outside diameter of the steel casing but not less than 30 inches.

The piles must extend through the existing fill layers and shall develop their load-carrying capacity through a pressure-grouted bond zone constructed in the underlying Marble bedrock (Stratum 3). The existing fill shall not be included in the calculation of the required pile bond zone length.

For this project, we recommend that the steel pipe casing have a minimum nominal diameter of eight (8) inches and a wall thickness of at least 0.408 inches. The casing shall extend down to the top of the bond zone (i.e. the bedrock surface) upon the completion of the grouting and shall remain in place permanently. The diameter of the rock socket shall