M E M O R A N D U M

To: Tom Harmer, Town Manager

From: Allen Parsons, AICP
Director, Planning, Zoning & Building Department

Report date: October 30, 2020

Meeting date: November 9, 2020

Subject: Report and Recommendations Regarding Marine Turtle Protection Ordinance (Proposed Amendments to Town Code, Chapter 100)

Recommended Action

Provide direction to Manager.

Background

The Town adopted a wide-ranging array of Marine Turtle Protection requirements in 2016 (Ordinance 2016-15). The stated purpose of the Town's marine turtle protection ordinance is:

> "*to protect marine turtles which nest along the beaches of the town by safeguarding the nesting female and hatchlings from the adverse effects of artificial light and from injury or harassment by prohibiting activities disruptive to marine turtles, while maintaining lighting standards necessary for public safety and security. (Sec. 100.01)*"

In addition to providing for protection of several species of marine turtles that nest on Town beaches, these requirements play a critical role in the Town's ability to obtain permits for beach nourishment projects.

Town staff have now experienced four full marine turtle nesting seasons implementing and enforcing these requirements. That experience, along with continued updates to guidance at the State level (described further below), have provided us the ability to evaluate and recommend updates to several aspects of our Town Code.

In developing these recommendations, Town staff worked closely with scientists and professionals from several agencies: Mote Marine Laboratory, Florida Fish and Wildlife Conservation Commission (FWC), U.S. Fish and Wildlife Service (USFWS), Sea Turtle Conservancy, and the Longboat Key Turtle Watch. These agencies are responsible for monitoring marine turtle populations and indicators found in nesting activities. To date, Mote Marine Laboratory surveys have found no significant reduction in the Town's "disorientation"(see Definition 1 at the end of this document) rates between 2013 and 2020 (see Definition 2 at the end of this document), even after adoption the new regulations provided for in Ordinance 2016-15. Multiple factors for the marine turtle disorientation rates are likely responsible.

Staff has identified several areas that afford improvement to the Marine Turtle Protection ordinance. The recommendations primarily address ambiguities in the existing ordinance, and incorporate additional best management practices recommended by FWC and the Florida Department of Environmental Protection (FDEP) via their “Model Lighting Ordinance for Sea Turtle Protection” (attached). The model ordinance is also set forth in Florida Administrative Code (FAC 62B-55) providing non-mandatory guidelines required by Statute to assist local governments in controlling beachfront lighting to protect nesting sea turtles.

These recommended updates reflect ongoing improvements in technology and in understanding effective measures that can further protect nesting sea turtles. For example, the FWC approval process for “Certified Wildlife Lighting” occurs once a year, and certification is typically good for two years. Subtle changes in technology are common. Currently there are 76 approved turtle-friendly light bulbs and hundreds of approved wall fixtures, ceiling mount fixtures, step lighting, pole fixtures, roadway lighting, walkway lighting, bollards, tape/bullet strips, and underwater lighting fixtures.

A summary of the recommendations follow.

Window Tinting: Staff recommends a modification to the percentage amount of light referenced in defining “Tinted or filmed glass” from a light transmittance value of 45 percent to a recommended 15 percent value. Staff also recommends the Tinted or filmed glass reference to a transmitted visible spectrum of between “400 to 700 nanometers” be eliminated from this definition. The reference to long wavelengths, in terms of nanometers (FWC, for example, recommends greater than 560 nanometers, see Definition 3 at the end of this document), is more typically used in the context of turtle-friendly light bulbs.

The intent would be for this window tinting transmittance value change to only apply to new construction along the beach that has not yet received a building permit, or to existing structures along the beach that receive permits for replacing windows or glass doors. The recommendation for this value change comes from a number of sources, including: FWC’s recommendations decrease light-pollution affecting marine turtles. In their model marine turtle lighting ordinance; all windows and glass doors on the seaward and shore-perpendicular sides of any structures are recommended to be designed for a light transmittance value 15 percent or less through the use of tinted glass, window film, or screens. This light transmittance value has been adopted by other coastal jurisdictions, including Holmes Beach, which adopted a light transmittance value of 15 percent or less for windows and glass doors as part of its sea turtle protection requirements.

There are a number of benefits associated with this change. The primary benefit would be that the installation of window tinting, with this percentage, or lower, can eliminate the need for any additional form of window covering (i.e. curtains, blinds, etc.). Recent experience with installations at the Zota Resort have shown that applying these window tinting percentages, via a film applied to existing windows, do not cost more to install, are not disruptive to views and can have energy savings benefits as well. Application of such window tinting is also more effective than relying on ongoing human actions to close blinds, etc.

The Town's current standard of a light transmittance value of 45 percent does not ensure that a home or tourism unit meets the sea turtle protection ordinance requirements to eliminate light sources visible from the beach, without additional measures such as curtains or other window coverings used in addition to the window tinting. It can be disconcerting to homeowners or tourism unit owners to discover that installations of what they thought were turtle-friendly glass or tinting does not meet turtle lighting requirements, without additional measures such as curtains, blinds, etc.

Lighting Standards for New & Existing Development: Staff recommends considering revised standards for the ordinance that regulates exterior sources of artificial light visible from the beach. These are proposed to comply with FWC's recommendations for best management lighting practices. Staff sees an opportunity to both simplify the requirements and reduce the amount of artificial light that impact marine turtles.

The key modification would require light sources, visible from the beach, to be shielded and utilize FWC approved marine turtle fixtures and bulbs and not just the lights in which a "point source" or bulb is visible. The FWC, and the U.S. Fish & Wildlife Service (USFWS), now certify light fixtures as turtle friendly. In order to qualify, a luminaire must be mounted as low as practical for an intended illumination task, have full cut-off or be completely shielded from the beach, and be lamped with a bulb that produces long-wavelength light, which appears as amber colored. (Turtles have trouble seeing monochromatic yellow, amber, and red light, but are most attracted to bright white polychromatic lights, such as white fluorescent, metal halide, halogen, and mercury vapor.) Participating manufacturers are becoming commonplace and fixtures can be purchased on-line and at most hardware stores.

Cost per bulb range from $15 for a turtle friendly 45-watt bulb compared to $9 for an LED 45-watt bulb. Additional costs for a single-family home with 1 to 3 outdoor lights is anticipated to be $25 or less to implement. For larger developments, the Sea Turtle Conservancy offers assistance, and grant funding to retrofit problem lighting and has done so at multiple locations in the Town.

Enforcement experience has shown that some lights, where the point source or bulb are not visible, can still be seen clearly from the beach, and can negatively impact marine turtles.

Enforcement experience has also shown that the existing standards addressing "floodlights, uplights, spotlights, and decorative lighting" can be confusing to interpret. Staff recommends that a more straightforward requirement that such light sources, visible from the beach, be prohibited. According to FWC, even when these fixtures are fitted with turtle-friendly light sources, they typically do not meet best practices requirements to shield or downward-direct and therefore contribute light visible from beach and that may not contribute to safety or security. An existing exception to motion detecting lighting devices is also recommended for removal, as these fixtures can accept FWC approved marine turtle bulbs, while providing for security lighting.

Lighting standards that address artificial lighting for illuminating pools and pool lighting, that are visible from the beach, are also recommended to be added to the ordinance in order to protect marine turtles from the adverse effects of this type of artificial lighting.

Enforcement experience has shown that these sources of artificial lighting have contributed to disorientations. Life Safety Code requirements include 3 foot-candles of illumination at the pool surface and the wet deck surface. Staff proposes a limit of no more than 3 foot-candles.

Staff also recommends adding “temporary lighting” (e.g. flashlights, lanterns, tiki torches, etc.) as a prohibited activity between sunset and sunrise, unless utilizing a long wavelength (i.e. turtle-friendly) light source. Temporary lighting can greatly affect disorientation rates. Temporary lighting does not need to be near a nest to cause a disorientation. Since a single temporary light can be seen from miles away, the potential to affect dozens of nests can have real impacts.

Permit Applications for New Development: Staff recommends the addition of language that explicitly enumerates a permitting review process, which is presently not in the ordinance. This requirement would clarify existing practices associated with reviewing new developments. The intent would be for permit reviews to apply to new construction, alteration, and/or remodeling of existing structures, when such remodeling includes exterior lighting fixtures and/or replacement of any glass or glazing seaward of the Coastal Construction Control Line (CCCL), or if the development creates any artificial light sources that may be visible from the beach. Town Code currently has no explicit requirement for a permit review process to ensure compliance with the marine turtle protection ordinance for exterior lighting, resulting in the potential for certain non-beach fronting properties, having construction being finalized, only to later be found in violation of the marine turtle protection ordinance. A Code requirement, for reviewing lighting plans prior to construction, would provide back-up to the review process staff currently undertakes.

Inspections for New Development: Related to permit applications, another recommendation includes the addition of an inspection process for any new development seaward of the CCCL, or for any new development that creates artificial light sources visible from the beach. This addition would address the lack of an explicit Code requirement for a final inspection process to ensure compliance with the marine turtle protection ordinance. Formalizing the requirement to conduct lighting inspections, following construction, would provide back-up to the inspection process staff currently undertakes.

Limited Allowances Motorized Vehicles: Staff has received feedback from some of the larger tourist properties regarding the prohibition of the use of motorized vehicles (e.g. all-terrain-vehicles, or ATV’s) to retrieve and place beach furniture. Some large properties place and retrieve up to hundreds of beach furniture items, including reclining chairs and umbrellas, on a daily basis, by hand. The request to allow for a case by case consideration for safe and limited usage of motorized vehicles, when properly controlled, appears to be a reasonable allowance. Based on feedback provided by Mote Marine staff, one of the important factors would be to limit the use of these vehicles on a daily basis until their program has had an opportunity view and document any turtle activity. Staff is recommending that such an allowance be available, by permit or agreement, and that the reviews and conditioning of activity be coordinated with Mote Marine or designee. (Note: This allowance would only be applicable during sea turtle nesting season, May 1st - October 31st. There is no such prohibition on motor vehicles

on the beach during the other 6 months of the year. Staff does recommend revisiting motor vehicle allowances on the beach in the months outside of sea turtle nesting season and will bring back a separate update for the Commission's consideration.)

Portable Recreational Equipment: Staff recommend the addition of standards that would allow for the safe storage of portable recreational equipment at night. The ordinance presently does not generally allow for storage of recreational equipment, like it does for recreational furniture, on the beach, even if that equipment were to be consolidated. The proposed approach would provide for a mechanism referred to as a Recreational Use Agreement, where proper placement and organization of materials could be verified with appropriate marine turtle organizations. This would provide an option similar to one used by Sarasota County. The intent would be to reduce the amount of obstructions on the beach at night that impact marine turtles and protect the dune system, by providing for better organization of materials. Such an approach is consistent with FWC's recommendations for best management practices.

Beach Furniture: Staff is also recommending changes to the allowances associated with storage of beach furniture. Town Code Section 100.08 allows beach furniture to remain on the public beach, as long as it is pulled "as close to the dune…or where there are no dunes or native vegetation… as close as practicable to an existing permanent structure…". Staff has had several challenges with enforcement of this provision.

One challenge is identifying ownership of beach furniture. There have been numerous situations where beach furniture has been left on the beach, in violation of Town Code, and then it turns out that the beach furniture does not belong to the upland property owner.

Staff believes the intent of Section 100.08 was to allow certain upland property owners (having a property ownership interest along the shoreline) to leave certain temporary structures on the beach (per subsection (C)), provided that the structures are left along the dune/native vegetation/orderly stored, so they do not interfere with turtle nesting. Staff recommends clarifying this provision to avoid the potential unintended consequence of otherwise allowing Town residents and visitors to leave their recreational furniture and return to such furniture. This requirement to remove beach furniture from the beach is only applicable during sea turtle nesting season, May 1st - October 31st. There is no such requirement to clear beach furniture during the other 6 months of the year. Staff recommends revisiting provisions regarding abandoned property, such as beach furniture, in the months outside of sea turtle nesting season and will bring back a separate update for the Commission's consideration.

There are also challenges to sea turtles becoming entangled in beach furniture or otherwise impacted, even when relocated adjacent to dunes. Staff recommends the addition of provisions that require beach furniture to be stacked, if possible, with similar temporary structures. Staff also recommends a further standard be included requiring furniture to not be placed within five feet of a marked/identified marine turtle nest, consistent with FWC's recommendations for best management practices.

Staff Recommendation

Provide direction to Manager.

Definitions

1. Disorientation events occur when artificial lighting on marine turtle nesting beaches disrupts the ability of nesting females and hatchlings to find the marine from the beach. Adult and hatchling marine turtles have an inborn tendency to move in the brightest direction, instinctively crawling away from the dark silhouettes of landward dunes and vegetation towards the brighter open horizon of the ocean. Artificial lights near the beach are often brighter than the ocean horizon, leading adult females and hatchlings to disorient, or crawl in the wrong direction. Both adult females and hatchlings can be disoriented landward by artificial lighting as they attempt to leave the beach after nesting or hatching.
2. The four year average of sea turtle nest disorientations between 2013 and 2016 was 147 disorientations. The four year average between 2017 and 2020 (Note: Only a partial season record for 2020 is currently available) is 175 disorientations. By comparison, between 2017 and 2020 Longboat Key had a higher percentage disorientation rate (14%) than Lido Key (11%), Siesta Key (7%), Casey Key (1%) and Venice (12%), which are all located within the Mote Marine permit area and are counted by similarly trained staff and volunteers.
3. The benchmark of 560 nanometers comes as of result of studies by FWC and the Sea Turtle Conservancy. This light wavelength would allow for temporary lighting approved by FWC and other commercially-available “red-bulb” flashlights.

Attachments

A. PowerPoint Presentation (Available in Town Clerk’s Office)
B. Draft Model Lighting Ordinance (Available in Town Clerk’s Office)

End of Agenda Item