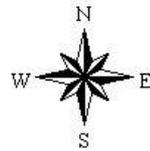
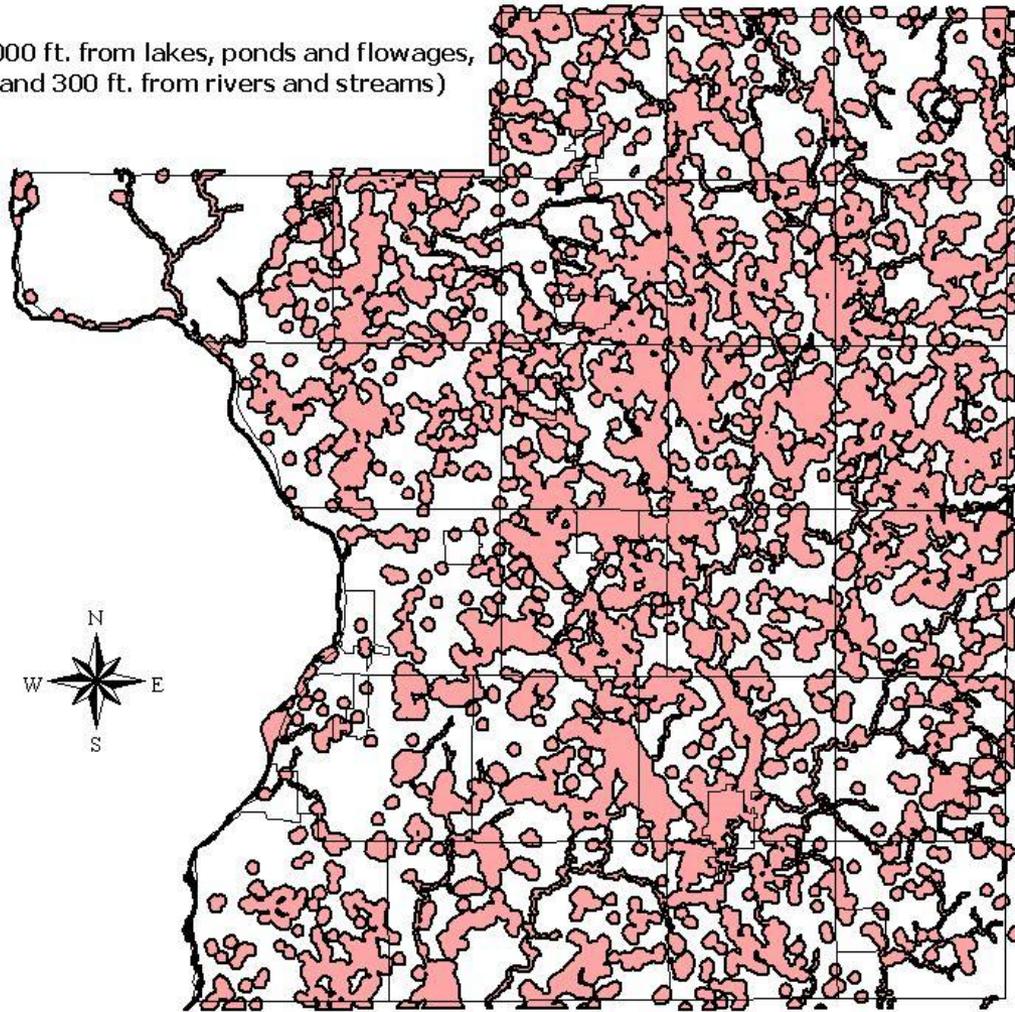
A scenic view of a lake with a boat docked, surrounded by trees and a picnic table in the foreground. The text "Polk County Shoreland Zoning" is overlaid in large, bold, orange letters at the top of the image.

Polk County Shoreland Zoning

Jeremy Williamson
Water Quality Specialist
Polk County LWRD

Polk County Shoreland Zoning

(1000 ft. from lakes, ponds and flowages,
and 300 ft. from rivers and streams)



0 5 10 15 20 25 Miles





Introduction to the Land Use Runoff Rating

- Developed to reduce the negative effects of shoreline development
- Recognizes uniqueness of properties
- Runoff calculations based on land use ratings from *Urban Hydrology for Small Watersheds, Technical Release 55 (1986)* Published by USDA

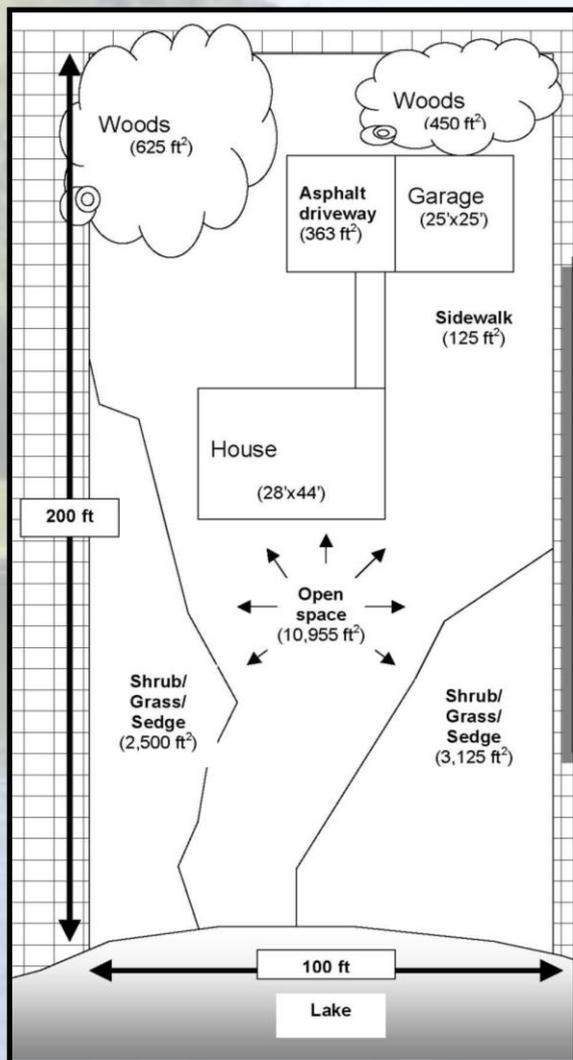
When is a Land Use Runoff Rating required?

- 1) Building on property within the setback areas
- 2) Activities that will increase impervious areas and drain directly to the lake. (within 300')

What is needed to calculate the Land Use Runoff Rating?

- 1) Hydraulic Soils Map of Polk County
- 2) Curve numbers for hydraulic soil types
- 3) Map that shows lot dimensions
- 4) Tape measure
- 5) Pencil & Paper
- 6) Calculator

1. Determine the area of each land use for the lot.



Land use totals

Lot
20,000 ft²

Open space
10,955 ft²

Shrub/Grass/Sedge
5,625 ft²

Woods
1,075 ft²

Impervious surface

House:	1,232 ft ²
Garage:	625 ft ²
Driveway:	363 ft ²
Sidewalk:	125 ft ²
<hr/>	
	2,345 ft ²

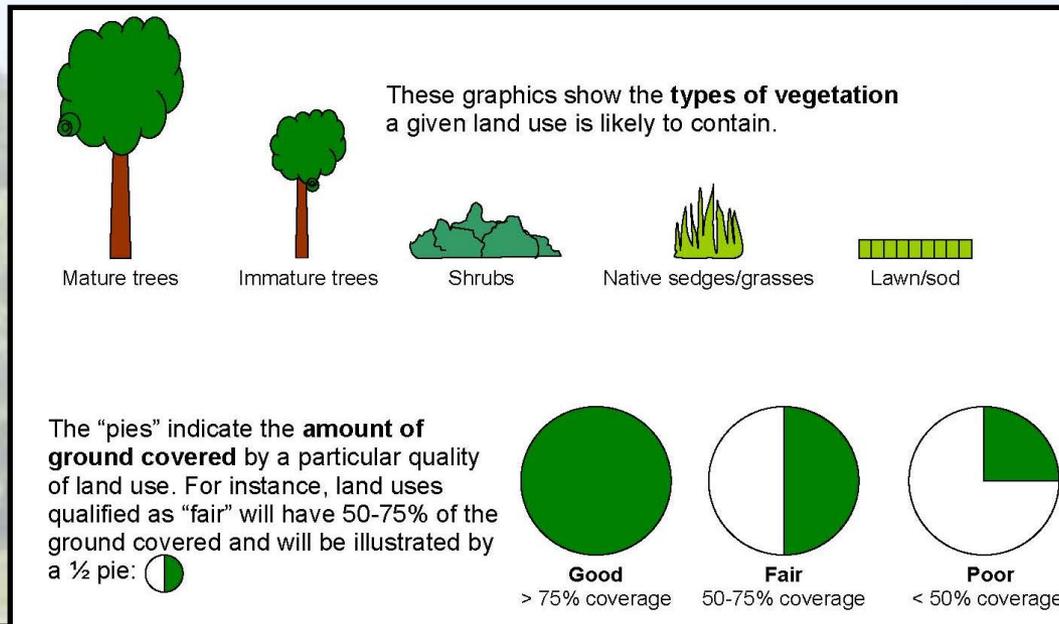
2. Determine the percentage of each land use on the lot.

Land use totals

Lot	
20,000 ft ²	
Open Space	
10,955 ft ²	
Shrub/Grass/Sedge	
5,625 ft ²	
Woods	
1,075 ft ²	
Impervious surfaces	
House:	1,232 ft ²
Garage:	625 ft ²
Driveway:	363 ft ²
Sidewalk:	125 ft ²
Total:	2,345 ft²

Open Space:	$10,955 / 20,000 = .55 = 55\%$
Shrub/Grass/Sedge:	$5,625 / 20,000 = .28 = 28\%$
Woods:	$1,075 / 20,000 = .05 = 5\%$
Impervious surfaces:	$2,345 / 20,000 = .12 = 12\%$

4. Determine the appropriate curve number for each land use



PERVIOUS AREAS

OPEN SPACE: Lawns, parks, golf courses, cemeteries, etc.

Poor condition; grass cover < 50%; mowed height = less than 2"

Fair condition; grass cover 50% to 75%; mowed height = 2" to less than 3"

Good condition; grass cover > 75%; mowed height = 3" or taller

SHRUB/GRASS/SEDGE COMMUNITY: Mixture of deep-rooting native plants

Poor: <50% ground cover; no mowing

Fair: 50 to 75% ground cover; no mowing

Good: >75% ground cover; no mowing

WOODS: Ground cover primarily native perennials and/or forest litter.

Poor: small trees, brush, and forest litter removed; <50% ground cover

Fair: small trees, brush, forest litter present; 50-75% ground cover

Good: small trees, brush, and forest litter present; >75% ground cover

IMPERVIOUS AREAS

Roofs, paved driveways, paved walkways, paved patios, etc.

Gravel driveways, gravel walkways, etc.

Curve Numbers for Hydrologic Soil Type

A	B	C	D
.68	.79	.86	.89
.49	<u>.69</u>	.79	.84
.39	.61	.74	.80
.48	.67	.77	.83
.35	.56	.70	.77
.30	<u>.48</u>	.65	.73
.45	.66	.77	.83
.36	.60	.73	.79
.30	<u>.55</u>	.70	.77
.98	<u>.98</u>	.98	.98
.76	.85	.89	.91

5. Multiply the percentage of each land use by the appropriate curve number.

A	B	C	D
.68	.79	.86	.89
.49	.69	.79	.84
.39	.61	.74	.80
.48	.67	.77	.83
.35	.56	.70	.77
.30	.48	.65	.73
.45	.66	.77	.83
.36	.60	.73	.79
.30	.55	.70	.77
.98	.98	.98	.98
.76	.85	.89	.91

Open space (fair condition):	55%	→	55 x	.69 = 38.0
Shrubs/Grass/Sedge (good):	28%	→	28 x	.48 = 13.4
Woods (good condition):	5%	→	5 x	.55 = 2.8
Impervious surfaces:	12%	→	12 x	.98 = 11.8

6. Add the resulting numbers to determine your Land Use Runoff Rating.

Open space (fair condition):	55%	55 x	.69 =	38.0
Shrubs/Grass/Sedge (good):	28%	28 x	.48 =	13.4
Woods (good condition):	5%	5 x	.55 =	2.8
Impervious surfaces:	12%	12 x	.98 =	11.8
			+	<hr/>
				Land Use Runoff Rating: 66.0

7. Results

If less than or equal to 69, no mitigation required

If greater than 69, mitigation required

Mitigation options

Rain Gardens

Rain Basins

Retention Pond

Vegetative Areas

Redirect Water

RUNOFF RATING WORKSHEET (VERSION 2.1)

RESET TABLE GO TO HELP GO TO HYDROLOGIC SOIL TYPE MAP GO TO LAND COVER TYPE PHOTOS PRINT REPORT (INCLUDE WITH APPLICATION)

ENTER LOT SIZE** ----- SQUARE FEET

PERVIOUS AREAS

OPEN SPACE - LAWNS, PARKS, GOLF COURSES, ETC.

- Poor condition; grass cover < 50%
- Fair condition; grass cover 50% to 75%
- Good condition; grass cover > 75%

SHRUB/GRASS/SEDGE COMMUNITY - MIXTURE OF DEEP-ROOTED NATIVE PLANTS

- Poor condition; cover < 50%; no mowing
- Fair condition; cover 50% to 75%; no mowing
- Good condition; cover > 75%; no mowing

WOODS - GROUND COVER PRIMARILY NATIVE PERENNIALS AND/OR FOREST LITTER*

- Poor condition; small trees, brush, and forest litter removed (cover < 50%)
- Fair condition; small trees, brush, forest litter present; not covering soil (cover 50% to 75%)
- Good condition; small trees, brush, and forest litter completely covers soil (cover > 75%)

IMPERVIOUS AREAS

- Roofs, paved driveways, paved walkways, paved patios, etc.
- Gravel driveways, gravel walkways, etc.

YOU MUST ACCOUNT FOR THE SQUARE FOOTAGE OF THE ENTIRE LOT

▼
▼
▼

Land Use Numbers for Hydrologic Soil Type

	A	B	C	D
Open Space - Poor	.68	.79	.86	.89
Open Space - Fair	.49	.69	.79	.84
Open Space - Good	.39	.61	.74	.80
Shrub/Grass/Sedge - Poor	.48	.67	.77	.83
Shrub/Grass/Sedge - Fair	.35	.56	.70	.77
Shrub/Grass/Sedge - Good	.30	.48	.65	.73
Woods - Poor	.45	.66	.77	.83
Woods - Fair	.36	.60	.73	.79
Woods - Good	.30	.55	.70	.77
Impervious - Roofs/Paved	.98	.98	.98	.98
Impervious - Gravel	.76	.85	.89	.99
	0	0	0	0

Total Area

Runoff Rating

POINT CREDITS:

PLACE AN "X" IN THE BOX IF YOU CAN TAKE CREDIT FOR A SEWER SYSTEM
 (E WAPOGASSET, BEAR TRAP, AND MAGNOR LAKES HAVE SEWER SYSTEMS)
 (1 POINT CREDIT)

PLACE AN "X" IN THE BOX IF YOU HAVE ESTABLISHED CONTINUOUS VEGETATIVE COVER
 ON THE LAKE SHORE - DEFINED AS FOLLOWS:

A vegetated buffer strip (shrub/grass/sedge community) of land 35 feet wide measured perpendicular from the ordinary high water mark (OHWM), where the viewing corridor does not exceed 30 feet measured parallel to the shore. (1.5 POINT CREDIT)

MITIGATION OPTIONS:

SHRUB/GRASS/SEDGE COMMUNITY VEGETATION*** Area to Plant: Square Feet

RAIN BASINS (4 IN. DEPTH)*** Area: Square Feet

RUNOFF DETAINMENT *** Volume: Cubic Feet

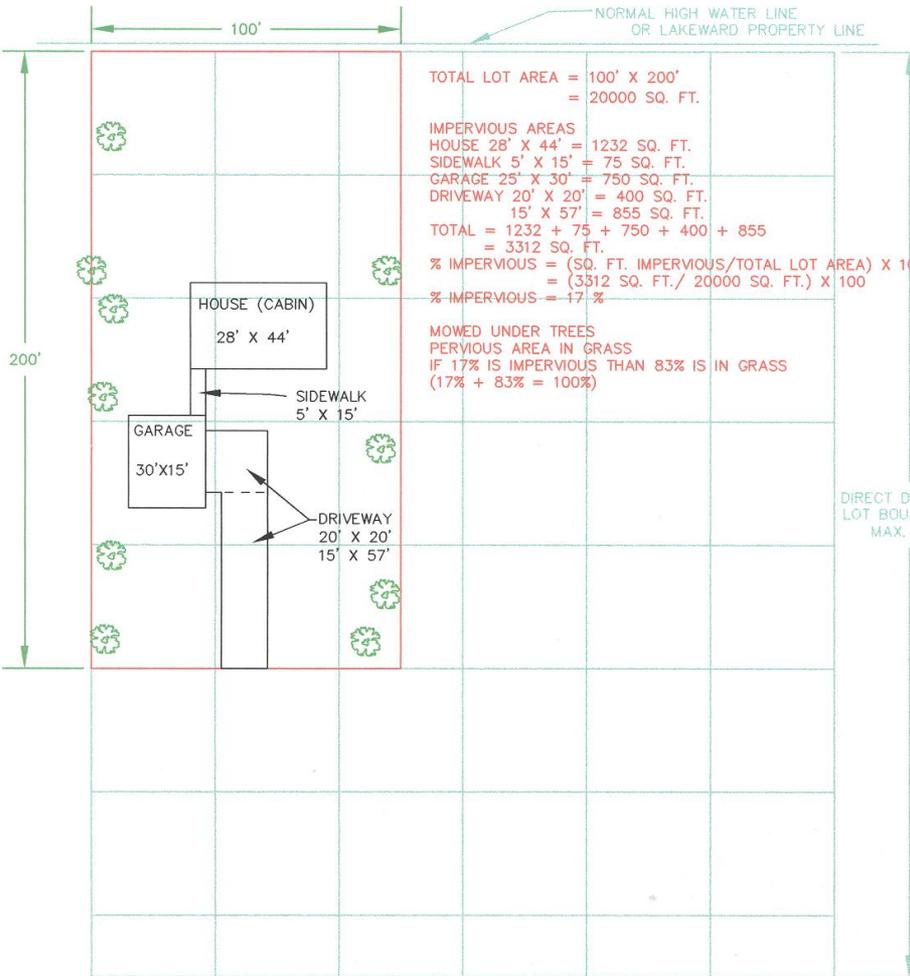
CALCULATE
 (CALCULATE AFTER ALL CHANGES)

* Woods - Stand that consists of one or more tree species with an understory of shrubs and immature trees. Ground cover consists primarily of native perennials. The ratio

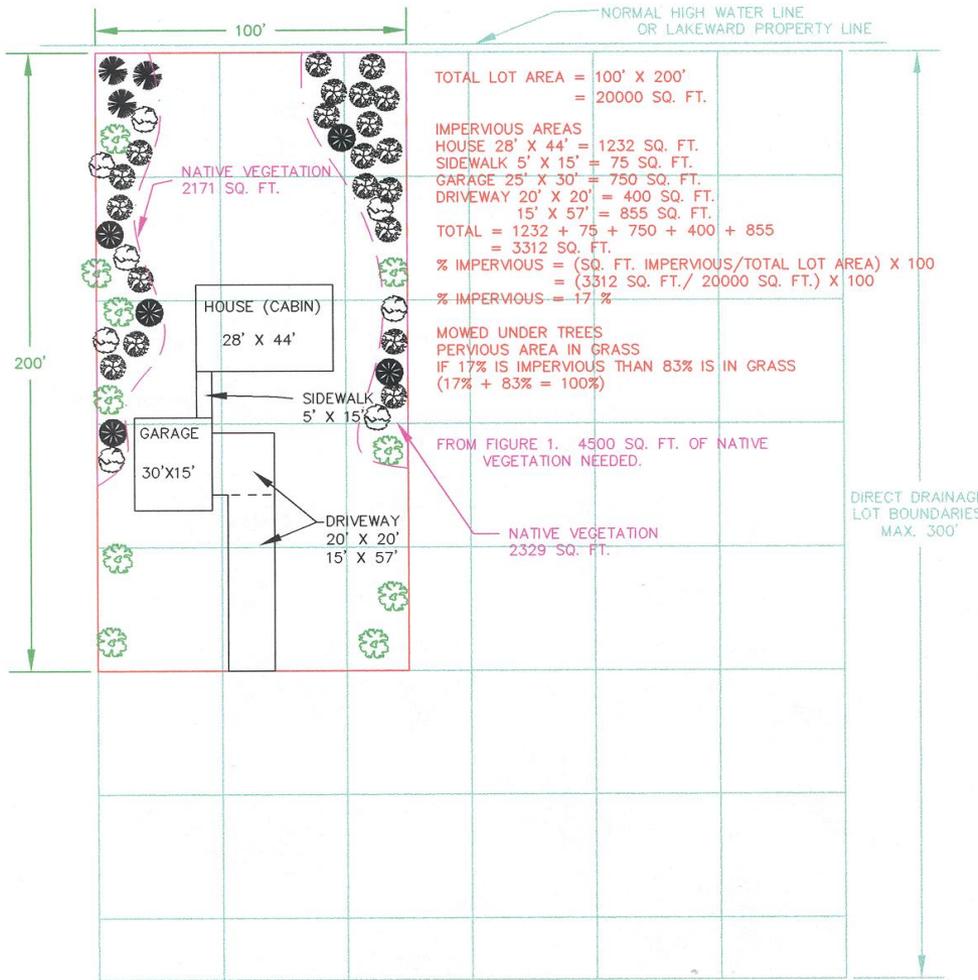
SHORELAND LOT LAYOUT*

DRAFT

1. MEASURE ALL ASPECTS OF LOT. TAKE MEASUREMENTS SO THAT THE DISTANCES FROM PROPERTY LINES, WATER, OTHER LAND USES, AND OTHER STRUCTURES ARE SHOWN.
2. DRAW PLAN VIEW (LOOKING DOWN ON THE LOT FROM AN AIRPLANE) OF LOT TO SCALE BELOW. INDICATE SQUARE FOOTAGE AND LOCATION OF EACH LAND USE AND STRUCTURE. LAND USES: GRASS, NATIVE VEGETATION (shrubs, brush, and grass mix) AND WOODS (no mowing; litter and brush cover soil). STRUCTURES: PAVED DRIVEWAY, ROOFS, PATIOS, GRAVEL WALKWAYS, ETC.
3. SHOW EXISTING STRUCTURES IN SOLID LINES
4. SHOW LOCATION OF PROPOSED STRUCTURE IN DOTTED LINES.



1. MEASURE ALL ASPECTS OF LOT. TAKE MEASUREMENTS SO THAT THE DISTANCES FROM PROPERTY LINES, WATER, OTHER LAND USES, AND OTHER STRUCTURES ARE SHOWN.
2. DRAW PLAN VIEW (LOOKING DOWN ON THE LOT FROM AN AIRPLANE) OF LOT TO SCALE BELOW. INDICATE SQUARE FOOTAGE AND LOCATION OF EACH LAND USE AND STRUCTURE. LAND USES: GRASS, NATIVE VEGETATION (shrubs, brush, and grass mix) AND WOODS (no mowing; litter and brush cover soil). STRUCTURES: PAVED DRIVEWAY, ROOFS, PATIOS, GRAVEL WALKWAYS, ETC.
3. SHOW EXISTING STRUCTURES IN SOLID LINES
4. SHOW LOCATION OF PROPOSED STRUCTURE IN DOTTED LINES.



GRAPHIC SCALE



(IN FEET)
1 inch = 40 ft.



DRAFT

Figure 2. RUNOFF TO CAPTURE

RATING - 69

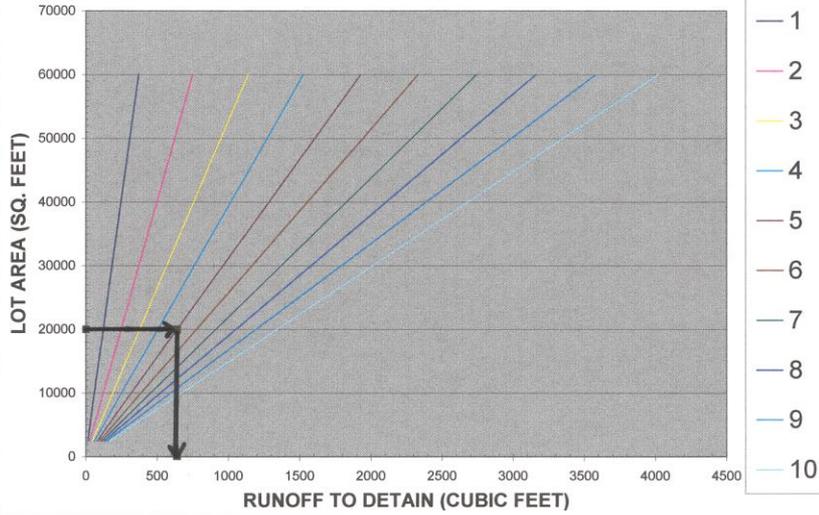


Figure 3. RAIN BASINS (DEPTH 4")

RATING-69

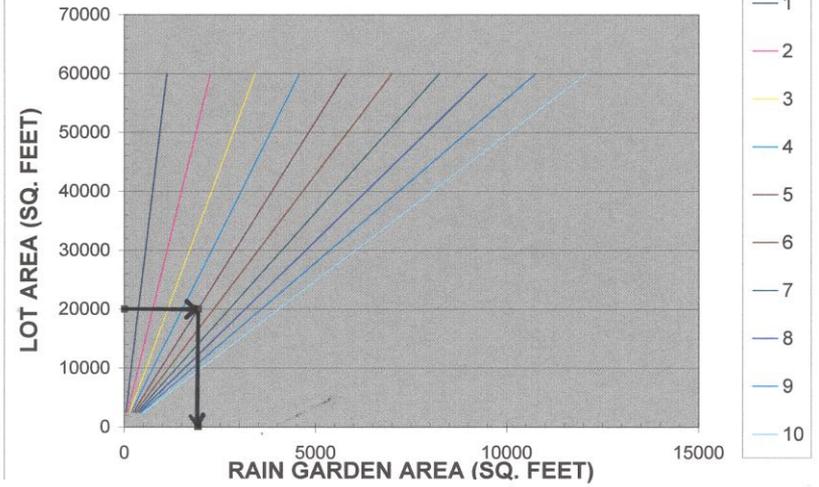
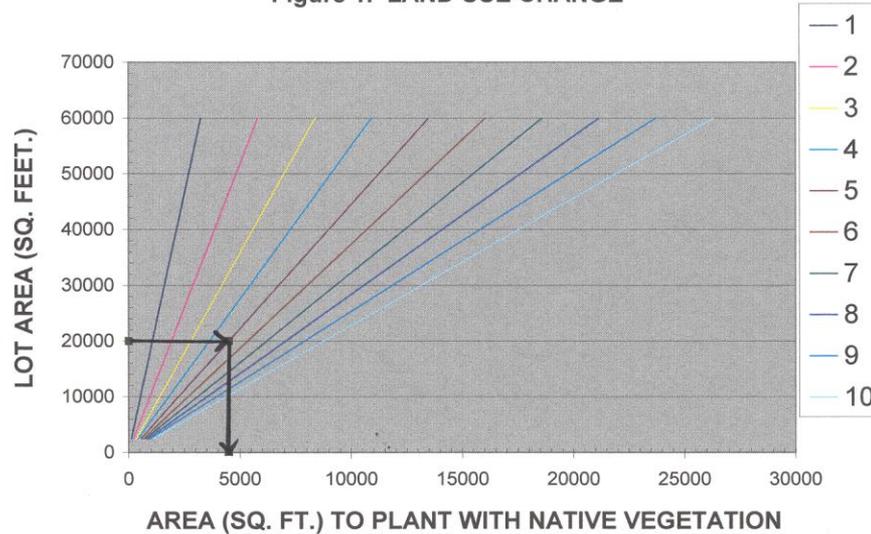


Figure 1. LAND USE CHANGE

RATING - 69

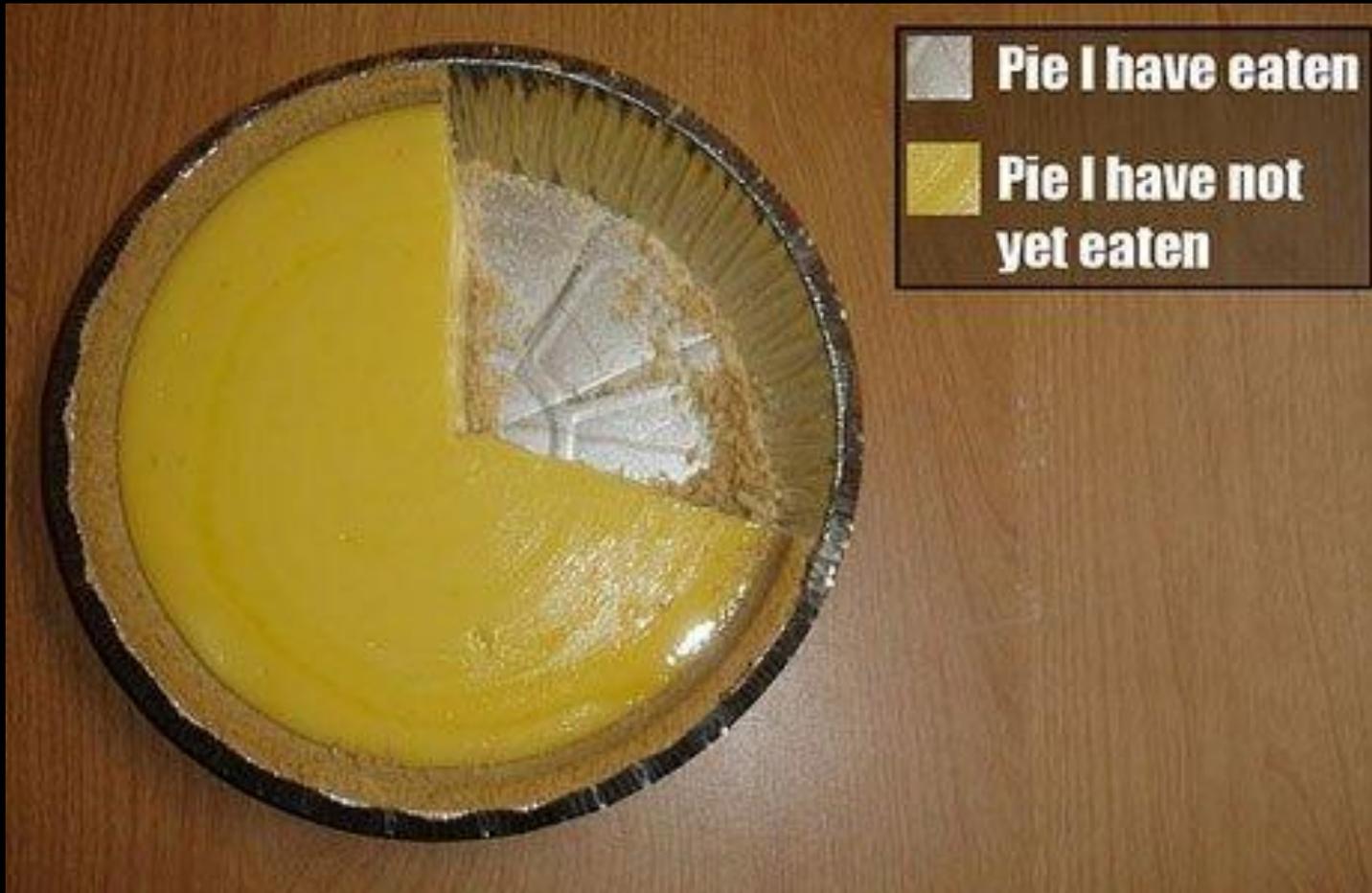


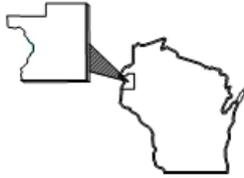


03/09/2010



We need data to determine compliance





**POLK COUNTY LAND & WATER
RESOURCES DEPARTMENT**

100 POLK COUNTY PLAZA - SUITE 120
BALSAM LAKE, WI 54810

PHONE: 715-485-8699 FAX:
715-485-8601

TIM RITTEN, DIRECTOR: 715-485-8631

TO: Land Conservation Committee and Zoning Committee
FROM: Amy Kelsey, LWRD
DATE: August 30, 2007
RE: Compliance with Land Use Runoff Rating

In 2006 the Zoning Department issued 152 Land Use Permits that were in a shoreland area. Of those 152 Land Use Permits, 78 were chosen randomly by the Land and Water Resources Department for a follow-up inspection. Follow-up inspections were conducted to ensure correct runoff calculations, that permitted plans were followed, and to see how the program is being interpreted by landowners and department staff.

The Land Use Runoff Rating (LURR) inspections were done in mid-summer 2007 by the Land and Water Resources Department. Of those 78 permits, 49 sites were found to be in compliance with the LURR (at or below 69), 10 sites were not in compliance, and 19 sites still had not completed landscaping or construction.

In Compliance	NOT in Compliance	Work Still Being Done
50	10	18
64%	13%	23%

Of the 50 sites that were within compliance, 19 applied the 15% rule, where less than 15% of their land is impervious and they maintain a buffer of 35 feet or more.

The 13% of landowners not in compliance had a runoff rating from 70 to 84. Reasons

for non-compliance include gravel landscaping, excessive driveways or turnaround areas, lack of buffer and native vegetation, wrong soil type figured, open space mowed too low, and building of large houses on small lots. The result is low infiltration of storm water and excessive runoff to the lake or waterbody. For most sites, compliance could easily be met by planting native vegetation on the property, allowing grass to grow higher, and/or using mulch instead of rocks in gardens and other areas. A few buildings had exceeded their permitted building size. The Zoning Department will contact the non-compliant property owners to address all issues.

For the permits that have work in progress, the Land Use Runoff Rating Permits allow a time frame for work to be completed. Article 14.C.6. of the Shoreland Protection Zoning Ordinance states, "Runoff rating plans approved after September 1 of each calendar year must be completed by June 1 of following year, all others must be completed by October 31 of the same calendar year." Ten permits were issued after September 1, 2006, and had until June 1, 2007, to complete their work. Seven permits were issued prior to September 1, 2006, and should have had their approved plans completed by October 31, 2006. One permit had no construction at all started on the property. The time frame to complete "work" is open to interpretation and should be consistent among staff.

Overall, property owners seem to be complying with the Shoreland Protection Zoning Ordinance. The value of healthy vegetation in shoreland areas is the best solution to address polluted runoff. There is a small amount of discrepancy in evaluating land use in "landscaped" lots, however, LWRD and Zoning agree on the effects and will work together to correct any infringements.

It is also noted that while the Land Use Runoff Rating does address land use types and imperviousness, there is no factoring of site slope or riparian habitat. Exotic species such as buckthorn was an issue on one property whose entire "wooded lot" consisted of buckthorn. The LWRD would like intact shoreland vegetation that would provide wildlife habitat as well as protect water quality on every property. This would also keep the rural, wild aesthetics that attract folks to Polk County. The slope of a property may have to be addressed in a manner other than the Land Use Runoff Rating.

We need buy in!



Recognition

& Demonstration Signs

& Participation Signs

& Thank You Letters

& Shirts





Native Landscaping

for Runoff Control

A Workshop for Landscapers

Learn about

- ☰ Rain Gardens
- ☰ On-lot Infiltration Practices
- ☰ Financial Assistance
for Your Customers



Coffee and Lunch Provided

Wednesday, April 4th

10:00 a.m. – 2:00 p.m.

Café Wren

2596 Highway 35 (Just North Of Luck)

Your customers may ask for landscaping services that infiltrate and purify water on their lot because of a concern for the environment, financial and technical assistance available, and regulatory requirements.

Be prepared to meet the demand! Attend this half-day workshop sponsored by Polk and Burnett Counties, the City of Amery, the Deer Lake Conservancy, University of Wisconsin Extension, and the Department of Natural Resources.

To Register: Fill out forms below and mail to: Ann Lane, BCLWCD, 7410 County Road K #109, Siren, WI 54872.
Send a check (\$10 for each participant) payable to the Burnett County LWCD by March 28th.
Questions about registration? Call Ann Lane (715-349-2186)
Other workshop questions? Call Jeremy Williamson (715-485-8639) or Cheryl Clemens (715-268-9992)

Name (s) _____

Company _____

Address _____

City _____ State _____ Zip _____

Email _____

Telephone _____



Controlling Runoff and Erosion

On Waterfront Property

A Workshop for Landscapers

Learn About

- ☰ Rain Gardens
- ☰ On-lot Infiltration Practices
- ☰ Porous Paving
- ☰ Addressing Problem Areas



Coffee and Lunch Provided

Thursday, March 26th, 2009

10:00 a.m. – 2:30 p.m.

Café Wren

2596 Highway 35 (Just North Of Luck)



Your customers may ask for landscaping services that infiltrate and purify water on their lot because of a concern for the environment, financial and technical assistance available, and regulatory requirements.

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To Register: Fill out form below and mail to:
 Ann Lane, Burnett County LWCD, 7410 County Road K #109, Siren, WI 54872.
Send a check (\$15 for each participant) payable to the Burnett County LWCD by March 15th.
Questions about registration? Call Ann Lane (715-349-2186)
Other workshop questions? Call Jeremy Williamson (715-485-8639) or Cheryl Clemens (715-268-9992)

Name (s) _____

Company _____

Address _____

City _____ State _____ Zip _____

Email _____

Telephone _____ No. Registered _____ Amt. Encl. _____

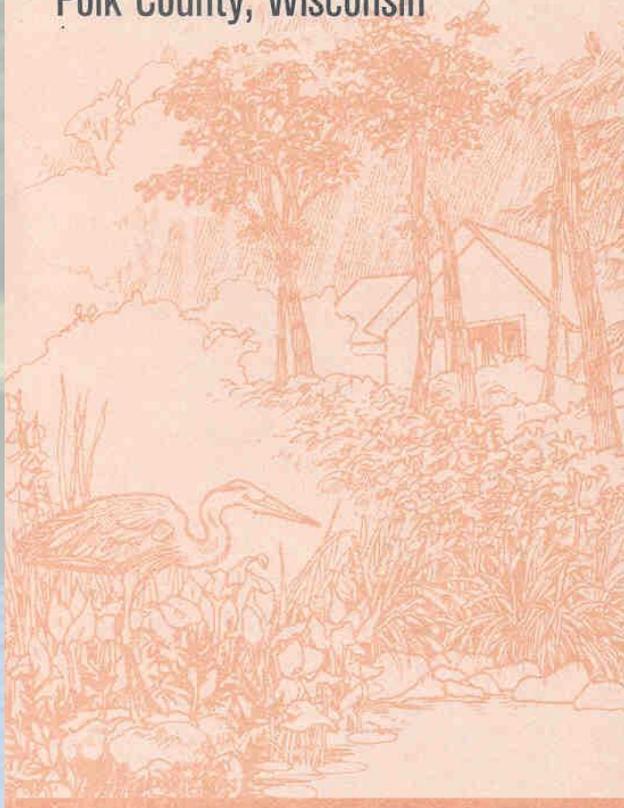


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Who's who...

Contacts for your Waterfront Property Questions

Polk County, Wisconsin

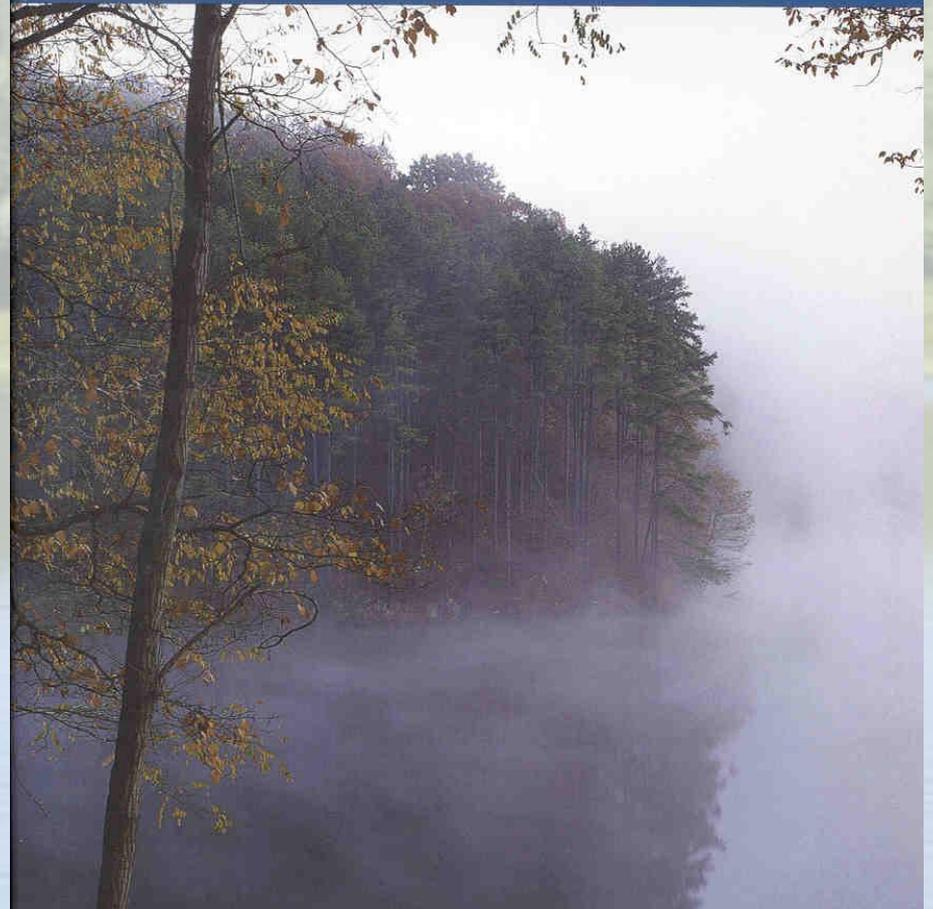


Use this brochure to find the proper resources for your questions about waterfront property use, development, management, and restoration. Be sure your actions are legal and lake/river/stream friendly!

Polk County, Wisconsin

Shoreland Property Owner Handbook

A guide to the Polk County Shoreland Protection Zoning Ordinance
in developing and caring for waterfront property



MOST LAKES
ARE POLLUTED
BECAUSE THEY'RE

