



# Charlevoix County Local Ordinance Gaps Analysis

An essential guide for water protection

Tip of the Mitt Watershed Council  
Written and compiled by Grenetta Thomassey, Ph.D.

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## **SECTION I: Introduction**

# Protecting Lakes, Streams, Wetlands and Ground Water

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### **Prevent or Save?**

It is much easier to prevent degradation of a lake than to save it from the brink of ruin.

Some Michigan lakes are in trouble. People love these lakes, but failure to prevent degradation has resulted in real and difficult challenges for communities. Drinking water sources are threatened, recreational use is limited, and habitat is disappearing. These factors impact quality of water - and quality of life - and place property values at risk.

Fortunately, in Northern Michigan, most of our treasured lakes, streams, and ground water sources are clean and plentiful. We still have wetlands to nurture those waters, drinking water is delicious and healthy, and recreational use abounds. Wildlife thrives among us, and property values are solid. Because these conditions exist, more and more people want to be here. In addition to new opportunities, this also brings a new set of challenges to our area, especially for local governments. This Local Ordinance Gaps Analysis is designed to help local governments deal with the water resource-related challenges that come with this growth.

Contrary to widely-held beliefs, state and federal regulations do not adequately protect water resources and wetlands from impacts that can be prevented at the local level. For example, federal regulations mainly address discharge of fill material into wetlands, but do not protect against other significant impacts. The state of Michigan does have a statutory Wetland Protection Program in place, but it is constantly threatened with budget cuts and attempts to weaken it. Additionally, it can fail to protect local wetlands that fall outside of its scope.

Growth pressures bring a new awareness of the limitations of state and federal protections, and local governments have come to realize the need to fill in the gaps. Sensible local regulations create a certainty that protects investments, not only for homeowners but also for small businesses and developers of larger projects. They also allow economic growth while protecting vital water resources.

### **Purpose**

The purpose of this project is to give you, the local government official, a comprehensive picture of:

- the water resource protections now in place at the county and township levels, including your jurisdiction;
- our recommended local approaches to protect waters;
- and what we suggest could be improved, to better protect your water resources.

Obviously, the "comprehensive picture" being presented here is a snapshot in time. However, every attempt has been made to give you a "living document" that should serve you for planning purposes, years into the future. Several items noted here as needing improvements may already be improved, by the time this document is published. Also, you might find an error, as this work was quite detail-oriented and it's possible that we missed something. Nevertheless, most of this information should be timely, useful, and provide helpful guidance.

The project was done across the entire service area of Tip of the Mitt Watershed Council: Antrim, Charlevoix, Emmet, and Cheboygan Counties. Every jurisdiction in each county was included. The project is divided into four reports, and this report is for Charlevoix County.

### **Critical Elements of this Project**

This project was done with the underlying assumption that specific Critical Elements are considered vital to address, if a local government wants to create strong protections for local water resources. These Critical Elements are:

- Master Plan Components
- Basic Zoning Components
- Shorelines
- Impervious Surfaces and Stormwater Management
- Soil Erosion and Sediment Control
- Sewer/Septic
- Wetlands
- Groundwater and Wellhead Protection
- Other: Floodplains, Steep Slopes, and Critical Dunes

The reasons for creating this particular list are detailed in the Literature Review that is found in Section II. The Literature Review is a formal academic review, documenting the current relevant research literature for each of these items. It explains why the Critical Elements are considered important enough to include in this work.

### **Project Evaluation and Analysis**

An Evaluation Checklist was created to focus on the Critical Elements listed above, in accordance with the Literature Review. You will find a copy in the Appendix.

The checklist was compared to each jurisdiction's Master Plan and any ordinances in place. The checklist question was asked; the answer was found and noted. If the answer was "yes", the question earned 3 points. If the answer was "yes, partially" the question earned 2 points. If the answer was "yes, minimally" the question earned 1 point. If the answer was no, the question earned 0 points and that item is considered to be missing. The score for each question was assigned and then the next question was asked, until the entire checklist was complete.

It is important to note that the scoring system used with the Evaluation Checklist does not penalize a jurisdiction for missing ordinances that are not appropriate for their area, because of geographic or other circumstances. We understand that there cannot be a cookie cutter approach to water protections for any region. The cover page of the Evaluation Checklist gives you a detailed explanation of the system used to accommodate those situations.

Upon completion of a checklist section, the points were totaled and the section was ranked. Here is the summary of the Ranking System:

<b>STRONG</b>	The section of the ordinance being reviewed can be identified as more protective or better than most ordinances in the state, for reasons that can be clearly articulated. For example, the section replicates a model ordinance on the same topic, or minimum standards are exceeded.
<b>ADEQUATE</b>	The section of the ordinance being reviewed is on par with other ordinances in the state; it is at least as protective as ordinances for areas with similar water resource features.
<b>WEAK</b>	The section of the ordinance being reviewed is deemed weaker than similar ordinances in the state, for a specific reason that can be clearly articulated. For example, a model ordinance is changed to delete some protection that should have remained intact.
<b>MISSING</b>	The topic is not included in the jurisdiction's ordinance.

An Analysis of the results was done when each checklist was finished, including Recommendations and Suggested Actions. Those are covered in Section III, with a Chapter devoted to each jurisdiction. Additionally, if an approved Watershed Management Plan exists for the jurisdiction, connections to plan implementation steps are also noted, where appropriate.

### Conclusion

Pressure from growth is quickly felt on surface and ground water sources and the wetlands that guard them. If adequate protections are not put in place, our lakes and streams will degrade. Eventually, the natural resources that brought new growth and opportunity will suffer from neglect and abuse. The chain of threats to drinking water, habitat, recreation, and property values is strong and can become evident all too quickly.

At the point of degradation, we can decide to change things and try to reverse the trend. However, it is obviously much easier to think about these challenges ahead of time, and plan for prevention. Managing these threats improves our ability to protect this high quality of life, far into the future, for our grandchildren and beyond.

Prevention efforts can take some time to accomplish, which is all the more reason to evaluate where we are now, and what we should consider now to protect our water's future – which is our future, plain and simple. If we destroy our water, we destroy our health and property values.

It is our sincere hope that this project and report are helpful to you, when considering local planning and zoning decisions that can be used to protect your important water resources. Please do not hesitate to contact Tip of the Mitt Watershed Council with any questions you may have, or for additional help or information.

## SECTION III: Analysis

### Chapter 3 City of Charlevoix

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#### Introduction

This chapter summarizes results of the Local Ordinance Gaps Analysis project for the City of Charlevoix, located at the junction of Lake Charlevoix and Lake Michigan. Affectionately known as “Charlevoix the Beautiful,” the city includes parts of both the Lake Charlevoix and Lake Michigan watersheds. Round Lake is a focal point for the city, and Stover Creek is a focus for some excellent restoration and protection projects.

With a year-round population of about 3,000, the summertime average population is closer to 9,000 and on a festival or holiday, the city can expect as many as 30,000 visitors during a summer weekend. This Chapter includes evaluation scores, recommendations and suggested actions. It also relates suggested actions to the existing Watershed Management Plan for Lake Charlevoix, where appropriate.

#### Evaluation Scores and Summary

##### Master Plan Components

POSSIBLE SCORE: 30

TOTAL SCORE: 21, STRONG

The City of Charlevoix Master Plan is hot off the presses! The Planning Commission approved it on January 10, 2011. The City Council then held a public hearing on February 7th and unanimously approved Resolution 2011-02-01, officially adopting the Master Plan. We congratulate them on this important accomplishment and thank them for this badly needed update. We also thank them for their strong emphasis on the unique connection to water that exists in the community.

The Master Plan specifically identifies the watershed in which the city is located using a watershed map that includes an inventory of surface water features (Chapter 2, Community Profile 2.3 Environment, Water - Map p.11). It also has a goal statement to protect water in Chapter 3, Community Vision & Goals: “Work with organizations like Tip of The Mitt Watershed Council, the Little Traverse Land Conservancy, and the Lake Charlevoix Association to inform the public on water quality protection measures.” (3.5 Community Goals, Objectives & Action Items, Item 3.4 Coordinate Efforts on Natural Resource Protection p.40)

The City of Charlevoix’s plan also includes goals for open space, which protects surface water, ground water, and wetlands. Infill development is encouraged in Chapter 2 (Community Profile, p.24-25). Chapter 4 notes that some undeveloped open spaces, both public and private, have high scenic and recreational value. Many of those include shorelines, which are extremely important to water quality, and extremely sensitive. It recommends that any development in these areas should pay special attention to setbacks, stormwater

Best Management Practices (BMPs), and other environmental considerations (Chapter 4 Charlevoix Tomorrow, Scenic Reserve p. 51).

Stormwater management is also addressed in the city plan. In recent years, Charlevoix partnered with Tip of the Mitt Watershed Council on this topic, and recommendations for stormwater control were received by the city (included in Master Plan Appendix G). Two Rain gardens and a stormwater filtration device have been implemented, so far, and the plan acknowledges the need to incorporate BMPs. This is a great policy approach for water protection. The city demonstrates to citizens, businesses, and visitors that cost effective, sustainable technology is available to keep water quality high that can also be very attractive or non-intrusive (Chapter 2 Community Profile, 2.11 City Utilities; Stormwater page 31).

The plan also includes this crucial point: "Work cooperatively with all jurisdictions to adopt a unified Stormwater Control Ordinance for Charlevoix County." (Chapter 3 Community Vision & Goals, 3.5 Community Goals, Objectives & Action Items, Item 3.4, p. 40) The need for doing so is described below, in the Stormwater Element, and in more detail in Chapter 1 of this project, covering Charlevoix County.

### Master Plan Components: RECOMMENDATIONS

Again, we congratulate the city on the new Master Plan and the hard work it took to complete. The City Planning office is now starting an update of the existing Zoning Ordinance, and this plan will serve as the basis for that work, in accordance with state law. We understand that decades went by before a new Master Plan update was attempted, but it is now finished and that is a wonderful accomplishment. We urge city officials to adopt the practice of review and updating the plan every five years. When this plan comes up for review in 2016, we recommend the following points.

**SUGGESTED ACTION:** In the next plan update, consider calling for minimizing impervious surfaces in new construction and redevelopment projects to reduce stormwater runoff and improve infiltration. Encourage incentive-based approaches that are creative and effective, and educate citizens and businesses about the need to do so.

**SUGGESTED ACTION:** Ensure that the plan update acknowledges the importance of well-constructed and maintained road stream crossings on the quality of Stover Creek.

**SUGGESTED ACTION:** Finally, the next plan update should also include identification and protection of any wildlife corridors that may exist in the city, working with neighboring jurisdictions to make them effective.

### Basic Zoning Components

POSSIBLE SCORE: 54  
TOTAL SCORE: 19, ADEQUATE

As noted above, the Zoning Ordinance is now up for review, which we hope is good timing for this Local Ordinance Gaps Analysis project, in terms of opportunities to improve water protection measures for the City of Charlevoix. The score for this element for Charlevoix is 19 of a possible 54. It scored "Adequate" but one less point would have put it into the "Weak" category. However, that is not to diminish the good basic components that are evident and can be used as a foundation for improvement.

The ordinance includes a fee system to cover costs for review of proposal applications or appeals: "The fees for processing planning and zoning requests within the City of Charlevoix shall be as specified by the city council in the annual City of Charlevoix budget ordinance." (CHAPTER 52 FEE SCHEDULE--ZONING AND SUBDIVISION REVIEW; 5.295) It also has methods in place for enforcement, including a clearly defined process for inspections and correction of violations: "Any person, partnership, corporation, or association

who creates or maintains a nuisance per se as defined in subsection (a) above or who violates or fails to comply with this Chapter or any permit issued pursuant to this Chapter shall be responsible for a municipal civil infraction punishable by a fine of no more than \$500.00 as determined by the court." [Chap 51 Art XII Sec 5.291 Penalties (b)]

The city Zoning Ordinance proposal review process is also coordinated with the receipt of other applicable permits. Approval is based upon, among other things, compliance with requirements of the city for fire and police protection, water supply, sewage disposal or treatment, storm drainage, and other public facilities and services. Also, approval is based on compliance with the standards of other government agencies, where applicable, and the approval of these agencies must be obtained or somehow assured [Chap 51 Art V General Provisions Sec 5.188 Development Plan (2)(b-c)]. This is good policy that allows more certainty early in the process. It is good to know about everything that is required before spending thousands of dollars. It is our experience that developers, including individuals who propose development projects on a single-family scale, appreciate understanding what is needed, up front. They often need to be educated about working in water and wetlands, or about concerns for ground water that is underfoot and out of sight, but nevertheless, crucial for the community.

Site plan review is required for all activities, except in R-1 and R-2 [Chap 51 Art V General Provisions Sec 5.188 Development Plan (1)]. Additionally, they are not required to include open spaces. However, Planned Unit Development (PUD) proposals are included in the ordinance, and they are required to provide 40 percent Open Space [Chapter 51, Art IV PUD Sec 5.73(1)(i)].

Site plans are only minimally required to indicate all existing natural features; this could be improved [Chapter 51 Art V Sec 5.188 Development Plan Review (3)(f)(9)]. In the R-4 zone, which is Multiple Family Dwelling areas, natural features are required, where possible [Chapter 51, Art IV Sec 5.64 Area Regulations, R-4 Planned Residential Zone (13)].

### Basic Zoning Components: RECOMMENDATIONS

**SUGGESTED ACTION:** Consider requiring a pre-application or pre-construction meeting for new development or redevelopment proposals. This can help applicants to understand what is needed, up front, and create a climate of certainty.

**SUGGESTED ACTION:** Consider improving site plan requirements to indicate all existing natural features, including the location and elevations of existing water courses and water bodies, man-made drainage pathways, flood plains, county drains, wetlands and ground water recharge areas.

**SUGGESTED ACTION:** Consider requiring open spaces in all districts of the city, and require open spaces to be managed in a natural condition with retention of native vegetation. Open space allowable uses should also be restricted to low impact activities. Finally, open spaces should be protected, using a conservation easement or other similar mechanism, to ensure they continue to serve the purpose of protecting water quality in the watershed.

### Shorelines

POSSIBLE SCORE: 60

TOTAL SCORE: 13, WEAK

The City of Charlevoix is blessed with a Great Lakes shoreline, forming part of the special northeastern shore of Lake Michigan. It also has a significant, mostly hardened, urban shoreline surrounding Round Lake, which connects Lake Michigan to Lake Charlevoix. The urban shoreline of Lake Charlevoix in the city limits eventually gives way to parkland or private residences, or water-related, recreational business concerns. Charlevoix is a true gateway to some of the most prized water resources in the state, and it is visited by thousands of people from around the world, every year. These people come to the city for the shoreline and the waters,



and special care must be taken to ensure this enthusiasm also incorporates efforts to protect those beloved shorelines and waters.

On the topic of shoreline protection, the city could improve. We recognize the enormous challenges of doing so, and appreciate the work already done in this regard. Two of the most effective ways that local governments can protect water quality is to require setbacks from the water's edge, and require a shoreline protection strip of native vegetation between the water and the upland land use, also called a vegetative buffer.

All principal uses located in the R-1 and R-4 districts of the City of Charlevoix must have a setback of 50 feet from the ordinary high water mark (OHWM) of Lakes Michigan and Charlevoix and Round Lake, as well as the Pine River Channel Marine-Commercial district (Art V Sec 5.198 Setback from Water bodies). The Scenic Reserve (SR) District also requires a minimum structure setback of 50 feet from the OHWM on the adjacent lake or water body [Art IV Sec 5.134 Scenic Reserve; Other Regulations (1)]. The SR has one stated purpose of providing for appropriate residential development along lake shores that will protect both the environment and the scenic qualities of this unique land area, which includes both public and private lands.

Charlevoix does not require vegetative buffers, except in the SR District, and even there, the provisions should be improved. It is generally recommended that a vegetative buffer should be at least 30 feet deep. The Other Regulations section in the SR includes: "Natural trees, shrubbery, or other vegetation shall be preserved as far as practicable, and where removed shall be replaced with other vegetation that is equally effective in retarding run off, preventing erosion and preserving natural beauty." [Art IV Sec 5.134 Scenic Reserve; Other Regulations (1)]

As you can see, there is no minimum depth for the vegetative strip. Elsewhere in the ordinance, there are conflicting definitions of greenbelt. In Art II Sec 5.5 Definitions, Greenbelt is noted as having a minimum depth of 10 feet. However, Art V General Purposes, Sec 5.203 addresses plant materials and landscaping requirements, and notes that if a greenbelt is required, it has to be at least 8 feet deep [9(e)]. Neither of these specifies greenbelts to serve as vegetative buffers, and both have limited effectiveness for shoreline protection because of their narrow depth.

As noted in the Literature Review, shorelines are vital transition zones between land and water, where many important interactions occur to benefit the lake ecosystem. These benefits are diminished when shoreline properties are developed and vegetation is removed, but can be recovered by planting vegetated buffer strips using a variety of native species. It is clear that some areas, such as the Marine-Commercial district and similar areas will not provide a practical setting for a riparian buffer. But other low cost and effective techniques exist to mitigate impacts of polluted stormwater runoff from impervious surfaces, directly into our lakes and streams.

Boating use of inland lakes can impact water quality, wildlife habitat, and the use and enjoyment of the lake by residents and visitors. A common way for local governments to address boating use is through dock restrictions and provisions. The Definition section of the ordinance defines Boat Docking Space as 26 lineal feet. If you have more than 2 docking spaces, each 1 ½ spaces more must have an on-site parking spot available. There are no keyhole prevention provisions to place restrictions on the size and type of multi-boat launch and docking sites, which may or may not make sense, given the site specifics and historic uses.

Since even a very small amount of petroleum products or hazardous chemicals can impact a large amount of water, it is important to ensure proper management of these liquids. Charlevoix does not have much oversight of marinas, even though the Marine-Commercial District provides principle uses for berthing, launching, handling or servicing of recreational or commercial boats [Art IV Sec 5.142 (1)]. It does not specify restrictions of boat repair and maintenance activities to prevent debris from falling into the water and prevent invasive species. It also does not specify fueling station spill prevention and containment measures, or BMPs.

Site plan review and special use permits require the disclosure of the use of hazardous or toxic materials in a development plan, but there is no mention of coordinating permit approvals from state or federal agencies, or requiring designs to prevent spills and (unless permitted by state or federal statute) discharges to surface or ground water.

### Shorelines: RECOMMENDATIONS

**SUGGESTED ACTION:** Maintaining native vegetation along the shoreline is critical to preserving water quality and providing wildlife habitat. Shoreline protection strip provisions should be required in all shoreline districts in the city, with some exception. In the exception areas, however, low cost and effective methods can and should be used to mitigate the impacts of polluted stormwater runoff directly into the city lakes and streams.

**SUGGESTED ACTION:** Encourage a minimum depth of 30 feet for all Shoreline Protection Strips. Require the maintenance and re-establishment of native vegetation and prohibit the use of invasive species.

**SUGGESTED ACTION:** Restrict boat repair and maintenance activities in marinas to clearly marked areas to prevent debris from falling into the water and prevent the spread of invasive species.

**SUGGESTED ACTION:** Require marina fueling stations to have spill containment equipment that is stored in a clearly marked location. Also require a spill contingency plan, and post emergency phone numbers in a prominent location. Finally, signs of leakage or spillage should be investigated immediately, and undertake cleanup in accordance with applicable BMPs.

### Impervious Surfaces

POSSIBLE SCORE: 33

TOTAL SCORE: 6, WEAK

The more a local government can do to reduce impervious surfaces, the better for water quality. As noted in the Lake Charlevoix Watershed Management Plan, impervious surfaces (streets, roofs, sidewalks, etc.) generate much more stormwater runoff than natural forested, or even agricultural, land uses. That polluted runoff discharges directly into Lakes Michigan and Charlevoix and Round Lake from pavement and rooftops, and includes bacteria from pet and animal wastes, fertilizer, oil and grease, sediment, heavy metals, salt, etc. To reduce impervious surfaces, a community should increase the retention or restoration of native vegetation in riparian areas and in open spaces, and install simple and effective solutions, ranging from rain barrels and rain gardens, to engineering approaches that treat stormwater that has traveled across impervious surfaces, before it discharges into the water.

On a positive note, Article V, Section 5.206 (2) requires parking areas to have canopy trees and planting areas that increase, with the increased size of the lot. Additionally, the SR district limits impervious surfaces to no more than 30 percent of the usable lot area [Art IV Sec 5.133 Lot Requirements for Scenic Reserve (4)].

### Impervious Surfaces: RECOMMENDATIONS

There are many opportunities for local governments to reduce impervious surfaces through their Zoning Ordinance. Additionally, the Lake Charlevoix Watershed Plan calls for reduction of impervious surfaces to reduce the pollutant load from stormwater running into our water resources. We encourage the City of Charlevoix to consider integrating the following provisions into their ordinance.

**SUGGESTED ACTION:** Consider reducing the parking space dimensions and setting them as a maximum. Also consider reducing the number of required parking spaces and setting the number as a maximum number, as opposed to a minimum.

**SUGGESTED ACTION:** Establish impervious surface lot coverage limits in all zoning districts (especially residential districts) to limit impervious surfaces to 15% of the total lot. Provide incentives for using LID techniques to mitigate the impacts of impervious surfaces, in exchange for a larger building footprint.

**SUGGESTED ACTION:** Consider adding a provision that allows for flexibility in front yard setbacks or side yard setbacks to encourage shorter driveways or shared driveways between two lots.

### **Stormwater Management**

POSSIBLE SCORE: 27

TOTAL SCORE: 3, WEAK

A multitude of studies from around the nation and world have documented that urban stormwater is a serious source of pollution. The city has some minimal oversight of stormwater. Site plan review requires that the drainage plan for proposed developments is adequate to handle anticipated stormwater runoff, and will not cause undue runoff onto neighboring property or overloading of watercourses in the area [Chap 51 Art IX Sec 5.263.3 Special Use Permit (7)(j)].

The city Zoning Ordinance also limits grading: "No premises shall be filled or graded so as to discharge surface runoff on abutting premises in such a manner that will cause inconvenience or damage to adjacent properties. When property is developed adjacent to existing properties previously developed, existing grades shall have priority." (Art V Sec 5.186)

#### **Stormwater Management: RECOMMENDATIONS**

As noted in Chapter 1, the county stormwater ordinance is no longer in effect. This should be remedied as soon as possible.

**SUGGESTED ACTION:** Consider adding review of stormwater BMPs and other water quality protections in the site plan review ordinance.

**SUGGESTED ACTION:** Coordinate efforts with the County Drain Commissioner to enact local stormwater ordinances in the county, allowing the county to administer and enforce them for local jurisdictions. Ask the county to finish the Storm Water Control (SWC) Ordinance and Intergovernmental Agreement, and present it to the City of Charlevoix for passage.

### **Soil Erosion and Sediment Control**

POSSIBLE SCORE: 18

TOTAL SCORE: 1, WEAK

By volume, sediment is the single largest pollutant to waters of the United States. Any time earth is disturbed or graded (as typically happens during the construction process), there is a potential for soil to erode and sediment to be deposited into lakes, streams, and wetlands. The City of Charlevoix Site Plan Review requires that a proposed development will not cause soil erosion or sedimentation problems [Art IX Sec 5.263.3 Special Use Permit (7)(i)].

As noted in the first chapter, counties are mandated to administer and enforce Part 91, and Charlevoix County has two state-recognized agencies that do so: The Soil Erosion Control Officer in the Department of Building Safety, and the County Road Commission.

### Soil Erosion and Sediment Control: RECOMMENDATIONS

All properties that are located near streams, wetlands, or drainage ways have the potential to erode and cause sedimentation to nearby waters. Accordingly, it is recommended that local units require all earth movement activities associated with development or construction projects to follow BMPs to control erosion and ensure that any sediment-laden runoff does not enter waterways. Coordination between townships and the county is essential to ensure that soil erosion and sedimentation is controlled.

**SUGGESTED ACTION:** Specifically require that all proposed development project earth change activities within 500 feet of a stream, wetland, or other waterway in all zoning districts receive a soil erosion and sedimentation control permit from Charlevoix County before they receive a permit from the City of Charlevoix.

### Sewer/Septic

POSSIBLE SCORE: 24

TOTAL SCORE: 11, ADEQUATE

The city's Master Plan includes goals to closely monitor the municipal water supply system to minimize or prevent leaks and/or ruptures; and integrate GIS and revise capital improvement plans to more effectively predict and plan for future infrastructure upgrades [Chapter 3 Community Vision & Goals, 3.5 Community Goals, Objectives & Action Items, 1.12 and 1.13(v)].

City regulations that pertain to septic systems are coordinated with the County Health Department regulations: "Every building .....shall be provided with a safe and sanitary water supply system. For those areas of the city not served by water and sewer, the written approval by the district health department of proposed facilities for water generation and treatment of waste, shall be filed with an application for a zoning permit." (Art V Sec 5.181)

### Sewer/Septic: RECOMMENDATIONS

**SUGGESTED ACTION:** If not already done, ensure the Sewer Service Area is mapped, including sewers that currently exist, areas that will be sewered in the future, and areas that will not be sewered.

**SUGGESTED ACTION:** Require that existing infrastructure be inventoried for age and condition, and ensure that a maintenance and replacement schedule is provided in the Master Plan.

**SUGGESTED ACTION:** Require the community to have a program to identify sanitary sewer or septic systems that are seeping into the storm water system, surface waters or ground water.

**SUGGESTED ACTION:** In the rural zoning district that allows septic, require that septic systems be located at least 100 feet from streams, wetlands, or other water bodies.

**SUGGESTED ACTION:** Consider establishing a "point of transfer" inspection requirement for the rural septic district, whereby septic systems must be inspected to ensure they are operating properly before ownership is transferred.

## Wetlands

POSSIBLE SCORE: 21

TOTAL SCORE: 1, WEAK

Michigan's wetland law specifically authorizes local governments to adopt wetland protection ordinances that provide an additional layer of protection to wetlands that fall under state jurisdiction and provide protection to wetlands not protected by the state statute. In addition to adopting and implementing a stand-alone wetland ordinance, local governments can support wetland protection through zoning and by requiring wetland permits from state and federal agencies prior to granting local zoning permits.

**SUGGESTED ACTION:** Given the important role that wetlands play in protecting water quality, providing wildlife habitat, and minimizing flooding, it is important to educate citizens on the importance of protecting wetlands.

**SUGGESTED ACTION:** Consider expanding the Shoreland Protection Strip to include setbacks from wetlands. This would help to protect wetlands and cost less to administer than a separate ordinance, in the short term. Eventually, a local wetland ordinance should be enacted to fill in gaps of protection.

**SUGGESTED ACTION:** Specifically require applicants seeking zoning permits to secure applicable state wetland permits before issuing a local zoning permit.



## Ground Water and Wellhead Protection

POSSIBLE SCORE: 18

TOTAL SCORE: 6, WEAK

The city relies on Lake Michigan for its drinking water (Master Plan, Chapter 2, 2.11 City Utilities, Water Supply p. 30). However, there could be protections in place for ground water sources in the city, which are important to surface water sources. For example, site plan review can be used to ensure direct discharge of potentially hazardous material is prevented, and required to be coordinated with state statutes.

Discharges to ground water are regulated by the state under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act (NREPA) 1994 PA 451, and Part 22 Rules. Any proposed discharges should be prohibited by the city until required state permits are received by the applicant. Storage of hazardous material is also regulated under Part 5 Rules issued for Part 31. This includes Pollution Incident Prevention Plans, which can be efficiently coordinated with Local Emergency Planning Committee work.

### Ground Water and Wellhead Protection: RECOMMENDATIONS

Ground water is vital for not only drinking water, but also to feed tributaries, seeps, springs, and wetland resources with fresh water supplies to support those ecosystems, including important recreational fisheries.

**SUGGESTED ACTION:** Complete and maintain a comprehensive inventory of potential threats to ground water. This will be particularly important as the city continues to grow.

**SUGGESTED ACTION:** If direct or indirect discharges to ground water are proposed, use site plan review or some other ordinance provision to prohibit this until appropriate approvals or permits are obtained from the state.

**SUGGESTED ACTION:** Protect ground water from potential contamination by requiring Pollution Incident Prevention Plans for storage of hazardous materials, in coordination with Local Emergency Planning Committee efforts.

## Other

POSSIBLE SCORE: 48

TOTAL SCORE: 24, ADEQUATE

The City of Charlevoix participates in the National Flood Insurance Program, and the Zoning Ordinance coordinates efforts by requiring proposed development properties to respect floodways and floodplains on or in the vicinity of the subject project [Art IX Special Use Permits Sec 5.263 (7)(g)]. We have no additional recommendations for this element.

## Conclusion

We applaud the water protection measures that exist in the City of Charlevoix. We also thank you for your time and attention in reading this chapter, and hope that our recommendations are helpful. However, if anything is unclear, please be sure to let us know. If you have any questions related to this project, please contact Tip of the Mitt Watershed Council at 231.347.1181.

**Results Worksheet**  
City of Charlevoix

Catagory	Possible Score	Total Score	Comments
<b>I. Master Plan</b> 30 - 21 = Strong 20 - 11 = Adequate 10 - 0 = Weak	30	20	Adequate
<b>II. Basic Zoning Elements</b> 54 - 37 = Strong 36 - 19 = Adequate 18 - 0 = Weak	54	42	Strong
<b>III. Shorelines</b> 60 - 41 = Strong 40 - 21 = Adequate 20 - 0 = Weak	60	13	Weak
<b>IV. Impervious Surface Reduction</b> 33 - 23 = Strong 22 - 12 = Adequate 11 - 0 = Weak	33	13	Adequate
<b>V. Stormwater Management</b> 27 - 19 = Strong 18 - 10 = Adequate 9 - 0 = Weak	27	10	Adequate
<b>VI. Soil Erosion and Sediment Control</b> 18 - 13 = Strong 12 - 7 = Adequate 6 - 0 = Weak	18	9	Adequate
<b>VII. Sewer/Septic</b> 24 - 17 = Strong 16 - 9 = Adequate 8 - 0 = Weak	24	6	Weak
<b>VIII. Wetlands</b> 21 - 15 = Strong 14 - 8 = Adequate 7 - 0 = Weak	21	5	Weak
<b>IX. Ground Water and Wellhead Protection</b> 24 - 17 = Strong 16 - 9 = Adequate 8 - 0 = Weak	18	7	Adequate
<b>X. Other Relevant Elements</b> 48 - 33 = Strong 32 - 17 = Adequate 16 - 0 = Weak	48	29	Adequate