

Sheboygan County Shoreland Mitigation Handbook



Adopted November 6, 2012

Mitigation Menu

	When is mitigation required?	How much mitigation is required?
Situation A	Increasing lot coverage between 15% and 30%	2 points for every 5% (or portion thereof) of increased impervious surface Examples: 18.01% to 22%=2 points 18.01% to 25%=4 points 18.01% to 30%=6 points
Situation B	Lot coverage is over 30% and proposed project will change the footprint of existing impervious surfaces	2 points for every 5% over 30% lot coverage with a maximum of 8 points Examples: Existing lot coverage is 40% and proposed project will keep it at 40%=4 points Existing lot coverage is 80% and proposed project will bring it to 78%= 8 points
Situation C	Lateral Expansion of up to 200 square feet on a non-conforming structure	3 points
Situation D	Relocation of a non-conforming structure that does not meet the required setback (cannot be closer than existing structure)	5 points

Mitigation Type	Number of Points Situation A, B, C or D
Rain Garden	3 points
Stormwater Infiltration System	3 points
Rain Gutter Collection System	4 points
Replacement of Septic System or Connection to Public Sewer	2 points
Existing Natural Buffer (OHWM extended 35' landward) (Includes Removal of Invasive Species)	3 points
Planting of a Primary Buffer (OHWM extended 35' landward)	1 point per 7' of buffer (maximum of 5 points)
Installation of (or existing) Sideyard Buffer >35'-75' from OHWM	1 point per 7' of width (maximum of 2 points per side and 4 points per lot)
Decreased Access and Viewing Corridor	1 point per 5% decrease from 30% (maximum of 3 points)
Management or Creation of Near-Shore Aquatic Habitat	1 point
Seawall Removal	2 points
Seawall Modification	1 point
Increasing Setback	1 point per 5' of increased setback beyond required (maximum of 3 points)
Using Earth-Tone Materials or Colors	1 point
Removal of a Legal Non-Conforming structure	2 point for accessory or 3 points for principal
Removal of Shore Lighting or Installation of Downcast Shore Lighting within 75' of OHWM	1 point
Conservation Easement	Based on proposal
Method Approved by Planning and Conservation Department Staff	Based on proposal

Rain Garden – 3 points

-A shallow depression planted with suitable native vegetation designed to absorb stormwater.

Mitigation Intent: Improve/preserve water quality by offsetting the impacts of surface runoff associated with a developed shoreland property. Design should be consistent with the scale of the proposed project and conform to property constraints.

Standards: The desired design should hold surface runoff for 24 to 48 hours after a rainfall event. Rain Garden is not a recommended mitigation option on the bluff of Lake Michigan.

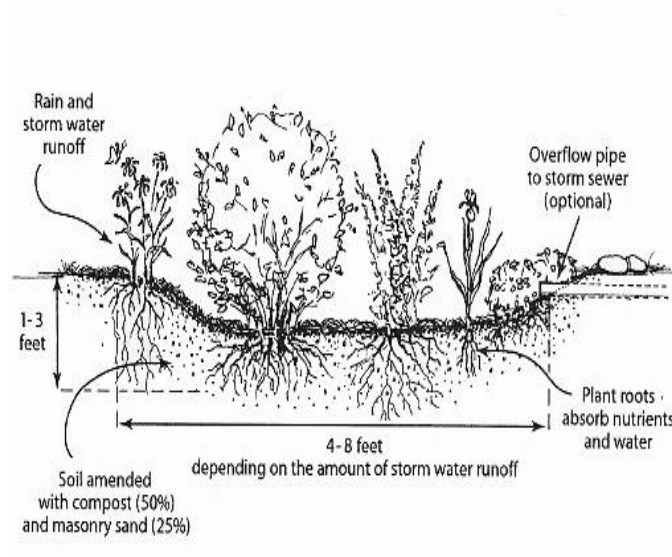


Figure: Cornell University

References:

[Rain Gardens - UW Extension](#)

[Rain Gardens: A Beautiful Way to Reduce Runoff Pollution- WDNR](#)

[Rain Gardens-A how-to manual for homeowners](#)

[Rain Garden Plant Lists-UW Madison](#)

Stormwater Infiltration System – 3 points

-An engineered system designed to absorb the accumulated water from a rainfall event.

Mitigation Intent: Improve/preserve water quality by offsetting the impacts of surface runoff associated with a developed shoreland property. Design should be consistent with the scale of the proposed project and conform to property constraints.

Infiltration Practices: Infiltration trenches, infiltration chambers, drywell, grass swales, etc).

Standards: A potential infiltration site needs to meet the following criteria:

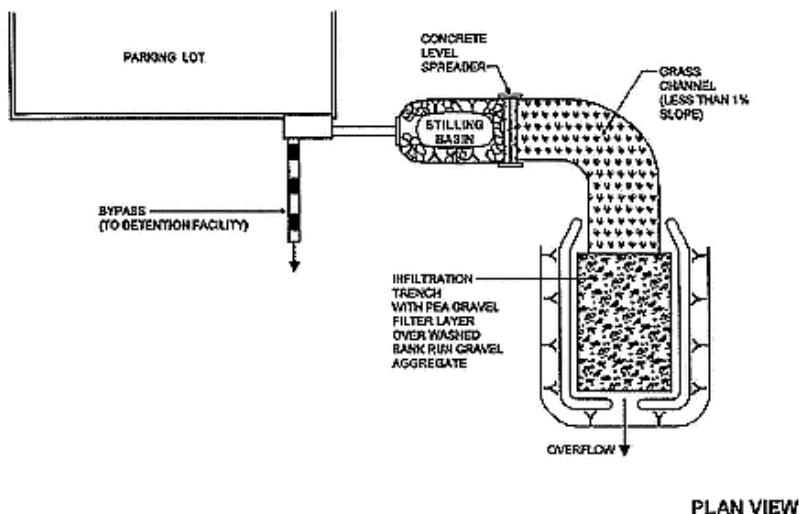
- The native soils need to be permeable (Clay soils do not infiltrate)
- The bottom of the stone reservoir should be completely flat so that infiltrated runoff will be able to infiltrate through the entire surface.
- Where possible, the bottom of the system should be at least 3 feet above groundwater, and a safe distance from drinking water wells (25 feet is the required setback).

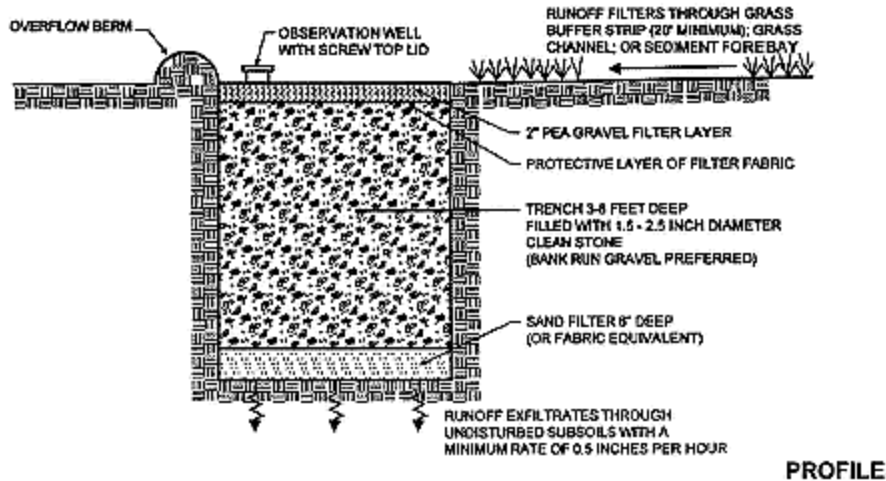
Typical Design should capture and release the collected stormwater from a 1.5 inch rain event within a 48 hour period and safely pass through or bypass the flows produced by the 24 hour, 100-year storm.

Infiltration Trench

Typical elements:

- In situ soils suitable for infiltration
- Design overflow to minimize impacts to lakes and streams
- Maintain safe separation from groundwater and bedrock





A schematic of an infiltration trench (Source: MDE, 2000)

Infiltration Chamber or Drywell

Typical elements:

- Prefabricated or stone stormwater storage with direct subsurface infiltration to native soils (similar to septic system)
- In situ soils suitable for infiltration
- Maintain safe separation from groundwater and bedrock

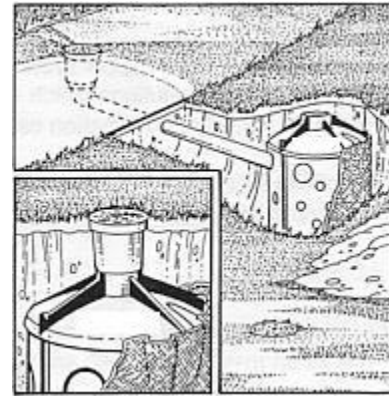


Image: tetoomey.com

Image: easydigging.com

Grass Swale

Typical elements:

- Grass surface
- Stone subsurface similar to infiltration trench
- In situ soils suitable for infiltration
- Design overflow to minimize impacts to lakes and streams
- Maintain safe separation from groundwater and bedrock



Image: WDNR

References:

[Infiltration\Storm Water Basins UWEX
Sheboygan County Stormwater Manual
Grassed Swales - EPA
Infiltration Trench - EPA
Wisconsin Stormwater Manual - WDNR
www.stormwatercenter.net](#)

Rain Gutter System – 4 points

- A method for collection and diversion of gutters and downspouts to lessen the impacts of the concentrated flow generated by a rain storm event.

Mitigation intent: protection of water resources from suspended pollutants through the reduction of the concentrated flow of stormwater collected by rain gutters and released to the ground surface.

Standards: Divert downspouts to a collection system, such as a cistern, eliminating concentrated flow of stormwater directly into surface waters. Rain barrels can be utilized as part of this remedy, but must be used in conjunction with other diversion or collection practices such as: rain gardens, infiltration systems, filter strips etc.

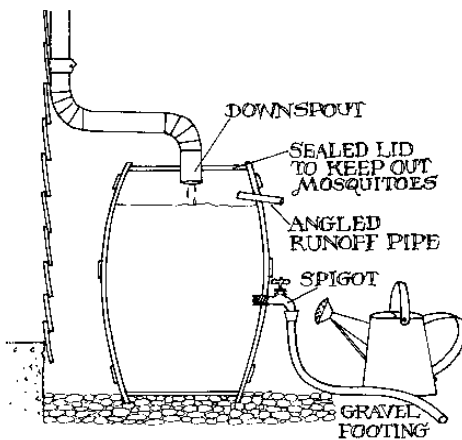


Image: WARM Training Center

Image: Low Impact Development Center

References:

[Controlling runoff and erosion from your waterfront property: a guide for land owners](#)

[Dripline Trench](#) –UWEX lakes

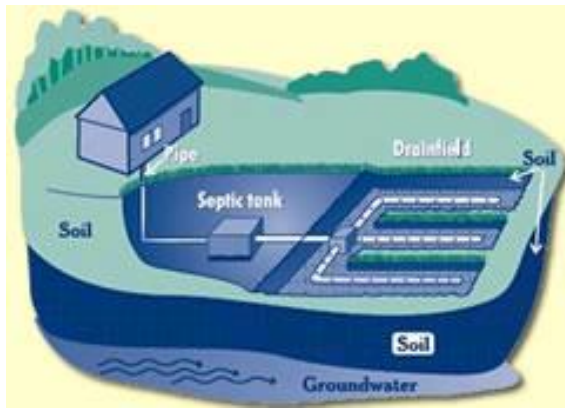
[Drywells](#) –UWEX lakes

Replacement of Septic System or Connection to Public Sewer – 2 points

-Replacement of a Private Onsite Waste Treatment System compliant with State the State Plumbing code or connection to public sewer to replace an outdated or failing system.

Mitigation intent: Protection of water resources from pollutants associated with improper treatment of wastewater.

Standards: Wisconsin Administrative Code – SPS383 and Sheboygan County Sanitary Ordinance



References:

[A Homeowner's Guide to Septic Systems](#)
[Sheboygan County Sanitary Ordinance](#)

Existing Primary Natural Buffer – 3 points

-Natural vegetative buffer exists on the property for a minimum of 35 feet from the OHWM of the water resource.

Mitigation Intent: Credit existing natural vegetative buffers already in place on shoreland properties.

Standards: Development of a management plan including inventory and control of invasive species that may be present. This may require supplementing the existing vegetative buffer with additional native species of trees, shrubs, and/or groundcovers.

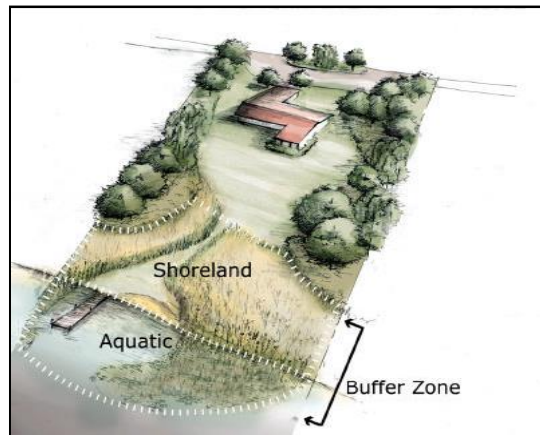


Image: The Wisconsin Lakes Partnership

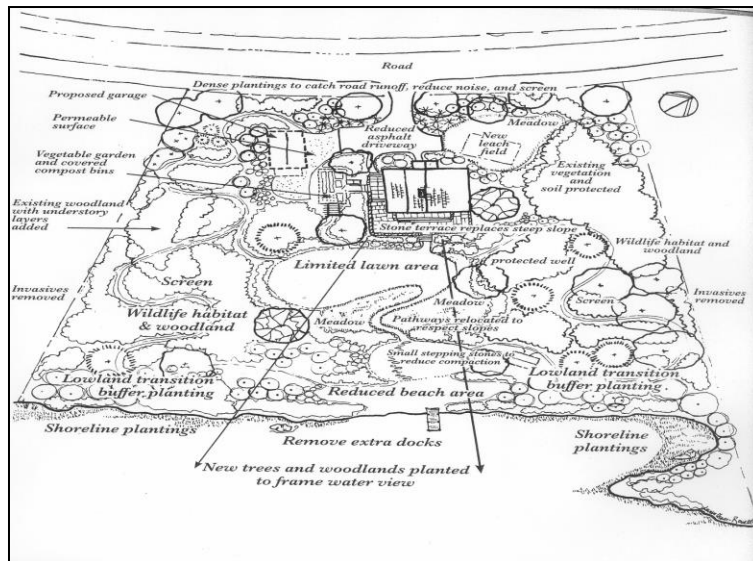


Image: The Wisconsin Lakes Partnership

References:

[Shoreland restoration: a growing solution video](#)

Restoration of a Primary Buffer - 1 point per 7' of buffer (maximum of 5 points)

-Restore a primary vegetative buffer of 35 feet from the OHWM of the water resource (seven foot increments are as measured from the OHWM landward)

Mitigation Intent: Protection of the water resource through the reestablishment of native vegetation in the primary buffer, screening of development from the waterway, and provide near shore wildlife habitat.

Standards: Development of a restoration plan using native plantings suitable to the site. The near shore habitat should be designed with native plantings that offer protection and improvement of the water resource. A management plan identifying the establishment of native plantings, invasive species control, and site specific remedies to control erosion on the site during and after the project is needed for this mitigation strategy. Viewing corridor from the developed portion of the site to the waters edge can be maintained for the benefit of the property. Plan restores three tiers of native vegetation within the buffer area—canopy, shrubs, and ground layer of grasses, sedges, rushes, ferns, and wildflowers.



Image: The Wisconsin Lakes Partnership



Image: www.wisconsinlakes.org

References:

[Protecting and Restoring Shorelands - WDNR/UWEX](#)

[A Fresh Look at Shoreland Restoration - WDNR/UWEX](#)

[Protecting our Living Shores - WDNR/UWEX](#)

[Wisconsin Native Plant Sources and Restoration Consultants - DNR/UWEX](#)

[Shoreland Habitat Conservation Practice Standard - NRCS](#)

[WI Biology Technical Note - NRCS](#)

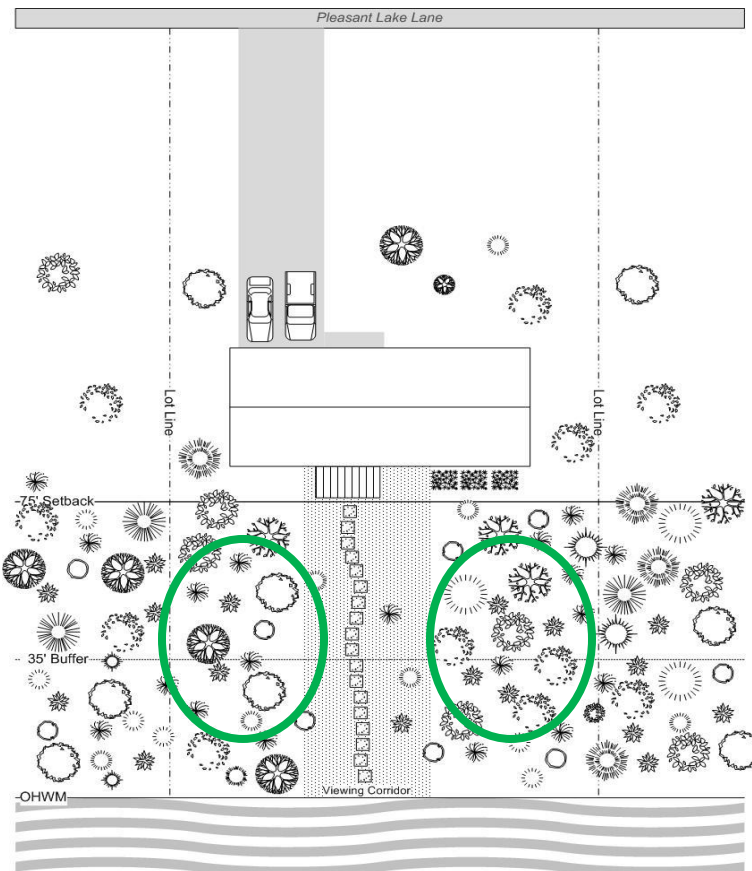
[Re-Vegetation Fact Sheet - Waushara Co.](#)

Restoration of (or existing) Side-Yard Buffer - 1 point per 7' of width (maximum of 2 points per side and 4 points per lot)

-Restoration of natural vegetation within the side-yard of the parcel from >35' to 75' from the OHWM

Mitigation Intent: Habitat improvement of the side-yard areas on shoreland properties with the reestablishment of native vegetation.

Standards: Native Plants, Invasive species control, removal of dead, diseased, dying vegetation.



References:

- [Protecting and Restoring Shorelands - WDNR/UWEX](#)
- [A Fresh Look at Shoreland Restoration - WDNR/UWEX](#)
- [Protecting our Living Shores - WDNR/UWEX](#)
- [Wisconsin Native Plant Sources and Restoration Consultants - DNR/UWEX](#)
- [Shoreland Habitat Conservation Practice Standard - NRCS](#)
- [WI Biology Technical Note - NRCS](#)
- [Re-Vegetation Fact Sheet - Waushara Co.](#)

Decreased Access and Viewing Corridor - 1 point per 5% decrease from 30% (maximum of 3 points)

-Reduction of the maximum allowed access and viewing corridor width to the waters edge and increasing the natural buffer within 35' of the OHWM

Mitigation Intent: Habitat improvement on shoreland properties with increased reestablishment of native vegetation. Screening of development as viewed from the waterway.

Standards: Native trees, shrubs, and ground cover plantings



Image: The Wisconsin Lakes Partnership

References:

[Protecting and Restoring Shorelands - WDNR/UWEX](#)

[A Fresh Look at Shoreland Restoration - WDNR/UWEX](#)

[Protecting our Living Shores - WDNR/UWEX](#)

[Wisconsin Native Plant Sources and Restoration Consultants - DNR/UWEX](#)

[Shoreland Habitat Conservation Practice Standard - NRCS](#)

[WI Biology Technical Note - NRCS](#)

[Infiltration Steps](#)

[Re-Vegetation Fact Sheet - Waushara Co.](#)

Management or Restoration of Near-Shore Aquatic Habitat – 1 point

-Restoration of the aquatic environment adjacent to the primary buffer utilizing best management practices

Mitigation Intent: Habitat improvement within the near shore water adjacent to a restored primary buffer.

Standards: Restored primary buffer must be established prior to or in conjunction with restoration of the near-shore habitat. (An area clear of near shore vegetation consistent with the viewing corridor is acceptable as part of this mitigation.) DNR concurrence with proposed habitat improvements and practices are needed prior to the project.



Image: The Wisconsin Lakes Partnership

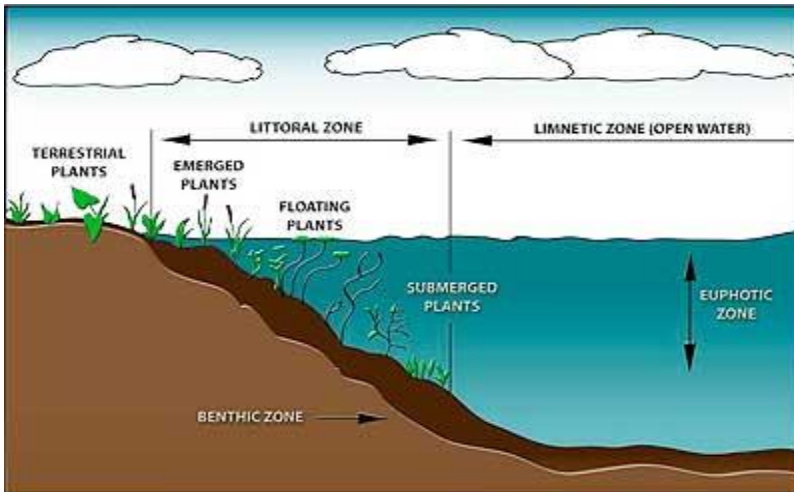


Image: www.wisconsinlakes.org

References:

[Aquatic Plant Management in Wisconsin-Clean Lakes Alliance](#)
[Planting the Seed Guide - Establishing Aquatic Plants 2004](#)

Seawall Removal – 2 points

-Removal of a seawall with restoration of the natural shoreline

Mitigation Intent: Habitat improvement connecting the primary buffer with the near-shore aquatic habitat

Standards: Restore stable slopes with native plantings at the waters edge. DNR concurrence with the proposed project is needed prior to the Department approval of this mitigation practice.



Image: The Wisconsin Lakes Partnership

References:

[WDNR Waterway & Wetland Permits: Lake Shore Erosion Control](#)
[Restore your Shore - MN DNR](#)

Seawall Modification – 1 point

-Modification of a seawall to improve the habitat interface between the primary buffer and the near-shore aquatic habitat.

Mitigation Intent: Habitat improvement connecting the primary buffer with the near-shore aquatic habitat

Standards: Restore stable slopes with native plantings at the waters edge. DNR concurrence with the proposed project is needed prior to the Department approval of this mitigation practice.

Increased Setback of Structures - 1 point per 5' of increased setback beyond required (maximum of 3 points)

-Siting a structure on the property further away from the OHWM than the required minimum setback

Mitigation Intent: Increased enhancement of the natural views from the water by increasing the distance between the waterway and the development on a property. Benefits to water quality result from a wider buffer between the impervious surface and the waterway.

Standards: Increased distance between structures from the waters edge beyond the minimum setback as defined by the *Shoreland Zoning Ordinance*.

Use of Earth-Tone Materials or Colors – 1 point

- Earth-tone colors utilized on the developed portion of the property

Mitigation Intent: Improved natural views from the water using colors to screen the development on shoreland property. Blend the development on a property with the natural surroundings of the shoreland to make the site less conspicuous as viewed from the water.

Standards: Use of earth-tone colors for all developed components of the development on the property within the viewing corridor from the shore. Practices include the use of exterior building materials or treatments that are inconspicuous and blend with the natural setting of the site.

Removal of a Legal Non-Conforming Structure

- **Accessory Structure – 2 points**
- **Principal Structure - 3 points**

-Voluntary removal of a legal non-conforming structure on the property.

Mitigation Intent: Elimination of legal non-conforming structures on shoreland properties.

Standards: Removal of a legal nonconforming structure without replacement. An existing nonconforming accessory structure must be of at least 120 square feet in area to qualify for 2 points.

Removal of Existing Shore Lighting with Installation of Downcast Shore Lighting – 1 point

- Remove, reduce, improve, or install lighting to limit light pollution beyond the viewing corridor of the property

Mitigation Intent: Improved natural views from the shoreline

Standards: All lighting within 75' required to comply with a down-lighting standard eliminating the spillover of light to the water or neighboring properties.

References:

[Sensible shoreland lighting](#)

Conservation Easement – points based on proposal - 1 to 8 points

- Work with the local land trust to permanently preserve natural areas within or connected to shoreland areas.

Mitigation Intent: Permanent preservation and protection of natural areas

Standards: Site must be ecologically significant to the water resource, have a management plan to control invasive species, and a recorded easement in place

[Glacial Lakes Land Conservancy](#)

Wildcard – points based on proposal – 1 to 8 points

-Mitigation strategy proposed by the applicant and agreed upon by the Department

Standards: Applicant must demonstrate a connection between the proposed mitigation and the intent/purpose of the *Shoreland Zoning Ordinance*.

