



May 10, 2017

RE: Comments on the Draft Future Land Use Map (FLUM), Major Street Map (MSM), and the City's Zoning Code and Subdivision Regulations.

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450-C Government Street
Mobile, Alabama 36602
(251) 433-4229
Fax: (251) 432-8197
Website: www.mobilebaykeeper.org
Email: info@mobilebaykeeper.org

We are Mobile Baykeeper, a twenty-year-old nonprofit organization with the mission of providing citizens a means to protect the beauty, health and heritage of the Mobile Bay Watershed and our coastal communities. We are submitting comments on behalf of our board, officers, staff, and more than 4,500 members regarding the draft FLUM, MSM, and Zoning and Subdivision Regulation Ordinances. We applaud the City for your efforts to make Mobile the, “most business and family friendly city in America by 2020”. At times, being business friendly can run afoul of being family friendly so we encourage the city to take a step further and define “business friendly”. We believe Mobilians want a city that supports small, medium, and large businesses that present great jobs with little to no pollution. Mobile’s successful future relies on our ability to balance development interests and the need to protect natural resources that both the economy and community are reliant.

General Comments on Future Land Use Map (FLUM):

- 1) Waterway buffers should be mapped around our tributaries, creeks, wetlands, and bays wherever practicable;
 - a) Waterway buffers, also referred to as “riparian buffers”, (1) help stabilize waterway banks, (2) improve water quality by filtering and trapping pollutants such as nutrients, chemicals, pesticides, and sediments, (3) reduce flooding impacts, and (4) promote the waterway as a destination rather than a ditch.
 - b) In particular, Dog River is not well protected in the current draft FLUM. It appears (due to the extremely similar color scheme for Waterway Buffers and Wetlands/Future Wetlands the difference between the two is obfuscated) there is very little buffer to the waterway leaving it vulnerable to erosion, pollution, and water quality issues.
- 2) We request more waterway buffers, designated wetland areas, and green spaces are established for Flood Zones;
 - a) Mobile is known to have major storms that pose flooding problems in low-lying areas. The flood zones established in the MAP for Mobile documents are not well protected in the FLUM.
 - b) Waterway buffer areas, wetlands, and green spaces provide protection from flooding by slowing and infiltrating (or storing) water runoff, preventing damaging floods.
- 3) Ensure waterway buffer zones **support** all current and future efforts of restoration;
 - a) Several comprehensive plans have been or are in the process of being created such as the Comprehensive Conservation and Management Plan (CCMP), Three Mile Creek Watershed Management Plan, and Dog River Watershed Management Plan, which have established strategic plans for restoration. These plans need to be considered and incorporated into the final FLUM.

- 4) Zone according to planning efforts for trails and green spaces. Consider the linkage of open spaces and parks to **improve** public recreational activity connectivity and use of waterways.
 - a) Waterway buffers have the potential to provide supplementary benefits to the community including increased access to waterways and better connectivity of various parts of the City for recreational use.
 - b) In addition to critical ecosystem functions, buffers also have the potential to provide supplementary benefits to the community including increased access to waterways, better connection of various parts of the City for recreational use, and improved property values.
 - c) At several MAP for Mobile workshops, and most recently, at the workshop presenting the draft FLUM and MSM, the community voiced the desire to have better accessibility to their waterways and better protection of these waterways. These comments and concerns need to be incorporated into the final FLUM.

General Comments on Major Street Map (MSM):

- (1) Specifically show how and where we plan to use **low-impact development** strategies particularly in high development locations with impervious surfaces;
 - a. Incorporating low-impact development strategies into the MSM is vital to counteract the major stormwater runoff issues facing Mobile.
“Increase the use of water quality improvement techniques in development activities to reduce pollution entering the City’s storm water system and enhance overall watershed protection.” – Map for Mobile

Overall Comments on the Process:

- (1) Explain how you will incorporate comments (both written and verbally received) from workshops and submissions into these plans.
- (2) Make all submitted comments available to the public.

Suggestions for Zoning and Subdivision Regulation Ordinances:

(1) Incorporate Low Impact Development (LID)/Green Infrastructure Practices into Regulating Ordinances.

- a. LID and green infrastructure are cost effective and efficient ways to implement regulations that better manage wet weather impacts such as stormwater runoff and flooding. Many Southeast cities have adopted the use of LID and Green Infrastructure into their regulations/ordinances to help with those issues, further showing the importance of integrating these strategies. Successful examples include:
 - o In 2012 Daphne, AL. put into effect low impact development techniques throughout the Jubilee Retail Overlay District. The reduction of stormwater runoff pollution and erosion were major goals of this ordinance. This was achieved through the use of permeable pavement, porous asphalt, bioretention ponds and elevated landscape beds.
 - o In response to high levels of E. coli bacteria in Silver Lake Beach, Ma, LID techniques were incorporated into city ordinances. The contamination was due to stormwater runoff pollution and the beach was very rarely open for use due to this. Through the use of daylighting stormwater drainage pipes and replacing the beaches paved parking lot with permeable pavers, porous asphalt and bioretention cells the city was able to reduce the effects of this pollution. Daylighting requires replacing underground drainage pipes with above-ground features such as planted. These swales served a multitude of purposes including the collection and filtration of polluted stormwater runoff, allowing for the breakdown and absorption of bacteria into the ground rather than the lake. The

EPA funded this project and since its completion there have been no beach closures due to E. coli levels, further reinforcing the importance of LID techniques.

- The City of Fairhope is a great example of a nearby municipality that has successfully added ordinances, which require LID methods to be utilized. We believe the City of Mobile would be wise to consider reviewing LID requirements in Fairhope ordinances (cited below) and build on their example.
- b. Please consider codifying the following specific list of suggestions relating to LID and green infrastructure:
 - Stormwater runoff reduction. The stormwater runoff volume generated by the first one inch of rainfall shall be retained on-site in order to help maintain pre-development site hydrology and help protect the local watershed from several indirect impacts of the land development process, including decreased groundwater recharge, decreased baseflow and degraded water quality. A stormwater management system is presumed to comply with this criteria if:
 - It includes green infrastructure practices that provide for the interception and evapotranspiration, infiltration, or capture and reuse of stormwater runoff, that have been selected, designed, constructed and maintained in accordance with the information presented in the latest edition of the Planning for Stormwater - Alabama Low Impact Development Handbook and applicable sections of the Coastal Stormwater Supplement; or constitutes an alternative practice responsibly designed and documented by the engineer to reproduce the intent of the Georgia Stormwater Management Manual and applicable sections of the Coastal Stormwater Supplement; and
 - It is designed to provide the amount of stormwater runoff reduction from the runoff generated by the first one inch of rainfall as specified in the latest edition of the Georgia Stormwater Management Manual and applicable sections of the Coastal Stormwater Supplement.
 - Require that developments of 25 units or more must cluster units to preserve at least 50% of open space.
 - All developments must preserve significant natural areas and trees while maintaining 75 foot buffers along streams, 50% of “strategic ecosystems” and 20% of existing tree canopy.
 - To reduce impervious cover consider reducing the minimum pavement width standard for residential roads, allowing for shared parking and pervious materials for spillovers and parking lanes.
 - Landscaping should be required for all parking lots and LID techniques shall be used in all parking lots containing 12 or more parking spaces. An Alabama licensed Professional Engineer and an Alabama licensed Landscape Architect must design all landscaping. Any landscaping plan submitted MUST use a minimum of one of the other techniques listed below:
 - **Bio-retention:** (engineered depression in landscape that captures and stores runoff short term, similar to rain garden. Removes pollutants in stormwater runoff thru adsorption, filtration, sedimentation, ion exchange, and biological decomposition)
 - **Rain Garden:** (shallow non-engineered depression in landscape that captures water and holds it short term to allow for infiltration, filtration of pollutants, habitat for native plants, and effective stormwater tx. Uses native plants, mulch and soil to clean up runoff)
 - **Vegetated Swale** (shallow, open channel stabilized with grass and other herbaceous vegetation designed to filter pollutants and convey stormwater)

- **Permeable Pavement Systems:** 100% of parking provided in lots of 12 or more spots, shall be permeable pavement systems. Typical systems include brick pavers, pervious asphalt, and pervious concrete.
- **Tree and Ground Cover Plantings:** Trees shall be included and integrated into the LID design, there shall be no bare ground exposed and all ground cover should contribute to the success of LID techniques.

Adopted from: The City of Fairhope -- Ordinance No. 1550 (amending Zoning Ordinance No.1253) adopted on October 12, 2015 regarding LID Parking Requirements (<http://www.cofairhope.com/home/showdocument?id=11036>) and from (City of Atlanta Post Development Stormwater Management Ordinance - Chapter 74 Article X) (https://www.municode.com/library/ga/atlanta/codes/code_of_ordinances?nodeId=COORATGEVOII_CH74EN_ARTXPODE_STMA)

We strongly support the adoption of ordinances that implement the above requirements and associated clauses that clarify and assist in said implementation. We suggest the city review the referenced ordinances in their entirety to further understand the context, purpose and intent, and other minutiae of these ordinances.

(2) **Implement a Riparian Buffer Ordinance:** Buffers adjacent to stream systems and coastal areas provide numerous environmental protection and resource management benefits that can include the following: 1) Restoring and maintaining the chemical, physical, and biological integrity of the water resources 2) Removing pollutants delivered from urban stormwater 3) Reducing erosion and sediment entering the stream 4) Stabilizing stream banks 5) Providing infiltration of stormwater runoff 6) Maintaining base flow of streams 7) Contributing the organic matter that is a source of food and energy for the aquatic ecosystem 8) Providing tree canopy to shade streams and promote desirable aquatic organisms (EPA, 2015, 1). These resource management benefits ultimately result in healthier communities, an improved environment, increased recreational opportunities, enhanced quality of life, and a stronger more resilient economy. We applaud those ordinances Mobile already has implemented (Specifically Chapter 17 Article I Division 2) aimed at minimizing public and private losses due to flood conditions by controlling alteration of stream channels and associated conveyances involved in accommodation of flood waters. However, we believe ordinance for the express purpose of protecting stream channels and wetlands are critical to the health of the city's environment and prosperity and quality of life of its families. Please consider codifying the following specific list of suggestions relating to riparian buffers:

- c. Determine the Riparian Buffer by measuring from the top of bank. The width of the Riparian Buffer may vary, depending on criteria such as:
 - Require the Riparian Buffer to be equal to or greater than any floodway profile, that has been created as part of a flood insurance study, or otherwise adopted for the waters.
 - Require waters with a drainage area of less than one (1) square mile to have a minimum Riparian Buffer width of thirty (30) feet.
 - Require waters with a drainage area of one (1) square mile or more to have a minimum Riparian Buffer width of sixty (60) feet. The sixty-foot width of the Riparian Buffer can be established on an average width basis for a project, as long as the minimum width of the RBZ is more than thirty (30) feet at any measured location. If Riparian Buffer averaging is used, a plat must be recorded showing the limits of the Riparian Buffer.
 - Waters that are contained within a culvert do not require an RBZ. This exception does not apply to proposed roadway or proposed driveway crossing waters.
 - RBZ widths apply where culverts are removed from waters.
 - The engineering director may approve alternate RBZ widths for special circumstances (e.g., existing land uses or existing physical conditions) that preclude the above requirements.
 - If mitigating an RBZ off-site, the RBZ must be shown on a recorded plat.

d. *Use of RBZ areas.*

- Acceptable uses of the RBZ may include: yards, picnic areas, walking trails, greenways, landscaped areas, wildlife habitat, primitive areas, roadway and sidewalk stream crossings, or other similar uses approved by the director.
- Specifically prohibited uses include, but are not limited to: parking lots, dumpster storage, material storage, grease-bin storage, vehicle storage/maintenance, animal lots or kennels, or other uses known to contribute pollutants to waterways.

e. *Protection during site development.*

- It is prohibited to disturb an RBZ except when restoring the stream or stream banks, creating or restoring the RBZ or when removing/eradicating invasive vegetation or replanting with native vegetation.
- All slopes adjacent to waters shall be left in a stabilized condition upon completion of the project. No actively eroding, bare or unstable banks shall remain unless ADEM has determined there is no better alternative (e.g. detrimental to endangered species). Placement of riprap and other hard armor is only allowed when bioengineering alternatives are not technologically feasible.

f. *Allowable disturbances.*

- The engineering director may allow new driveways, road crossings, or foundations and columns across or through an RBZ on a case-by-case basis. It must be demonstrated that the encroachment is necessary, and that the RBZ will not be impacted excessively. In these cases, the driveway, road crossing, or foundation and columns shall be constructed with careful attention to protecting trees and vegetation, and minimizing site grading.
- Approved mitigation is required for removal, encroachment or disturbances to the RBZ.
- Utility crossings.
 - Utilities within the RBZ are not exempt from RBZ requirements or mitigation.
 - All utilities within the RBZ must be subsurface or overhead.
 - Planting plans must be consistent with guidelines in the land development manual.
- Installing a new or replacing an existing culvert, pipe or bridge across waters.
 - Maintain a natural stream bottom to the maximum extent practicable.
 - Culverts, pipes and bridges must span the baseflow channel.
 - Minimize the length of culverts, pipes and bridges.
 - All crossings must be as close to perpendicular to the flow path as possible.

g. *Enhancements.*

- RBZ enhancement may be required when an RBZ has excessive invasive vegetation and/or if it contains significant areas of unhealthy, diseased or dead vegetation. Information on RBZ enhancements can be found in the land development manual.

Adopted from: The City of Knoxville -- (Ord. No. O-26-2013, § 8, 2-5-13)

(https://www.municode.com/library/tn/knoxville/codes/code_of_ordinances?nodeId=PTIICOOR_CH22.5ST_ARTIISIDECR_S22.5-40RIBUZO)

Alternatively we suggest that they City review the Atlanta Riparian Buffer Requirements as another potential guide to implementing riparian buffers – (City of Atlanta Riparian Buffer Ordinance - Chapter 74 Article VII)

(https://www.municode.com/library/ga/atlanta/codes/code_of_ordinances?nodeId=COORATGEVOII_CH74EN_ARTVIIRIBURE)

We strongly support the adoption of ordinances that implement the above requirements and associated clauses that clarify and assist in said implementation.

(3) Consider Modifications and Additions to Post Construction Stormwater Ordinances -

Management of stormwater runoff from sites post construction phase is vital in controlling the impacts of development on urban water quality and flooding. The increase in impervious surfaces such as rooftops, roads, parking lots, and sidewalks due to land development has a number of effects on aquatic systems including 1) increase in the total volume of stormwater runoff from a site, increase in the occurrence of flooding, loss of aquatic biodiversity increase in pollutants including sediment, nutrients, heavy metals, bacteria, and hydrocarbons. The primary objective of a stormwater management ordinance for existing development is to limit runoff volume and reduce runoff pollution. We suggest incorporating language referring to a guidance manual for BMP design and implementation such as the City of Montgomery has done (<http://www.montgomeryal.gov/home/showdocument?id=2190>). Additionally the Maryland Department of the Environment has created one of the better examples of stormwater management planning manuals ([http://www.stormwatercenter.net/Model Ordinances/Post Construction Stormwater Management/md department of environment.htm](http://www.stormwatercenter.net/Model%20Ordinances/Post%20Construction%20Stormwater%20Management/md_department_of_environment.htm)). We also suggest the ordinance contain language requiring that all development projects include a post-construction stormwater management plan. The ordinance state what the contents of an acceptable plan are and who is responsible for operation and maintenance. Finally, the city should determine what measures will be taken for enforcement when the requirements are not followed. We suggest the city review model stormwater management ordinances. We find the St. Johns River Water Management District regulations to be an especially good model as they experience similar climatic conditions to Mobile and analogously to Mobile are under intense development pressures ([http://www.stormwatercenter.net/Model Ordinances/Post Construction Stormwater Management/st johns permits.htm](http://www.stormwatercenter.net/Model%20Ordinances/Post%20Construction%20Stormwater%20Management/st_johns_permits.htm)).

Thank you for your consideration of these comments. Please contact us with any questions at (251) 433-4229.

Sincerely,



Casi (kc) Callaway
Executive Director
Mobile Baykeeper



Cade Kistler
Program Director
Mobile Baykeeper