



MASTER PLAN REVIEW CHECKLIST – CITY OF CHARLEVOIX

Completed May 19, 2021

This Master Plan Review Checklist is intended to ensure the document includes critical fresh water resource protections. In the 21st Century, Master Planning by local governments in Northern Michigan must include steps that ensure services and community assets are resilient to extreme weather events and expected impacts from climate change. The checklist covers all of these stated concerns.

CRITERIA				
WATER RESOURCES - GENERAL	Yes	No	N/A	Comments
1. Does the Master Plan specifically identify the watershed(s) in which the community is located?		X		<p>The City is in the Lake Charlevoix Watershed.</p> <p>If useful, here is a link to the Watershed Management Plan: https://www.watershedcouncil.org/uploads/7/2/5/1/7251350/lake-charlevoix_wmp.pdf</p> <p>The City of Charlevoix is a member of the watershed plan committee. The City Manager gets our agendas and meeting minutes, and attends meetings when agenda items are relevant.</p>
2. Does the Master Plan have a complete inventory of lakes, rivers, and wetlands , with maps of their locations?	X			<p>The city is an urban landscape, surrounded by major lakes, which are included on all the maps. There may be some wetlands in the SR district but no maps in the Master Plan indicated wetland locations, which are few and mostly on private land.</p>
3. Does the Master Plan identify and map groundwater recharge areas?			X	<p>Again, a very urban landscape with drinking water supplied by Lake Michigan.</p>

4. Does the Master Plan have a specific and focused goal or statement of intent to protect water resources ?	X			<p>CHAPTER 3: COMMUNITY VISION AND GOALS, Page 39, <i>GOAL: Work cooperatively with surrounding municipalities, governmental agencies, non-profits, and private sector organizations on a variety of issues.</i></p> <p>Page 40 3.4 COORDINATE EFFORTS ON NATURAL RE-SOURCE PROTECTION.</p> <ul style="list-style-type: none"> • <i>Work with organizations like Tip of the Mitt Watershed Council, WATCH, the Little Traverse Land Conservancy, and the Lake Charlevoix Association to inform the public on water quality protection measures and conservation easements.</i>
5. Does the Master Plan include goals for community acquisition or conservation of open space to protect surface water, groundwater, and wetlands?	X			<p>Chapter 3, page 35, stated commitment to Smart Growth includes this:</p> <p><i>6. Preserve open space, farmland, natural beauty, and critical environmental areas.</i></p>
6. If applicable, does the Master Plan identify and call for preservation of undisturbed Natural Areas and/or Natural River designations to protect community surface water and groundwater resources?	X			<p>Urban landscape but includes city parks and trails connecting adjacent townships, noted at various places in the plan, as well as many mentions of the city protecting wildlife and the natural beauty and environmental health of the area, especially along shorelines.</p>
7. Does the Master Plan include identification and protection of wildlife corridors ?	X			<p>See question 6 above</p>
8. Does the plan acknowledge the importance of well-constructed and maintained road stream crossings on the quality of stream and water resources, and prioritize replacement where needed?			X	<p>The watershed plan includes a road/stream crossing inventory, done in 2001. This will be updated when the new plan is updated in coming years. There are no crossings noted in the city as being impaired</p>

9. Does the plan require a building setback from wetland areas of at least 25'?			X	Very few wetlands in the city; not really applicable. Some smaller wetlands can still provide functions and values to the nearby waterbodies, but those can be addressed on case by case basis
10. Does the plan call for a required greenbelt buffer of vegetation 35'-50' from the shoreline landward, along at least 75% the length of a shoreline to physically protect lakes and streams? <i>[If the buffer area contains native vegetation and is properly designed, it will infiltrate and filter pollutants, act as a storage area during floods, sustain integrity of the ecosystem for aquatic life, and provide habitat for land-based species.]</i>		X		
STORMWATER RUNOFF	Yes	No	N/A	Comments
11. Does the Master Plan identify stormwater management as an important goal to prevent pollution and raising of water temperatures for the health, safety, and welfare of the residents? <i>[NOTE: A local/county stormwater control ordinance should be in place to control runoff during construction and redevelopment projects. If not, the plan should call for enacting such an ordinance.]</i>	X			Chapter 2, page 31 has a detailed explanation of why this is important There is a recent city Storm Water Control Ordinance in place that is compatible with other storm water ordinances around Lake Charlevoix and used in coordination with Charlevoix County.
12. Does the Master Plan call for using Green Infrastructure solutions to in order to reduce stormwater runoff and improve infiltration? <i>[Green infrastructure can be categorized in two ways: 1.) Natural -the ecosystems present in the natural environment 2.) Built -constructed green infrastructure such as rain gardens, bioswales, and community gardens]</i>	X			The term "green infrastructure" is not used, but Chapter 2, page 31 notes this: <i>Charlevoix recently partnered with the Tip of the Mitt Watershed Council to evaluate its stormwater management system. The report included recommendations on specific stormwater control features such as rain gardens, permeable pavement, and newer technologies that can be incorporated into municipal stormwater systems.</i> The City is currently working with the Watershed Council on storm water runoff control projects, including rain gardens, which can be highlighted in the new plan update.

<p>13. Does the Master Plan call for the use of Low Impact Development (LID), which is application of Green Infrastructure techniques that mimic the natural water cycle to manage stormwater?</p> <p><i>[LID design techniques infiltrate, filter, store, evaporate, and detain runoff close to its source. Indicating this in the Master Plan establishes a good foundation for implementing LID techniques in the community.]</i></p>	X			<p>It does not use the term LID but see answer to above question #12. Rain gardens are an example of LID, and these can be incorporated to help manage storm water runoff and filter it before it enters waterways. There are many other examples that can be found here:</p> <p>Lake Charlevoix Watershed Homeowner's Guide: https://www.watershedcouncil.org/uploads/7/2/5/1/7251350/lid_brochure-lcx-web_updated10-28-16.pdf</p>
<p>14. Are incentives supported in the Master Plan to help development projects reduce runoff by minimizing impervious surfaces?</p> <p><i>[Examples: cost-share programs with public-private partnerships; tax rebates offered for replacing impervious surfaces with permeable pavement or vegetative solutions; increased height or footprint in exchange for installation of stormwater BMPs, such as rain gardens, parking lot modifications, or shoreline buffer zones]</i></p>		X		<p>No incentives noted but zoning ordinance includes this: <i>Lot coverage requirements in all zones shall be calculated by dividing the total area of the lot by the total square footage of all impervious surfaces.</i></p> <p>Incentives might help eliminate unneeded impervious surfaces that runoff into water resources</p>
WATER LEVEL FLUCTUATIONS – SETBACKS	Yes	No	N/A	Comments
<p><i>Great Lakes Coastline</i></p> <p>15. If the community has a Great Lakes Coastline, does the Master Plan incorporate the use of an Overlay District, or other tools, to protect the shoreline with setbacks?</p> <p><i>[NOTE: Establishing the width of a setback so it is effective depends on the type and sensitivity of the natural feature and the expected impacts of surrounding land uses. In general, the wider the setback, the more protection it provides.]</i></p>	X			<p>The Zoning Ordinance includes this, 153.151 SETBACK REQUIREMENTS (C):</p> <p><i>Setback from bodies of water.</i> Notwithstanding other provisions of this subchapter, all principal uses located in the R1 and R4 Districts shall have a setback of 50 feet from the ordinary high water mark of Lake Michigan, Lake Charlevoix and Round Lake, as well as the Pine River Channel.</p>
<p><i>Inland Lakes and Streams</i></p> <p>16. Does the Mater Plan require a minimum shoreline setback of 50' for inland lakes and streams, specifically to minimize harmful runoff and erosion?</p> <p><i>[NOTE: Exceptions can be made for some uses, such as pump houses, recreational docks, storm water and erosion control measures, picnic tables, benches, recreational watercraft, and stairways and walkways.]</i></p>	X			<p>See question 15 above.</p>

CLIMATE RESILIENCY	Yes	No	N/A	Comments
<p>17. Does the Master Plan include a required Climate Resiliency Assessment to identify vulnerabilities, and actions/strategies to address the vulnerabilities?</p>		X		<p>Suggest publication from Tip of the Mitt Watershed Council that can help with this section of the checklist:</p> <p>Resiliency Plan for Governments in the Little Traverse Bay Watershed: Local Climate Solutions https://www.watershedcouncil.org/uploads/7/2/5/1/7251350/lrbay-climate_change_report-final-web.pdf</p> <p>Even though it was created for Little Traverse Bay, the solutions would apply to the Lake Charlevoix Watershed, as well.</p>
<p>18. Does the Climate Resiliency Assessment include hazard planning for shifts in water level changes, both high and low?</p>		X		
<p>19. Does the hazard planning include a reassessment of current shoreline or coastal setback regulations?</p> <p><i>[The jurisdiction should increase buffer and stormwater requirements, as appropriate, to help stabilize shorelines during high water and provide somewhere for water to go when the groundwater table is inundated.]</i></p>		X		
<p>20. Does the Climate Resiliency Assessment include hazard planning for expected changes in climate, including extreme weather events and higher air and water temperatures?</p>		X		
FLOODPLAINS	Yes	No	N/A	Comments
<p>21. Does the Master Plan include a map of floodplains in the jurisdiction?</p>		X		
<p>22. Does the community participate in the National Flood Insurance Program (NFIP)?</p> <p><i>[Communities participate in NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally-backed flood insurance available to homeowners, renters, and business owners in these communities. Community participation is voluntary.]</i></p>	X			

23. If yes on question 22, is there ordinance language that regulates floodplain development in the 500-year flood plain boundary as the "locally regulated flood plain," which exceeds the typical FEMA-recognized 100-year floodplain? (see below checklist)* <i>[This can earn Community Rating System points that lowers insurance premiums.]</i>		X		
24. Does the community coordinate their efforts to protect the floodplain with adjoining communities ?		X		
25. Do community floodplain regulations provide for assessing the impacts of flood management projects on water quality ?	X			Any proposed waterfront development requires site plan review.
26. Do the floodplain regulations provide for using Green Infrastructure to add Best Management Practices (BMPs) to existing projects?		X		Again, many examples can be found here: Lake Charlevoix Watershed Homeowner's Guide: https://www.watershedcouncil.org/uploads/7/2/5/1/7251350/lid_brochure-lcx-web_updated10-28-16.pdf
27. Is there a variable width, naturally vegetated buffer that encompasses the 500-year (or 100-year) floodplain area?		X		
ENFORCEMENT	Yes	No	N/A	Comments
28. Does the Master Plan direct the jurisdiction to participate in reviews of state/federal permit applications to ensure actions taken meet the standards of the jurisdiction?		X		The City could participate in these reviews using MiWaters from EGLE: https://www.michigan.gov/egle/0,9429,7-135-3313_72753---,00.html or USACE: https://www.lre.usace.army.mil/Missions/Regulatory-Program-and-Permits/Public-Notices/
29. Does the Master Plan establish a firm line on enforcement of laws , directing the Zoning Board of Appeals to give strong consideration to principles of the Master Plan when considering requests for nonconforming uses and variances, especially on riparian properties?		X		

*Adopting the 500-year flood plain boundary as the “locally regulated flood plain” does not affect flood insurance requirements, as FEMA requires flood insurance based on the 100-year flood boundary and flood elevations. Although the term “100-year flood” is widely used, it does not give people a good sense of the true risk of flooding in a given year. Some experts suggest instead talking about floods that have a 1 percent chance of happening in a given year (a 500-year flood is one that has a 0.2 percent chance of occurring in a given year). Noting that a parcel of land has a 26 percent chance of flooding over the life of a 30-year mortgage can give homeowners a more concrete sense of the risk. (EPA 2017, Smart Growth Fixes for Climate Adaptation and Resilience)