

**EAST GOSHEN TOWNSHIP  
PLANNING COMMISSION  
Agenda  
Wednesday, January 6, 2010  
7:00 PM**

- A. Call to Order / Pledge of Allegiance
- B. Review of Tracking Log / Determine need for Workshop Meeting
- C. Public Comment on Non-Agenda Items
- D. Approval of Minutes
  - 1. **November 4, 2009**
  - 2. **December 3, 2009**
- E. Acknowledge Receipt of New Applications
  - 1. **Liberty Towers, 1594 Paoli Pike (V)**
- F. Subdivision Plans
- G. Land Development Plans
  - 1. **1661 E. Strasburg Rd, Mullen Property (Lot 2, Ashbridge Farm)**
  - 2. **Lieberman Earley & Co., 1345 Enterprise Drive (L/D)**
  - 3. National Bank of Malvern, 1305 Paoli Pike (L/D)
- H. Conditional Uses and Variances
  - 1. **Lieberman Earley & Co., 1345 Enterprise Drive (C/U)**
  - 2. **Liberty Towers, 1594 Paoli Pike (V)**
- I. Ordinance Amendments
  - 1. **Signs for Historic Adaptive Reuses (review and recommendation)**
- J. Old Business
  - 1. Discussion on "Traditions" Ind. Living Fac. project in West Goshen
  - 2. Sample Generator Ordinance
- K. New Business
- L. Any Other Matter
- M. Meetings and Dates of Importance

January 4, 2010	Board of Supervisors	
	Re-organizational & Formal Meeting	7:00 PM
January 6, 2010	Planning Commission	7:00 PM
January 7, 2010	Park & Recreation	7:00 PM
January 9, 2010	Annual Planning Session	8:00 AM
January 11, 2010	Municipal Authority	7:00 PM
January 12, 2010	Board of Supervisors	7:00 PM
January 13, 2010	Conservancy Board	7:00 PM
January 14, 2010	Historical Commission	7:00 PM
January 19, 2010	Board of Supervisors	7:00 PM
January 20, 2010	Deer Committee	7:00 PM
January 26, 2010	Board of Supervisors	7:00 PM

- N. Correspondence
- O. Goals
- P. Adjournment

- **Bold Items indicate that the Planning Commission has new information to review for that application.**

**REMINDER – Newsletter Article Submission Due Date:**

<u>Article Due Date</u>	<u>Delivery Date</u>
February 10, 2010	April 1, 2010
May 12, 2010	July 1, 2010
August 11, 2010	October 1, 2010
November 10, 2010	January 1, 2011

**EAST GOSHEN TOWNSHIP  
PLANNING COMMISSION  
APPLICATION HISTORY  
Wednesday, January 6, 2010  
7:00 PM**

**1. SUBDIVISION & LAND DEVELOPMENT PLANS**

**Matthew & Christine Mullen, 1661 E. Strasburg Rd (L/D)**

August 18, 2009	application
October 13, 2009	Yerkes – Stormwater Mgt & Erosion Review
October 26, 2009	CCPC – Pre/Final Land Development
November 10, 2009	Chester County Conservation District

**Lieberman Earley & Company, 1345 Enterprise Drive (L/D)**

November 19, 2009	EB Walsh – application of NPDES Permit
November 20, 2009	Application Plan
December 4, 2009	EB Walsh – 60-day extension
December 10, 2009	Memo – new hearing date
December 16, 2009	Lieberman Earley & CO – continuance
<b>December 29, 2009</b>	<b>Yerkes – L/D and C/U Plan Review</b>

**2. CONDITIONAL USE /Variances/ZHB APPLICATIONS**

**Lieberman Earley & Company, 1345 Enterprise Drive (C/U)**

December 10, 2009	memo – new hearing date
December 16, 2009	Lieberman Earley – 90 Day extension

**Liberty Towers, LLC, 1584 Paoli (V)**

December 29, 2009	Application Plans
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**3. ORDINANCE AMENDMENTS**

**Signage for Historic Adaptive Reuses**  
Amended draft ordinance

**4. ANY OTHER MATTER**

January 6, 2010

Application Name	Application (CU, LD, O, SD, V, SE, CA)	Type (Sk, P, F)	Date Filed	Start Date	Date to Verkes/Consultant	Date to CCPC	Date to Abutting Prop. / ABC's	Extension	PC NLT Action Date	BOS NLT Action Date	Hearing Date	Drop Dead date
1661 E. Strasburg Rd. (Mullen)	LD	P/F	9/24/09	10/7/09	9/25/09	9/25/09	9/28/09	2	2/3/10	3/2/10	n/a	3/12/10
Leiberman Early (1345 Enterprise Drive)	CU	P/F	11/19/09	11/19/09	11/20/09	n/a	11/30/09	1	3/3/10	3/16/10	3/2/10	3/19/10
Leiberman Early (1345 Enterprise Drive)	LD	P/F	11/19/09	12/2/09	11/20/09	11/23/09	11/30/09	1	4/7/10	4/20/10	n/a	5/1/10
National Bank of Malvern (1305 Paoli Pike)	LD	P/F	11/24/09	12/2/09	12/7/09	12/4/09	11/25/09		2/3/10	3/2/10	n/a	3/2/10
Liberty Towers (1594 Paoli Pike)	Z	P	12/28/09	12/28/09	12/29/09	n/a	12/29/09		2/3/10	2/16/10	2/24/10	2/26/10

Bold = New Application or PC action required

**EAST GOSHEN TOWNSHIP**  
**PLANNING COMMISSION MEETING**  
**November 4, 2009**

*The East Goshen Township Planning Commission held their regularly scheduled meeting on November 4, 2009 at the East Goshen Township building. Chairman Senya Isayeff, Vice-Chair George Martynick and members Megann Hedgecock, Albert Zuccarello, Sue Carty and Peter Mylonas were present. Also present were Township Zoning Officer Mark Gordon, Kathryn Yahraes from the Historic Commission, and Don McConathy (BOS).*

**WORKSHOP SESSION – 7:00pm**

Senya reviewed the agenda for the evening.

The minutes of October 7<sup>th</sup> were approved as corrected. Senya reviewed the agenda for the evening.

Chuck spoke of the cell towers and added that through independent research learned that technology is quickly changing. New software is tested every 30 days. Shared towers are possible with factors. Technical and legal consideration between companies is also a factor. AT&T is prepared to launch a new device that will allow cell phones to switch from tower to tower without dropped calls.

**FORMAL SESSION**

**A. Pledge of Allegiance**

Senya called the meeting to order at 7:36pm. Don McConathy led those in attendance in the Pledge of Allegiance.

**B. Approval of Minutes**

The minutes of September were discussed. Al made a motion to approve the minutes of September 2<sup>nd</sup>, Peter seconded the motion and Meghann abstained due to her absence from the meeting. No further comment was made and the motion passed unanimously. The motion to approve the October 7<sup>th</sup>, 2009 was made by Meghann and seconded by Al. No further comment was made and the motion passed unanimously.

**C. New Applications**

**Clearwire US LLC**-Fran Green, representative from Clearwire was in attendance and noted that a proposed panel would be added to the existing grid on the water tower. The addition of 3 antenna and 3 microwave disks would be added. Two equipment cabinets on concrete pads would be housed there as well. Mark noted that a new conditional use would need to be drafted. The PC requested a post installation noise study be conducted in the spring. Peter made a motion to recommend the BOS to approve the re-open of the existing conditional use as long as a post construction noise study is conducted in August of 2010. Chuck seconded the motion.

**19 School Lane**- mark McGinley, owner of 19 School Lane was in attendance to discuss the request for a die yard variance at this location. The plan is to construct a 1600sf dwelling with 3 bedrooms, 2 baths,, and a single car garage. A variance was previously granted by a prior owner and that owner never took advantage of the variance. Senya noted that the PC supports the request and re-instatement of the variance. Chuck made a motion to recommend approval to the BOS and Al seconded the motion.

**D. Old Business**- Traditions is West Goshen has been tabled. Don added that they builder is looking to downsize the project and resubmit to the township for review and approval.

50 E. **New Business**

51 Riparian Buffer- the Conservancy Board is requesting consideration to adjust the buffer from 50 feet to  
52 100 feet. Senya added that the PC is not prepared to discuss at this time and that the PC would gather  
53 information and discuss at the December meeting.

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55 A new clean-up date of November 14<sup>th</sup> was selected. It was also noted that elections for new members  
56 will be held in December.

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58 **Public Comment:**

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60 At the beginning of the formal session, Senya asked those in attendance if there was any public  
61 comment not on the agenda. Jim Gillespie of Milmo, LLC and Automotive Specialties came forward to  
62 discuss his plans for 1340 Enterprise Drive, the formal site of Men's Formalwear. This location will be  
63 vacant as of November 13<sup>th</sup> and he is looking to purchase the building to house a military vehicle  
64 museum along with his other business ventures to house under one roof. The building is 86,000 sf. Al  
65 asked how many vehicles will be housed on site and what the hours of operation would be and if there  
66 would be a noise factor to consider. Jim noted that it would be a 9-5 operation with the museum open to  
67 the public 7 days a week. The business would mostly consist of internet sales. He also noted that this  
68 would not be a dealership, 90% of the operation is by appointment only. It was noted that the business  
69 would have roughly 20 employees and that the prior company had 120 employees onsite.

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72 F. **Adjournment**

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74 Motion to adjourn the meeting was made by George and seconded by Sue. The meeting adjourned at 8:45 p.m.

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77 Respectfully submitted, \_\_\_\_\_  
78 *Linda Jones, Recording Secretary*  
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**EAST GOSHEN TOWNSHIP**  
**PLANNING COMMISSION MEETING**  
**December 2, 2009**

*The East Goshen Township Planning Commission held their regularly scheduled meeting on December 2, 2009 at the East Goshen Township building. Chairman Senya Isayeff, Vice-Chair George Martynick and members Megann Hedgecock, Albert Zuccarello, Sue Carty and Peter Mylonas were present. Also present were Township Zoning Officer Mark Gordon, Don McConathy (BOS) and Ginny Newlin from the Conservancy Board.*

**WORKSHOP SESSION – 7:00pm**

Mr. McConathy noted to the board that the Clearwire conditional use approval presented to the Board of Supervisors was missing some needed items. The BOS did not re-open the old C/U; the Solicitor issued a new conditional use. Clearwire is 51% owned by Sprint and they did not provide proof of such. It also appears that 4 items appear on the pad, when only 3 are allowed.

Senya reviewed the agenda for the evening. 1345 Enterprise Drive is to be discussed in the formal session, as is the National Bank of Malvern. Riparian buffers were also discussed and Senya noted that he feels it is unfair for homeowners property value to lower if they do not have a 1000 foot setback. Senya also recommended to the Conservancy to provide the PC with information to add to the agenda for the next meeting.

Al will discuss Traditions in the formal session.

The minutes of November 4<sup>th</sup>, although submitted in time, did not make it into the packet. The approval of minutes will be postponed until January.

**FORMAL SESSION**

**A. Pledge of Allegiance**

Senya called the meeting to order at 7:40pm. Sue Carty led those in attendance in the Pledge of Allegiance.

**B. New Applications**

**National Bank of Malvern-** at the time of the meeting, the Planning Commission has yet to receive notes from Yerkes. Mr. Oliva presented plans submitted to the township the week prior proposing a 3050 square foot bank with 2 drive thru windows and 32 parking spaces for banking customers and 106 spaces leased to the YMCA. The parcel is 4.56 acres with a 100 foot front yard. Access to the site is right in and right out to Paoli Pike that was agreed in the Condition Use Permit. A secondary access entry is located at Airport from to the YMCA through the parking lot entrance.

One half of the site is left as it currently exists. This area consists of 2.25 acres with no grading done at time of construction. Storm water will be collected on site by underground seepage bed. Mark Gordon questioned pedestrian safety concerns and Mr. Oliva noted that there is a sidewalk in the plan that can be constructed if requested.

**C. Old Business-** Al attended the West Goshen planning commission meeting and 4 solicitors were present to discuss the issue of Traditions. Traditions explained in detail site and apartment changes. The basic idea is to lower the height of the building to 35 feet. It will still remain at 3 floors with an A frame roof. It will also go from 128 to 115 units. The kitchen and load area have been moved to the other side, away from the residential area of Culbertson Circle. Deliveries will be made by small vans, not trucks. Parking is still inadequate. All changes will be presented to the West Goshen BOS on January 20<sup>th</sup>.

52 PC elections were discussed. There are two positions to elect. Sue and Megan nominated George as the chairman  
53 and Al and Chuck nominated Sue Carty as the vice-chair. Senya and Don passed out certificates to all members  
54 of the PC in recognition of their dedication.

55 **Public Comment:-** none.

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58 **D. Adjournment**

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60 Motion to adjourn the meeting was made by Chuck and seconded by Al. The meeting adjourned at 9:32 p.m.

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63 Respectfully submitted, \_\_\_\_\_  
64 *Linda Jones, Recording Secretary*

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G. LIEBERMAN EARLEY  
2  
2 pages



EDWARD B. WALSH & ASSOCIATES, INC.  
*Complete Civil Engineering Design / Consultation Services*  
Lionville Professional Center  
125 Dowlin Forge Road  
Exton, PA 19341

November 19, 2009

Donna Leddy  
Chester County Conservation District  
688 Unionville Road  
Suite 200  
Kennett Square, PA 19348

RE: Application for District Services and General NPDES Permit Application  
for  
1345 Enterprise Drive, Goshen Business Park, East Goshen Township, PA  
(Initial Completeness Submission)

Dear Ms. Leddy:

Please find attached an Application for District Services and General NPDES Permit Application for 1345 Enterprise Drive located within the Goshen Business Park, East Goshen Township, PA. The application and supporting information is submitted on behalf of the Lieberman Earley & Company and their planned 64 parking space expansion to the existing facilities located at 1345 Enterprise Drive. The following additional information is submitted for District review:

- One (1) completed Application for District Services;
- Check 1722: \$1,500.00 Application for District Services Fee;
  
- Three (3) completed General NPDES Permit Application (One Original and Two Copies);
- Check 1721: \$250.00 General NPDES Permit Application Fee;
  
- Three (3) sealed copies of Soil Erosion and Sedimentation Control Plan, Sheet 4 of 7;
- Three (3) sealed copies of supplemental plans which include:
  - a. Overall Site Plan, Sheet 1 of 7;
  - b. Grading, Utilities, and Post Construction Stormwater Management Plan, Sheet 3 of 7;
  - c. DETAILS, Sheet 6 and 7 of 7;
  
- Three (3) sealed copies of the Final Stormwater Management Report, Erosion & Sediment Control Plan, and Post Construction Stormwater Management Plan.

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Donna Leddy  
Chester County Conservation District  
November 19, 2009  
Page 2 of 2

The attached applications and supporting information have been prepared in accordance with current Chapter 102 and PA DEP regulations. The information has been compiled in coordination with the enclosed *Complete Plan Checklist*, *E & S Plan Technical Review Checklist*, and *Application Checklist for General NPDES Permit for Stormwater Discharges Associated with Construction Activities*.

Please feel free to contact me should you require any additional information and thank you for your assistance with the project.

Very truly yours,  
**EDWARD B. WALSH & ASSOC., INC.**

A handwritten signature in black ink, appearing to read "Stephen J. Sauselein". The signature is fluid and cursive, with a large initial 'S'.

Stephen J. Sauselein, P.E.

cc: John Lieberman, Lieberman Earley Company  
Craig Hough, C.E. Hough Architects  
file



EDWARD B. WALSH & ASSOCIATES, INC.  
*Complete Civil Engineering Design / Consultation Services*  
Lionville Professional Center  
125 Dowlin Forge Road  
Exton, PA 19341

December 4, 2009

Mark Gordon  
East Goshen Township  
1580 Paoli Pike  
West Chester, PA 19380

RE: Lieberman Earley & Company  
1345 Enterprise Drive, Goshen Business Park  
EBWA File #3580

Dear Mr. Gordon:

By this letter the Lieberman Earley & Company, Applicant of the proposed Conditional Use and Land Development Application for 1345 Enterprise Drive, requests a 60-day extension from the current deadline for the Board of Supervisors to render a decision on the applications currently on file with the Township.

Please contact me if I can provide any additional materials to aid in this matter.

Very Truly Yours,

EDWARD B. WALSH & ASSOCIATES, INC.

Very truly yours,  
**EDWARD B. WALSH & ASSOC., INC.**

Stephen J. Sauselein, P.E.

cc: John Lieberman, Lieberman Earley Company  
Craig Hough, C.E. Hough Architects  
file



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**CHESTER COUNTY CONSERVATION DISTRICT**  
**688 Unionville Road, Suite 200, Kennett Square, PA 19348**  
**Phone: 610-925-4920 ~ Fax: 610-925-4925**  
**www.chesco.org/conservation**

December 14, 2009

Lieberman Earley & Company  
Attn: John Lieberman  
485 Devon Park Drive; Suite 100  
Wayne, PA 19087

**Re: Erosion & Sedimentation Pollution Control Plan**  
**1345 Enterprise Drive: Review I**  
**East Goshen Township, Chester County, PA**  
**NPDES File: PAG2001509049**

**Most Recent Plan Revision Date: 10/1/09    Total Acres: 8.00    Disturbed Acres: 1.23**  
**Receiving Watershed: Chester Creek    Designation: TSF**

To Whom It May Concern:

The Chester County Conservation District has reviewed the above referenced project and found it to be **inadequate**. The following items must be adequately addressed prior to the approval of this plan:

**Erosion and Sedimentation Control Comments**

1. The proposed limit of disturbance and the NPDES permit boundary as shown on the E&S control plan drawings are the same. Because the NPDES permit boundary and Limit of Disturbance are the same, any exceeding of the limit of disturbance as proposed will also exceed the NPDES boundary, requiring a major amendment of the NPDES permit. NPDES boundary as proposed also makes worksheet 10 for water quality non-compliant. All credits for worksheet 10 must be included within the NPDES permit boundary. Minimizing disturbed areas and soil compaction are not applicable because all areas within the NPDES boundary as proposed will be graded and paved over. Rain Gardens and bio-retention as noted on worksheet 10 could not be located. NOI and E&S application and all other related material should be revised. Address.
2. Temporary stockpile locations have not been provided. There is no room within the proposed limit of disturbance to accommodate storage of fill removed from either PCSWM facility. Please revise.

3. The front seepage bed and access to the seepage bed are not included within the proposed limit of disturbance. Please revise. NOI, E&S application and all other forms should be updated to accommodate and address this additional disturbance proposed.
4. Past land uses as far as records show have not been discussed in the narrative. Please address.
5. Inlet protection has not been provided for inlets tributary to the underground facility prior to stabilization of disturbed areas on site. Other inlets, which will be subject to construction traffic traversing between the disturbed areas also are not protected while tributary to waters of the commonwealth.
6. Please clarify how volume and rates of runoff from existing improvements will be managed while the new underground infiltration facility is installed.
7. Please provide a plan drawing showing existing features.
8. The Chapter 93 classification of the receiving stream or other waterbodies could not be located. Please address.
9. The demolition plan as referenced in the proposed sequence of construction could not be located. Please address.

**Comments as per the PA DEP NPDES II Post Construction Stormwater Requirements**

1. Soil testing pits 2 and 4, which are located within the boundaries of the rear infiltration facility are showing evidence of a seasonally high water table at 16" and 12" respectively. The infiltration facility is more than 72" deep. Please clarify how infiltration as proposed will function properly for a deep bed where limiting zones have been observed at relatively shallow depths. Bed design is not conducive to soil and infiltration testing results as provided. Please revise.
2. Infiltration testing (10/20/09) was conducted nearly three weeks following plan design (10/1/09) as noted on the plans. Please discuss how an infiltration facility is properly designed to site specific conditions when the testing to which the facility should be designed around is completed following design of the facility. Design should be based on the testing; testing should not be done to accommodate the design. Revise.
3. Worksheet 10 is non compliant because all credit being claimed is not located within the NPDES permit boundary. Please address.
4. Summary table 2 in the NOI is incorrect. Please follow directions for filling in boxes and revise.
5. Elevations of infiltration tests relative to proposed bed bottom elevations could not be located. Please address.

6. Loading rations have been exceeded for the proposed underground infiltration facilities.
7. The soil infiltration testing results that were submitted with the stormwater report do not reflect the current stormwater management layout. Please provide information on the following items:
  - a. The proposed data does not indicate the depth to rock or water below the bottom of the proposed stormwater seepage/infiltration BMPs. Please provide this information for all proposed stormwater seepage/infiltration BMPs.
  - b. A minimum 2 feet of soil should separate the bottom of any of the on-site infiltration BMP to the SHWT.
  - c. Additional infiltration testing should be performed based on the new location of the stormwater BMPs and at the depth of the proposed bed bottom elevation.
  - d. It is not an appropriate or acceptable methodology to infiltrate stormwater on fill. Please provide adequate documentation and test data to indicate location of both water and/or rock beneath the proposed bed bottoms.
8. Please add the following to your construction sequence to address issues with PCSM:
  - a. Existing subgrade under the infiltration bed shall NOT be compacted or subject to excessive construction equipment traffic prior to the placement of geotextile and stone bed.
  - b. Prior to construction, infiltration areas shall be marked off in the field. The areas shall be delineated with construction fencing or tape in such a manner as to prevent the parking or repeated movement of construction equipment across the infiltration areas.
  - c. All bed bottoms should be level after final grading.
  - d. Prior to infiltration bed grading and placement of geotextile, upgradient areas shall be sufficiently stabilized to prevent the washing of sediment into the recharge areas. Alternatively, the contractor may install silt fence in accordance with Construction Document Plan Sheet \_\_\_\_\_. It is the contractor's responsibility to prevent the deposition of sediment or sediment-laden waters into the infiltration structures after final grading.
  - e. Upon approval of final subgrade preparation, geotextile and infiltration bed aggregate shall be placed immediately. Any accumulation of debris or sediment which has taken place after approval of subgrade shall be removed prior to installation of geotextile at no extra cost to owner. Where erosion has caused accumulation of fine materials and/or surface ponding, this material shall be removed with light equipment and the underlying soils scarified to a minimum depth of 6 inches with a York rake and light tractor.
  - f. If bedrock is encountered at any time during excavation of the infiltration bed, excavation is to be discontinued in the affected area and the owner and engineer notified at once.
  - g. Place geotextile in accordance with manufacturer's standards and recommendations. Adjacent strips of geotextile shall overlap a minimum

- of twelve (12) inches. Secure fabric at least four (4) feet outside of bed and take steps necessary to prevent any sediment from entering trench.
- h. Aggregate shall be clean with a wash loss of no more than 0.5 percent. Installation of the stone should be checked by the design or site engineer prior to installation into the infiltration BMP to ensure that it is clean washed stone. Aggregate that does not meet this criteria will be removed at no extra cost to the owner and the beds restored to the owner's satisfaction.
  - i. Following placement of bed aggregate, the geotextile shall be folded overtop the bed, with appropriate fabric overlap, to protect from sediment washout along bed edges. Topsoil (or appropriate material specified by particular design) will be used to fill above the bed to the specified height.

The Chester County Conservation District has reviewed this plan solely to determine whether it is adequate to satisfy the requirements of PCSM Plan and E & S Plan - Chapter 102, the erosion control rules and regulations of the Department of Environmental Protection. A 60-day time period from the receipt of this inadequate letter is provided for your response to this review. If no response is provided, the plans will be considered withdrawn and any subsequent submission will require a new submission with fees.

Please submit a revised **highlighted** plan to this office that addresses all deficiencies with Chapter 102 regulations as described in this letter. **Please include a response letter outlining the necessary plan revisions. Please be advised that the District may have additional comments with the revisions. Only full plan revisions that address all items above will be reviewed.**

Before any construction or earthmoving may begin, the appropriate and necessary local, state and federal permits must be secured from the agency having specific permitting authority. No approval or disapproval is given regarding the sewage plan, the storm water management controls, wetland encroachments, waterway obstruction, or any other item not specified in Chapter 102.

**If you have any questions or comments regarding this matter, please feel free to contact Benjamin Drover, Resource Conservationist, at the Chester County Conservation District office at (610) 925-4920 ext 106.**

Sincerely,



Christian E. Strohmaier Electronic signature  
Acting District Manager

CC: Project File  
East Goshen fax 610-692-8950  
Yerkes fax 610-644-3812  
EB Walsh c/o S. Sauselein fax 610-903-0080  
Lieberman Earley & Company c/o J. Lieberman fax 610-688-4544



Yerkes Associates, Inc.

Consulting Engineers / Site Planners / Land Surveyors

December 29, 2009

East Goshen Township  
1580 Paoli Pike  
West Chester, Pennsylvania 19380

Attn: Mark Gordon, Township Zoning Officer

Re: Goshen Business Park-1345 Enterprise Drive  
Amended Land Development and Conditional Use Plan Review

Dear Mark:

The following plans and correspondence prepared by Edward B. Walsh & Associates, Inc., have been received by our office for review:

Plans, dated 10-01-09:

- Sheet 1 of 7: Overall Site Plan
- Sheet 2 of 7: Existing Features/Demolition Plan
- Sheet 3 of 7: Grading, Utilities Plan and Post Construction Stormwater Management Plan
- Sheet 4 of 7: Soil Erosion and Sedimentation Control Plan
- Sheet 5 of 7: Landscape Plan
- Sheet 6 of 7: Details
- Sheet 7 of 7: Preliminary/Final Erosion and Sedimentation Control Plan

Report

- Final Stormwater Management Report and Erosion & Sediment Control Plan and Post Construction Stormwater Management Plan, dated November 16, 2009 (singly bound).

Correspondence:

- Edward B. Walsh & Assoc., Inc, letter dated 11-19-09.

The owner of the tract is the Trusts of Susan Y., David D. and John T. Kim. The applicant is Lieberman Earley & Company. The site is located on and accessed from the northerly side of Enterprise Drive west of the spur access from Paoli Pike. The site is comprised of two Tax Parcels (Tax Assessment Map 53-4, Parcels 171 and 172). The site is situated within the BP Business Park Zoning District and contains 8.00 acres net. The site contains an existing structure which is utilized as office and warehouse space. No change of use is indicated.

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1345 Enterprise Drive  
December 29, 2009  
Page 2 of 4

The existing property is served by public water and sewer. The plan depicts the consolidation of the two lots into one lot, and the net addition of 64 parking spaces with associated stormwater control facilities.

The following comments are offered for your consideration:

Zoning Ordinance

1. Section 240-21.C (23) - Impervious coverage expansion and parking in front yard is permitted by Conditional Use. The requirements of section 240-31.C.qq will need to be addressed to the Township's satisfaction.
2. Section 240-23.D (11) - A clear sight triangle at driveway intersections is required to be established and maintained. Obstructions are limited to a height of not more than two feet above center line grade. The location of the sign at the eastern driveway entrance should be adjusted so that it does not encroach into the clear sight triangle.
3. Section 240-26.B (6)(a) - Parking is prohibited in floodplains. The floodplain boundary location shall be shown on the plans or the plans should note that no floodplain exists on the parcel.
4. Section 240-27.C (1)(e) - The method of irrigating all planted areas shall be shown or noted on the plans.
5. Section 240-27.E (11) - Pathways and walkways to link the rear parking area and the side building entrances should be considered.
6. Section 240-31.C (2)(e) - The Fire Marshall should review the plan to ensure adequate access to the rear of the building by emergency vehicles.
7. Section 240-33.B (7)(b) - Spot elevations should be provided on the Grading Plan to verify the slopes of the proposed curb ramps. Ramps shall comply with Federal ADA Standards for Accessible Design.
8. Section 240-33.C (3) - No less than 5 percent of the off-street parking area shall be landscaped. Calculations should be provided demonstrating compliance.

Subdivision and Land Development Ordinance

9. Section 205-30.B (12) - The plans should indicate the right-of-way and cartway widths for Enterprise Drive.
10. Sections 205-30.C (3)(b) & 33.B (21)(b) - It appears Inlet #4 is mislabeled. Some of the pipe data, for the subsurface stormwater management system located in the rear of the property, is also mislabeled.

1345 Enterprise Drive  
December 29, 2009  
Page 3 of 4

11. Section 205-35.C – The location of all existing watercourses, floodplains and wetlands within 50 feet of the tract boundaries shall be shown on the plan.
12. Section 205-35.E - A note shall be added to the plans indicating that the applicant is responsible for installation and maintenance of all soil and erosion control measures until closeout of the escrow account.
13. Section 205-37.C (4) – The drop across the inlet #5 should be adjusted to provide a minimum two-inch drop from invert in to invert out.
14. Section 205-37.C (8) - Profiles of the storm sewer and stormwater management systems should be provided to ensure adequate cover is provided.
15. Section 205-37.F (1) – The Applicant's Engineer should provide explanation for the use of partially perforated pipe as opposed to fully perforated pipe.
16. Section 205-37.F (2) - For the proposed rear basin the outlet data on the plan view (Sheet 6 of 7) does not agree with the pond report data in the stormwater report, and the outlet structure detail. The plan should be revised for consistency with the stormwater management report.
17. Section 205-37.F (5) – Percolation rate shall not be taken into account when sizing stormwater management basins. It appears from the proposed rear basin pond report that the percolation rate was utilized in sizing the basin. The basin design should be adjusted for compliance with this section.
18. Section 205-37.G - A note shall be added to the Title Plan that the stormwater facilities are permanent and shall be maintained by the property owner.
19. Section 205-61.C (2) – The plans should indicate the placement of tree protection fence for protection of the trees at the west exit from the rear parking area and the trees to remain near the northeast corner of the building.

Stormwater Management Ordinance 129-M-103

20. Section 304.B.6- The soils identified in the stormwater management report should be checked for consistency with the site soils identified on the plan.
21. Section 406.B & .C - Pipe hydraulic calculations shall be provided demonstrating the storm sewer capacity to convey runoff from the 25-year design storm. The design shall also demonstrate that an overflow system has the capacity to convey the difference between the 100-year and the 25-year peak flow to the stormwater management system.

1345 Enterprise Drive  
December 29, 2009  
Page 4 of 4

EROSION AND SEDIMENT CONTROL

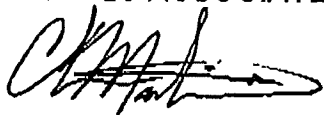
22. Inlet protection shall be provided for all existing and proposed inlets while the site disturbance is ongoing.
23. A detail of the temporary 18" HDPE pipe and existing outlet structure should be provided. The means of closing off the existing orifices should be specified. The removal of the temporary pipe should be specified in the Construction Sequence.

GENERAL COMMENTS

24. Top of stone and bottom of stone elevations for the stormwater management facilities should be added to the detail sheet.
25. Since the proposed limit of disturbance exceeds one acre, the soil erosion and sedimentation control plan will need to be submitted to the Chester County Conservation District for review and approval. A letter of adequacy from the Chester County Conservation District and a NPDES Permit is required for final plan approval.

The comments above should be addressed and the plans revised and resubmitted for further review. Please do not hesitate to call if you have any questions concerning this review.

Sincerely,  
YERKES ASSOCIATES, INC.



Christopher Martincic, P.E.



Michael Conrad, P.E.

Cc: Stephen J. Sauselein, Edward B. Walsh & Assoc., Inc.

H. LIEBERMAN EARLY  
FYI  
1  
1 pg

## Memorandum

---

East Goshen Township  
1580 Paoli Pike  
West Chester, PA 19380

Voice: 610-692-7171  
Fax: 610-692-8950  
E-mail: [mgordon@eastgoshen.org](mailto:mgordon@eastgoshen.org)

---

Date: 12/10/2009  
To: Board of Supervisors  
Cc: John Lieberman, Lieberman Early & Company  
From: Mark Gordon, Township Zoning Officer *mlb*  
Re: 1345 Enterprise Drive Conditional Use and Land Development.

Dear Board Members,

The Conditional Use application for the Parking Expansion at 1345 Enterprise Drive was originally scheduled for January 4, 2010. Since the Application has granted a 60 day extension to the Township for the review period of this application the new hearing date is scheduled and advertised for **March 2, 2010**.

Please announce this schedule change at your meeting on January 4, 2010 in the event that someone attends expecting the hearing to be conducted.

H. LIEBERMAN EARLEY  
1.  
one pg

# **LIEBERMAN EARLEY & COMPANY**

THE MEADOWS • 485 DEVON PARK DRIVE • SUITE 100 • WAYNE, PA 19087

Phone (610) 688-4300

Fax (610) 688-4544

JOHN E. LIEBERMAN  
PRINCIPAL

PHILIP R. EARLEY  
PRINCIPAL

December 16, 2009

Mr. Rick Smith  
Township Manager  
East Goshen Township  
1580 West Chester Pike  
West Chester, PA 19380

DEC 17 2009

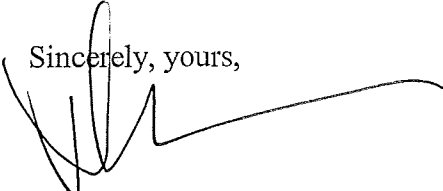
**Re:** Conditional Use Application for 1345 Enterprise Drive, Goshen Business Park

Dear Rick:

Per our discussion today, the ownership of the above property has requested that the above project be put on hold for 90 (ninety) days, and be continued until April 5, 2010. It is understood that in conjunction with the above request, the ownership waives the time limits stipulated in the MPC.

Should you have any questions, please feel free to call me.

Sincerely, yours,

  
John E. Lieberman  
Applicant

**INDUSTRIAL • COMMERCIAL • RETAIL • MANAGEMENT**

FOUR GENERATIONS OF EXPERIENCE

H. LIBERTY TOWERS  
COPY 2  
3pp

**EAST GOSHEN TOWNSHIP  
ZONING HEARING BOARD APPLICATION**

1580 PAOLI PIKE WEST CHESTER, PA 19380-6199  
PHONE (610)-692-7171 FAX (610)-692-8950

Name of Applicant: Liberty Towers, LLC  
c/o Lemanowicz, LLP  
Applicant Address: 1012 N. Bethlehem Pike, Suite 200B-3 Lower Gwynedd, PA 19002  
  
Telephone Number: 267-419-8498 Fax Number: 215-565-2739  
Email Address: cjf@lemanowiczlaw.com  
Property Address: 352 Paoli Pike, West Chester, PA 19380  
  
Tax Parcel Number: 53-004-0080.0100 Zoning District: C-2 Acreage: 43,560 s.f.

**Purpose of Application (check one)**

- ☒ Variance (Type: ☒ Use Variance ☒ Dimensional Variance)  
☐ Special Exception  
☐ Appeal determination of the Zoning Officer  
☐ Other \_\_\_\_\_

**Sections of Zoning Ordinance in which relief is sought:**

See attached Memorandum of Law in Support of Application.

**Description of the Zoning Relief requested and the future use of the property:**

See attached Memorandum of Law in Support of Application.

We hereby acknowledge that we have read this application and state that the above is correct and agree to comply with all provisions of the East Goshen Township Zoning Ordinance applicable to this project and property.

\_\_\_\_\_  
Signature of Applicant Date  
Richard J. Lemanowicz, Attorney for Applicant

**\*Please review the formal application and review procedures on page three.**

# EAST GOSHEN TOWNSHIP ZONING HEARING BOARD APPLICATION

1580 PAOLI PIKE WEST CHESTER, PA 19380-6199  
PHONE (610)-692-7171 FAX (610)-692-8950

This checklist outlines the steps and items needed to insure completeness of the application and to insure the application follows the process and conforms to the timeframe outlined by the state of Pennsylvania and East Goshen Township. This checklist is broken into two parts, the Application process and the Review Process. The application process must be completed in its entirety prior to the applications advancement into the Review Process.

Applicant Name: Liberty Towers, LLC

## Application Process Checklist (Administration use only):

<u>Item</u>	<u>Date Complete</u>
1. Completed Township Application Form: .....	<u>12/29/09</u>
2. All related materials submitted: .....	<u>"</u>
3. Township application and review fees paid: .....	<u>"</u>

Application accepted on 12/29/09 by MARK GORDON

Official Signature [Signature] Title Zoning Officer

## Review Process Checklist

<u>Item</u>	<u>Date</u>
1. Start date: .....	<u>12/29/09</u>
2. Date of first formal Planning Commission Meeting following complete application: .....	<u>1/6/2010</u>
3. Date sent to CCPC: .....	<u>—</u>
4. Date sent to Township Engineer: .....	<u>12/30/09</u>
5. Date presented to Planning Commission: .....	<u>1/6/2010</u>
6. Date sent to CB: .....	<u>12/29/09</u>
7. Date sent To MA: .....	<u>"</u>
8. Date sent to HC: .....	<u>"</u>
9. Date sent to PRB: .....	<u>"</u>
10. Date sent to TAB: .....	<u>"</u>
11. Date by which the PC must act: .....	<u>2/3/2010</u>
12. Date by which Board of Supervisors must act: .....	<u>2/16/2010</u>
13. Drop Dead Date; (Day 60): .....	<u>2/26/2010</u>
14. Zoning Hearing Date: .....	<u>2/24/2010</u>
15. Dates of public advertisement: .....	<u>_____ &amp; _____</u>

# EAST GOSHEN TOWNSHIP ZONING HEARING BOARD APPLICATION

1580 PAOLI PIKE WEST CHESTER, PA 19380-6199

PHONE (610)-692-7171 FAX (610)-692-8950

## **Procedures for the processing and review of Subdivision, Land Development, Conditional Use, Variance, and Special Exception Applications**

**August 19, 2002**

**2<sup>nd</sup> Revision: March 2, 2006**

1. In order for any application to be considered by the Planning Commission it must be submitted to the Township with all required documentation as per the Township Code and with all applicable fees paid. The Township will use a checklist to verify all required documentation has been submitted. Until the application is complete the application will not be considered "filed" by the Township staff. The Planning Commission will acknowledge receipt of the application at their next regularly scheduled meeting.
2. All materials to be considered at the next regular meeting of the Planning Commission must be submitted with at least eleven (11) copies to the Township Staff by not later than close of business the previous Tuesday. Any materials submitted after that time will be held for the following meeting and not provided to the Commission at the upcoming meeting.
3. The application review cycle for Subdivision and Land Development Applications shall begin with the next regular meeting of the Commission after the complete application is filed. The application review cycle for Conditional Use, Variance, and Special Exception Applications shall begin the day a complete application is filed with the Township.
4. Applicants should not distribute material to the Commission during a meeting unless it is directly related to the initial presentation of the application. All materials for the Planning Commission, including any material to be used at a meeting, must be delivered to the Township Staff not later than close of business the previous Tuesday.
5. The burden of supplying necessary materials to the Planning Commission in a timely manner is on the applicant. Late delivery of material may require an extension on the part of the applicant or a recommendation for denial of the application by the Planning Commission.
6. Formal application presentations to the Planning Commission will only be made at the regular meeting after the complete application is submitted and accepted by the Township staff.
7. The application will remain on the Planning Commission's agenda until such time as the Commission has made its recommendation to the Board of Supervisors and or Zoning Hearing Board.
8. Applicants are encouraged to attend each Planning Commission meeting in order to answer questions or address issues concerning their application.
9. Applications will be voted on only during the regular Planning Commission meetings.
10. The Chairman, in his sole discretion, may waive or modify any of this procedure.

## **Zoning Hearing Board Procedural Rule for Hearing Continuances: ADOPTED: May 13, 2009**

1. The Zoning Hearing Board may grant one application for hearing continuance. Subject to the limited circumstances referenced in paragraph 2 below, the rescheduled hearing shall be held unless the applicant withdraws the application.
2. The continuance after the first one shall only be granted in an extraordinary circumstance.
3. The Zoning Hearing board has the sole discretion whether to grant any continuance.



**BOARD OF SUPERVISORS**  
**EAST GOSHEN TOWNSHIP**  
CHESTER COUNTY  
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

FBI

December 29, 2009

Dear Property Owner:

The purpose of this letter is to inform you that Liberty Towers, LLC has applied for a Zoning Variance requesting relief from the zoning ordinance. The applicant is requesting that the Zoning Hearing Board grant relief to allow a Wireless Communications Facility use in the C-2 Zoning District, and for dimensional relief from the rear yard setback requirements. The applicant proposes to construct a 150 foot tall Wireless Communications tower behind the Wawa store at 1594 Paoli Pike.

The application requests relief from the following sections of the Township Zoning Ordinance: §240-15.B and §240-15.G.

Pursuant to Township policy, property owners and residents within 1000 feet of the subject property are notified of Zoning Variance applications.

**This application is scheduled to be discussed during the meetings outlined below:**

**January 6, 2010** - Planning Commission meeting (workshop at 7 pm, formal meeting @ 7:30 pm)

**February 16, 2010** – Board of Supervisors meeting (workshop at 7:00 pm, formal meeting @ 8:00 pm)

**February 24, 2010** – Zoning Hearing Board (meeting @ 7:30 pm) **(Zoning Hearing)**

All meetings are held at the Township Building and are open to the public and are subject to change. The variance application is available for review during normal business hours. Please give me a call at 610-692-7171 or email me at [mgordon@eastgoshen.org](mailto:mgordon@eastgoshen.org) if you have any questions or need additional information.

Sincerely,



Mark A. Gordon  
Township Zoning Officer

Cc: All Township Authorities, Boards and Commissions  
Richard J. Lemanowicz, Esq. (Via Email and First Class Mail)

I HISTORIC ADAPTIVE  
reuse  
bpg

Smith, Rick

---

**From:** Rick Smith [rsmith@eastgoshen.org]  
**Sent:** Thursday, December 03, 2009 7:47 AM  
**To:** 'Kristin Camp'  
**Subject:** Signs for Historic structures091027.DOC

**Attachments:** 20091203073238913.pdf; 20091203073249111.pdf; Signs for Historic structures091027.DOC



Signs for 200912030732  
toric structures111.pdf (651 KB)

Kristin

Can you advertise this for January 19th?

Thanks

Rick

PS I will ask the East Goshen Planning Commission to re recommend this since the wording has been changed since there October 15th letter.

To PC

12/3/09

Please see change. Suggest  
You Re-recommend APPROVAL

Thanks

Rick

2018

TOWNSHIP OF EAST GOSHEN  
CHESTER COUNTY, PENNSYLVANIA

ORDINANCE NO. \_\_\_\_\_

**AN ORDINANCE OF THE TOWNSHIP OF EAST GOSHEN, CHESTER COUNTY, PENNSYLVANIA, AMENDING THE CODE OF ORDINANCES OF EAST GOSHEN TOWNSHIP, CHAPTER 240, TITLED "ZONING", SECTION 240-38.5 REGARDING ALLOWABLE SIGNS FOR ADAPTIVE REUSES OF HISTORIC STRUCTURES.**

**BE IT ENACTED AND ORDAINED**, by the Board of Supervisors of East Goshen Township, Chester County, Pennsylvania, that Chapter 240 of the East Goshen Township Code, titled "Zoning" is amended as follows:

**SECTION I.** A new subparagraph E shall be added to Section 240-38.5 which shall provide as follows:

- "E. Where approved by the Board of Supervisors as a conditional use, a property on which a historic resource is located and adaptively reused shall be permitted one freestanding sign with a maximum area of 32 square feet for the entire property regardless of the number of uses conducted on the property."

**SECTION II. SEVERABILITY.** If any provision, sentence, clause, section or part of this ordinance is for any reason found to be unconstitutional, illegal or invalid, such unconstitutionality, illegality or invalidity shall not affect or impair any of the remaining provisions, sentences, clauses, sections or parts hereof. It is hereby declared as the intent of the Board of Supervisors that this Ordinance would have been adopted had such unconstitutional, illegal or invalid provision, sentence, clause, section or part thereof not been included herein.

**SECTION III. REPEALER.** All ordinances or parts of ordinances conflicting with any provision of this Ordinance are hereby repealed insofar as the same affects this Ordinance.

**SECTION IV. EFFECTIVE DATE.** This Ordinance shall become effective five (5) days after enactment as by law provided.

ENACTED AND ORDAINED this \_\_\_\_\_ day of \_\_\_\_\_, 2009.

ATTEST:

**BOARD OF SUPERVISORS  
EAST GOSHEN TOWNSHIP**

\_\_\_\_\_  
Louis F. Smith, Secretary

\_\_\_\_\_  
E. Martin Shane, Chairman

\_\_\_\_\_  
Carmen R. Battavio, Vice-Chairman

\_\_\_\_\_  
Joseph M. McDonough, Member

\_\_\_\_\_  
Donald R. McConathy, Member

\_\_\_\_\_  
Thom Clapper, Ph.D., Member



EAST GOSHEN TOWNSHIP  
PLANNING COMMISSION  
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

October 15, 2009

EAST GOSHEN TOWNSHIP  
*Board of Supervisors*  
1580 Paoli Pike  
West Chester, Pa. 19380

Re: Signage for Historic Adaptive reuses

Dear Board Members:

At our meeting on October 7, 2009 the Planning Commission discussed a proposed addition "Amendment" to the Historic Preservation Ordinance related to signage for historic properties which receive approval for an adaptive reuse or and have multiple principal uses. Right now the ordinance allows each adaptive reuse approved to have a 32 SF sign. This amendment proposes to limit the total sign area to 32 SF for the property as a whole.


The commission voted unanimously in favor recommend amending the zoning ordinance as outlined below:

§240-38.5.

E. Where approved by the Board of Supervisors as a conditional use, a property on which a historic resource is located and adaptively reused shall be permitted one freestanding sign with a maximum area of 32 square feet for the entire property regardless of the number of uses conducted within the historic resource.

This proposed amendment has been forwarded to the Historic Commission for their review and recommendation.

Very truly yours,

  
Senya D. Isayeff  
Chairman

CC: East Goshen Township Historic Commission

596



# THE COUNTY OF CHESTER

## COMMISSIONERS

Terence Farrell  
Carol Aichele  
Kathi Cozzone

RONALD T. BAILEY, AICP  
Executive Director

## PLANNING COMMISSION

Government Services Center, Suite 270  
601 Westtown Road  
P.O. Box 2747  
West Chester, PA 19380-0990  
(610) 344-6285 Fax: (610) 344-6515



November 25, 2009

Louis F. Smith, Jr., Manager  
East Goshen Township  
1680 Paoli Pike  
West Chester, PA 19380-6199

NOV 24 2009

Re: Proposed Zoning Ordinance Amendment:  
Signs at Historic Resources  
# 4606 - East Goshen Township

Dear Mr. Smith:

The Chester County Planning Commission has reviewed a proposed amendment to the East Goshen Township Zoning Ordinance, submitted pursuant to the provisions of the Pennsylvania Municipalities Planning Code, Section 609(e). We received this referral for review on October 30, 2009. We offer the following comments to assist in your review of the proposed East Goshen Township Zoning Ordinance amendment:

### DESCRIPTION OF THE AMENDMENT:

The amendment allows, as a conditional use, one sign (up to 32 square feet) at a property on which a historic resource has been adaptively reused.

### RELATIONSHIP TO *LANDSCAPES2*:

The updated 2009 Chester County Comprehensive Plan, *Landscapes2*, includes Historic Resources Objective HR 1: "Plan cooperatively to preserve and interpret historic and archeological resources and landscapes." In addition, Historic Resources Objective HR 2.2 promotes the protection of historic resources and their contexts, which are integral to their meaning and significance. The amendment can help preserve the integrity of the Township's historic resources, and is consistent with *Landscapes2*.

### CONSIDERATIONS:

1. The Township may wish to apply additional considerations to the sign's relationship with the historic resource, to ensure that the sign is compatible with the historic resource and will not have any adverse effects on it. We suggest that such considerations could involve an assessment of lighting to ensure that it is oriented downwards from the top of the sign to limit light pollution, and a review of sign construction materials (i.e., neon or fluorescent lamps and plastic signs might not be appropriate when used in proximity to historic resources). The Board of Supervisors could also consider the use of period-appropriate materials such as wood, mounting hardware and paint, and the use of appropriate lettering styles and colors. Because this provision is regulated by conditional use, the Board of Supervisors would be permitted to "...attach such reasonable conditions and safeguards, in addition to those expressed in the ordinance, as it may deem necessary to implement the purposes of ...the zoning ordinance." (Pennsylvania Municipalities Planning Code, Section 913.2(a)).

6068

Page: 2

November 25, 2009

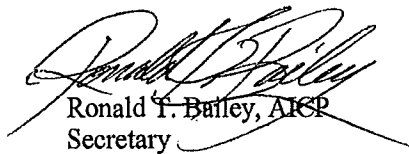
Re: Proposed Zoning Ordinance Amendment:  
Signs at Historic Resources  
# 4606 - East Goshen Township

2. The Township should consider how this amendment will relate to Zoning Ordinance Section 240-22.U (which is not proposed for amendment), which relates to historic wall signs located on properties listed on the East Goshen Township Historic Resource Inventory, and which contains different dimensional limitations.

**RECOMMENDATION: The Chester County Planning Commission recommends that the Township adopt the proposed amendment after reviewing the suggestions in this letter.**

We request an official copy of the adopted ordinance be sent to the County Planning Commission as required by Section 609(g) of the Pennsylvania Municipalities Planning Code. This will allow us to maintain a current file copy of your ordinance.

Sincerely,

  
Ronald T. Bailey, AICP  
Secretary

RTB/WSB

610-692-7171

www.eastgoshen.org

BOARD OF SUPERVISORS  
EAST GOSHEN TOWNSHIP

CHESTER COUNTY  
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

PC FY1

MATTHEW & CHRISTINE MULLEN  
600 THORNCROFT DRIVE  
WEST CHESTER, PA 19380

NOVEMBER 17, 2009

RE: 1645 E STRASBURG RD  
ACCT #: RC222

ENCLOSED IS THE INVOICE THAT IS DUE ON YOUR ACCOUNT.  
THE AMOUNT OF THE INVOICE EXCEEDED THE FUNDS IN YOUR ESCROW  
ACCOUNT. PLEASE PAY THE REMAINING BALANCE OF THE INVOICE &  
PROVIDE US WITH AN ADDITIONAL SEPARATE CHECK IN THE AMOUNT  
OF \$2000.00 TO BE DEPOSITED INTO YOUR ESCROW ACCOUNT TOWARD  
FUTURE BILLS.

<u>INVOICE</u>	<u>ORIGINAL AMT DUE</u>	<u>AMT PAID</u>	<u>CURRENT AMT DUE</u>
5819	\$4207.50	\$2000.00 ESCROW	\$2207.50

TOTAL AMOUNT DUE ON ACCOUNT: \$2207.50

PLEASE CONTACT ME SHOULD YOU HAVE ANY QUESTIONS

SINCERELY,

TIA PICCOLO  
STAFF ACCOUNTANT

ENCLOSURES



PC FY 1

**Gordon, Mark**

---

**From:** Lambert, Robert [rlambert@site-engineers.com]  
**Sent:** Monday, December 28, 2009 11:14 AM  
**To:** Mark Gordon  
**Subject:** Re:

Mark,

Thank you for the email. I will contact the Mullens to insure the invoice gets paid.

I am actually compiling the plans to resubmit to Yerkes and the Conservation district today addressing their reviews. I anticipate we will have clean letters for the February meeting schedules.

In addition, please accept this email as a 30 day extension of the 90 day review period per the MPC.

Please let me know if you have any questions or comments.

Thank you and Happy Holidays,

Rob Lambert

SITE Engineering Concepts, LLC  
P.O. Box 1992  
Southeastern, PA 19399  
P: 610.240.0450  
F: 610.240.0451

On Mon, Dec 28, 2009 at 10:48 AM, Mark Gordon <[mgordon@eastgoshen.org](mailto:mgordon@eastgoshen.org)> wrote:

Rob,

The Mullen land development review is reaching a decision point for the Planning Commission. I have not seen your revised plan addressing the Twp. Engineers comments nor has the Township received the required escrow balance and additional monies in order to move forward with the review.

The Township requires an extension to the review period from the applicant and a check for \$4207.50 to replenish the escrow account prior to the PC meeting on Jan 6, 2009. I have enclosed the Township correspondence to Mr. and Mrs. Mullen regarding the Escrow fees for your information.

Thank you,

-Mark

PC FYI

**Gordon, Mark**

---

**To:** rlambert@site-engineers.com  
**Attachments:** Escrow ltr 111709.pdf

Rob,  
The Mullen land development review is reaching a decision point for the Planning Commission. I have not seen your revised plan addressing the Twp. Engineers comments nor has the Township received the required escrow balance and additional monies in order to move forward with the review.

The Township requires an extension to the review period from the applicant and a check for \$4207.50 to replenish the escrow account prior to the PC meeting on Jan 6, 2009. I have enclosed the Township correspondence to Mr. and Mrs. Mullen regarding the Escrow fees for your information.

Thank you,  
-Mark

**Mark A. Gordon**  
Director of Code Enforcement / Zoning Officer  
East Goshen Township  
1580 Paoli Pike  
West Chester, PA 19380  
O: 610-692-7171  
F: 610-692-8950  
[www.eastgoshen.org](http://www.eastgoshen.org)

FYI

# Technology Will Drive Future Growth In Towers

In 2010, we forecast growth patterns throughout the Mid-Atlantic states. Long-term clients are preparing to solve gap coverage problems and conduct fill-in work there. Backhaul growth will also fuel tower demand as tower-mounted microwave antennas increasingly replace slower T-1 lines.

By John Paleski

The saying "Out with the old, and in with the new" sure works well from a wireless technology standpoint. The continued deterioration of the older narrowband technologies was one of the few negative aspects of 2009 for tower owners. During the past nine months, we have experienced a significant contraction of paging and lower data-rate tiers. However, at the same time, we grew our business in new technology (3G and 4G) by about 20 percent or so, which more than offset the losses experienced by the narrowband sector.

## Growth rate: 17 percent

During the past year, we experienced growth in unexpected places, such as Salt Lake City, Detroit and Seattle. The Dallas/Fort Worth area has been a huge growth driver for us; similarly, the Northeast corridor has been quite strong. Additionally, federal, state and local government use is still in green growth mode. Even with the worst recession in memory, we are looking at an overall growth rate of 17 percent on a yearly basis.

As we ring in the New Year, 2009 has already given us plenty of signs as to where the coming months will take us. New technology today requires less and less equipment and space per tower site, but that has been more than out-

stripped by the need to text, send email, surf the Web and even post pictures on Facebook, which demands more data and bandwidth, and hence, more cell sites. It is interesting that technology allows for more efficiency, but then that very efficiency leads to higher data rates and more business. It's a vicious cycle, and so far the users have been outstripping technology gains. Who could have forecasted that the killer app for 2009 would have been teenage kids texting, sexting, photo-swapping and surfing the Web from an iPhone?

## More Internet searches

The new smart phones are demanding on an individual cell site because they can send and receive large bundles of data quickly. The iPhone itself has added an overwhelming amount of capacity problems to the cell site infrastructure, taking up a huge amount of bandwidth. Recently, AT&T commented that data transmissions have been growing exponentially — up a staggering 4,900 percent since 2007. The FCC remarked that there would not be enough spectrum to keep pace with that growth. In the United Kingdom, about 60 percent of iPhone users send or receive more than 25 megabits of data per month. Google notes that the iPhone originates 50 times more

Internet searches than other phones. At AT&T, whose capacity woes have been well publicized, managers must be scratching their heads.

What is the upshot of this boom in demand? We have seen our clients move to lower rad centers on our towers, which suggests that they are shrinking their cells to boost their capacity. They have reduced tower elevations from 180 feet to 100 feet, for example, especially along highways.

## Preferred backhaul: microwave

In urban areas, cells, which previously had a coverage area of about a mile, now cover as little as a few hundred yards. The data passing through lower Manhattan presently has rendered certain cell sites overloaded. We have had some carriers relocate from 12-story buildings down to four-story buildings because some higher-elevation cell sites were gathering too many users and overloading. Carriers, therefore, require a greater number of lower-elevation sites. Backhaul requirements have also become an issue primarily in New York, Chicago and the Northeast. Remember that when a call is originated, it first connects to the tower network, then to the World Wide Web. This second connection is the backhaul link. Today's preferable backhaul

## horizons

Capability at estimated commercial deployment (Mbps)	Housing units requiring upgrade to reach each tier (millions)	Incremental cost to universal availability of these advertised speeds (best estimate, \$ billions)
0.768-3	3-6	20
3-10	7-10	35
10-30	33-37	50
100+	111-116	350

**Table 1. Several potential sources of funding for construction of the broadband highway were identified by the Task Force, including the Universal Service Fund, BTOP/BIP, and private investment funding. However, none of these sources is a panacea to provide the massive capital required.**

deployment (e.g., the pending petition calling for a "shot clock" on local zoning decisions and the pending proceeding on pole attachments).

### The current state of broadband

On Sept. 29, 2009, the FCC's Broadband Task Force provided its initial findings on the current status of broadband in the United States and some insight on where the effort is headed. The staff focused on consumer applications and found that consumers

to concurrently support large email, browsing, video and two-way streaming, and high-definition streamed video. Perhaps more disturbing is the FCC's finding that 33 percent of the consumers that have broadband access available do not subscribe.

The FCC's findings beg the question as to what basket of broadband applications the NBP should prescribe as the standard for universal broadband service. In an exchange with FCC Commissioner Robert McDowell, a couple of Commission staff members suggested the FCC would make that decision. However, McDowell quickly and pointedly observed that consumers should make these determinations. The staff then clarified that there will undoubtedly be some areas where the market has not and will not make broadband available, and for those areas the FCC will have to decide what basket of applications should be provided.

### Broadband highway or service lane?

The FCC recognizes the demand for mobile broadband is exploding in this country with smart phones and portable PCs driving traffic growth. Mobile data usage is estimated to grow from 17 petabytes (a petabyte is 1 million gigabytes) per month in 2009 to 397 petabytes per month by 2013. Mobile data users are expected to reach 139 million

by 2013 with smart phone penetration reaching 35 percent. Smart phones and portable PCs will account for 83 percent of all mobile data traffic by 2013. Sales of smart phones are expected to exceed standard cell phones by 2011.

At present, the FCC, wireless carriers and others consider wireless broadband to be a complementary service to, rather than a substitute for, wireline broadband. This is the result of wireless broadband service currently offering speeds that fall well below those achievable by fiber and cable. Wireless can therefore not provide the same basket of broadband applications provided by wireline broadband. Stephen Bye of Cox Communications stated at an NBP workshop that "over time, as the capacity of wireless networks starts to match wireline, there may be an equivalency argument, depending on the pricing and cost structure, in much the same way as you now see with wireless and wireline voice."

### Spectrum estimate

The FCC does find in its report that 4G wireless technology may compete in rural areas, but also that it could require large amounts of new spectrum. This highlights a key concern for the future growth of mobile broadband: Can sufficient spectrum be made available to meet the anticipated demand? The FCC has already allocated 534 megahertz of spectrum for mobile broadband, including cellular, broadband PCS, Educational Broadband Service/Broadband Radio Service, Advanced Wireless Services and 700-MHz frequency-band spectrum. However, the FCC now estimates that the amount of spectrum required for wireless broadband will be significantly higher: 760 to 840 megahertz by 2010; 1,300 megahertz by 2015; and from 1,280 to 1,720 megahertz by 2020. With only 50 megahertz of spectrum in the current spectrum allocation pipeline (40 megahertz of AWS spectrum and 10 megahertz of 700-MHz frequency-band spectrum), FCC Chairman Julius Genachowski has acknowledged that additional spectrum must be identified for mobile broadband.

**4G wireless technology may compete in rural areas, but also it could require large amounts of new spectrum. This highlights a key concern for the future growth of mobile broadband: Can sufficient spectrum be made available to meet the anticipated demand?**

currently use broadband for emailing, browsing and entertainment and are increasingly turning to broadband for education, job training, business and other productive purposes.

The Task Force identified "baskets" of service applications and the downlink speeds needed to support such applications and found that 3 to 6 million households lack any high-speed access and about 50 percent of consumers receive broadband with downlink speeds less than 3 Mbps, which is too slow

40 above ground level

[www.agl-mag.com](http://www.agl-mag.com)



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DESIGN : RC  
 DRAWN : NL  
 CHECKED : -  
 DATE : 10-27-2020

**ALPHA**  
 PLANNING & ENGINEERING & SURVEYING  
 15 LAKESHORE RD., P.O. BOX 47  
 NEW CUMBERLAND, PA 17050  
 PHONE: (717) 770-2500  
 FAX: (717) 770-2500  
 WWW.ALPHAPLAN.COM

**SITE PLAN**  
 TRADITIONS OF WEST GOSHEN  
 WEST GOSHEN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

PROJECT NO. 202009  
 DATE: 10-27-2020  
 SCALE: 1" = 40'  
 SHEET 3-C

CHUCK	LEWIS	BLADING	CHARD
212.40	222.55	118.54	211.64
212.69	197.85	114.76	218.51

LINE	FILE	DATE
1	10-27-20	10/27/20
2	10-27-20	10/27/20
3	10-27-20	10/27/20
4	10-27-20	10/27/20

NO.	DATE	DESCRIPTION	BY
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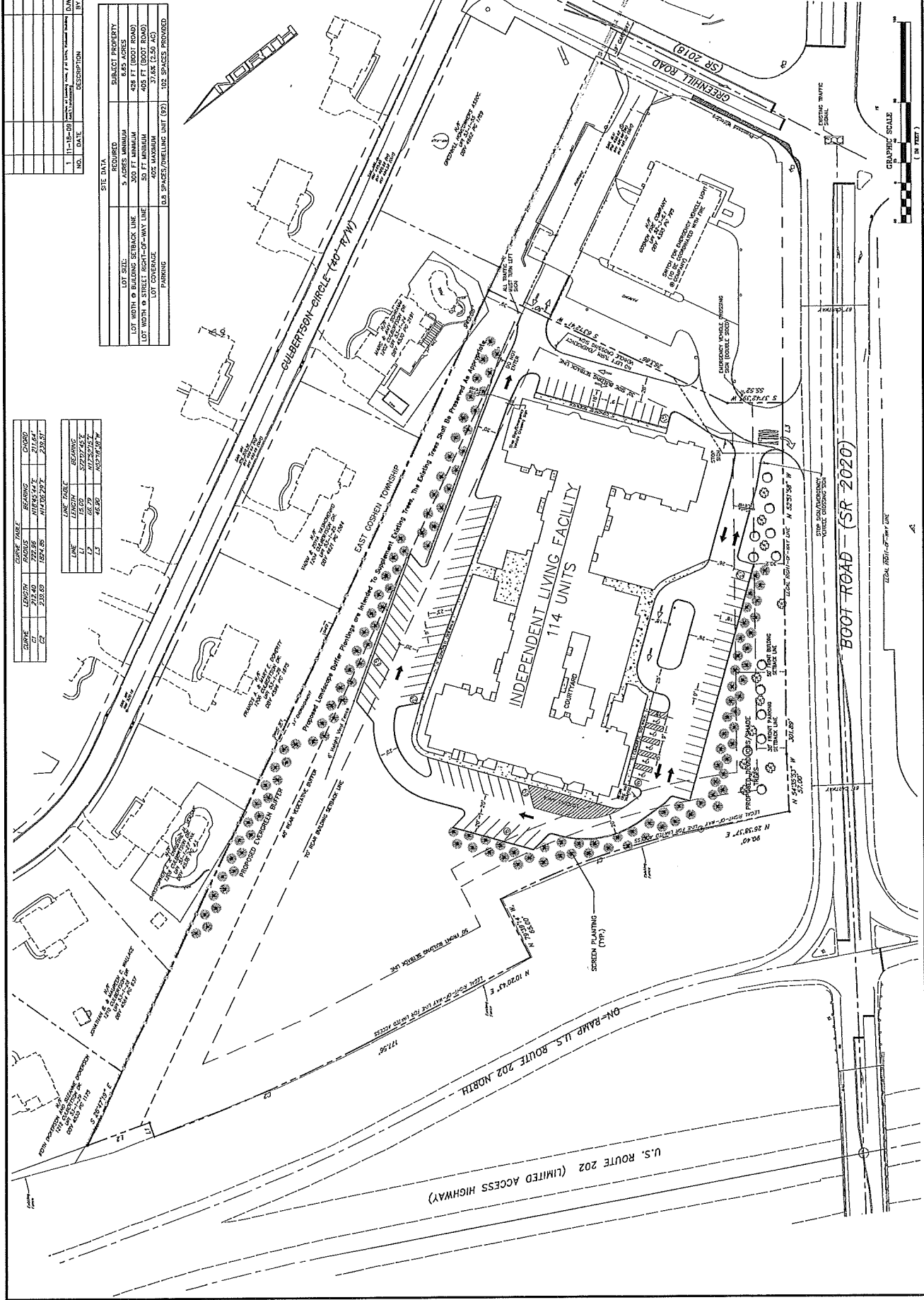
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# BOARD OF SUPERVISORS

EAST GOSHEN TOWNSHIP

CHESTER COUNTY

1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

October 22, 2009

Mr. William E. Stone c/o  
Clearwire US LLC  
1210 Northbrook Drive  
Trevose, PA 19053

Re: Clearwire Conditional Use Application  
Aqua Water Tank Edgewood Road

Dear Mr. Stone:

At the public hearing on November 17, 2009 the Board of Supervisors approved the conditional use application of Clearwire U.S. LLC to utilize the AQUA Water Tank at 21 Edgewood Road for a wireless communications facility as depicted on the plans dated 5/11/09, last revised 11/17/09, pursuant to Section 240-31.C(3)(h)[e] of the Zoning Ordinance with the following conditions:

1. All comments contained in the Township Engineer's review letters dated 10/26/2009 and 11/16/2009 shall be addressed to the satisfaction of the Township engineer prior to issuance of a building permit.
2. The applicant shall submit a building permit application prior to installation, to be reviewed and approved by the Township.
3. The applicant must conform to all applicable Federal, State, County and Township rules and regulations.
4. The new wireless communication facility shall be installed and operated in conformance with the representations made at the public hearing and meetings at which this application was discussed.
5. The applicant shall conduct a post installation noise study during the summer and no later than August 31, 2010, to document conformance with the Township Noise Ordinance. If a violation exists the applicant shall mitigate the violation.
6. The applicant shall provide documentation on the legal relationship between Clearwire U.S., Sprint and Nextel prior to the issuance of a building permit.
7. The applicant shall provide a copy of the FCC licensing agreement prior to the issuance of a building permit.

\*At the hearing your attorney Michael Grab indicated that the conditions were acceptable to Clearwire U.S.

Please give me a call at 610-692-7171 or e-mail me at [rsmith@eastgoshen.org](mailto:rsmith@eastgoshen.org) if you have any questions or need additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Louis F. Smith, Jr." with a stylized, cursive script.

Louis F. Smith, Jr.  
Township Manager

Cc: Planning Commission  
Steve McGuire, Esquire

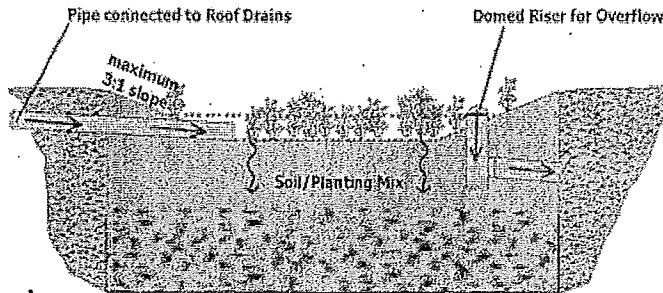
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09\_2009\Decision 112009.doc



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## BMP 6.4.5: Rain Garden/Bioretention

### RECHARGE GARDEN / BIORETENTION BED



A Rain Garden (also called Bioretention) is an excavated shallow surface depression planted with specially selected native vegetation to treat and capture runoff.

Key Design Elements	Potential Applications
<ul style="list-style-type: none"> <li>▪ Flexible in terms of size and infiltration</li> <li>▪ Ponding depths generally limited to 12 inches or less for aesthetics, safety, and rapid draw down. Certain situations may allow deeper ponding depths.</li> <li>▪ Deep rooted perennials and trees encouraged</li> <li>▪ Native vegetation that is tolerant of hydrologic variability, salts and environmental stress</li> <li>▪ Modify soil with compost.</li> <li>▪ Stable inflow/outflow conditions</li> <li>▪ Provide positive overflow</li> <li>▪ Maintenance to ensure long-term functionality</li> </ul>	Residential: Yes Yes Commercial; Ultra Yes Urban: Industrial: Yes Yes Retrofit: Yes Highway/Road: Yes
	Stormwater Functions
	Volume Reduction: Medium Recharge: Med./High Peak Rate Control: Low/Med. Water Quality: Med./High
	Water Quality Functions
	TSS: TP: 85% 85% NO3: 30%

### Other Considerations

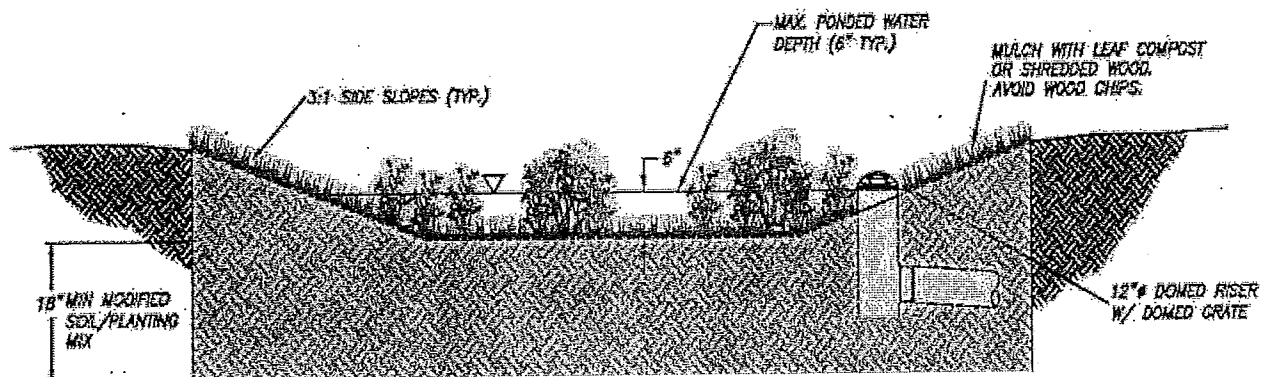
- **Protocol 1. Site Evaluation and Soil Infiltration Testing** and **Protocol 2. Infiltration Systems Guidelines** should be followed, see Appendix C.

## Description

Bioretention is a method of treating stormwater by pooling water on the surface and allowing filtering and settling of suspended solids and sediment at the mulch layer, prior to entering the plant/soil/microbe complex media for infiltration and pollutant removal. Bioretention techniques are used to accomplish water quality improvement and water quantity reduction. Prince George's County, Maryland, and Alexandria, Virginia have used this BMP since 1992 with success in many urban and suburban settings.

Bioretention can be integrated into a site with a high degree of flexibility and can balance nicely with other structural management systems, including porous asphalt parking lots, infiltration trenches, as well as non-structural stormwater BMPs described in Chapter 5.

The vegetation serves to filter (water quality) and transpire (water quantity) runoff, and the root systems can enhance infiltration. The plants take up pollutants; the soil medium filters out pollutants and allows storage and infiltration of stormwater runoff; and the bed provides additional volume control. Properly designed bioretention techniques mimic natural ecosystems through species diversity, density and distribution of vegetation, and the use of native species, resulting in a system that is resistant to insects, disease, pollution, and climatic stresses.



### Rain Gardens / Bioretention function to:

- Reduce runoff volume
- Filter pollutants, through both soil particles (which trap pollutants) and plant material (which take up pollutants)
- Recharge groundwater by infiltration
- Reduce stormwater temperature impacts
- Enhance evapotranspiration
- Enhance aesthetics
- Provide habitat

## **Primary Components of a Rain Garden/Bioretention System**

The primary components (and subcomponents) of a rain garden/bioretention system are:

### **Pretreatment (optional)**

- Sheet flow through a vegetated buffer strip, cleanout, water quality inlet, etc. prior to entry into the Rain Garden

### **Flow entrance**

- Varies with site use (e.g., parking island versus residential lot applications)
- Water may enter via an inlet (e.g., flared end section)
- Sheet flow into the facility over grassed areas
- Curb cuts with grading for sheet flow entrance
- Roof leaders with direct surface connection
- Trench drain
- Entering velocities should be non-erosive.

### **Ponding area**

- Provides temporary surface storage of runoff
- Provides evaporation for a portion of runoff
- Design depths allow sediment to settle
- Limited in depth for aesthetics and safety

### **Plant material**

- Evapotranspiration of stormwater
- Root development and rhizome community create pathways for infiltration
- Bacteria community resides within the root system creating healthy soil structure with water quality benefits
- Improves aesthetics for site
- Provides habitat for animals and insects
- Reinforces long-term performance of subsurface infiltration
- Should be tolerant of salts if in a location that would receive snow melt chemicals

### **Organic layer or mulch**

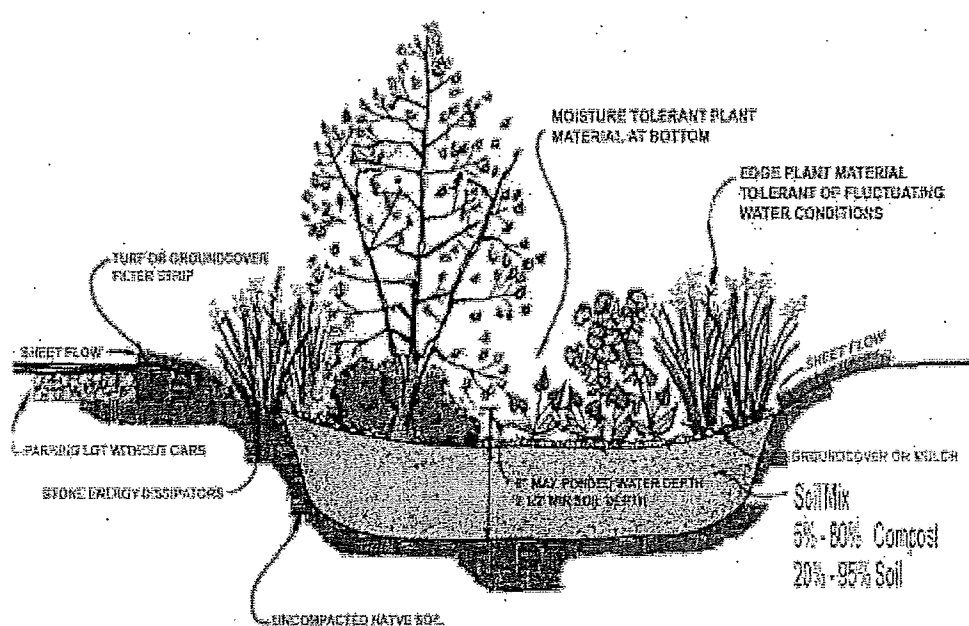
- Acts as a filter for pollutants in runoff
- Protects underlying soil from drying and eroding
- Simulates leaf litter by providing environment for microorganisms to degrade organic material
- Provides a medium for biological growth, decomposition of organic material, adsorption and bonding of heavy metals
- Wood mulch should be shredded - compost or leaf mulch is preferred.

### **Planting soil/volume storage bed**

- Provides water/nutrients to plants
- Enhances biological activity and encourages root growth
- Provides storage of stormwater by the voids within the soil particles

### Positive overflow

- Will discharge runoff during large storm events when the storage capacity is exceeded. Examples include domed riser, inlet, weir structure, etc.
- An underdrain can be included in areas where infiltration is not possible or appropriate.



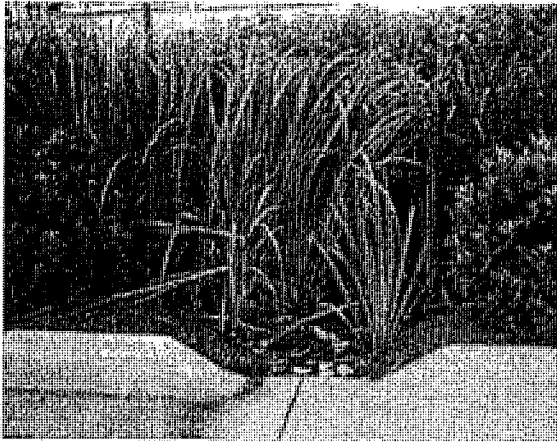
### Variations

Generally, a Rain Garden/Bioretention system is a vegetated surface depression that provides for the infiltration of relatively small volumes of stormwater runoff, often managing stormwater on a lot-by-lot basis (versus the total development site). If greater volumes of runoff need to be managed or stored, the system can be designed with an expanded subsurface infiltration bed or the Bioretention area can be increased in size.

The design of a Rain Garden can vary in complexity depending on the quantity of runoff volume to be managed, as well as the pollutant reduction objectives for the entire site. Variations exist both in the components of the systems, which are a function of the land use surrounding the Bioretention system.

The most common variation includes a gravel or sand bed underneath the planting bed. The original intent of this design, however, was to perform as a filter BMP utilizing an under drain and subsequent discharge. When a designer decides to use a gravel or sand bed for volume storage under the planting bed, then additional design elements and changes in the vegetation plantings should be provided.

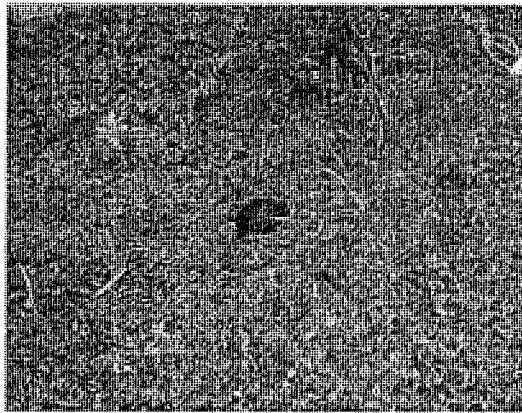
**Flow Entrance: Curbs and Curb Cuts**



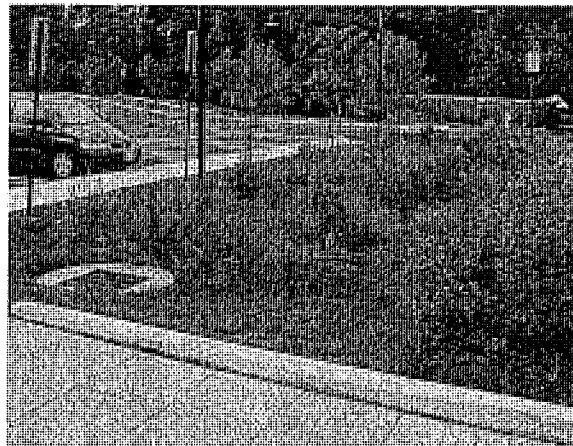
**Flow Entrance: Trench Drain**



**Positive Overflow: Domed Riser**



**Positive Overflow: Inlet**



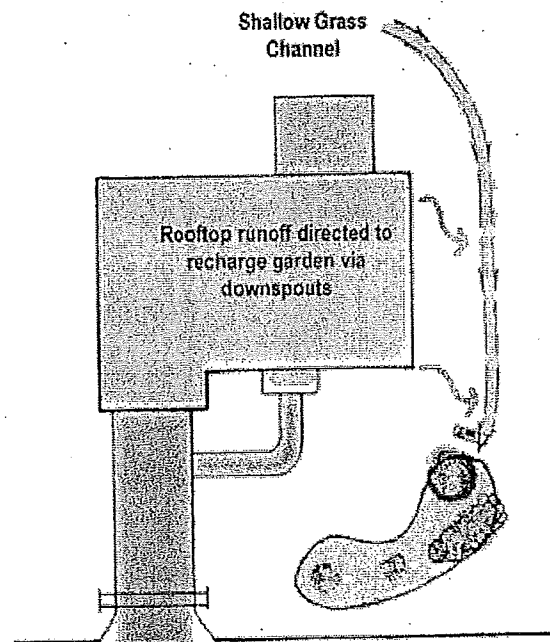
## Applications

Bioretention areas can be used in a variety of applications: from small areas in residential lawns to extensive systems in large parking lots (incorporated into parking islands and/or perimeter areas).

- Residential On-lot**

Rain Garden (Prince George's County)

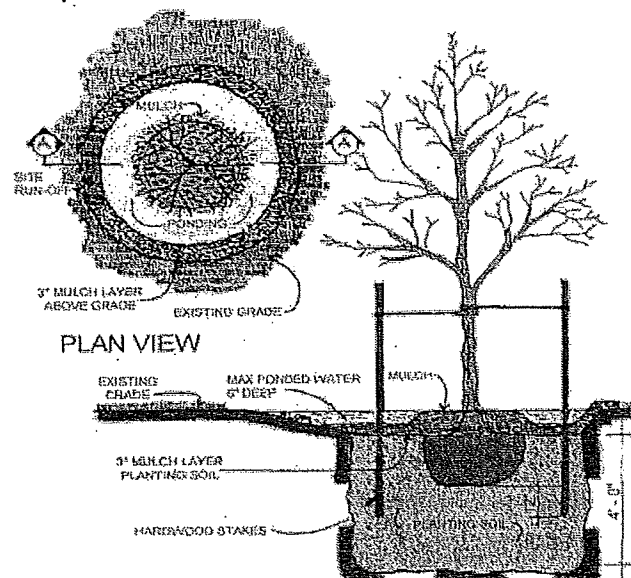
Simple design that incorporates a planting bed in the low portion of the site



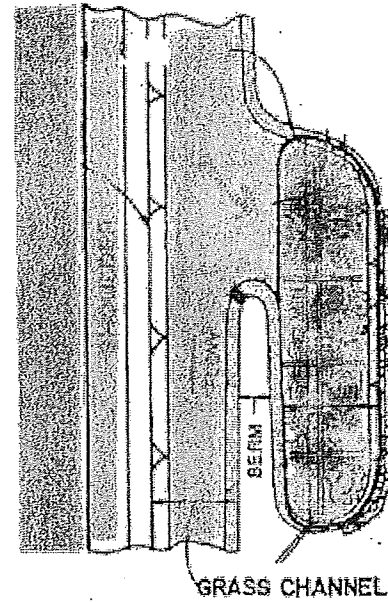
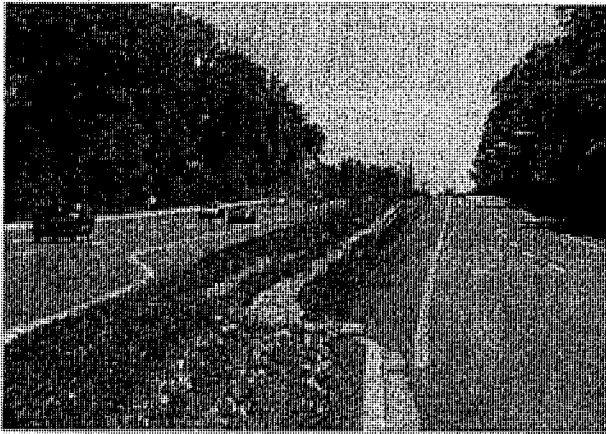
- Tree and Shrub Pits**

Stormwater management technique that intercepts runoff and provides shallow ponding in a dish-shaped mulched area around the tree or shrub.

Extend the mulched area to the tree dripline



- **Roads and highways**



- **Parking Lots**
- **Parking Lot Island Bioretention**



- **Commercial/Industrial/Institutional**

In commercial, industrial, and institutional situations, stormwater management and greenspace areas are limited, and in these situations, Rain Gardens for stormwater management and landscaping provide multifunctional options.

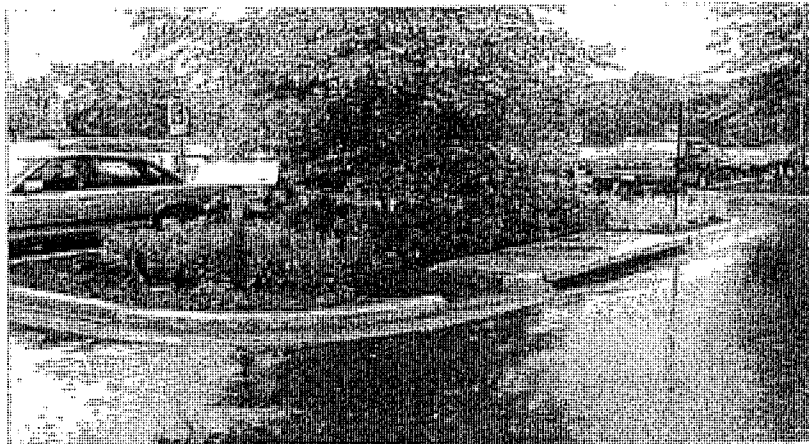


- **Curbless (Curb cuts) Parking Lot Perimeter Bioretention**

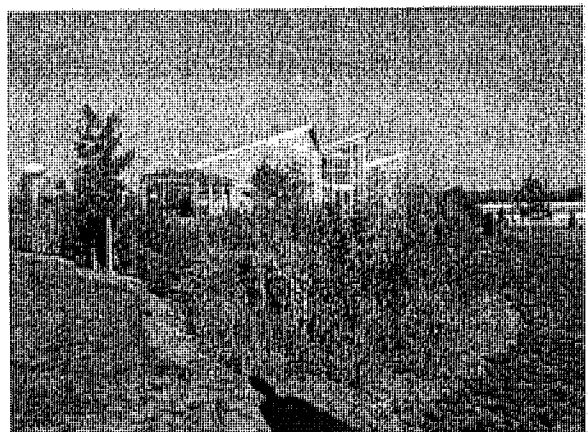
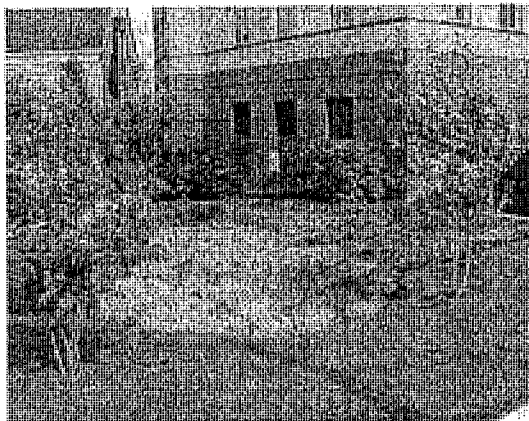
The Rain Garden is located adjacent to a parking area with no curb or curb cuts , allowing stormwater to sheet flow over the parking lot directly into the Rain Garden. Shallow grades should direct runoff at reasonable velocities; this design can be used in conjunction with depression storage for stormwater quantity control.



- **Curbed Parking Lot Perimeter Bioretention**



- **Roof leader connection from adjacent building**





## Design Considerations

Rain Gardens are flexible in design and can vary in complexity according to water quality objectives and runoff volume requirements. Though Rain Gardens are a structural BMP, the initial siting of bioretention areas should respect the Integrating Site Design Procedures described in Chapter 4 and integrated with the preventive non-structural BMPs.

It is important to note that bioretention areas are not to be confused with constructed wetlands or wet ponds which permanently pond water. Bioretention is best suited for areas with at least moderate infiltration rates (more than 0.1 inches per hour). In extreme situations where permeability is less than 0.1 inches per hour, special variants may apply, including under drains, or even constructed wetlands.

Rain Gardens are often very useful in retrofit projects and can be integrated into already developed lots and sites. An important concern for all Rain Garden applications is their long-term protection and maintenance, especially if undertaken in multiple residential lots where individual homeowners provide maintenance. In such situations, it is important to provide some sort of management that insures their long-term functioning (deed restrictions, covenants, and so forth).

### 1. Sizing criteria

- a. **Surface area** is dependent upon storage volume requirements but should generally not exceed a maximum loading ratio of 5:1 (impervious drainage area to infiltration area; see Protocol 2. Infiltration Systems Guidelines (Appendix C) for additional guidance on loading rates.)
  - b. **Surface Side slopes** should be gradual. For most areas, maximum 3:1 side slopes are recommended, however where space is limited, 2:1 side slopes may be acceptable.
  - c. **Surface Ponding depth** should not exceed 6 inches in most cases and should empty within 72 hours.
  - d. **Ponding area** should provide sufficient surface area to meet required storage volume without exceeding the design ponding depth. The subsurface storage/infiltration bed is used to supplement surface storage where feasible.
  - e. **Planting soil depth** should generally be at least 18" where only herbaceous plant species will be utilized. If trees and woody shrubs will be used, soil media depth may be increased, depending on plant species.
2. **Planting Soil** should be a loam soil capable of supporting a healthy vegetative cover. Soils should be amended with a composted organic material. A typical organic amended soil is combined with 20-30% organic material (compost), and 70-80% soil base (preferably topsoil). Planting soil should be approximately 4 inches deeper than the bottom of the largest root ball.
3. **Volume Storage Soils** should also have a pH of between 5.5 and 6.5 (better pollutant adsorption and microbial activity), a clay content less than 10% (a small amount of clay is beneficial to adsorb pollutants and retain water), be free of toxic substances and unwanted plant material and have a 5 –10% organic matter content. Additional organic matter can be added to the soil to increase water holding capacity (tests should be conducted to determine volume storage capacity of amended soils).

4. Proper **plant selection** is essential for bioretention areas to be effective. Typically, native floodplain plant species are best suited to the variable environmental conditions encountered. If shrubs and trees are included in a bioretention area (which is recommended), at least three species of shrub and tree should be planted at a rate of approximately 700 shrubs and 300 trees per acre (shrub to tree ratio should be 2:1 to 3:1). An experienced landscape architect is recommended to design native planting layout.
5. **Planting periods** will vary, but in general trees and shrubs should be planted from mid-March through the end of June, or mid-September through mid-November
6. A maximum of 2 to 3 inches of shredded **mulch** or leaf compost (or other comparable product) should be uniformly applied immediately after shrubs and trees are planted to prevent erosion, enhance metal removals, and simulate leaf litter in a natural forest system. Wood chips should be avoided as they tend to float during inundation periods. Mulch / compost layer should not exceed 3" in depth so as not to restrict oxygen flow to roots.
7. Must be designed carefully in areas with **steeper slopes** and should be aligned parallel to contours to minimize earthwork.
8. Under drains should not be used except where in-situ soils fail to drain surface water to meet the criteria in Chapter 3.

## Detailed Stormwater Functions

### Infiltration Area

#### Volume Reduction Calculations

The storage volume of a Bioretention area is defined as the sum total of 1. and the smaller of 2a or 2b below. The surface storage volume should account for at least 50% of the total storage. Inter-media void volumes may vary considerably based on design variations.

1. Surface Storage Volume (CF) = Bed Area (ft<sup>2</sup>) x Average Design Water Depth
- 2a. Infiltration Volume = Bed Bottom area (sq ft) x infiltration design rate (in/hr) x infiltration period (hr) x 1/12.
- 2b. Volume = Bed Bottom area (sq ft) x soil mix bed depth x void space.

### Peak Rate Mitigation

See Chapter 8 for Peak Rate Mitigation methodology, which addresses link between volume reduction and peak rate control.

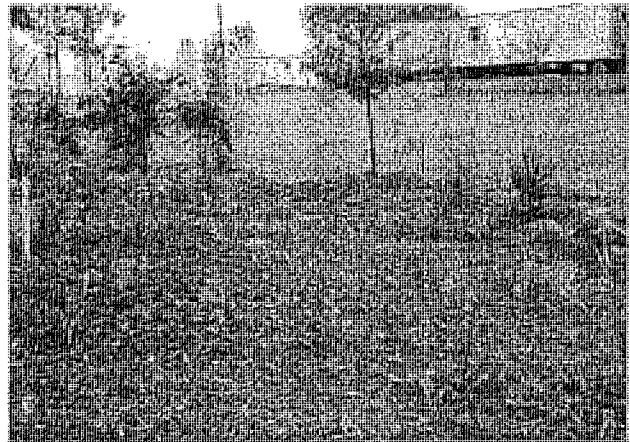
## Water Quality Improvement

See Chapter 8 for Water Quality Improvement methodology, which addresses pollutant removal effectiveness of this BMP.

### Construction Sequence

The following is a typical construction sequence; however, alterations might be necessary depending on design variations.

1. Install temporary sediment control BMPs as shown on the plans.
2. Complete site grading. If applicable, construct curb cuts or other inflow entrance but provide protection so that drainage is prohibited from entering construction area.
3. Stabilize grading within the limit of disturbance except within the Rain Garden area. Rain garden bed areas may be used as temporary sediment traps provided that the proposed finish elevation of the bed is 12 inches lower than the bottom elevation of the sediment trap.
4. Excavate Rain Garden to proposed invert depth and scarify the existing soil surfaces. Do not compact in-situ soils.
5. Backfill Rain Garden with amended soil as shown on plans and specifications. Overfilling is recommended to account for settlement. Light hand tamping is acceptable if necessary.
6. Presoak the planting soil prior to planting vegetation to aid in settlement.
7. Complete final grading to achieve proposed design elevations, leaving space for upper layer of compost, mulch or topsoil as specified on plans.
8. Plant vegetation according to planting plan.
9. Mulch and install erosion protection at surface flow entrances where necessary.



## Maintenance Issues

Properly designed and installed Bioretention areas require some regular maintenance.

- While vegetation is being established, pruning and weeding may be required.
- Detritus may also need to be removed every year. Perennial plantings may be cut down at the end of the growing season.
- Mulch should be re-spread when erosion is evident and be replenished as needed. Once every 2 to 3 years the entire area may require mulch replacement.
- Bioretention areas should be inspected at least two times per year for sediment buildup, erosion, vegetative conditions, etc.
- During periods of extended drought, Bioretention areas may require watering.
- Trees and shrubs should be inspected twice per year to evaluate health.

## Cost Issues

Rain Gardens often replace areas that would have been landscaped and are maintenance-intensive so that the net cost can be considerably less than the actual construction cost. In addition, the use of Rain Gardens can decrease the cost for stormwater conveyance systems at a site. Rain Gardens cost approximately \$5 to \$7 (2005) per cubic foot of storage to construct.

## Specifications

The following specifications are provided for informational purposes only. These specifications include information on acceptable materials for typical applications, but are by no means exclusive or limiting. The designer is responsible for developing detailed specifications for individual design projects in accordance with the project conditions.

### 1 Vegetation - See Appendix B

### 2 Execution

#### a. Subgrade preparation

1. Existing sub-grade in Bioretention areas shall NOT be compacted or subject to excessive construction equipment traffic.
2. Initial excavation can be performed during rough site grading but shall not be carried to within one foot of the final bottom elevation. Final excavation should not take place until all disturbed areas in the drainage area have been stabilized.
3. Where erosion of sub-grade has caused accumulation of fine materials and/or surface ponding in the graded bottom, this material shall be removed with light

equipment and the underlying soils scarified to a minimum depth of 6 inches with a York rake or equivalent by light tractor.

4. Bring sub-grade of bioretention area to line, grade, and elevations indicated. Fill and lightly regrade any areas damaged by erosion, ponding, or traffic compaction. All bioretention areas shall be level grade on the bottom.
5. Halt excavation and notify engineer immediately if evidence of sinkhole activity or pinnacles of carbonate bedrock are encountered in the bioretention area.

b. Rain Garden Installation

1. Upon completion of sub-grade work, the Engineer shall be notified and shall inspect at his/her discretion before proceeding with bioretention installation.
2. For the subsurface storage/infiltration bed installation, amended soils should be placed on the bottom to the specified depth.
3. Planting soil shall be placed immediately after approval of sub-grade preparation/bed installation. Any accumulation of debris or sediment that takes place after approval of sub-grade shall be removed prior to installation of planting soil at no extra cost to the Owner.
4. Install planting soil (exceeding all criteria) in 18-inch maximum lifts and lightly compact (tamp with backhoe bucket or by hand). Keep equipment movement over planting soil to a minimum – **do not over compact**. Install planting soil to grades indicated on the drawings.
5. Plant trees and shrubs according to supplier's recommendations and only from mid-March through the end of June or from mid-September through mid-November.
6. Install 2-3" shredded hardwood mulch (minimum age 6 months) or compost mulch evenly as shown on plans. Do not apply mulch in areas where ground cover is to be grass or where cover will be established by seeding.
7. Protect Rain Gardens from sediment at all times during construction. Hay bales, diversion berms and/or other appropriate measures shall be used at the toe of slopes that are adjacent to Rain Gardens to prevent sediment from washing into these areas during site development.
8. When the site is fully vegetated and the soil mantle stabilized the plan designer shall be notified and shall inspect the Rain Garden drainage area at his/her discretion before the area is brought online and sediment control devices removed.
9. Water vegetation at the end of each day for two weeks after planting is completed.

Contractor should provide a one-year 80% care and replacement warranty for all planting beginning after installation and inspection of all plants.