



Enacting Shoreline Zoning Protections Around Lake Charlevoix

2016 Final Report

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Tip of the Mitt Watershed Council

Acknowledgements

A steering committee of local planning and zoning professionals provided insight and recommendations throughout the creation of this report. The committee's collective experience and knowledge of Lake Charlevoix shoreline issues were instrumental in the creation of the recommendations of this report.

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Funding

Funding for this project was provided through a grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council.

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November, 2016

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Whether it's fishing, sailing, birding or swimming, activities that connect people to Lake Charlevoix provide the foundation for protecting the lake and its water quality, as noted by residents and visitors alike. Communities surrounding Lake Charlevoix have a long history of working together to actively protect the water quality of Lake Charlevoix. According to the 2012 Lake Charlevoix Watershed Management Plan, the community places a high priority on protecting the water quality of Lake Charlevoix and its tributaries. A key strategy for achieving this is reducing the amount of nonpoint source pollution that enters the lake by working with local governments and shoreline property owners to reduce stormwater runoff. *Enacting Shoreline Zoning Protections Around Lake Charlevoix* was a three-year project aimed at protecting the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the 10 jurisdictions surrounding the lake.

With a surface area of over 17,200 acres, Lake Charlevoix is the third largest inland lake in Michigan.

Led by the Land Information Access Association (LIAA), a non-profit community services organization based in Traverse City, the project team worked with local planning and zoning officials to develop and implement new zoning standards for waterfront properties around the lake. In general, communities were very receptive to this idea, and significant progress was made in moving forward local policies to protect water quality. The following project report details the project background and process, a summary of current shoreline protection zoning standards in the 10 jurisdictions surrounding Lake Charlevoix, a summary of the recommendations for each community, and a series of next steps to build on the positive momentum that emerged from this effort.

Project Purpose and Background

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. The goal of this project was to further institutionalize this acceptance of shoreline protection standards in the each community surrounding Lake Charlevoix: the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

This effort of adopting zoning protections is one piece of a larger project called the *Lake Charlevoix Watershed: Protection through Action Project*, made possible by a Michigan Department of Environmental Quality Nonpoint Source Program 319 grant secured by the Tip of the Mitt Watershed Council. In addition to working on local ordinance language, project partners are working to protect water quality through coordination and enforcement of water quality protections, establishment of the

Lake Charlevoix Association Guardian Program, and by working to improve septic system regulations in Charlevoix County.



Map of the 10 jurisdictions surrounding Lake Charlevoix.

Why Protect Water Quality?

It is well understood that shoreline development impacts the water quality of lakes and streams as well as the surrounding terrestrial ecosystems, and local governments have a special role to play in ensuring that inland lakes and streams are protected. A considerable amount of water quality data has been collected from surface waters in the Lake Charlevoix Watershed for over 40 years, and the underlying finding is that the water quality has been in large part preserved and protected despite increased development and human activity. The good news is that protection of water quality and prevention of degradation is significantly easier than restoring a damaged resource. To ensure that Lake Charlevoix is protected for generations to come, local officials are coming together to make a commitment to systematically address water quality issues through local their zoning ordinances. Water quality protection provides a wide range of community benefits, including preservation of quality of life, wildlife habitat, recreational opportunities, human health, aesthetics, economic vitality and increased property values.

This project primarily focused on zoning actions that can be taken to protect the *shoreland protection zone* (see image to the right). The shoreland protection zone is the area between the water and the upland zone. Implementing shoreline protection minimizes runoff volume, controls peak runoff rates, maximizes infiltration and groundwater recharge, protects water quality, helps prevent flooding, minimizes erosion, protects channels and banks, and reduces sedimentation of water bodies.



Project Process

The following briefly details each step of the three-year project. Each step is expanded upon later in the report.

Step 1: We began by convening a steering committee composed primarily of zoning administrators representing each of the 10 jurisdictions surrounding Lake Charlevoix. Another piece of the project initiation phase was developing a project website (www.lakecharlevoixprotection.org) to track the existing zoning ordinances of each jurisdiction as they relate to water quality. The website also served as a resource for the communities to learn more about how they can improve water quality protection through their local ordinances.

Step 2: The next step was to review the findings and recommendations from previous shoreline protection efforts (see the section called *Prior Lake Charlevoix Shoreline Protection Efforts* for a detailed account of prior protection efforts). The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations found in this report.



Step 3: Working under guidance from the steering committee, LIAA reviewed the contents of each of the 10 zoning ordinances as they pertained to a whole host of different zoning standards that protect water quality. Using the review of existing ordinances as a starting point, the project team worked with the steering committee to develop a list of 10 best practices that informed recommendations made to each community.

Step 4: Education was an important component of the project, and presentations were made to the public and to local officials throughout the project's duration. LIAA presented at the

Charlevoix County Planner's Forum each year (2014, 2015 and 2016). The purpose of these presentations was to educate local communities about the importance of water quality protection, provide an overview of the project, provide project updates in subsequent years, and get feedback on how best to connect with local communities and make the information meaningful and implementable. LIAA also presented in front of all 10 planning commissions at their monthly meetings to review recommended changes to the zoning ordinances and receive feedback from the commissions on which ordinance language would be most appropriate for their community to adopt.

Step 5: Based on feedback from each planning commission, the project team drafted a series of recommended edits tailored to each individual jurisdiction's ordinance. The proposed edits were made to be easily inserted into the existing ordinance and were based on feedback from the planning commission as to what types of ordinance amendments would be most realistic to implement, both politically and practically.

History of Prior Shoreline Protection Efforts

There have been a number of past shoreline studies focused on tools for local governments to protect water quality in the Lake Charlevoix community. These studies provided valuable insight and formed the basis of the recommendations of this report. The project team reviewed and analyzed the efforts of three previous shoreline protection studies that addressed zoning standards in the jurisdictions surrounding Lake Charlevoix. These efforts included the *Lake Charlevoix Zoning Study Group's Shoreline Protection Strategies* project, the *Fostering Smart Growth Land Use Policies Across the Charlevoix Community* project, and Tip of the Mitt Watershed Council's *Charlevoix County Local Ordinance Gaps Analysis*.

The *Fostering Smart Growth Land Use Policies Across the Charlevoix Community* project made recommendations for shoreline zoning standards in the City of Charlevoix, Charlevoix Township, Eveline Township, Hayes Township, Marion Township, and Norwood Township. In 2008, LIAA worked with six jurisdictions as well as the County as a whole to adopt a series of greenbelt standards along Lake Charlevoix and Lake Michigan shorelines. The report recommended that greenbelt provisions be added within the *general provisions* of each ordinance, that waterfront greenbelt districts be established, and that an illustration of the greenbelt be a required part of any site development plan that is submitted. LIAA worked with each community to adopt these standards by developing checklists that outline the administrative process and public requirements of amending ordinance standards.

The *Lake Charlevoix Zoning Study Group's Shoreline Protection Strategies* report focused on the shoreline zoning standards of Bay Township, Boyne City, East Jordan, Evangeline Township, Eveline Township, and South Arm Township. In 2012, MSU Extension staff worked with these communities to make recommendations on a variety of shoreline protection standards, focused on single family waterfront residences. Examples of recommendations include a consistent Ordinary High Water Mark

(OHWM), shoreline setbacks for residential areas, greenbelts, impervious surface limits, zoning enforcement, standards for shoreline protection structures, and requirements for septic systems.

The project team also reviewed the recommendations of the Tip of the Mitt Watershed Council's *Charlevoix County Local Ordinance Gaps Analysis* as a part of this process. The gaps analysis provides specific ordinance recommendations for each jurisdiction in Charlevoix County and includes an evaluation of each community's master plan, zoning ordinance, stormwater management provisions, wetlands protections, sewer and septic controls, and groundwater and wellhead protections. Each component was rated as either strong, adequate, weak, or missing. The recommendations specific to shoreline ordinance provisions were helpful in identifying ways that each jurisdiction can improve its standards to better protect water quality.

Review of Current Zoning Standards

In addition to reviewing past studies, the project team deemed it necessary to identify which shoreline protection standards are present in each existing zoning ordinance. All 10 local zoning ordinances were reviewed to determine existing shoreline protection standards, including:

- High water elevation
- Shoreline setbacks
- Greenbelt, or vegetative buffer, standards
- Maximum impervious surface lot coverage
- Permitting requirements on waterfront lots
- Keyhole and funneling standards
- Shoreline protection structures

The tables on the following pages illustrate the extent of the shoreline protection standards for zoning districts in each jurisdiction that have at least some frontage on Lake Charlevoix.

City of Boyne City – Existing Shoreline Protection Zoning Standards

Community	City of Boyne City			
	WRD	MFRD	CSD	CBD
Zoning District				
Defined High Water Elevation/OHWM	582.4' I.G.L.D.			
Setback from OHWM	35'	35'	35'	35'
Maximum Impervious Surface Coverage	30%*	30%*	40%*	100%*
Shoreline Buffer/Greenbelt Requirement	-	-	-	-
Native vegetation requirement in greenbelt	-	-	-	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-	-	-
Specific prohibition of lawn in greenbelt	-	-	-	-
Requirement of trees/woody plants in greenbelt	-	-	-	-
Cutting/pruning of greenbelt vegetation limited	-	-	-	-
Prohibition of beach sanding in greenbelt	-	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	-	-	-	-
Allows a single path (6' maximum width) through the greenbelt to the water	-	-	-	-
Allows for the maintenance of existing natural shoreline buffers, where they exist	-	-	-	-
Requirement that all county, state, federal permits be obtained prior to zoning permit being issued	-	-	-	-
Formal Planning Commission site plan review for all waterfront uses	-	-	-	-
Dock regulation	Yes	-	-	-
Specific keyhole/funneling standards	-	-	-	-
Prohibition of seawalls	-	-	-	-
Engineered stormwater control system requirement	Yes**	Yes**	Yes**	Yes**

*Maximum lot area covered by buildings.

**Stormwater plans that comply with the Charlevoix County Stormwater Ordinance are required in all zoning districts for all proposed uses except single-family, detached residential uses.

Note: Maximum front yard coverage in inorganic material is 40% in the WRD zoning district.

City of Charlevoix – Existing Shoreline Protection Zoning Standards

Community	City of Charlevoix		
	R1	SR	MC
Zoning District			
Defined High Water Elevation/OHWM	581.5' I.G.L.D.		
Setback from OHWM	50'	50'	0'
Maximum Impervious Surface Coverage	40%	30%	-
Shoreline Buffer/Greenbelt Requirement	-	-	-
Native vegetation requirement in greenbelt	-	-	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-	-
Specific prohibition of lawn in greenbelt	-	-	-
Requirement of trees/woody plants in greenbelt	-	-	-
Cutting/pruning of greenbelt vegetation limited	-	-	-
Prohibition of beach sanding in greenbelt	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	-	-	-
Allows a single path (6' maximum width) through the greenbelt to the water	-	-	-
Allows for the maintenance of existing natural shoreline buffers, where they exist	-	-	-
Requirement that all county, state, federal permits be obtained prior to zoning permit being issued	-	-	-
Formal Planning Commission site plan review for all waterfront uses	-	-	-
Dock regulation	-	-	-
Specific keyhole/funneling standards	-	-	-
Prohibition of seawalls	-	-	-
Engineered stormwater control system requirement	Yes*	Yes*	Yes*

**All site plans submitted for approval must show the location and type of all proposed surface water drainage facilities.*

City of East Jordan – Existing Shoreline Protection Zoning Standards

Community	City of East Jordan					
	RA	R1	R3	I	WF	CR
Zoning District						
Defined High Water Elevation/OHWM	Legally established surface water level					
Setback from OHWM	40'	35'	35'	75'	50'	50'
Maximum Impervious Surface Coverage	30%	30%	30%	75%	75%	20%
Shoreline Buffer/Greenbelt Requirement	-	-	-	-	-	-
Native vegetation requirement in greenbelt	-	-	-	-	-	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-	-	-	-	-
Specific prohibition of lawn in greenbelt	-	-	-	-	-	-
Requirement of trees/woody plants in greenbelt	-	-	-	-	-	-
Cutting/pruning of greenbelt vegetation limited	-	-	-	-	-	-
Prohibition of beach sanding in greenbelt	-	-	-	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	-	-	-	-	-	-
Allows a single path (6' maximum width) through the greenbelt to the water	-	-	-	-	-	-
Allows for the maintenance of existing natural shoreline buffers, where they exist	-	-	-	-	-	-
Requirement that all county, state, federal permits be obtained prior to zoning permit being issued	-	-	-	-	-	-
Formal Planning Commission site plan review for all waterfront uses	-	-	Yes	Yes	Yes	-
Dock regulation	-	-	-	-	-	-
Specific keyhole/funneling standards	-	-	-	-	-	-
Prohibition of seawalls	-	-	-	-	-	-
Engineered stormwater control system requirement			Yes*	Yes*	Yes*	

**All proposed development in the R-3, WF, and I districts, except single-family homes in the R-3 district, must meet the surface water drainage requirements of the ordinance.*

Bay Township – Existing Shoreline Protection Zoning Standards

Community	Bay Township		
	A	C	R1
Zoning District	A	C	R1
Defined High Water Elevation/OHWM	581.5' I.G.L.D.		
Setback from OHWM	65'	65'	65'
Maximum Impervious Surface Coverage	10%-50%*	10%-50%*	10%-50%*
Shoreline Buffer/Greenbelt Requirement	45'	45'	45'
Native vegetation requirement in greenbelt	Yes	Yes	Yes
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-	-
Specific prohibition of lawn in greenbelt	-	-	-
Requirement of trees/woody plants in greenbelt	Yes	Yes	Yes
Cutting/pruning of greenbelt vegetation limited	Yes	Yes	Yes
Prohibition of beach sanding in greenbelt	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter	Stricter	Stricter
Allows a single path (6' maximum width) through the greenbelt to the water	Yes	Yes	Yes
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	Yes	Yes
Requirement that all county, state, federal permits be obtained prior to zoning permit being issued	Yes	Yes	Yes
Formal Planning Commission site plan review for all waterfront uses	-	-	-
Dock regulation	Yes	Yes	Yes
Specific keyhole/funneling standards	-	-	-
Prohibition of seawalls	-	-	-
Engineered stormwater control system requirement	-	Yes**	-

*Based on average parcel slope.

** Stormwater management systems are required as a standard for Site Plan Approval for all proposed development in the C district.

Charlevoix Township – Existing Shoreline Protection Zoning Standards

Community	Charlevoix Township			
	R-1	R-2	PRD	I-2
Zoning District	R-1	R-2	PRD	I-2
Defined High Water Elevation/OHWM	579.8' I.G.L.D.			
Setback from OHWM	50'	50'	50'	50'
Maximum Impervious Surface Coverage	30%	35%	-	-
Shoreline Buffer/Greenbelt Requirement	50'	50'	50'	-
Native vegetation requirement in greenbelt	Yes*	Yes*	Yes*	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-	-	-
Specific prohibition of lawn in greenbelt	Yes**	Yes**	Yes**	-
Requirement of trees/woody plants in greenbelt	-	-	-	-
Cutting/pruning of greenbelt vegetation limited	Yes	Yes	Yes	-
Prohibition of beach sanding in greenbelt	-	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	Yes	Yes	Yes	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter	Stricter	Stricter	-
Allows a single path (6' maximum width) through the greenbelt to the water	Stricter	Stricter	Stricter	-
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	Yes	Yes	-
Requirement that all county, state, federal permits be obtained prior to zoning permit being issued	Yes***	Yes***	Yes***	Yes***
Formal Planning Commission site plan review for all waterfront uses	-	-	-	-
Dock regulation	-	-	-	-
Specific keyhole/funneling standards	-	-	-	-
Prohibition of seawalls	-	-	-	-
Engineered stormwater control system requirement	-	-	Yes****	Yes****

*Native plants required in first 25' from OHWM.

**No cultivated varieties of vegetation or grass allowed within 25' of the OHWM.

***All development subject to site plan review must meet requirements of other government agencies and have such approval obtained or assured.

****Stormwater management and soil erosion control plans are required for proposed development except single- and two-family homes.

Note: Shoreline protection standards apply to all districts except I-2.

Evangeline Township – Existing Shoreline Protection Zoning Standards

Community	Evangeline Township				
	SWB	K	P	R/CS	GB
Defined High Water Elevation/OHWM	582.35' I.G.L.D. plus one (1) foot				
Setback from OHWM	50' (100' - steep slopes)				
Maximum Impervious Surface Coverage	15% or 2,500 s.f.	15%	25% or 3,000 s.f.	15%	15% or 2,500 s.f.
Shoreline Buffer/Greenbelt Requirement	25' (50' - steep slopes)				
Native vegetation requirement in greenbelt	Yes	Yes	Yes	Yes	Yes
Prohibition of pesticides, herbicides, fertilizers in greenbelt	Yes	Yes	Yes	Yes	Yes
Specific prohibition of lawn in greenbelt	Yes	Yes	Yes	Yes	Yes
Requirement of trees/woody plants in greenbelt	Yes	Yes	Yes	Yes	Yes
Cutting/pruning of greenbelt vegetation limited	Yes	Yes	Yes	Yes	Yes
Prohibition of beach sanding in greenbelt	-	-	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	Yes	Yes	Yes	Yes	Yes
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter	Stricter	Stricter	Stricter	Stricter
Allows a single path (6' maximum width) through the greenbelt to the water	Stricter	Stricter	Stricter	Stricter	Stricter
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	Yes	Yes	Yes	Yes
Requirement that all county, state, federal permits be obtained prior to zoning permit being issued	Yes	Yes	Yes	Yes	Yes
Formal Planning Commission site plan review for all waterfront uses	Yes	Yes	Yes	Yes	Yes
Dock regulation	Yes	Yes	Yes	Yes	Yes
Specific keyhole/funneling standards	-	-	-	-	-
Prohibition of seawalls	Yes	Yes	Yes	-	Yes
Engineered stormwater control system requirement	Yes	Yes	Yes	Yes	Yes

Eveline Township – Existing Shoreline Protection Zoning Standards

Community	Eveline Township				
	R	VC	FF	G	VMU
Zoning District					
Defined High Water Elevation/OHWM	582.35' I.G.L.D.				
Setback from OHWM	50'	50'	50'	50'	50'
Maximum Impervious Surface Coverage	20%	20%	20%	20%	20%
Shoreline Buffer/Greenbelt Requirement	50'	50'	50'	50'	50'
Native vegetation requirement in greenbelt	Yes	Yes	Yes	Yes	Yes
Prohibition of pesticides, herbicides, fertilizers in greenbelt	Yes	Yes	Yes	Yes	Yes
Specific prohibition of lawn in greenbelt	-	-	-	-	-
Requirement of trees/woody plants in greenbelt	Yes	Yes	Yes	Yes	Yes
Cutting/pruning of greenbelt vegetation limited	Yes	Yes	Yes	Yes	Yes
Prohibition of beach sanding in greenbelt	-	-	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Yes	Yes	Yes	Yes	Yes
Allows a single path (6' maximum width) through the greenbelt to the water	Yes	Yes	Yes	Yes	Yes
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	Yes	Yes	Yes	Yes
Requirement that all county, state, federal permits be obtained prior to zoning permit being issued	-	-	-	-	-
Formal Planning Commission site plan review for all waterfront uses	-	-	-	-	-
Dock regulation	Yes	Yes	Yes	Yes	Yes
Specific keyhole/funneling standards	Yes	Yes	Yes	Yes	Yes
Prohibition of seawalls	-	-	-	-	-
Engineered stormwater control system requirement	Yes*	Yes*	Yes*	Yes*	Yes*

**All proposed development requiring site plan review must conform with Charlevoix County Drain Commission standards.*

Hayes Township – Existing Shoreline Protection Zoning Standards

Community	Hayes Township	
	R-1	A
Zoning District	R-1	A
Defined High Water Elevation/OHWM	582.3' I.G.L.D.	
Setback from OHWM	100'	100'
Maximum Impervious Surface Coverage	15%	30%
Shoreline Buffer/Greenbelt Requirement	50'	50'
Native vegetation requirement in greenbelt	Yes	Yes
Prohibition of pesticides, herbicides, fertilizers in greenbelt	Yes	Yes
Specific prohibition of lawn in greenbelt	-	-
Requirement of trees/woody plants in greenbelt	Yes	Yes
Cutting/pruning of greenbelt vegetation limited	Yes	Yes
Prohibition of beach sanding in greenbelt	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter	Stricter
Allows a single path (6' maximum width) through the greenbelt to the water	Yes	Yes
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	Yes
Requirement that all county, state, federal permits be obtained prior to zoning permit being issued	Yes	Yes
Formal Planning Commission site plan review for all waterfront uses	-	-
Dock regulation	Yes	Yes
Specific keyhole/funneling standards	Yes	Yes
Prohibition of seawalls	-	-
Engineered stormwater control system requirement	Yes	Yes

Marion Township – Existing Shoreline Protection Zoning Standards

Community	Marion Township
Zoning District	R-1
Defined High Water Elevation/OHWM	As established by law
Setback from OHWM	50'
Maximum Impervious Surface Coverage	-
Shoreline Buffer/Greenbelt Requirement	50'
Native vegetation requirement in greenbelt	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	Yes
Specific prohibition of lawn in greenbelt	-
Requirement of trees/woody plants in greenbelt	-
Cutting/pruning of greenbelt vegetation limited	-
Prohibition of beach sanding in greenbelt	-
Prohibition of alteration of area between water's edge and high water elevation	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter
Allows a single path (6' maximum width) through the greenbelt to the water	Yes
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes
Requirement that all county, state, federal permits be obtained prior to zoning permit being issued	Yes
Formal Planning Commission site plan review for all waterfront uses	-
Dock regulation	-
Specific keyhole/funneling standards	-
Prohibition of seawalls	-
Engineered stormwater control system requirement	Yes*

**All development requiring site plan review shall comply with the terms of the Charlevoix County Stormwater Runoff Control Ordinance.*

South Arm Township – Existing Shoreline Protection Zoning Standards

Community	South Arm Township	
	R-2	C-1
Zoning District	R-2	C-1
Defined High Water Elevation/OHWM	As established by law	
Setback from OHWM	100'	75'
Maximum Impervious Surface Coverage	30%	-
Shoreline Buffer/Greenbelt Requirement	50'	-
Native vegetation requirement in greenbelt	-	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-
Specific prohibition of lawn in greenbelt	-	-
Requirement of trees/woody plants in greenbelt	Yes	-
Cutting/pruning of greenbelt vegetation limited	Yes	-
Prohibition of beach sanding in greenbelt	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter	-
Allows a single path (6' maximum width) through the greenbelt to the water	Stricter	-
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	-
Requirement that all county, state, federal permits be obtained prior to zoning permit being issued	Yes	Yes
Formal Planning Commission site plan review for all waterfront uses	-	-
Dock regulation	Yes	Yes
Specific keyhole/funneling standards	Yes	Yes
Prohibition of seawalls	-	-
Engineered stormwater control system requirement	Yes*	Yes*

*Stormwater retention consistent with the Charlevoix County Stormwater program required on site for all development.

Shoreline Protection Recommendations

Because the project team was not embroiled in the day-to-day demands of implementing and enforcing the zoning ordinances in the way that zoning administrators are, conversations with the steering committee were critical in formulating realistic and implementable standards. Using the inventory of existing protections as well as past recommendations from previous planning efforts, the project team identified a series of broad recommendations. The steering committee was integral to the process of refining the recommendations to ensure each one was realistic, implementable, and enforceable.

The steering committee noted that, in order to be effective, recommendations for zoning standards must address the different circumstances faced by townships and cities within the study area. The committee recognized these difficulties and made different recommendations for cities and townships where applicable. It was also noted that there may be limiting factors in certain portions of the study area that make the adoption of uniform standards difficult. While the physical characteristics of certain waterfront parcels may present some challenges in implementing common recommendations, the committee decided that general recommendations should be developed and adjustments could be made to meet each community's specific needs.

The following is a list of specific categories for which recommendations were made:

- High water elevation
- Shoreline setbacks
- Greenbelts or vegetated buffer strips
- Engineered stormwater control systems
- Maximum impervious surface lot coverage
- Conditions for issuance of zoning permits
- Formal planning commission site plan review
- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

General shoreline protection recommendations for each of these categories are detailed below. Each category heading notes whether the recommendation applies to townships only or both cities and townships. Due to existing development patterns (e.g., smaller lot sizes, shallow setbacks, etc.) and the presence of highly disturbed sites within the three cities in the study, the application of some of the recommended shoreline zoning standards is impractical. On the following pages, the recommendations of the project team and steering committee are presented along with the reasoning for the recommendations and a listing of the jurisdictions whose ordinances already meet the recommended standards.

Recommendation #1: High Water Elevation – Cities and Townships

Zoning ordinances will define a High Water Elevation for Lake Charlevoix as 582.35' IGLD (International Great Lakes Datum, or IGLD, is the reference system by which Great Lakes water levels are measured).

Reasons for recommendation

582.35' IGLD is the highest water level recorded on Lake Charlevoix. Historical water levels have frequently been higher than the defined Ordinary High Water Mark (OHWM) of 581.5', and standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake.

Three of 10 Zoning Ordinances around Lake Charlevoix currently meet or exceed this standard: Boyne City, Evangeline Township, and Eveline Township.

Recommendation #2: Shoreline Setbacks – Townships

Zoning ordinances will require shoreline setbacks of at least 50' from the High Water Elevation for all principle and accessory structures except for docks, shoreline protection structures, allowed viewing platforms, and stairs to the lake. Shoreline setbacks of 100' will be required when, within 500' of the lake, average slopes of the waterfront parcel are greater than 12%, impervious surface coverage is greater than 15%, and/or poor drainage conditions exist.

Reasons for recommendation

Implementing shoreline setbacks for structures reduces impervious surface coverage near the lake. This provides greater opportunity for stormwater runoff to *percolate* (filter gradually through the soil) before reaching the lake and can help prevent degradation of water quality caused by soil erosion and increased nutrient concentration. Based on calculations from the previous shoreline zoning study by MSU Extension, a shoreline setback of 50' in combination with a greenbelt will allow all stormwater runoff to percolate prior to reaching the lake on well drained, gently sloped sites with impervious surface coverage of 15% or less. When site conditions are less conducive to stormwater percolation, the larger 100' setback allows greater distance/time for percolation to occur.

Seven of seven Township Zoning Ordinances around Lake Charlevoix currently have shoreline setbacks that meet or exceed the 50' setback standard: Bay Township, Charlevoix Township, Evangeline Township, Eveline Township, Hayes Township, Marion Township, and South Arm Township. However, modification is needed in most cases to meet the additional setback standards for lots with steep slopes described above. The City of Charlevoix Zoning Ordinance also meets this standard.

Recommendation #3: Greenbelt/Vegetated Buffer Strips – Townships

Zoning ordinances will require a greenbelt, or vegetated buffer strip, for new development or redevelopment on lots along the shore of Lake Charlevoix. The greenbelt policy should:

- Set a minimum greenbelt depth of 50 feet, measured from the High Water Elevation
- Require native vegetation in the greenbelt

- Require trees and woody plants and shrubs be planted in the greenbelt
- Prohibit lawns within the greenbelt
- Prohibit beach sanding within the greenbelt and between the greenbelt and water's edge.
- Prohibit the use of herbicides, pesticides, and fertilizers within the greenbelt
- Prohibit alteration of the area between the water's edge and the High Water Elevation
- Allow limited, or reasonable, tree pruning in the greenbelt for filtered/corridor views
- Require that new low-growing plantings be spaced for complete ground coverage in two years
- Prohibit structures (except docks and shoreline protection structures) between the greenbelt and water's edge
- Allow a single, small (200 square feet) waterfront viewing platform in the greenbelt
- Allow a single path (6' maximum width) through the greenbelt to the water
- Allow for the maintenance of existing natural shoreline buffers, where they exist

Reasons for recommendation

Maintaining shoreline greenbelts, or vegetated buffer strips, helps protect the water quality of the lake by cooling water, reducing shoreline erosion, slowing stormwater runoff rates, and filtering nutrients from stormwater before it reaches the lake (Southeast Michigan Council of Governments). The use of native plants, woody shrubs and trees — instead of lawns and other less pervious surfaces — within the greenbelt allows for greater stormwater infiltration rates. Native plants often require less maintenance and are better adapted to local shoreline conditions. The inclusion of trees, shrubs and other native plants also helps to develop an extensive, healthy root system in the greenbelt (Tip of the Mitt Watershed Council, 2007). These root systems stabilize banks and help prevent erosion from reaching the lake. The elimination of lawns and prohibition of the use of herbicides, pesticides and fertilizers in the greenbelt reduces the potential for chemicals and nutrients to enter the lake. Chemicals and nutrients can disrupt natural food chains by killing organisms that act as food sources for fish and birds (Michigan Department of Natural Resources and Environment, 2010). Fish species can also be negatively impacted when added beach sand covers important lake-bottom habitats like gravel, rock and weed beds. Beach sanding is often futile due to natural shoreline processes and frequently results in the sand burying underwater habitat or being transported to adjacent properties (Tip of the Mitt Watershed Council, 2007).

Seven of seven Township Zoning Ordinances around Lake Charlevoix currently have greenbelt/vegetated buffer strip standards: Bay Township, Charlevoix Township, Evangeline Township, Eveline Township, Hayes Township, Marion Township, and South Arm Township. However, modification is needed in most cases to meet all of the standards listed above.

Recommendation #4: Engineered Stormwater Control Systems – Cities and Townships

In commercial, mixed-use, and multiple-family residential waterfront areas, zoning ordinances will require an engineered stormwater control system that accommodates all stormwater from on-site impervious surfaces and allows it to percolate prior to flowing into the lake.

Reasons for recommendation

Where smaller lot sizes and more intense land uses prevail, the incorporation of greenbelts can become more difficult. In these cases, engineered stormwater control systems can be used to capture stormwater from impervious surfaces, slow its speed, and allow it to percolate before it reaches the lake. This helps reduce the potential for shoreline erosion and reduce the amount of pollutants and nutrients from stormwater runoff reaching the lake.

Recommendation #5: Maximum Impervious Surface Lot Coverage – Townships

Zoning ordinances will establish a 15% maximum for impervious surface coverage on single-family residential lots within 500' of the High Water Elevation along the shore of Lake Charlevoix.

Reasons for recommendation

Impervious surface coverage greatly increases stormwater runoff volume and speed. Water quality has been shown to be negatively impacted by impervious surface coverage due to increased erosion and pollutant loads (Southeast Michigan Council of Governments). Reducing the amount of impervious surface coverage on waterfront parcels helps reduce the risk of shoreline erosion and the potential for pollutants to enter the lake through stormwater runoff.

Two of seven Township Zoning Ordinances around Lake Charlevoix currently meet or exceed this standard: Evangeline Township and Hayes Township.

Recommendation #6: Conditions for Issuance of Zoning Permits – Cities and Townships

Zoning ordinances will require that all necessary state, federal, and county permits (including Health Department septic permits) be obtained prior to a zoning permit being issued.

Reasons for recommendation

By requiring that all necessary permits be obtained prior to the issuance of a zoning permit, jurisdictions can be sure that the requirements of all other agencies are being met by the proposed development.

Three of 10 Zoning Ordinances around Lake Charlevoix currently meet or exceed this standard: Evangeline Township, Hayes Township, and Marion Township.

Recommendation #7: Formal Planning Commission Site Plan Review – Cities and Townships

Zoning Ordinances will require formal Planning Commission site plan review for all waterfront property development projects. Site plans should include all information already required for site plan review as well as the following:

- Location of the High Water Elevation
- Location of all setbacks, including the shoreline setback
- Existing and proposed site topography, shown at a minimum of 2' contour intervals
- Locations of existing and proposed structures and other impervious surfaces
- Calculations of existing and proposed impervious surface coverage

- Existing and proposed greenbelt/vegetated buffer strip, including a planting plan

Reasons for recommendation

By requiring formal site plan review for all waterfront property development projects, local units of government can gather detailed information and more precise documentation on proposed projects on waterfront parcels. The site plan review process identifies exactly what will happen on the property, allowing zoning staff to only need to verify that the development occurs based on the approved plans.

One of 10 Zoning Ordinances around Lake Charlevoix currently meets or exceeds this standard: Evangeline Township.

Recommendation #8: Shoreline Protection Structures – Cities and Townships

Zoning ordinances will prohibit the construction of seawalls in favor of revetments and engineered natural shorelines, except when there is no other practical alternative.

Reasons for recommendation

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall (Michigan Department of Environmental Quality).

One of 10 Zoning Ordinances around Lake Charlevoix currently meets or exceeds this standard: Evangeline Township.

Recommendation #9: Keyhole or Funneling Practices – Cities and Townships

Zoning ordinances will specifically prohibit or limit keyholing or funneling practices.

Reasons for recommendation

Keyholing or funneling is the practice of giving multiple property owners access to the lake from a single waterfront lot. These practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion (Ardizzone & Wyckoff, 2003). By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keyholing/funneling is prevented.

Two of 10 Zoning Ordinances around Lake Charlevoix currently meet or exceed this standard: Eveline Township and Hayes Township.

Recommendation #10: Number and Use of Docks – Cities and Townships

Zoning ordinances will limit the number of docks allowed and number of boats allowed for each waterfront parcel. The steering committee feels that each jurisdiction should determine what dock and boat standards are appropriate for their specific community.

Reasons for recommendation

Reducing the number of docks and boat storage spaces around the lake improves congestion and aesthetic issues, and can also help protect water quality by limiting the opportunity for erosion and fuel and chemical pollution from increased boating activity (Ardizzone & Wyckoff, 2003).

Six of 10 Zoning Ordinances around Lake Charlevoix currently meet or exceed this standard: Boyne City, Bay Township, Evangeline Township, Eveline Township, Hayes Township, and South Arm Township.

Planning Commission

Between February and November of 2016, the project team worked with each individual planning commission to develop and refine ordinance amendment language.

Presentations

The project team attended regularly-scheduled planning commission meetings and presented recommendations in front of each commission. For each presentation, a handout was developed for commissioners that summarized the potential ordinance amendments they could consider adopting based on their existing zoning ordinance. To view the meeting handouts distributed to each planning commission, please see Appendix A.

In general, the recommendations were well-accepted by the planning commissioners. In each community, there was a basic level of understanding of the impact that water quality has on public health, quality of life, the economy, and the ecosystem. There was a genuine desire to be proactive in regulating development and other activities along the shoreline to protect water quality beyond each jurisdiction's borders. It was a great opportunity to engage in an open dialogue with commissioners to learn more about how they implement their zoning ordinance in relation to waterfront development.

Planning commissioners in general agreed that flexible standards focused on desired outcomes are often better than strict standards. For example, requiring the planning commission to review all new waterfront developments through a site-plan review process gives property owners some flexibility to be creative in their design while still allowing the planning commission to ensure the development does not negatively impact water quality. We also found that some standards are perhaps too much trouble than they are worth. For example, raising the Ordinary High Water Mark by a few inches will cause a great number of non-conforming setbacks, but will not necessarily improve water quality substantially, especially in areas with steep slopes. In comparison, increasing setback requirements regardless of the starting elevation will ensure development does not encroach too close to the water's edge.

Draft Ordinance Language

Once an initial presentation had been made to the planning commissions, the project team drafted ordinance language. Draft ordinance language for each community was based on the conversations with and feedback from planning commissioners and was tailored to each individual community. The project team developed the language using Michigan Department of Environmental Quality best management practices, statewide model ordinances, and ordinances from neighboring communities surrounding Lake Charlevoix. It should be noted that the draft ordinance language is intended for planning commission

discussion; any additions or deletions to the existing zoning ordinance will need to be reviewed by a municipal attorney and will likely also be amended through the public hearing process.

The following table summarizes the date of each initial planning commission presentation, the date that draft ordinance language was submitted, and the planning commission contact to follow up with to ensure the ordinance amendments move forward. A complete set of draft ordinance language for each community can be found in Appendix B.

Community	Date of PC Presentation	Date Ordinance Language Sent	Commissison Contact	Title	Email
City of Boyne City	16-May-16	8-Jul-16	Scott McPherson	Planning/Zoning	smcpherson@boynecity.com
City of Charlevoix	11-Apr-16	24-Jun-16	Zach Panoff	Planning/Zoning	planner@cityofcharlevoix.org
City of East Jordan	9-Jun-16	4-Aug-16	Tom Cannon	City Administrator	tcannon@eastjordancity.org
Bay Township	3-Mar-16	7-Jun-16	Jim Vanek	Clerk	clerk@baytownship.org
Charlevoix Township	16-Mar-16	25-Apr-16	Dan Ulrich	PC Chair	d.ulrich57@gmail.com
Evangeline Township	16-Feb-16	7-Nov-16	Patrick Kilkenny	Planning/Zoning	pkilkenny@boynecity.com
Eveline Township*	13-Jul-16	4-Aug-16	Rick Duell	Planning/Zoning	rdeuell1952@gmail.com
Hayes Township	16-Aug-16	8-Nov-16	Marlene Golovich	Clerk	clerk@hayestownship.gov
Marion Township	23-May-16	14-Nov-16	Tim Matchett	PC Chair	timmatchett@hotmail.com
South Arm Township	9-Aug-16	14-Nov-16	John Ferguson	Zoning Administrator	john@fcasurveying.com

**Ordinance recommendations to Eveline consisted of commenting on draft language that they were already in the process of updating prior to the planning commission presentation.*

Next Steps

Through this effort, we learned that modifying existing ordinance language and getting the changes formally adopted by the local jurisdictions is a slow process. Given the time constraints of the project, it was not realistic to codify substantive changes to existing ordinances during the project period. The project team did not have the time or capacity to continue to assist each community through the public hearing process and formal adoption by each elected board. However, Tip of the Mitt Watershed Council and the Lake Charlevoix Association plan to carry this effort forward, building on what was started. The project website, www.lakecharlevoixprotection.org, will serve as a beneficial resource for each of the communities as well as the project partners as each community moves forward in adopting the ordinance updates. Tip of the Mitt Watershed Council will continue to update the website and use it as a tool for engaging communities.

One of the most beneficial outcomes of this project was the conversations, both with zoning administrators and with each individual planning commission. Discussing key issues helped the group identify creative solutions. Through these conversations, there were a number of opportunities to further explore local policies related to water quality that were beyond the scope of this project, or emerged once final recommendations had already been determined. The project team recommends that the following issues be considered in developing future projects:

- There is currently only one community — Charlevoix Township — that does not allow alteration of the area between the Ordinary High Water Mark and the water’s edge. There is very little case law about the implications of regulating this area, and many communities were hesitant to

include this regulation in their zoning ordinance. It would be beneficial to explore this issue further.

- Communities should consider increasing the use of images in their ordinances. Images of revetments and engineered natural shoreline solutions can help clarify what is acceptable for property owners. Further, visuals like those included in the Evangeline Township zoning ordinance help the property owner visualize greenbelt standards much better than simple descriptions.
- A number of communities noted that future projects should focus on solutions and best management practices on public waterfront property, and on working regionally to promote best management practices on shared county, state and federal resources.
- The pre-application conference that Evangeline Township offers to all developers as a way of having an informal conversation with the planning commission prior to formally submitting a site plan is a good technique and should be considered by other communities.
- A few communities were interested in strategies for regulating boathouses and wondered about the ramifications on upland dredging as water levels change.
- Requiring a detailed Landscaping Plan as a part of the zoning ordinance for waterfront properties — like Eveline Township plans to do in its updated ordinance — was a strategy that was well-received by other communities. This is another process that allows for creativity by the property owner while still ensuring the greenbelt provides the desired outcome.
- Melrose Township has an overlay district on Walloon Lake that extends back to the first street. This is a practical solution to avoid using absolute distances that split up parcels and could be a recommendation of future projects.

Appendix A:

Planning Commission Handouts

Enacting Shoreline Zoning Protections around Lake Charlevoix

Project Overview and Recommendations

Evangeline Township Planning Commission Meeting – 2-16-16

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. In an effort to build upon previous shoreline protection work, the Enacting Shoreline Zoning Protections project was launched to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. The project promotes the understanding and acceptance of the need for shoreline protection standards in the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

The project team, led by the Land Information Access Association (LIAA), a non-profit community services organization in Traverse City, convened a steering committee made up of local planning and zoning officials to help guide the creation of definitions and standards for waterfront properties around the lake. LIAA created a steering committee report and project website (lakecharlevoixprotection.org) that include a summary of the findings and recommendations from previous shoreline protection efforts, a summary of current shoreline protection zoning standards in the ten jurisdictions surrounding Lake Charlevoix, and recommendations for definitions and zoning standards to help protect Lake Charlevoix's water quality.

Review and analysis of the work by the previous shoreline protection studies shows that local municipalities can be effective in protecting water quality by managing development and redevelopment on waterfront properties. The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations for the local units of government around the Lake.

Current Shoreline Protection Zoning Standards in Evangeline Township

Evangeline Township has already gone to great lengths to protect the shoreline and water quality of Lake Charlevoix. The Township's Zoning Ordinance contains many standards and regulations that help prevent shoreline degradation, limit the impacts of stormwater runoff, and help prevent pollution of the Lake. The Township's residents, elected officials, and planning commissioners should be proud of their commitment to the continued protection of this valuable natural resource. The table on the following page illustrates the Zoning Ordinance's standards and regulations related to shoreline protection and indicates where they meet the recommendations created as a part of this project.

Community	Evangeline Township				
	SWB	K	P	R/CS	GB
Zoning District	SWB	K	P	R/CS	GB
Defined High Water Elevation/OHWM	582.35' I.G.L.D. plus one (1) foot				
Setback from OHWM	50' (100' - steep slopes)				
Maximum Impervious Surface Coverage	15% or 2,500 s.f.	15%	25% or 3,000 s.f.	15%	15% or 2,500 s.f.
Shoreline Buffer/Greenbelt Requirement	25' (50' - steep slopes)				
Native vegetation requirement in greenbelt	Yes	Yes	Yes	Yes	Yes
Prohibition of pesticides, herbicides, fertilizers in greenbelt	Yes	Yes	Yes	Yes	Yes
Specific prohibition of lawn in greenbelt	Yes	Yes	Yes	Yes	Yes
Requirement of trees/woody plants in greenbelt	Yes	Yes	Yes	Yes	Yes
Cutting/pruning of greenbelt vegetation limited	Yes	Yes	Yes	Yes	Yes
Prohibition of beach sanding in greenbelt	-	-	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	Yes	Yes	Yes	Yes	Yes
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter	Stricter	Stricter	Stricter	Stricter
Allows a single path (6' maximum width) through the greenbelt to the water	Stricter	Stricter	Stricter	Stricter	Stricter
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	Yes	Yes	Yes	Yes
Requirement of all county, state, federal permits be obtained prior to zoning permit being issued	Yes	Yes	Yes	Yes	Yes
Formal Planning Commission site plan review for all waterfront uses	Yes	Yes	Yes	Yes	Yes
Dock regulation	Yes	Yes	Yes	Yes	Yes
Specific keyhole/funneling standards	-	-	-	-	-
Prohibition of seawalls	Yes	Yes	Yes	-	Yes
Engineered stormwater control system requirement	Yes	Yes	Yes	Yes	Yes

Recommendations for further shoreline protection zoning standards in Evangeline Township

After reviewing the recommendations of the previous shoreline protection work groups and discussing appropriate shoreline protection standards for the ten jurisdictions surrounding Lake Charlevoix, the project team and steering committee identified specific categories for which recommendations should be made. Those categories are:

- High water elevation
- Shoreline setbacks
- Greenbelts or vegetated buffer strips
- Engineered stormwater control systems
- Maximum impervious surface lot coverage

- Conditions for issuance of zoning permits
- Formal planning commission site plan review
- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

As shown in the table above, the Evangeline Township Zoning Ordinance (Zoning Ordinance) contains many shoreline protection standards that align with the recommendations of the Enacting Shoreline Protections project. However, some of the recommended standards are not included in the Zoning Ordinance and we are requesting that the Planning Commission review these recommendations and consider amending the Zoning Ordinance to better protect the shoreline and water quality of Lake Charlevoix. The following recommended amendments to the Zoning Ordinance are included for your review and consideration.

Prohibit the sanding of beaches

It is recommended that the Zoning Ordinance be amended to prohibit beach sanding both within the natural vegetation waterfront buffer strip and between the high water elevation and the water’s edge. The sanding of beaches is often futile due to natural shoreline processes and variation in water levels. Beach sanding can also be detrimental to fish species within lakes when added beach sand covers important lake bottom habitats like gravel, rock, and weed beds. Specific language to prohibit beach sanding within the waterfront buffer strip could be added to Section 3.06 of the Township’s Zoning Ordinance. Additional amendments to prohibit beach sanding between the high water elevation and the water’s edge could also be added to the ordinance, either within Section 3.06 or as a new section in Article III: General Provisions.

Prohibit the alteration of the area between the water’s edge and the high water elevation

Jurisdiction over inland lake bottomlands between the high water elevation and the water’s edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas, including the alteration of the ground and the construction of structures. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water’s edge. The alteration of bottomlands between the water’s edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion. Specific language to prohibit the alteration of these areas could be included in a new section in Article III: General Provisions or, potentially, within Section 3.06 – Natural Vegetation Waterfront Buffer Strip.

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by

reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keholing/funneling is prevented. Specific language to regulate, or prohibit, keyhole/funnel development could be included within Article III: General Provisions or within each waterfront zoning district's section in Article V: Zoning Districts.

Project Funding

Funding for this project was provided through a 319 Grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council. Project partners working on this, and other, portions of the grant include Tip of the Mitt Watershed Council, MSU Extension, and the Lake Charlevoix Association.

Enacting Shoreline Zoning Protections around Lake Charlevoix

Project Overview and Recommendations

Bay Township Planning Commission Meeting – March 1, 2016

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. In an effort to build upon previous shoreline protection work, the Enacting Shoreline Zoning Protections project was launched to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. The project promotes the understanding and acceptance of the need for shoreline protection standards in the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

The project team, led by the Land Information Access Association (LIAA), a non-profit community services organization in Traverse City, convened a steering committee made up of local planning and zoning officials to help guide the creation of definitions and standards for waterfront properties around the lake. LIAA created a steering committee report and project website (lakecharlevoixprotection.org) that include a summary of the findings and recommendations from previous shoreline protection efforts, a summary of current shoreline protection zoning standards in the ten jurisdictions surrounding Lake Charlevoix, and recommendations for definitions and zoning standards to help protect Lake Charlevoix's water quality.

Review and analysis of the work by the previous shoreline protection studies shows that local municipalities can be effective in protecting water quality by managing development and redevelopment on waterfront properties. The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations for the local units of government around the Lake.

Current Shoreline Protection Zoning Standards in Bay Township

Bay Township has already gone to great lengths to protect the shoreline and water quality of Lake Charlevoix. The Township's Zoning Ordinance contains many standards and regulations that help prevent shoreline degradation, limit the impacts of stormwater runoff, and help prevent pollution of the Lake. The Township's residents, elected officials, and planning commissioners should be proud of their commitment to the continued protection of this valuable natural resource. The table on the following page illustrates the Zoning Ordinance's standards and regulations related to shoreline protection and indicates where they meet the recommendations created as a part of this project.

Community	Bay Township		
Zoning District	A	C	R1
Defined High Water Elevation/OHWM	581.5' I.G.L.D.		
Setback from OHWM	65'	65'	65'
Maximum Impervious Surface Coverage	10%-50%*	10%-50%*	10%-50%*
Shoreline Buffer/Greenbelt Requirement	45'	45'	45'
Native vegetation requirement in greenbelt	Yes	Yes	Yes
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-	-
Specific prohibition of lawn in greenbelt	-	-	-
Requirement of trees/woody plants in greenbelt	Yes	Yes	Yes
Cutting/pruning of greenbelt vegetation limited	Yes	Yes	Yes
Prohibition of beach sanding in greenbelt	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter	Stricter	Stricter
Allows a single path (6' maximum width) through the greenbelt to the water	Yes	Yes	Yes
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	Yes	Yes
Requirement of all county, state, federal permits be obtained prior to zoning permit being issued	Yes	Yes	Yes
Formal Planning Commission site plan review for all waterfront uses	-	-	-
Dock regulation	Yes	Yes	Yes
Specific keyhole/funneling standards	-	-	-
Prohibition of seawalls	-	-	-
Engineered stormwater control system requirement	-	Yes**	-

*Based on average parcel slope.

** Stormwater management systems are required as a standard for Site Plan Approval for all proposed development in the C district.

Recommendations for further shoreline protection zoning standards in Evangeline Township

After reviewing the recommendations of the previous shoreline protection work groups and discussing appropriate shoreline protection standards for the ten jurisdictions surrounding Lake Charlevoix, the project team and steering committee identified specific categories for which recommendations should be made. Those categories are:

- High water elevation
- Shoreline setbacks
- Greenbelts or vegetated buffer strips
- Engineered stormwater control systems
- Maximum impervious surface lot coverage

- Conditions for issuance of zoning permits
- Formal planning commission site plan review
- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

As shown in the table above, the Bay Township Zoning Ordinance (Zoning Ordinance) contains many shoreline protection standards that align with the recommendations of the Enacting Shoreline Protections project. However, some of the recommended standards are not included in the Zoning Ordinance and we are requesting that the Planning Commission review these recommendations and consider amending the Zoning Ordinance to better protect the shoreline and water quality of Lake Charlevoix. The following recommended amendments to the Zoning Ordinance are included for your review and consideration.

Redefine High Water Elevation

It is recommended that the Zoning Ordinance be amended to define the High Water Elevation of Lake Charlevoix as 582.35' I.G.L.D. This elevation is the highest water level recorded on the lake and historical lake levels have frequently been higher than the defined Ordinary High Water Mark (OHWM) of 581.5'. Standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake. Specific language to define the High Water Elevation as 582.35' I.G.L.D. could be added to Article III: Definitions and Section 6.2 of the Township's Zoning Ordinance. Additionally, references to the OHWM in Article VI - Waterfront Overlay District of the Ordinance would need to be modified to reference the newly defined High Water Elevation.

Modify Natural Vegetative Strip Standards

It is recommended that the Zoning Ordinance be amended to include additional regulations for Natural Vegetated Strips on waterfront parcels. Specifically, the recommended additions are:

- The prohibition of the use of pesticides, herbicides, and fertilizers in the Natural Vegetative Strip.
- The specific prohibition of lawn within the Natural Vegetative Strip.
- The inclusion of a requirement that new low-growing plantings within the Natural Vegetative Strip be spaced for complete ground coverage in two years.

The addition of these regulations would further increase the effectiveness of the shoreline buffer to slow runoff, reduce erosion, and protect the Lake from pollution. Specific language to include these regulations in the Zoning Ordinance could be added to Section 6.4.b - Natural Vegetative Strip.

Prohibit the sanding of beaches

It is recommended that the Zoning Ordinance be amended to prohibit beach sanding both within the Natural Vegetative Strip and between the high water elevation and the water's edge. The sanding of beaches is often futile due to natural shoreline processes and variation in water levels. Beach sanding can also be detrimental to fish species within lakes when added beach sand covers important lake

bottom habitats like gravel, rock, and weed beds. Specific language to prohibit beach sanding within the waterfront buffer strip could be added to Section 6.4.b of the Township's Zoning Ordinance. Additional amendments to prohibit beach sanding between the high water elevation and the water's edge could also be added to the ordinance, either within Section 6.4.b or as a new section in Article IV - General Provisions.

Prohibit the alteration of the area between the water's edge and the high water elevation

Jurisdiction over inland lake bottomlands between the high water elevation and the water's edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas, including the alteration of the ground and the construction of structures. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water's edge. The alteration of bottomlands between the water's edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion. Specific language to prohibit the alteration of these areas could be included in a new section in Article IV - General Provisions or, potentially, within Article VI - Waterfront Overlay District of the Zoning Ordinance.

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans. Specific language to require site plan review for all waterfront uses could be included in Section 12.2 of the Zoning Ordinance.

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keyholing/funneling is prevented. Specific language to regulate, or prohibit, keyhole/funnel development could be included within Article IV - General Provisions or Article VI - Waterfront Overlay District.

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. Specific language to prohibit the construction of seawalls could be included in Article VI - Waterfront Overlay District.

Project Funding

Funding for this project was provided through a 319 Grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council. Project partners working on this, and other, portions of the grant include Tip of the Mitt Watershed Council, MSU Extension, and the Lake Charlevoix Association.

Enacting Shoreline Zoning Protections around Lake Charlevoix

Project Overview and Recommendations

City of Charlevoix Planning Commission Meeting – April 11, 2016

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. In an effort to build upon previous shoreline protection work, the Enacting Shoreline Zoning Protections project was launched to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. The project promotes the understanding and acceptance of the need for shoreline protection standards in the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

Funding for this project was provided through a 319 Grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council. Project partners working on this, and other, portions of the grant include Tip of the Mitt Watershed Council, MSU Extension, and the Lake Charlevoix Association.

The project team, led by the Land Information Access Association (LIAA), a non-profit community services organization in Traverse City, convened a steering committee made up of local planning and zoning officials to help guide the creation of definitions and standards for waterfront properties around the lake. LIAA created a steering committee report and project website (lakecharlevoixprotection.org) that include a summary of the findings and recommendations from previous shoreline protection efforts, a summary of current shoreline protection zoning standards in the ten jurisdictions surrounding Lake Charlevoix, and recommendations for definitions and zoning standards to help protect Lake Charlevoix's water quality.

Review and analysis of the work by the previous shoreline protection studies shows that local municipalities can be effective in protecting water quality by managing development and redevelopment on waterfront properties. The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations for the local units of government around the Lake.

Current Shoreline Protection Zoning Standards in the City of Charlevoix

The City of Charlevoix has already gone to great lengths to protect the shoreline and water quality of Lake Charlevoix. The City's Zoning Ordinance contains many standards and regulations that help prevent shoreline degradation, limit the impacts of stormwater runoff, and help prevent pollution of the Lake. The City's residents, elected officials, and planning commissioners should be proud of their commitment to the continued protection of this valuable natural resource. The table on the following page illustrates

the Zoning Ordinance’s standards and regulations related to shoreline protection and indicates where they meet the recommendations created as a part of this project.

Community	City of Charlevoix		
	R1	SR	MC
Zoning District			
Defined High Water Elevation/OHWM	581.5' I.G.L.D.		
Setback from OHWM	50'	50'	0'
Maximum Impervious Surface Coverage	40%	30%	-
Shoreline Buffer/Greenbelt Requirement	-	-	-
Native vegetation requirement in greenbelt	-	-	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-	-
Specific prohibition of lawn in greenbelt	-	-	-
Requirement of trees/woody plants in greenbelt	-	-	-
Cutting/pruning of greenbelt vegetation limited	-	-	-
Prohibition of beach sanding in greenbelt	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	-	-	-
Allows a single path (6' maximum width) through the greenbelt to the water	-	-	-
Allows for the maintenance of existing natural shoreline buffers, where they exist	-	-	-
Requirement of all county, state, federal permits be obtained prior to zoning permit being issued	-	-	-
Formal Planning Commission site plan review for all waterfront uses	-	-	-
Dock regulation	-	-	-
Specific keyhole/funneling standards	-	-	-
Prohibition of seawalls	-	-	-
Engineered stormwater control system requirement	Yes*	Yes*	Yes*

**All site plans submitted for approval must show the location and type of all proposed surface water drainage facilities.*

Recommendations for further shoreline protection zoning standards in the City of Charlevoix

After reviewing the recommendations of the previous shoreline protection work groups and discussing appropriate shoreline protection standards for the ten jurisdictions surrounding Lake Charlevoix, the project team and steering committee identified specific categories for which recommendations should be made. The categories that are applicable to cities are:

- High water elevation
- Engineered stormwater control systems
- Conditions for issuance of zoning permits
- Formal planning commission site plan review

- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

As shown in the table on the previous page, the City of Charlevoix Zoning Ordinance (Zoning Ordinance) contains some shoreline protection standards that align with the recommendations of the Enacting Shoreline Protections project. However, some of the recommended standards are not included in the Zoning Ordinance and we are requesting that the Planning Commission review these recommendations and consider amending the Zoning Ordinance to better protect the shoreline and water quality of Lake Charlevoix. The following recommended amendments to the Zoning Ordinance are included for your review and consideration.

Redefine Ordinary High Water Mark

It is recommended that the Zoning Ordinance be amended to define the Ordinary High Water Mark of Lake Charlevoix as 582.35' I.G.L.D. This elevation is the highest water level recorded on the lake and historical lake levels have frequently been higher than the defined Ordinary High Water Mark (OHWM). Standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake. Specific language to define the Ordinary High Water Mark as 582.35' I.G.L.D. could be added to Part 1 Article 2 Section 5.12 Definitions N-O.

Conditions for Issuance of Zoning Permits

By requiring that all necessary permits be obtained prior to the issuance of a zoning permit, jurisdictions can be sure that the requirements of all other agencies are being met by the proposed development. This could be added to Part V Article 16 Section 5.161. Zoning Permits.

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans. Specific language to require site plan review for all waterfront uses could be included in Part IV Article 12: Site Plan Review – Part 5.116. Applicability.

Shoreline Protection Structures

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. A new section in the ordinance could be added to Part II Article 8 General Provisions to prohibit the construction of seawalls in most instances. Additionally, references to sea walls in Part II Article 7 would need to be amended.

Specifically regulate number of docks allowed

It is recommended that the Zoning Ordinance specifically regulate the number of docks allowed for each waterfront parcel to help protect water quality by limiting the opportunity for erosion and fuel and chemical pollution from increased boat dockage on the Lake. Specific language to regulate the number of docks allowed on each waterfront parcel could be included within Part II Section 5 under the Schedule of Uses.

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keyholing/funneling is prevented. Specific language to regulate, or prohibit, keyhole/funnel development could be included within Part III Article 8: General Provisions.

Enacting Shoreline Zoning Protections around Lake Charlevoix

Project Overview and Recommendations

City of Boyne City Planning Commission Meeting – May 16, 2016

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. In an effort to build upon previous shoreline protection work, the Enacting Shoreline Zoning Protections project was launched to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. The project promotes the understanding and acceptance of the need for shoreline protection standards in the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

Funding for this project was provided through a 319 Grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council. Project partners working on this, and other, portions of the grant include Tip of the Mitt Watershed Council, MSU Extension, and the Lake Charlevoix Association.

The project team, led by the Land Information Access Association (LIAA), a non-profit community services organization in Traverse City, convened a steering committee made up of local planning and zoning officials to help guide the creation of definitions and standards for waterfront properties around the lake. LIAA created a steering committee report and project website (lakecharlevoixprotection.org) that include a summary of the findings and recommendations from previous shoreline protection efforts, a summary of current shoreline protection zoning standards in the ten jurisdictions surrounding Lake Charlevoix, and recommendations for definitions and zoning standards to help protect Lake Charlevoix's water quality.

Review and analysis of the work by the previous shoreline protection studies shows that local municipalities can be effective in protecting water quality by managing development and redevelopment on waterfront properties. The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations for the local units of government around the Lake.

Current Shoreline Protection Zoning Standards in the City of Charlevoix

The City of Boyne City has already gone to great lengths to protect the shoreline and water quality of Lake Charlevoix. The City's Zoning Ordinance contains many standards and regulations that help prevent shoreline degradation, limit the impacts of stormwater runoff, and help prevent pollution of the Lake. The City's residents, elected officials, and planning commissioners should be proud of their commitment to the continued protection of this valuable natural resource. The table on the following page illustrates

the Zoning Ordinance’s standards and regulations related to shoreline protection and indicates where they meet the recommendations created as a part of this project.

City of Boyne City – Existing Shoreline Protection Zoning Standards

Community	City of Boyne City			
	WRD	MFRD	CSD	CBD
Defined High Water Elevation/OHWM	582.4' I.G.L.D.			
Setback from OHWM	35'	35'	35'	35'
Maximum Impervious Surface Coverage	30%*	30%*	40%*	100%*
Shoreline Buffer/Greenbelt Requirement	-	-	-	-
Native vegetation requirement in greenbelt	-	-	-	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-	-	-
Specific prohibition of lawn in greenbelt	-	-	-	-
Requirement of trees/woody plants in greenbelt	-	-	-	-
Cutting/pruning of greenbelt vegetation limited	-	-	-	-
Prohibition of beach sanding in greenbelt	-	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	-	-	-	-
Allows a single path (6' maximum width) through the greenbelt to the water	-	-	-	-
Allows for the maintenance of existing natural shoreline buffers, where they exist	-	-	-	-
Requirement of all county, state, federal permits be obtained prior to zoning permit being issued	-	-	-	-
Formal Planning Commission site plan review for all waterfront uses	-	-	-	-
Dock regulation	Yes	-	-	-
Specific keyhole/funneling standards	-	-	-	-
Prohibition of seawalls	-	-	-	-
Engineered stormwater control system requirement	Yes**	Yes**	Yes**	Yes**

*Maximum lot area covered by buildings.

**Stormwater plans that comply with the Charlevoix County Stormwater Ordinance are required in all zoning districts for all proposed uses except single-family, detached residential uses.

Note: Maximum front yard coverage in inorganic material is 40% in the WRD zoning district.

Recommendations for further shoreline protection zoning standards in the City of Boyne City

After reviewing the recommendations of the previous shoreline protection work groups and discussing appropriate shoreline protection standards for the ten jurisdictions surrounding Lake Charlevoix, the project team and steering committee identified specific categories for which recommendations should be made. The categories that are applicable to cities are:

- High water elevation

- Engineered stormwater control systems
- Conditions for issuance of zoning permits
- Formal planning commission site plan review
- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

As shown in the table on the previous page, the City of Boyne City Zoning Ordinance (Zoning Ordinance) contains some shoreline protection standards that align with the recommendations of the Enacting Shoreline Protections project. However, some of the recommended standards are not included in the Zoning Ordinance and we are requesting that the Planning Commission review these recommendations and consider amending the Zoning Ordinance to better protect the shoreline and water quality of Lake Charlevoix. The following recommended amendments to the Zoning Ordinance are included for your review and consideration.

Conditions for Issuance of Zoning Permits

By requiring that all necessary permits be obtained prior to the issuance of a zoning permit, jurisdictions can be sure that the requirements of all other agencies are being met by the proposed development. This could be added to Appendix A Article XXVIII. Administration and Enforcement.

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans. Specific language to require site plan review for all waterfront uses could be included Chapter 2 Article VI Division 5 Planning Commission Sec. 2-262. Powers and duties and/or Appendix A Article XIX. Development Plan Requirements. Additionally, language requiring planning commission site plan review would need to be added to Appendix A Article V Waterfront Residential District.

Shoreline Protection Structures

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. A new section in the ordinance could be added to Appendix A Article V Waterfront Residential District Sec. 5.40. - Development requirements.

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by

reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keyholing/funneling is prevented. Specific language to regulate, or prohibit, keyhole/funnel development could be included within Appendix A Article V Waterfront Residential District Sec. 5.40. - Development requirements.

Enacting Shoreline Zoning Protections around Lake Charlevoix

Project Overview and Recommendations

Charlevoix Township Planning Commission Meeting – March 16, 2016

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. In an effort to build upon previous shoreline protection work, the Enacting Shoreline Zoning Protections project was launched to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. The project promotes the understanding and acceptance of the need for shoreline protection standards in the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

Funding for this project was provided through a 319 Grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council. Project partners working on this, and other, portions of the grant include Tip of the Mitt Watershed Council, MSU Extension, and the Lake Charlevoix Association.

The project team, led by the Land Information Access Association (LIAA), a non-profit community services organization in Traverse City, convened a steering committee made up of local planning and zoning officials to help guide the creation of definitions and standards for waterfront properties around the lake. LIAA created a steering committee report and project website (lakecharlevoixprotection.org) that include a summary of the findings and recommendations from previous shoreline protection efforts, a summary of current shoreline protection zoning standards in the ten jurisdictions surrounding Lake Charlevoix, and recommendations for definitions and zoning standards to help protect Lake Charlevoix's water quality.

Review and analysis of the work by the previous shoreline protection studies shows that local municipalities can be effective in protecting water quality by managing development and redevelopment on waterfront properties. The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations for the local units of government around the Lake.

Current Shoreline Protection Zoning Standards in Charlevoix Township

Charlevoix Township has already gone to great lengths to protect the shoreline and water quality of Lake Charlevoix. The Township's Zoning Ordinance contains many standards and regulations that help prevent shoreline degradation, limit the impacts of stormwater runoff, and help prevent pollution of the Lake. The Township's residents, elected officials, and planning commissioners should be proud of their commitment to the continued protection of this valuable natural resource. The table on the following

page illustrates the Zoning Ordinance’s standards and regulations related to shoreline protection and indicates where they meet the recommendations created as a part of this project.

Community	Charlevoix Township			
	R-1	R-2	PRD	I-2
Defined High Water Elevation/OHWM	579.8' I.G.L.D.			
Setback from OHWM	50'	50'	50'	50'
Maximum Impervious Surface Coverage	30%	35%	-	-
Shoreline Buffer/Greenbelt Requirement	50'	50'	50'	-
Native vegetation requirement in greenbelt	Yes*	Yes*	Yes*	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-	-	-
Specific prohibition of lawn in greenbelt	Yes**	Yes**	Yes**	-
Requirement of trees/woody plants in greenbelt	-	-	-	-
Cutting/pruning of greenbelt vegetation limited	Yes	Yes	Yes	-
Prohibition of beach sanding in greenbelt	-	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	Yes	Yes	Yes	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter	Stricter	Stricter	-
Allows a single path (6' maximum width) through the greenbelt to the water	Stricter	Stricter	Stricter	-
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	Yes	Yes	-
Requirement of all county, state, federal permits be obtained prior to zoning permit being issued	Yes***	Yes***	Yes***	Yes***
Formal Planning Commission site plan review for all waterfront uses	-	-	-	-
Dock regulation	-	-	-	-
Specific keyhole/funneling standards	-	-	-	-
Prohibition of seawalls	-	-	-	-
Engineered stormwater control system requirement	-	-	Yes****	Yes****

*Native plants required in first 25' from OHWM.

**No cultivated varieties of vegetation or grass allowed within 25' of the OHWM.

***All development subject to site plan review must meet requirements of other government agencies and have such approval obtained or assured.

****Stormwater management and soil erosion control plans are required for proposed development except single and two-family homes.

Note: Shoreline protection standards apply to all districts except I-2.

Recommendations for further shoreline protection zoning standards in Charlevoix Township

After reviewing the recommendations of the previous shoreline protection work groups and discussing appropriate shoreline protection standards for the ten jurisdictions surrounding Lake Charlevoix, the project team and steering committee identified specific categories for which recommendations should be made. Those categories are:

- High water elevation
- Shoreline setbacks
- Greenbelts or vegetated buffer strips
- Engineered stormwater control systems
- Maximum impervious surface lot coverage
- Conditions for issuance of zoning permits
- Formal planning commission site plan review
- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

As shown in the table above, the Charlevoix Township Zoning Ordinance (Zoning Ordinance) contains many shoreline protection standards that align with the recommendations of the Enacting Shoreline Protections project. However, some of the recommended standards are not included in the Zoning Ordinance and we are requesting that the Planning Commission review these recommendations and consider amending the Zoning Ordinance to better protect the shoreline and water quality of Lake Charlevoix. The following recommended amendments to the Zoning Ordinance are included for your review and consideration.

Redefine High Water Elevation

It is recommended that the Zoning Ordinance be amended to define the High Water Elevation of Lake Charlevoix as 582.35' I.G.L.D. This elevation is the highest water level recorded on the lake and historical lake levels have frequently been higher than the defined Ordinary High Water Mark (OHWM). Standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake. Specific language to define the High Water Elevation as 582.35' I.G.L.D. could be added to Article XIV: Definitions of the Township's Zoning Ordinance. Additionally, references to the OHWM in Section 3.13: Shoreline Protection Regulations and Article V: District Regulations of the Ordinance would need to be modified to reference the newly defined High Water Elevation.

Modify impervious surface coverage standards for waterfront lots

It is recommended that the Zoning Ordinance be amended to limit the maximum allowable impervious surface coverage on waterfront lots to 15%. Reducing the amount of impervious surface coverage on waterfront lots helps reduce the risk of shoreline erosion and the potential for pollutants to enter the lake through stormwater runoff. Specific language to limit impervious surface coverage on waterfront

lots could be added to Section 3.13 of the Zoning Ordinance. Additionally, references to this regulation could be added to Article V: District Regulations.

Modify Shoreline Protection Regulations

It is recommended that the Zoning Ordinance be amended to include additional shoreline protection regulations for waterfront parcels. Specifically, the recommended additions are:

- The prohibition of the use of pesticides, herbicides, and fertilizers in the Natural Vegetative Strip.
- The inclusion of a requirement that specifically requires the planting of trees and/or woody plants in the shoreline protection zone.
- The inclusion of a requirement that new low-growing plantings within the Natural Vegetative Strip be spaced for complete ground coverage in two years.

The addition of these regulations would further increase the effectiveness of the shoreline buffer to slow runoff, reduce erosion, and protect the Lake from pollution. Specific language to include these regulations in the Zoning Ordinance could be added to Section 3.13: Shoreline Protection Regulations.

Prohibit the sanding of beaches

It is recommended that the Zoning Ordinance be amended to prohibit beach sanding within the shoreline protection zone. The sanding of beaches is often futile due to natural shoreline processes and variation in water levels. Beach sanding can also be detrimental to fish species within lakes when added beach sand covers important lake bottom habitats like gravel, rock, and weed beds. Specific language to prohibit beach sanding within the shoreline protection zone could be added to Section 3.13 of the Township's Zoning Ordinance.

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans. Specific language to require site plan review for all waterfront uses could be included in Article IX: Site Plan Review of the Zoning Ordinance and/or Article V: District Regulations.

Specifically regulate number of docks allowed

It is recommended that the Zoning Ordinance specifically regulate the number of docks allowed for each waterfront parcel to help protect water quality by limiting the opportunity for erosion and fuel and chemical pollution from increased boat dockage on the Lake. Specific language to regulate the number of docks allowed on each waterfront parcel could be included within Section 3.13 and/or Article V: District Regulations of the Ordinance.

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keyholing/funneling is prevented. Specific language to regulate, or prohibit, keyhole/funnel development could be included within Article III: General Regulations.

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. Specific language to prohibit the construction of seawalls could be included in Section 3.13 of the Ordinance.

Enacting Shoreline Zoning Protections around Lake Charlevoix

Project Overview and Recommendations

City of East Jordan Planning Commission Meeting – June 9, 2016

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. In an effort to build upon previous shoreline protection work, the Enacting Shoreline Zoning Protections project was launched to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. The project promotes the understanding and acceptance of the need for shoreline protection standards in the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

Funding for this project was provided through a 319 Grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council. Project partners working on this, and other, portions of the grant include Tip of the Mitt Watershed Council, MSU Extension, and the Lake Charlevoix Association.

The project team, led by the Land Information Access Association (LIAA), a non-profit community services organization in Traverse City, convened a steering committee made up of local planning and zoning officials to help guide the creation of definitions and standards for waterfront properties around the lake. LIAA created a steering committee report and project website (lakecharlevoixprotection.org) that include a summary of the findings and recommendations from previous shoreline protection efforts, a summary of current shoreline protection zoning standards in the ten jurisdictions surrounding Lake Charlevoix, and recommendations for definitions and zoning standards to help protect Lake Charlevoix's water quality.

Review and analysis of the work by the previous shoreline protection studies shows that local municipalities can be effective in protecting water quality by managing development and redevelopment on waterfront properties. The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations for the local units of government around the Lake.

Current Shoreline Protection Zoning Standards in the City of East Jordan

The City of East Jordan has already gone to great lengths to protect the shoreline and water quality of Lake Charlevoix. The City's Zoning Ordinance contains many standards and regulations that help prevent shoreline degradation, limit the impacts of stormwater runoff, and help prevent pollution of the Lake. The City's residents, elected officials, and planning commissioners should be proud of their commitment to the continued protection of this valuable natural resource. The table on the following page illustrates

the Zoning Ordinance’s standards and regulations related to shoreline protection and indicates where they meet the recommendations created as a part of this project.

City of East Jordan – Existing Shoreline Protection Zoning Standards

Community	City of East Jordan					
	RA	R1	R3	I	WF	CR
Defined High Water Elevation/OHWM	Legally established surface water level					
Setback from OHWM	40'	35'	35'	75'	50'	50'
Maximum Impervious Surface Coverage	30%	30%	30%	75%	75%	20%
Shoreline Buffer/Greenbelt Requirement	-	-	-	-	-	-
Native vegetation requirement in greenbelt	-	-	-	-	-	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-	-	-	-	-
Specific prohibition of lawn in greenbelt	-	-	-	-	-	-
Requirement of trees/woody plants in greenbelt	-	-	-	-	-	-
Cutting/pruning of greenbelt vegetation limited	-	-	-	-	-	-
Prohibition of beach sanding in greenbelt	-	-	-	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	-	-	-	-	-	-
Allows a single path (6' maximum width) through the greenbelt to the water	-	-	-	-	-	-
Allows for the maintenance of existing natural shoreline buffers, where they exist	-	-	-	-	-	-
Requirement of all county, state, federal permits be obtained prior to zoning permit being issued	-	-	-	-	-	-
Formal Planning Commission site plan review for all waterfront uses	-	-	Yes	Yes	Yes	-
Dock regulation	-	-	-	-	-	-
Specific keyhole/funneling standards	-	-	-	-	-	-
Prohibition of seawalls	-	-	-	-	-	-
Engineered stormwater control system requirement			Yes*	Yes*	Yes*	

**All proposed development in the R-3, WF, and I districts, except single-family homes in the R-3 district, must meet the surface water drainage requirements of the ordinance.*

Recommendations for further shoreline protection zoning standards in the City of East Jordan

After reviewing the recommendations of the previous shoreline protection work groups and discussing appropriate shoreline protection standards for the ten jurisdictions surrounding Lake Charlevoix, the project team and steering committee identified specific categories for which recommendations should be made. The categories that are applicable to cities are:

- High water elevation
- Engineered stormwater control systems

- Conditions for issuance of zoning permits
- Formal planning commission site plan review
- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

As shown in the table on the previous page, the City of East Jordan Zoning Ordinance (Zoning Ordinance) contains some shoreline protection standards that align with the recommendations of the *Enacting Shoreline Protections* project. However, some of the recommended standards are not included in the Zoning Ordinance and we are requesting that the Planning Commission review these recommendations and consider amending the Zoning Ordinance to better protect the shoreline and water quality of Lake Charlevoix. The following recommended amendments to the Zoning Ordinance are included for your review and consideration.

Redefine Ordinary High Water Mark

It is recommended that the Zoning Ordinance be amended to define the Ordinary High Water Mark of Lake Charlevoix as 582.35' I.G.L.D. This elevation is the highest water level recorded on the lake and historical lake levels have frequently been higher than the defined Ordinary High Water Mark (OHWM). Standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake. Specific language to define the Ordinary High Water Mark as 582.35' I.G.L.D. could replace the existing definition of *Shoreline* on page 15 in Article I Sec. 48-8. Definitions.

Conditions for Issuance of Zoning Permits

By requiring that all necessary permits be obtained prior to the issuance of a zoning permit, jurisdictions can be sure that the requirements of all other agencies are being met by the proposed development. This could be added to Article II Administration and Enforcement Sec. 48-38. Zoning permit.

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans. Currently, the City of East Jordan does not require formal site plan review for single family residential development (RA and R1). Specific language to require site plan review for all waterfront uses could be included in Article II Division 2 Sec. 48-70. Developments requiring site plan approval (p. 25)

Shoreline Protection Structures

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. New sections detailing *Site development requirements* could be added to each zoning district with waterfrontage.

Specifically regulate number of docks allowed

It is recommended that the Zoning Ordinance specifically regulate the number of docks allowed for each waterfront parcel to help protect water quality by limiting the opportunity for erosion and fuel and chemical pollution from increased boat dockage on the Lake. Specific language to regulate the number of docks allowed on each waterfront parcel could be included within *Permitted accessory uses* in each zoning district with waterfrontage.

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keyholing/funneling is prevented. Specific language to regulate, or prohibit, keyhole/funnel development could be included within *site development requirements* in each zoning district with waterfrontage.

Enacting Shoreline Zoning Protections around Lake Charlevoix

Project Overview and Recommendations

Eveline Township Planning Commission Meeting – July 13, 2016

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. In an effort to build upon previous shoreline protection work, the Enacting Shoreline Zoning Protections project was launched to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. The project promotes the understanding and acceptance of the need for shoreline protection standards in the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

Funding for this project was provided through a 319 Grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council. Project partners working on this, and other, portions of the grant include Tip of the Mitt Watershed Council, MSU Extension, and the Lake Charlevoix Association.

The project team, led by the Land Information Access Association (LIAA), a non-profit community services organization in Traverse City, convened a steering committee made up of local planning and zoning officials to help guide the creation of definitions and standards for waterfront properties around the lake. LIAA created a steering committee report and project website (lakecharlevoixprotection.org) that include a summary of the findings and recommendations from previous shoreline protection efforts, a summary of current shoreline protection zoning standards in the ten jurisdictions surrounding Lake Charlevoix, and recommendations for definitions and zoning standards to help protect Lake Charlevoix's water quality.

Review and analysis of the work by the previous shoreline protection studies shows that local municipalities can be effective in protecting water quality by managing development and redevelopment on waterfront properties. The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations for the local units of government around the Lake.

Current Shoreline Protection Zoning Standards in Eveline Township

Eveline Township has already gone to great lengths to protect the shoreline and water quality of Lake Charlevoix. The Township's Zoning Ordinance contains many standards and regulations that help prevent shoreline degradation, limit the impacts of stormwater runoff, and help prevent pollution of the Lake. The Township's residents, elected officials, and planning commissioners should be proud of their commitment to the continued protection of this valuable natural resource. The table on the following

page illustrates the Zoning Ordinance’s standards and regulations related to shoreline protection and indicates where they meet the recommendations created as a part of this project.

Eveline Township – Existing Shoreline Protection Zoning Standards

Community	Eveline Township				
Zoning District	R	VC	FF	G	VMU
Defined High Water Elevation/OHWM	582.35' I.G.L.D.				
Setback from OHWM	50'	50'	50'	50'	50'
Maximum Impervious Surface Coverage	20%	20%	20%	20%	20%
Shoreline Buffer/Greenbelt Requirement	50'	50'	50'	50'	50'
Native vegetation requirement in greenbelt	Yes	Yes	Yes	Yes	Yes
Prohibition of pesticides, herbicides, fertilizers in greenbelt	Yes	Yes	Yes	Yes	Yes
Specific prohibition of lawn in greenbelt	-	-	-	-	-
Requirement of trees/woody plants in greenbelt	Yes	Yes	Yes	Yes	Yes
Cutting/pruning of greenbelt vegetation limited	Yes	Yes	Yes	Yes	Yes
Prohibition of beach sanding in greenbelt	-	-	-	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-	-	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-	-	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Yes	Yes	Yes	Yes	Yes
Allows a single path (6' maximum width) through the greenbelt to the water	Yes	Yes	Yes	Yes	Yes
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	Yes	Yes	Yes	Yes
Requirement of all county, state, federal permits be obtained prior to zoning permit being issued	-	-	-	-	-
Formal Planning Commission site plan review for all waterfront uses	-	-	-	-	-
Dock regulation	Yes	Yes	Yes	Yes	Yes
Specific keyhole/funneling standards	Yes	Yes	Yes	Yes	Yes
Prohibition of seawalls	-	-	-	-	-
Engineered stormwater control system requirement	Yes*	Yes*	Yes*	Yes*	Yes*

**All proposed development requiring site plan review must conform with Charlevoix County Drain Commission standards.*

Recommendations for further shoreline protection zoning standards in Eveline Township

After reviewing the recommendations of the previous shoreline protection work groups and discussing appropriate shoreline protection standards for the ten jurisdictions surrounding Lake Charlevoix, the project team and steering committee identified specific categories for which recommendations should be made. Those categories are:

- High water elevation
- Shoreline setbacks
- Greenbelts or vegetated buffer strips
- Engineered stormwater control systems

- Maximum impervious surface lot coverage
- Conditions for issuance of zoning permits
- Formal planning commission site plan review
- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

As shown in the table above, the Eveline Township Zoning Ordinance (Zoning Ordinance) contains many shoreline protection standards that align with the recommendations of the Enacting Shoreline Protections project. However, some of the recommended standards are not included in the Zoning Ordinance and we are requesting that the Planning Commission review these recommendations and consider amending the Zoning Ordinance to better protect the shoreline and water quality of Lake Charlevoix. The following recommended amendments to the Zoning Ordinance are included for your review and consideration.

Modify impervious surface coverage standards for waterfront lots

It is recommended that the Zoning Ordinance be amended to limit the maximum allowable impervious surface coverage on waterfront lots to 15%. Reducing the amount of impervious surface coverage on waterfront lots helps reduce the risk of shoreline erosion and the potential for pollutants to enter the lake through stormwater runoff. Specific language to limit impervious surface coverage on waterfront lots could be added to Article 2 Zoning Districts Section 2.3 Schedule of Requirements/Restrictions for Primary Structures.

Modify Shoreline Protection Regulations

It is recommended that the Zoning Ordinance be amended to include additional shoreline protection regulations for waterfront parcels. Specifically, the recommended additions are:

- Prohibits lawns within the greenbelt; and
- Requires that new low-growing plantings be spaced for complete ground coverage in two years.

The addition of these regulations would further increase the effectiveness of the Greenbelt to slow runoff, reduce erosion, and protect the Lake from pollution. Specific language to include these regulations in the Zoning Ordinance could be added to Article 4 general provisions Section 4.6 Waterfront Greenbelt.

Prohibit the sanding of beaches

It is recommended that the Zoning Ordinance be amended to prohibit beach sanding within the greenbelt. The sanding of beaches is often futile due to natural shoreline processes and variation in water levels. Beach sanding can also be detrimental to fish species within lakes when added beach sand covers important lake bottom habitats like gravel, rock, and weed beds. Specific language to include these regulations in the Zoning Ordinance could be added to Article 4 General Provisions Section 4.6 Waterfront Greenbelt.

Prohibit the alteration of the area between the water’s edge and the high water elevation

Jurisdiction over inland lake bottomlands between the high water elevation and the water's edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas, including the alteration of the ground and the construction of structures. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water's edge. The alteration of bottomlands between the water's edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion. Specific language to include these regulations in the Zoning Ordinance could be added to Article 4 General Provisions Section 4.6 Waterfront Greenbelt.

Conditions for Issuance of Zoning Permits

By requiring that all necessary permits be obtained prior to the issuance of a zoning permit, jurisdictions can be sure that the requirements of all other agencies are being met by the proposed development. This could be added to Article 5 Administration and Enforcement Section 5.2 Zoning Permit.

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans. Specific language to require site plan review for all waterfront uses could be included in Article 8 Section 8.2 Site Plans Required.

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. Specific language to include these regulations in the Zoning Ordinance could be added to Article 4 General Provisions Section 4.6 Waterfront Greenbelt.

Enacting Shoreline Zoning Protections around Lake Charlevoix

Project Overview and Recommendations

Marion Township Planning Commission Meeting – May 23, 2016

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. In an effort to build upon previous shoreline protection work, the Enacting Shoreline Zoning Protections project was launched to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. The project promotes the understanding and acceptance of the need for shoreline protection standards in the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

Funding for this project was provided through a 319 Grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council. Project partners working on this, and other, portions of the grant include Tip of the Mitt Watershed Council, MSU Extension, and the Lake Charlevoix Association.

The project team, led by the Land Information Access Association (LIAA), a non-profit community services organization in Traverse City, convened a steering committee made up of local planning and zoning officials to help guide the creation of definitions and standards for waterfront properties around the lake. LIAA created a steering committee report and project website (lakecharlevoixprotection.org) that include a summary of the findings and recommendations from previous shoreline protection efforts, a summary of current shoreline protection zoning standards in the ten jurisdictions surrounding Lake Charlevoix, and recommendations for definitions and zoning standards to help protect Lake Charlevoix's water quality.

Review and analysis of the work by the previous shoreline protection studies shows that local municipalities can be effective in protecting water quality by managing development and redevelopment on waterfront properties. The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations for the local units of government around the Lake.

Current Shoreline Protection Zoning Standards in Marion Township

Marion Township has already gone to great lengths to protect the shoreline and water quality of Lake Charlevoix. The Township's Zoning Ordinance contains many standards and regulations that help prevent shoreline degradation, limit the impacts of stormwater runoff, and help prevent pollution of the Lake. The Township's residents, elected officials, and planning commissioners should be proud of their commitment to the continued protection of this valuable natural resource. The table on the following

page illustrates the Zoning Ordinance’s standards and regulations related to shoreline protection and indicates where they meet the recommendations created as a part of this project.

Marion Township – Existing Shoreline Protection Zoning Standards

Community	Marion Township
Zoning District	R-1
Defined High Water Elevation/OHWM	As established by law
Setback from OHWM	50'
Maximum Impervious Surface Coverage	-
Shoreline Buffer/Greenbelt Requirement	50'
Native vegetation requirement in greenbelt	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	Yes
Specific prohibition of lawn in greenbelt	-
Requirement of trees/woody plants in greenbelt	-
Cutting/pruning of greenbelt vegetation limited	-
Prohibition of beach sanding in greenbelt	-
Prohibition of alteration of area between water's edge and high water elevation	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter
Allows a single path (6' maximum width) through the greenbelt to the water	Yes
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes
Requirement of all county, state, federal permits be obtained prior to zoning permit being issued	Yes
Formal Planning Commission site plan review for all waterfront uses	-
Dock regulation	-
Specific keyhole/funneling standards	-
Prohibition of seawalls	-
Engineered stormwater control system requirement	Yes*

**All development requiring site plan review shall comply with the terms of the Charlevoix County Stormwater Runoff Control Ordinance.*

Recommendations for further shoreline protection zoning standards in Marion Township

After reviewing the recommendations of the previous shoreline protection work groups and discussing appropriate shoreline protection standards for the ten jurisdictions surrounding Lake Charlevoix, the project team and steering committee identified specific categories for which recommendations should be made. Those categories are:

- High water elevation
- Shoreline setbacks
- Greenbelts or vegetated buffer strips

- Engineered stormwater control systems
- Maximum impervious surface lot coverage
- Conditions for issuance of zoning permits
- Formal planning commission site plan review
- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

As shown in the table above, the Marion Township Zoning Ordinance (Zoning Ordinance) contains many shoreline protection standards that align with the recommendations of the Enacting Shoreline Protections project. However, some of the recommended standards are not included in the Zoning Ordinance and we are requesting that the Planning Commission review these recommendations and consider amending the Zoning Ordinance to better protect the shoreline and water quality of Lake Charlevoix. The following recommended amendments to the Zoning Ordinance are included for your review and consideration.

Redefine High Water Elevation

It is recommended that the Zoning Ordinance be amended to define the High Water Elevation of Lake Charlevoix as 582.35' I.G.L.D. This elevation is the highest water level recorded on the lake and historical lake levels have frequently been higher than the defined Ordinary High Water Mark (OHWM). Standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake. Specific language to define the High Water Elevation as 582.35' I.G.L.D. could be added to Article II: Rules of Construction and Definitions of the Zoning Ordinance.

Modify impervious surface coverage standards for waterfront lots

It is recommended that the Zoning Ordinance be amended to limit the maximum allowable impervious surface coverage on waterfront lots to 15%. Reducing the amount of impervious surface coverage on waterfront lots helps reduce the risk of shoreline erosion and the potential for pollutants to enter the lake through stormwater runoff. Specific language to limit impervious surface coverage on waterfront lots could be added to Article V: District Regulations Section 5.07.5 – General Development Provisions of the Zoning Ordinance.

Modify Shoreline Protection Regulations

It is recommended that the Zoning Ordinance be amended to include additional shoreline protection regulations for waterfront parcels. Specifically, the recommended additions are:

- The specific requirement that native vegetation be planted in the Greenbelt (Marion Twp. currently requires 70% of natural vegetation be native).
- The specific prohibition of lawns within the Greenbelt.
- The inclusion of a requirement that specifically requires the planting of trees and/or woody plants in the Greenbelt.
- The inclusion of a requirement that new low-growing plantings within the Greenbelt be spaced for complete ground coverage in two years.

The addition of these regulations would further increase the effectiveness of the Greenbelt to slow runoff, reduce erosion, and protect the Lake from pollution. Specific language to include these regulations in the Zoning Ordinance could be added to Article III: General Provisions, Section 3.11 – Greenbelt.

Prohibit the sanding of beaches

It is recommended that the Zoning Ordinance be amended to prohibit beach sanding within the greenbelt. The sanding of beaches is often futile due to natural shoreline processes and variation in water levels. Beach sanding can also be detrimental to fish species within lakes when added beach sand covers important lake bottom habitats like gravel, rock, and weed beds. Specific language to prohibit beach sanding within the shoreline protection zone could be added to Article III: General Provisions, Section 3.11 – Greenbelt.

Prohibit the alteration of the area between the water’s edge and the high water elevation

Jurisdiction over inland lake bottomlands between the high water elevation and the water’s edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas, including the alteration of the ground and the construction of structures. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water’s edge. The alteration of bottomlands between the water’s edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion. Specific language to prohibit the alteration of these areas could be included in Article III: General Provisions.

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans. Specific language to require site plan review for all waterfront uses could be included in ARTICLE VI: Site Plan Review Section 6.03, Article VII Uses Subject to Special Approval, and Article VIII Supplemental Site Development Standards.

Specifically regulate number of docks allowed

It is recommended that the Zoning Ordinance specifically regulate the number of docks allowed for each waterfront parcel to help protect water quality by limiting the opportunity for erosion and fuel and chemical pollution from increased boat dockage on the Lake. Specific language to regulate the number of docks allowed on each waterfront parcel could be included within Article III: General Provisions Section 3.11 – Greenbelt.

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the

lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keholing/funneling is prevented. Specific language to regulate, or prohibit, keyhole/funnel development could be included within Article III: General Provisions Section 3.11 – Greenbelt.

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. Specific language to prohibit the construction of seawalls could be included in Article III: General Provisions Section 3.11 – Greenbelt.

Enacting Shoreline Zoning Protections around Lake Charlevoix

Project Overview and Recommendations

Hayes Township Planning Commission Meeting – August 16, 2016

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. In an effort to build upon previous shoreline protection work, the Enacting Shoreline Zoning Protections project was launched to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. The project promotes the understanding and acceptance of the need for shoreline protection standards in the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

Funding for this project was provided through a 319 Grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council. Project partners working on this, and other, portions of the grant include Tip of the Mitt Watershed Council, MSU Extension, and the Lake Charlevoix Association.

The project team, led by the Land Information Access Association (LIAA), a non-profit community services organization in Traverse City, convened a steering committee made up of local planning and zoning officials to help guide the creation of definitions and standards for waterfront properties around the lake. LIAA created a steering committee report and project website (lakecharlevoixprotection.org) that include a summary of the findings and recommendations from previous shoreline protection efforts, a summary of current shoreline protection zoning standards in the ten jurisdictions surrounding Lake Charlevoix, and recommendations for definitions and zoning standards to help protect Lake Charlevoix's water quality.

Review and analysis of the work by the previous shoreline protection studies shows that local municipalities can be effective in protecting water quality by managing development and redevelopment on waterfront properties. The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations for the local units of government around the Lake.

Current Shoreline Protection Zoning Standards in Hayes Township

Hayes Township has already gone to great lengths to protect the shoreline and water quality of Lake Charlevoix. The Township's Zoning Ordinance contains many standards and regulations that help prevent shoreline degradation, limit the impacts of stormwater runoff, and help prevent pollution of the Lake. The Township's residents, elected officials, and planning commissioners should be proud of their commitment to the continued protection of this valuable natural resource. The table on the following

page illustrates the Zoning Ordinance’s standards and regulations related to shoreline protection and indicates where they meet the recommendations created as a part of this project.

Hayes Township – Existing Shoreline Protection Zoning Standards

Community	Hayes Township	
Zoning District	R-1	A
Defined High Water Elevation/OHWM	582.3' I.G.L.D.	
Setback from OHWM	100'	100'
Maximum Impervious Surface Coverage	15%	30%
Shoreline Buffer/Greenbelt Requirement	50'	50'
Native vegetation requirement in greenbelt	Yes	Yes
Prohibition of pesticides, herbicides, fertilizers in greenbelt	Yes	Yes
Specific prohibition of lawn in greenbelt	-	-
Requirement of trees/woody plants in greenbelt	Yes	Yes
Cutting/pruning of greenbelt vegetation limited	Yes	Yes
Prohibition of beach sanding in greenbelt	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter	Stricter
Allows a single path (6' maximum width) through the greenbelt to the water	Yes	Yes
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	Yes
Requirement of all county, state, federal permits be obtained prior to zoning permit being issued	Yes	Yes
Formal Planning Commission site plan review for all waterfront uses	-	-
Dock regulation	Yes	Yes
Specific keyhole/funneling standards	Yes	Yes
Prohibition of seawalls	-	-
Engineered stormwater control system requirement	Yes	Yes

Recommendations for further shoreline protection zoning standards in Hayes Township

After reviewing the recommendations of the previous shoreline protection work groups and discussing appropriate shoreline protection standards for the ten jurisdictions surrounding Lake Charlevoix, the project team and steering committee identified specific categories for which recommendations should be made. Those categories are:

- High water elevation
- Shoreline setbacks
- Greenbelts or vegetated buffer strips
- Engineered stormwater control systems

- Maximum impervious surface lot coverage
- Conditions for issuance of zoning permits
- Formal planning commission site plan review
- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

As shown in the table above, the Hayes Township Zoning Ordinance (Zoning Ordinance) contains many shoreline protection standards that align with the recommendations of the Enacting Shoreline Protections project. However, some of the recommended standards are not included in the Zoning Ordinance and we are requesting that the Planning Commission review these recommendations and consider amending the Zoning Ordinance to better protect the shoreline and water quality of Lake Charlevoix. The following recommended amendments to the Zoning Ordinance are included for your review and consideration.

Modify Shoreline Protection Regulations

It is recommended that the Zoning Ordinance be amended to include additional shoreline protection regulations for waterfront parcels. Specifically, the recommended additions are:

- Specific prohibition of lawn in greenbelt; and
- Require that new low-growing plantings be spaced for complete ground coverage in two years.

The addition of these regulations would further increase the effectiveness of the Greenbelt to slow runoff, reduce erosion, and protect the Lake from pollution. Specific language to include these regulations in the Zoning Ordinance could be added to Article III Section 3.14 Waterfront Regulations.

Prohibit the sanding of beaches

It is recommended that the Zoning Ordinance be amended to prohibit beach sanding within the greenbelt. The sanding of beaches is often futile due to natural shoreline processes and variation in water levels. Beach sanding can also be detrimental to fish species within lakes when added beach sand covers important lake bottom habitats like gravel, rock, and weed beds. Specific language to prohibit beach sanding within the shoreline protection zone could be added to Article III Section 3.14 Waterfront Regulations.

Prohibit the alteration of the area between the water’s edge and the high water elevation

Jurisdiction over inland lake bottomlands between the high water elevation and the water’s edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas, including the alteration of the ground and the construction of structures. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water’s edge. The alteration of bottomlands between the water’s edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase

the risk of shoreline erosion. Specific language to prohibit the alteration of these areas could be included in Article III Section 3.14 Waterfront Regulations.

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans. Specific language to require site plan review for all waterfront uses could be included in Article V: Site Plan Review Section 5.03.

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. Specific language to prohibit the construction of seawalls could be included in Article III Section 3.14 Waterfront Regulations.

Enacting Shoreline Zoning Protections around Lake Charlevoix

Project Overview and Recommendations

South Arm Township Planning Commission Meeting – October 11, 2016

Based on previous shoreline protection work in the communities surrounding Lake Charlevoix, it is clear that local elected and appointed officials believe that maintaining the water quality of the lake is important for future economic development and quality of life in the region. In an effort to build upon previous shoreline protection work, the Enacting Shoreline Zoning Protections project was launched to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. The project promotes the understanding and acceptance of the need for shoreline protection standards in the City of Charlevoix, City of Boyne City, City of East Jordan, Bay Township, Charlevoix Township, Eveline Township, Evangeline Township, Hayes Township, Marion Township, and South Arm Township.

Funding for this project was provided through a 319 Grant from the Michigan Department of Environmental Quality, Non-Point Source Program that was secured by the Tip of the Mitt Watershed Council. Project partners working on this, and other, portions of the grant include Tip of the Mitt Watershed Council, MSU Extension, and the Lake Charlevoix Association.

The project team, led by the Land Information Access Association (LIAA), a non-profit community services organization in Traverse City, convened a steering committee made up of local planning and zoning officials to help guide the creation of definitions and standards for waterfront properties around the lake. LIAA created a steering committee report and project website (lakecharlevoixprotection.org) that include a summary of the findings and recommendations from previous shoreline protection efforts, a summary of current shoreline protection zoning standards in the ten jurisdictions surrounding Lake Charlevoix, and recommendations for definitions and zoning standards to help protect Lake Charlevoix's water quality.

Review and analysis of the work by the previous shoreline protection studies shows that local municipalities can be effective in protecting water quality by managing development and redevelopment on waterfront properties. The project team and steering committee used the findings of these previous studies to guide the creation of the shoreline protection recommendations for the local units of government around the Lake.

Current Shoreline Protection Zoning Standards in South Arm Township

South Arm Township has already gone to great lengths to protect the shoreline and water quality of Lake Charlevoix. The Township's Zoning Ordinance contains many standards and regulations that help prevent shoreline degradation, limit the impacts of stormwater runoff, and help prevent pollution of the Lake. The Township's residents, elected officials, and planning commissioners should be proud of their commitment to the continued protection of this valuable natural resource. The table on the following page illustrates the Zoning Ordinance's standards and regulations related to shoreline protection and indicates where they meet the recommendations created as a part of this project.

South Arm Township – Existing Shoreline Protection Zoning Standards

Community	South Arm Township	
	R-2	C-1
Zoning District	R-2	C-1
Defined High Water Elevation/OHWM	As established by law	
Setback from OHWM	100'	75'
Maximum Impervious Surface Coverage	30%	-
Shoreline Buffer/Greenbelt Requirement	50'	-
Native vegetation requirement in greenbelt	-	-
Prohibition of pesticides, herbicides, fertilizers in greenbelt	-	-
Specific prohibition of lawn in greenbelt	-	-
Requirement of trees/woody plants in greenbelt	Yes	-
Cutting/pruning of greenbelt vegetation limited	Yes	-
Prohibition of beach sanding in greenbelt	-	-
Prohibition of alteration of area between water's edge and high water elevation	-	-
Requires that new low-growing plantings be spaced for complete ground coverage in two years	-	-
Allows a single, small (200 s.f.) waterfront viewing platform in the greenbelt	Stricter	-
Allows a single path (6' maximum width) through the greenbelt to the water	Stricter	-
Allows for the maintenance of existing natural shoreline buffers, where they exist	Yes	-
Requirement of all county, state, federal permits be obtained prior to zoning permit being issued	Yes	Yes
Formal Planning Commission site plan review for all waterfront uses	-	-
Dock regulation	Yes	Yes
Specific keyhole/funneling standards	Yes	Yes
Prohibition of seawalls	-	-
Engineered stormwater control system requirement	Yes*	Yes*

*Stormwater retention consistent with the Charlevoix County Stormwater program required on site for all development.

Recommendations for further shoreline protection zoning standards in South Arm Township

After reviewing the recommendations of the previous shoreline protection work groups and discussing appropriate shoreline protection standards for the ten jurisdictions surrounding Lake Charlevoix, the project team and steering committee identified specific categories for which recommendations should be made. Those categories are:

- High water elevation
- Shoreline setbacks
- Greenbelts or vegetated buffer strips
- Engineered stormwater control systems
- Maximum impervious surface lot coverage

- Conditions for issuance of zoning permits
- Formal planning commission site plan review
- Shoreline protection structures
- Keyhole and funneling practices
- Number and use of docks

As shown in the table above, the South Arm Township Zoning Ordinance (Zoning Ordinance) contains many shoreline protection standards that align with the recommendations of the Enacting Shoreline Protections project. However, some of the recommended standards are not included in the Zoning Ordinance and we are requesting that the Planning Commission review these recommendations and consider amending the Zoning Ordinance to better protect the shoreline and water quality of Lake Charlevoix. The following recommended amendments to the Zoning Ordinance are included for your review and consideration.

Redefine High Water Elevation

It is recommended that the Zoning Ordinance be amended to define the High Water Elevation of Lake Charlevoix as 582.35' I.G.L.D. This elevation is the highest water level recorded on the lake and historical lake levels have frequently been higher than the defined Ordinary High Water Mark (OHWM). Standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake. Specific language to define the High Water Elevation as 582.35' I.G.L.D. could be added to ARTICLE II Section 2.02 – DEFINITIONS; the definition of Ordinary High Water Line (p. 9).

Modify impervious surface coverage standards for waterfront lots

It is recommended that the Zoning Ordinance be amended to limit the maximum allowable impervious surface coverage on waterfront lots to 15%. Reducing the amount of impervious surface coverage on waterfront lots helps reduce the risk of shoreline erosion and the potential for pollutants to enter the lake through stormwater runoff. Specific language to limit impervious surface coverage on waterfront lots could be added to ARTICLE V Section 5.02 – SINGLE FAMILY GREENBELT RESIDENTIAL DISTRICT (R-2) (p. 31) and Section 5.05 – COMMERCIAL DISTRICT (C-1) (p. 35).

Modify Shoreline Protection Regulations

It is recommended that the Zoning Ordinance be amended to include additional shoreline protection regulations for waterfront parcels. Specifically, the recommended additions are:

- Require native vegetation in the greenbelt zone;
- Prohibit pesticides, herbicides, and fertilizers in the greenbelt zone;
- Prohibit a lawn in the greenbelt zone;
- Require that new low-growing plantings be spaced for complete ground coverage in two years.

The addition of these regulations would further increase the effectiveness of the Greenbelt zone to slow runoff, reduce erosion, and protect the Lake from pollution. Specific language to include these regulations in the Zoning Ordinance could be added to ARTICLE V Section 5.02 – SINGLE FAMILY GREENBELT RESIDENTIAL DISTRICT (R-2) (p. 31)

Prohibit the sanding of beaches

It is recommended that the Zoning Ordinance be amended to prohibit beach sanding within the greenbelt. The sanding of beaches is often futile due to natural shoreline processes and variation in water levels. Beach sanding can also be detrimental to fish species within lakes when added beach sand covers important lake bottom habitats like gravel, rock, and weed beds. Specific language to include these regulations in the Zoning Ordinance could be added to ARTICLE V Section 5.02 – SINGLE FAMILY GREENBELT RESIDENTIAL DISTRICT (R-2) (p. 31).

Prohibit the alteration of the area between the water's edge and the high water elevation

Jurisdiction over inland lake bottomlands between the high water elevation and the water's edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas, including the alteration of the ground and the construction of structures. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water's edge. The alteration of bottomlands between the water's edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion. Specific language to include these regulations in the Zoning Ordinance could be added to ARTICLE V Section 5.02 – SINGLE FAMILY GREENBELT RESIDENTIAL DISTRICT (R-2) (p. 31).

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans. Specific language to require site plan review for all waterfront uses could be included in ARTICLE III – GENERAL PROVISIONS, Section 3.14 – SITE PLAN REVIEW (p. 16).

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. Specific language to include these regulations in the Zoning Ordinance could be added to ARTICLE V Section 5.02 – SINGLE FAMILY GREENBELT RESIDENTIAL DISTRICT (R-2) (p. 31).

Appendix B:

Ordinance Recommendations

Enacting Shoreline Zoning Protections around Lake Charlevoix

To: Bay Twp. Planning Commission
From: Claire Karner, Community Planner at LIAA
Date: June 7, 2016
Subject: Draft Ordinance Language Recommendations for Lake Charlevoix Project

There are many opportunities for local governments to enhance water quality through the adoption of local zoning protections for waterfront properties. To better protect the water quality of Lake Charlevoix and Walloon Lake, the Bay Township Planning Commission could consider prohibiting the use of pesticides in the Natural Vegetative Strip, prohibiting the alteration of the area between the water's edge and the Ordinary High Water Mark, requiring formal Planning Commission site plan review for all waterfront uses, prohibiting keyhole/funneling, and prohibiting the construction of seawalls.

For each of the five ordinance recommendations, there is a brief overview and reasoning behind the ordinance recommendation as well as draft language for consideration. Draft language has been developed using Michigan Department of Environmental Quality best management practices, statewide model ordinances, and ordinances from neighboring communities surrounding Lake Charlevoix. A ~~strike through~~ is used for language recommended to eliminate and **redline** for new language.

Recommendation #1: Prohibit the use of pesticides in the Natural Vegetative Strip

[ORDINANCE LANGUAGE]

Article VI: Waterfront Overlay District (p. 34)

6.4 Development Standards

b. Natural Vegetative Strip

9. No supplemental plant nutrients shall be allowed in the natural vegetative strip.¹

Recommendation #2: Prohibit the alteration of the area between the water's edge and the Ordinary High Water Mark

Jurisdiction over inland lake bottomlands between the high water elevation and the water's edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas, including the alteration of the ground and the construction of structures. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water's edge. The alteration of bottomlands between the water's edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion.

¹ Language adapted from Evangeline Township Zoning Ordinance, 2008

[ORDINANCE LANGUAGE]

Article VI: Waterfront Overlay District (p. 34)

6.4 Development Standards

b. Natural Vegetative Strip

10. Areas located below the Ordinary High Water Mark shall not be altered.²

Recommendation #3: Require formal Planning Commission site plan review for all waterfront uses.

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans.

[ORDINANCE LANGUAGE]

Article XII Site Plan Review (p. 55)

12.2 When Required Site plan review and approval is required for the following uses:

- a) For all uses in all zoning districts except as indicated below.
- b) For all special uses in all zoning districts.
Site plans shall be submitted with all applications for special use permits. The review of such site plans shall be concurrent with the Planning Commission's deliberations on the application for special uses.
- c) For PUD's.
A site plan shall be submitted at the time application is made for PUD approval. The review of the site plan shall be concurrent with deliberations on Planned Unit Developments.
- d) For all site condominium and condominium subdivisions subject to the provisions of the Condominium Act (P.A. 59 of 1978, as amended).
- e) For all platted subdivisions subject to the provisions of the Land Division Act (P.A.591 of 1996, as amended).
- f) For all uses in the Waterfront Overlay District.

Recommendation #4: Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keholing/funneling is prevented.

[ORDINANCE LANGUAGE]

Article VI: Waterfront Overlay District (p. 34)

6.4 Development Standards

c. Limitation of Funnel Development

- 1. Not more than one (1) single family home or cottage or one (1) condominium unit or one (1) apartment unit shall use or be permitted to use each one hundred (100)

² Language adopted from Charlevoix Township Zoning Ordinance,

feet of lake or stream frontage as measured along the normal high water mark of the lake or stream. This restriction is intended to limit the number of users of the lake or stream frontage to preserve the quality of the waters, avoid congestion, and to preserve the quality of recreational uses of all waters and recreational lands within the Township.³

2. This restriction shall apply to any parcel regardless of whether access to the water shall be gained by easement, common fee ownership, single fee ownership, or lease.⁴
3. This restriction shall not apply to a Public Access Site.⁵

Recommendation #5: Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative.

[ORDINANCE LANGUAGE]

Article VI: Waterfront Overlay District (p. 34)

6.4 Development Standards

d. Standard sheet piling or concrete seawalls are prohibited except where the applicant can demonstrate to the Planning Commission that no other practical alternative exists.⁶

³ Language adapted from Hayes Township Zoning Ordinance, 2012

⁴ Language adapted from Hayes Township Zoning Ordinance, 2012

⁵ Language adapted from Hayes Township Zoning Ordinance, 2012

⁶ Language adapted from Evangeline Township Zoning Ordinance, 2008

Enacting Shoreline Zoning Protections around Lake Charlevoix

To: Scott McPherson, Planning Director, City of Boyne City
From: Claire Karner, Community Planner at LIAA
Date: June 24, 2016
Subject: Draft Ordinance Language Recommendations for Lake Charlevoix Project

In an effort to build upon previous shoreline protection work, the *Enacting Shoreline Zoning Protections* project is intended to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. Based on feedback from discussions with the City of Boyne City Planning Commission on May 16, the following ordinance language has been prepared for planning commission discussion and consideration.

For each of the ordinance recommendations, there is a brief overview and reasoning behind ordinance recommendation as well as draft language for consideration. Draft language has been developed using Michigan Department of Environmental Quality best management practices, statewide model ordinances, and ordinances from neighboring communities surrounding Lake Charlevoix. We use a ~~strike through~~ for language recommended to eliminate and **redline** for new language.

It should be noted that this draft ordinance language is intended for planning commission discussion and any additions or deletions to the existing zoning ordinance should be reviewed by a municipal attorney and may also be amended through the public hearing process.

Conditions for Issuance of Zoning Permits

By requiring that all necessary permits be obtained prior to the issuance of a zoning permit, jurisdictions can be sure that the requirements of all other agencies are being met by the proposed development.

Recommended Edits:

Appendix A Article XXVIII. Administration and Enforcement, p. 190.

Sec. 28.20. – Zoning Permits

- (1) It shall be unlawful for any person to commence excavation for any building or structure or to commence the erection, addition, alteration or repair of any building, structure or parking area or repair or move any building or structure; and no land use shall be commenced until a zoning permit has been secured from the planning director or zoning administrator. Except upon written order of the zoning board of appeals, no such zoning permit shall be issued for any building where the construction, addition, alteration or use thereof would be in violation of any of the provisions of this ordinance.
- (2) Exempted from the zoning permit requirements are facial alterations, structures of 100 square feet or less, installation of siding, windows, doors, shingles, and replacements of existing or deteriorated

materials and ordinary maintenance repairs made on all dwellings and their related outbuildings. This exemption does not eliminate the necessity for compliance with other county, state, or federal permitting requirements.

- (3) A Zoning Permit may not be issued until all other necessary permits required by statute have been obtained or waived with exception of those permits issued by the Charlevoix County Building Department.¹

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans. Boyne City could consider adding language to the section on Preliminary development plan review that the planning commission conduct a preliminary review of site plans for any type of waterfront development, including single family residential.

Recommended Edits:

Article XIX. – Development Plan Requirements

Sec. 19.35. - Preliminary development plan review, p. 110

The development plan approval process includes an optional review of a preliminary development plan by the planning commission. This process is at the option of the planning commission for: development plans affecting over three acres; sites containing floodplains or within the flood hazard zone; sites containing or potentially containing designated/regulated wetlands by the Michigan Department of Environmental Quality; **waterfront sites**; and/or conditional uses and complex commercial development sites.

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. Although the City noted that they are already required to obtain many of the permits listed, it is recommended that the Ordinance be updated to explicitly state that.

Recommended Edits

Appendix A Article V Waterfront Residential District Sec. 5.40. - Development requirements, p. 46

F. Additional requirements. The following requirements, unless superceded by the standards of this article, shall be met within a waterfront residential district (WRD):

8. **Standard sheet piling or concrete seawalls are prohibited except where the applicant can demonstrate to the Planning Commission that no other practical alternative exists.**²

Appendix A Article VI Multiple Family Residential District Sec. 6.40. - Development requirements, p. 48

¹ Language adapted from Hayes Township Zoning Ordinance, 2009

² Language adapted from Evangeline Township Zoning Ordinance, 2008

The following requirements shall be met within a multiple family residential district (MFRD):

- G. **Standard sheet piling or concrete seawalls are prohibited except where the applicant can demonstrate to the Planning Commission that no other practical alternative exists.**³

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keholing/funneling is prevented.

Recommended Edits:

Appendix A Article V Waterfront Residential District Sec. 5.40. - Development requirements, p. 46

F. Additional requirements. The following requirements, unless superceded by the standards of this article, shall be met within a waterfront residential district (WRD):

- 9. **Limitation of Funnel Development. Not more than one (1) residential home shall use or be permitted to use each one hundred (100) feet of lake or stream frontage as measured along the normal high water mark of the lake or stream. This restriction is intended to limit the number of users of the lake or stream frontage to preserve the quality of the waters, avoid congestion, and to preserve the quality of recreational uses of all waters and recreational lands within the City. This restriction shall apply to any parcel regardless of whether access to the water shall be gained by easement, common fee ownership, single fee ownership or lease. This restriction shall not apply to a "Public Access Site" as hereafter described.**⁴

Appendix A Article VI Multiple Family Residential District Sec. 6.40. - Development requirements, p. 48

The following requirements shall be met within a multiple family residential district (MFRD):

- G. **Limitation of Funnel Development. Not more than one (1) condominium unit or apartment unit shall use or be permitted to use each one hundred (100) feet of lake or stream frontage as measured along the normal high water mark of the lake or stream. This restriction is intended to limit the number of users of the lake or stream frontage to preserve the quality of the waters, avoid congestion, and to preserve the quality of recreational uses of all waters and recreational lands within the City. This restriction shall apply to any parcel regardless of whether access to the water shall be gained by easement, common fee ownership, single fee ownership or lease. This restriction shall not apply to a "Public Access Site" as hereafter described.**⁵

³ Language adapted from Evangeline Township Zoning Ordinance, 2008

⁴ Language adapted from Hayes Township Zoning Ordinance, 2012

⁵ Language adapted from Hayes Township Zoning Ordinance, 2012

Enacting Shoreline Zoning Protections around Lake Charlevoix

To: Dan Ulrich, Planning Commission Chair, Charlevoix Township
From: Claire Karner, Community Planner at LIAA
Date: April 25, 2016
Subject: Draft Ordinance Language Recommendations for Lake Charlevoix Project

In an effort to build upon previous shoreline protection work, the *Enacting Shoreline Zoning Protections* project is intended to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. Based on feedback from discussions with the Charlevoix Township Planning Commission on March 16, 2016, the following ordinance language has been prepared for planning commission discussion and consideration.

For each of the eight ordinance recommendations, there is a brief overview and reasoning behind ordinance recommendation as well as draft language for consideration. Draft language has been developed using Michigan Department of Environmental Quality best management practices, statewide model ordinances, and ordinances from neighboring communities surrounding Lake Charlevoix. We use a ~~strike through~~ for language recommended to eliminate and **redline** for new language.

It should be noted that this draft ordinance language is intended for planning commission discussion and any additions or deletions to the existing zoning ordinance should be reviewed by a municipal attorney and may also be amended through the public hearing process.

Redefine High Water Elevation

It is recommended that the Zoning Ordinance be amended to define the High Water Elevation of Lake Charlevoix as 582.35' I.G.L.D. This elevation is the highest water level recorded on the lake and historical lake levels have frequently been higher than the defined Ordinary High Water Mark (OHWM). Standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake.

Recommended Edits:

Article XIV: Definitions of the Township's Zoning Ordinance, p. 89: ~~Ordinary High Water Elevation Mark – This elevation is the highest water level recorded on the lake and delineating this elevation helps ensure the effectiveness of shoreline buffers around the lake. The boundary of lakes and streams which elevation shall be the elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape; commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. The ordinary high water mark elevation for Lake Charlevoix and Lake Michigan shall be, elevation 579.8 Ft~~ **582.35 Ft.** (International Great Lakes Datum—1955).

3.13 SHORELINE PROTECTION REGULATIONS, p. 6: C. Regulations. The following shoreline regulations shall apply to all districts except the I-2 Marine Industrial District: 1. Areas located below the Ordinary High Water Elevation Mark (elevation ~~579.8~~ 582.35 I.G.L.D.) shall not be altered.

Article V: District Regulations of the Ordinance, footnotes on pages 12, 15, and 33: As measured from the ordinary high water elevation mark (582.35 I.G.L.D.); see Article III Section 3.13 for shoreline protection regulations applicable to all districts.

Article V: District Regulations of the Ordinance, p. 19: 3. Buffer Yards Required. All PRDs shall provide a minimum buffer yard of 50 feet from street right-of-way lines and property lines and 50 feet from the ordinary high water elevation mark of a lake or stream. Buffer yards shall be landscaped with trees, shrubs and other plant materials that are compatible with local climate, soils characteristics, drainage and available water supply. Maintenance shall be the responsibility of the homeowners association. See Section 3.13 for shoreline protection regulations.

Modify impervious surface coverage standards for waterfront lots

It is recommended that the Zoning Ordinance be amended to limit the maximum allowable impervious surface coverage on waterfront lots to 15%. Reducing the amount of impervious surface coverage on waterfront lots helps reduce the risk of shoreline erosion and the potential for pollutants to enter the lake through stormwater runoff.

Recommended Edits:

3.13 SHORELINE PROTECTION REGULATIONS, Part (C) Regulations, p. 6: 2. No more than a maximum of 15% or 2,500sq. ft. (whichever is greater) of the lot area on waterfront property may be impervious surface. Impervious surfaces include all areas which prevent the free infiltration of water. The spatial dimensions of existing buildings that encroach on the waterfront, side yard and road setbacks or exceed the maximum allowable impervious surface standards of this district shall not be further expanded.¹

ARTICLE V DISTRICT REGULATIONS: Add footnotes under each district regulation table indicating a maximum Lakeshore Lot Coverage of 15% (of total impervious surfaces)

Modify Shoreline Protection Regulations

It is recommended that the Zoning Ordinance be amended to include additional shoreline protection regulations for waterfront parcels. Specifically, the recommended additions are:

- The prohibition of the use of pesticides, herbicides, and fertilizers in the Natural Vegetative Strip.
- The inclusion of a requirement that specifically requires the planting of trees and/or woody plants in the shoreline protection zone.
- The inclusion of a requirement that new low-growing plantings within the Natural Vegetative Strip be spaced for complete ground coverage in two years.

Recommended Edits:

¹ Language adapted from Evangeline Township Zoning Ordinance, 2008

3.13 SHORELINE PROTECTION REGULATIONS, Part (C) Regulations, p. 6: 3.13 SHORELINE PROTECTION REGULATIONS, Part (C) Regulations, p. 6:

- No supplemental plant nutrients shall be allowed in the shoreline protection zone.²
- The shoreline protection zone shall be planted to a mixture of trees and low growing woody shrub species native to the area and suitable for the site. Trees shall be scattered throughout the strip and sited in a manner what allows for “filter” views of the water from the dwelling.
- Shrubs shall be of sufficient size and planted at spacings that shall provide coverage of the ground within the shoreline protection zone, except as allowed in district regulations for a viewing platform and path, within a period of two (2) full growing seasons.³

Prohibit the sanding of beaches

It is recommended that the Zoning Ordinance be amended to prohibit beach sanding within the shoreline protection zone. The sanding of beaches is often futile due to natural shoreline processes and variation in water levels. Beach sanding can also be detrimental to fish species within lakes when added beach sand covers important lake bottom habitats like gravel, rock, and weed beds.

Recommended Edits:

3.13 SHORELINE PROTECTION REGULATIONS, Part (C) Regulations, p. 6: 3.13 SHORELINE PROTECTION REGULATIONS, Part (C) Regulations, p. 6:

No additional fill (except to replenish beach sand, with necessary permits) shall be allowed between the water’s edge and the high water level elevation.⁴

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans.

Recommended Edits:

Article IX: Site Plan Review of the Zoning Ordinance, p. 59

B. Exemptions. With the exception of lots abutting US-31, M-66, and Boyne City Road where site plans shall be required for all uses, the Planning Commission may exempt the following from site plan review when it determines that the submission of a site plan would serve no useful purpose and the proposed use complies fully with ordinance requirements:

1. Accessory structures no greater than 500 square feet that require no new or additional access to/from public roads. [amended 5/14/07]
2. An enlargement of a principal building by less than 10 percent of the existing gross floor area provided such enlargement will not result in a requirement for additional parking or access to a public road.
3. A change in a principal use where such change will not result in the expansion of an existing structure, an increase in impervious surface, additional access, or other alterations to the existing site conditions.

² Language adapted from Evangeline Township Zoning Ordinance, 2008

³ Language adapted from Evangeline Township Zoning Ordinance, 2008

⁴ Language adapted from Evangeline Township Zoning Ordinance, 2008

4. One and two-family dwellings except that any such dwelling located **on a waterfront parcel** or in a critical dune area shall not be exempt from site plan review.
5. Home-based businesses.

Specifically regulate number of docks allowed

It is recommended that the Zoning Ordinance specifically regulate the number of docks allowed for each waterfront parcel to help protect water quality by limiting the opportunity for erosion and fuel and chemical pollution from increased boat dockage on the Lake.

Recommended Edits:

3.13 SHORELINE PROTECTION REGULATIONS, Part (C) Regulations, p. 6: 3.13 SHORELINE PROTECTION REGULATIONS, Part (C) Regulations, p. 6:

Each legally created lakefront lot shall be entitled to one (1) seasonal dock. A minimum of two (200) hundred feet of frontage is required for a second dock. Each additional dock or boat hoist shall require an additional one (100) hundred feet of water frontage.⁵

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keyholing/funneling is prevented.

Recommended Edits:

ARTICLE III GENERAL REGULATIONS, add after 3.13, p. 6:

3.14 Limitation of Funnel Development Not more than one (1) single family home or cottage or one (1) condominium unit or one (1) apartment unit shall use or be permitted to use each one hundred (100) feet of lake or stream frontage as measured along the normal high water mark of the lake or stream. This restriction is intended to limit the number of users of the lake or stream frontage to preserve the quality of the waters, avoid congestion, and to preserve the quality of recreational uses of all waters and recreational lands within the Township. This restriction shall apply to any parcel regardless of whether access to the water shall be gained by easement, common fee ownership, single fee ownership or lease. This restriction shall not apply to a "Public Access Site" as hereafter described.⁶

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative.

⁵ Language adapted from Bay Township Zoning Ordinance, 2011

⁶ Language adapted from Hayes Township Zoning Ordinance, 2012

Recommended Edits:

3.13 SHORELINE PROTECTION REGULATIONS, Part (C) Regulations, p. 6:

Standard sheet piling or concrete seawalls are prohibited except where the applicant can demonstrate to the Planning Commission that no other practical alternative exists.⁷

⁷ Language adapted from Evangeline Township Zoning Ordinance, 2008

Enacting Shoreline Zoning Protections around Lake Charlevoix

To: Tom Cannon, City Administrator, City of East Jordan
From: Claire Karner, Community Planner at LIAA
Date: August 4, 2016
Subject: Draft Ordinance Language Recommendations for Lake Charlevoix Project

In an effort to build upon previous shoreline protection work, the *Enacting Shoreline Zoning Protections* project is intended to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. Based on feedback from discussions with the City of East Jordan Planning Commission on June 9, 2016, the following ordinance language has been prepared for planning commission discussion and consideration.

For each of the ordinance recommendations, there is a brief overview and reasoning behind ordinance recommendation as well as draft language for consideration. Draft language has been developed using Michigan Department of Environmental Quality best management practices, statewide model ordinances, and ordinances from neighboring communities surrounding Lake Charlevoix. We use a ~~strike through~~ for language recommended to eliminate and **redline** for new language.

It should be noted that this draft ordinance language is intended for planning commission discussion and any additions or deletions to the existing zoning ordinance should be reviewed by a municipal attorney and may also be amended through the public hearing process.

Redefine High Water Elevation

It is recommended that the Zoning Ordinance be amended to define the High Water Elevation of Lake Charlevoix as 582.35' I.G.L.D. This elevation is the highest water level recorded on the lake and historical lake levels have frequently been higher than the defined Ordinary High Water Mark (OHWM). Standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake.

Recommended Edits:

Article I Sec. 48-8. Definitions, p. 15

~~*Shoreline* means the line which separates land from a surface water feature and may be established as a matter of record as the mean level elevation of the surface water or as determined by the legal establishment of the surface water level elevation by the county drain commissioner or the state department of natural resources. For the purpose of this chapter the legally established surface water level elevation shall take precedence, if established, over the mean level elevation.~~

***Ordinary High Water Mark (OHWM)* means the line between upland and bottomland which persists through successive changes in water levels, below which the presence and action of the water is**

common or recurrent so that the character of the land is marked distinctly from the upland and is apparent in the soil itself, the configuration of the soil and the vegetation. On an inland lake which has had a level established by law, it means the high established level. On a river or stream, the ordinary high water mark shall be the ten year flood limit line. The ordinary high water mark shall be at elevation 582.35 feet (International Great Lake Datum, IGLD) for Lake Charlevoix.¹

Clarification should be made in all areas of the ordinance that reference shoreline setbacks that the setback should be measured from the OHWM. For example, the definition of **Yard, front could be amended to state:*

Yard, front, means the open space between the front street lot line or ~~waterfront-shoreline~~ **Ordinary High Water Mark on shoreline parcels** and the main building in which the principal use is located.

Conditions for Issuance of Zoning Permits

By requiring that all necessary permits be obtained prior to the issuance of a zoning permit, jurisdictions can be sure that the requirements of all other agencies are being met by the proposed development.

Recommended Edits:

Article II Administration and Enforcement Sec. 48-38. Zoning permit

Sec. 48-38. Zoning permit.

(a) Zoning permit requirements. A zoning permit is required for all developments and shall be obtained after the effective date of the ordinance from which this chapter is derived from the office of the zoning administrator or his agent by the owner for the following conditions:

1. The administrative coordination of zoning permits issued by the city and building permits issued by the building inspector shall be in accordance with section 48-193
2. The construction, enlargement, alteration or moving of any dwelling, building or structure or any part thereof, being used or to be used for agricultural, residential, commercial, industrial, public or semipublic purposes.
3. Repairs of a minor nature or minor alterations which do not change the use, occupancy, area, structural strength, fire hazard, fire protection, exits, light, and ventilation of a building shall not require a zoning permit.
4. **A Zoning Permit may not be issued until all other necessary permits required by statute have been obtained or waived with exception of those permits issued by the Charlevoix County Building Department.**²

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan

¹ Language adapted from City of Charlevoix Zoning Ordinance, 2013

² Language adapted from Hayes Township Zoning Ordinance, 2009

review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans.

Recommended Edits:

Article II Division 2

Sec. 48-70. Developments requiring site plan approval (p. 24)

The following land, building and structural uses require site plan approval:

- (1) All principal and special uses and their accessory uses in the R-3, PO, WF, C-1, C-2 and I districts.
- (2) All special uses and their accessory uses in all districts.
- (3) All planned unit developments (PUDs).
- (4) All developments located on waterfront parcels.

(Ord. No. 142, § 22.02, 2-6-1990)

Sec. 48-71. Developments not requiring site plan approval.

Single-family homes and mobile homes located on separate lots or parcels and their accessory uses in the RA, R-1, R-2, R-2A, R-3 and R-4 districts, with the exception of those located on the waterfront, do not require site plan approval.

(Ord. No. 142, § 22.03, 2-6-1990)

Specifically regulate number of docks allowed

It is recommended that the Zoning Ordinance specifically regulate the number of docks allowed for each private residential waterfront parcel to help protect water quality by limiting the opportunity for erosion and fuel and chemical pollution from increased boat dockage on the Lake.

Recommended Edits:

ARTICLE III. DISTRICT REGULATIONS

DIVISION 2. - RA Single-Family Residential District

DIVISION 3. - R-1 Single-Family Residential District

DIVISION 6. - R-3 Multiple-Family Residential District

Language similar to the following could be inserted into each Division listed above in the section that outlines permitted accessory uses: Each legally created lakefront lot shall be entitled to one (1) seasonal dock. A minimum of two (200) hundred feet of frontage is required for a second dock. Each additional dock or boat hoist shall require an additional one (100) hundred feet of water frontage.³

Specifically regulate or prohibit keyhole/funnel development and seawalls.

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel and prohibit new seawalls from being constructed.

³ Language adapted from Bay Township Zoning Ordinance, 2011

Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keholing/funneling is prevented.

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. We recommend the East Jordan Planning Commission considers limiting keyhole/funnel development and seawalls by creating an additional section in ARTICLE III. District Regulations, DIVISION 1. Generally as is detailed below.

Recommended Edits:

ARTICLE III. DISTRICT REGULATIONS
DIVISION 1. Generally

Sec. 48-202 Waterfront Development

1. **Limitation of Funnel Development.**
 - a. Not more than one (1) residential home, condominium unit, or apartment unit shall use or be permitted to use each one hundred (100) feet of lake or stream frontage as measured along the normal high water mark of the lake or stream.
 - b. This restriction is intended to limit the number of users of the lake or stream frontage to preserve the quality of the waters, avoid congestion, and to preserve the quality of recreational uses of all waters and recreational lands within the City.
 - c. This restriction shall apply to any parcel regardless of whether access to the water shall be gained by easement, common fee ownership, single fee ownership or lease.⁴
2. **Prohibition of Seawalls**
 - a. Standard sheet piling or concrete seawalls are prohibited except where the applicant can demonstrate to the Planning Commission that no other practical alternative exists.⁵

⁴ Language adapted from Hayes Township Zoning Ordinance, 2012

⁵ Language adapted from Evangeline Township Zoning Ordinance, 2008

Enacting Shoreline Zoning Protections around Lake Charlevoix

To: Zach Panoff, Interim Planning and Zoning Administrator, City of Charlevoix
From: Claire Karner, Community Planner at LIAA
Date: June 24, 2016
Subject: Draft Ordinance Language Recommendations for Lake Charlevoix Project

In an effort to build upon previous shoreline protection work, the *Enacting Shoreline Zoning Protections* project is intended to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. Based on feedback from discussions with the City of Charlevoix Planning Commission on April 11, 2016, the following ordinance language has been prepared for planning commission discussion and consideration.

For each of the ordinance recommendations, there is a brief overview and reasoning behind ordinance recommendation as well as draft language for consideration. Draft language has been developed using Michigan Department of Environmental Quality best management practices, statewide model ordinances, and ordinances from neighboring communities surrounding Lake Charlevoix. We use a ~~strike through~~ for language recommended to eliminate and **redline** for new language.

It should be noted that this draft ordinance language is intended for planning commission discussion and any additions or deletions to the existing zoning ordinance should be reviewed by a municipal attorney and may also be amended through the public hearing process.

Redefine High Water Elevation

It is recommended that the Zoning Ordinance be amended to define the High Water Elevation of Lake Charlevoix as 582.35' I.G.L.D. This elevation is the highest water level recorded on the lake and historical lake levels have frequently been higher than the defined Ordinary High Water Mark (OHWM). Standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake.

Recommended Edits:

Part 1: Introduction 5.12. Definitions N – O, p.13: Ordinary High Water Mark. The line between upland and bottomland which persists through successive changes in water levels, below which the presence and action of the water is common or recurrent so that the character of the land is marked distinctly from the upland and is apparent in the soil itself, the configuration of the soil and the vegetation. On an inland lake which has had a level established by law, it means the high established level. On a river or stream, the ordinary high water mark shall be the ten year flood limit line. The ordinary high water mark shall be at elevation ~~581.5~~ **582.35** feet (International Great Lake Datum, IGLD-~~1985~~) for Lake Michigan, the Pine River Channel, Round Lake and Lake Charlevoix.

Conditions for Issuance of Zoning Permits

By requiring that all necessary permits be obtained prior to the issuance of a zoning permit, jurisdictions can be sure that the requirements of all other agencies are being met by the proposed development.

Recommended Edits:

Part V Article 16 Section 5.161. Zoning Permits, p. 155.

- (1) No building or structure shall be erected or installed on any lot unless, or until, a zoning (1) permit has been issued by the city for such building or structure. No permit shall be issued by the City of Charlevoix or any official thereof for the construction, erection, alteration, placing or moving of any building or structure on any parcel of land unless such building or structure is designed and the proposed location on its lot, or its intended lot, is arranged to conform with the provisions of this chapter, except that no permit shall be required for alterations which do not result in change in height, floor area, lot coverage, location of walls or other structural alterations.
- (2) **A Zoning Permit may not be issued until all other necessary permits required by statute have been obtained or waived with exception of those permits issued by the Charlevoix County Building Department.¹**

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans.

Recommended Edits:

Part IV Article 12: Site Plan Review – Part 5.116. Applicability, p. 125.

5.116. Applicability

- (2) Level “B” Review. The planning commission shall act upon all site plans, other than those provided for level “A” review, in connection with the creation of a use or the erection of a building or structure in any of the following circumstances:
 - a) Any “permitted” use within any zoning district occupying a building of two (a) thousand (2000) square feet or more.
 - b) Any special use in any district.
 - c) Any Planned Unit Development.
 - d) Any site plan on a Waterfront parcel.**
 - e) As otherwise required by this ordinance.

5.117. Exemptions

Site plan review shall not be required for a single or two family dwellings on a lot on which there exists no other principal building or use or for any home occupation or accessory building in a single family residential district, **with the exception of single or two family dwellings on the waterfront.**

¹ Language adapted from Hayes Township Zoning Ordinance, 2009

Specifically regulate number of docks allowed

It is recommended that the Zoning Ordinance specifically regulate the number of docks allowed for each waterfront parcel to help protect water quality by limiting the opportunity for erosion and fuel and chemical pollution from increased boat dockage on the Lake.

Recommended Edits:

Part 1 Article 4 Residential Districts 5.26 Schedule of Uses, p. 24.

Part 1 Article 5 Nonresidential and Mixed Use Districts 5.31 Schedule of Uses, p. 30.

Language similar to the following could be inserted into each table or added as additional notes: **Each legally created lakefront lot shall be entitled to one (1) seasonal dock. A minimum of two (200) hundred feet of frontage is required for a second dock. Each additional dock or boat hoist shall require an additional one (100) hundred feet of water frontage.²**

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keyholing/funneling is prevented.

Recommended Edits:

Part III Article 8 General Provisions 5.60. Access, p. 79.

- (1) All lots shall have frontage on a dedicated public or private street.
- (2) A copy of an approved driveway permit from the city, Charlevoix County or MDOT, as applicable, shall be required.
- (3) Multiple-family, commercial, office or industrial developments consisting of multiple buildings need not front each structure within the development upon publicly dedicated streets.
- (4) **Limitation of Funnel Development. Not more than one (1) residential home, condominium unit, or apartment unit shall use or be permitted to use each one hundred (100) feet of lake or stream frontage as measured along the normal high water mark of the lake or stream. This restriction is intended to limit the number of users of the lake or stream frontage to preserve the quality of the waters, avoid congestion, and to preserve the quality of recreational uses of all waters and recreational lands within the City. This restriction shall apply to any parcel regardless of whether access to the water shall be gained by easement, common fee ownership, single fee ownership or lease. This restriction shall not apply to a "Public Access Site" as hereafter described.³**

² Language adapted from Bay Township Zoning Ordinance, 2011

³ Language adapted from Hayes Township Zoning Ordinance, 2012

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative. Currently, the only place in the ordinance where seawalls are referenced is in Part II Article 7, 5.46. Accessory Buildings and Uses – the Section on Boathouses. The planning commission is currently exploring updates to this section on Boathouses to better protect the shoreline and added regulations regarding seawalls would be a strategy to accomplish this goal.

Recommended Edits

Standard sheet piling or concrete seawalls are prohibited except where the applicant can demonstrate to the Planning Commission that no other practical alternative exists.⁴ (The Planning Commission will need to identify where in the Zoning Ordinance is the most appropriate place to add seawall language).

Upland Dredging

Although not a strategy explored by the Steering Committee, upland dredging is an issue that has come to the attention of the City of Charlevoix Planning Commission. According to the Michigan Department of Environmental Quality, any dredging below (waterward) of the ordinary high water mark of a lake or stream requires a permit. Excavation on the upland (dry land) within 500 feet of a lake or stream that does not extend below the water table does not require a permit from the DEQ.

Local communities can restrict alteration of the area between the water's edge and the OHWM through their local ordinance. Charlevoix Township has language in their ordinance restricting alteration between the water's edge and the OHWM.

The City could consider not allowing the construction of new boathouses, and grandfather in existing structures. Because of the dynamic nature of shorelines, the area between the water's edge and the OHWM is constantly in flux. The water quality of the lake depends partially on what goes on in that important transition zone.

⁴ Language adapted from Evangeline Township Zoning Ordinance, 2008

Enacting Shoreline Zoning Protections around Lake Charlevoix

To: Evangeline Township Planning Commission
From: Claire Karner, Community Planner at LIAA
Date: November 7, 2016
Subject: Draft Ordinance Language Recommendations for Lake Charlevoix Project

There are many opportunities for local governments to enhance water quality through the adoption of local zoning protections for waterfront properties. To better protect the water quality of Lake Charlevoix and Walloon Lake, the Evangeline Township Planning Commission could consider prohibiting beach sanding and the alteration of the area between the water's edge and the high water elevation and prohibiting keyhole/funneling.

For each of the three ordinance recommendations, there is a brief overview and reasoning behind the ordinance recommendation as well as draft language for consideration. The recommendations were identified after a meeting with planning commissioners to identify what ordinance amendments would be supported by the commission and the larger community. Draft language has been developed using Michigan Department of Environmental Quality best management practices, statewide model ordinances, and ordinances from neighboring communities surrounding Lake Charlevoix. A ~~strikethrough~~ is used for language recommended to eliminate and **redline** for new language.

Recommendation #1: Prohibit the sanding of beaches and alteration of the area between the water's edge and the high water elevation.

It is recommended that the Zoning Ordinance be amended to prohibit beach sanding both within the natural vegetation waterfront buffer strip and between the high water elevation and the water's edge. The sanding of beaches is often futile due to natural shoreline processes and variation in water levels. Beach sanding can also be detrimental to fish species within lakes when added beach sand covers important lake bottom habitats like gravel, rock, and weed beds. Jurisdiction over inland lake bottomlands between the high water elevation and the water's edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water's edge. The alteration of bottomlands between the water's edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion.

[PROPOSED ORDINANCE LANGUAGE]

Article III: General Provisions Section 3.06 – Natural Vegetation Waterfront Buffer Strip

B. A Natural Vegetation Waterfront Buffer Strip shall meet the following specifications:

7. No sand or fill shall be placed within the Vegetation Waterfront Buffer Strip.

Article III: General Provisions Section 3.07 – Waterfront setback Provision

B. No additional fill ~~(except to replenish beach sand, with necessary permits)~~ shall be allowed between the water's edge and the high water level elevation.

Recommendation #2: Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keholing/funneling is prevented. The following provisions could be added to each of the 5 waterfront zoning districts:

- Glenwood Beach District
- Pinehurst Waterfront Residential District
- Kriegerville Waterfront Residential District
- Springwater Beach District
- Walloon Waterfront Residential District

[PROPOSED ORDINANCE LANGUAGE]

Article VI: Zoning Districts and Maps
Development Standards

Limitation of Funnel Development: Not more than one (1) single family home or cottage or one (1) condominium unit or one (1) apartment unit shall use or be permitted to use each one hundred (100) feet of lake or stream frontage as measured along the normal high water mark of the lake or stream. This restriction is intended to limit the number of users of the lake or stream frontage to preserve the quality of the waters, avoid congestion, and to preserve the quality of recreational uses of all waters and recreational lands within the Township. This restriction shall apply to any parcel regardless of whether access to the water shall be gained by easement, common fee ownership, single fee ownership, or lease.¹

¹ Language adapted from Hayes Township Zoning Ordinance, 2012

DRAFT 2

Eveline Township Zoning Ordinance

Changes to Waterfront Greenbelt Language

Eveline Township’s planning and zoning program supports long term water quality protection. Current waterfront zoning standards were designed to protect water quality and natural waterside landscapes. The Township Planning Commission has been investigating mechanisms for waterfront landowners to make minor changes to the waterfront greenbelt that would allow creation of small water view corridors while not comprising the integrity of the overall waterfront greenbelt. This document first presents the existing greenbelt language found in Zoning Ordinance, Section 4.6 Waterfront Greenbelt. Item B presents suggested changes to the current language. Other language additions include: Waterfront Greenbelt Landscaping Plan Approval Standards; Waterfront Greenbelt Landscaping Plan Data Required; and Circumstances Requiring a Site Plan.

A. Current language in Section 4.6 Waterfront Green Belt (Page 4-3)

- 4. *All vegetation within a waterfront greenbelt area shall remain in an undisturbed or natural state.*
 - a. *Any disturbance within the waterfront greenbelt unless allowed below shall be restored by the owner or his agents.*
 - b. *Trees may not be removed within the waterfront greenbelt area unless specifically allowed by a permit to construct a walkway or deck as provided for in this Section. Minimal selective pruning of trees is allowed in order to afford a view of the water.*
 - c. *Natural ground cover shall be preserved to the fullest extent feasible and where removed it shall be replaced with vegetation that is equally effective in retarding runoff, preventing erosion, and preserving natural beauty.*
 - i. *Where shoreline areas are restored, they shall be landscaped with native, non-invasive landscaping species.*
 - ii. *Invasive and exotic species to be avoided include, but are not limited to, purple loosestrife, reed canary grass, crown vetch, white and yellow sweet clover, Russian Olive, Autumn Olive, and Tartarian honeysuckle. FIND A LIST OF SPECIES*
 - iii. *A combination of grasses, shrubs, and trees shall be introduced in a naturalized planting pattern where native shoreline vegetation does not exist.*

B. Suggested Language Changes

4. All vegetation within a waterfront greenbelt area shall remain in an undisturbed or natural state unless a Waterfront Greenbelt Landscape Plan (WGLP) is submitted to and approved by the Zoning Administrator or Planning Commission.
- a) Any disturbance within the waterfront greenbelt unless allowed below shall be restored by the owner or his agents.
 - b) Trees may not be removed within the waterfront greenbelt area unless specifically allowed by a permit. **Dead trees may be removed.**
 - c) Natural ground cover shall be preserved to the fullest extent feasible and where removed it shall be replaced with vegetation that is equally effective in retarding runoff, preventing erosion, and preserving natural beauty.
 - i. Where shoreline areas are restored, they shall be landscaped with native or non-invasive landscaping species.
 - ii. Invasive and exotic species to be avoided include, but are not limited to, purple loosestrife, reed canary grass, crown vetch, white and yellow sweet clover, Russian Olive, Autumn Olive, and Tartarian honeysuckle.
 - iii. A combination of grasses, shrubs, and trees shall be introduced where native shoreline vegetation does not exist.
 - iv. **A manicured lawn is not allowed within the greenbelt.**
 - v. **Significant trees (12 inches and larger in diameter measured at breast height) shall be preserved.**
 - d) Natural vegetation cover, including trees, shrubs or herbaceous plants shall be maintained on at least eighty percent (80%) of the lake or stream frontage within the waterfront greenbelt. The vegetation on the remaining twenty percent (20%) may be cleared for a single view corridor; or selective trees removed to provide for a filtered view throughout the frontage, provided the cumulative total of the trees removed does not exceed the allowed twenty percent (20%) of the frontage.
 - e) **Maximum width of the greenbelt alteration to provide a view corridor shall be 30 feet on any parcel. Or shall be limited to 20 percent, with clearings limited to 20 feet per 100 feet of shoreline width. clarify**
 - f) Prior to any alteration or removal of trees, shrubs, ground cover or other native vegetation, the items to be altered or removed shall be marked by the applicant and approved by the Zoning Administrator as being in compliance with the landscaping component of the WGLP prior to work commencing to ensure impacts to the shoreline resources are minimized.
 - g) Trees and shrubs marked for removal shall be cut flush with the ground and stumps shall not be removed.

Commented [CK1]: But root systems left intact (as noted below)

Commented [CK2]: Is a manicured lawn allowed on 20% of the frontage? Seems like low lying woody plants and native grasses would still provide for a sufficient view shed and provide water quality benefits.

- h) A single view corridor shall not be located within the side yard setback.
- i) Tree-topping and clear cutting within the waterfront greenbelt is prohibited.
- j) No lawn shall be maintained between the Ordinary High Water Mark and the water's edge.
- k) **No supplemental plant nutrients should be applied** in the waterfront greenbelt.
- l) **No grading, excavation, filling or stump removal shall be allowed in the Waterfront Greenbelt, unless necessary for erosion control and with appropriate state and county permits.**
- m) A corridor view shall be established through selective cutting only after the principal structure has been sufficiently constructed to locate windows, decks or other structure features intended to enjoy and utilize a water view. Prior to cutting or removal of these trees and vegetation, these changes shall be marked by the applicant and approved by the Zoning Administrator as being in compliance with the Waterfront Greenbelt Landscape Plan.
- n) Pruning and removal activities shall be inspected at the discretion of the Zoning Administrator.
- o) The remaining trees and shrubs may be trimmed and pruned to create filtered views to the water from the property.

Commented [CK3]: You could consider completely prohibiting alteration of area between water's edge and high water elevation (which would also eliminate the potential for upland dredging and beach sanding). Charlevoix Twp. has a provision for this.

Can there be a stipulation added to prohibit the construction of seawalls along the shoreline in favor of revetments and engineered natural shorelines, except where there is no other practical alternative?

C. Waterfront Greenbelt Landscaping Plan Approval Standards

The following standards shall be considered by the Zoning Administrator or Planning Commission when reviewing the Waterfront Greenbelt Landscaping Plan submission:

- a) **The Waterfront Greenbelt Landscaping Plan shall demonstrate that the impact to fish, birds, wildlife, native vegetation, and general water quality is minimized by preserving natural habitat;**
- b) **The Waterfront Greenbelt Landscaping Plan shall demonstrate that erosion and sedimentation shall be prevented;**
- c) **The Waterfront Greenbelt Landscaping Plan shall demonstrate that the natural character and aesthetic value of the shoreline is maintained by minimizing the visual impact of the development;**
- d) The Zoning Administrator can review and act upon Waterfront Greenbelt Landscaping Plans for the construction of one single family dwelling, or accessory buildings, or additions to existing single family dwellings, or disturbances of the waterfront greenbelt on parcels with less than 120 feet of Lake Charlevoix frontage. All other Waterfront Greenbelt Landscaping Plans shall be reviewed and acted upon by the Planning Commission.

D. Waterfront Greenbelt Landscaping Plan Data Required

Prior to alteration of greenbelts on waterfront properties located on Lake Charlevoix (all waterfront properties) requires submittal of a Waterfront Greenbelt Landscaping Plan and approval by the Zoning Administrator or the Planning Commission, prior to the start of any of these activities. All applicants shall submit Waterfront Greenbelt Landscaping Plans that contain the following information:

- a) Two complete sets of plans for Zoning Administrator review or 8 complete sets for Planning Commission review.
- b) Show placement of any buildings or other structures, delineates a perimeter line encompassing all proposed activities, identifies the location and extent of the shoreline waterfront greenbelt boundary, and proposed land changes including plantings;
- c) All shoreline types and coastal resources, including but not limited to, bluff ridges, wetland boundaries, ordinary high water mark; and a landscape plan which contains an existing and planned vegetation inventory (trees, shrubs and ground cover, including a written list and map showing the location of trees, shrubs and ground cover, with notes as to the locations of native and non-native species) shall be identified and submitted with the Waterfront Greenbelt Landscaping Plan.
- d) A plan for controlling traffic to the lakefront, detailing construction and maintenance of paths, stairs or boardwalks;
- e) Detailed drawings and descriptions of all temporary and permanent soil erosion and sedimentation control measures, and bank stabilization measures as submitted to the Soil Erosion Control Enforcement Officer;
- f) Detailed drawings delineating areas to be cleared of vegetation before and during development activities, with area calculations and descriptions of the vegetation to be removed, and detailed drawings and descriptions of proposed vegetation restoration for those same areas;
- g) Detailed drawings that show the location of existing structures on the property, as well as dwellings on neighboring parcels;
- h) The Waterfront Greenbelt Landscaping Plan shall identify the location of property, including a full tax identification number, location of the nearest public road intersection, the high water mark, a north arrow and map scale;
- i) The Waterfront Greenbelt Landscaping Plan shall include the name, address, professional status, license number (if applicable), and phone number of the person who prepared the plan along with the date of the original drawing and the date of the most recent revision.

E. Circumstances Requiring a Site Plan

Site plans are required for the following uses:

- 1. Except as provided herein, all new uses, including single-family and two-family dwellings located on a waterfront lot. Except as provided herein, single-family and two-family dwellings

located on a non-waterfront lot shall not require site plan review.

2. Except as provided herein, **expansion or renovation of an existing use**, including single-family and two-family dwellings located on a waterfront lot. Except as provided herein, the expansion or renovation of single-family and two-family dwellings located on a non-waterfront lot shall not require site plan review.

Enacting Shoreline Zoning Protections around Lake Charlevoix

To: Hayes Township Planning Commission
From: Claire Karner, Community Planner at LIAA
Date: November 8, 2016
Subject: Draft Ordinance Language Recommendations for Lake Charlevoix Project

In an effort to build upon previous shoreline protection work, the *Enacting Shoreline Zoning Protections* project is intended to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. Based on feedback from discussions with the Hayes Township Planning Commission on August 16, 2016, the following ordinance language has been prepared for planning commission discussion and consideration.

For each of the three ordinance recommendations, there is a brief overview and reasoning behind ordinance recommendation as well as draft language for consideration. Draft language has been developed using Michigan Department of Environmental Quality best management practices, statewide model ordinances, and ordinances from neighboring communities surrounding Lake Charlevoix. We use a ~~strike through~~ for language recommended to eliminate and **redline** for new language.

It should be noted that this draft ordinance language is intended for planning commission discussion and any additions or deletions to the existing zoning ordinance should be reviewed by a municipal attorney and may also be amended through the public hearing process.

Prohibit the alteration of the area between the water's edge and the high water elevation

Jurisdiction over inland lake bottomlands between the high water elevation and the water's edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas, including the alteration of the ground and the construction of structures. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water's edge. The alteration of bottomlands between the water's edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion.

Recommended Edits:

Article III: General Provisions
Section 3.14 Waterfront Regulations

8. The area between the water's edge and the high water elevation shall not be altered.

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans.

Recommended Edits:

Article V: Site Plan Review

Section 5.03 – Site Plan Review (All Districts)

1. Circumstances Requiring a Site Plan: Site Plans are required for the following uses:
 - A. All new uses and/or structures except one-family or two-family residential units **that are not located on waterfront parcels**, associated accessory structures to one-family or two-family residential units, agricultural buildings in the Agricultural district, accessory buildings as a principal use, provided all requirements are met.
 - B. Expansion or renovation of an existing use, other than one-family or two-family residential use, which increases the existing floor space more than twenty five (25) percent.
 - C. Changes of use for an existing structure or lot.
 - D. Any special use permit.
 - E. Any use requiring off-street parking, as stated in the off-street parking schedule of this ordinance.
 - F. **All new waterfront structures, including one-family or two-family residential units**
 - G. Other uses as required by this Ordinance.

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative.

Recommended Edits:

Article III: General Provisions

Section 3.14 Waterfront Regulations

- 9. Standard sheet piling or concrete seawalls are prohibited except where the applicant can demonstrate to the Planning Commission that no other practical alternative exists.¹**

Docks

The Hayes Township Planning Commission also requested that we provide recommendations on regulating docks. Specifically, permanent docks versus seasonal, the appropriate length of docks, and boat parking requirements. Reducing the number of docks and boat storage spaces around the lake improves congestion and aesthetic issues and can help protect water quality by limiting the opportunity for erosion and fuel and chemical pollution from increased boating activity. The steering committee for

¹ Language adapted from Evangeline Township Zoning Ordinance, 2008

this project felt that each jurisdiction should determine what dock and boat standards are appropriate for their specific community. According to water law attorney Clifford Bloom of Law, Weathers & Richardson writing for the Michigan Planning and Zoning News, dock and boat ordinances are police power ordinances, not zoning power ordinances. As such, they can apply to existing uses.

A model dock ordinance developed for the Michigan Townships Association Convention recommended that communities should require more than eighty (80) feet of continuous frontage on a lake to consider allowing a second dock. Where more than one (1) dock is permitted for a separate frontage, the docks shall be separated by a minimum of thirty (30) feet. This model ordinance also recommends that no dock shall extend more than seventy-five (75) feet into a body of water, measured perpendicularly from the shoreline, unless necessary to reach water with a depth of three (3) feet, and then no further than necessary to reach such depth. All docks shall have a minimum width of two and one-half (2- 1/2) feet, but shall not exceed a maximum width of six (6) feet. Additionally, the model ordinance recommends prohibiting permanent docks. The model ordinance can be downloaded at this link: http://www.bsmlawpc.com/municipal_law/PDF/Riparian_Water_Law_Articles/MTA_Convention_Outline_Water_Law%20and_Michigan_Townships.pdf

Enacting Shoreline Zoning Protections around Lake Charlevoix

To: Marion Township Planning Commission
From: Claire Karner, Community Planner at LIAA
Date: November 14, 2016
Subject: Draft Ordinance Language Recommendations for Lake Charlevoix Project

In an effort to build upon previous shoreline protection work, the *Enacting Shoreline Zoning Protections* project is intended to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. Based on feedback from discussions with the Marion Township Planning Commission on May 23, 2016, the following ordinance language has been prepared for planning commission discussion and consideration.

For each of the seven ordinance recommendations, there is a brief overview and reasoning behind the ordinance recommendation as well as draft language for consideration. Draft language has been developed using Michigan Department of Environmental Quality best management practices, statewide model ordinances, and ordinances from neighboring communities surrounding Lake Charlevoix. We use a ~~strike through~~ for language recommended to eliminate and **redline** for new language.

It should be noted that this draft ordinance language is intended for planning commission discussion and any additions or deletions to the existing zoning ordinance should be reviewed by a municipal attorney and may also be amended through the public hearing process.

Redefine High Water Elevation

It is recommended that the Zoning Ordinance be amended to define the High Water Elevation of Lake Charlevoix as 582.35' I.G.L.D. This elevation is the highest water level recorded on the lake and historical lake levels have frequently been higher than the defined Ordinary High Water Mark (OHWM). Standardizing a High Water Elevation of 582.35' helps ensure the effectiveness of shoreline buffers around the lake.

Recommended Edits:

Article II: Rules of Construction and Definitions of the Zoning Ordinance, p. II-11

Ordinary High Water Line: The line between upland and bottomland which persists through successive changes in water levels, below which the presence and action of the water is so common or recurrent that the character of the land is marked distinctly from the upland and is apparent in the soil itself, the configuration of the soil and the vegetation. ~~On an inland lake which has had a level established by law, it means the high established level. On a river or stream, the ordinary high water mark shall be the ten year flood limit line.~~ **This elevation is the highest water level recorded on the lake and delineating this**

elevation helps ensure the effectiveness of shoreline buffers around the lake. The high water elevation for Lake Charlevoix shall be elevation 582.35 Ft. (International Great Lakes Datum).

Modify impervious surface coverage standards for waterfront lots

It is recommended that the Zoning Ordinance be amended to limit the maximum allowable impervious surface coverage on waterfront lots to 15%. Reducing the amount of impervious surface coverage on waterfront lots helps reduce the risk of shoreline erosion and the potential for pollutants to enter the lake through stormwater runoff.

Recommended Edits:

Article V: District Regulations

Section 5.01 -- Single Family Residential District (R-1)

Section 5.01.6 – General Development Provisions

Maximum Impervious Surface Coverage: No more than a maximum of 15% or 2,500sq. ft. (whichever is greater) of the lot area on waterfront property may be impervious surface. The spatial dimensions of existing buildings that encroach on the waterfront, side yard and road setbacks or exceed the maximum allowable impervious surface standards of this district shall not be further expanded.¹

Modify Shoreline Protection Regulations

It is recommended that the Zoning Ordinance be amended to include additional shoreline protection regulations for waterfront parcels. Specifically, the recommended additions are:

- The specific prohibition of lawns within the Greenbelt.
- The inclusion of a requirement that specifically requires the planting of trees and/or woody plants in the Greenbelt.
- The inclusion of a requirement that new low-growing plantings within the Greenbelt be spaced for complete ground coverage in two years.

The addition of these regulations would further increase the effectiveness of the Greenbelt to slow runoff, reduce erosion, and protect the Lake from pollution.

Recommended Edits:

Article III: General Provisions, Section 3.11 – ~~Greenbelt~~ **Shoreline Protection Regulations**

Part 1: Greenbelt

To preserve natural resources, water quality and community scenic and recreational values, a greenbelt shall be established and maintained on all waterfront property. The greenbelt shall include all the land area located within fifty (50) feet of the ordinary high water mark of a lake or a stream abutting or

¹ Language adapted from Evangeline Township Zoning Ordinance, 2008

traversing the property in question. Within the greenbelt, the following development or use restrictions shall apply:

7. Natural vegetation cover, including trees, ~~shrubs or herbaceous~~ and woody plants shall be maintained on a least seventy percent (70%) of the lake or stream frontage within the greenbelt, unless a landscape plan is submitted and approved by the Planning Commission. Beach sand, gravel, cobblestone or rock may be substituted for vegetated areas where these materials naturally exist.
9. No lawns should be established or maintained on the greenbelt.
10. Shrubs shall be of sufficient size and planted at spacings that shall provide coverage of the ground within the shoreline protection zone, except as allowed in district regulations for a viewing platform and path, within a period of two (2) full growing seasons.²

Prohibit the alteration of the area between the water's edge and the high water elevation

Jurisdiction over inland lake bottomlands between the high water elevation and the water's edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas, including the alteration of the ground and the construction of structures. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water's edge. The alteration of bottomlands between the water's edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion.

Recommended Edits:

Article III: General Provisions, Section 3.11 – ~~Greenbelt~~ Shoreline Protection Regulations
Part 2: Shoreline Alteration and Access

1. The alteration of bottomlands between the water's edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion. Areas located below the Ordinary High Water Mark (elevation 582.35 ft.) shall not be altered.³

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans.

Recommended Edits:

ARTICLE VI: Site Plan Review, Section 6.03 Site Plan Review (All Districts)

² Language adapted from Evangeline Township Zoning Ordinance, 2008

³ Language adapted from Charlevoix Township Zoning Ordinance, 2007

Required site plans give the Planning Commission an opportunity to review development proposals in a concise and consistent manner. The use of the site plan ensures that the physical changes in the property meet with local approval and that development actually occurs as it was planned and represented by the developer.

1. Circumstances Requiring a Site Plan: Site plans are required for the following uses:
 - A. All new uses and/or structures except one-family or two-family residential units **not located on a waterfront site.**
 - G. All new uses and/or structures on waterfront sites.

Specifically regulate or prohibit keyhole/funnel development

It is recommended that the Zoning Ordinance specifically regulate or prohibit keyhole, or funnel, development where multiple property owners or parcels are allowed lake access on a single waterfront parcel. Keyhole practices can greatly increase the number of docks and motorized watercraft on the lake, increase runoff and pollution, and increase shoreline erosion. By limiting the number of motorized boats that are able to be docked on individual waterfront parcels, water quality can be protected by reducing the potential for fuel and chemical spills. Additionally, congestion and aesthetic issues are reduced when keyholing/funneling is prevented.

Recommended Edits:

Article III: General Provisions Section 3.11 – ~~Greenbelt~~ **Shoreline Protection Regulations**

Part 2: Shoreline Alteration and Access

2. **Limitation of Funnel Development Not more than one (1) single family home or cottage or one (1) condominium unit or one (1) apartment unit shall use or be permitted to use each one hundred (100) feet of lake or stream frontage as measured along the normal high water mark of the lake or stream. This restriction is intended to limit the number of users of the lake or stream frontage to preserve the quality of the waters, avoid congestion, and to preserve the quality of recreational uses of all waters and recreational lands within the Township. This restriction shall apply to any parcel regardless of whether access to the water shall be gained by easement, common fee ownership, single fee ownership or lease. This restriction shall not apply to a “Public Access Site” as hereafter described.⁴**

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative.

Recommended Edits:

Article III: General Provisions Section 3.11 – ~~Greenbelt~~ **Shoreline Protection Regulations**

⁴ Language adapted from Hayes Township Zoning Ordinance, 2012

Part 2: Shoreline Alteration and Access

3. Standard sheet piling or concrete seawalls are prohibited except where the applicant can demonstrate to the Planning Commission that no other practical alternative exists.⁵

⁵ Language adapted from Evangeline Township Zoning Ordinance, 2008

Enacting Shoreline Zoning Protections around Lake Charlevoix

To: South Arm Township Planning Commission
From: Claire Karner, Community Planner at LIAA
Date: November 14, 2016
Subject: Draft Ordinance Language Recommendations for Lake Charlevoix Project

In an effort to build upon previous shoreline protection work, the *Enacting Shoreline Zoning Protections* project is intended to help protect the water quality of Lake Charlevoix through the adoption of shoreline protection zoning standards in the ten jurisdictions surrounding the lake. Based on feedback from discussions with the South Arm Township Planning Commission on October 11, 2016, the following ordinance language has been prepared for planning commission discussion and consideration. Feedback at the October meeting was made using the adopted zoning ordinance from March of 2001. After that meeting, LIAA staff received a copy of the ordinance that was adopted in January of 2015 to make the following recommendations.

For each of the five ordinance recommendations, there is a brief overview and reasoning behind the ordinance recommendation as well as draft language for consideration. Draft language has been developed using Michigan Department of Environmental Quality best management practices, statewide model ordinances, and ordinances from neighboring communities surrounding Lake Charlevoix. We use a ~~strikethrough~~ for language recommended to eliminate and **redline** for new language.

It should also be noted that this draft ordinance language is intended for planning commission discussion, and any additions or deletions to the existing zoning ordinance should be reviewed by a municipal attorney and may also be amended through the public hearing process.

Modify impervious surface coverage standards for waterfront lots

It is recommended that the Zoning Ordinance be amended to limit the maximum allowable impervious surface coverage on waterfront lots to 15%. Reducing the amount of impervious surface coverage on waterfront lots helps reduce the risk of shoreline erosion and the potential for pollutants to enter the lake through stormwater runoff.

Recommended Edits:

Article IV: Zoning Districts and Regulations, Section 4.05 - Single Family Waterfront Residential District (R-2)

E. Greenbelt Regulations

3. **Maximum Impervious Surface Coverage: No more than a maximum of 15% or 2,500sq. ft. (whichever is greater) of the lot area on waterfront property may be impervious surface. The spatial dimensions of existing buildings that encroach on the waterfront, side yard and road**

setbacks or exceed the maximum allowable impervious surface standards of this district shall not be further expanded.¹

Modify Shoreline Protection Regulations

It is recommended that the Zoning Ordinance be amended to include additional shoreline protection regulations for waterfront parcels. Specifically, the recommended additions are:

- The specific prohibition of lawns within the Greenbelt.
- The inclusion of a requirement that specifically requires the planting of trees and/or woody plants in the Greenbelt.
- The inclusion of a requirement that new low-growing plantings within the Greenbelt be spaced for complete ground coverage in two years.

The addition of these regulations would further increase the effectiveness of the Greenbelt to slow runoff, reduce erosion, and protect the Lake from pollution.

Recommended Edits:

Article IV: Zoning Districts and Regulations, Section 4.05 - Single Family Waterfront Residential District (R-2)

E. Greenbelt Regulations

4. No lawns should be established or maintained on the greenbelt.
5. Shrubs shall be of sufficient size and planted at spacings that shall provide coverage of the ground within the shoreline protection zone, except as allowed in district regulations for a viewing platform and path, within a period of two (2) full growing seasons.²

Prohibit the alteration of the area between the water's edge and the high water elevation

Jurisdiction over inland lake bottomlands between the high water elevation and the water's edge is concurrently held by both the Michigan Department of Environmental Quality and local units of government. Local zoning ordinances can regulate activities that take place in these areas, including the alteration of the ground and the construction of structures. It is recommended that the Zoning Ordinance be amended to prohibit the alteration of the area between the defined high water elevation and the water's edge. The alteration of bottomlands between the water's edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion.

Recommended Edits:

Article IV: Zoning Districts and Regulations, Section 4.05 - Single Family Waterfront Residential District (R-2)

E. Greenbelt Regulations

¹ Language adapted from Evangeline Township Zoning Ordinance, 2008

² Language adapted from Evangeline Township Zoning Ordinance, 2008

6. The alteration of bottomlands between the water's edge and high water elevation can negatively impact habitat that would be underwater when lake levels are high. It can also increase the risk of shoreline erosion. Areas located below the Ordinary High Water Mark shall not be altered.³

Require formal Planning Commission site plan review for all waterfront uses

Requiring formal site plan review for any waterfront use gives local units of government detailed information and more precise documentation on proposed projects adjacent to the Lake. The site plan review process ensures that each of these projects is meeting the required standards of the ordinance and allows zoning staff to simply verify that development is occurring according to the approved plans.

Recommended Edits:

Article V – Site Plan Review, Section 5.03 - Site Plan Review (All Districts)

A. Circumstances Requiring a Site Plan:

Site plans give the Planning Commission an opportunity to review development proposals in a concise, consistent manner. The use of a site plan insures that physical changes in the property meet with local approval and that building actually occurs as it was promised by the developer. Site plans are required for the following uses:

1. All new development, both permitted uses and special uses, except the following, provided all requirements are met:
 - one-family and two-family residential units **that are not located on waterfront parcels**
 - associated accessory structures to one-family or two-family residential units
 - agricultural buildings in the Agricultural district
2. **All waterfront development and redevelopment.**

Prohibit the construction of seawalls

Seawalls can cause degradation of shoreline areas on the waterside of the wall and additional erosion of adjacent shorelines on either side of the wall. It is recommended that the construction of seawalls be prohibited within the Zoning Ordinance in favor of revetments and engineered natural shorelines, except where there is no other practical alternative.

Recommended Edits:

Article IV: Zoning Districts and Regulations, Section 4.05 - Single Family Waterfront Residential District (R-2)

E. Greenbelt Regulations

7. **Standard sheet piling or concrete seawalls are prohibited except where the applicant can demonstrate to the Planning Commission that no other practical alternative exists.**⁴

³ Language adapted from Charlevoix Township Zoning Ordinance, 2007

⁴ Language adapted from Evangeline Township Zoning Ordinance, 2008