



The Township of Pine

# WORKBOOK APPENDICES

*Implementable Comprehensive Plan*



*and Comprehensive Recreation Plan*







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# APPENDICES

More  
Information

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- A. A Case Study: The Township of Pine’s comprehensive planning process.

Also including explanation of consistency with the Municipalities Planning Code and with the scope of work agreement with Pennsylvania Department of Conservation and Natural Resources

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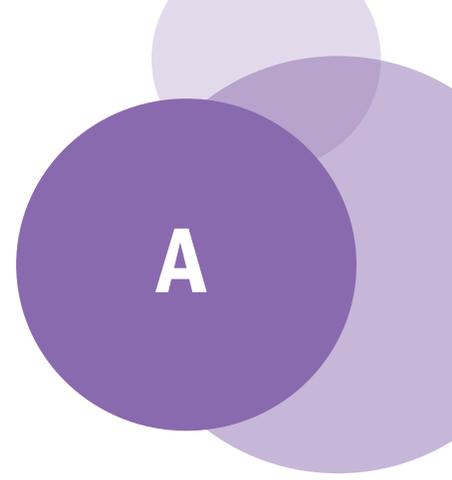
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# APPENDICES



## INTRODUCTION

- A. A Case Study: The Township of Pine's comprehensive planning process



# THE IMPLEMENTABLE COMPREHENSIVE PLAN: A CASE STUDY WITH THE TOWNSHIP OF PINE, ALLEGHENY COUNTY, PA

## Appendix A Case Study

### Deciding to update the Township of Pine's Comprehensive Plan

When professional staff members at the Township of Pine began, in 2012, to consider reviewing the community's comprehensive plan, they already knew the township was operating smoothly. Finances were in order, the township was growing, and a new Community Center had opened a few years before.

The Pennsylvania Municipalities Planning Code (MPC), which enables municipalities to adopt comprehensive plans, requires municipalities to review their adopted plans every 10 years to ensure that they continue to meet the needs of the community. New opportunities, concerns for the future and changing demographics can render planning that was done more than 10 years ago less than relevant. Pine's assistant manager (now manager) and its planner wanted to be sure the township's plan would remain an effective guide for the future of the township.

They raised the possibility with the township manager at the time, and to the board of supervisors, which approved funding in the 2013 budget (although the township chose not to move forward in 2013). The township planner also stayed in close communication with the director of parks and recreation, who at the same time had been thinking of updating its Comprehensive Recreation Parks and Open Space Plan (comprehensive recreation plan) for the community.

The three recognized they might want to proceed with both plans concurrently, so that any proposals that might emerge could later be considered holistically. They invited Pashek Associates to discuss a potential project. The firm was known to Pine Township through a swimming pool feasibility study (2004), trail feasibility study (2005) and business analysis of a potential aquatic center (2013).

The consultant considered this a chance to help the township press ahead with the next round of park and recreation development in the community and to discuss a new approach to community planning that Mr. Pashek had been developing with Denny Puko, planning program managers with the Pennsylvania Department of Community and Economic Development (DCED). This new approach, called the Implementable Comprehensive Plan, might be a good fit for Pine Township, Mr. Pashek thought, as the community transitioned from a rapidly growing suburban community to a municipality that was expecting less growth.

**Vision:** The Township of Pine provides for the public good through a planning process that involves citizens in decisionmaking; that anticipates future needs; that continually strives to exceed standards and expectations; that respects human, financial and natural resources; and that considers its work to be a public trust.

## Case Study

# Choosing an Implementable Comprehensive Plan over the traditional planning model

The MPC establishes the intent, purpose and scope of comprehensive plans. It details minimum requirements for content that should be included in a comprehensive plan in the areas of:

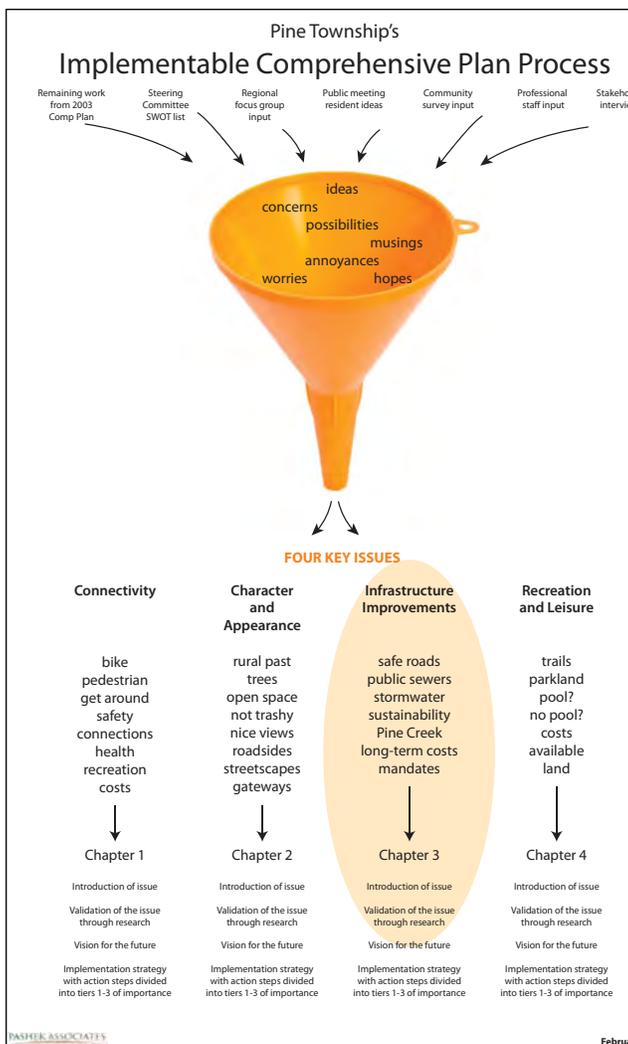
- future development
- land use
- transportation
- community facilities and utilities
  - development compatible with that of neighboring municipalities, and
  - protection of natural and historic resources.

The MPC requires that a municipality's comprehensive plan aligns effectively with the comprehensive plan of the county in which the municipality lies.

The traditional approach to comprehensive plans tends to be research-heavy, closely following a template that is similar for each municipality regardless of differences. Common are dozens of pages of demographic background that do not seem to tie into any recommendations found later in the plan. Moreover, the traditional plan seems to document large amounts of information that people living in the community already know or can find instantaneously via the internet.

The Implementable Comprehensive Plan model emphasizes highly action-oriented, specific, measurable and feasible strategies for getting things done. Through this planning process, the community focuses in on the issues that most concern it. These become the "Key Issues" of the plan. Key Issues are typically limited in number to help the community focus its energy and assets. Most importantly, the Key Issues are matters that the community can address through practical and realistic means. Implementable Comprehensive Plans also emphasize communication that everyone understands, and avoid planning jargon and excessive use of acronyms.

About 90 percent of an implementable comprehensive planning process is dedicated to identifying the Key Issues through an in-depth public process; conducting targeted research needed to thoroughly understand the issues and how to address them; articulating a future vision; and developing action-oriented strategies for attaining that vision. Another critical component of the process is



The Implementable Comprehensive Planning process guides a community as it selects the small handful of issues it feels are not only very important but also can realistically be addressed or positively affected within about three to five years.

“capacity-building” to ensure the community can continue the work of the plan after the consultant’s part is done.

The fundamental difference between a traditional plan and an implementable plan is the shift in focus from a goal of completing a plan to a goal of implementing changes in the community, with the plan as a way of facilitating that process.

The idea of an Implementable Comprehensive Plan appealed to staff members at the Township of Pine, who have little patience for studies whose conclusions call for another round of research, or plans that produce charts and stats but not much in the way of tangible action steps.

## Case Study

### Facets of community involvement

One of the basic tenants of an Implementable Comprehensive Plan is that issues are identified based on a broad based public involvement process. The methods of collecting public input for a traditional comprehensive plan are similar to that of an Implementable Comprehensive Plan. They depart in the way the two plans use the public process:

Whereas the traditional comprehensive plan process often bases recommendations primarily on professional input (consultant and/or municipal staff) crafted around the MPC template of community issues, the Implementable Comprehensive Plan forges recommendations directly from the building blocks of public input. It is this direct link that forms the basis for support for the plan, since residents are most likely to support a plan that clearly addresses their issues. For example, in the Township of Pine, residents were concerned about maintaining the look and feel of their community, which became the Key Issue “Community Character and Appearance.” (In traditional planning this would not have rated its own chapter.) Based on public input, the planning team was able to structure a series of actions that would enhance the visual character people enjoyed about their township.

Type of Public Involvement	Number
Steering Committee meetings for Comp Plan	3
Study Committee meetings for the Comp Rec Plan	4
Public Meeting for the Comp Plan	1
Public Meeting for the Comp Rec Plan	1
Public Meeting as part of Adoption	2
Focus Group meetings for the Comp Plan	7
Regional Focus Group Meeting with planners	1
Meetings to present a status report to supervisors	2
Questionnaire posted on Township website	
Booth at Community Day	
Key Person Interviews	

Although the scope of work required four focus group meetings, preparation of the plan ultimately included one meeting on infrastructure, one on trails and connectivity and five on community character, in addition to those meetings for the comprehensive recreation plan. Moreover, as the planning process proceeded, the township and consultant decided that the plan would benefit from additional exposure, so the township added the digital questionnaire and the booth at Community Day.

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# Identifying the township's Key Issues

## Case Study

There were several steps that propel the planning process from many ideas, opportunities and concerns to the development of several focused Key Issues that may change the community in a positive way. They were:

- 1.** List all of the ideas, concerns and possibilities from the community based on various forms of public input. Mix in township staff and consultant ideas, to form a list of as many as 100 topics.
- 2.** Cluster the ideas into several broad areas of focus. For example, in the Township of Pine, residents at the public meeting raised concerns about traffic and intersections as well as older homes that had private septic systems. At the same time, staff members were concerned about new issues related to stormwater management and municipal separate storms sewer systems (MS4s). These topics were grouped into a Key Issue called “Public Infrastructure.” This is a flexible period of the Key Issue identification process; it can seem initially that a topic might be an excellent Key Issue for the community, but after research the township and consultant may decide the topic might better be addressed another way. In Pine, an example was this: Early on, a Key Issue was “fiscal responsibility,” because financial prudence and anticipated slowing growth were on the minds of the steering committee, township staff and the consultant. However, this focus shifted as the planning team concluded that making truly useful recommendations would be challenging on this topic, considering that all issues have fiscal components and that the township is in excellent financial condition.
- 3.** To make sure the Implementable Comprehensive Plan ultimately is practical and useful, the steering committees and township staff help to rank the ideas for their importance to the community and the likelihood that they will be accomplished in the next five years or so. Thus, each Key Issue subsequently includes some ideas that have varying degrees of “need to be addressed in the community” and “likelihood that they can be addressed soon.”
- 4.** Through focus groups, interviews and additional research, each Key Issue was then more fully developed. The focus groups are clusters of people who are interested in or are experts on matters related to a specific Key Issue. For example, for the transportation topic within the Public Infrastructure issue, the planning team met with a representative of the Southwestern Pennsylvania Commission, an elected official’s representative, and the township civil engineer, among others. The research state includes interviews with people knowledgeable about a specific topic and a review of existing data. Based on this analysis, topics raised in the public process were recast into strategies for implementation of Key Issues.
- 5.** Based on the research, the consultant and township identified which of the topics within the Key Issues are Tier 1 strategies, which are Tier 2 and which are Tier 3. More and deeper research and more specific recommendations for how the municipality can move the topic forward are developed for Tier 1 topics. Less detail goes into Tier 2 topics, and brief information is provided for Tier 3 topics. This research also allows the planning team to validate that the issue is relevant, create a vision for the future for that issue and develop strategies to achieve change in the community for topics with the highest need and potential for success. The consultant’s initial prioritization of the tiers were tested with township staff and modified based on their input.
- 6.** In the end, each Key Issue has:
  - An introduction explaining the issue
  - Additional “talking points” as to why this is a key issue for this community
  - Vision for the future for that issue
  - Validation that the issue is important to the community and needs to be addressed
  - Ranked implementation and management strategies

## Lessons Learned

As with any relatively new process, there is no definitive road map for developing an Implementable Comprehensive Plan. The planning team found “lessons learned” and got new ideas while working on the plan for the Township of Pine.

## Case Study

### **A. Figuring out funding sources to pay for the consulting work involved in both the “comprehensive recreation plan” and the “comprehensive plan.”**

The township budgeted in 2014 \$25,000 for the comprehensive plan and \$20,000 for the comprehensive recreation plan. Mr. Pashek suggested a goal of \$70,000 for the comprehensive plan and \$40,000 for the comprehensive recreation plan, for a total of \$110,000. The consultant made inquiries with Pennsylvania and Allegheny County agencies about additional funding.

The Department of Community and Economic Development (DCED) had very limited funding statewide and would not likely be a funding partner for this project.

Allegheny County provides grants to municipalities through the Allegheny Places Municipal Planning Grant program, which is funded by the county capital budget. The program’s purpose is to enable municipalities to be consistent with AlleghenyPlaces, the county comprehensive plan, primarily through funding land use ordinances and comprehensive plans. AlleghenyPlaces recognizes the importance of multi-municipal cooperation and planning for the future of the county, and only funds multi-municipal comprehensive plans. However, municipalities can propose other projects that meet the grant program goals. The county sees great potential in the Implementable Comprehensive Plan model, and is interested in helping municipalities understand how the process differs from a more traditional planning process. The county awarded a \$30,000.00 grant to the township for tracking and documenting its planning process, and making the information available to other municipalities interested in Implementable Comprehensive Plans.

Concurrently, Mr. Pashek was talking to Pennsylvania Department of Conservation and Natural Resources (DCNR) staff regarding this new Implementable Comprehensive Plan model and whether the principles embodied in that process were applicable to their planning processes. Conversations also included DCNR’s potential financial support of a joint comprehensive plan and comprehensive recreation plan. There had been some history of DCNR’s funding portions of a DCED-funded comprehensive plans. Mr. Pashek felt that DCNR would likely match the \$20,000 in the township budget for the comprehensive recreation plan. Because of the department’s interest in this new process, DCNR agreed to fund an additional \$10,000 in support of the Implementable Comprehensive Plan for public process and environmental mapping. So the total budget for the comprehensive plan and comprehensive recreation plan was:

<b>Funding Source</b>	<b>Amount</b>
Township Comprehensive Plan budget	\$25,000
Township Comprehensive Recreation Plan budget	\$20,000
Allegheny County grant	\$30,000
DCNR grant	\$30,000
<b>TOTAL</b>	<b>\$105,000</b>

## Case Study

### B. Trying to get multi-municipal participation in the planning process.

Many municipal components, such as business districts, watersheds and transportation corridors, span political boundaries. So that municipalities provide even better long-range planning, the state and county have decided to dedicate much of their planning assistance grants to those communities that band together to do comprehensive planning. The Local Government Academy also only funds multi-municipal planning.

The Township of Pine shares several regional characteristics with adjacent communities:

- Route 19 functions as the major commercial corridor for McCandless, Pine, Bradford Woods and Marshall.
- Watersheds and Sewer Authorities cross political boundaries.
- Most of the communities around Pine share some of the same challenges.

Pine Township's planner, Mr. Kurpakus, reached out to the adjacent communities with the help of Kay Pierce, planning manager at Allegheny County Department of Economic Development, to see if there was any interest in working together on a comprehensive plan. Marshall had recently completed a new plan and McCandless and Bradford Woods were not interested in pursuing a plan at the time, so the Township of Pine found itself going it alone. However, since the planning staffs of these communities shared a history of collaboration, the Scope of Work, at the suggestion of Allegheny County, included a focus group meeting of planning professionals from nearby communities to discuss common issues.

### C. Creating a “scope of work” for a project with an unknown scope.

Neither the township nor Pashek Associates knew what might bubble up from the community as its Key Issues. How many would there be? Would it be clear that what was a “key issue” vs. a run-of-the-mill issue? How much work by the consultant should the township require? How much should Pashek Associates agree to? For a time, both parties felt they couldn't begin a comprehensive plan without a scope-of-work agreement, but also felt they couldn't develop a scope of work until they were far enough into a comprehensive plan to know the Key Issues.



Residents contribute ideas about the priority of issues in the Township of Pine.

After extensive discussions, the scope was written to encompass four Key Issues. Both the consultant and township recognized that despite a very specific scope of work, there needed to be some flexibility in the process to allow the planning to adjust to the real needs of the township, even if that meant shifting focus mid-way through the process. This process identified the need for some pre-planning before setting a scope of work for a planning consultant.

Ideally Steps 1, 2 and 3 under “Identifying the Township's Key Issues” on Page CS-4 would be completed using a broad-based public process to define a few Key Issues facing the municipality. Then a scope of work could be crafted to specifically address those needs in the community. This would also solve concerns that Allegheny County and municipal solicitors might have with attaching a scope of work to the formal agreement (between

the county and municipality or between the municipality and the consultant). Flexibility and room for interpretation, often needed for the Implementable Comprehensive Plan process, tend to concern those that want a clear list of tasks and deliverables that can easily be measured. How does one know that you have fulfilled a contract if the scope of work has built-in flexibility?

### **D. Approvals of non-traditional planning.**

#### *Meeting the requirements of the Municipalities Planning Code*

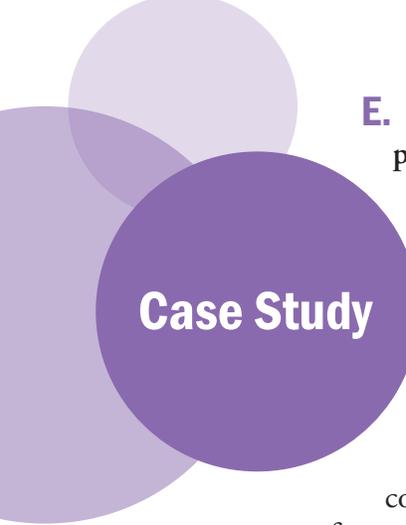
On one hand, all parties enthusiastically embraced the idea of a plan that would be focused and meaty, not broad-brush. But the Township of Pine, including the township solicitor, and Allegheny County's Division of Planning needed to be certain that an Implementable Comprehensive Plan would fulfill the requirements of the state's Municipalities Planning Code. Mr. Puko from the state DCED and Mr. Pashek, the consultant, explained how this non-traditional approach that expends the most time, money and energy on a small handful of Key Issues could still touch lightly on all the requirements of the MPC.

Instead of a Comprehensive Plan organized by MPC planning elements (like transportation or community facilities) the plan's chapters focused on Key Issues in the community that needed to be solved. In the past, these issues have in fact embraced several of the MPC planning elements within one Key Issue. But, to be sure of meeting the MPC requirements, a chapter was proposed to address any other topics required by the MPC that were not covered in earlier chapters.

#### *Approval of an Implementable Comprehensive Planning process by Allegheny County and state Department of Conservation and Natural Resources*

For years, the county has evaluated comprehensive plans developed by municipalities or groups of municipalities. The county has looked at whether the plan meets the requirements of the MPC, whether the plan is consistent with the planning of adjacent communities and the county's own comprehensive plan and whether the municipality is provided information that will be helpful going forward. By creating an issues-based plan, evaluating a plan for conformance to the MPC becomes challenging. To the county's credit, staff have researched and discussed the principles of the Implementable Comprehensive Plan and have been willing to give this new model of planning some latitude in terms of the MPC.

As public agencies get larger and more complex, there appears to be less flexibility about new planning models and how DCNR might review an integrated comp plan/comp rec plan based on the Implementable Comprehensive Plan model. How can DCNR determine if what it receives in terms of work product is appropriate for the value of the grant provided to the municipality? Can DCNR develop a comfort level with a plan that is process-and-issues oriented instead of focusing on the data collection and report development that have been the mainstays of a traditional comp rec plan?



## Case Study

### E. Challenges of integrating a comp rec plan into a comp plan that is based on the principles of an Implementable Comprehensive Plan

The standard DCNR comp rec plan is data-intensive with a standard methodology that has little flexibility to adjust to the needs of the community. The Implementable Comprehensive Plan focuses on process and issues, and allows the community to set the framework of the plan during the planning process, based on problem-solving of real issues.

Initial discussions between professional staff at the Township of Pine and the consultant centered on whether this could be a truly integrated plan, one document, focusing on Key Issues that would include some that were park and recreation-related.

Would the comp plan issues override Key Issues faced by the Parks and Recreation department? Who would ultimately decide what were township priorities in an integrated plan — the comp plan steering committee or the parks and recreation study committee? At times all involved thought the marriage of these two plans into one issues-based plan was too difficult and that the result should be two stand-alone documents. As the parties finalized the scope of work, the consultant and township decided to press Allegheny County and the state DCNR to consider this new model of planning and to truly integrate two traditional planning models into one innovative plan.

But the practicalities of that decision became a matter of discussion during the planning process in terms of the desire for an aquatic center. The comp plan steering committee, led by members of the township board of supervisors, were not especially interested in considering an aquatic center for the community for several reasons, including a concern that it might require a tax increase. The study committee for the comp rec plan, responding to public interest in a pool, wanted that to be one of the highest priority issues in the plan. Later, as the planning team confronted the issue of the aquatic center, it considered going back to two separate documents but finally decided to carry on with the integrated approach.

Timing became an impediment to proceeding with one combined plan. The comp plan and comp rec plan money was budgeted by the township in 2014. The township planner was anxious to get the comp plan started in 2014, with the plan wrapping up in the summer of 2015. But the DCNR grant, applied for in April 2014, was not awarded until late October of 2014. Contracts for the grant did not get signed until the second quarter of 2015, with a proposed 100% draft due from Pashek Associates by the end of June 2015. We did request from DCNR and received a “Letter of Retroactivity” which allowed that if Pine Township received a grant from DCNR for the comp rec plan and comp plan, the money used by the Township in 2014 could be counted as part of the match for the grant even though the contract for the DCNR grant was not dated until January 1, 2015.

The timing of the DCNR grant and allowances created planning process inefficiencies. The comp rec plan portions at times lagged behind the work associated with the comp plan instead of being truly integrated, from a timeline perspective.

## F. Comprehensive plan steering committee makeup

Several very positive aspects of the makeup of the steering committee played out during the process. Having active members of the leadership of the board of supervisors was important. These individuals were able to guide the plan in a way that predicts the plan will be approved during the MPC adoption process. Including representatives of the township’s planning commission, environmental advisory committee, business owners and school district was helpful in terms of discussing a wide range of topics. The consultant, in retrospect, feels it should have done more to include more women, younger people, stay-at-home parents and representatives of other demographic groups as members of the steering committee, to make it more representative of the community. A very diverse steering committee tends to create additional discussion and momentum.



Prioritizing community issues at a public meeting.

## G. Planning and public involvement in a community with few big problems

The Township of Pine is an attractive place to live and do business. Public education is excellent. Elected leaders and professional staff have done a terrific job of guiding the community as it grew. As the consultant discussed the concept of an issues-based comprehensive plan with Mr. Kurpakus, he mentioned that things were generally going well in the township and wondered aloud what major issues there could be. The township had successfully completed most of the tasks identified in the comp plan prepared about 10 years ago. The planning team wondered if the lack of significant matters of concern in the township might negatively impact the development of Key Issues. In fact, this may have explained the relatively low response rate on the questionnaire posted on the township website.

In general, the consultant has found that, in communities like Pine, the Key Issues tend to center less on matters of critical concern and more on matters that contribute to quality of life. Yet, as the planning team delved into the process, township staff’s involvement led to commitment and enthusiasm for the Key Issues that were identified and to the specific strategies and timelines proposed for making changes in the community.

## H. Municipal staff personalities and the success of the plan

The Implementable Comprehensive Plan focuses on real issues and practical problem solving. The consultant believes that the success of this plan is in large part due to the attitudes held by township staff. With Mr. Kurpakus as a “get it done” kind of guy, township Manager Scott Anderson guiding the team through the choppy waters of what will get approved, and Parks and Recreation Director Joni Patsko balancing the desires of the recreation committee with those of the elected officials, the consultant felt confident the team was headed in the right direction throughout the process.

Also, the staff’s desire for a hands-on, easy-to-use document matches up nicely with the Implementable



## Case Study

Comprehensive Plan principles. Staff simply wanted to know very specific steps on how to implement strategies so they could begin that process. Aligned with that desire to get things done was a wish to not have a planning document that was hundreds of pages long and that reported information they already knew. Throughout the process, township staff were supportive in helping the consultant make the report and its recommendations more graphic and less reliant on lengthy word descriptions. Staff members saw this comp plan as a workbook that they could refer to as they implemented strategies. The consultant believes that this effort will become the standard for Implementable Comprehensive Plans because of Pine Township's staff.

### **I. Developing a product that documents the process and is more a workbook for Township staff than a traditional “plan” with hundreds of pages of narrative.**

One of the principles of the Implementable Comprehensive Plan is to focus less on a jargon-filled planning report with hundreds of pages of narrative and maps, and more on an illustration of the decisions that have been made through the process.

The goal would be to make the “workbook” very visual and easily understood by any resident who might want to champion a Key Issue. A goal will be to make the written material so easy to access ideas, that elected officials will keep their workbook handy and refer to the workbook when setting policy and annual budgets.

The challenge is to meet everyone's expectations of what a comp plan and comp rec plan must include while honoring the principle of an accessible and easy-to-use document. The consultant had significant support from Mr. Kurpakus to keep it simple, and he asked if what we planned to write could be boiled down to a checklist of action steps. Kay Pierce from Allegheny County Planning and Denny Puko from the state DCED gave feedback at various points in the process on the look of the workbook. To be sure, this shift from a reference book to a workbook is itself a work in progress and will continue to get better as we all learn how to better meet the needs of each community that wants an Implementable Comprehensive Plan.

# Consistency with Municipalities Planning Code

**Introduction:** In order for the township Board of Supervisors to approve this Comprehensive Plan, the proposed plan must be reviewed by the County for consistency with the County Comprehensive Plan and the plan must meet the requirements of the Municipalities Planning Code (MPC) Article III, Section 301. The following is a summary of those MPC requirements and a comparison of where that information is included in this comp plan. Where the key issues did not include an element in the MPC, we address that following the chart.

MPC requirement	Where it can be found in the Comprehensive Plan
Statement of objectives	Found in the Vision Statements for each Key Issue.
Plan for land use	The Township of Pine is almost fully developed. The township recently updated its zoning ordinance and zoning map. This comprehensive plan addresses a few minor adjustments recommended to the zoning. Otherwise, the majority of the zoning remains the same. The current zoning map, provided on subsequent page in this section, reflects Future Land Use.
Plan to meet housing needs	Housing was discussed during preparation of this plan, and the township believes the current housing mix as well as that provided for in the Zoning Ordinance will meet the needs of the community for the next 10 years. The current zoning map and chart of zoning designations and permitted uses for residential development are provided on subsequent pages in this section of the appendix. Research surrounding population growth and community resources appears in the Other Topics chapter.
Plan for movement of people and goods	Found in the Public Infrastructure chapter for road improvements proposed by this plan. Also, in the Connectivity & Trails section for non-motorized movement of people.
Plan for community facilities	Most of the township’s facilities are fairly new or have recently been updated. This plan focused on several park recommendations, in the Parks and Recreation chapter. Public utilities were addressed in the Public InfrastructureInfrastructure chapter.
Statement of Interrelationship among various plan components.	The nature of an Implementable Comprehensive Plan is to focus on major issues in the community. Each issue tends to address multiple planning elements in an integrated manner.
Short- and long term implementation strategies	Found in each chapter for the specific issue.
	<i>Continued on next page</i>

MPC requirement <i>(continued)</i>	Where it can be found in the Comprehensive Plan
Statement that existing and proposed development is compatible with existing and proposed development in adjacent communities and consistent with the County Comprehensive Plan.	The zoning map was not changed as the result of this plan. There has been no change in consistency. Part of the process was to convene a focus group of planners from adjacent communities to address common regional concerns including Route 19, watersheds, regional trails and best practices municipalities were engaging in regarding stormwater and land use regulations. This plan is consistent with the County Comprehensive Plan.
Plan for protection of natural and historic resources	Found in the Community Character & Appearance Chapter.
Plan for reliable supply of water	Found in the Public Infrastructure chapter. Water for the Township of Pine is provided by the Westview Water Authority. Two water storage tanks have been built for the township. Adequate water supplies have been planned for through full build-out.
Plan to be reviewed in 10 years	This plan recommends that the plan be updated in 10 years. Found in the introduction.
Careful analysis of all of the elements	We believe that the Key Issues identified by the Community were developed in a careful manner that incorporated most of the planning elements of the MPC.
Adoption process with the county	To take place in Fall 2015.

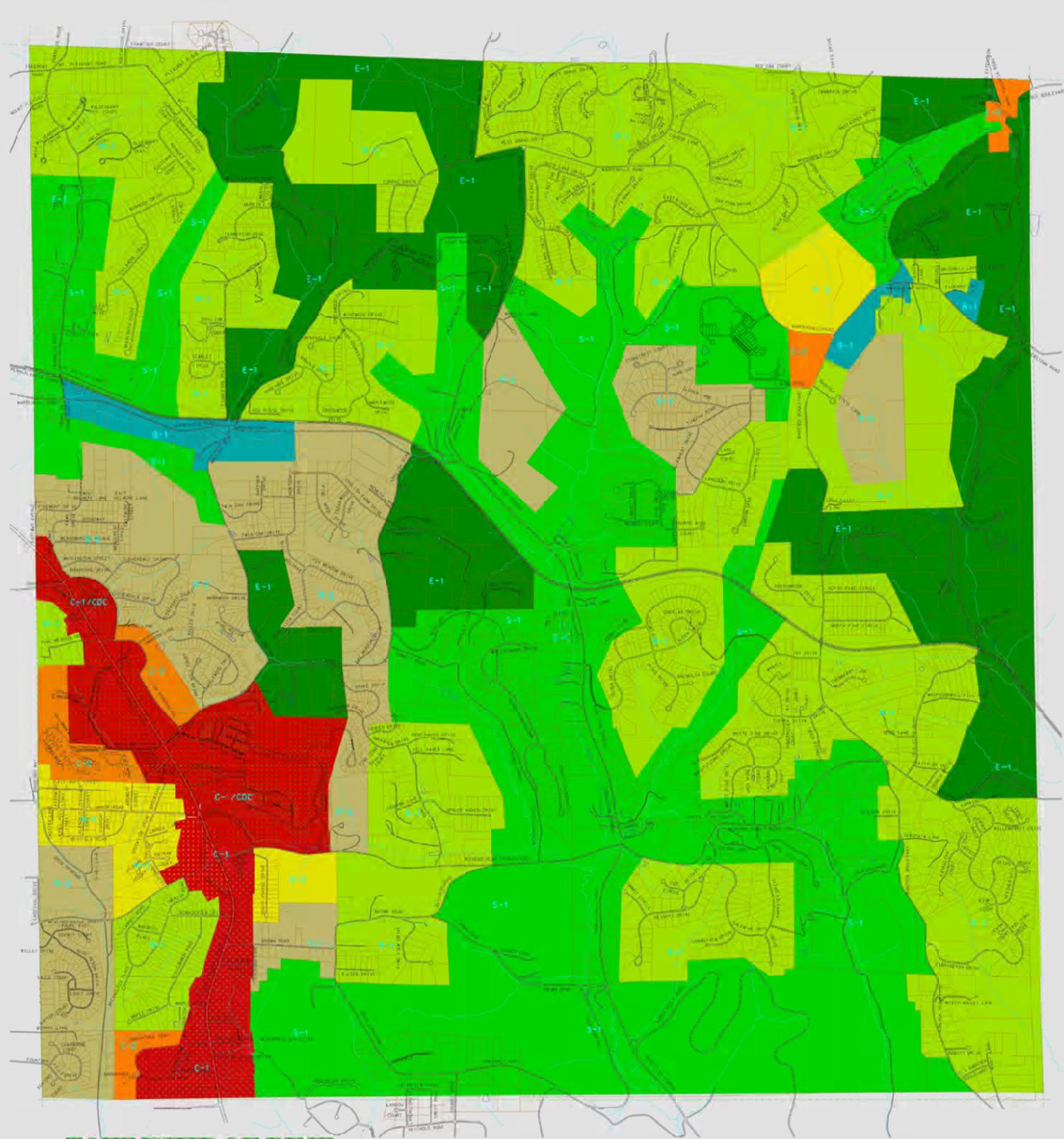
## Consistency with Scope of Work approved by DCNR for this Comprehensive Recreation Plan

**Introduction:** Before the Township can close out the funding grant they received from DCNR for the Comp Rec Plan, the plan must be reviewed and approved by DCNR. Toward that end, the following chart lists the requirements of the Scope of Work approved by DCNR for this project.

Scope of Work requirement	Where it can be found in the Comprehensive Recreation Plan
<i>Establish Baseline for Existing Conditions</i>	
Inventory Park Facilities	An inventory map is included in Chapter 4, Parks & Recreation Strategies; additional information is in the Appendix.
Inventory Recreation Programs	Program offerings are provided in the Appendix. This was not a focus of this plan.
Inventory Open Space	An open space inventory is included in maps in Chapter 2, Connectivity & Trails, and Chapter 4, Parks & Recreation.
Inventory Regional Recreation Facilities	Inventory map in the Parks & Recreation Chapter
Provide some limited demographics and community background in support of the key issues	Key demographics supporting strategies are included in Chapter 4, Parks & Recreation Strategies; a more complete tabulation of relevant demographic information is included in the Appendix
<i>Listening to Township Residents</i>	
Meet with the Steering Committee up to five times	Met 12/19/14, 1/27/15, 4/15/15, 6/11/15
Interview key people (max 15)	Conducted interviews with sports associations, trail groups and other stakeholders
Public Input meeting at the beginning	7/23/14 kickoff meeting for the Comprehensive Plan, which involved park and recreation issues, and a park and recreation-specific kickoff meeting 1/20/15.
Develop Vision, goals and strategies	Found in the beginning of each chapter.
	<i>Continued on next page</i>

Scope of Work requirement <i>(Continued)</i>	Where it can be found in the Comprehensive Recreation Plan
<i>Looking to the Future / Making it all work</i>	
Define most critical issues	See case study for a narrative about the process of identifying the Key Issues; for a description of the Key Issues, see Chapter 2, Connectivity and Trails and Chapter 4, Parks & Recreation Strategies
Set priorities	See “tier” system in Parks & Recreation and Connectivity & Trails chapters
Develop practical recommendations	See Chapter 2, Connectivity & Trails, and Chapter 4, Parks & Recreation, Strategies for listing and narrative
Provide detailed strategies	See Chapter 2, Connectivity & Trails, and Chapter 4, Parks & Recreation, Strategies for listing and narrative
Develop focused implementable tasks	See Chapter 2, Connectivity & Trails, and Chapter 4, Parks & Recreation, Strategies for listing and narrative
Design implementation process	See Chapter 2, Connectivity & Trails, and Chapter 4, Parks & Recreation, Strategies for listing and narrative
Establish 2nd tier issues	See Chapter 2, Connectivity & Trails, and Chapter 4, Parks & Recreation, Strategies for listing and narrative
<i>Provide a Graphic Report</i>	Incorporated in the Comprehensive Plan document at Chapter 2 for Connectivity & Trails, and Chapter 4, Parks & Recreation.
<i>Adopt Plan incorporating a second public meeting</i>	Pending

# Zoning Map



## TOWNSHIP OF PINE

### ZONING MAP

ADOPTED: JUNE 6, 1990  
 REVISED: FEBRUARY 20, 1995, OFD #220  
 REVISED: JULY 6, 1998, ORD #2E1  
 REVISED: JULY 6, 1998, ORD #2E2  
 REVISED: JANUARY 6, 2003, ORD#307  
 REVISED: NOVEMBER 1, 2010, ORD#357

	E-1 ESTATE RESIDENTIAL DISTRICT		C-1 COMMUNITY SERVICE CENTER DISTRICT
	S-1 SPECIAL RESIDENTIAL DISTRICT		C-2 PLANNED TRANSITION DISTRICT
	R-1 SUBURBAN RESIDENTIAL DISTRICT		B-1 RURAL BUSINESS DISTRICT
	R-2 COMMUNITY RESIDENCE DISTRICT		TCDC - TOWN CENTER DESIGN OVERLAY DISTRICT
	R-3 NEIGHBORHOOD RESIDENCE DISTRICT		TYO - TRADITIONAL VILLAGE OVERLAY DISTRICT
			CDC - COMMERCIAL DEVELOPMENT CONTROL OVERLAY DISTRICT

**Permitted Uses**

**Permitted Uses requiring Land Development Approval**

**Conditional Uses**

By Zoning District

	E-1	S-1	R-1	R-2	R-3	B-1	C-1	C-2
Accessory Use/Structure	P	P	P	P	P	CU	CU	CU
Adult-Oriented Establishments							CU	
Agricultural Uses	P	P	P	P	P	P		
Alcohol Rehabilitation Clinic							CU	
Animal Day Care						P-LD	P-LD	
Animal Hospital							CU	
Automotive Dealership, New							P-LD	
Automotive Dealership, Used							P-LD	
Bed and Breakfast Establishment						CU		
Car Wash							P-LD	
Carriage Homes			PRD	PRD	CU	CU	P-LD	CU
Cemetery	P-LD	P-LD						
Clubs				TC-PRD			TC-PRD	P-LD
College				TC-PRD			P-LD	CU
Co-location/shared use communication facility							CU	CU
Co-location/shared use communication facility, on existing facilities only	CU	CU	CU	CU	CU	CU		
Commercial or Public Parking Garage or Lot							CU	
Communication Facility							CU	CU
Communication Tower							CU	CU
Day Care Center				TC-PRD		P-LD	P-LD	P-LD
Drive-in Theater							CU	
Entertainment Facilities							P-LD	
Essential Facilities	P-LD	P-LD	P-LD	P-LD	P-LD	CU	CU	CU
Farm Market				TC-PRD		P-LD	TC-PRD	
Free-Standing Self Storage units							CU	
Garden Apartment, in structures, 6,000 square feet or less						CU		CU
Garden Apartment (NEW DEVELOPMENTS)				TC-PRD	P-LD		CU	
Group Care Facility							CU	CU
Heliport							CU	
Hospital				TC-PRD			P-LD	CU

P = PERMITTED USE

P-LD = USE PERMITTED WITH LAND DEVELOPMENT APPROVAL

CU = CONDITIONAL USE

AVAIL = PRD OPTION AVAILABLE IN ZONING DISTRICT

PRD = USE AVAILABLE AS A PART OF A PRD ONLY

TC-PRD = USE AVAILABLE AS A PART OF A TC-PRD ONLY

**Permitted Uses**  
**Permitted Uses requiring Land Development Approval**  
**Conditional Uses**  
 By Zoning District

	E-1	S-1	R-1	R-2	R-3	B-1	C-1	C-2
Indoor Theater				TC-PRD			P-LD	
Kennel				TC-PRD		P-LD	TC-PRD	
Life Care Community				TC-PRD			P-LD	CU
Light Manufacturing, Research and Testing							P-LD	
Light Manufacturing, Research and Testing in structures 6,000 sq ft or less						CU		
Medical Clinic							P-LD	P-LD
Methadone Treatment Facility							CU	
Mixed Uses in structures 6,000 square feet or less						P-LD		P-LD
Mixed Uses				TC-PRD			P-LD	
Mobile Home Parks							CU	
Mortuary						CU	CU	
Motel or Hotel				TC-PRD			P-LD	
Nature Preserve	P	P	P	TC-PRD			TC-PRD	
No-Impact Home-Based Business	P	P	P	P	P	CU	P-LD	P-LD
Nursery							CU	CU
Nursing Home				TC-PRD		P-LD	P-LD	P-LD
Offices				TC-PRD			P-LD	
Offices in structures 6,000 square feet or less						P-LD		CU
Other Uses not listed							CU	
Outdoor Advertising Signs							CU	
Park and Ride Facility							CU	
Park	P	P	P	P	P	P	P-LD	P-LD
Patio Homes			PRD	PRD	CU	CU	TC-PRD	CU
Place of Worship	CU	CU	CU	CU	CU	CU	P-LD	P-LD
Pole-Mounted/Shared Use Communication Facility						CU	CU	CU
Public and Semi Public Uses	CU	CU	CU	CU	CU	CU	P-LD	P-LD
Recreation								P-LD
Recreation Facility	CU	CU	CU	CU	CU	CU	P-LD	
Restaurant without drive-thrus				TC-PRD		CU	TC-PRD	
Restaurants							P-LD	

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**Permitted Uses**

**Permitted Uses requiring Land Development Approval**

**Conditional Uses**

By Zoning District

	E-1	S-1	R-1	R-2	R-3	B-1	C-1	C-2
Retail Sales and Services				TC-PRD			P-LD	
Retail Sales and Services without drive-thrus, in structures 6,000 or less						P-LD		
Single Family Dwelling, Attached (INFILL)						CU		CU
Single Family Dwelling, Attached (NEW DEVELOPMENTS)					P-LD	CU	CU	CU
Single-Family Dwelling, Detached	P	P	P	P	P	CU	TC-PRD	P
Swimming Pools, Public							CU	
Trade Schools				TC-PRD			P-LD	CU
Vehicle Repair Station						CU	CU	
Vehicle Sales						CU	CU	
Vehicle Service Station				TC-PRD		CU	CU	
Veterinary Services				TC-PRD		P-LD	TC-PRD	
Warehouse							CU	CU
Warehouse Sales							CU	
Wineries						P-LD		
Planned Residential Development (PRD)	AVAIL	AVAIL	AVAIL	AVAIL				
Town Center Planned Residential Development (TC-PRD)				AVAIL			AVAIL	
Minimum Lot Area*	3 Acres	2 Acres	1 Acre	3/4 Acre	1/2 Acre	1/2 Acre	1 Acre	1 Acre
Minimum Lot Width*	300 feet	200 feet	125 feet	90 feet	70 feet	125 feet	150 feet	100 feet
Maximum Building Coverage*	10%	10%	20%	20%	35%	30%	50%	50%
Maximum Lot Coverage*	20%	20%	40%	40%	50%	50%	80%	80%
Front Yard*	60 feet	50 feet	40 feet	30 feet	25 feet	20 feet	50 feet	50 feet
Side Yards*	40 feet	30 feet	20 feet	15 feet	10 feet	25 feet	10 feet	25 feet
Rear Yard*	50 feet	50 feet	50 feet	40 feet	40 feet	40 feet	50 feet	50 feet
Maximum Height*	35 feet	45 feet	45 feet					

\* Base Zoning requirements listed - Consult Zoning Ordinance for possible exceptions to these requirements

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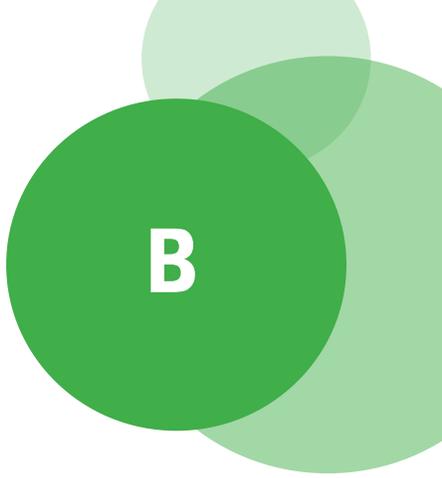
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# APPENDICES



**B**

## CONNECTIVITY & TRAILS

B. Pennsylvania Recreation Use of Land and Water Act



# Pennsylvania's Recreational Use of Land and Water Act



## INTRODUCTION

Pennsylvania has a law that limits the legal liability of landowners who make their land available to the public for free recreation. The purpose of the law is to supplement the availability of publicly owned parks and forests by encouraging landowners to allow hikers, fishermen and other recreational users onto their properties. The Recreational Use of Land and Water Act (“RULWA”), found in Purdon’s Pennsylvania Statutes, title 68, sections 477-1 et seq., creates that incentive by limiting the traditional duty of care that landowners owe to entrants upon their land. **So long as no entrance or use fee is charged, the Act provides that landowners owe no duty of care to keep their land safe for recreational users and have no duty to warn of dangerous conditions.** Excepted out of this liability limitation are instances where landowners willfully or maliciously fail to guard or warn of dangerous conditions. That is, the law immunizes landowners only from claims of negligence. Every other state in the nation has similar legislation.

## PEOPLE COVERED BY THE ACT

The “owners” of land protected by the Act include public and private fee title holders as well as lessees (hunt clubs, e.g.) and other persons or organizations “in control of the premises.” Holders of conservation easements and trail easements are protected under RULWA if they exercise sufficient control over the land to be subject to liability as a “possessor.” (See *Stanton v. Lackawanna Energy Ltd.* (Pa. Supreme Ct. 2005)(RULWA immunizes power company from negligence claim where bike rider collided with gate that company had erected within the 70-foot wide easement over mostly undeveloped land it held for power transmission)).

## LAND COVERED BY THE ACT

Although on its face RULWA applies to all recreational “land”—improved and unimproved, large and small, rural and urban—in the last 15 years or so, Pennsylvania courts have tended to read the Act narrowly, claiming that the legislature intended it to apply only to large land holdings for outdoor recreational use.

Courts weigh several factors to decide whether the land where the injury occurred has been so altered from its natural state that it is no longer “land” within the meaning of the Act. In order of importance:

(1) Extent of Improvements – The more developed the property the less likely it is to receive protection under RULWA, because

recreational users may more reasonably expect it to be adequately monitored and maintained;

(2) Size of the Land – Larger properties are harder to maintain and so are more likely to receive recreational immunity;

(3) Location of the Land – The more rural the property the more likely it will receive protection under the Act, because it is more difficult and expensive for the owner to monitor and maintain;

(4) Openness – Open property is more likely to receive protection than enclosed property; and

(5) Use of the Land – Property is more likely to receive protection if the owner uses it exclusively for recreational, rather than business, purposes.

## SITE IMPROVEMENTS

The following cases focus on the nature and extent of site improvements that might negate RULWA immunity:

- The state Supreme Court ruled that the Act was not intended to apply to swimming pools, whether indoor (*Rivera v. Philadelphia Theological Seminary* (Pa. Supreme Ct. 1986)) or outdoor (*City of Philadelphia v. Duda* (Pa. Supreme Ct. 1991)).

- RULWA immunity does not cover injuries sustained on basketball courts, which are “completely improved” recreational facilities (*Walsh v. City of Philadelphia* (Pa. Supreme Ct. 1991)).

- Playgrounds are too “developed” to qualify for immunity (*DiMino v. Borough of Pottstown* (Pa. Commonwealth Ct. 1991)).

- Playing fields generally are held not to be “land” within the protection of the Act (*Brown v. Tunkhannock Twp.* (Pa. Commonwealth Ct. 1995) (baseball field); *Seifert v. Downingtown Area School District* (Pa. Commonwealth Ct. 1992)(lacrosse field); *Lewis v. Drexel University* (Pa. Superior Ct. 2001, unreported)(football field); but see *Wilkinson v. Conoy Twp.* (Pa. Commonwealth Ct. 1996)(softball field is “land” under RULWA)).

- An unimproved grassy area at Penns Landing in Philadelphia was deemed outside the Act's scope, given that the site as a whole was highly developed (*Mills v. Commonwealth* (Pa. Supreme Ct. 1993); compare *Lory v. City of Philadelphia* (Pa. Supreme Ct. 1996) (swimming hole in "remote" wooded area of Philadelphia is covered by RULWA)).

RULWA immunity has been found in several cases where people were injured at outdoor sites containing limited improvements:

- An earthen hiking trail in a state park is not an improvement vitiating the Act's immunity (*Pomeren v. Commonwealth* (Pa. Commonwealth Ct. 1988)).

- The owner of property containing a footpath created by continuous usage, which led down to the Swatara Creek, has no duty to erect a warning sign or fence between his property and the adjacent municipal park (*Rightnour v. Borough of Middletown* (Lancaster Cty. Ct. of Common Pleas 2001)).

- A landscaped park containing a picnic shelter is still "unimproved" land for RULWA purposes (*Brezinski v. County of Allegheny* (Pa. Commonwealth Ct. 1996)).

- An artificial lake is just as subject to RULWA protection as a natural lake, although the dam structure itself is not covered (*Stone v. York Haven Power Co.* (Pa. Supreme Ct. 2000)).

- An abandoned rail line in a wooded area is covered by RULWA, even where the plaintiff fell from a braced railroad trestle (*Yanno v. Consolidated Rail Corp.* (Pa. Superior Ct. 1999))(but may no longer be good law after *Stone*)).

Uncertainty about what constitutes an improvement under the Act reportedly has had a dampening effect on efforts to improve public access to outdoor recreation sites. Public and private landowners are concerned that installation of fishing piers, boat docks, parking facilities, or paths and ramps for wheelchair use will strip much-needed RULWA immunity from otherwise protected land. A bill introduced in the state Senate in the late 1990s attempted to clarify that public access improvements would not affect immunity under the Act, but the legislation was not successful.

### ***FAILURE TO WARN***

As noted above, although negligence liability is negated by the Act, a landowner remains liable to recreational users for "willful or malicious failure to guard or warn" against a dangerous condition. To determine whether an owner's behavior was willful, courts will look at two things: whether the owner had actual knowledge of the threat (e.g., was there a prior accident in that same spot); and whether the danger would be obvious to an entrant upon the land. If the threat is obvious, recreational users are considered to be put on notice, which precludes liability on the part of the landowner. In a recent drowning case, for example, landowner Pennsylvania Power & Light Company

claimed immunity under RULWA. The judge, however, sent to the jury the question of whether PP&L was willful in not posting warning signs. A previous tubing accident had occurred in the same location, and there was testimony that the dangerous rapid where the drowning occurred was not visible to people tubing upstream (*Rivera v. Pennsylvania Power & Light Co.* (Pa. Superior Ct. 2003)).

### ***GOVERNMENTAL IMMUNITY***

Interestingly, Pennsylvania's governmental immunity statutes, the Tort Claims and Sovereign Immunity Acts, shield municipalities and Commonwealth agencies from claims of willful misconduct. Liability only may be imposed upon these entities for their negligent acts. But, as noted above, where an injury occurs on "land" within the meaning of RULWA, the law shields landowners from negligence suits. In essence, public agencies are granted complete immunity for many recreational injuries. (See *Lory v. City of Philadelphia* (Pa. Supreme Ct. 1996)(city immune for both its negligent maintenance of recreational lands and its willful failure to guard or warn of hazards on that property)).

### ***RECREATIONAL PURPOSE; PUBLIC ACCESS***

Though not all recreational land is covered by the Act, the law's definition of "recreational purpose" is broad enough to include almost any reason for entering onto undeveloped land, from hiking to water sports to motorbiking. (See *Commonwealth of Pa. v. Auresto* (Pa. Supreme Ct. 1986)(RULWA covers snowmobile injury)). This is true even if the landowner has not expressly invited or permitted the public to enter the property. However, where the land is open only to selected people rather than to the public in general, this will weigh against RULWA immunity. (See *Burke v. Brace* (Monroe Cty. Ct. of Common Pleas 2000)(lake located in a subdivision and open only to homeowner association members and guests is not covered by RULWA)).

### ***NO USER FEE***

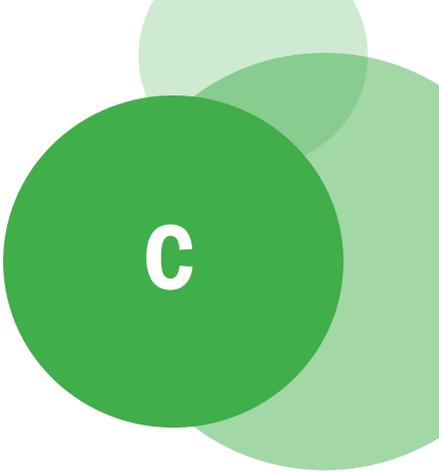
Finally, charging recreational users a fee (which is different than accepting payment for an easement) takes the property out from under the Act's protection.

Copies of this fact sheet may be obtained from:

PA Department of Conservation and Natural Resources  
Bureau of Recreation and Conservation  
Rachel Carson State Office Building  
P.O. Box 8475  
Harrisburg, PA 17105-8475  
Telephone: (717) 787-7672  
Fax: (717) 772-4363  
[www.dcnr.state.pa.us](http://www.dcnr.state.pa.us)



# APPENDICES



C

## CONNECTIVITY & TRAILS

C. Model Trail Easement Agreement from the Pennsylvania Land Trust Association



# Reducing Liability Associated with Public Access



*Public access to property for recreational uses—such as hiking, bird watching, fishing and hunting—raises concern about the possibility of liability on account of injury to a recreational user. Pennsylvania law provides some protection from liability associated with public use of property for recreational purposes. Also there are practical steps that can be taken to minimize risk of liability.*

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- Rails-to-Trails Act 2
- Equine Immunity Act 2
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## **Introduction**

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Pennsylvania's Recreational Use of Land and Water Act (referred to as "RULWA") provides that landowners who invite or permit and other statutes provide substantial protection from liability to landowners who permit the public to come onto their

land for outdoor recreation. These protections also apply to holders of trail and other easements. The best defense for landowners and easement holders, however, is preparedness: posting signs, obtaining releases, requiring indemnity, securing insurance coverage and taking steps to warn users of potentially dangerous conditions. This guidance discusses a variety of legal and other means to avoid or minimize liability.

## **Statutory Protection from Liability**

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### **Recreational Use of Land and Water Act**

#### **Defense of immunity**

RULWA provides that landowners who invite or permit people to come onto their land for recreational uses do not, by doing so, assume responsibility for or incur liability for bodily injury or property damage suffered by any recreational user. If the landowners are sued, RULWA gives them the defense of immunity. Pennsylvania courts interpreting RULWA have found that an easement holder is entitled to the same scope of protection as a landowner.

#### **Statutory exceptions**

If an admission fee is charged in connection with the recreational use, the protection of RULWA will be lost. In addition, a landowner who willfully or maliciously fails to guard or warn of dangerous conditions is not protected by RULWA.

### **Judicial exceptions**

Even though a landowner may assert the defense of immunity under RULWA, there is no guarantee that RULWA immunity will apply in any given situation. Since the enactment of RULWA in 1966, exceptions to the protection afforded by this immunity statute have been carved out by Pennsylvania courts in a body of continually evolving case law. Examples of such exceptions are where the injury occurred on land in close proximity to developed land or where the land has certain types of improvements, such as swimming pools, playgrounds or basketball courts.

The guide [Pennsylvania's Recreational Use of Land and Water Act](#), published by the Pennsylvania Land Trust Association and available at [ConservationTools.org](#), provides a fuller review of the types of lands and improvements that are covered by or exempted from RULWA.

### **Rails-to-Trails Act**

Pennsylvania's Rails-to-Trails Act provides for rail-trails acquired under the Act a limitation of liability similar to that found in RULWA. Like RULWA, an owner may be open to liability if there is any charge made or usually made for entering or using the trail. Unlike RULWA, there is no exception for willful or malicious failure to warn or guard against dangerous conditions.

The guide [Liability and Rail-Trails in Pennsylvania](#), published by the Rails-to-Trails Conservancy and available at [ConservationTools.org](#), includes rail-trail case studies.

### **Equine Immunity Act**

Landowners and easement holders who permit horseback riding should consider availing themselves of the protections afforded by Pennsylvania's [Equine Immunity Act](#) (Act 93 of 2005). The act applies "to an individual, group, club or business entity that... provides the facilities for an equine activity...." The act lists eight equine activities including "recreational rides." Signs must be posted to take advantage of the protections:

This act shall provide immunity only where signing is conspicuously posted on the premises on a sign at least three feet by two feet, in two or more locations, which states the following: "You assume the risk of equine activities pursuant to Pennsylvania law."

### **Immunity Available to the Commonwealth and Local Government**

Both public and private entities can assert immunity under all of the statutory schemes identified above, but only the Commonwealth of Pennsylvania and its instrumentalities (for example, state-controlled agencies and authorities) can assert immunity under the [Sovereign Immunity Act](#). The Sovereign Immunity Act enacts by statute the ancient principle of case law that the sovereign (in this case the Commonwealth of Pennsylvania) cannot be sued. There are some exceptions to that general rule, among which are claims for bodily injury (or death) resulting from defective conditions derived or originating from Commonwealth real estate. (Exceptions do not include claims for injuries arising from negligent maintenance of real property. In *Nardella v. SEPTA* (Pa. Cmwlth. 2011), the court found that ice and snow are not defective conditions. Thus, the Commonwealth and its instrumentalities are immune from suit for slips and falls on ice or snow at locations they own, manage, possess or control.)

Only counties, townships and other municipal entities and instrumentalities can assert immunity under the [Political Subdivision Tort Claims Act](#). The Political Subdivision Tort Claims Act provides coverage similar to the Sovereign Immunity Act.

Both Acts provide monetary caps on damages and limit the kinds of claims that can be brought.

### **Steps to Minimize Risk**

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Besides asserting the defense of statutory immunity, there are steps that landowners (the "Owners") and, where a recreational access easement over a designated area (the "Easement Area") is in place, the easement holder (the "Holder") can take to lessen the

risk of liability for injuries arising from public access to private property for recreational uses.

### Warnings and Temporary Closings

The most important step Owners and Holder can take to eliminate risk is to warn recreational users whenever they become aware of a potentially dangerous condition—especially one that a recreational user might not notice—and take reasonable steps to guard against injury even if that means closing the Easement Area temporarily. Avoiding potential liability is always better than defending claims—even if immunity may be available under RULWA.

### Well-Drafted Easement Document

Prudently crafted trail and other recreational use easements can decrease the potential risk of liability and costs to Owners and Holder.

### No duty imposed by easement documents

Given the strong recommendation to take reasonable steps to guard against injury, some may find it surprising that the model documents provided by the Pennsylvania Land Trust Association to afford recreational opportunities do not allocate responsibility to inspect for, or warn against, potentially dangerous conditions or to perform whatever maintenance or repair may be necessary or advisable to correct dangerous or defective conditions. Responsibility is either not mentioned at all ([Model Grant of Trail Easement](#)) or, as in §5.04 of the [Model Trail Easement Agreement](#), any duty to inspect, warn against or correct defective or dangerous conditions is expressly disclaimed.

### Rationale

There is a tactical reason for the approach taken by the model easement documents. Information in a recorded document is available to everyone, including the attorney for the person allegedly injured using the Easement Area. The model easement documents purposely omit provisions that may incentivize a lawsuit or provide a path to get around the statutory defense of immunity. A covenant that imposes an affirmative duty to inspect, or warn against, or repair

defective conditions within the Easement Area may provide an avenue for a plaintiff’s attorney to claim that the injured recreational user had a reasonable expectation, based upon the terms of the easement document, that safe conditions would be maintained. Whether or not ultimately successful, the issues of fact and law become more complicated and, instead of being quickly dismissed, the claim may require litigation or a substantial cash outlay to settle.

### Off-record agreement

If Owners and Holder want to allocate, as between themselves, rights and responsibilities pertaining to the safety of the Easement Area, they can do so but they are well advised to keep the content of that agreement off-record so as not to give rise to a claim that a recreational user relied upon that promise. A mention of the off-record document in the recorded easement document should be sufficient to put a successor to Owners or Holder on notice to inquire as to the contents of that document.

### Indemnity

[The guide [Indemnity Agreements and Liability Insurance](#), published by the Pennsylvania Land Trust Association and available at [ConservationTools.org](#), looks at the use of indemnity for a range of conservation transactions.]

### Shifting risk

An indemnity is a legal device to shift the risk of loss or liability from one person to another. For example, Owners may want to shift the risk of liability associated with an organized race to be held on the trail to the event sponsor. An indemnity is often coupled with an agreement to defend -- a phrase typically used is “indemnify, defend and hold harmless”. The agreement to defend is important because, while statutory immunity may ultimately result in a finding of no liability, thousands of dollars may be spent in court costs and legal fees to achieve that result. Why would a recreational user commence a claim that is probably covered by RULWA? Attorneys representing injured persons know that an insurance company may be willing to pay to settle a case rather than incurring the cost of defense.

### **Allocating risk in recreational use easements**

In the case of trail and other public access easements, Owners may want to shift to Holder the risk of liability arising out of an injury to a recreational user. The [Model Trail Easement Agreement](#) takes the approach that, as to the Easement Area, Owners should take responsibility for the acts and omissions of Owners and anyone else who is on the property at the express or implied invitation of Owners. These are referred to as “Owner Responsibility Claims”. The safety of family, friends and people providing services or making deliveries to Owners remains the responsibility of Owners just as it would if no access easement had been granted. Liability for bodily injury or property damage occurring within the Easement Area (other than Owner Responsibility Claims) is allocated to Holder including the cost of defending the claim on behalf of both Owners and Holder.

### **Indemnity from recreational user groups**

Landowners may require indemnity agreements from schools, clubs or other groups using a trail on a regular basis, or from an event sponsor who desires use of the trail for a “run” or competitive event. For example, Owners may be able to shift the risk of a student athlete being injured to the local school district by requiring an indemnity as a condition to allowing the cross-country team to use the trail system for daily practice. These indemnities are important because, as discussed in the next section, they provide access to the indemnifying party’s insurance coverage. The [Model Trail Easement Agreement](#), by requiring Owners’ written consent for certain uses, provides Owners the opportunity to require indemnity agreements for races and other organized activities.

### **Insurance**

[The guide [Indemnity Agreements and Liability Insurance](#) looks at the use of liability insurance in conjunction with indemnification agreements.]

### **Defense of claims**

The availability of the statutory defenses described above may insulate Owners from liability for claims arising from recreational use; nevertheless, a claim asserted in court needs to be defended and, until

dismissed or settled, attorneys’ fees and other costs will be incurred. Insurance coverage can mitigate the cost of defending the claim as well as any liability that may ensue.

### **Liability insurance**

Owners typically carry policies of homeowners’ insurance, which include coverage for bodily injury (including death) and property damage occurring on or about the property owned by the persons named in the policy, called the “named insureds”. Similar coverage for injury and damage is furnished to organizations, whether for profit or nonprofit, under commercial general liability policies. Submitting a claim promptly to the liability insurer will ordinarily result in an attorney being engaged to defend the named insureds. The following subsections explain how liability coverage can be extended to persons other than the named insured on the policy -- for example, by extending Holder’s liability coverage to protect Owners as well -- and how to bolster the protections offered by an indemnity backed by insurance coverage

#### *Contractual liability endorsement*

If a recreational user asserts a claim against Owners, and if Holder has indemnified Owners for liability arising from such claims in the easement document, then the Owners (and their insurance company) may be able to call on Holder’s insurance company to defend both Owners and Holder. Holder’s insurer will be bound to do so only if Holder’s liability policy covers contractual liability (liability to others under an indemnity) as well as coverage of the claim asserted by the recreational user. The same applies if responsibility for that claim was allocated to Owners in the easement document. In that case, the Holder (and its insurance company) would be able to call on Owner’s insurance company to defend the claim on behalf of both if contractual liability coverage is included in Owners’ liability coverage. Liability policies generally exclude contractual liability from basic coverage but it can be added back in by endorsement.

### *Additional insured endorsement*

Another way to furnish liability coverage to persons not originally named in the policy is to have the insurance company amend the policy by endorsement to name them as additional insureds. The endorsement is supposed to provide the additional insureds with the same coverage as the insured has with respect to a particular site or occurrence; however, endorsements vary widely and each must be carefully reviewed to see that the anticipated coverage is actually provided.

### **Waiver of subrogation**

Once a claim is paid to an injured person, the insurance company has the legal right, called subrogation, to sue others who may share responsibility for the accident. For the unwary, this may have surprising consequences.

Using our earlier example, a school district indemnifies the owner of a trail for injuries that might occur to its cross-country team athletes who use the trail for daily practice. The school district has its insurer add contractual liability coverage to back this indemnity. If an injury then occurs, the school district's insurer might end up paying a claim. The school district's indemnification of the trail owner will protect the owner from the athlete's claim or an attempt by the school district to shift liability. However, the trail owner is not protected from the school district's insurer. Subrogation allows the school district's insurer to try to recover some of the money paid to the athlete from the trail owner.

In other words, even if a group indemnifies an Owner and agrees to pay any claim against an Owner via the group's contractual liability endorsement, the group's insurer may still sue the Owners to recover some of its costs. To bar that suit, and complete the protection intended by the indemnity, a waiver of subrogation should be requested as part of the indemnity package.

### **Certificates of insurance**

A certificate of insurance is issued by an insurance company to the requesting party (called a certificate holder) to evidence the types and limits of coverage carried under policies issued by that company to the

named insured. Owners and Holder can require delivery of certificates of insurance before commencement of the easement and periodically, or on request, thereafter. Certificates of insurance will list endorsements to the CGL policy such as contractual liability, additional insured status and waiver of subrogation.

### **Off-record agreements**

So as not to incentivize claims against Owners or Holder, none of the model trail easement documents provided by the Pennsylvania Land Trust Association reference insurance responsibilities. If Owners will not enter into an easement document without a written commitment from Holder to carry certain kinds of insurance with certain minimum requirements, this can be done outside the recorded document, perhaps with the stipulation that Holder is not permitted to transfer the easement to another entity without obtaining an assumption of that agreement. The commentaries to the models call for the insertion of a brief reference to the off-record document to be sure that the off-record agreement is not superseded by the easement document and to be sure that a successor or assignee of Holder is bound to the agreement.

### **Releases**

#### **Releases effective with adults**

Another method to control risk is to obtain from recreational users a signed statement (called a "release") that absolves Owners and others (for example, activity sponsors) from any responsibility for personal injury suffered by that individual arising from the recreational use. A release signed by a legally competent adult is *highly effective* in Pennsylvania. Young people under the age of 18 are, however, not legally competent to waive their rights to seek compensation for injury. Releases signed by their parents or legal guardians are not effective to waive the constitutional rights of young people to a jury trial and due process of law.

The guide [Release of Liability](#), published by the Pennsylvania Land Trust Association and available at [ConservationTools.org](http://ConservationTools.org), discusses at length releases,

assumption of risk agreements and covenants not to sue. PALTA developed the accompanying [Model Release Agreement](#) to help nonprofits minimize the risk of being held responsible for injuries or property damage associated with organizing volunteer, educational, recreational and other events and activities (or opening up property for the same).

### Releases and trail easements

The commentary to the [Model Trail Easement Agreement](#) notes the opportunity to require delivery of signed releases as a condition to use of the Trail under certain circumstances. For example, runs and other competitive events fall into the *license* rather than *easement* category; they are not permitted without Owners' consent. This is to allow Owners the opportunity to require releases and, perhaps, an indemnity from the event sponsor, as a condition to use of the Easement Area. Another way to obtain releases is to allow certain activities that may impose greater risk to be limited to members of a user club; for example, an equestrian or snowmobiling association. Club members must carry a membership card when using the Easement Area and the release can be printed on that membership card.

### The Indemnity Wish List

In seeking to establish sufficient liability protection, a person or organization might pursue a wish list of tools described above:

- Indemnity agreement,
- Contractual liability endorsement,
- Additional insured endorsement,
- Waiver of subrogation,
- Releases.

However, these tools are complex in their details and in how they interact and overlap with one another. Depending on the situation, one or more of these tools may not be available; also, each tool may not be needed to achieve sufficient protection. The person or organization seeking to protect itself must review the particular facts and circumstances to determine whether its needs are being met.

## Different Risks for Public and Private Entities

---

Greater statutory liability protections and the power of taxation make it less risky for public entities to own land or hold easements for recreational public use than private entities.

Regarding public access easements, the private landowner has the same statutory protections from liability available to them whether a nonprofit organization or government is identified as the Holder of the easement. However, in regards to liability risks to Holder, there are compelling reasons to favor governmental entities, rather than nonprofit organizations, as Holder.

### Additional Protection from Liability for Public Entity

In addition to RULWA and other statutory defenses available to Owners and land trusts discussed in the opening section of this guide, other layers of protection are available only to state and local governments. The Commonwealth can assert immunity or limited liability under the Sovereign Immunity Act and counties, townships and other municipalities can similarly assert immunity or limited liability under the Political Subdivision Tort Claims Act. The availability of strong defenses can be expected to result in the quick dismissal of claims that are not well grounded. *See "Immunity Available to Commonwealth and its Agencies"* above.

### Impact of Judgment on Public Versus Nonprofit Entity

In the case of a municipality owning the trail or holding a trail easement, if a court or jury finds liability, the burden of that liability can be borne by the public generally. However, in the case of a nonprofit, the assets of the nonprofit, including charitable contributions and funds set aside for recreation and conservation, will be exposed to collection of a judgment. Even if proceeds of insurance policies are available to pay the claim, the nonprofit will undoubtedly bear the burden of increased premiums (if it is able to obtain insurance at all) for a

long time to come. The public uses streets and sidewalks owned or maintained by government all the time. The costs of defending or insuring against claims arising from public use are not likely to change very much regardless of whether the injury occurred on a trail or on a sidewalk. Thus, the incremental cost of assuming responsibility for trails in addition to other public rights of way is, probably, not very significant. On the other hand, the cost of defending or insuring claims arising from public use could have a paralyzing and ruinous impact on a nonprofit and the nonprofit's mission.

## Preserving Charitable Assets

Charitable organizations must be careful to preserve their endowment and other funds dedicated to furthering their mission over the long term. If a claim for serious injury or death is for some reason not barred by immunity, insurance proceeds may not be sufficient to satisfy the verdict or settlement reached. While this may be unlikely, it nevertheless could happen and, if it does, the funds that nonprofit organization needs to continue its programs and operations, will also be exposed to payments required by court order.

### Limit Liability by Contract

In the case of easements for public access, one possibility that could be considered is to add to the easement document a provision limiting Holder's liability on its agreement to indemnify Owners from claims to the insurance proceeds available to defend the claim. But, even if that was acceptable to Owners, it only limits Owners' recovery from Holder for a judgment rendered against Owners. It does nothing to limit Holder's potential exposure for claims asserted directly against Holder by the recreational user.

### Separate Entity for Public Access Assets

If a conservation organization is not satisfied with the protections from liability discussed above and wants to isolate its charitable assets from exposure to public access claims, another strategy to consider is the creation of a separate, but controlled, entity to hold the land and easements available for public use.

### Single purpose entity

The first step to implement the strategy is for the primary organization (the "parent") to create an entity (the term used in commercial transactions is a single purpose entity or SPE) to own the assets involved in higher risk activities. In this case, the parent would transfer to the SPE some or all of its public access land and easements. The SPE is named as an insured on the policies of liability insurance carried by the parent so as to provide coverage for claims against the parent, the SPE and any indemnified parties. The SPE can be set up as a single-member non-profit organization, thus vesting in parent, as sole member, total control over the SPE.

### Separate entity for liability purposes

So long as the formalities of separate existence are observed (for example, separate annual meetings, election of officers, bank accounts) the parent, and its assets, will be shielded from claims against the SPE. But if the directors and officers of the parent treat the two entities as if they were one, a court can "pierce the corporate veil" and allow recovery against the parent.

### Single entity for tax purposes?

The SPE can take any form available under state law that provides protection for the parent. A non-profit corporation controlled by the parent as single member is an obvious choice for these purposes but there is a federal tax reason to consider forming the SPE as a single member limited liability company. Single member LLCs, unlike single member corporations, are "disregarded" for federal tax purposes; in other words, they are *not* recognized as an entity separate from the parent. The result is that contributions of land or easements to the SPE (if it has been formed as a single member limited liability company) are treated, for federal tax purposes, as if the donations had been made to the parent. The parent's status for purposes of determining tax deductibility under the Code (for example, recognition as a public charity under §501(c)(3)) automatically extends to the limited liability company it controls.

### **Does an SPE strategy make sense for a particular organization?**

The issues surrounding the development and implementation of an effective strategy for isolating risk are complex. If an organization wants to further investigate or pursue such a strategy, it should hire competent legal assistance to help it navigate the complexities in the context of the organization's particular circumstances.

## **Conservation Easements**

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In the [\*Model Trail Easement Agreement\*](#), liability for bodily injury or property damage occurring within the Trail Easement Area (other than Owner Responsibility Claims) is allocated to Holder. In contrast, the indemnity provision in the [\*Model Grant of Conservation Easement\*](#) runs only from the Owners to the Holder. Because with a conservation easement the Holder generally has no care, custody or control of the Property, this is entirely sensible and appropriate.

When an easement for public access is granted as part of a conservation easement, the Holder gains some control over the portion of the Property available for public recreational use. This merits a review of who should indemnify whom for what. Some users may resolve matters by adjusting the conservation easement indemnity provision to simply make the indemnification mutual. But this does not take into account that Holder's indemnity ought to be limited only to specific public use claims within a specific area. A better alternative is to add to the conservation easement a provision, applicable to the public access area only, similar to the indemnity included in the [\*Model Trail Easement Agreement\*](#), which limits Holder's responsibility to the Easement Area only and carves out from that overall responsibility Owner Responsibility Claims. Users should consider this when deciding whether to establish a trail easement as part of a broader conservation easement document or via a separate trail easement document.

## **Related Resources at ConservationTools.org**

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### **Library Categories**

[Liability Associated with Recreational Use](#)

### **Featured Library Items**

[Model Release Agreement](#)

[Davis v. City of Philadelphia 1/13/2010 Decision](#)

[Liability and Rail-Trails in Pennsylvania](#)

[Equine Immunity Act](#)

[Sovereign Immunity Act](#)

[Political Subdivision Tort Claims Act](#)

[Rails to Trails Act](#)

[Easement Holder Enjoys Same RULWA Immunity as Land Owner](#)

[Model Grant of Conservation Easement and Commentary, 6th Edition](#)

[Model Grant of Trail Easement and Commentary: A Short Form Alternative to the Model Trail Easement Agreement](#)

[Model Trail Easement Agreement and Commentary \(3rd edition\)](#)

### **Related Guides**

[Indemnity Agreements and Liability Insurance: Protection from Claims Brought by Third Parties](#)

[Pennsylvania's Recreational Use of Land and Water Act](#)

[Reducing Liability Associated With Public Access](#)

[Release of Liability: A Tool for Managing the Risk of a Volunteer or Participant in an Activity Suing the Activity's Organizer or Host](#)

[Trail Easement](#)

[Conservation Easement](#)

[Model Conservation Easement](#)

## Experts

[Patricia L. Pregmon, Esq.](#)

Pregmon authored this guide. Pregmon offers more than 25 years experience in real estate law and has helped scores of clients achieve their goals.

## Submit Comments and Suggestions

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*The Pennsylvania Land Trust Association would like to know your thoughts about this guide: Do any subjects need clarification or expansion? Other concerns? Please contact Andy Loza at 717-230-8560 or [aloza@conserveland.org](mailto:aloza@conserveland.org) with your thoughts. Thank you.*

## Acknowledgements

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[Patricia L. Pregmon](#), attorney at law, is the primary author, and [Andrew M. Loza](#), the contributing author and editor.

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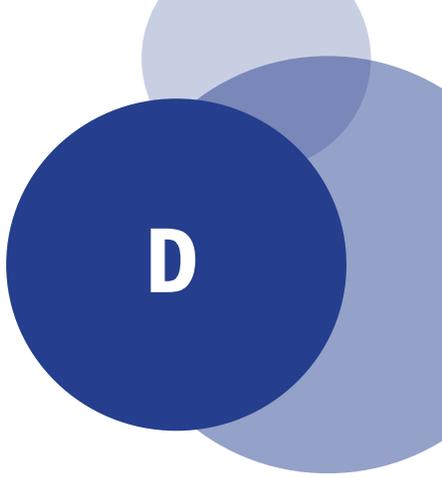
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# APPENDICES

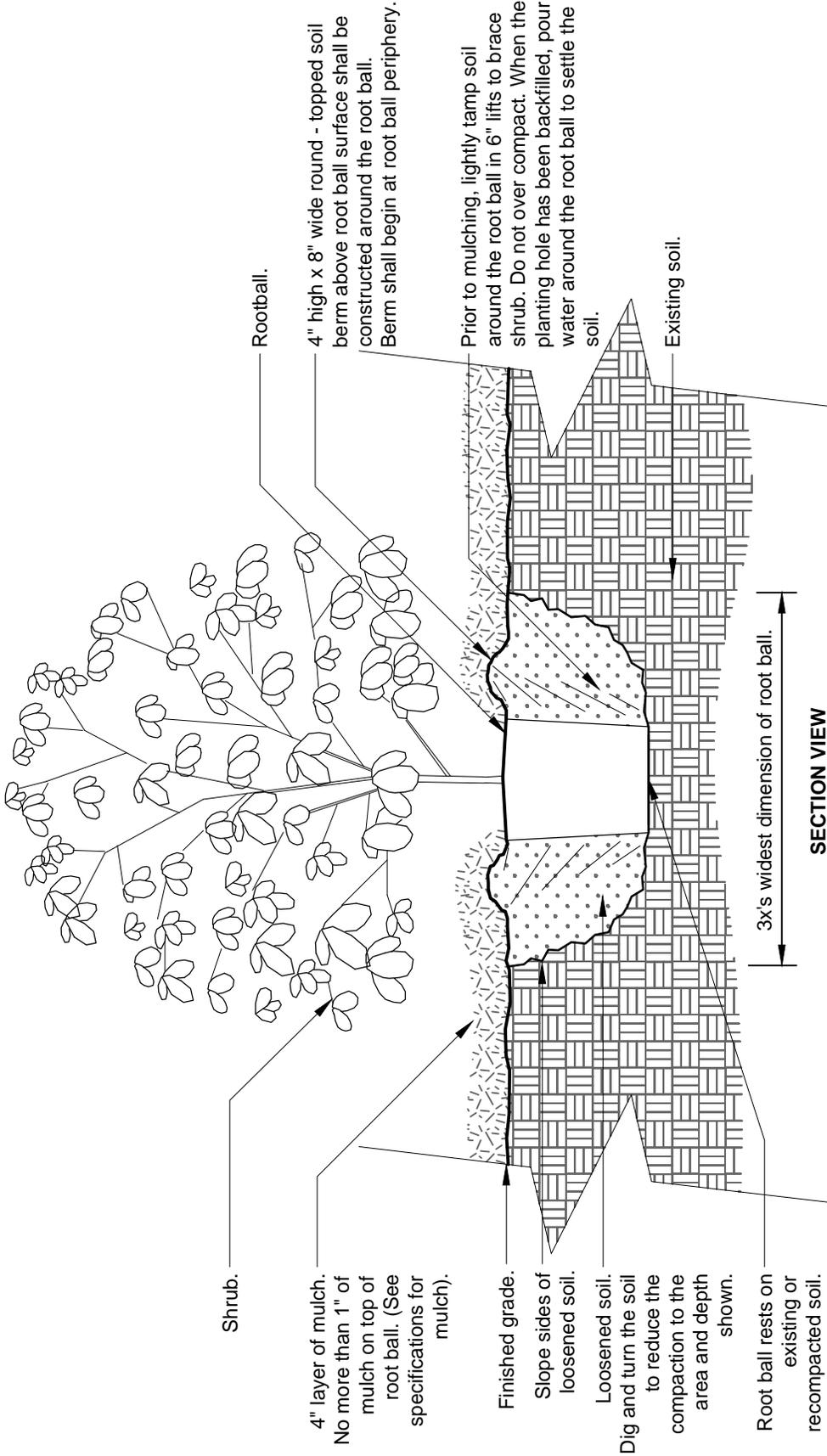


D

## COMMUNITY CHARACTER & APPEARANCE

D. Drawings illustrating techniques for proper planting





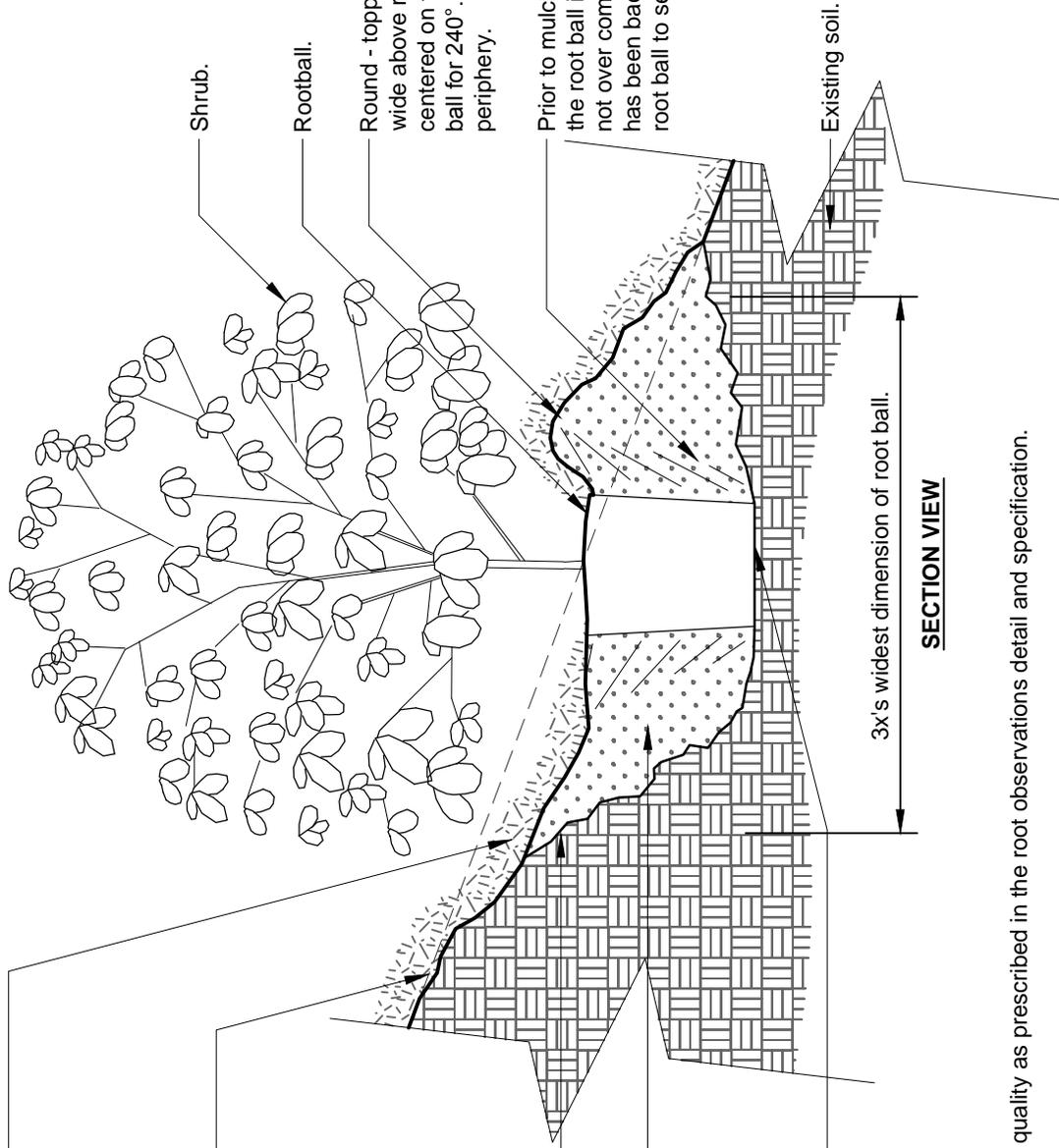
- Notes:
- 1- Shrubs shall be of quality prescribed in the root observations detail and specifications.
  - 2- See specifications for further requirements related to this detail.

P-X

## SHRUB - UNMODIFIED SOIL

4" layer of mulch.  
No more than 1" of mulch on top of root ball. (See specifications for mulch).

Original slope should pass through the point where the trunk meets substrate/soil.



Slope sides of loosened soil.

Loosened the soil. Dig and turn the soil to reduce the compaction to the area and depth shown.

Bottom of root ball rests on existing or recompacted soil.

3x's widest dimension of root ball.

**SECTION VIEW**

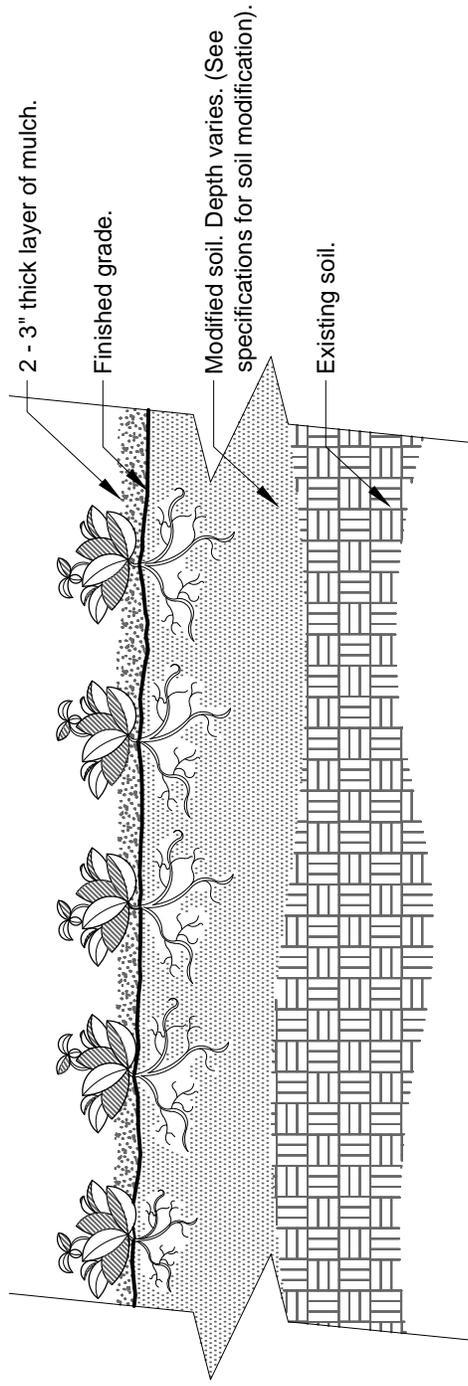
Notes:

1- Shrubs shall be of quality as prescribed in the root observations detail and specification.

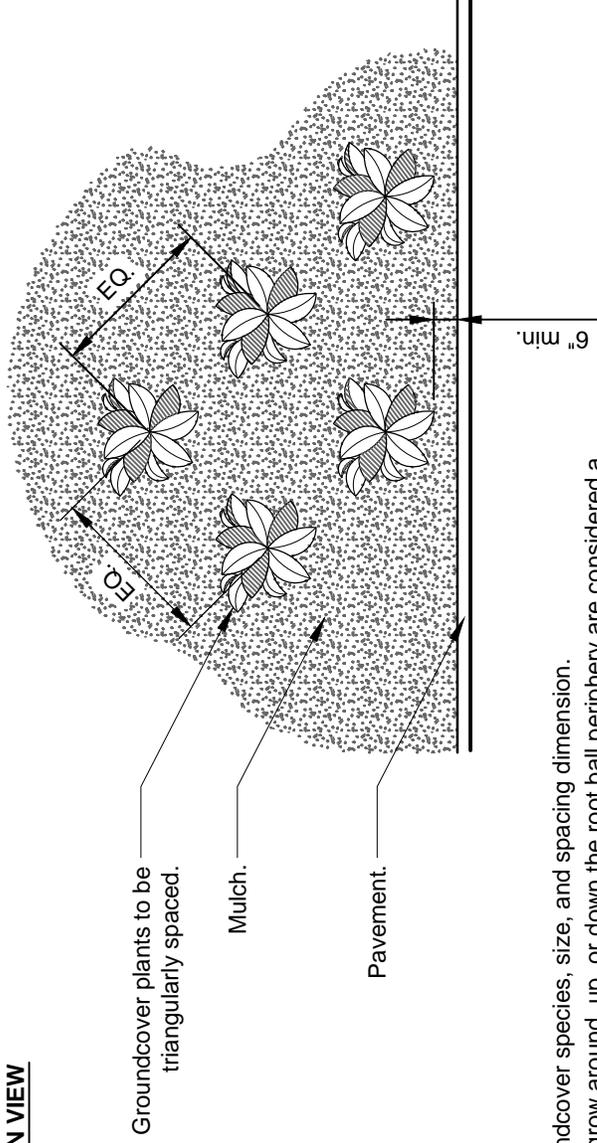
2- See specifications for further requirements related to this detail.

**P-X**

# SHRUB ON SLOPE 5% (20:1) TO 50% (2:1) - UNMODIFIED SOIL



**SECTION VIEW**



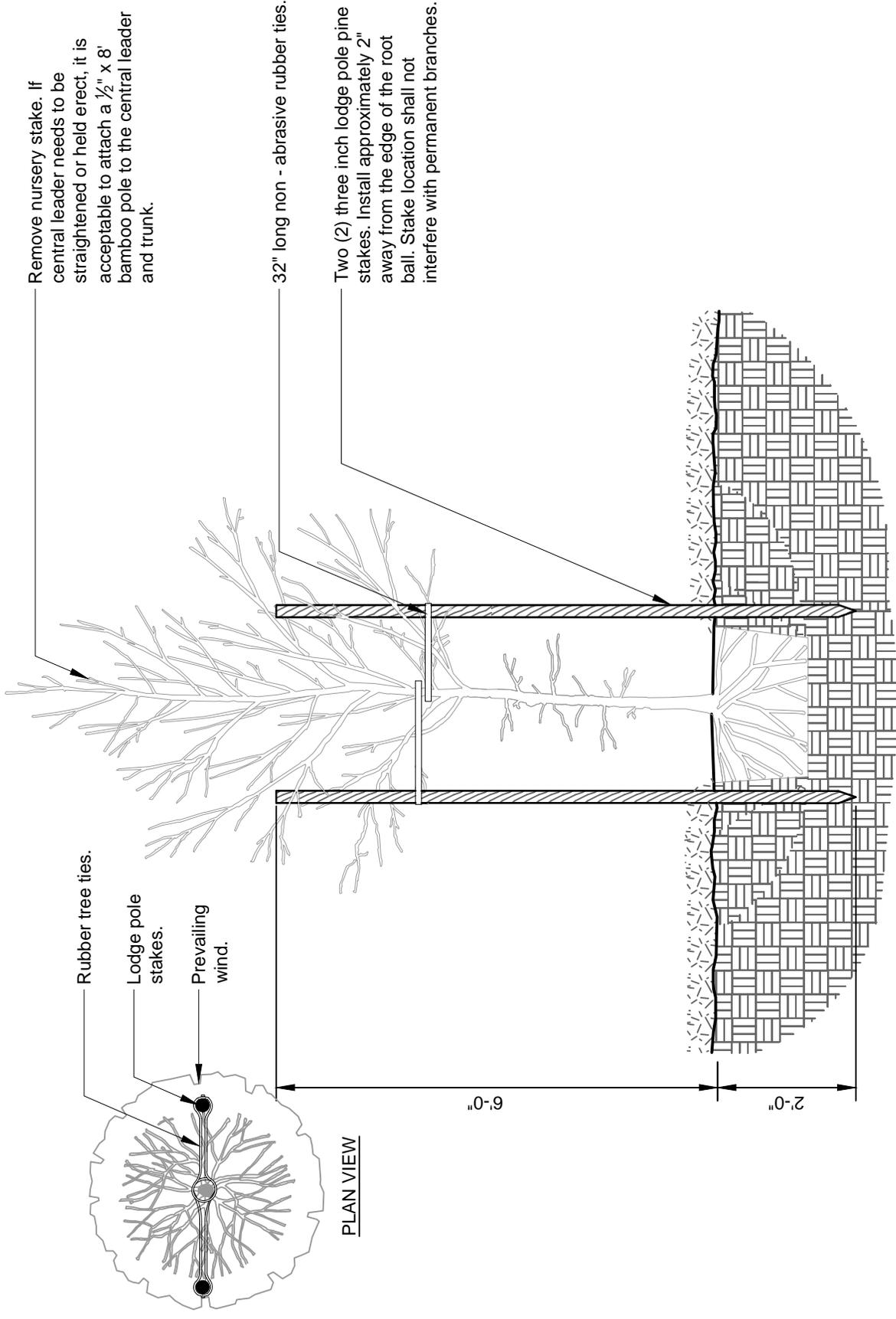
**PLAN**

**Notes:**

- 1- See planting legend for groundcover species, size, and spacing dimension.
- 2- Small roots ( $\frac{1}{4}$ " or less) that grow around, up, or down the root ball periphery are considered a normal condition in container production and are acceptable however they should be eliminated at the time of planting. Roots on the periphery can be removed at the time of planting. (See root ball shaving container detail).
- 3- Settle soil around root ball of each groundcover prior to mulching.



**GROUNDCOVER**



Remove nursery stake. If central leader needs to be straightened or held erect, it is acceptable to attach a 1/2" x 8' bamboo pole to the central leader and trunk.

32" long non-abrasive rubber ties.

Two (2) three inch lodge pole pine stakes. Install approximately 2" away from the edge of the root ball. Stake location shall not interfere with permanent branches.

Rubber tree ties.  
Lodge pole stakes.  
Prevailing wind.

PLAN VIEW

6'-0"

2'-0"

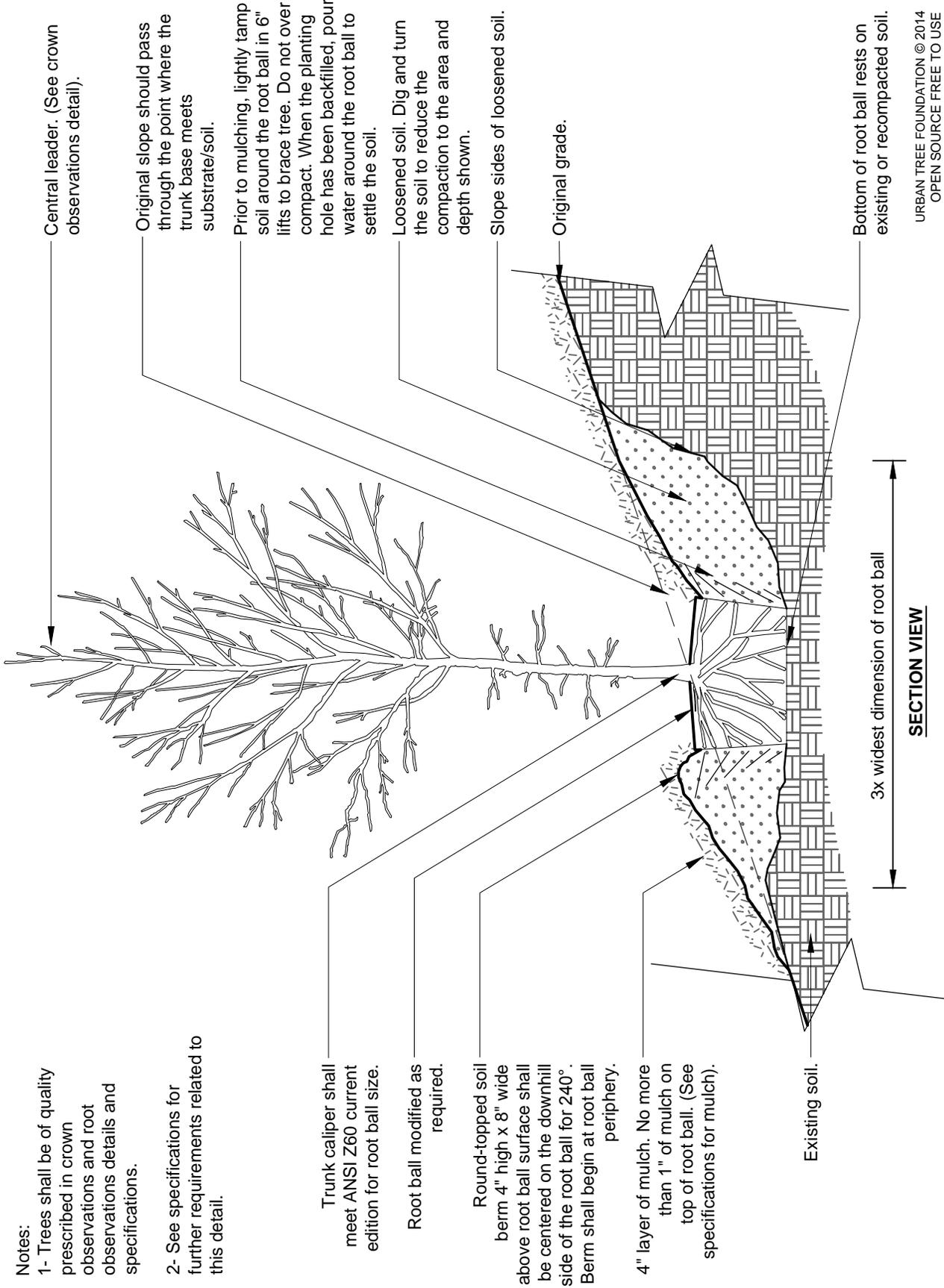
SECTION VIEW

TREE STAKING - LODGE POLES (2)

P-X

Notes:

- 1- Trees shall be of quality prescribed in crown observations and root observations details and specifications.
- 2- See specifications for further requirements related to this detail.



Trunk caliper shall meet ANSI Z60 current edition for root ball size.

Root ball modified as required.

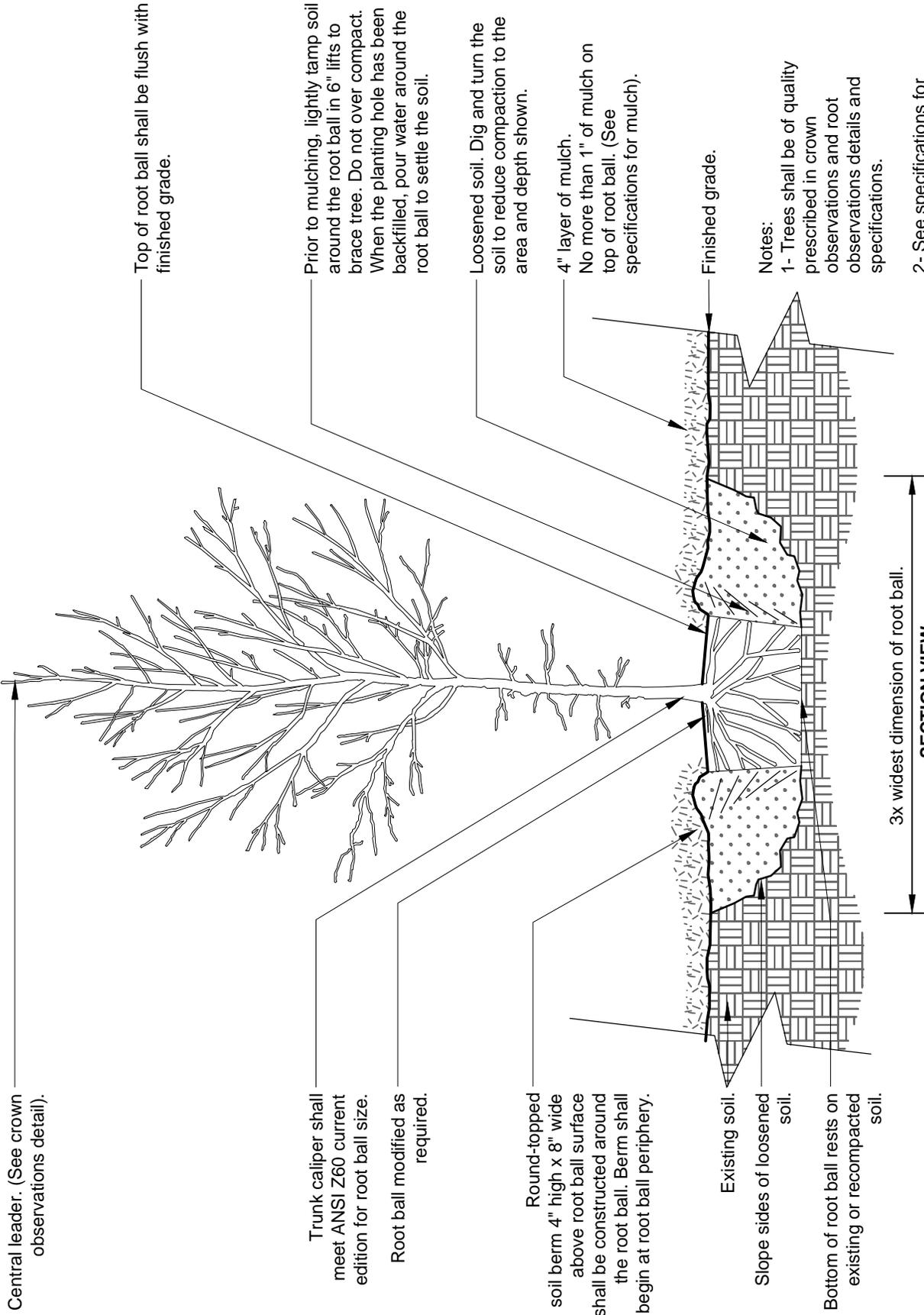
Round-topped soil berm 4" high x 8" wide above root ball surface shall be centered on the downhill side of the root ball for 240°. Berm shall begin at root ball periphery.

4" layer of mulch. No more than 1" of mulch on top of root ball. (See specifications for mulch).

P-X

**TREE ON SLOPE 5% (20:1) TO 50% (2:1) - UNMODIFIED SOIL**

Central leader. (See crown observations detail).



Top of root ball shall be flush with finished grade.

Prior to mulching, lightly tamp soil around the root ball in 6" lifts to brace tree. Do not over compact. When the planting hole has been backfilled, pour water around the root ball to settle the soil.

Loosened soil. Dig and turn the soil to reduce compaction to the area and depth shown.

4" layer of mulch. No more than 1" of mulch on top of root ball. (See specifications for mulch).

Finished grade.

Notes:  
1- Trees shall be of quality prescribed in crown observations and root observations details and specifications.  
2- See specifications for further requirements related to this detail.

3x widest dimension of root ball.  
**SECTION VIEW**

# TREE W/ BERM (EXISTING SOIL NOT MODIFIED)

P-X

Notes:

1- Trees shall be of quality prescribed in crown observations and root observations details and specifications.

2- See specifications for further requirements related to this detail.

Trunk caliper shall meet ANSI Z60 current edition for root ball size.

Root ball modified as required.

Round-topped soil berm 4" high x 8" wide above root ball surface shall be constructed around the root ball. Berm shall begin at root ball periphery.

Bottom of root ball rests on existing or recompacted soil.

Central leader. (See crown observations detail).

Root ball surface shall be positioned to be one-quarter above finished grade.

Prior to mulching, lightly tamp soil around the root ball in 6" lifts to brace tree. Do not over compact. When the planting hole has been backfilled, pour water around the root ball to settle the soil.

Existing site soil added to create a smooth transition from the top of the raised root ball to the finished grade at a 15% max. slope.

4" layer of mulch. No more than 1" of mulch on top of root ball. (See specifications for mulch).

Original grade.

Finished grade.

Loosened soil. Dig and turn the soil to reduce compaction to the area and depth shown. Existing soil.

3x widest dimension of root ball.

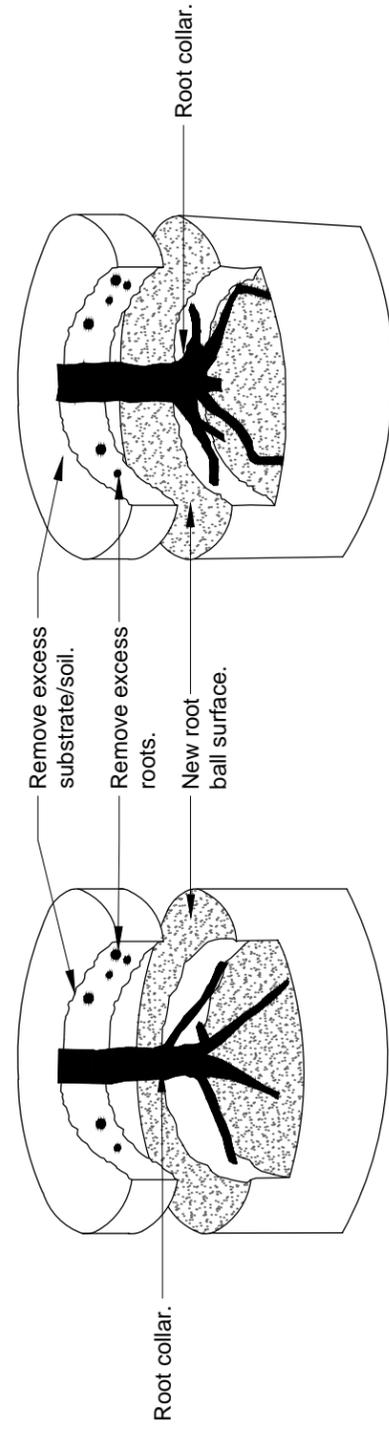
**SECTION VIEW**

**TREE IN POORLY DRAINED SOIL**





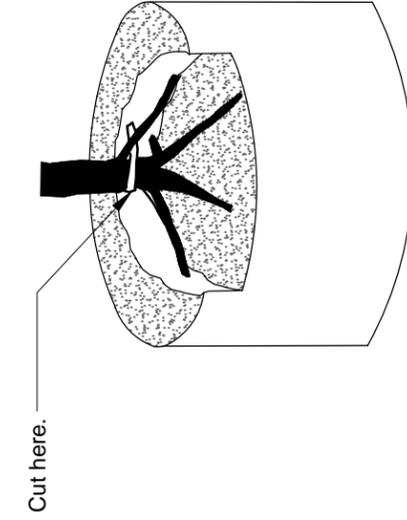
**Step 1 - Remove substrate over root collar.**



Tree planted too deeply in root ball. Remove excess substrate and roots to meet root inspection detail.

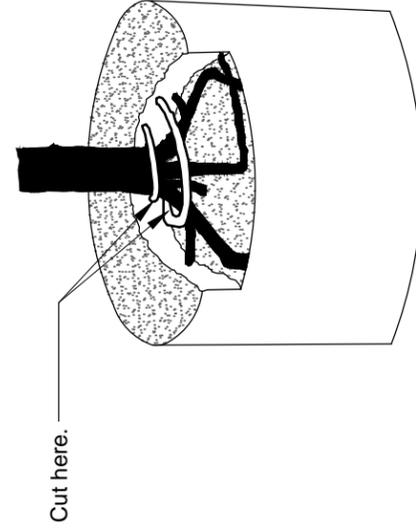
Tree planted too deeply in root ball. Remove excess substrate and roots to meet root inspection detail.

**Step 2 - Remove defects.**



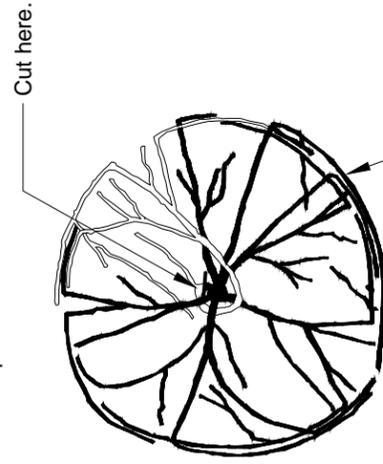
Five structural (large) roots shown in black. Remove structural root (white) wrapping root collar.

Four structural roots shown in black. Remove root (white) growing over structural roots.



Six structural roots shown in black. Remove roots (white) growing over root collar by cutting them just before they make an abrupt turn.

Seven structural roots shown in black. Remove structural roots (white) growing around or over root collar by cutting them just before they make an abrupt turn.



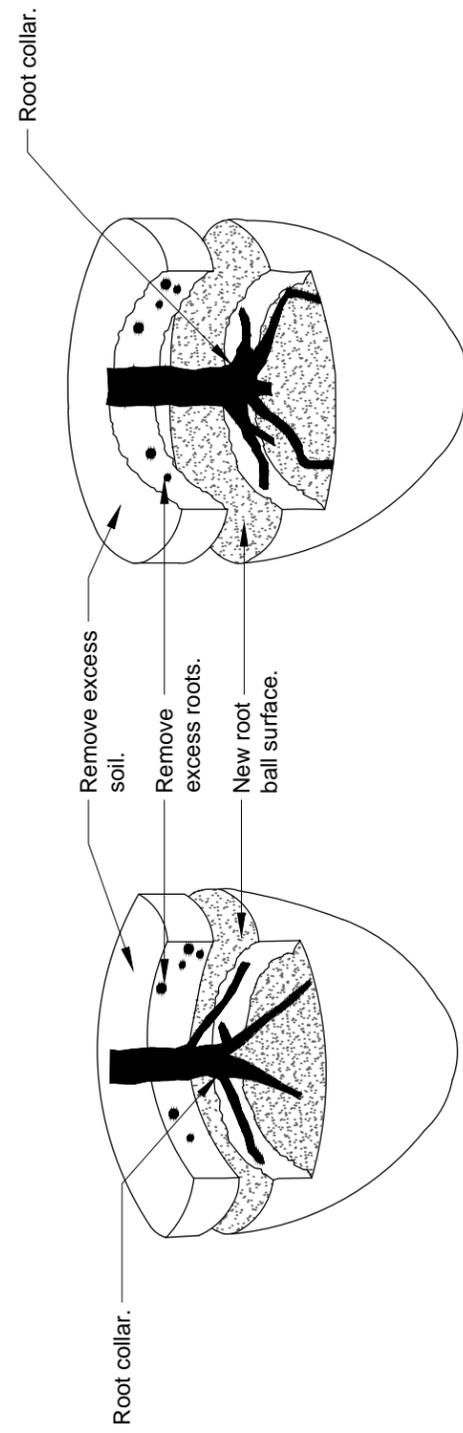
Cut structural root just before it makes abrupt turn. Pruning cut should be made tangent (parallel) to the trunk.

Cut structural roots just before they make abrupt turn by cutting tangent (parallel) to the trunk (two cuts shown).

**Notes:**

- 1- All trees shown are rejectable unless they undergo recommended correction.
- 2- First Step 1, then Step 2. Roots and soil may be removed during the correction process; substrate/soil shall be replaced after correction has been completed.
- 3- Trees shall meet root observations detail following correction.
- 4- Small roots (1/4" or less) on the periphery of the root ball are common with container plant production. These small roots are not defined as "defects" and can be addressed at the time of installation (See root ball shaving container detail).

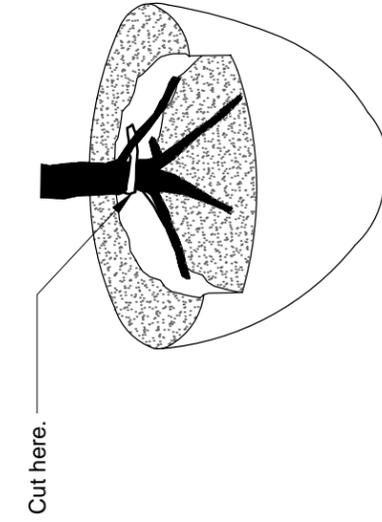
**Step 1 - Remove soil and roots over the root collar.**



Tree planted too deeply in root ball. Remove excess soil and roots to meet root inspection detail.

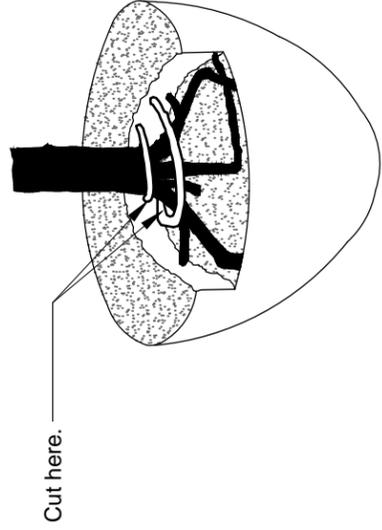
Tree planted too deeply in root ball. Remove excess soil and roots to meet root inspection detail.

**Step 2 - Remove defects.**

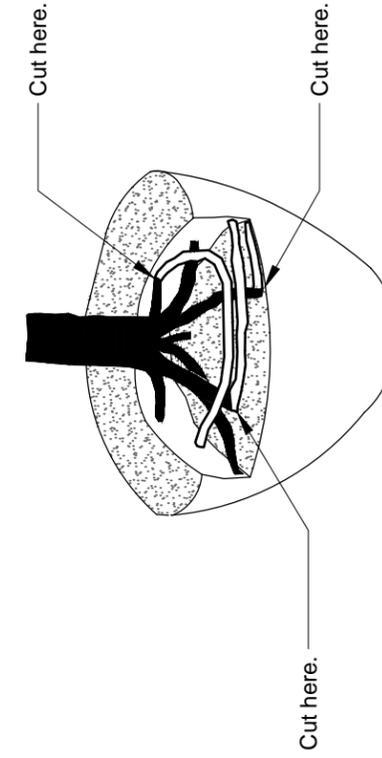


Five structural (large) roots shown in black. Remove structural (white) root wrapping root collar.

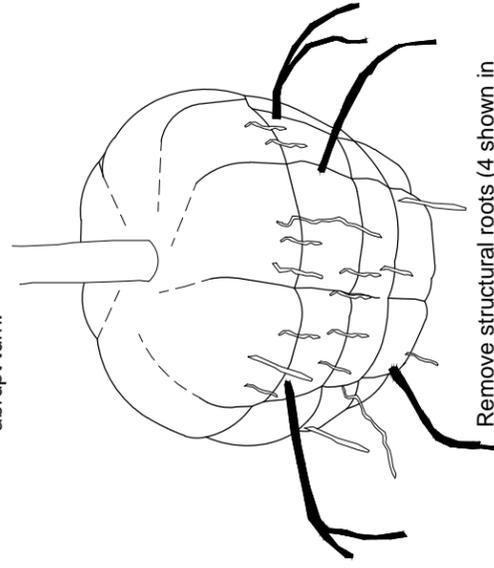
Four structural roots shown in black. Remove root (white) growing over structural roots.



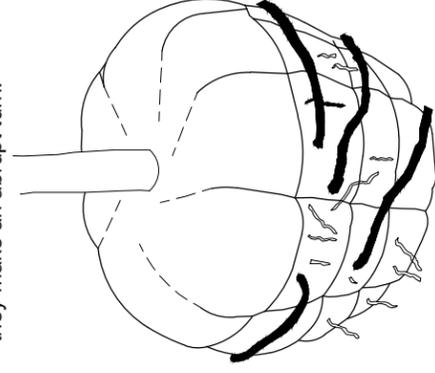
Six structural roots shown in black. Remove structural roots (white) growing over root collar by cutting them just before they make an abrupt turn.



Seven structural roots shown in black. Remove structural roots (white) growing around or over root collar by cutting them just before they make an abrupt turn.



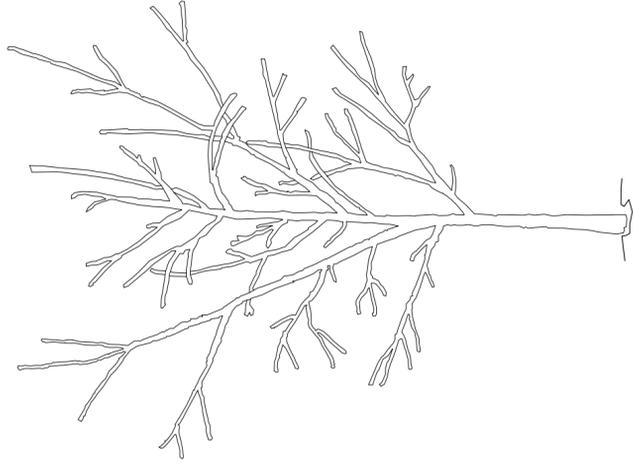
Remove structural roots (4 shown in black) extending from root ball.



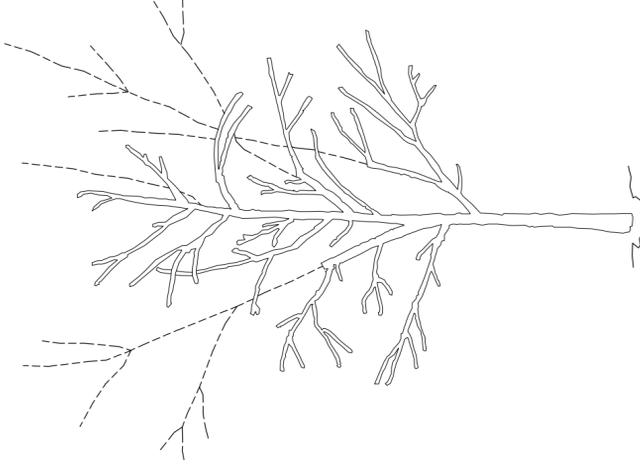
Remove structural roots (4 shown in black) deflected on root ball periphery. Small roots ( $\frac{1}{4}$ " or less) at the periphery of the root ball are not defined as defects and do not need to be removed.

**Notes:**

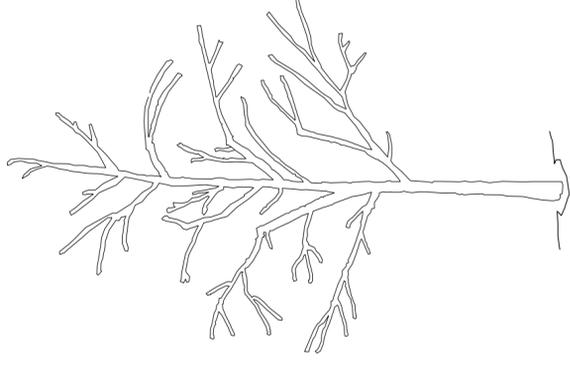
- 1- All trees shown are rejectable unless they undergo recommended correction.
- 2- First step 1, then step 2. Adjust hole depth to allow for the removal of excess soil and roots over the root collar.
- 3- Roots and soil may be removed during the correction process; substrate/soil shall be replaced after the correction has been completed.
- 4- Trees shall pass root observations detail following correction.



Before planting, tree has three codominant stems. The two that compete with the one in the center should be pruned to suppress their growth.



Two competing stems were reduced substantially, in this case removing about 70% of their foliage using reduction cuts.



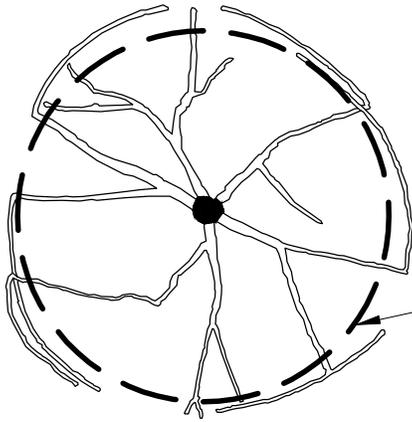
After pruning, tree has only one dominant stem.

- Notes:
- 1- All trees shown are rejectable unless they undergo recommended treatment.
  - 2- Tree shall meet crown observation detail following correction.

**CROWN CORRECTION DETAIL**

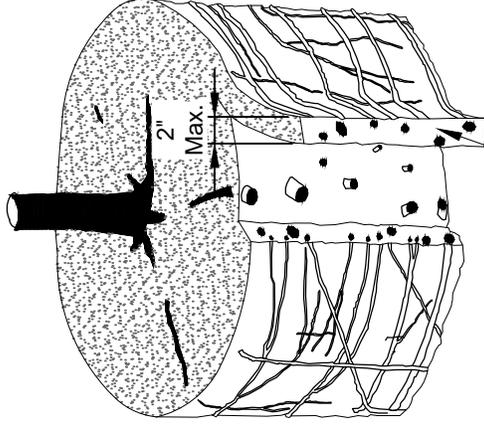
S-X

BEFORE SHAVING



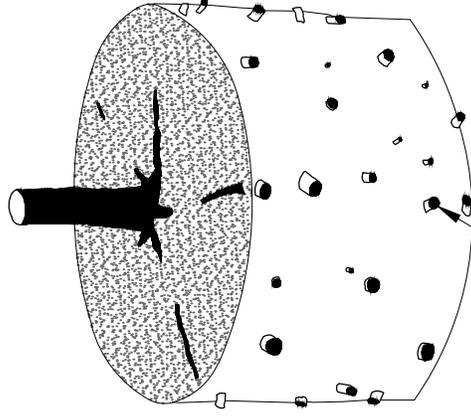
Shave root ball here to remove all roots growing on periphery.

SHAVING PROCESS



Shave outer periphery of the root ball a maximum of 2" thick.

SHAVING COMPLETE

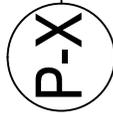


Root tips exposed at periphery of root ball. All roots growing around periphery are removed.

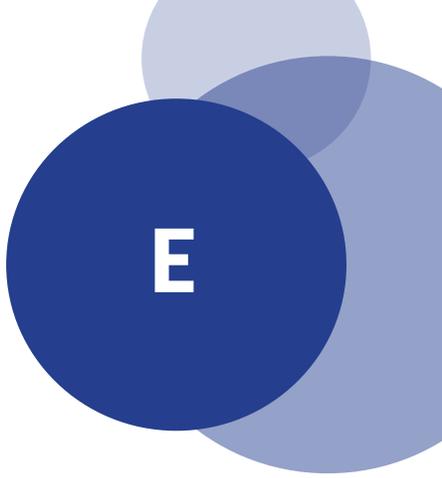
Notes:

- 1- Shaving to be conducted using a sharp blade or hand saw eliminating no more than needed to remove all roots on the periphery of root ball.
- 2- Shaving can be performed just prior to planting or after placing in the hole.

**ROOT BALL SHAVING CONTAINER DETAIL**



# APPENDICES



E

## COMMUNITY CHARACTER & APPEARANCE

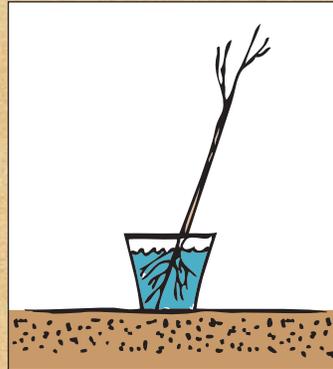
E. Drawings and information on planting bare-root stock and whips (Arbor Day Foundation)



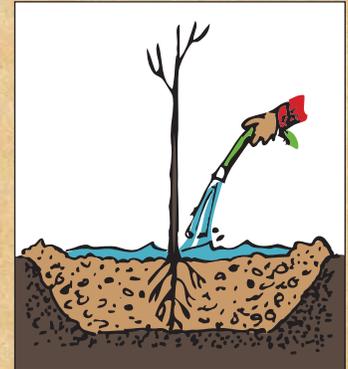
# How to Plant Bare-root Trees

Members: Please also see "Important Notes for Planting Your 10 Free Trees" on the reverse side.

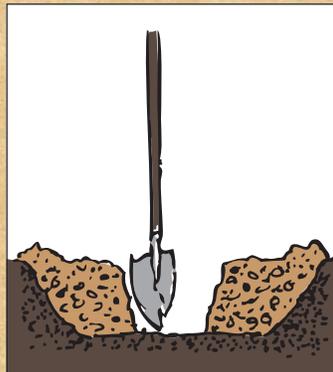
- 1 Unpack your trees, remove all packing materials, carefully untangle the roots and soak the roots in water 3 to 6 hours. Do not allow the roots to dry out.



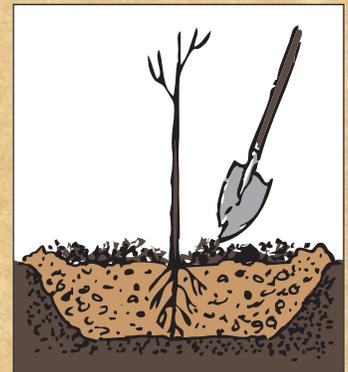
- 4 Shovel in the remaining soil. It should be firmly but not tightly packed. Construct a water-holding basin around the tree. Give the tree plenty of water.



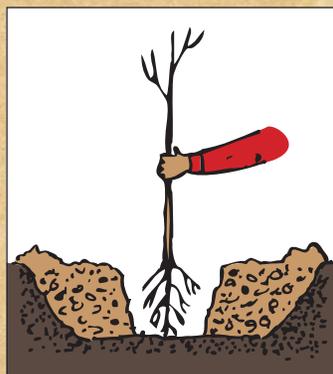
- 2 Dig a hole, wider than seems necessary, so the roots can grow outward without crowding. Remove any grass within a 3-foot circular area. To aid root growth, turn soil in an area up to 3 feet in diameter.



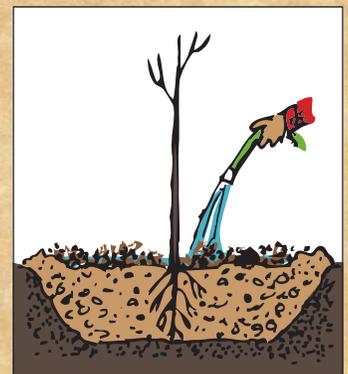
- 5 After the water has soaked in, spread protective mulch two inches deep in a 3-foot diameter area around the base of the tree, but not touching the trunk.



- 3 Plant the tree at the same depth it stood in the nursery, with plenty of room for the roots. Partially fill the hole, firming the soil around the lower roots. Do not add soil amendments such as peat or bark. Do not use fertilizer, potting soil, or chemicals on your new trees.



- 6 The soil and mulch around your trees should be kept moist but not soggy. During dry weather, generously water the tree every 7 to 10 days during the first year. Water slowly at the dripline.



# Members

## Important Notes for Planting Your 10 Free Trees.

### What To Do When You Receive Your Trees.

INSPECT your trees in the package. Extensive damage should be reported to our Member Services Department at: 888-448-7337 or send an email to our member services team at [member.services@arborday.org](mailto:member.services@arborday.org).

### It's best to plant your trees right away.

IF YOU NEED TO STORE YOUR TREES FOR 2-5 DAYS, make sure the tree roots have hydrating gel around them in the root bag. If you find that the tree roots are dry, open the package and wrap wet paper towels around the roots and enclose them again in the root bag with the twist-tie. Place the trees and root bag in the original shipping bag. Put the trees in a cool place without sunlight (such as a garage, basement, or they can even be stored in a refrigerator between 35–45 degrees F) until they are ready to plant. Simply follow the “How to Plant Bare-root Trees” instructions on the reverse side.

**The Best Time to Plant:** IN SPRING, your trees can be planted from when the frost first leaves the ground through late spring. IN FALL, your trees can be planted until the ground is frozen solid.

**Planting Location:** To give your trees the best start, we recommend planting in a protected area about 2 ½ feet apart with worked-up soil such as a garden. After 1 to 2 years, simply transplant to the permanent location when the trees are dormant.

### Carefully Separate Your Trees:

There will be more than one tree in your package. Remove the plastic bag around the roots and the twist tie holding your trees together. Separate your trees, carefully untangling the roots. *(Please note that the roots have been covered with a hydrating gel which keeps them moist during shipment.)* Soak the roots in water 3 to 6 hours. Do not allow the roots to dry out.



### “Heeling in” Your Trees.

IF YOU CANNOT PLANT YOUR TREES WITHIN A FEW DAYS, we recommend that you “heel in” your trees. Use this procedure if you are planning to store the trees longer than 5 days.

1. Unpack your trees, remove all packing materials, carefully untangle the roots and soak the roots in water 3 to 6 hours. Do not allow the roots to dry out.
2. With a shovel or spade, dig an angled trench in the ground, preferably in the shade, that will accommodate your trees. Lay your trees side by side with

### Dormant Trees: Yes, they're alive!

To be sure they arrive in a strong, healthy condition, we ship your bare-root trees only when they are dormant in the spring and fall seasons. The roots have been dipped in a hydrating gel to keep them moist during shipping.

When you receive your trees, deciduous trees will generally be leafless and evergreens may have a few yellow needles from winter cold.

A tiny scratch in the bark will reveal a living layer of green – your assurance that the trees are still very much alive even though they are “asleep.”

**Fertilizer? DO NOT** use fertilizer, potting soil, or chemicals on your baby trees. Such products will kill your young trees.



**Watering:** Keeping your baby trees watered is important during their first year. Keep the soil and mulch moist but not soggy. In dry weather, you should water generously every 7 to 10 days. The water should soak into the soil and mulch. Avoid watering so much that you see standing water.

**Protection:** We recommend putting a fence (such as chicken wire) around your trees if your site is a feeding ground for rabbits, deer, or other wildlife.

### Transplant your trees when they are dormant.

**In fall:** after the leaves have dropped or, on evergreen trees, when light-brown clusters form on the top.

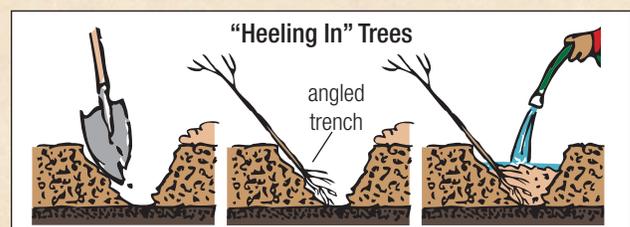
**In early spring:** before leaves or new growth appear.

After 1 to 2 years of growing in a protected garden area, when it's time to transplant your trees to their permanent home, begin by digging the new holes. Please refer to “How to Plant Bare-root Trees” instructions.

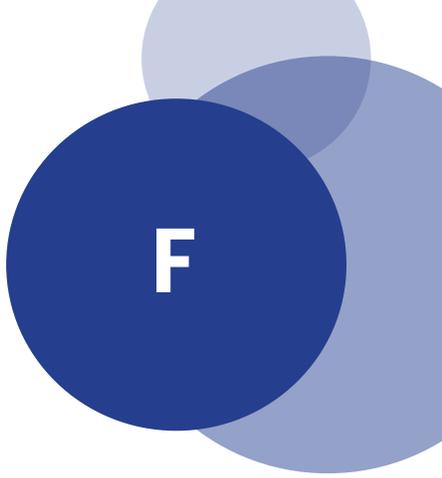
Within a 2-foot circular area, dig up your tree, keeping soil around the roots. Large or damaged roots may need to be hand pruned. Handle your trees by the root ball, not the trunk or branches. Don't let the root ball dry out.

the roots of your trees in the trench and the trunk extending up the angled side of the trench.

3. Fill the trench with the dug-out soil, covering the roots but leaving the trunk uncovered. Water generously and keep moist until you are ready to plant.



# APPENDICES



F

## COMMUNITY CHARACTER & APPEARANCE

E. Riparian Buffer Restoration (Pennsylvania Stormwater Best Management Practices manual)



## BMP 6.7.1: Riparian Buffer Restoration



A riparian buffer is a permanent area of trees and shrubs located adjacent to streams, lakes, ponds, and wetlands. Riparian forests are the most beneficial type of buffer for they provide ecological and water quality benefits. Restoration of this ecologically sensitive habitat is a responsive action to past activities that may have eliminated any vegetation.

<p style="text-align: center;"><b><u>Key Design Elements</u></b></p> <ul style="list-style-type: none"> <li>▪ Reestablish buffer areas along perennial, intermittent, and ephemeral streams</li> <li>▪ Plant native, diverse tree and shrub vegetation</li> <li>▪ Buffer width is dependant on project preferred function (water quality, habitat creation, etc.)</li> <li>▪ Minimum recommended buffer width is 35' from top of stream bank, with 100' preferred.</li> <li>▪ Create a short-term maintenance and long-term maintenance plan</li> <li>▪ Mature forest as a vegetative target</li> <li>▪ Clear, well-marked boundary</li> </ul>	<p style="text-align: center;"><b><u>Potential Applications</u></b></p> <p>Residential: Yes                  Commercial: Yes                  Ultra Urban: Yes                  Industrial: Yes                  Retrofit: Yes                  Highway/Road: Limited</p>
	<p style="text-align: center;"><b><u>Stormwater Functions</u></b></p> <p>Volume Reduction: Medium                  Recharge: Medium                  Peak Rate Control: Low/Med.                  Water Quality: Med./High</p>
	<p style="text-align: center;"><b><u>Water Quality Functions</u></b></p> <p>TSS: 65%                  TP: 50%                  NO3: 50%</p>

## Description

The USDA Forest Service estimates that over one-third of the rivers and streams in Pennsylvania have had their riparian areas degraded or altered. This fact is sobering when one considers the important stormwater functions that riparian buffers provide. The non-structural BMP, Riparian Forest Buffer Protection, addresses the importance of protecting the three-zone system of existing riparian buffers.

The values of riparian buffers – economic, environmental, recreational, aesthetic, etc. – are well documented in scientific literature and numerous reports and thus will not be restated here in this BMP sheet. Rather, this BMP serves to provide a starting point for the designer that seeks to restore the riparian buffer. Important reports are cited consistently throughout this section and should be mentioned upfront as sources for additional information to a designer seeking to restore a riparian buffer. The first, the *Chesapeake Bay Riparian Handbook: a Guide for Establishing and Maintaining Riparian Forest Buffers* was prepared by the US Department of Agriculture (USDA) Forest Service for the Chesapeake Bay Program in 1997. The second, the *Pennsylvania Stream ReLeaf Forest Buffer Toolkit* was developed by the Alliance for the Chesapeake Bay specifically for the Pennsylvania streams in 1998. A third and often-referenced report, is the *Riparian Forest Buffers* series written by Robert Tjaden for the Maryland Cooperative Extension Service in 1998.

Riparian buffers are scientifically proven to provide a number of economic and environmental values. Buffers are characterized by high species density, high species diversity, and high bio-productivity as a transition between aquatic and upland environments. Project designers should take into account the benefits or services provided by the buffer and apply these to their project goals. Priorities for riparian buffer use should be established early on in the planning stages. Some important considerations when establishing priorities are:

- **Habitat** – Restoring a buffer for habitat enhancement will require a different restoration strategy than for restoring a buffer for increased water quality.
- **Stream Size** – A majority of Pennsylvania's stream miles is comprised of small streams (first, second, and third order), which may be priority areas to reduce nutrients. Establishing riparian buffers along these headwater streams will reduce the high nutrient loads relative to flow volumes typical of small streams.
- **Continuous Buffers** - Establishing continuous riparian forest buffers in the landscape should be given a higher priority than establishing larger but fragmented buffers. Continuous buffers provide better stream shading and water quality protection, as well as corridors for the movement of wildlife.
- **Degree of Degradation** – Urban streams are usually buried or piped. Streams in areas without forests, such as pastures, may benefit the most from buffer restoration, as sources of headwater streams. Highly urbanized/altered streams may not be able to provide high levels of pollution control.
- **Loading Rates** - The removal of pollutants may be highest where nutrient and sediment loading are the highest.
- **Land Use** – Adjacent land uses will influence Buffer Width and Vegetation types used to establish a riparian buffer. While the three-zone riparian-forested buffers described earlier are the ideal, they may not always be feasible to establish, especially in urban situations.

Preparation of a *Riparian Buffer Restoration Plan* is critical to ensuring long-term success of the project and should be completed before any planting is to occur. It is essential that site conditions are well understood, objectives of the landowner are considered, and the appropriate plants chosen for the site, tasks that are completed in the planning stages. Below is a summary of the nine steps that are recommended for the planning stages of a buffer restoration project.

### 1. Obtain Landowner Permission and Support

Landowner commitment is essential for the success of the project. Landowners must be aware of all maintenance activities that will occur once buffer is planted.

### 2. Make Sure Site is Suitable for Restoration

If streambanks are extensively eroded, consider an alternative location. Rapidly eroding streambanks may undermine seedlings. Streambank restoration may need to occur prior to riparian buffer restoration. Obtain professional help in evaluating the need for streambank restoration.

### 3. Analyze Site's Physical Conditions

The most important physical influence of the site is the soil, which will control plant selection. Evaluate the soil using the County soil survey book to determine important soil characteristics such as flooding potential, seasonal high water table, topography, soil pH, soil moisture, etc. Also, a simple field test can suffice, with direct observation of soil conditions.

### 4. Analyze Site's Vegetative Features

Existing vegetation present at the restoration site should be examined to determine the strategy for buffer establishment. Strategies will differ for various pre-restoration conditions such as pasture, overgrown abandoned field, mid-succession forest, etc.

- *Identify Desirable Species:* Native tree and shrub species that thrive in riparian habitats in Pennsylvania should be used. These species should be identified in the restoration site and protected for their seed bank potential. Several native vines and shrubs (blackberry, Virginia creeper, and spicebush) can provide an effective ground cover during establishment of the buffer, though they should be selectively controlled to minimize herbaceous competition.
- *Identify Undesirable Species:* Consider utilizing undesirable species such as the black locust for their shade function during buffer establishment. Consider controlling invasive plants prior to buffer planting.
- *Identify Sensitive Species:* Since riparian zones are rich in wildlife habitat and wetland plant species to be aware of any rare, threatened or endangered plant (or animal) species.

### 5. Draw a Map of the Site (Data collection)

Prepare a sketch of the site that denotes important existing features, including stream width, length, streambank condition, adjacent land uses and stream activities, desired width of buffer, discharge pipes, obstructions, etc.

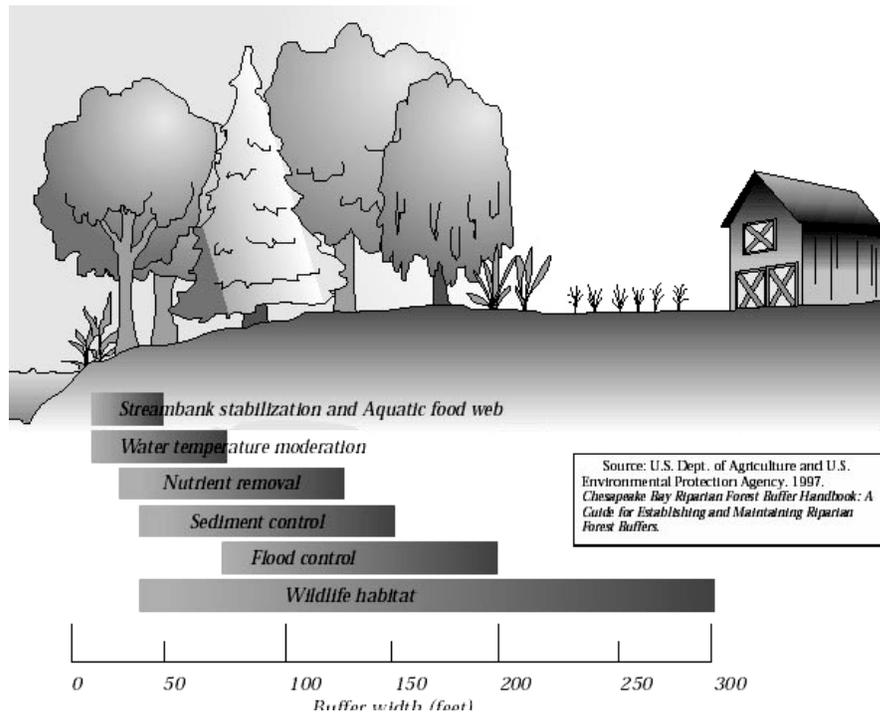
### 6. Create a Design that Meets Multiple Objectives

Ideally, the three-zone system should be incorporated into the design, in a flexible manner to obtain water quality and landowner objectives.

- *Consider landowner objectives:* Consider the current use of the buffer by the landowner, especially if the buffer will be protected in perpetuity. Consider linking the buffer to an existing (or planned) trail system.
- *Buffer width:* Riparian buffer areas do not have a fixed linear boundary, but vary in shape, width, and vegetative type and character. The function of the buffer (habitat, water quality, etc) is the overriding criterion in determining buffer width (Figure 1). Many factors including slope, soil type, adjacent land uses, floodplain, vegetative type, and

water shed condition influence what can be planted. The most commonly approved minimum buffer widths for water quality and habitat maintenance are 35 –100 feet. Buffers less than 35 feet do not protect aquatic resources long term.

Figure 1



- *Consider costs:* The planting design (density, type, mix, etc.) will ultimately be based on the financial constraints of the project. See discussion below for estimating direct costs for planting and maintenance.
- *Choose the appropriate plants:* This manual encourages the use of native plants in stormwater management facilities. Since they are best suited to our local climate, native species have distinct genetic advantages over non-native species. Ultimately using native plants translates into greater survivorship with less replacement and maintenance which is a cost benefit to the landowner. Please refer to the plant list in Appendix B for a comprehensive list of native trees and shrubs available for stormwater management facility planting.

**Plant Size:** Choice of planting stock (seeds, container seedling, bare-root seedlings, plugs, etc.) is ultimately determined by funding resources. Larger material will generally cost more, although it will usually establish more rapidly.

**7. Draw a Planting Plan**

*Planting Density:* Trees should be planted at a density sufficient to provide 320 trees per acre at maturity. To achieve this density, approximately 436 (10 x 10 feet spacing) to 681 (8 x 8 feet spacing) trees per acre should be planted initially. Some rules of thumb for tree spacing and density based on plant size at installation:

- Seedlings                      6-10 feet spacing (~700 seedlings / acre)
- Bare Root Stock            14-16 feet spacing (~200 plants / acre)
- Larger & Container        16 – 18 feet spacing (~150 plants/acre)

Formula for Estimating Number of Trees and Shrubs:  
 # Plants = length x width of corridor (ft) / 50 square feet

This formula assumes each tree will occupy an average of 50 sq. ft., random placement of plants approximately 10 feet apart, and mortality rate of up to 40% that can be absorbed by the growing forest system.

Alternatively, the adjacent table can be utilized to estimate the number of trees per acre needed for various methods of spacing.

*Planting Layout:* Given planting density and mix, drawing the planting plan is fairly straightforward. The plan can vary from a highly technical drawn to scale plan, or a simple line drawing of the site. Any plan must show the site with areas denoted for trees and shrub species with notes for plant spacing and buffer width.

Spacing (feet)	Trees (number)	Spacing (feet)	Trees (number)	Spacing (feet)	Trees (number)
2x2	10,890	7x9	691	12x15	242
3x3	4,840	7x10	622	12x18	202
4x4	2,722	7x12	519	12x20	182
4x5	2,178	7x15	415	12x25	145
4x6	1,815	8x8	681	13x13	258
4x7	1,556	8x9	605	13x15	223
4x8	1,361	8x10	544	13x20	168
4x9	1,210	8x12	454	13x25	134
4x10	1,089	8x15	363	14x14	222
5x5	1,742	8x25	218	14x15	207
5x6	1,452	9x9	538	14x20	156
5x7	1,245	9x10	484	14x25	124
5x8	1,089	9x12	403	15x15	194
5x9	968	9x15	323	15x20	145
5x10	871	10x10	436	15x25	116
6x6	1,210	10x12	363	16x16	170
6x7	1,037	10x15	290	16x20	136
6x8	908	10x18	242	16x25	109
6x9	807	11x11	360	18x18	134
6x10	726	11x12	330	18x20	121
6x12	605	11x15	264	18x25	97
6x15	484	11x20	198	20x20	109
7x7	889	11x25	158	20x25	87
7x8	778	12x12	302	25x25	70

**8. Prepare Site Ahead of Time**

Existing site conditions will determine the degree of preparation needed prior to planting. Invasive infestation and vegetative competition are extremely variable, and therefore must be considered in the planning stages. Site preparation should begin in the fall prior to planting. Enlist professional to determine whether use of chemical controls are necessary to prepare site for planting. Eliminate undesired species with either herbicide application (consult a professional) or physical removal. If utilizing a highly designed planting layout, mark site ahead of time with flags, spray paint, or other markers so that the appropriate plant is put in the right place.

**9. Determine Maintenance Needs**

An effective buffer restoration project should include management and maintenance guidelines, including a description of the allowable uses in the various zones of the buffer. Buffer

boundaries should be well defined with clear signs or markers. Weed control is essential for the survival and rapid growth of trees and shrubs, and can include any of the following:

- Organic mulch
- Weed control fabrics
- Shallow cultivation
- Pre-emergent herbicides
- Mowing

Non-chemical weed control methods are preferred since chemicals can easily enter the water system. If possible, avoid working in the riparian area between April 15 and August 15, the mating and newborn period for local wildlife.

**Variations**

See Applications

**Applications**

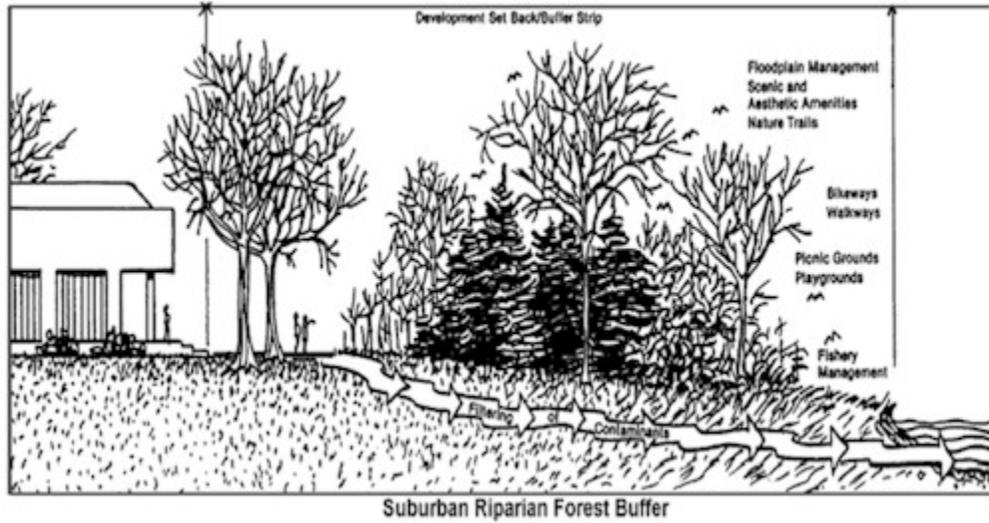
- **Forested Landscape**



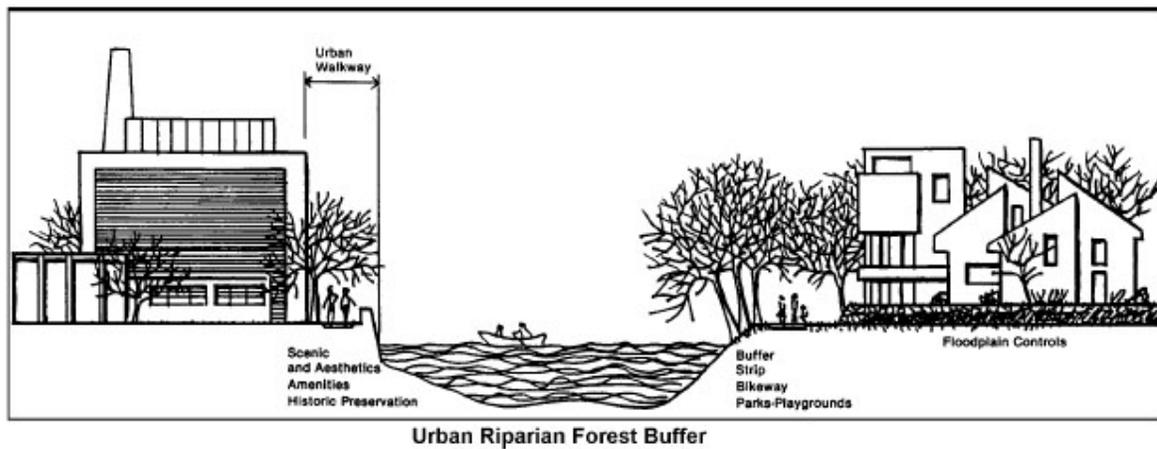
- **Agricultural Landscape**



- **Suburban / Developing Landscape**



- **Urban Landscape**



## Design Considerations

The considerations listed below should all be taken into account during the planning stage. There are many potential threats to the long-term viability of riparian plant establishment and with proper foresight, these problems can be eliminated or addressed.

### 1. Deer Control

- a. Look for signs of high deer densities, including an overgrazed understory with a browse line 5-6 feet above the ground.

### 2. Tree Shelters

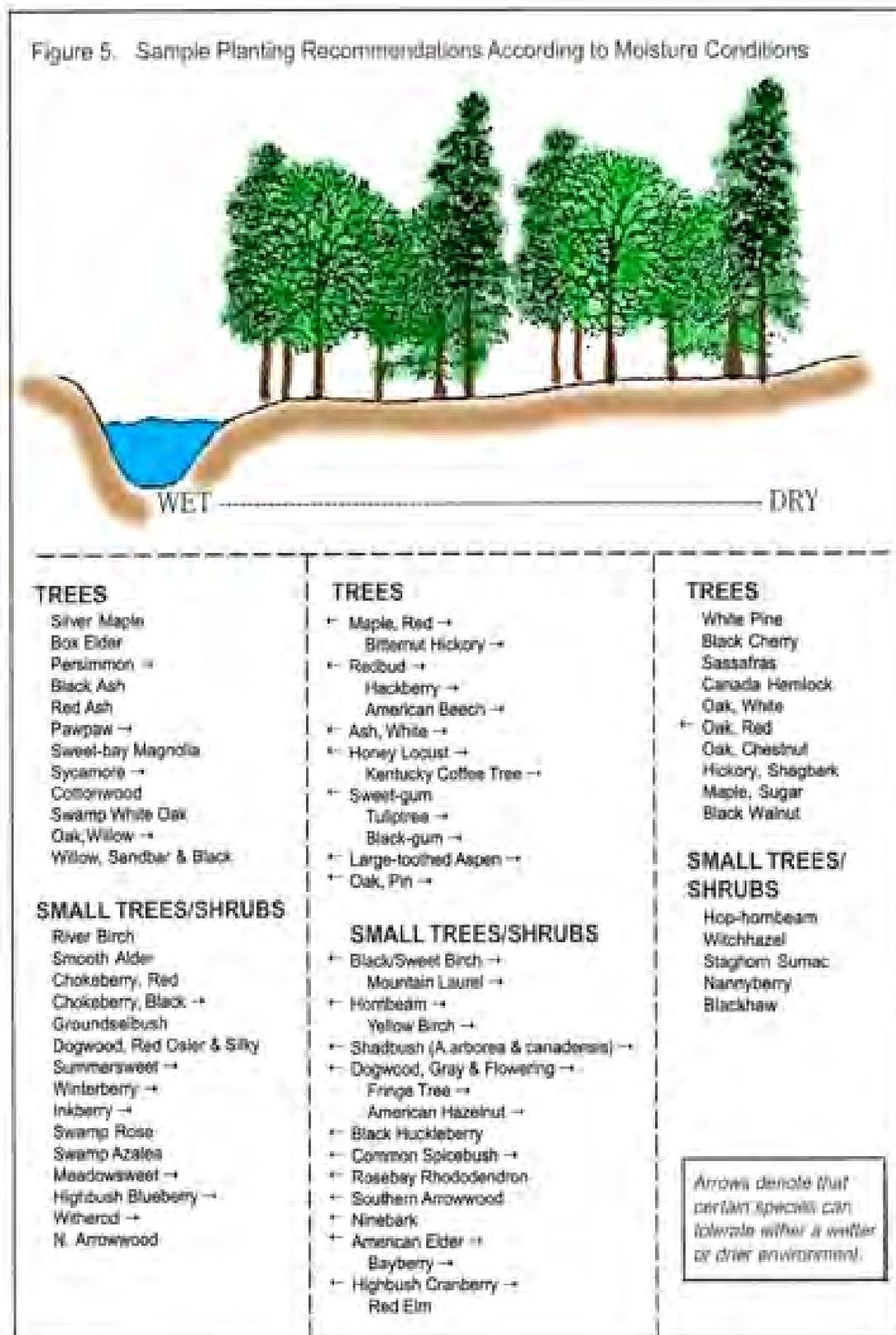
- a. Recommended for riparian plantings where deer predation or human intrusion may be a problem.
- b. Plastic tubes that fit over newly planted trees that are extremely successful in protecting seedlings.
- c. Protect trees from accidental strikes from mowing or trimming
- d. Create favorable microclimate for seedlings
- e. Secure with wooden stake and place netting over top of tree tube
- f. Remove tree shelters 2 to 3 years after plants emerge

### 3. Stream Buffer Fencing

- a. Deer can jump fences up to 10 feet high, preferring to go under barriers.
- b. Farm animals cause greatest damage to stream banks – consider permanent fencing like high-tensile smooth wire fencing or barbed fencing.
- c. The least expensive is 8 foot plastic fencing, which are effective against deer and easily repaired.

### 4. Vegetation

- a. Consider using plants that are able to survive frequent or prolonged flooding conditions. Plant trees that can withstand high water table conditions. Figure 5 shows tree species that fit into the moisture conditions of a streamside area.
- b. Soil disturbance can result in unanticipated infestation by invasive plants.



## Construction Sequence

The PA Stream ReLeaf project provides a checklist that can substitute for a construction sequence for riparian buffer restoration. A slightly modified version follows:

### 1. SELECT SITE

- Confirm site is suitable for restoration
- Obtain landowner permission

### 2. ANALYSE SITE

- Evaluate site's physical conditions (soil attributes, geology, terrain)
- Evaluate site's vegetative features (desirable and undesirable species, native species, sensitive habitats)
- Sketch or map site feature

### 3. DESIGN BUFFER

- Consider landowner objectives in creating buffer design
- Determine desired functions of buffer in determining buffer width
- Match plant species to site conditions (hardiness zone, moisture, soil pH)
- Match plant Species to objectives of buffer functions (water quality, wildlife, recreation, etc.)
- Match plant sizes to meet budget limitations
- Develop sketch of planting plan

### 4. PREPARE SITE

- Eliminate undesirable species ahead of planting date
- Mark planting layout at the site
- Purchase plants and planting materials (mulch, tree shelters)

### 5. SITE PLAN SHOULD INCLUDE:

- Site map with marked planting zones
- Plant species list
- Planting directions (spacing, pattern of planting)
- Equipment/tool list
- Site preparation directions
- Maintenance schedule

### 6. PLANTING DAY

- Keep plants moist and shaded
- Provide adequate number of tools
- Document with photos of site during planting

## 7. SITE MAINTENANCE (additional information below)

- Assign responsibilities watering, weeding, mowing, and maintenance
- Monitor site regularly for growth and potential problems

### **Maintenance Issues**

The riparian buffer is subject to many threats, including:

- Browsing
- Invasion by exotic species
- Competition for nutrients by adjacent herbaceous vegetation
- Human disturbance

Proper awareness of these issues is critical to ensure the long-term effectiveness of a restored riparian buffer.

The most critical period during buffer establishment is maintenance of the newly planted trees during canopy closure, typically the first 3 to 5 years. Ongoing maintenance practices are necessary for both small seedlings and larger plant materials. Maintenance and monitoring plans should be prepared for the specific site and caretakers need to be advised of required duties during the regular maintenance period.

Maintenance measures that should be performed regularly:

#### Watering

- Plantings need deep regular watering during the first growing season, either natural watering via rainfall, or planned watering, via caretaker.
- Planting in the fall increases the likelihood of sufficient rain during planting establishment.

#### Mulching

- Mulch will assist in moisture retention in the root zone of plantings, moderate soil temperature, provide some weed suppression, and retard evaporation
- Use coarse, organic mulch that is slow to decompose in order minimize repeat application
- Apply 2-4 inch layer, leaving air space around tree trunk to prevent fungus growth.
- Use combination of woodchips, leaves, and twigs that are stockpiled for six months to a year.

#### Weed control

- Weed competition limits buffer growth and survival, therefore weeds should be controlled by either herbicides, mowing, or weed mats:

#### **Herbicides**

This is a short-term maintenance technique (2-3 years) that is generally considered less expensive and more flexible than mowing, and will result in a quicker establishment of the buffer. Herbicide use is regulated by the PA Department of Agriculture. Proper care should be taken to ensure that proximity to water features is considered.

**Mowing**

Mowing controls the height of the existing grasses, yet increases nutrient uptake, therefore competition for nutrients will persist until the canopy closure shades out lower layers. A planting layout similar to a grid format will facilitate ease of mowing yet yield an unnaturally spaced community. Mowing may result in strikes on the trunk unless protective measures are utilized. Mowing should occur twice each growing season. Mower height should be set between 8 –12 inches.

**Weed Mats**

Weed mats are geo-textile fabrics that are used to suppress weed growth around newly planted vegetation by providing shade and preventing seed deposition. Weed mats are installed after planting, and should be removed once the trees have developed a canopy that will naturally shade out weeds.

**Deer damage**

- Deer will browse all vegetation within reach, generally between 5-6 feet above the ground
- Approaches to minimize damage include: 1) selecting plants that deer do not prefer (ex. Paper Birch, Beech, Ash, Common Elderberry) 2) homemade deer repellants 3) tree shelters

**Tree shelters**

- Repair broken stakes
- Tighten stake lines
- Straighten leaning tubes
- Clean debris from tube
- Remove netting as tree grows
- Remove when tree is approximately 2 inches wide

**Invasive Plants**

- Monitor restoration sight regularly for any signs of invasive plants.
- Appendix B contains common invasive plants found in Pennsylvania.
- Choice of control method is based on a variety of considerations, but falls into three general categories:
  - Mechanical
  - Mechanical with application of herbicide
  - Herbicide

**Special Maintenance Considerations**

Riparian buffer restoration sites should be monitored to maximize wildlife habitat and water quality benefits, and to discover emerging threats to the project. During the first four years, the new buffer should be monitored four times annually (February, May, August, and November are recommended) and inspected after any severe storm. Repairs should be made as soon as possible.

Depending on restoration site size, the buffer area should be sampled to approximate survival rate. Data derived should consider survival of the planted material and natural regeneration to determine if in-fill planting should occur to supplement plant density.

Survival rates of at least 70% are deemed to be successful. Calculate percent survival by the following equation:

$$(\# \text{ of live plants} / \# \text{ of installed plants}) 100 = \% \text{ survival}$$

## Cost Issues

Establishment and maintenance costs should be considered up front in the riparian buffer plan design. Installing a forest riparian buffer involves site preparation, tree planting, second year reinforcement planting, and additional maintenance. Both the USDA Riparian Handbook and the PADEP/PADCNR Stream ReLeaf Forest Buffer Toolkit utilize a basic outline for estimating costs for establishment and maintenance:

Costs may fluctuate based on numerous variables including whether or not volunteer labor is utilized, whether plantings and other supplies are donated or provided at a reduced cost.

## Specifications

**The USDA Forest Service developed a riparian forest buffer specification, which outlines three distinct zones and establishes the minimally acceptable requirements for reforestation by landowners.**

### Definition

An area of trees and other vegetation located in areas adjoining and upgradient from surface water bodies and designed to intercept surface runoff, wastewater, subsurface flow, and deeper groundwater flows from upland sources for the purpose of removing or buffering the effects of associated nutrients, sediment, organic matter, pesticides, or other pollutants prior to entry into surface waters and ground water recharge areas.

### Scope

This specification establishes the minimally acceptable requirements for the reforestation of open lands, and renovation of existing forest to be managed as Riparian Forest Buffers for the purposes stated.

### Purpose

To remove nutrients, sediment, animal-derived organic matter, and some pesticides from surface runoff, subsurface flow, and near root zone groundwater by deposition, absorption, adsorption, plant uptake, denitrification, and other processes, thereby reducing pollution and protecting surface water and groundwater quality.

### Conditions Where Practice Applies

Subsurface nutrient buffering processes, such as denitrification, can take place in the soil wherever carbon energy, bacteria, oxygen, temperature, and soil moisture is adequate. Nutrient uptake by plants occurs where the water table is within the root zone. Surficial filtration occurs anywhere surface vegetation and forest litter are adequate.

The riparian forest buffer will be most effective when used as a component of a sound land management system including nutrient management and runoff, and sediment and erosion control practices. Use of this practice without other nutrient and runoff, sediment and erosion control practices can result in adverse impacts on buffer vegetation and hydraulics including high maintenance costs, the need for periodic replanting, and the carrying of excess nutrients and sediment through the buffer by concentrated flows.

This practice applies on lands:

1. adjacent to permanent or intermittent streams which occur at the lower edge of upslope cropland, grassland or pasture;

2. at the margins of lakes or ponds which occur at the lower edge of upslope cropland, grassland or pasture;
3. at the margin of any intermittent or permanently flooded, environmentally sensitive, open water wetlands which occur at the lower edge of upslope cropland, grassland or pasture;
4. on karst formations at the margin of sinkholes and other small groundwater recharge areas occurring on cropland, grassland, or pasture.

Note: In high sediment production areas (8-20 in./100 yrs.), severe sheet, rill, and gully erosion must be brought under control on upslope areas for this practice to function correctly.

**Riparian Buffer Installation Costs - Estimation per Acre**

	Cost, ea.	Number	Cost, Total
<b>Phase 1: Establishment</b>			
<i>Preparation</i>			
Light site preparation (mow, disking)	-	-	\$ 12.00
<i>Planting</i>			
Tree Seedlings (12" - 18" Hardwoods)	\$ 1.15	430	\$ 494.50
Tree Shelters (optional)	\$ 5.00	430	\$ 2,150.00
Fencing (1 ac = 282 ft) (optional)			\$ 564.00
<b>Subtotal</b>			<b>\$ 3,220.50</b>
<b>Phase 2: Maintenance</b>			
<i>Reinforcement Planting</i>			
Tree Seedlings in Year 2	\$ 1.15	50	\$ 57.50
Herbicide Treatment (optional)			\$ 54.00
Mowing (optional)			\$ 12.00
<b>Subtotal</b>			<b>\$ 123.50</b>
<b>Total Costs, no options</b>			<b>\$ 564.00</b>
<b>Total Costs, with options</b>			<b>\$ 3,344.00</b>

## Design Criteria

### Riparian Forest Buffers

Riparian forest buffers will consist of three distinct zones and be designed to filter surface runoff as sheet flow and downslope subsurface flow, which occurs as shallow groundwater. For the purposes of these buffer strips, shallow groundwater is defined as: saturated conditions which occur near or within the root zone of trees, and other woody vegetation and at relatively shallow depths where bacteria, oxygen, and soil temperature contribute to denitrification. Streamside Forest Buffers will be designed to encourage sheet flow and infiltration and impede concentrated flow.

#### Zone 1

##### Location

Zone 1 will begin at the top of the streambank and occupy a strip of land with a fixed width of fifteen feet measured horizontally on a line perpendicular to the streambank.

##### Purpose

The purpose of Zone 1 is to create a stable ecosystem adjacent to the water's edge, provide soil/water contact area to facilitate nutrient buffering processes, provide shade to moderate and stabilize water temperature encouraging the production of beneficial algal forms, and to contribute necessary detritus and large woody debris to the stream ecosystem.

##### Requirements

Runoff and wastewater to be buffered or filtered by Zone 1 will be limited to sheet flow or subsurface flow only. Concentrated flows must be converted to sheet flow or subsurface flows prior to entering Zone 1. Outflow from subsurface drains must not be allowed to pass through the riparian forest in pipes or tile, thus circumventing the treatment processes. Subsurface drain outflow must be converted to sheet flow for treatment by the riparian forest buffer, or treated elsewhere in the system prior to entering the surface water.

Dominant vegetation will be composed of a variety of native riparian tree and shrub species and such plantings as necessary for streambank stabilization during the establishment period. A mix of species will provide the prolonged stable leaf fall and variety of leaves necessary to meet the energy and pupation needs of aquatic insects.

Large overmature trees are valued for their detritus and large woody debris. Zone 1 will be limited to bank stabilization and removal of potential problem vegetation. Occasional removal of extreme high value trees may be permitted where water quality values are not compromised. Logging and other overland equipment shall be excluded except for stream crossings and stabilization work.

Livestock will be excluded from Zone 1 except for designed stream crossings.

## Zone 2

### Location

Zone 2 will begin at the edge of Zone 1 and occupy an additional strip of land with a minimum width of 60 feet measured horizontally on a line perpendicular to the streambank. Total minimum width of Zones 1 & 2 is therefore 75 feet. Note that this is the minimum width of Zone 2 and that the width of Zone 2 may have to be increased as described in the section “Determining the Total Width of Buffer” to create a greater combined width for Zones 1 & 2.

### Purpose

The purpose of Zone 2 is to provide necessary contact time and carbon energy source for buffering processes to take place, and to provide for long term sequestering of nutrients in the form of forest trees. Outflow from subsurface drains must not be allowed to pass through the riparian forest in pipe or tile, thus circumventing the treatment processes. Subsurface drain outflow must be converted to sheet flow for treatment by the riparian forest buffer, or treated elsewhere in the system prior to entering the surface water.

### Requirements

Runoff and wastewater to be buffered or filtered by Zone 2 will be limited to sheet flow or subsurface flow only. Concentrated flows must be converted to sheet flow or subsurface flows prior to entering Zone 2.

Predominant vegetation will be composed of riparian trees and shrubs suitable to the site, with emphasis on native species, and such plantings as necessary to stabilize soil during the establishment period. Nitrogen-fixing species should be discouraged where nitrogen removal or buffering is desired. Species suitability information should be developed in consultation with state and federal forestry agencies, Natural Resources Conservation Service, and USDI Fish and Wildlife Service.

Specifications should include periodic harvesting and timber stand improvement (TSI) to maintain vigorous growth and leaf litter replacement, and to remove nutrients and pollutants sequestered in the form of wood in tree boles and large branches. Management for wildlife habitat, aesthetics, and timber are not incompatible with riparian forest buffer objectives as long as shade levels and production of leaf litter, detritus, and large woody debris are maintained. Appropriate logging equipment recommendations shall be determined in consultation with the state and federal forestry agencies.

Livestock shall be excluded from Zone 2 except for necessary designed stream crossings.

## Zone 3

### Location

Zone 3 will begin at the outer edge of Zone 2 and have a minimum width of 20 feet. Additional width may be desirable to accommodate land-shaping and mowing machinery. Grazed or ungrazed grassland meeting the purpose and requirements stated below may serve as Zone 3.

Purpose

The purpose of Zone 3 is to provide sediment filtering, nutrient uptake, and the space necessary to convert concentrated flow to uniform, shallow, sheet flow through the use of techniques such as grading and shaping, and devices such as diversions, basins, and level lip spreaders.

Requirements

Vegetation will be composed of dense grasses and forbs for structure stabilization, sediment control, and nutrient uptake. Mowing and removal of clippings are necessary to recycle sequestered nutrients, promote vigorous sod, and control weed growth.

Vegetation must be maintained in a vigorous condition. The vegetative growth must be hayed, grazed, or otherwise removed from Zone 3. Maintaining vigorous growth of Zone 3 vegetation must take precedence and may not be consistent with wildlife needs.

Zone 3 may be used for controlled intensive grazing when conditions are such that earthen water control structures will not be damaged.

Zone 3 may require periodic reshaping of earth structures, removal or grading of accumulated sediment, and reestablishment of vegetation to maintain effectiveness of the riparian buffer.

**Determining Need For Protection**

Buffers should be used to protect any body of water which will not be:

- treated by routing through a natural or artificial wetland determined to be adequate treatment;
- treated by converting the flow to sheet flow and routing it through a forest buffer at a point lower in the watershed.

**Determining Total Width of the Buffer**

Note that while not specifically addressed, slope and soil permeability are components of the following buffer width criteria.

Each of the following criteria is based on methods developed, or used by persons conducting research on riparian forests.

**Streamside Buffers**

The minimum width of streamside buffer areas can be determined by any number of methods suitable to the geographic area.

1. Based on soil hydrologic groups as shown in the county soil survey report, the width of Zone 2 will be increased to occupy any soils designated as Hydrologic Group D and those soils of Hydrologic Group C which are subject to frequent flooding. If soils of Hydrologic Groups A or B occur adjacent to intermittent or perennial streams, the combined width of Zones 1 & 2 may be limited to the 75 foot minimum.
2. Based on area, the width of Zone 2 should be increased to provide a combined width of Zones 1 & 2 equal to one third of the slope distance from the streambank to the top of the pollutant source area. The effect is to create a buffer strip between field and stream which occupies approximately one third of the source area.

3. Based on the Land Capability Class of the buffer site as shown in the county soil survey, the width of Zone 2 should be increased to provide a combined width of Zones 1 & 2 as shown below.

Capability Class	Buffer Width
Cap. I, II e/s, V	75'
Cap. III e/s, IV e/s	100'
Cap. VI e/s, VII e/s	150'

**Pond and Lake-Side Buffer Strips**

The area of pond or lake-side buffer strips should be at least one-fifth the drainage area of the cropland and pastureland source area. The width of the buffer strip is determined by creating a uniform width buffer of the required area between field and pond. Hydrologic Group and Capability Class methods of determining width remain the same as for streamside buffers. Minimum widths apply in all cases.

**Environmentally Sensitive Wetlands**

Some wetlands function as nutrient sinks. When they occur in fields or at field margins, they can be used for renovation of agricultural surface runoff and/or drainage. However, most wetlands adjoining open water are subject to periodic flushing of nutrient-laden sediments and, therefore, require riparian buffers to protect water quality.

Where open water wetlands are roughly ellipsoid in shape, they should receive the same protection as ponds.

Where open water wetlands exist in fields as seeps along hillslopes, buffers should consist of Zones 1, 2 & 3 on sides receiving runoff and Zones 1 & 3 on the remaining sides. Livestock must be excluded from Zones 1 & 2 at all times and controlled in Zone 3. Where Zones 1 & 3 only are used, livestock must be excluded from both zones at all times, but hay removal is desirable in Zone 3.

**Vegetation Selection**

Zone 1 & 2 vegetation will consist of native streamside tree species on soils of Hydrologic Groups D and C and native upland tree species on soils of Hydrologic Groups A and B.

Deciduous species are important in Zone 2 due to the production of carbon leachate from leaf litter which drives bacterial processes that remove nitrogen, as well as, the sequestering of nutrients in the growth processes. In warmer climates, evergreens are also important due to the potential for nutrient uptake during the winter months. In both cases, a variety of species is important to meet the habitat needs of insects important to the aquatic food chain.

Zone 3 vegetation should consist of perennial grasses and forbs.

Species recommendations for vegetated buffer areas depend on the geographic location of the buffer. Suggested species lists should be developed in collaboration with appropriate state and federal forestry agencies, the Natural Resources Conservation Service, and the USDI Fish and Wildlife Service. Species lists should include trees, shrubs, grasses, legumes, forbs, as well as site preparation techniques. Fertilizer and lime, helpful in establishing buffer vegetation, must be used with caution and are not recommended in Zone 1.

## Maintenance Guidelines

### General

Buffers must be inspected annually and immediately following severe storms for evidence of sediment deposit, and erosion, or concentrated flow channels. Prompt corrective action must be taken to stop erosion and restore sheet flow.

The following should be avoided within the buffer areas: excess use of fertilizers, pesticides, or other chemicals; vehicular traffic or excessive pedestrian traffic; and removal or disturbance of vegetation and litter inconsistent with erosion control and buffering objectives.

Zone 1 vegetation should remain undisturbed except for removal of individual trees of extremely high value or trees presenting unusual hazards such as potentially blocking culverts.

Zone 2 vegetation, undergrowth, forest floor, duff layer, and leaf litter shall remain undisturbed except for periodic cutting of trees to remove sequestered nutrients; to maintain an efficient filter by fostering vigorous growth; and for spot site preparation for regeneration purposes. Controlled burning for site preparation, consistent with good forest management practices, could also be used in Zone 2.

Zone 3 vegetation should be mowed and the clippings removed as necessary to remove sequestered nutrients and promote dense growth for optimum soil stabilization. Hay or pasture uses can be made compatible with the objectives of Zone 3.

Zone 3 vegetation should be inspected twice annually, and remedial measures taken as necessary to maintain vegetation density and remove problem sediment accumulations.

### Stable Debris

As Zone 1 reaches 60 years of age, it will begin to produce large stable debris. Large debris, such as logs, create small dams which trap and hold detritus for processing by aquatic insects, thus adding energy to the stream ecosystem, strengthening the food chain, and improving aquatic habitat. Wherever possible, stable debris should be conserved.

Where debris dams must be removed, try to retain useful, stable portions which provide detritus storage.

Deposit removed material a sufficient distance from the stream so that it will not be refloated by high water.

## Planning Considerations

1. Evaluate the type and quantity of potential pollutants that will be derived from the drainage area.
2. Select species adapted to the zones based on soil, site factors, and possible commercial goals such as timber and forage.

3. Plan to establish trees early in the dormant season for maximum viability.
4. Be aware of visual aspects and plan for wildlife habitat improvement if desired.
5. Consider provisions for mowing and removing vegetation from Zone 3. Controlled grazing may be satisfactory in Zone 3 when the filter area is dry and firm.

## References

Natural Resources Conservation Service. 1997. USDA Natural Resources Conservation Practice Standard Riparian Forest Buffer. USDA Natural Resources Conservation Service.

Palone, R.S. and A.H. Todd (editors.) 1997. Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Forest Buffers. USDA Forest Service. NA-TP-02-97. Radnor, PA. <http://www.chesapeakebay.net/pubs/subcommittee/nsc/forest> or order from: U.S. EPA Chesapeake Bay Program. 410 Severn Ave. Suite 109. Annapolis, MD. 1-800-968-7229.

PA Department of Environmental Protection. 1998. *Pennsylvania Stream ReLeaf – Forest Buffer Toolkit*, <http://www.dep.state.pa.us/dep/deputate/watermgt/WC/Subjects/StreamReLeaf/default.htm>

Tjaden, R.L. and G.M. Weber. 1997. An Introduction to the Riparian Forest Buffer. Maryland Cooperative Extension Fact Sheet 724. College Park, MD. 2 pages. <http://www.riparianbuffers.umd.edu/PDFs/FS724.pdf>.

Tjaden, R.L. and G.M. Weber. 1997. Riparian Buffer Systems. Maryland Cooperative Extension Fact Sheet 733. College Park, MD. 2 pages. <http://www.riparianbuffers.umd.edu/PDFs/FS733.pdf>.

# APPENDICES



G

## COMMUNITY CHARACTER & APPEARANCE

G. Invasive species management strategies (Pennsylvania Department of Conservation and Natural Resources)





PENNSYLVANIA DEPARTMENT of  
CONSERVATION and NATURAL RESOURCES

January 2011

*WORKING DOCUMENT*



Invasive Species Management Plan





## CHAPTER 2 - PREVENTION

### Purpose of Prevention

Preventing invasive species from becoming established can be more cost effective than restoring an injured ecosystem. Controlling established invasive species is costly and difficult, and complete eradication is extremely difficult. Prevention can avoid the potentially permanent species losses that may result from a pest invasion. For instance, nearly half of the species currently listed as threatened or endangered under the U.S. Federal Endangered Species Act are in jeopardy primarily due to invasive species. Initial changes in ecosystem processes and interactions may be undetectable, depending upon the specific species, prior to devastating impacts of invasions.

### Preventing Introduction and Spread on DCNR Lands

Preventing the statewide introduction and spread of invasive species will be a difficult task as DCNR has minimal authority on private lands. Reducing the likelihood of invasion on DCNR property is, however, feasible and specific invasive species management techniques used by DCNR may serve as models for implementation on private lands. Land managers must become familiar with regional invasive species. Where heavy infestations on private lands are known to occur, DCNR land managers should monitor property borders and work with private landowners to control infestations and ensure that the invasives do not spread into public lands.

Natural pathways for the introduction and dispersal of pests include wind, water or animals. Areas disturbed by both natural and human causes (roadsides, trails, log landings, energy transmission rights-of-way and construction zones) are particularly susceptible to invasion and should be targeted for prevention efforts (interpretive signs, educational programming, equipment washing), as these are likely sources of seed or propagules for the translocation of invasive species. Motorized and non-motorized transportation devices (including ATVs and bicycles), hikers and horses disturb soils and transport seeds of invasive plants into recreational areas, providing optimum conditions for invasive plants to become established. Unclean watercrafts and angling equipment can transfer aquatic organisms between water bodies. Transport of firewood from one area to another may also encourage invasive species and is responsible for wide distribution of the invasive pest Emerald Ash Borer from Michigan to Pennsylvania. Escapees like wild boar from private hunting preserves can wreak havoc on the natural environment. Special attention is needed on newly acquired properties with varied land use histories. Sites that undergo land use change or disturbance, such as agricultural fields that are allowed to naturally revert to other vegetation communities, are especially susceptible to invasive species establishment.

#### **To prevent the introduction and spread of invasives:**

##### **1. Minimize disturbance when possible, and restore damage caused by unavoidable disturbances**

Projects planned in relatively intact habitat areas are susceptible to invasive species introductions through disturbance. Project review must include consideration for the likelihood of facilitating invasions. Placing unnecessary trails and roadways in large, unfragmented tracts should be avoided in order to maintain ecosystem integrity. Construction rights-of-way should be minimized to further reduce susceptibility. Cover, mulch, seed or plant the disturbed area to prevent establishment of unwanted plants. Establishing native seed cover is preferred, when appropriate. Monitor the site and control unwanted plants that may appear.



## **2. Reclaim/restore recently altered or newly acquired areas**

Heavily disturbed areas, such as terrestrial habitats resulting from dam removal, are especially prone to invasion. Immediate reclamation of these areas by planting non-invasive plant species is essential. Establishing native species in restoration activities will help create a desired vegetation cover. Newly acquired land should be scouted for invasive species and, if necessary, quickly treated. Prompt action will discourage the disrupted area from serving as a pest source for neighboring tracts, especially if the invasive species is locally unusual or present in large numbers. Care should be taken, however, as equipment used in restoration activities may be vectors for invasive species introductions. Make sure any equipment was not used previously in heavily infested areas and is clean of mud, seeds and other propagules.

## **3. Discourage the use of known or potentially invasive plant species**

Plants that are native to a site should be selected for use in landscaping, whenever feasible. (An exception may be in landscaping an existing structure to represent historical accuracy. In that case, species intended for use should be carefully screened to ensure that known invasive species are not introduced). DCNR technical assistance to private land managers should strongly discourage the use of known or potentially invasive plants.

## **4. Use reputable nurseries and seed sources**

Ask vendors if they are aware of restricted species. Check for “hitch-hikers” in nursery stock, packing materials, and associated locations. Use only certified seed, where feasible.

## **5. Use fertilizers wisely**

The most commonly used supplemental nutrients in agriculture or landscaping include limiting factors in plant growth, principally nitrogen and phosphorous. High nitrogen levels offer a supreme growth factor for all plants, granting a particular advantage to invasive plants. Many invasive species have adapted to use plentiful nutrients for explosive growth; therefore excessive fertilizer application enhances the growth of invasives. Using soil tests to prescribe proper levels of fertilizer is important. The use of native plants will cut down or eliminate the need for fertilizers, as many native plants can grow well without them.

## **6. Protect native plant communities**

A key to controlling invasive plants is to protect native plant communities. Where native plant communities have been displaced, invasive plants thrive, especially on bare soil and disturbed ground. Where native communities are still present, non-invasive plants can move into the empty niche created by the removal of invasive species. Protecting native plant communities from disturbance, deer browse and other threats will strengthen their ability to resist invasion.



## **7. Develop invasive species expertise**

In order to prevent further invasions, land managers must be trained in invasive species identification, inventory and control methods. Training cannot be once and done; new species are discovered and control techniques change, so managers must remain knowledgeable.



**8. Inspect annually for invasive species**

Effective scouting on state-owned and adjacent private lands will allow managers to identify invasive species before populations increase exponentially and reach levels difficult to control (*see the chapter on Survey and Detection*). Identifying and controlling organisms before populations reproduce will result in greater program success.

**9. Carefully consider location when disposing of mechanically removed invasive plant species**

Reproductive parts of many invasive plants can withstand seasonal cycles, including drying and freezing, therefore composting invasive species residue is not recommended. Seeds and roots/rhizomes, especially, should be destroyed or carefully collected and discarded with trash to prevent reestablishment.

**10. Prioritize the management of existing on-site invasive species to prevent spread**

Travel on roadways and trails is a major conduit for invasive species movement, thus control measures should target high traffic areas, as well as areas where new small populations have just been found. For individual projects, invasive species in areas that are frequently revisited should be treated prior to project initiation and monitored throughout project completion. In timber sales, for example, invasive species surrounding areas cleared for log landings or haul roads should be identified and controlled before timber harvesting commences.

**11. Examine common practices to determine how alterations may reduce the risk of invasive species introduction**

To accomplish this task, the [U.S. Fish and Wildlife Service](#) employs a method known as [Hazard Analysis Critical Control Point](#) (HACCP) planning. This procedure for preventing introduction does not require each land manager to have detailed knowledge of invasive species present at a site. Employing the use of HACCP planning will allow DCNR to focus efforts and fiscal resources more effectively. See Appendix 7 for more information on HACCP.

**12. Review contracts for opportunities to strengthen prevention measures**

Added language to existing contracts with internal and external groups (gas or timber leases, for example) may include equipment-cleaning requirements, avoiding the use of equipment that has been recently used in infested areas, liability for new invasive species introductions, disturbed habitat remediation guidelines and other appropriate preventive activities.



**13. Provide voluntary inspections**

To prevent translocation of specific pests, visitors should be encouraged to voluntarily allow designated personnel to inspect their firewood, boats or bait for presence of invasive species. This is already standard procedure at some locations in Pennsylvania and in many other states.

**14. Know original sources of transferred and used materials**

Require knowledge of the original source and previous sites of transferred topsoil, fill, shale, firewood or other materials brought into a site. Roadside shoulder material, removed during road shoulder maintenance, can be loaded with invasive plant seeds. If the source of this material supported invasive plants, the contaminated material should not be used in an uninfested area.



Other soil or fill material should be used only with a good plan for weed control following placement. A visit to the site of the material's origin may be necessary to evaluate whether its use is appropriate.

### 15. Consider invasive species when making trail decisions and designations

Consider the need for preventing invasive species introduction when establishing trails and roadways, as there is potential for horses, motorized transportation devices and even hikers to act as pathways of invasion. Avoid the construction of trails through known infestations.



## Preventing Introduction of Species Not Yet in Pennsylvania

### 1. Pathways

The most common pathway for introducing insect pests and pathogens is the movement of infested firewood and timber from quarantined areas. In the case of Sudden Oak Death, another common route of introduction is via infected soils or plant materials, such as nursery stock. Certain insects, like the marmorated stinkbug, or invasive plant species, such as mile-a-minute (*see photo on right*) or Japanese stilt grass, are often transported along vehicular routes or on trails. Invasive aquatics like zebra mussels can enter an area on boats or fishing tackle, and rusty crayfish may be in a fisherman's bait bucket. Wild and domesticated animals and wind are also responsible for the introduction or spread of some invasive species. Recognizing the pathways for species introductions will help in identifying prevention tactics for those species.



### 2. Changing Conditions

Prevention activities usually focus on species that are already known to be a threat, yet with the potential impacts of climate change (variable precipitation, increased disturbances, higher average temperatures) there is the possibility that a species that is benign today may become invasive in the future, or that species from much further south can now extend their range into Pennsylvania. Longer warm seasons that favor outdoor recreation could extend the length of time that people inadvertently act as vectors for invasives. Continual monitoring for new species and reviewing research and literature from other states and countries will become more important as climate conditions change.

### 3. Prevention methods

The most common interstate prevention method is the enactment and enforcement of quarantines that restrict or prohibit the movement of infected materials. Monitoring programs along known pathways of introduction and movement may also serve as a preventive strategy.

## Preventing Introduction and Spread on Private and Municipal Lands

DCNR has less control over the introduction and spread of invasive species on lands other than state forests and parks. On other lands throughout the Commonwealth, prevention measures will rely on less direct influences that DCNR can exert through funding programs and partnerships with other agencies and landholders across the state. DCNR's grants, external funding processes, outreach and



education provide opportunities to infuse invasive species prevention measures into conservation efforts throughout the Commonwealth.

DCNR provides millions of dollars in grant money every year to participating partners and agencies involved in natural resource conservation efforts, greenways programs, urban and community forestry projects and planning and educational programming. DCNR also has purview of many programs within other agencies and organizations that also provide funding streams for many types of projects and activities across the state. This subsection briefly describes ways DCNR could integrate invasive species prevention measures into funding mechanisms throughout the Commonwealth.

## 1. DCNR grants

Prevention measures for invasive species are most easily integrated into grant processes over which DCNR has the greatest level of control. Thus, a close examination of existing [DCNR grant programs](#) is a high priority objective for the Invasive Species Action Plan. A comprehensive review of existing internal granting programs and processes for their appropriateness in providing for the prevention of invasive species is necessary to accomplish the following:

-  Ensure grant funds are not used to encourage invasive species  
Ascertain that DCNR grant monies are not inadvertently funding the planting of invasive species or otherwise facilitating their introduction or spread.
-  Incorporate grant-selection criteria  
Incorporate criteria to prioritize projects that contribute to invasive species prevention and the use of native plants in landscaping.
-  Require prevention plans and guidelines  
Require an invasive species prevention plan for projects that pose opportunities for the introduction or spread of invasive species.

A second order objective of this review process is to establish a set of formal guidelines on how to incorporate invasive species prevention measures and concerns into new DCNR grant programs. Training on and dissemination of these guidelines would then be necessary for DCNR staff with roles as grant program decision makers and administrators.

## 2. External funding processes

As a leading state conservation agency, DCNR should also play a leadership role in providing information and advisory services to other agencies and organizations within the Commonwealth. The DCNR review of external funding mechanisms should serve as a model system to ensure that invasive species prevention measures are applied more efficiently across the state.

DCNR staff often participates on advisory committees for other agencies and organizations, and as reviewers of grant project proposals for external programs. As such, they should advocate following the activities described in the previous bulleted list.



**The following actions provide a starting point towards the overall objective:**

 **Identify external granting sources**

External grant sources could either inadvertently contribute to spreading invasive species or be used to prioritize/fund prevention measures (e.g. federal or state road-building or other construction and infrastructure funding processes, federal and state agricultural assistance programs or cost-share practices, Departments of Education and Community/Economic Development grant programs).

 **Outline decision-making structures**

Outline these for the highest priority funding programs and identify opportunities to influence them either in terms of directing monies for prevention measures or to include prevention measures as prerequisites on projects that pose threats of introducing or spreading invasive species.

 **Prioritize Programs**

Priorities should be arranged in terms of strategic impact to the prevention of invasive species. Identify strategic priorities jointly in terms of potential positive contribution to furthering invasive species prevention measures and ability of DCNR to constructively influence desirable changes to funding criteria within a meaningful time frame.

**3. Education, outreach and communication**

Integrating invasive species information into ongoing education, outreach and communication efforts is essential to fostering public and staff awareness and action. DCNR's existing efforts in providing educational programs and materials offer appropriate channels for the distribution of information regarding invasive species prevention, although competition for resources by other priority issues may interfere at times. The following are identified as high priority educational opportunities for invasive species prevention within the current suite of DCNR educational efforts (*see also the chapter on education, training, and outreach*).

 **Demonstration forests**

Currently, nearly every forest district maintains a demonstration forest as a tool for outreach and education to private landowners and other local groups. These outdoor classrooms often focus on the importance of using environmentally appropriate prescriptions while conducting a timber sale. Incorporating information on the importance of preventing invasive species during silvicultural operations would provide a critical arena for disseminating this information to a priority audience. To facilitate such programming during the use of these forests, educational materials and formal training should be provided to service foresters.

 **Stewardship plans**

BOF assists private forest landowners in developing forest stewardship plans for their properties. Existing invasive species issues are recognized in current forest stewardship plans, which require more focus on prevention of future invasions. Literature on preventive management to be followed during a timber harvest (similar to materials developed for use at the demonstration forests) should be included in every stewardship plan, as well as a section on other general prevention measures especially appropriate for private forest landowners.



### State Parks educational programming

Incorporating prevention education into State Parks programming is imperative, as State Park visitors represent a population of varying demographic characteristics. Programming could include pertinent information from invasive species identification to on-site impacts of invasive species. Fun, yet educational activities like weed pull competitions and invasive plant cook-outs can be done at parks statewide. A coherent strategy should be developed to assist state park education program coordinators in providing an effective curriculum on invasive species prevention.



### Other educational programs

DCNR exerts considerable public influence in other outdoor educational opportunities, such as State Park environmental education centers, [Eco Camp](#), the statewide [Envirothon](#) program and through cooperating partners and other agencies with mutual interests in natural resource-based conservation and education (Conservancies, Fish and Boat Commission, Game Commission, Conservation Districts, Cooperative Extension). Sharing curriculum materials and education strategies for invasive species prevention among such partners is critically important to ensure the widest possible social impact of DCNR outreach efforts. This is already being done throughout the agency, and should continue to be done whenever possible.

### Internal training

After the completion of the 2005 version of the Invasive Species Management Plan, multiple internal training sessions on invasive species identification, prevention and control were held throughout the state (*see photo on right*). Pesticide re-certification and pesticide technician trainings are also being offered by the Bureau of State Parks to DCNR staff. Long term success of maintaining interest in and commitment to prevention measures will require increased coverage on prevention issues during internal management meetings and trainings.



### Wayside exhibits/cooperating portals

Programs such as [Pa. Wilds](#), [Tree Vitalize](#), and others increase opportunities to reach the public. Several banners and interpretive panels about invasive species have been developed and are available for agency-wide use (*see photo on right*).



### Technical assistance

Invasive species prevention can also be fostered through technical assistance programs provided by DCNR. The agency should continue to utilize existing sources of technical assistance (service foresters, FPM personnel, BOF Ecological Services Section) and the numerous websites that are available in order to prioritize prevention issues on private lands and throughout district and regional operations.

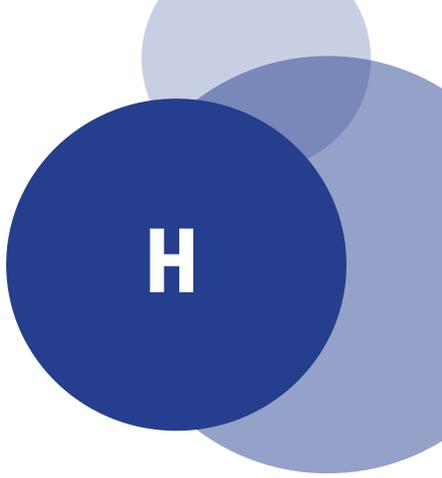


## Prevention Recommendations

- 1. Require contractors to share the responsibility of preventing the introduction of invasives**  
Bureaus prepare necessary specifications that are a requirement for pre-approval of the contractor's sources of fill, soil, shale and related materials. Contractors should submit a description of the source, as required for other types of materials. The project inspector or a qualified departmental designee could then inspect the supply source and prohibit its use if contaminated by transferable agents of invasive species. Another option is to specify requirements for contractors to treat and control invasive species on placed fill material for a specified time period. Equipment cleaning and scheduling options (i.e. starting with the least invaded area and later moving to more invaded areas) should also be included, when feasible.
- 2. Include invasive species prevention methods for private landowners in plans and grants**  
DCNR can draw attention to and minimize the problem of invasive species by incorporating prevention methods into Stewardship and landowner assistance plans and grants distributed by the [Bureau of Recreation and Conservation](#).
- 3. Continue to incorporate invasive species prevention sections into state park and state forest district resource management plans**  
While this has been done for many parks and districts throughout the state, efforts should continue until all plans incorporate this information. These sections should outline appropriate site-specific prevention methods. In addition, there should be a listing of locations requiring frequent monitoring because they are either areas of high spread potential (e.g. frequently traveled roadsides and trails) or "positive deviants," areas that are not yet impacted by invasive species and are biologically sensitive, diverse or unique.
- 4. Update the [Invasive Exotic Plant Management Tutorial website](#) so that it integrates the most up-to-date interstate, intrastate and intra-DCNR property prevention concerns**  
In addition to containing guidelines for preventing and controlling invasive species, this website also serves as a field guide, facilitating invasive species identification. Exhaustive lists of invasive species known within Pennsylvania and species that threaten to enter the state should be maintained here. As the invasive species issue is very dynamic, this website should allow for continual updates and links to additional information.
- 5. Develop a list of species that could become invasive or could enter the state if climate conditions change, and determine potential pathways for these species.** This list will need to be continuously updated as climate conditions change and as research discovers new species of invasives.
- 6. Appoint someone within the agency to keep abreast of new developments in invasive species prevention**  
Prevention is a continually advancing issue that requires constant updating and prioritizing. The scientific community is constantly identifying new threats as researchers are learning more about the impacts caused by specific invasive species. DCNR needs to be aware of the most current information in order to make appropriate decisions to prevent invasive species.



# APPENDICES



H

## COMMUNITY CHARACTER & APPEARANCE

H. Sample ordinance governing “Conservation of Natural Features” (Pocopson, PA)



Township of Pocopson, PA

Tuesday, June 30, 2015

## Chapter 250. ZONING

### Article XIII. General Standards

#### § 250-87. Conservation of natural features.

[Amended 3-4-2002 by Ord. No. 1-2002; 5-14-2007 by Ord. No. 3-2007]

- A. Purpose. The following natural resource conservation standards are established to protect the public health, safety, and welfare by minimizing adverse environmental impacts. These standards are intended to meet the following purposes:
- (1) Define and delineate selected natural resources within the Township and establish resource conservation standards to assist the Township in reducing the impact proposed uses will have on the environment.
  - (2) Conserve valuable natural resources within the Township in accordance with the Pocopson Township Comprehensive Plan (2001) and the Pocopson Township Parks, Recreation, and Open Space Plan (1993).
  - (3) Conserve and protect natural resources within the Township and the Kennett Area Region in accordance with the following policies of the Kennett Area Region Comprehensive Plan (2000), as amended:
    - (a) Preserve and protect areas which are naturally unsuitable for development or which provide valuable wildlife habitat, including stream valleys, riparian zones, steep slopes, floodplains, woodlands, wetlands, and seasonal high water table soils.
    - (b) Continue to preserve sensitive natural areas and wildlife habitats from development by strengthening natural resource conservation standards contained in each municipality's Zoning and Subdivision and Land Development Ordinances.
    - (c) Protect regional watersheds and the quality of groundwater and streams within the region, and pursue measures to maintain and, where possible, improve water quality.
- B. General applicability of conservation standards.
- (1) In the event that the provisions of this section and any other provisions of the Township Code are in conflict, the more restrictive provisions shall apply.
  - (2) In the event that two or more natural resource areas identified in this section occur on the same lot or tract, disturbance limitations shall be measured separately. Where such resource areas overlap, the most restrictive standard (the least amount of permitted alteration, regrading, clearing, or building) shall apply to the area of overlap.
  - (3) It shall be a violation of this chapter to regrade, fill, pipe, divert, channel, build upon, or otherwise alter or disturb a natural resource protected by this section prior to the submission, review, and approval of any applicable application for zoning or building permit(s), conditional use or special exception approval, zoning variance, or subdivision or land development plan(s).

- (4) Limitations to the disturbance of resources shall apply before, during, and after construction on a site.
- (5) Disturbance limitations, established as a maximum percentage of permitted disturbance, shall be applied concurrently as a percentage of each applicable resource area to the extent that it is present on the entirety of any tract or any lot and as a percentage of the area within each discrete resource area measuring one acre or more. A "discrete resource area" is the entirety of any single contiguous area comprising any one resource regulated by the provisions of this Section. Any area of resource overlap shall be measured as part of the contiguous resource area with the most restrictive disturbance limitation. For example, if disturbance of 25% of a particular resource area is permitted, then it shall apply as 25% of the total area of that resource on the applicable lot or tract. In addition, the twenty-five-percent limitation shall apply individually to each discrete resource area measuring one acre or more, regardless of whether, collectively, such areas comprise 25% of all areas of such resource on the applicable lot or tract.
- (6) Disturbance limitations shall be applied based on the occurrence of identified resource areas at the time of adoption of this section. Disturbance permitted over time in multiple applications on the same lot or tract shall be measured against the same overall limitations established at the time of the first application after the adoption of this section. For example, if applicable disturbance limitations for a particular resource permit two acres of disturbance, and one acre of disturbance is permitted upon the first application after the adoption of this section, then only one acre shall remain to be permitted for future disturbance of the applicable resource regardless of the total number of applications over the years.
- (7) Information submitted to demonstrate compliance with this section shall be verified as correct by the Township Engineer or other qualified professional as determined by the Township.
- (8) Regulations and disturbance limits for each specific resource area set forth below shall be complied with as applicable. The following summary table is provided as an overview of disturbance limitations. In certain cases as provided herein, exceptions or modifications may apply.

<b>Resource Area</b>	<b>Maximum Disturbance</b>
Floodplain Conservation District	0%
Very steep slopes	10%
Moderately steep slopes	25%
Steep slope margins	25%
Wetlands	0%
Zone One: Inner Riparian Buffer	0%
Zone Two: Outer Riparian Buffer	15%
Seasonal high water table soils	20%
Heritage trees	0%
Rare species sites	0%
Exceptional natural areas	10%
Forest interior habitat	10%
Class I woodlands located on very steep slopes	5%
Class I woodlands outside very steep slopes	15%
Class II woodlands	15%
Class III woodlands in greenway corridors	15%
Class III woodlands outside greenway corridors	25%

- C. Floodplain conservation. Areas identified as being within the boundaries of the Floodplain Conservation District shall not be regraded, filled, built upon, channeled, or otherwise altered or disturbed except in conformance with Article **VI** of this chapter.
- D. Steep slope conservation.
  - (1) Steep slope areas shall be preserved in their natural state whenever possible. Where construction of roads, buildings, driveways, or infrastructure cannot be avoided, disturbance shall be kept to the

minimum necessary and in no case shall it exceed the following permitted disturbance limits:

- (a) Moderately steep slopes. No more than 25% of moderately steep slopes shall be regraded, cleared, built upon, or otherwise altered or disturbed.
- (b) Steep slope margins. No more than 25% of steep slope margins shall be regraded, cleared, built upon, or otherwise altered or disturbed.
- (c) Very steep slopes. No more than 10% of very steep slopes shall be regraded, cleared, built upon, or otherwise altered or disturbed. In addition, disturbance permitted on very steep slopes shall be limited to the following activities:
  - [1] Timber harvesting, when conducted in compliance with the required timber harvesting plan. Clearcutting or grubbing of trees is prohibited on very steep slopes.
  - [2] Grading for the minimum portion of a driveway necessary for access to the principal use and sewer, water, and other utility lines when it can be demonstrated to the satisfaction of the Township that no other routing is practicable, but excluding sewage disposal systems.
  - [3] Hiking and riding trail(s) of minimum adequate width(s), where developed so as to minimize potential erosion, follow existing topographic contours to the greatest degree practicable and, where using unpaved surfaces, to the maximum practicable extent.
- (2) All permitted buildings or structures shall be constructed in such a manner as to provide for the least alteration necessary of the existing grade, vegetation, and natural soils condition.
- (3) A grading plan shall be provided identifying the existing contours of the site, proposed finished grades, and the proposed location of all buildings and structures. Locations for all stockpiled earth, stone, and other materials shall be shown on the plan and shall not be located within the dripline of any trees intended to remain post permitted disturbance.
- (4) Excessive cut and fill shall be avoided. New roads and improvements to existing roads should be designed within the existing contours of the land to the extent possible and strive for compatibility with the character of rural roads.
- (5) Finished slopes of permitted cut and fill shall not exceed thirty-three-percent slope unless the applicant can demonstrate the method by which steeper slopes will be stabilized and maintained adequately.
- (6) Any stockpile(s) of earth intended to be stored for more than 21 days shall be seeded or otherwise stabilized to the satisfaction of the Township Engineer. Any disturbed areas of very steep slope and any cut and fill resulting in slopes of greater than 20% shall be protected with an erosion control blanket.
- (7) Any disturbance of land shall be in compliance with the erosion and sedimentation control standards of Chapter **190**, Subdivision and Land Development, and PADEP Title 25, Chapter 102. All applicants shall refer to the PADEP Erosion and Sediment Pollution Control Program Manual dated March 2000, or latest edition, for applicable erosion and sediment control standards. Where applicable, in the context of any application before the Township, any applicant shall permit inspection of erosion and sedimentation controls by designated personnel of both the Township and the Chester County Conservation District.
  - (a) An erosion and sedimentation control plan and soil stabilization plan shall be submitted consistent with the requirements of Chapter **190**, Subdivision and Land Development.
  - (b) The plan shall demonstrate how soil will be protected from erosion during construction and how soil will be stabilized upon the completion of construction.
- (8) Where the following information has not been previously submitted as part of a subdivision or land development plan application, such information shall be submitted to the Township with building permit, conditional use, special exception, or zoning applications, when applicable:

- (a) The adequacy of access to the site for emergency vehicles shall be subject to review by the Fire Marshal or his designee. The necessary information shall be submitted by the applicant to the Fire Marshal or his designee for his review.
- (b) Grading plan and erosion and sedimentation control plans.

E. Wetlands conservation.

- (1) Wetlands shall not be regraded, filled, piped, diverted, channeled, built upon, or otherwise altered or disturbed, including for purposes of access or utility crossings, except where all applicable permits have been obtained and copy thereof submitted to the Township.
- (2) Any applicant proposing a use, activity, or improvement which would entail the regrading or placement of fill in wetlands shall provide the Township with proof that the Pennsylvania Department of Environmental Protection (Bureau of Dams and Waterway Safety and Bureau of Water Quality Management) and the U.S. Army Corps of Engineers have been contacted to determine the applicability of state and federal wetland regulations. Any applicant contacted by the Pennsylvania Department of Environmental Protection or the U.S. Army Corps of Engineers in regard to wetlands also shall concurrently provide to the Township a copy of such correspondence.
- (3) Where permitted subject to applicable regulation and as otherwise provided herein, sewers or other liquid transport pipelines shall only be permitted to cross wetlands on the minimum traversal distance and where every precaution shall be taken to prevent leaks and to prevent any possible draining of the wetland (e.g., water flowing through or along any pipe or trench). At the expense of the applicant, the Township may require inspection of applicable systems and facilities, including but not limited to x-ray of steel welds and pressure testing of pipelines.
- (4) Where wetland disturbance is permitted subject to applicable regulation on any lot or tract, no more than 10% nor more than one acre of any wetland area, whichever is less, shall be disturbed for any purpose. To the maximum extent feasible, any disturbance to or loss of natural wetlands shall be mitigated at the rate of three times the lost or disturbed wetland area in a manner approved by the Township. Mitigation may include creation of wetlands which shall be hydrologically fed with stormwater discharged from an approved stormwater management facility. Created wetlands may be located at a site approved by the Township for such mitigation, whether on or off the property that contains the wetland subject to disturbance. Where approved by the Township, some or a portion of any required wetlands mitigation, in lieu of wetland creation, may be accounted for through permanent conservation of other existing unprotected wetlands or by restoration of former wetlands (e.g., through removal of tilefields or other drainage facilities) by means satisfactory to the Township.
- (5) Where required to comply with state or federal regulation, any applicant also shall provide the Township with a full wetland delineation report conducted by a qualified wetland biologist, soil scientist, or environmental professional of demonstrated qualifications, subject to the following:
  - (a) Where there is any question as to the accuracy of the wetland delineation report, the Township may hire a qualified consultant to review the delineation and recommend revisions at the applicant's expense.
  - (b) Such a professional shall certify that the methods used correctly reflect the currently accepted technical concepts, including identification and analysis of wetland vegetation, hydric soils, and hydrologic indicators. Methods used in the delineation report shall be acceptable to the Township Engineer or other qualified consultant hired by the Township.
  - (c) The wetland report submitted to the Township shall include a determination of whether wetlands are present on the site and a full delineation, area measurement (in square feet), and description of any wetlands determined to be present.

F. Watercourse and riparian buffer protection standards.

- (1) Zone One: Inner Riparian Buffer. With the exception of those uses or activities listed below, no land disturbance shall be permitted within the Zone One riparian buffer:

- (a) Regulated activities permitted by the commonwealth (i.e., permitted stream or wetland crossing).
  - (b) Provision for trail and trail access where approved by the Township with minimum disturbance to existing woodland vegetation.
  - (c) Selective removal of hazardous or invasive vegetation; or
  - (d) Vegetation management in accordance with an approved landscape plan or open space management plan.
- (2) Zone Two: Outer Riparian Buffer. Except for the following activities, no more than 15% of a Zone Two riparian buffer shall be regraded, filled, built upon, or otherwise altered or disturbed:
- (a) Activities permitted in the Zone One riparian buffer.
  - (b) Timber harvesting, when conducted in compliance with a timber harvesting plan approved by the Township. Clearcutting of timber shall not be permitted within the riparian buffer.
- G. Conservation of seasonal high water table soils.
- (1) With the exception of those uses or activities listed below, and where not otherwise regulated more restrictively under the provisions of this chapter, no more than 20% of any seasonal high water table soil shall be regraded, filled, built upon, or otherwise altered or disturbed:
- (a) Regulated activities permitted by the commonwealth (i.e., permitted stream or wetland crossing);
  - (b) Provision for trail and trail access where approved by the Township;
  - (c) Selective removal of hazardous or invasive vegetation; or
  - (d) Vegetation management in accordance with an approved landscape plan or open space management plan.
- (2) Notwithstanding the twenty-percent disturbance limitation set forth above, the following regulations shall apply to seasonal high water table soils:
- (a) No structures for human use or habitation or for regular animal occupancy shall be constructed in any area of soil where the seasonal high water table is within one foot of the surface;
  - (b) No subsurface sewage system shall be constructed within any area of seasonal high water table soil.
  - (c) No road, driveway, or emergency access shall cross any area of seasonal high water table soil except where providing necessary access which clearly is otherwise impracticable and only where drainage, adequate base preparation, and paving approved by the Township Engineer shall be provided.
- H. Heritage trees.
- (1) No heritage trees shall be removed from any lot or tract except where undertaken in accordance with an approved timber harvesting plan or where the applicant demonstrates to the satisfaction of the Township that such removal is essential to eliminate hazardous condition(s). In consideration of any need for tree removal, the Township may engage the services of an arborist, reasonable costs therefor to be borne by the applicant.
- (2) To the minimum extent necessary to permit retention of heritage trees while providing for lawful use, modification to otherwise applicable area and bulk requirements may be approved in the following situations:
- (a) Where approved by the Board of Supervisors as part of any applicable subdivision or land development application; or

- (b) Where approved by the Zoning Officer upon approval of any applicable building permit; and
    - (c) Provided that no applicable yard area setback shall be reduced more than 50% except where approved as a variance by the Zoning Hearing Board.
  - (3) Where any applicant for building, zoning, subdivision or land development approval establishes conservation restrictions acceptable to the Township which shall result in the conservation of heritage trees, all such heritage trees to be retained shall be credited toward any tree replacement required under § **250-87K(5)** below, at the ratio of four trees credited for each heritage tree retained.
- I. Rare species sites.
- (1) With the exception of selective removal of hazardous or invasive vegetation, no rare species site shall be regraded, filled, built upon, or otherwise altered or disturbed.
  - (2) A buffer area with a minimum dimension of 25 feet shall be provided around the entire perimeter of any rare species site within which no land disturbance shall be permitted.
  - (3) To the minimum extent necessary to avoid disturbance to rare species site(s) or to provide for required buffer(s), while providing for lawful use, modification to otherwise applicable area and bulk requirements may be approved in the following situations:
    - (a) Where approved by the Board of Supervisors as part of any applicable subdivision or land development application; or
    - (b) Where approved by the Zoning Officer upon approval of any applicable building permit; and
    - (c) Provided that no applicable yard area setback shall be reduced more than 50% except where approved as a variance by the Zoning Hearing Board.
- J. Exceptional natural areas.
- (1) With the exception of those uses or activities listed below, and where not otherwise regulated more restrictively under the provisions of this chapter, no more than 10% of any exceptional natural area, where not otherwise classified as woodland, shall be regraded, filled, built upon, or otherwise altered or disturbed:
    - (a) Regulated activities permitted by the commonwealth (i.e., permitted stream or wetland crossing);
    - (b) Provision for trails;
    - (c) Selective removal of hazardous or invasive vegetation; or
    - (d) Vegetation management in accordance with an approved landscape plan or open space management plan.
  - (2) Exceptional natural areas which are classified as woodland on the Woodland Classification Map shall be regulated as provided in § **250-87K**, without further limitation under this subsection.
- K. Woodlands and hedgerows.
- (1) Disturbance limitations for woodlands and hedgerows. Notwithstanding the provisions of this section, selective harvesting of timber shall be permitted where undertaken in compliance with the provisions set forth in § **250-87K(10)** below. Clearcutting of any woodland area shall be prohibited except to the minimum extent necessary to permit the implementation of an approved land development or building permit in conformance with this section. Except for an approved timber harvesting operation, all woodland disturbance shall be subject to the following total disturbance limitations:
    - (a) Permitted woodland disturbance on any lot or tract shall not exceed 5% of any area designated Class I woodland on the Pocopson Township Woodland Classification Map,<sup>[1]</sup> where such woodland is coextensive with any area of very steep slope.

[1]: *Editor's Note: The Woodland Classification Map is on file in the Township offices.*

- (b) Except where § **250-87K(1)(a)** applies, permitted woodland disturbance on any lot or tract shall not exceed 15% of any area designated Class I or Class II woodland on the Pocopson Township Woodland Classification Map, nor any woodland within a designated greenway corridor.
- (c) Outside of areas designated as greenway corridors, permitted woodland disturbance on any lot or tract shall not exceed 25% of any Class III woodland.
- (d) Permitted woodland disturbance on any lot or tract shall not exceed 10% of any area designated as "forest interior habitat" on the Pocopson Township Woodland Classification Map.<sup>[2]</sup>

[2]: *Editor's Note: The Woodland Classification Map is on file in the Township offices.*

- (e) Disturbance limitations shall be measured based on the extent of the subject woodland classification at the time of first submission of applicable application(s) after the adoption of this section and shall be indicated on applicable plan(s). The extent of any area of woodland disturbance shall be measured to include the entire area within the dripline of any tree where any part of the area within the dripline of said tree is subject to woodland disturbance. Any disturbance limitation shall run with the land, once established. Subsequent applications shall be subject to the initial determination of disturbance limitations, regardless of intervening disturbance which may have occurred. If, at any time within three years prior to an applicable application, there had existed a greater extent of woodland, such greater area shall be utilized to calculate the extent of woodland disturbance and the limitations set forth herein.
- (2) Woodland replacement. Where permitted, any woodland disturbance exceeding any of the following standards shall require provision for vegetation replacement as set forth in § **250-87K(5)** below. Each of the following standards shall be applied independently, and the corresponding replacement requirements shall be cumulative.
- (a) Any woodland disturbance in any of the following areas:
    - [1] Any area designated as Class I or Class II woodland on the Pocopson Township Woodland Classification Map.<sup>[3]</sup>

[3]: *Editor's Note: The Woodland Classification Map is one file in the Township offices.*

    - [2] Any area designated as a greenway corridor.
    - [3] Any area within the drip line of any Heritage Tree.
    - [4] Any area within any riparian buffer.
  - (b) Woodland disturbance in excess of 10,000 square feet of existing area of Class III woodland or hedgerow(s) for each principal use permitted on any lot or tract. As an example, where two principal uses are permitted, woodland disturbance may involve up to 20,000 square feet (10,000 x 2) before replacement is required, except as otherwise provided herein.
- (3) In determining where necessary woodland disturbance shall occur in the context of any subdivision or land development, the applicant shall consider the following:
- (a) The location(s) and benefit of conservation of healthy mature woodland stands.
  - (b) The impacts, in terms of functions and values to wildlife, of separating, dividing and/or encroaching on wildlife travel corridors and/or extensive habitat areas. Such impacts must be explicitly assessed in any area designated as one or more of the following:
    - [1] Greenway corridor.
    - [2] Forest interior habitat.
    - [3] Rare species site(s).

- [4] Exceptional natural areas.
- [5] Riparian buffers.
- [6] Class I or Class II woodlands.
- (4) In areas of permitted woodland disturbance and areas adjacent to permitted woodland disturbance, remaining trees shall be protected from damage. The following procedures shall be utilized during construction in order to protect remaining trees:
- (a) Where existing trees are to remain, no change in existing grade shall be permitted within the dripline of the trees. Appropriate fencing four feet in height shall be placed at the dripline of trees to remain, wherever adjacent to proposed construction. Such fencing shall be maintained in place throughout the duration of construction activity. Roots shall not be cut within the dripline of any trees to remain.
- (b) Trees within 25 feet of a building, or bordering entrances or exits to building sites, shall be protected by a temporary harrier to be maintained in place throughout the duration of construction activity.
- (c) No boards or other material shall be nailed or otherwise attached to trees during construction.
- (d) Construction materials, equipment, soil and/or debris shall not be stored nor disposed of within the driplines of trees to remain.
- (e) Tree trunks, limbs, and exposed roots damaged during construction shall be protected from further damage by being treated immediately in accordance with accepted professional landscape procedures.
- (5) Calculation of required vegetation replacement. Where woodland disturbance exceeds any of the standards set forth in § **250-87K(2)** above, applied independently and cumulatively, replacement plantings shall be installed in accordance with the standards set forth below. A sample list of acceptable replacement plantings is found in § **250-87N**.
- (a) Required replacement trees shall be determined using the calculation set forth below which results in the greatest number of replacement trees:
- [1] Replacement tree calculation based on area of woodland disturbance. At a minimum, for each 500 square feet of woodland disturbance area, or fraction thereof, in excess of the applicable standard set forth in § **250-87K(2)** and regardless of the character and sizes of the disturbed vegetation, one tree at least two inches to 2 1/2 inches caliper shall be planted.
- [2] Replacement tree calculation based on specific tree removal. Regardless of any disturbance allowances, for each tree greater than 12 inches dbh to be removed, required replacement trees also shall be calculated in accordance with the following schedule. For purposes of this section, it shall be assumed that any tree greater than 12 inches dbh shall be removed if located within 25 feet of any proposed land disturbance.
- | <b>For Each Tree to Be Removed (inches dbh)</b> | <b>Minimum Number and Caliper of Replacement Trees (inches)</b> |
|---|---|
| One, 12 to 18                                   | Two 2 to 2 1/2  |
| One, 18 to 24                                   | Three 2 to 2 1/2  |
| One, 24 to 36                                   | Four 2 to 2 1/2   |
| One, greater than 36                            | Six 2 to 2 1/2  |
- (b) Required replacement shrubs. At a minimum, for each 100 square feet of woodland disturbance area, or fraction thereof, in excess of the applicable standard set forth in § **250-87K(2)** and regardless of the character and sizes of the disturbed vegetation, one shrub at least 24 inches to 30 inches in height shall be planted in addition to any required tree replacement. Shrubs planted in accordance with this requirement may be of restoration quality and not necessarily

landscaping quality.

- (c) Required replacement plantings shall be in addition to any required street trees or any other landscape material required under applicable provisions of this chapter or Chapter **190**, Subdivision and Land Development.
  - (d) Where approved by the Township as a condition of any building, zoning, subdivision or land development approval or as a condition of grant of modification under § **250-87M(3)**, required replacement trees may be substituted for greater numbers of trees of smaller caliper than otherwise required or by vegetation other than trees (e.g., for purposes of reforestation).
  - (e) Where approved by the Township as a condition of any building, zoning, subdivision or land development approval or as a condition of grant of modification under § **250-87M(3)**, some or all of the required replacement plantings may be installed at a site other than that subject to required replacement planting.
  - (f) In lieu of actual installation of replacement plantings, the Township may permit any applicant to place the equivalent cash value, as agreed upon by the Township and the applicant, for some or all of the required replacement plantings into a special fund established for that purpose. Such fund shall be utilized at the discretion of the Township for the purchase and installation of plantings elsewhere in the Township, Installation of such plantings on private lands shall be dependent upon the establishment of conservation easement(s) or other restriction(s) acceptable to the Township that will reasonably guarantee the permanent protection of such plantings. Where the provisions of this section are otherwise applicable, any grant of approval of modifications requested pursuant to § **250-87M(3)** also may be conditioned upon the placement of equivalent cash value for otherwise required replacement plantings into such a fund.
  - (g) The locations, selected species, and sizes of all replacement plantings, along with a planting schedule tied to the timing and/or phasing of the development, shall be indicated on the final subdivision/land development plan(s) or building permit application, as applicable.
- (6) Required replacement vegetation and their measurement shall conform to the standards of the publications "American or U.S.A. Standard for Nursery Stock," ANSI or USAS Z60.1 of the American Association of Nurserymen, as amended. All plant material used on the site shall have been grown so as to have a high likelihood of survival on the site (e.g., grown specifically for planting in the applicable USDA hardiness zone) and shall be nursery grown, unless it is determined by the Township that the transplanting of trees partially fulfills the requirements of this section.
- (7) Species of replacement plantings selected and planting locations shall reflect careful site evaluation and in particular the following considerations:
- (a) Existing and proposed site conditions and their suitability for the plant materials, based upon the site's geology, hydrology, soils, and microclimate.
  - (b) Specific functional and design objectives of the plantings, which may include but not necessarily be limited to replacement of woodland area removed, enhancement of existing woodland or oldfield area(s), reforestation of riparian buffer areas, mitigation of new woodland edge conditions as a result of land disturbance, provision for landscape buffer, visual screening, noise abatement, energy conservation, wildlife habitats, and aesthetic values.
  - (c) Maintenance considerations such as hardiness, resistance to insects and disease, longevity, and availability.
  - (d) Because of the many benefits of native plants (ease of maintenance, longevity, wildlife habitat, etc.), the use of nursery-grown free-fruited native trees and shrubs is strongly encouraged. Species selection should reflect species diversity characteristic of the native deciduous woodland.
- (8) All replacement plantings shall be guaranteed and maintained in a healthy and/or sound condition for at least 24 months or shall be replaced. In addition, the applicant may be required to escrow sufficient additional funds for the maintenance and/or replacement of the proposed vegetation during the

twenty-four-month replacement period and to provide for the removal and replacement of vegetation damaged during construction, based upon the recommendation of the Township Engineer.

- (9) All applicants shall include, as part of preliminary and final plan submission, where applicable, a plan for the long-term management of any woodland area not subject to woodland disturbance and any area selected for introduction of replacement plantings in accordance with this section. Such plan shall include a statement of woodland management objectives and shall demonstrate to the satisfaction of the Board of Supervisors the feasibility of intended management practices, aiming to ensure the success of stated objectives, including the viability of introduced plantings, deterrence of invasive vegetation, and means to minimize any future woodland disturbance. Applicants are strongly encouraged to seek woodland management assistance from a qualified professional.
- (10) Timber harvesting operations.
- (a) Any timber harvesting operation shall be undertaken in accordance with a timber harvesting plan approved by the Township. All timber harvesting plans shall be submitted to the Township for review for compliance with the standards for timber harvesting operations set forth herein not less than 45 days prior to commencement of the timber harvesting operation. Within 30 days of submission to the Township, a timber harvesting plan shall be approved, denied, or approved subject to reasonable conditions and the applicant so notified in writing.
- (b) Any timber harvesting plan submitted to the Township for review and approval shall be consistent with the Timber Harvesting Guidelines of the Pennsylvania Model Forestry Regulations of the Penn State School of Forest Resources, as applicable, and shall include a plan or plans indicating the following information:
- [1] Site location and boundaries of both the entirety of the property upon which the timber harvesting operation shall occur and the specific area proposed for timber harvesting;
  - [2] Significant natural features on the property including steep slopes, wetlands, riparian buffer zones, heritage trees, rare species sites, and exceptional natural areas;
  - [3] Identification of the classification of the woodland or woodland(s) where the timber harvesting operation is proposed to occur, as indicated on the Pocopson Township Woodland Classification Map<sup>[4]</sup>;  
*[4]: Editor's Note: The Woodland Classification Map is on file in the Township offices.*
  - [4] Identification of areas of forest interior habitat where timber harvesting is proposed to occur;
  - [5] Identification of greenway corridors where timber harvesting is proposed to occur, as indicated on the Pocopson Township Greenway Corridors Map<sup>[5]</sup>;  
*[5]: Editor's Note: The Greenway Corridors Map is on file in the Township Offices.*
  - [6] The general location of the proposed operation in relation to municipal and state highways and any proposed accesses to those highways;
  - [7] Design, construction, maintenance, and retirement of the access system, including haul roads, skid roads, skid trails, and landings;
  - [8] Design, construction, and maintenance of water control measures and structures such as culverts, broad-based dips, filter strips, and water bars;
  - [9] Design, construction, and maintenance of proposed stream and wetland crossings; and
  - [10] Identification of forest canopy to remain as provided under § 250-87K(10)(f).
- (c) Any permits required by any other agency under any applicable regulation shall be the responsibility of the landowner or timber harvesting operator as applicable. A copy of all required permits shall be submitted to Pocopson Township at least 20 days prior to commencement of

the timber harvesting operation.

- (d) The following management practices shall apply to all timber harvesting operations:
- [1] Felling and skidding of trees shall be undertaken in a manner which minimizes damage to trees or other vegetation not intended to be harvested (e.g., successive limbing up the tree rather than felling in its entirety).
  - [2] Felling or skidding across any public thoroughfare is prohibited without the express written consent of the Township or Penn DOT, whichever is responsible for the maintenance of said thoroughfare.
  - [3] No timber loads weighing more than 60,000 pounds shall be permitted on Township roads. The applicant shall review with the Township Roadmaster the condition of any Township road that will be used to transport log loads or that may otherwise be impacted by the timbering operation. The Township shall require the posting of a bond or other approved security of no less than \$50,000 to cover any damage to Township roads.
  - [4] Slash, tops or litter resulting from a timber harvesting operation shall either be cut to a height of three feet or less and left on site or chipped and recycled on site. The burning of slash shall be prohibited.
  - [5] No tops, slash or litter shall be left within 25 feet of any public thoroughfare or private roadway.
  - [6] Litter resulting from a timber harvesting operation shall be removed from the site or otherwise dealt with as approved by the Township (e.g., chipped and recycled on site).
  - [7] The operation shall not cause harm to the environment or any other property.
- (e) No timber harvesting operation shall be permitted within any Zone One riparian buffer or any rare species site, nor within 25 feet of any rare species site. No clearcutting of timber shall be permitted within any Zone Two riparian buffer or any exceptional natural area.
- (f) In all woodlands, a minimum percentage of the forest canopy trees shall remain in good condition after the completion of any timber harvesting operation, as set forth in the table below. Remaining forest canopy trees shall be well distributed throughout the area subject to the timber harvesting operation.

Woodland Class	Percentage Forest Canopy Trees to Remain by Location		
	Zone One Riparian Buffer	Zone Two Riparian Buffer	All Other
Class III	100%	60%	30%
Class II	100%	70%	40%
Class I	100%	80%	50%
Forest interior habitat or exceptional natural area	100%	90%	60%

- (g) At least 50% of the required remaining forest canopy trees, as provided above, shall be comprised of higher value species. Where the number of trees comprising higher value species that exist prior to the approval of any timber harvesting operation is less than the number which would be required to comply with this provision, no higher value species may be harvested.
- (h) Township representative(s) shall be permitted access to the site of any timber harvesting operation before, during, or after active timber harvesting to review, inspect and ascertain compliance with the provisions set forth herein.
- (i) Upon determination that a timber harvesting operation is in violation of these regulations, each day where any violation occurs shall constitute a separate violation subject to the provisions of

this chapter.

L. Greenway corridor conservation.

- (1) Use regulations. Within any designated greenway corridor, a building may be erected, altered, or used and a lot may be used as provided in the underlying base zoning district, except that all uses within a greenway corridor shall be subject to conditional use approval.
- (2) Area and bulk regulations. Within any designated greenway corridor, and subject to conditional use approval, the area and bulk regulations of the underlying base zoning district shall apply.
- (3) Special criteria for development within greenway corridors. Except as otherwise noted herein, the following special criteria are applicable within any designated greenway corridor to any new principal use and to the expansion, alteration, modification, or reconstruction of any existing use or structure for which a building permit is required:
  - (a) Under any development option, on properties subject to subdivision or land development, building locations shall be selected outside of designated greenway corridors where feasible and, where not feasible, shall be located as near to the edge of the designated corridor as practicable, in order to conserve the largest possible breadth and extent of the greenway corridor.
  - (b) The conventional development option shall not be utilized except where approved as a conditional use upon determination by the Board of Supervisors that no other development option is practicable.
  - (c) Open space resulting from subdivision shall be located so as to maximize the degree to which lands within designated greenway corridors shall be so preserved.
  - (d) Where applicable under any development option, the Board of Supervisors may grant conditional use approval subject to modification of any otherwise applicable area, bulk or design standard, where such modification is deemed as promoting the conservation of any designated greenway corridor.
  - (e) Where applicable and where not undertaken voluntarily by the affected landowner(s), as condition(s) of conditional use approval, the Board of Supervisors may require establishment of formal conservation easements and/or public trail easements, in order to permanently secure the benefits of the greenway corridor subject to application.
- (4) Woodlands, riparian buffers and identified natural areas or exceptional natural area within designated greenway corridors shall be preserved to the greatest extent feasible. Where feasible, more than one type of habitat area on a single tract shall be preserved in order to promote maintenance of habitat diversity.
- (5) In the context of an application for approval of a conditional use, subdivision or land development plan, special exception, variance, or building permit, the Township may require reforestation within designated greenway corridors. A landscape plan shall accompany the application and adequately illustrate proposed reforestation plans, including a list of native trees and shrubs to be provided, and defining the long-term management provisions. All plantings shall be established prior to final occupancy permit approval.
- (6) Alteration of natural ridgelines within any designated greenway corridor through grading or earthmoving shall be avoided or, if not feasible, shall be minimized to the greatest extent feasible.

M. Application of natural resource conservation standards.

- (1) Plan information and delineation of natural resources. To ensure compliance with the natural resource conservation standards of this section, the following information shall be submitted by the applicant when applying for a zoning or building permit, conditional use or special exception approval, zoning variance, or subdivision and land development approval where land disturbance is contemplated. In those cases where only a limited amount of the site will be subject to disturbance, the Board of

Supervisors may allow a smaller area of land to be shown on the plan, based upon a review and recommendation from either the Zoning Officer or the Township Engineer, where the information submitted will adequately demonstrate compliance with the natural resource conservation standards of this section. Where less than the entire site is to be shown on the plan, the application shall be accompanied by a written explanation from the applicant as to why it is not necessary to include the entire site with the plan information.

[Amended 5-9-2011 by Ord. No. 1-2011]

- (a) A site plan which identifies the limits of all natural resources on the site, including areas of woodlands or other vegetation to be preserved, and the proposed use of the site, including any existing or proposed structures.
  - (b) The limits of all encroachments and disturbances necessary to establish the proposed use on the site, including a grading plan showing existing and proposed contours.
  - (c) Calculations indicating the area of the site comprising each of any regulated natural resources and the area of each of such natural resources that would be disturbed or encroached upon. The calculations shall be shown on submitted plan sheet(s).
  - (d) Deed restrictions, conservation easements, or other mechanisms proposed to ensure continued resource protection where applicable and subject to Township approval.
- (2) Continued protection of identified natural resources. To ensure the continued protection of identified natural resources, the following requirements shall apply:
- (a) Natural resource areas on individual lots.
    - [1] For natural resource areas protected under the terms of this section located on individual lots, deed restrictions, conservation easements, or other permanent mechanisms acceptable to the Township shall be recorded for each lot that has such natural resource areas within its boundaries.
    - [2] The mechanism(s) approved by the Township for permanent protection of natural resources shall clearly state that the maintenance responsibility lies with the individual property owner and shall provide for the continuance of natural resource protection in accordance with the provisions of this chapter.
  - (b) Natural resource areas held in common.
    - [1] For natural resource areas held in common, the provisions of § **250-98**, Open space standards, and § **250-99**, Homeowners associations, shall apply.
    - [2] The party or organization responsible for the maintenance of any natural resource area(s) shall be clearly identified in applicable deed(s).
  - (c) Changes to approved plans. All applicable plans and deeds shall include the following wording: "Any structures, infrastructure, utilities, sewage disposal systems, or other proposed land disturbance indicated on the approved final plan shall only occur at the locations shown on the plan. Changes to such locations shall be subject to additional review and reapproval in accordance with the provisions of § **250-87**, Chapter **250**, Zoning, of the Pocopson Township Code."
- (3) Modifications to natural resource conservation standards.
- (a) For any use or activity subject to subdivision or land development review, as part of applicable plan submission, modification(s) may be requested to the provisions of this § **250-87**. Requested modification(s) may be granted at the discretion of the Board of Supervisors pursuant to the provisions of Chapter **190**, Subdivision and Land Development.
  - (b) For any use or activity not subject to Subdivision or Land Development review but where the use

or activity is subject to application for approval of a conditional use, special exception, or zoning variance, modification(s) to the provisions of this § **250-87** may be requested as part of such application.

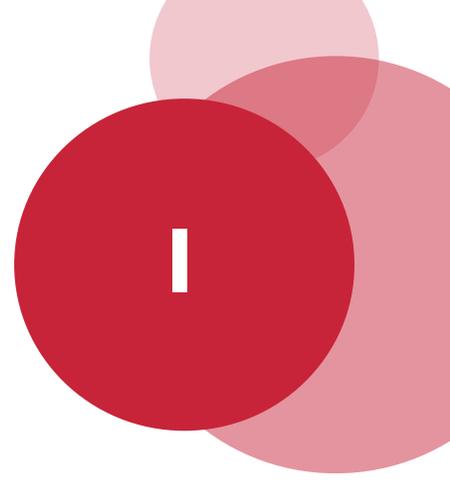
- (c) For any use or activity not otherwise subject to permit or approval as provided in M(3)(a) or (b), modification(s) to the provisions of this § **250-87** may be requested in the form of an application for grant of a special exception by the Zoning Hearing Board. Such applications shall be submitted to the Township Planning Commission for review and comment prior to formal special exception application to the Zoning Hearing Board.
- (d) In consideration of approval of any request for modification(s) under this § **250-87**, it shall be determined that the specific nature of the lawful use or activity, existing site conditions, and/or safety considerations warrant such modification(s) and that the resource protection purposes of this § **250-87** shall be adhered to, to the maximum extent practicable.
- (4) Agricultural exception to natural resource conservation standards. Disturbance or removal of woodland, hedgerow, or oldfield vegetation may be excepted from the definitions of "land disturbance" and "woodland disturbance," and from otherwise applicable regulation, for purposes of expanding or continuing agricultural use on an existing agricultural property or on adjacent property into which an existing agricultural operation may be expanded, only in compliance with the following: [Added 12-10-2007 by Ord. No. 10-2007]
- (a) Agricultural operations on the subject property shall be conducted in accordance with a conservation plan filed with and acceptable to the Township and the Chester County Conservation District.
- (b) The landowner intending to disturb or remove woodland, hedgerow, or oldfield vegetation under this exception shall, prior to initiation of such disturbance or removal, submit a signed and dated statement to the Township that, at a minimum, indicates commitment to comply with the following standards; where thereafter any of the following standards are violated, the Township shall notify the affected landowner that the exception has been violated and that the subject lands shall be regulated as if the exception never had been utilized:
- [1] Should the property be proposed for development of more than an average of one dwelling per 20 acres within seven years of the disturbance subject to this exception, the landowner shall be required to replant the disturbed area with a mix of trees and shrubs of sufficient size and number to provide a visual screen and to provide for the re-creation of the preexisting woodland, hedgerow or oldfield conditions to the satisfaction of the Township.
- [2] Should the Chester County Conservation District determine that the conservation plan in effect for the subject property has been repeatedly and/or grossly violated and that such violation(s) have not been corrected in a timely fashion after proper notice by the District or the Township, the landowner shall be required to replant the disturbed area as set forth in Subsection **M(4)(b)[1]** above.
- [3] This exception shall not apply to disturbance or removal of vegetation within any wetland, exceptional natural area, Zone One Inner Riparian Buffer or on very steep slopes.
- N. Suggested plant list. The following list includes species acceptable for woodland replacement plantings. Examples of species appropriate for use where screening or buffering is desirable or required are indicated with an asterisk (\*). Appropriate species for street tree plantings are indicated by the notation "ST." Specific species selection and planting locations shall reflect careful site evaluation as further set forth herein.

<b>Tree Common Name</b>	<b>Botanical Name of Tree</b>
<i>Evergreen trees</i>	
Eastern red cedar*	Juniperus virginiana
Canadian hemlock	Tsuga canadensis
Red (eastern or yellow) spruce*	Picea rubens
Norway spruce*	Picea abies

<b>Tree Common Name</b>	<b>Botanical Name of Tree</b>
Eastern white pine	Pinus strobes
<i>Shade trees</i>	
Red maple, ST	Acer rubrum
Sugar maple, ST	Acer saccharum
White ash, ST	Fraxinus americana
Green ash, ST	Fraxinus pennsylvanica
Sycamore	Platanus occidentalis
White oak, ST	Quercus alba
Northern red oak, ST	Quercus rubra
Tulip poplar	Liriodendron tulipifera
Scarlet oak, ST	Quercus coccinea
Pin oak, ST	Quercus palustris
Shagbark hickory	Carya ovata
American basswood	Tilia americana
American beech	Fagus grandifolia
Black cherry	Prunus serotina
London plane tree	Platanus acerifolia
<i>Small trees and shrubs</i>	
Rhododendron	Rhododendron sp.
Black chokecherry	Aronia melanocarpa
Shadbush/serviceberry*	Amelanchier canadensis
Redbud	Cercis canadensis
Flowering dogwood*	Cornus florida white
Winterberry	Ilex verticulata
Washington hawthorn*	Crataegus phaemopyrum
New Jersey tea	Ceanothus americanus
Sourwood	Oxydendrum arboreum
Ironwood	Ostrya virginiana
Arrowwood	Viburnum dentatum
Black haw	Viburnum prunifolium
Maple leaf viburnum	Viburnum acerifolium
Mountain laurel	Kalmia latifolia
Highbush blueberry	Vaccinium corybosum
Lowbush blueberry	Vaccinium vacillans
Common juniper	Juniperus communis



# APPENDICES



## PARKS & RECREATION

- I. Summary of result of the public input gathered as part of this plan



# Comprehensive Recreation Plan public meeting input

## Pine Township Recreation, Parks, and Open Space Plan Public Meeting – Pine Community Center – January 20, 2015

Attending the meeting were a total of fourteen people, of which 11 signed in. Bob Good, of Pashek Associates, introduced the agenda and explained to the attendants the purpose, and the process of the meeting. He also explained the Planning Process that Pashek Associates utilizes to obtain information and to create the Plan and to formulate its vision, goals, recommendations and implementation strategies.

Pashek Associates used the Nominal Group Technique to gather comments. The technique worked as follows:

1. Every person in attendance had the opportunity to share his or her concerns. One after another, each person shared one of his or her issues at a time. Each issue was recorded on a board in the front of the room. After each person had the chance to share one issue, additional issues were identified by going around the room person by person until all issues were heard and recorded.
2. The group identified 12 issues.
3. Finally, each person was given five stickers that were numbered 1 through 5. They were asked to prioritize the issues listed by placing the sticker with the number 5 on their highest priority, 4 on the next highest, etc.
4. After the prioritizing was completed, the points were totaled for each issue. Similar issues were combined, resulting in five key issues. The ranking of the issues, with their respective point values, is shown below.

<b>Pine Township Public Meeting</b>		
<b>January 20, 2015 Pine Community Center</b>		
<b>Opportunities and Issues in Recreation, Parks, and Open Space</b>		
<b>Rank</b>	<b>Votes</b>	<b>Opportunity or Issue</b>
1	66	Create safe pedestrian/bike access from neighborhoods to the park. Develop safer bike lanes along roads. Trail connectivity: neighborhood to neighborhood, schools, community center, commercial areas.
2	44	Community indoor/outdoor swimming pool at community center.
3	25	Additional park land and/or open space in the Township.
4	20	Additional recreation and sports facilities - T-ball fields, pavilions by the lake and the soccer fields, indoor turf facility, amphitheater.
5	2	Make Pine Township known for its parks and recreation. Includes township parks, community center, North Park, programs, and facilities.

# Comprehensive Plan public meeting input

The initial public meeting (7-23-2014) for the Implementable Comprehensive Plan elicited the following tabulated responses to open-ended questions (using nominal group technique) about what community issues residents hoped a comprehensive plan would address. Issues with Parks-and Recreation components are highlighted in yellow.

1. Community Ideas and Issues (consultant consolidated some of the similar issues into one):

Votes	Issues and Aspirations
36	Hazardous roads need improvements, Logan and Dean Roads were especially mentioned – there seemed to be two hazards: <b>safety for walkers/joggers/ bicyclists needing more sidewalks and wider berms along the roads</b> and <b>traffic safety</b> like the need to provide more traffic lights (possibly with extended green lights where appropriate) or stop signs, removing trees blocking site lines and addressing blind curves and odd intersections, additional lighting, intersections with medians and crosswalks, signs, landscaping improvements and painting fire hydrants – also mentioned was the need to plan for future development
27	Future growth should be planned (controlled) to maintain the integrity of the rural areas and to be more focused on small commercial development (like independently owned coffee shops) with a character like commercial development at Treesdale – encourage small scale businesses through zoning changes
17	<b>Future planning must include improvements to recreation in the Township – suggested facilities include: indoor/outdoor pool, basketball and tennis courts, amphitheater, 6 more picnic shelters, playground upgrade at the community park, hiking trails and an off leash dog park</b>
8	There were concerns expressed about the impact of future development on existing residents including erosion, construction traffic (the pollution from trucking) and buffers between the new development and established residences
7	Some residents are concerned with the safety implications of interconnecting roads between subdivisions – they are especially concerned with any routes that might become a short-cut to the high school – consider traffic management plan and traffic calming
7	There is a need for new housing that “baby boomers” could move into when they want to downsize from their large home; something better than an apartment
7	We should continue to support our excellent school district – the Township and school district should plan into the future together
6	There was a desire to establish a historical society and support interpretation and preservation of the Township’s history
6	Recognizing that there may need to be safety improvements to Township roads, some expressed concern that widening or realigning roads might negatively impact residents and the ability to enjoy their property
6	The Township was encouraged to advocate for residents concerning turnpike traffic noise
5	<b>Continue to work on interconnecting trails in the Township and providing linkages to North Park and explore obtaining future grants to fund these improvements</b>
5	<b>Provide more programming for youth/extracurricular activities other than sports; we need to fill the gap with the loss of some PE classes in the school district – consider increasing senior programming</b>
4	<b>There was concern about the fee structure at the community center, especially for families with younger children who might not use the fitness center; suggestion that the community center consider offering a fee break to non-profits that might meet in the center (ie scout groups)</b>

4	Concern with wild animal control (deer problems were mentioned for the Eastridge development)
3	Several suggested the importance to preserve as many trees as possible – it is the trees that in part makes Pine special and why some move into the Township
3	Several expressed concern that future plans for the Township not include higher density housing
2	Extend public sewers throughout the Township
2	Improve the Township website
2	Promote more facilities for mass transit in the Township (park and ride, HOV lanes)
2	Develop more volunteer programs for residents – cleanup was suggested as a volunteer activity
1	The multi-municipal police department is an asset to the Township and is worthy of our support
1	We should celebrate the community’s accomplishments, communicate events and opportunities, especially for newcomers to the Township – consider a welcoming procedure for new residents
1	Support and get out the word on programs offered at the Pine/Richland library
0	Grow community partnerships with police, firefighters and EMS with community awareness programs – the new fire station is “awesome” but the fire department needs more community support financially and with volunteers
0	The Township should provide residents assistance in trying to select a power supplier

## Township of Pine, Allegheny County

### SUMMARY OF The Business Analysis for a Potential Aquatic Center as part of the Community Center

The full report is available at the Pine Community Center



#### Who responded to the survey?

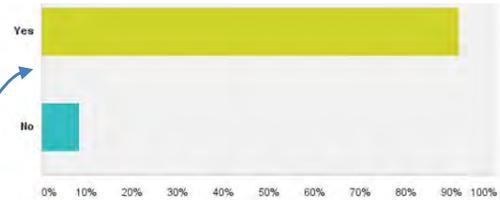
- 91% of the respondents are residents of Pine Township
- 59% of the respondents are members of the Community Center while 41% are not.
- 61% of the respondents hold a membership at another recreation facility that has a swimming pool
- Respondents represented 1,306 individual residents and 322 families

#### Is there support for an Aquatic Center?

- 92% of those who do not currently belong said it is likely they would join the Pine Community Center if it included an aquatic facility
- 94% said they support adding an aquatic center to the Pine Community Center
- 91% of those with memberships at other facilities are somewhat or very likely to move their membership to Pine if there is a pool

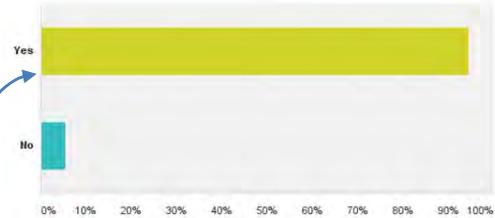
#### Q12 As a non-member, would you be more likely to purchase a Community Center membership if the facility included an aquatic center?

Answered: 251 Skipped: 71



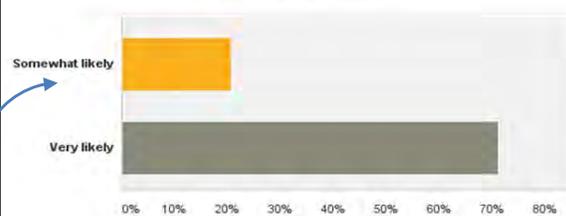
#### Q14 Do you support adding an aquatic center to the Pine Community Center?

Answered: 317 Skipped: 5



#### Q13 If you are currently a member of another indoor recreation facility, how likely are you to move your membership to Pine Community Center if an aquatic center is added?

Answered: 198 Skipped: 124



# Comprehensive Recreation Plan interviews

## Personal interviews

Andy Baechle, Director Allegheny County Parks

Phil Henry, Pine Township Supervisor

Larry Kurpakus, Pine Township Planning Director

Scott D. Anderson, Township Manager

Michael Kotyk, Bike Pittsburgh

Valerie Day Wilden, St. Barnabas (via Jim Pashek as part of the Comp Plan)

## Email Interviews

Pine Youth Soccer Association

Patrick O'Leary (via Joni Patsko) Pine Richland Baseball Association

Debra Barns, Pine Township Lacrosse Association

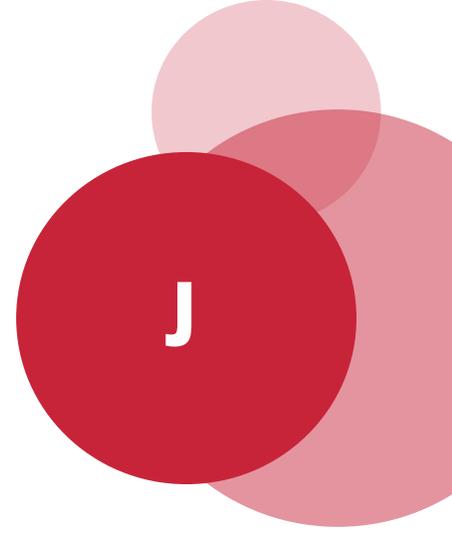
# Connectivity & Trails-specific input

Approximately 16 people with interest and/or specific expertise on bicycle and pedestrian connectivity met 2/13/2015 for a working meeting to propose the most important and desired routes and connections in and about the township.





# APPENDICES



## PARKS & RECREATION

J. Pine Community Center programs



**Fall 2015  
September-  
November**

# Pine Community Center Program Guide

## In this Issue...

**Create Lasting Memories**  
Page 5

**Discover the Explorer in your  
Child**  
Page 8

**Zoom, Zoom, Zoom—Active  
at Any Age**  
Page 10

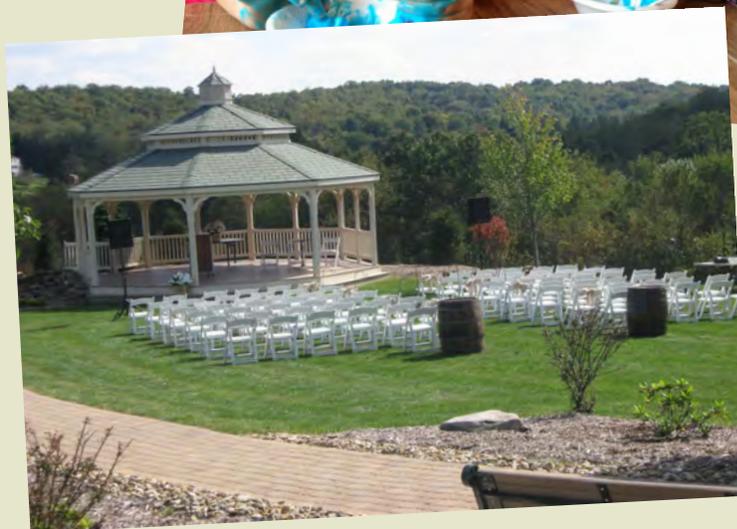
**Work Smarter, Not Harder**  
Page 14

**Blast Off!**  
Page 16

**Need a Little Extra Jolly in  
your Holiday Party?**  
Page 21

**Pine**  
COMMUNITY  
CENTER

100 Pine Park Drive  
Wexford, PA 15090  
(724) 625-1636, Ext. 3



**REGISTER ONLINE TODAY!**  
[www.twp.pine.pa.us/communitycenter](http://www.twp.pine.pa.us/communitycenter)

# GENERAL INFORMATION

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Group Fitness.....	17
Facility Rental.....	20

## Mission Statement

The Pine Community Center is a Township facility that provides an inter-generational place for members of the community to meet and enjoy mental, physical and social well-being.

## Contact

100 Pine Park Drive  
Wexford, PA 15090  
724-625-1636, Ext. 3  
pinecenter@twp.pine.pa.us

## Hours of Operation

(Fall Hours begin August 31)

### Monday-Friday

6:00 am—10:00 pm

### Saturday and Sunday

8:00 am—5:00 pm

## Holiday Closures

### September 7, Labor Day

Closed

### November 26, Thanksgiving Day

Closed

## Board of Supervisors

Michael J. Dennehy Jr.—Chair  
Philip D. Henry—Vice Chair  
Pat D. Avolio  
Edward Holdcroft  
Frank J. Spagnolo

**Scott Anderson**—Township Manager  
sanderso@twp.pine.pa.us

**Joni Patsko**—Director of Parks and Recreation  
jpatsko@twp.pine.pa.us

**Alicia Bercury**—Fitness Program Coordinator  
abercury@twp.pine.pa.us

**Meagan Quail**—Program Coordinator  
mquail@twp.pine.pa.us

**Kevin Bacon**—Facility Rental Coordinator  
kbacon@twp.pine.pa.us

**Kaylyn Begley**—Assistant Program Coordinator  
kbegley@twp.pine.pa.us

## Stay Connected!



**Kids Corner**

Kids Corner provides a safe, friendly environment for children ages 3 months to 9 years.

**Fee**

Member: \$1 per child  
 Non-member: \$3 per child

**HOURS**

**Monday-Friday**  
 9:00 am—12:00 pm

**Monday-Thursday**  
 5:30—7:30 pm

**Saturday**  
 9:00—11:00 am



**Check-In**

All members, guests and visitors **MUST** check in at the welcome desk upon each visit.

- Members will check in using their provided scan card
- All children under 12 years old, non-members, program attendees and visitors will sign in on a designated sign in form

**Class Cancellations**

The Pine Community Center reserves the right to cancel any class or program that does not meet the minimum enrollment/participation. In the event of a cancellation, the staff will notify registered participants in advance.

**PROGRAM AND CLASS REGISTRATION**

**Three Ways to Register!**

**1. Online:** Visit [www.twp.pine.pa.us/communitycenter](http://www.twp.pine.pa.us/communitycenter) and find the **Register Online** tab in the top right hand corner of every page. Create an account or sign in to register for your favorite activities and classes.

**2. In Person:** Register in person at the Pine Community Center welcome desk Monday through Friday from 8:00 am - 10:00 pm and Saturday and Sunday from 8:00 am - 5:00 pm. Payment methods: cash, check and credit/debit cards. We do not accept Discover Card.

**3. By Mail:** Send Activity Registration Form and appropriate fee to 100 Pine Park Drive, Wexford, PA 15090. Activity registration forms can be found on our website under the Program and Fitness/Wellness pages.

**Fall 2015  
 Registration Dates**

**Members**

Begins August 10

**Non-members**

Begins August 17

**REGISTER EARLY!**  
*Programs and activities that do not meet the minimum enrollment will be canceled.*

# CALENDAR

## September

1	<b>Fit N' Focused Boot Camp Begins</b>	6:15 am	Pg. 19
13	<b>Grandparents Day</b>	1:00 pm	Pg. 5
14	<b>5-Day Core Blast Boot Camp Begins</b>	8:30 am	Pg. 16
17	<b>Train Your Brain</b>	12:00 pm	Pg. 11
19	<b>PA Family Fishing Program</b>	11:00 am	Pg. 5
21	<b>5-Day Barre Blast Boot Camp Begins</b>	10:45 am	Pg. 16
25	<b>Kids Open Gym Night—Soccer</b>	7:00 pm	Pg. 9

## October

3	<b>Touch-a-Truck</b>	1:00 pm	Pg. 5
5	<b>10-Day Fat Blast Boot Camp Begins</b>	8:30 am	Pg. 16
6	<b>Fit N' Focused Boot Camp Begins</b>	6:15 am	Pg. 19
12	<b>Pumpkin Drop Off Begins</b>	8:00 am	Pg. 5
15	<b>Train Your Brain</b>	12:00 pm	Pg. 11
22	<b>Fall Harvest Senior Luncheon</b>	12:00 pm	Pg. 11
24	<b>Halloween Party in the Park</b>	1:00 pm	Pg. 5
26	<b>Halloween Zumba Party</b>	6:00 pm	Pg. 18
30	<b>Kids Open Gym Night—Wiffleball</b>	7:00 pm	Pg. 9

## NOVEMBER

3	<b>Fit N' Focused Boot Camp Begins</b>	6:15 am	Pg. 19
14	<b>Holiday Dazzle</b>	4:00 pm	Pg. 6
19	<b>Train Your Brain</b>	12:00 pm	Pg. 11
22	<b>Learn N' Burn</b>	2:00 pm	Pg. 19
27	<b>Kids Open Gym Night—Kickball</b>	7:00 pm	Pg. 9
27	<b>Black Friday Fun and Fitness</b>	9:00 am	Pg. 6

**PA Family Fishing Program**

**Saturday, September 19  
11:00 am-3:00 pm**

Join us at the Pine Park Lake for an educational program designed for families with little or no fishing experience! Families will learn basic fishing skills and have an opportunity to practice those skills. The fishing license requirement is waived for participants 16 years and older. All necessary equipment will be provided by the PA Fish & Boat Commission. **Ages:** 5 years & up. **Fee:** \$10 per child. Register by September 14.

**Touch-a-Truck**

**Saturday, October 3  
1:00-3:30 pm**

**You won't believe your eyes!** See, touch, interact and learn about a variety of fun vehicles. Check out a fire truck, police car, tractor, dump truck, ambulance and many more! **DON'T FORGET YOUR CAMERAS!** **Ages:** 12 years & under. **Fee:** \$3 per child. No pre-registration required.

**Pine's Pumpkin Patch**

**Monday, October 12-Saturday, October 31  
8:00 am-10:00 pm**

Bring in your decorated (*not carved!*) pumpkin for our 4<sup>th</sup> Annual Pumpkin Decorating Contest. Votes will be collected and all proceeds will benefit your charity of choice. **Pumpkin drop-off:** October 12-14, **Voting:** October 15-30, **Winner announced:** October 31. Pumpkin drop-off and voting can be done between 8:00 am and 10:00 pm. No pre-registration required.

**Halloween Party in the Park**

**Saturday, October 24  
1:00-4:00 pm**

A ghoulishly good time for the whole family! Enjoy the following activities: crafts, ghost stories, hayrides, and a bonfire. There will also be a costume parade and contest. **Ages:** All ages. **Fee:** \$3 per person. **Location:** Pine Community Center. No pre-registration required.

**New! Grandparents Day!**

**Sunday  
September 13  
1:00-3:00 pm**

**Celebrate National Grandparents Day at the PCC...  
Grandkids, great grandkids and grandfriends welcome!**

**Create lasting memories at our Grandparents Day celebration!**

- Games
- Activities
- Crafts
- Snacks
- Refreshments

Activities geared for children ages **6-12** years old along with their grandparents.

**Grandparents FREE**  
**Members \$10 per grandchild**  
**Non-members \$15 per grandchild**

**Pre-registration Required! Register by 9/6!**

# Pine Holiday Dazzle Show

**Sunday, November 14**

**4:00-7:00 pm**

**\$3 pre-sale/\$5 day of event**

**A wonderful holiday celebration you don't want to miss!**

- Santa arrives by fire truck
- Cookie decorating
- Crafts
- Performances by local talent groups
- Carriage rides
- Children's booth
- S'mores by the bonfire
- Live reindeer
- Storytelling
- Hat parade
- And more!
- Food and refreshments will be available at an additional cost
- Look for more information in the coming months

# BLACK FRIDAY FUN & FITNESS

**Avoid the crowds and jumpstart your day with a fitness frenzy!**

**DOORBUSTERS!**  
9am-12pm

**Friday, November 27<sup>th</sup>**  
**9 am-12 pm**

**\$5-\$10 Select Fitness Programs**

**Fitness classes beginning @ 9 am**

- VIP Member FREE
- Member \$3 per class
- Non-member \$5 per class
- Registration is required
- Minimum 6 enrolled per class

**10% OFF Fitness Punch Cards**

**Register by November 20<sup>th</sup>!**

# YOUTH PROGRAMS



## REGISTER EARLY!

A \$5 late fee will be applied to all programs for individuals registering within one week of the program start date. Also, classes that do not meet the minimum enrollment are subject to cancellation.

## STORY TIME Ages 1-3

Start your little ones love for reading early! You and your child can spend quality time together getting lost in a new story each week. Games, activities, and songs will be incorporated. *Parent participation required.*

**Dates:** 2<sup>nd</sup> and 4<sup>th</sup> Thursday of every month from September-November (NO CLASS 11/26)

**Time:** 10:00 - 10:30 am

**Fee:** Member \$12/Non-member \$24

**Minimum/Maximum:** 6/12

## SAVE YOURSELF A TRIP AND REGISTER ONLINE!

Register for our programs,  
classes and activities online!

## TOT TIME Ages 1-4

Let your little one develop gross motor skills through an organized pre-school play time. This instructor led program will guide your tot through fun games and activities to get them exploring their movement and developing motor skills. *Parent participation encouraged.*

**Dates:** 1<sup>st</sup> and 3<sup>rd</sup> Thursday of every month from September-November

**Time:** 10:00 - 10:45 am

**Fee:** Member \$21/Non-member \$42

**Minimum/Maximum:** 6/15

## MUCK-N-MESS Ages 3-5

Dress your kids in their play clothes and come ready to get mucky and messy! Your kids will have a blast getting their hands ooey and gooey while creating art work, completing science experiments and running amuck! *Parent participation encouraged.*

### Dates:

Session 1: Fridays, 9/4 - 10/9

Session 2: Fridays, 10/16 - 11/20

**Time:** 1:00 - 2:00 pm

**Fee:** Member \$18/Non-member \$36

**Minimum/Maximum:** 6/12

## PRE-SCHOOL PLAYTIME Ages 3-5

Each week, we set aside gym time for pre-school children to enjoy a variety of activities. Appropriate pre-school age items are set up to provide pre-school children and their parents a place to play and have fun.

**Date:** Every Monday, Wednesday, Thursday and Friday

**Time:** 8:30 - 10:30 am

**Fee:** Member Free/Non-member \$6

## YOUTH PROGRAMS

### SMART SMART!

**Ages 3-6**

Have your kids get a smart jump start on organized sports! This clinic teaches the basic motor skills necessary to play organized sports while spending quality one-on-one time with their parents. It focuses on teaching children, as well as the parents, throwing, catching, kicking and batting skills.

**Dates:**

Session 1: Tuesdays, 9/8-10/13

Session 2: Tuesdays, 10/20-11/24

**Time:** 6:15 - 7:00 pm

**Fee:** Member \$18/Non-member \$36

**Minimum/Maximum:** 6/12

### LIL' EXPLORERES CLUB Ages 3-6

Bring your little tyke to the Pine Park Lake and introduce them to nature. Explore the great outdoors through hiking, nature crafts, stories, and more. One hike per class. Please dress appropriately for the weather and for hiking. Pre-registration required.

**Dates:**

Session 1: Wednesdays, 9/2-10/7

Session 2: Wednesdays, 10/14-11/18

**Time:** 1:00 - 2:00 pm

**Fee:** Member \$18/Non-member \$36

**Minimum/Maximum:** 6/12

### TAE KWON DO Ages 6+

This is an introductory course where participants will learn the basics of this martial art. At your first class, you will be fitted for and order your uniform. *Please note: Cost of uniform is an additional \$25.*

**Dates:**

Session 1: Wednesdays, 9/9-10/7

Session 2: Wednesdays, 10/14-11/18

**Time:** 6:15 - 7:15 pm

**Fee:** Member \$24/Non-member \$48

**Minimum/Maximum:** 8/20



### ZUMBA® KIDS Ages 4-9

Kids get the chance to be active and jam out to their favorite music! Zumba® Kids classes feature kid-friendly routines based on the original Zumba® choreography. We break down steps, add games, activities, and cultural exploration elements into the class structure.

**Dates:**

Session 1: Saturdays, 9/19-10/24

Session 2: Saturdays, 11/7-12/19\*

**Time:** 11:00 - 11:45 am

**Fee:** Member \$36/Non-member \$48

**Minimum/Maximum:** 6/12

\*NO CLASS 11/28

# KIDS OPEN GYM NIGHTS

Kids ages 8–12 can now spend their Friday nights at the Pine Community Center with their friends having a blast playing in the gym and enjoying pizza and snacks. Each Open Gym Night will be designated to a specific sport that will be played all night long! Some sports will include dodgeball, kickball, pickle ball, floor hockey, and mat ball.

## Dates, Times & Sports

September 25th — Soccer  
7:00 - 9:00 pm

October 30th\* — Wiffleball  
7:00 - 9:00 pm

*\*Wear Halloween Costumes!*

November 27th — Kickball  
7:00 - 9:00 pm



**Fee\*:** Members \$6 per night  
Non-members \$12 per night

**\*PRE-REGISTRATION REQUIRED!**

**Minimum/Maximum\*:** 12/32

\*If minimum is not reached, program is subject to cancellation

## ADULT AND OLDER ADULT PROGRAMS

### RECREATIONAL SPORTS Ages 18+

Not only are recreational sports a great way to stay physically active through the years but they are also fun and social.

Our recreational sport activities are designed for adults ages 18 years and older. All days and times are subject to change based on gymnasium availability. All sports are limited to one court ONLY. See below for days, times, and experience level for each sport.

#### Fee for all recreational sports:

Member **FREE**/Non-member \$6

#### Pickleball

Co-ed pickleball that is designed for all experience levels.

**Date:** Every Tuesday

**Time:** 10:30 am - 12:30 pm

**Maximum players:** 20

#### Recreational Volleyball

Co-ed volleyball that is designed for the novice to intermediate player.

**Date:** Every Wednesday

**Time:** 7:30 - 9:30 pm

**Maximum players:** 18

#### Men's Basketball

Men's basketball that is designed for the competitive athlete.

**Date:** Every Thursday

**Time:** 7:30 - 9:30 pm

**Maximum players:** 18

#### Power Volleyball

Co-ed volleyball that is designed for experienced players.

**Date:** Every Friday

**Time:** 7:30 - 9:30 pm

**Maximum players:** 18

## NEW! Boomer Boot Camp

**Zoom, zoom, zoom!! This program, designed for active baby boomers ages 50-65, will incorporate age appropriate boot camp exercises.**

**A mix of low-impact exercises will provide a total body workout. Exercises will focus on many components including cardio endurance, agility, strength, flexibility and stability. Equipment that will be included will be TRX® suspension training, medicine balls, free weights, stability balls and more. Fitness assessments will be performed before and after each session to test ability and assess progress.**

#### Dates:

Session 1: Tuesdays & Thursdays, 9/29-10/22

Session 2: Tuesdays & Thursdays, 10/27-11/19

**Time:** 12:00 - 1:00 pm or 5:00 - 6:00 pm

#### Fee:

VIP Member **FREE**

Member \$48

Non-member \$64

**Minimum/Maximum:** 6/15

### BALLROOM DANCE Ages 18+

Have you always wanted to learn how to dance? Now's the time! Have fun and express yourself through various types of dance.

#### Dates/Times:

Tuesdays, 7:00 - 8:00 pm

9/1-9/22: East Coast Swing

9/29-10/27\*: Cha Cha

*\*No class 10/13*

11/3-11/24: Waltz

Tuesdays, 8:00 - 9:00 pm

9/1-9/22: Salsa

9/29-10/27\*: Country Two Step

*\*No class 10/13*

11/3-11/24: Merengue/Bachata

**Fee:** Member \$32/Non-member \$48

**Minimum/Maximum:** 4/10

# ADULT AND OLDER ADULT PROGRAMS

## SILVERSNEAKERS® Ages 65+

The Pine Community Center is a SilverSneakers® participating location! SilverSneakers® is a health plan benefit that provides a basic fitness center membership and fitness classes designed specific to older adults.

## SILVER&FIT® Ages 65+

The Pine Community Center is a Silver&Fit® participating location! Health plans offer Silver&Fit® to eligible Medicare Advantage/Supplement beneficiaries and group retirees. Silver&Fit® members have access to a basic fitness membership at no cost.

## FALL HARVEST LUNCHEON Ages 55+

The Pine Community Center welcomes all seniors to our Fall Harvest Luncheon. Bring your favorite dish and enjoy great food and great fun! Pre-registration is required.

**Date:** Thursday, October 22

**Time:** 12:00 - 1:30 pm

**Fee:**

SilverSneakers® and Silver&Fit® **FREE**  
Member **FREE**

Non-member \$6

**Minimum/Maximum:** 10/20

## VOLUNTEER OPPORTUNITIES

Are you looking to get involved? The Pine Community Center is always looking for volunteers to assist with our special events and programs. Opportunities are also available with Friends of Pine Parks and the Parks & Recreation Commission. Please contact the Pine Community Center for more information.

### REGISTER EARLY!

A \$5 late fee will be applied to all programs for individuals registering within one week of the program start date. Also, classes that do not meet the minimum enrollment are subject to cancelation.

## SILVERSNEAKERS AND ACTIVE OLDER ADULT PROGRAMS

Ages 55+

We offer a variety of fitness classes and programs for active older adults. Our classes and programs are open to SilverSneakers® members, members and non-members. These classes and programs are **FREE** for SilverSneakers® and full facility members. Associate and non-members **MUST** pay a guest fee in order to participate.

### Fitness Classes and Activity Offerings:

- Fitness Challenges
- SilverSneakers® Classic
- SilverSneakers® Circuit
- Yoga
- Zumba® Gold
- Quarterly Luncheons
- Activity Days
- Blood Pressure Screenings

## Train Your Brain!

Ages 55+

**Socialize and have fun while training your brain! Crossword puzzles, brain teasers, word searches, memory games and more. Light snacks and refreshments will be provided.**

***Pre-registration is required.***

**Dates:** 3rd Thursday of every month  
September-November

**Time:** 12:00 - 1:30 pm

**Fee:**

SilverSneakers® and Silver&Fit® **FREE**

Member \$18/Non-member \$36

**Minimum/Maximum:** 6/24

# FITNESS CENTER AND MEMBERSHIPS

Type of Membership	3 Month	Annual	12 Month Debit
Resident Adult	\$135	\$360	\$30
Non-resident Adult	\$195	\$540	\$45
Resident Family	\$240	\$660	\$55
Non-resident Family	\$345	\$900	\$75
Resident Senior	\$105	\$300	\$25
Non-resident Senior	\$150	\$420	\$35
Resident Teen	\$105	\$300	\$25
Non-resident Teen	\$150	\$420	\$35



## BECOME A MEMBER

As a member, you have access to a full fitness center, indoor track, gymnasiums, locker rooms and several seating areas with free Wi-Fi.

Members also have priority on registration and receive discounts on all classes, programs, and events. There's no joining fee and **ANYONE** can become a member (that includes non-residents).

**Do you own or work at a business located in Pine?** Please contact us for more information on Business Memberships.

## FITNESS EQUIPMENT

We offer a variety of cardiovascular equipment such as treadmills, ellipticals, stationary and upright bikes, stair steppers, Expresso bikes, a rowing machine, and Cybex ARC trainers.

Our strength training equipment includes a variety of single-station strength machines, a cable crossover, Olympic benches, incline leg press, smith machine, dumbbells, TRX Suspension Training, and kettlebells.

All new members are provided with a basic complimentary orientation on the fitness equipment.

## GYMNASIUMS AND INDOOR TRACK

Our two full size gymnasiums are an excellent venue for your next game of basketball or to let the kids play while you workout.

Our 1/13 mile, temperature controlled indoor track makes for a perfect place to walk or run.

## LOCKER ROOMS

Our clean, convenient, and comfortable locker rooms offer spacious dressing areas and lockers, showers, a vanity with mirror and restrooms.

Lockers can be used daily at no cost, however, items cannot be stored in lockers unless a Locker Rental Agreement has been approved.

**Locker rental fee per month\*:** \$10

**Annual rental fee:** \$100

\*3-month minimum

# FITNESS CENTER AND MEMBERSHIPS

## PERSONAL TRAINING Ages 13+

Reach your goals! Get the personal attention and motivation you need to maximize your exercise routine and meet your health and fitness goals.

### Individual

# of Sessions	Member	Non-Member
1	\$45	\$55
3	\$129	\$159
6	\$258	\$318
9	\$369	\$459
12	\$468	\$588

### Partner (fee per person)

# of Sessions	Member	Non-Member
1	\$30	\$40
3	\$84	\$114
6	\$168	\$228
9	\$234	\$324
12	\$288	\$408

### Trio (fee per person)

# of Sessions	Member	Non-Member
1	\$25	\$35
3	\$69	\$99
6	\$138	\$198
9	\$189	\$279
12	\$228	\$348

Contact Alicia Bercury, Fitness Program Coordinator at [abercury@twp.pine.pa.us](mailto:abercury@twp.pine.pa.us) or 724-625-1636, Ext. 160 to schedule personal training.

## TEEN WEIGHT TRAINING Ages 13-15

Our program is designed for teens **ages 13-15** who wish to use the fitness area without parental supervision. Teens will learn safe and proper technique, proper program design and program variation. This class will be led by a Certified Personal Trainer, ACSM Health Fitness Specialist or staff with a 4-year Exercise Science degree. **Program consists of (3) one hour sessions.**

### Fee:

One-on-one: \$90

Partners: \$75 (each person)

Trio: \$60 (each person)

## NOT A MEMBER?

Try the fitness center, track or gymnasium as a guest. Participants using the fitness center must be 13 years and older (persons 13-15 must be accompanied by an adult). Persons utilizing the track or gymnasium under the age of 13 must be supervised by an adult.

**CONTACT US FOR MORE INFORMATION ABOUT OUR GUEST POLICY & FEES AND HOW TO RECEIVE A ONE TIME 3-DAY FREE GUEST PASS !**



# TRX<sup>®</sup> Small Group Training

Tired of your  
current  
exercise plan?

Not seeing the  
results  
you want?

Ready for a  
change?

Enjoy training  
with a group?

Try something  
**NEW**  
and take your  
fitness to the next level!

The TRX<sup>®</sup> Suspension Trainer is the original, best-in-class, workout system that leverages gravity and your body weight to perform hundreds of exercises.

A fast, effective workout to build functional strength, increase balance and improve core stability.

## The TRX<sup>®</sup> Suspension Trainer:

- Delivers a fast, effective total body workout
  - Helps build a rock-solid core
- Benefits people of all fitness levels (athletes to seniors)

See Group Fitness Schedule for days/times

- Registration is required for TRX<sup>®</sup> Classes
- New sessions begin every 4-5 weeks
  - Only 6 people per time slot
- Please see the front desk for registration info

# FITNESS AND WELLNESS PROGRAMS

## REGISTER EARLY!

A \$5 late fee will be applied to all programs for individuals registering within one week of the program start date. Also, classes that do not meet the minimum enrollment are subject to cancellation.

## EXERCISE PRESCRIPTIONS Ages 13+

Get a customized workout program just for you! Whether you're looking for general health, weight loss, sport specific, or other exercise program, we can customize a workout for the results you want. Exercise prescriptions take into account an individual's goals, fitness level, health limitations and current exercise routine.

We have several options available to accommodate your specific needs. For more information, contact Alicia Bercury, Fitness Program Coordinator at [abercury@twp.pine.pa.us](mailto:abercury@twp.pine.pa.us).

## QUICKSTART PROGRAM Ages 16+

Our QuickStart program is great for new members and beginner exercisers! Your QuickStart workout plan, designed by a personal trainer, will cover 3 components of fitness—cardiovascular, resistance training and flexibility. This 2-week workout plan will cover everything you need to know in order to get started on the right track. Your new plan will cover:

- Frequency—How often?
- Intensity—How hard?
- Time—How long?
- Type—What exercises and equipment?
- Heart Rate Calculation

**Fee: \$35**  
(members only)

All information will be explained in-person with a personal trainer and a written chart will be provided. A follow up appointment will be scheduled 2 weeks out from the initial meeting. Fitness goals and recommendations will be discussed.

## Yoga at the Gazebo



All fitness levels welcome.  
Please bring your own mat.

*Flow into Fall with Yoga at the Gazebo! Enjoy breath work, asanas (postures) and simple flowing patterns to improve strength, flexibility, balance and mental focus.*

### Available Dates:

Thursday, September 10 at 11:00 am  
Sunday, September 13 at 12:00 pm  
Thursday, September 17 at 11:00 am  
Sunday, September 20 at 12:00 pm  
Thursday, September 24 at 11:00 am

**REGISTRATION REQUIRED!** MAXIMUM ENROLLMENT PER CLASS IS 10.

VIP Member FREE

Member \$6 per class

Non-member \$8 per class

*Don't let the word  
"boot camp" scare you!*

Our "boot camps" are designed to be fun and we welcome participants of all fitness levels. Don't let us fool you though...you will still work hard and have a blast while doing it!

## 5-DAY CORE BLAST BOOT CAMP

*Core Blast Boot Camp* is designed to blast calories with cardio, strength and core work. Each calorie blasting workout will last 30 minutes.

Dates: September 14-18

Time: 8:30 am or 5:00 pm

Fee: VIP \$10/Member \$15/Non-member \$25

*Barre Blast Boot Camp* is designed to fire up the lower body! Using low-impact moves, get ready to shake shake shake. Small amounts of core and upper arm work will be incorporated. Each workout will last 30 minutes.

Dates: September 21-25

Time: 10:45 am

Fee: VIP \$10/Member \$15/Non-member \$25

## 5-Day Barre Blast Boot Camp

## 10-DAY FAT BLAST BOOT CAMP

*Our Fat Blast Boot Camp* is designed to challenge you in every way possible. Each day of your 10-day adventure will bring a fresh, new workout...HIIT, strength, Plyometrics, core, endurance, agility and more. Weight and measurements will be taken before and after (optional). Focus is not unhealthy weight loss, rather motivation to continue exercising. A general meal plan will be included. Each workout will last 30 minutes.

Dates: October 5-14

Time: 8:30 am

Fee: VIP \$15/Member \$35/Non-member \$45

# VIP Fitness Pass!

The VIP Fitness Pass entitles members to unlimited group fitness classes. VIP members also receive a discounted rate when registering for select fitness programs such as TRX® Small Group Training and other health/wellness offerings.

The VIP Fitness Pass is available for all membership categories:

Adult, family, teen, senior, SilverSneakers® and Silver&Fit®

- The additional cost for an individual is \$20/month
- The additional cost for a family of 2 or more is \$25/month

*Please note: VIP Pass is only valid with full facility, annual memberships. The VIP Pass is a 12-month commitment.*

## FITNESS CLASSES Ages 13+

Our fitness classes are designed to meet the needs for participants of all fitness levels. Whether you're interested in a hardcore strength workout, a relaxing Yoga class or a kick butt cardio workout, we have the class for you! Our qualified instructors create classes that are fun, motivating, and challenging. We offer a variety of class days and times to meet the needs of your busy schedule.

## FITNESS CLASSES OFFERED

Please visit our website for current class schedule and class descriptions. Check our online schedule regularly for updates.

- Barre
- Beginner Classes
- Boot Camp
- Cardio Kickboxing
- Cardio and Strength
- Core Conditioning
- Cycle
- Express Classes
- High Intensity
- Pilates
- RIP® (compare to LesMills BodyPump)
- Total Body Strength
- Yoga
- Zumba®

## FALL SESSION SCHEDULE

**Session 1:** September 8-October 4

**Session 2:** October 5-November 1

**Session 3:** November 2-November 29

*NOTE: All classes will be canceled on September 7, November 25 and November 26. See Black Friday Fun & Fitness for classes on November 27.*

### Registration Per Class Session:

VIP Pass

No registration required

Member

4-week session \$24

5-week session \$30

Non-member

4-week session \$32

5-week session \$40

### REGISTER EARLY!

**A \$5 late fee will be applied to all programs for individuals registering within one week of the program start date. Also, classes that do not meet the minimum enrollment are subject to cancellation.**

## GROUP FITNESS

### FITNESS PUNCH CARDS AND DROP-INS

Are you thinking about taking a class but just aren't sure which one is right for you? We offer fitness punch cards and single class drop-ins for your convenience. Punch cards and drop-ins **MUST** be purchased prior to class.

#### Punch Cards

##### Member

5 classes \$35/10 classes for \$70

##### Non-member

5 classes \$45/10 classes for \$90

#### Drop-ins

Member \$8 per class

Non-member \$10 per class

*What are you waiting for? Try a fitness class today!*

### NEW! INTRO TO TRX® Ages 13+

This program is designed to prepare you for TRX Small Group Training. It is not required, but **highly recommended** that you complete at least one session prior to joining one of our small group classes. You'll learn valuable information such as strap adjustment, intensity variations, body positions and more. Each class will last approximately one hour.

#### Dates/Times:

September 22 at 8:30 am

September 23 at 7:30 pm

September 27 at 1:00 pm

October 27 at 8:30 am

October 28 at 7:30 pm

November 1 at 1:00 pm

#### Fee:

VIP Free

Member \$6

Non-member \$8

**Minimum/Maximum:** 3/6

# HALLOWEEN ZUMBA PARTY!



**Sign up for a SPOOKTACULAR fitness event! Wear your favorite costume and enjoy an hour long Zumba class followed by some tasty holiday treats! Costumes not required, but highly encouraged!**



**Date:** Monday, October 26

**Time:** 6:00-8:00 pm



**Event Fee:**  
VIP FREE  
Member \$5  
Non-member \$10

*Register by October 19th!*

## LEARN N' BURN Ages 13+

LEARN new choreography & BURN mega calories in one action-packed two hour fitness experience! Get a 30 minute sample of each—POWER STEP, WAR and RIP! **Prizes, snacks, and refreshments will also be provided!**

POWER STEP® is an athletic approach to step aerobics. It features functional athletic training and incorporates a platform for cardio, strength, balance and agility training.

WAR® an exhilarating total body workout where a fusion of martial arts meets chart-topping hits. Learn how to punch effectively, kick safely and perform hooks and uppercuts like the pros.

RIP® is a barbell workout that incorporates functional strength training. Every movement plane is attacked using weights and body weight. Featuring safe and motivating exercises, and great music to create a thrilling group fitness atmosphere.

*Please note: It is not required that attendees participate in all fitness classes.*

**Date:** Sunday, November 22

\*Pre-registration required

**Time:** 2:00 - 4:00 pm

**Fee:**

VIP Member Free

Member \$5

Non-member \$10

### REGISTER EARLY!

A \$5 late fee will be applied to all programs for individuals registering within one week of the program start date. Also, classes that do not meet the minimum enrollment are subject to cancelation.

## FIT N' FOCUSED BOOT CAMP

Ages 13+

**Get energized, get moving, and get your mornings started off right!** Each day is a new **30 MINUTE** workout focusing on one or more fitness training principles (i.e. cardio, strength, endurance, power, agility, and balance). Join us today and get the **FIT** you've been looking for! *Variations will be offered for all fitness abilities.*

**Dates:**

September 1-October 2

October 6-30

November 3-24

**Days:**

*Classes are held Tuesday, Thursday and Friday*

**Time Slots:**

6:15 - 6:45 am or

7:00 - 7:30 am

**Fee (per month):**

VIP \$15

Member \$35

Non-member \$45



## CLASS OF THE MONTH Ages 13+

Our monthly promotion gives members the opportunity to try a variety of fitness classes at no cost. Each month, we choose a "Class of the Month." Members can attend 1 free class within the month.

This is a great way to mix up your workout...and you may find a class you really LOVE!

This promotion is for **MEMBERS ONLY!** Join today to take advantage of "Class of the Month."

# HAVE YOUR NEXT **BIRTHDAY PARTY** At the Pine Community Center!

## Birthday Party Packages

Celebrate your child's special day with a variety of fun options!

BALLOON ARTISTS

DANCE PARTIES

FACE PAINTING

BOUNCE HOUSES

*Plus, a wide variety of  
Sports Packages!*

## Scenic Wedding Packages!

Let Pine Community Center be part of your special day!

We offer amenities to suit your bridal shower, rehearsal dinner, ceremony and reception needs!

### Amenities

- Community Room that seats up to 160 guests
  - Gazebo
  - Kitchen
- Picture perfect scenery

## NEW! Zumba® Dance Party Birthday Packages

**Kids will have a blast celebrating their birthday while movin' and groovin' to fun, upbeat music!**

Our instructor will lead party guests through an action-packed hour of kid-friendly routines, games and FUN! This package also includes one hour in our party room for cake, ice cream and presents!



Contact Kevin Bacon, Rental Coordinator, at 724-625-1636, Ext. 119 for additional rental information.



## **Book Your Event at the Pine Community Center!**

### **Looking for the perfect place to have your next event?**

We welcome you to host your event with us! With a wide range of available rooms, we can accommodate as little as 20 and as many as 160 guests.



Rooms equipped with sound/projection capabilities are an excellent choice for a business meeting or seminar.

From small luncheons to larger wedding receptions, we have what you need to make your event memorable!



Meeting Room



Catering Kitchen



Gazebo

**CONTACT KEVIN BACON, FACILITY RENTAL COORDINATOR, FOR  
RENTAL INFO: 724-625-1636, Ext. 119 or [kbacon@twp.pine.pa.us](mailto:kbacon@twp.pine.pa.us)**



## Township of Pine

230 Pearce Mill Road  
Wexford, PA 15090

Phone: 724-625-1591  
Fax: 724-625-1560

Business Hours:  
Monday - Friday  
8:00 am - 4:30 pm

### Registration for Programs and Classes!

#### Three ways to register!

- 1. Online:** Visit [www.twp.pine.pa.us/thecenter](http://www.twp.pine.pa.us/thecenter) and find the **Register Online** tab in the top right hand corner of every page. Create an account or sign in to register for your favorite activities and classes.
- 2. In Person:** Register in person at the Pine Community Center welcome desk Monday through Friday from 8:00 am - 10:00 pm and Saturday and Sunday from 8:00 am - 5:00 pm. Payment methods: cash, check and credit/debit cards. We do not accept Discover Card.
- 3. By Mail:** Send Activity Registration Form and appropriate fee to 100 Pine Park Drive, Wexford, PA 15090. Activity registration forms can be found on our website under the Program and Fitness/Wellness pages.

**Please call 724-625-1636, Ext. 3 with questions regarding registration.**

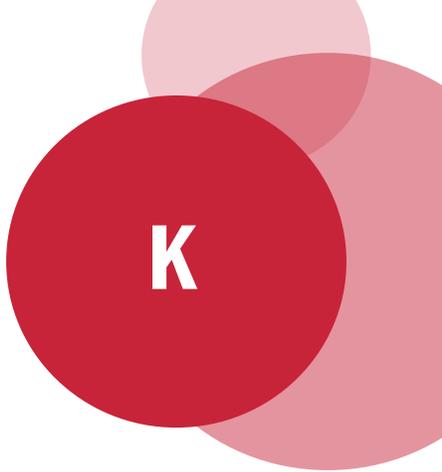
### Updated Website!

*We're excited to announce that our updated website is up and running!  
Our updated website will make finding and registering for programs and  
classes online much easier!*

### Stay Connected!

*Like us on Facebook and Follow us on Twitter!*

# APPENDICES



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## PARKS & RECREATION

K. Open space, park land and facilities



# Township of Pine open space, park land and recreation facilities

## COMPARISON OF PARK LAND AND FACILITIES

K

Township of Pine: 2010 Population - 11,497

### PARK LAND

Total township-owned park acreage - 150

Township-owned park land acres per 1,000 residents = 13

PRORAGIS Benchmark for acres per 1,000 = 8.3

Total Park Acreage with North Park – 920

### PINE COMMUNITY PARK

108 Acres - 41 acres recreational use; 67 acres open space

- Pine Community Center
- 1 Pony League Field/Soccer Field
- 1 Colt League Field/Soccer Field
- 2 Little League Fields/Soccer Field
- 2 Soccer Fields
- Multipurpose Field
- 2 Sand Volleyball Courts
- Concession Stand with Restroom Facilities
- Children's Playground Area
- Pre-School Playground Area
- Fishing Lake
- Nature Trail
- Hiking Trails
- 2 Pavilions
- Basketball Court
- Bocce Court



### PINE HAVEN PARK

38 acres - 2 acres recreational use; 36 acres open space

- Nature Area
- Hiking Trail

### KARRINGTON WOODS PARK

7 acres - 2 acres recreational use; 5 acres open space

- Multi-Purpose Field
- Soccer Goals
- Children's Play area - Tot Lot
- Picnic Tables
- Park Benches
- Court Basketball/Hockey Court

## **NORTH PARK**

3,075 acres total- Approximately 770 acres in Pine Township

- Basketball courts
- McKinney Soccer Complex
- Rectangular sports fields
- Marshall Lake
- Walking Trails
- Park Trails
- Nature Trail
- Wetland
- Ice Skating Rink
- Admin Building
- Observation Tower
- Senior Softball Complex
- Off-Leash Dog Area
- Horseshoe Pits
- Lodge



## **OPEN SPACE**

### **TOWNSHIP-OWNED**

Clover Lane Open Space (2 parcels) - 108.57 Acres

South Lake Drive Parcel- 7.2 acres

Trillium Court Parcel - 8 acres

Pinkerton Road - 5.3

Colony Court - 8.8

Fox Meadow Drive - 5.8

Fox Meadow Drive - 13.2

Fountain Hills Drive - 7.4

Bradford Drive - 7.3

### **CONSERVATION EASEMENTS**

Irwin Run - 73 acres Owner: Allegheny Land Trust

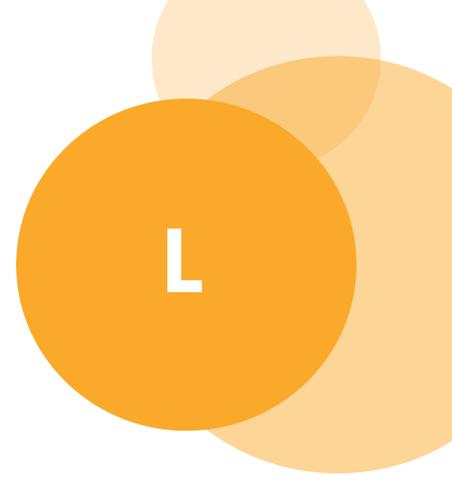
Irwin Run Conservation Area conserves forever approximately 73 acres adjacent to North Park, helping to buffer the park and protecting beneficial wetlands, densely wooded slopes and stream valley. The 1995 Allegheny County Greenway Plan identifies the valley in which this property lies as a proposed “Conservation Corridor.”

### **HOA OR DEVELOPER - OWNED PARCELS**

Approximately 50 parcels = 706 acres

### **AGRICULTURAL EASEMENTS AND SECURITY AREAS - 446.45 ACRES**

# APPENDICES



## PUBLIC INFRASTRUCTURE

- L. Sample ordinance governing stormwater management fee (Mt. Lebanon, PA)



Bill No. 11-11

Introduced: June 27, 2011

By Commissioner: Matt Kluck

Enacted: August 9, 2011

MT. LEBANON, PENNSYLVANIA

ORDINANCE NO. 3187

AN ORDINANCE OF MT. LEBANON, PENNSYLVANIA  
ESTABLISHING A FEE FOR STORMWATER COLLECTION AND  
MANAGEMENT

WHEREAS, it appears that Mt. Lebanon, PA ("Mt. Lebanon") has constructed and/or maintains, and will continue to construct and maintain, a system including sewers and drains to collect and manage stormwater; and

WHEREAS, Mt. Lebanon desires to assess a fee for all properties that are connected with, use, are serviced by or are benefited by such system.

NOW THEREFORE, Mt. Lebanon, Pennsylvania, hereby ordains:

Section 1. Title

This chapter shall be known and may be cited as the "Mt. Lebanon, Pennsylvania Stormwater Management Fee Ordinance."

Section 2. Statement of Findings

- A. Mt Lebanon currently incurs costs to runs a stormwater system.
- B. Inadequate management of accelerated stormwater runoff throughout a watershed increases flood flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of existing streams and storm sewers, greatly increases the cost of public facilities to convey and manage stormwater, undermines floodplain management and flood reduction efforts in upstream and downstream communities, reduces groundwater recharge and threatens public health and safety.
- C. Inadequate planning and management of stormwater runoff throughout a watershed can harm surface water resources by changing the natural hydrologic patterns, accelerating stream flows (which increase scour and erosion of stream beds and stream banks,

thereby elevating sedimentation), destroying aquatic habitat, and elevating aquatic pollutant concentrations and loadings such as sediments, nutrients, heavy metals and pathogens. Groundwater resources are also impacted through loss of recharge; stormwater is an important water resource which provides groundwater recharge for water supplies and baseflow of streams, which also protects and maintains surface water quality.

D. A comprehensive program of stormwater management is fundamental to the public health, safety, welfare and the protection of the residents of Mt. Lebanon, their resources and the environment in order to control items such as flooding, erosion and pollution.

E. The collection and conveyance system for stormwater includes underground pipes, but also includes conduits, inlets, culverts, catch basins, gutters, ditches, channels, detention ponds, streets, curbs, and drains.

F. The nature of stormwater is that any system to control stormwater must be designed for, and funds must be expended to control, peak flow, total runoff volume and pollution in the stormwater.

G. These three factors all relate to and are driven by impervious surface; once property is developed, peak flow, runoff volume and pollution all increase greatly.

H. Peak flow occurs most often during periods of intense rainfall and/or when the ground is saturated (can accept no more water) or is arid (concrete like surface resulting from overly dry conditions).

I. Because of the effect of weather on stormwater (e.g. extended dry or wet periods), no developed property can always accept all stormwater, and all developed properties therefore generate stormwater runoff.

J. In a developed, urban environment such as Mt. Lebanon, each developed property generates runoff and therefore uses or is in some fashion connected with, serviced by or benefited by the stormwater Sewerage System, which normally functions by collecting stormwater from a property and/or by preventing stormwater from entering another property.

K. Stormwater is heavily polluted when there has not been rain for a period of time, and sediment, yard waste, animal waste, pesticides, herbicides, oil and grease can be found in stormwater.

L. Impervious surface is a primary indicator of the generation of stormwater and usage of the stormwater Sewerage System.

M. The effects of stormwater runoff can be minimized by using project designs that maintain the natural hydrologic regime and sustain high water quality, groundwater recharge, stream baseflow and aquatic ecosystems.

N. Federal and state regulations (including those found at 40 CFR Part 122) require Mt. Lebanon to implement a program of stormwater controls. Mt. Lebanon is required to obtain

a permit for stormwater discharges from their separate sewer system under the National Pollutant Discharge Elimination Systems (NPDES).

O. Mt. Lebanon desires to establish fair and equitable user charges to assure that each Property and recipient of services within Mt. Lebanon will pay its proportionate share of the costs of operation, maintenance, repair, administration, replacement and improvement of all stormwater services provided or paid for by Mt. Lebanon.

P. The charges as determined herein are fair and equitable and are based upon the following facts: a minimum fee per residential unit is reasonable; the basis for the equivalent residential unit of 2400 square feet of impervious surface was based on a statistical sampling of properties in Mt. Lebanon; the requirement that a property have 800 square feet of impervious surface is reasonable based on the use of aerial photography to determine impervious surface and reasonably defines what is a developed property; the use of aerial photography provides an accurate measurement for impervious surface; the standard charge for single family dwellings is based on the fact that there is not a great deal of variation in size, nor any substantial manner to control stormwater runoff; the inclusion of townhomes as a single family dwelling takes into account the common areas; and that on commercial and institutional properties, the opportunity to control runoff in a meaningful way typically does exist and should be encouraged and acknowledged.

### Section 3. Definitions

A. Words and terms used in this Ordinance and not given specific definition shall be defined as set forth in applicable statutes of the Commonwealth of Pennsylvania or ordinances of Mt. Lebanon, if any, and shall otherwise be given their ordinary and common meaning.

B. For purposes of this Ordinance, the following words and terms shall be defined as set forth below:

(1) **Equivalent Residential Unit (ERU)** - means the measure of impervious ground cover for a typical single-family residential property used in assessing the fees for each parcel of property, and which has been determined to be 2,400 square feet.

(2) **Impervious Surface** - means those hard surface areas either which prevent or retard the entry of water into the soil in the manner that such water entered the soil under natural conditions pre-existent to development, or which cause water to run off the surface in greater quantities or at an increased rate of flow than that present under natural conditions pre-existent to development, including, without limitation, such surfaces as roof tops, asphalt, concrete, pavers, compacted aggregate engineered and maintained for vehicular traffic or parking, paving, driveways and parking lots, private streets, walkways, patio areas, storage areas or other surfaces which similarly affect the natural infiltration or runoff patterns existing prior to development.

(3) **Mt. Lebanon** - Mt. Lebanon, Pennsylvania, a home rule municipality.

(4) **Operation, Maintenance and Capital Costs** - The associated costs of equipment and facilities, energy, manpower, materials, property acquisition, transportation and services required to collect, convey, detain, pump and transport stormwater, flood protection, keep equipment and facilities functioning satisfactorily and economically, administer the Sewerage System and shall include sums paid to defray costs of Mt. Lebanon's improvements to the Sewerage System.

(5) **Owner** - Any person, firm, corporation, individual, partnership, company, association, society or group owning real property in Mt. Lebanon.

(6) **Property**-each lot, parcel, building or portion thereof containing 800 or more square feet of Impervious Surface.

(7) **Rental, Rates and Charges** - Sums assessed, imposed and to be collected from each Property which uses, benefits from or is serviced by the Mt. Lebanon Sewerage System or which discharges stormwater, directly or indirectly, into the Mt. Lebanon Sewerage System for the use of and the service rendered and improvement of such system.

(8) **Replacement** - The associated costs of obtaining and installing equipment, accessories or appurtenances which are necessary during the service life of the Mt. Lebanon Sewerage System so as to maintain the capacity and performance for which said system was designed and constructed; shall include costs associated with improvements to the Sewerage System.

(9) **Sewerage System** - The system of collection and conveyance, including pipes, conduits, mains, inlets, culverts, catch basins, gutters, ditches, channels, detention ponds, streets, curbs, drains and all devices, appliances and facilities appurtenant thereto used for collecting, conducting, pumping, conveying, detaining and/or treating stormwater.

(10) **Stormwater** - Includes runoff water from all precipitation events, snowmelt and springs.

(11) **User** - Any person, firm, corporation, individual, partnership, company, association, society or group using, benefiting from or being served by the Mt. Lebanon Sewerage System.

#### **Section 4. Imposition of Rental, Rates and Charges**

For the use of, benefit by and the services rendered by the Sewerage System, including its operation, maintenance, repair, replacement and improvement of said system and all other expenses, rental, rates and charges are hereby imposed upon each and every Property that is connected with, uses, is serviced by or is benefited by Mt. Lebanon's Sewerage System, either directly or indirectly, and upon the owner(s) of such Properties. Such rental, rates and charges are imposed on a four month basis on the first of September, January, and May of each year. Such rental, rates and charges shall be payable to Mt. Lebanon by and collected from the owners of such Properties as hereinafter provided, and shall be determined as set forth below.

A. Each Property that contains a single-family residential dwelling, townhouse, or duplex shall be charged for one (1) ERU for each individual dwelling unit. The ERU charge shall be eight dollars (\$8.00) per month.

B. The charge for each other Property within Mt. Lebanon shall be based upon the number of square feet of measured impervious surface, as determined through aerial photography and surface feature evaluation processes, expressed in whole ERUs by rounding to the next highest ERU. The charge for each other Property shall be computed by multiplying the number of ERUs for a given Property by the unit rate established by Mt. Lebanon as set forth above in subsection A above. In no event shall any Property pay a charge of less than one ERU.

C. Notwithstanding the foregoing, the following Property shall be exempt from rental, rates and charges under this Ordinance.

(1) Public Street, as defined in the Mt. Lebanon Subdivision and Land Development Ordinance.

(2) Private Street, as defined in the Mt. Lebanon Subdivision and Land Development Ordinance.

#### **Section 5. Uniform Application of Rental, Rates and Charges**

Rental, rates and charges shall be assessed, imposed, liened and collected as to all Property, owners, lots, parcels, buildings units and users.

#### **Section 6. "User" and "Owner" Distinguished**

References in this Ordinance to "use," "user," "unit" or portion of a Property, lot, parcel or building with respect to the calculation and assessment of sewer rental, rates and charges shall not be construed to modify or alter the fact that sewer rental, rates and charges shall be assessed and imposed upon the Property pursuant to 53 P.S. § 7106, et seq., as may in the future be amended, and the owner of each Property against which sewer rental, rates and charges are imposed and assessed under this Ordinance shall be and remain liable for payment of the same, whether or not such owner occupies the Property. Nothing in this Ordinance shall be construed to prohibit or limit an owner's ability to collect by lease or contract sums due by a tenant or other occupier of the owner's Property, but such lease or contract shall not bind Mt. Lebanon or limit in any way Mt. Lebanon's authority to impose, assess, lien and collect sewer rental, rates and charges.

#### **Section 7. Billing and Collection of Rental, Rates and Charges**

The rental, rates and charges fixed and established by this Ordinance shall be effective as to all Properties that use, are served or are benefited by the Mt. Lebanon Sewerage System existing as of the effective date of this Ordinance, and shall be effective to all other Properties thereof that use or are so served or benefit subsequent to the effective date of this Ordinance. Rental, rates and charges imposed by this Ordinance shall be assessed and billed by Mt. Lebanon effective as of the first day of each calendar third beginning in September or on such other basis

as the Commission or its designee shall authorize. A bill shall be prepared and mailed by Mt. Lebanon (or its designee or contractor) on or before the first business day of January, May and September of each year as to calendar quarter billing or on or before the applicable billing date for other periods to the owner of each premises served by the Mt. Lebanon Sewerage System. Such assessments shall be payable at their face amount during the 30 days next following the date on which said assessment bill was mailed. [Starting in January, 2012, a discount of 2% will be given to any Owner that pays the entire calendar year rental rates and charges]. The rental, rates and charges assessed and collection will not be subject to proration or refund by Mt. Lebanon in the event a Property is sold; provided, however, that this sentence shall not bind a buyer and seller from making their own proration of any rental, rates and charges assessed hereunder.

#### **Section 8. Late Payment Penalty**

Effective on the first day of the calendar month next following an assessment billing, a penalty of five percent (5%) of the rental, rates and charges assessed for that calendar quarter and not paid within the calendar month of the assessment shall be added for nonpayment within the time allowed.

#### **Section 9. Interest on Unpaid Rental, Rates and Charges**

Interest at the rate of ten percent (10%) per year from the first day of the calendar month next following that month in which sewer rental, rates and charges were assessed and billed shall accrue and be added to all original amounts of sewer rental, rates and charges remaining unpaid at the end of the calendar month in which the same were first imposed and assessed, and shall continue to accrue until the full amount of such rental, rates and charges is paid in full.

#### **Section 10. Rental, Rates and Charges Constitute Lien on Property**

In accordance with the Municipal Claims Act, 53 P.S. § 7101, et seq. (as amended), all rental, rates, and charges, penalties, interest, collection fees, lien filing and satisfaction fees and other charges imposed for failure to pay promptly shall constitute a lien upon and against the subject Property and its owner from the date of their imposition and assessment.

#### **Section 11. Exemptions and Credits Applicable to Rental, Rates and Charges**

Credits against Rental, Rates and Charges are an appropriate means of adjusting fees, rates, rental, charges, fines and penalties, under some circumstances, to account for applicable mitigation measures. Credit mechanisms are attached hereto as Appendix A. No exception, credit, offset, or other reduction in rental, rates and charges shall be granted based on age, race, tax status, economic status or religion of the customer, or other condition unrelated to the demand for and cost of services provided by Mt. Lebanon.

#### **Section 12. Appeal Procedures**

A. Any owner who believes the provisions of this Ordinance have been applied in error may appeal in the following manner and sequence.

(1) An appeal of a rental, rate and charge must be filed in writing with the Public Works Director or his/her designee within thirty (30) days of the charge being mailed or delivered to the Property owner. Any appeal must state the reasons for the appeal.

(2) Using information provided by the appellant, the Public Works Director (or his/her designee) shall conduct a technical review of the conditions on the Property and respond to the appeal in writing within thirty (30) days. In response to an appeal, the Public Works Director may adjust the rental, rate and charge applicable to the Property in accordance with the provisions of this Ordinance.

(3) A decision of the Public Works Director that is adverse to an appellant may be further appealed to the Municipal Manager or his/her designee within thirty (30) days of the adverse decision. The appellant, stating the grounds for further appeal, shall deliver notice of the appeal to Mt. Lebanon Manager or his/her designee. The Municipal Manager or his/her designee shall issue a written decision on the appeal within thirty (30) days. All decisions by the Municipal Manager or his/her designee shall be personally delivered to the owner or, sent to the billing address of the customer by registered or certified mail.

(4) A decision of the Municipal Manager that is adverse to appellant may be further appealed to the Commission within thirty (30) days of receipt of the adverse decision. The Appellant, stating the ground for further appeal, shall deliver notice of the appeal to the Municipal Manager or his/her designee. The appellant shall present his appeal at the next meeting of the Commission that is at least 7 days after delivery of the appeal. The Commission shall issue a written decision on the appeal within thirty (30) days of the conclusion of the presentation. The decision of the Commission shall be final.

### Section 13. Policies and Procedures Authorized

A. The Commission or its designee may by resolution adopt such policies and procedures as it deems appropriate to ensure collection of sewer rental, rates and charges assessed and imposed pursuant to this Ordinance. Without limitation, collection procedures may include referral of delinquent accounts to a collection agency; filing of liens; scire facias sur municipal lien proceedings to collect filed liens; and any and all other measures or combination thereof which the Commission may deem appropriate.

B. All costs of such collection procedures, including but not limited to fees for filing, perpetuation and satisfaction of liens, collection fees, attorney's fees, court costs, litigation expense, charges for service of documents, shall upon being incurred by Mt. Lebanon be imposed as a charge for nonpayment and added to the balance due on said owner's account. [Exhibit B contains a listing of such charges.]

C. No lien shall be satisfied, nor shall any collection proceeding be discontinued until all amounts due on an account, including rental, rates, penalties, interest, collection fees, attorney's fees, court costs and other charges are first paid in full to Mt. Lebanon.

D. The Manager is authorized to adopt any policies or procedures that the Manager deems necessary or convenient to interpret or implement this Ordinance.

#### **Section 14. Storm Sewer Revenue Fund**

The funds received from the collection of the rental, rates and other charges authorized by this Ordinance shall be deposited into a Storm Sewer Revenue Fund, a fund and account hereby created and dedicated to the operation, administration, maintenance, repair and improvement of the Sewerage System and paying Operation, Maintenance and Capital Costs.

#### **Section 15. No Warranty or Action**

Nothing in this ordinance or in the design, operation or maintenance of the Sewerage System shall be deemed to constitute a warranty, express or implied, nor shall it afford the basis for any action seeking the imposition of money damages against Mt. Lebanon, its officers, employees, or agents. Mt. Lebanon expressly reserves the right to assert all available immunities and defenses in any action seeking to impose monetary damages upon Mt. Lebanon, its officers, employees and agents arising out of any alleged failure or breach of duty or relationship as may not exist or hereafter be created.

#### **Section 16. Severability.**

If any section, subsection, sentence, clause, phrase or portion of this Ordinance or its application to any person, property or circumstances is for any reason held invalid or unconstitutional by any court, such holding shall not be construed to affect the validity of any of the remaining provisions of this Ordinance or its application, for such portion shall be deemed as a separate, distinct and independent provision from the remaining provisions which shall be and remain in full force and effect. It is hereby declared the legislative intent that this Ordinance would have been adopted had such invalid or unconstitutional provision of its application not been included therein.

#### **Section 17. Effective Date**

This Ordinance shall become effective on September 1, 2011, will expire August 31, 2031 unless extended by ordinance on or before that date; provided, however, that the expiration of the Ordinance will not apply to nor affect the validity and collectability of any rate, rental or charge assessed prior to such expiration date.

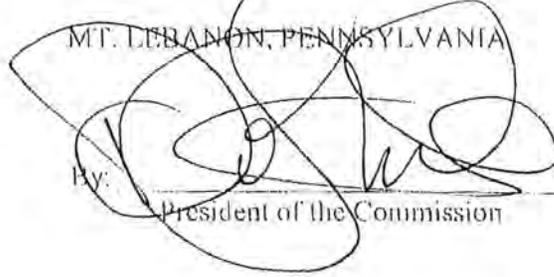
**ORDAINED AND ENACTED** into an Ordinance and passed by the Commission of Mt. Lebanon, Pennsylvania on this 9th day of August, 2011.

ATTEST:



Secretary

MT. LEBANON, PENNSYLVANIA

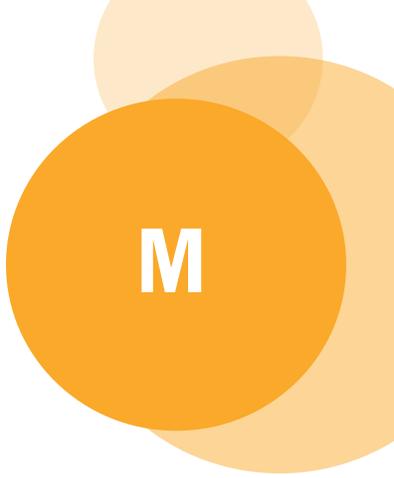


By:

President of the Commission



# APPENDICES



M

## PUBLIC INFRASTRUCTURE

M. Illicit Discharge Detection and Elimination: Guidance manual for program development and technical assessments



# GUIDANCE MANUAL

M

This 378-page manual, funded by the Environmental Protection Agency and prepared by the Center for Watershed Protection and the University of Alabama, is available by free download from:

<http://water.epa.gov/polwaste/npdes/swbmp/Illicit-Discharge-Detection-and-Elimination.cfm>



## Illicit Discharge Detection and Elimination

*A Guidance Manual for  
Program Development and Technical Assessments*

by the  
Center for  
Watershed Protection

and  
Robert Pitt  
University of Alabama

October 2004





# PASHEK ASSOCIATES

LANDSCAPE ARCHITECTURE | DESIGN | PLANNING

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