



September 17, 2012

Linda Tucker
City of Isle of Palms
PO Drawer 508
Isle of Palms SC 29451

RE: Pre-Project Lighting Survey
Isle of Palms Shoal Management Project [CSE 2384]

Dear Ms Tucker,

As a special condition of Permit No 2010-1041-2-IG, the City is required to conduct surveys of the direct and indirect lighting observable from the beach. Two surveys are required this year, and two are required in 2013. At the request of the City, CSE conducted the first lighting survey on the evening of March 12, 2012. That survey was outside of turtle nesting season and also outside of certain time restrictions set forth in the City's lighting ordinance; therefore, some of the lights observed during the March survey may not necessarily be in violation of the ordinance if they are turned off during the restricted times (May 1 through October 31). CSE conducted the second lighting survey on the evening of July 20, 2012. This period is within the turtle nesting season and also the time restrictions set forth in the City's lighting ordinance. The permit condition is meant to be an effort to inform property owners and guests and does not include any enforcement measures or penalties.

CSE conducted the lighting survey by walking the project area beach at night and documenting observable direct and indirect lighting. Locations of light sources were marked on aerial photographs, and notes were recorded regarding the type of light (e.g. lamp in window, porch light, street light, etc). Still photography was also used to document light sources in many cases, with photos being taken from near the berm crest, using a standard point-and-shoot digital camera at its widest focal length. The majority of light sources documented occurred at the multi-family condo complexes in Wild Dunes. The types of light sources included direct and indirect interior lighting such as table lamps set in front of windows, TVs, illuminated window shades, direct lighting from balconies and porches, direct and indirect lighting from parking areas beneath and around buildings, landscape lighting, pool lighting, and indirect lighting of building walls.

CSE digitized the general locations of light sources using GIS software as shown in Figure A. The corresponding descriptions of the light sources are given in Table 1. Annotated photographs are also shown to provide a visual indication of the types of light sources observed during the survey.

Figure 1. General locations of light sources observed from the beach.

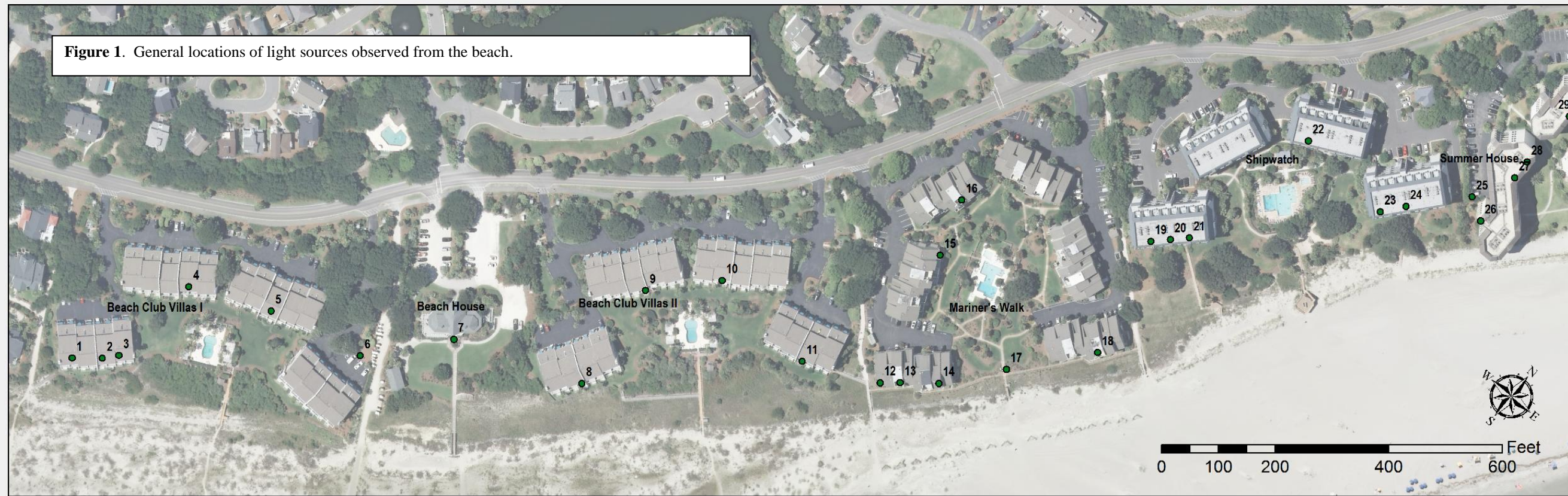




Table 1. Descriptions of light sources shown in Figure 1.

Point Number	Light Type	Point Number	Light Type
1	Balcony Lights	34	Balcony Lights
2	Balcony Lights	35	Interior Lighting
3	Interior Lighting	36	Interior Lighting
4	Direct, Exterior Light	37	Pole Light
5	Interior Lighting	38	Multiple Direct Interior
6	Pole Light	39	Multiple Pole Lights
7	Courtesy Stairwell Lighting	40	Walkover Light
8	Window Lamp, Balcony Lights	41	Interior Lighting
9	Interior Lighting, Balcony Light	42	Multiple Interior - Lamps, Kitchen Lighting
10	Interior Lighting	43	Ground Floor Lighting
11	Interior Lighting	44	Multiple Parking Area Lights
12	Television, Balcony Light	45	Multiple Pole Lights
13	Window Lamp	46	Television
14	Interior Lighting	47	Multiple Interior Lighting
15	Balcony Lights	48	Window Lamp
16	Balcony Lights	49	Multiple Direct - Kitchen, Ceiling Lighting
17	Shielded Light	50	Balcony Lights
18	Interior Lighting	51	Window Lamp
19	Multiple Interior - Lamps, Ceiling Lighting	52	Balcony Lights
20	Multiple Direct Lighting	53	Television
21	Multiple Interior Lighting	54	Interior Lighting
22	Window Lamps	55	Window Lamp
23	Balcony Lights	56	Parking Area Light
24	Multiple Direct - Bottom Floor, Interior Lighting	57	Ceiling Lighting
25	Light Pole	58	Ceiling Lighting
26	Stairwell Lighting	59	Window Lamp
27	Parking Area Lighting	60	Multiple Direct - Window Lamps, Ceiling Lighting
28	Multiple Window Lamps	61	Interior Lighting
29	Interior Lighting	62	Parking Area Light
30	Window Lamps	63	Television
31	Shielded Light	64	Ceiling Lighting
32	Multiple Direct - Window Lamp, Ceiling Lights	65	Television
33	Interior Lighting	66	Multiple Interior Lighting



A list of regime-specific light sources is below (locations marked in Figure 1 are in parentheses):

WD POBH — The Property Owners Beach House only had courtesy lighting along the stairwells that lead up to the porch. These were the only lights directly visible from the beach. This was an improvement over the March survey findings.

Beach Club Villas I and II — Several units had lamps (08) and balcony lights (02) directly visible from the beach and others had interior lighting which illuminated walls or curtains, producing ambient lighting observable from the beach (05). Lights around the pools were not visible in this survey. A pole light in the parking area at the north end of BCV I was directly visible from the beach (06).

Mariner's Walk — Several units had lamps (13) or TVs directly visible from the beach, and others had interior lighting which illuminated walls or curtains, producing ambient lighting observable from the beach (14). Several balcony lights were directly visible from the beach (15, 16). A shielded light near the pool was directly visible from the beach (17).

Shipwatch — Several units had lamps directly visible from the beach (22), and others had interior lighting which illuminated walls or curtains, producing ambient lighting observable from the beach (21). Multiple sources of direct lighting were observable at the ground level (24).

Summer House — Several units had lamps (28) directly visible from the beach, and others had interior lighting which illuminated walls or curtains, producing ambient lighting observable from the beach. A shielded light near the pool was visible from the beach (31). The stairwell on the southwest side of the building had multiple direct light sources (26).

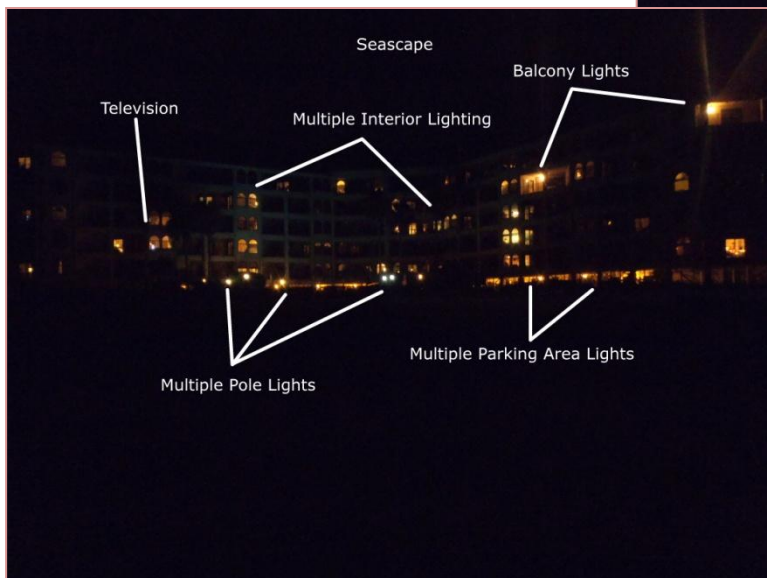
Summer Dunes Lane Properties — One unit had ceiling lights directly visible from the beach (32), and others had interior lighting which illuminated walls or curtains, producing ambient lighting observable from the beach (33).

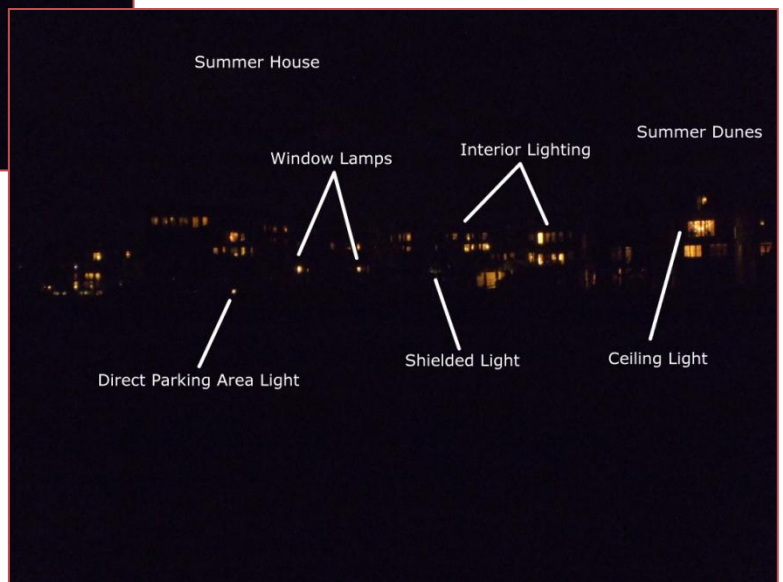
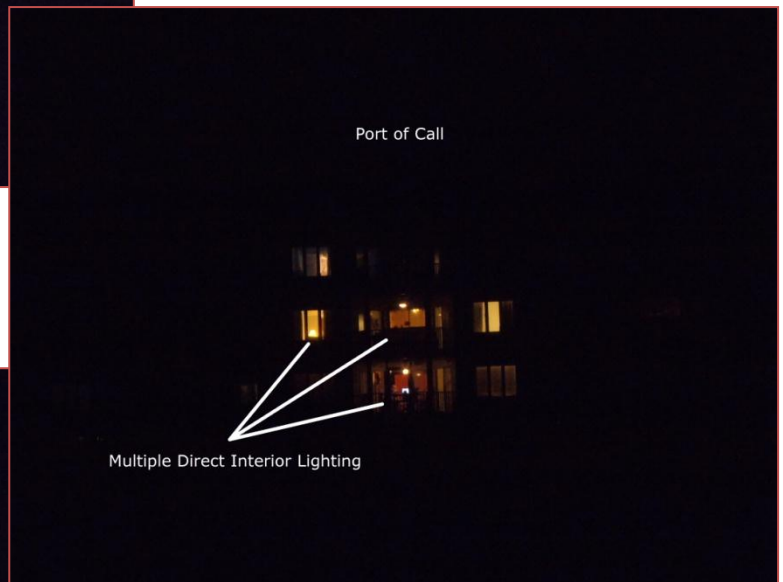
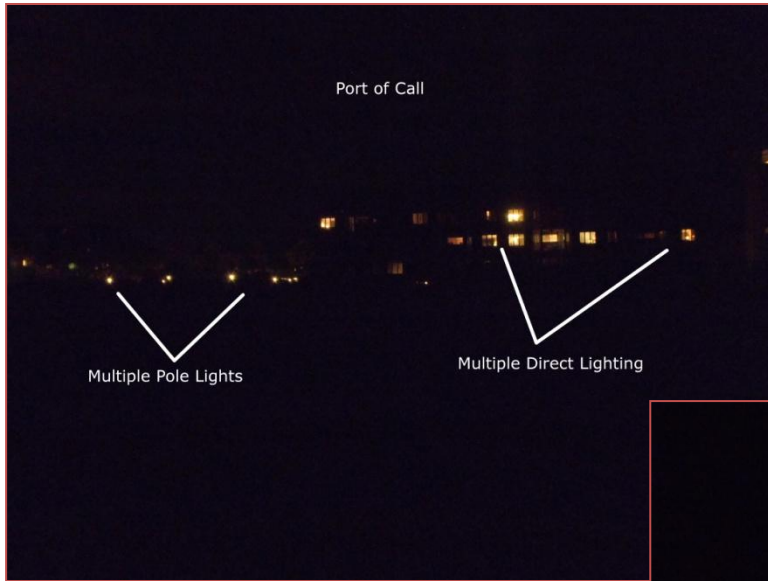
Tidewater — Several units had interior lighting which illuminated walls or curtains, producing ambient lighting observable from the beach (35, 36). One unit along Summer Dunes Lane had a balcony light directly observable from the beach (34). There is a pole light near the pool directly visible from the beach (37).

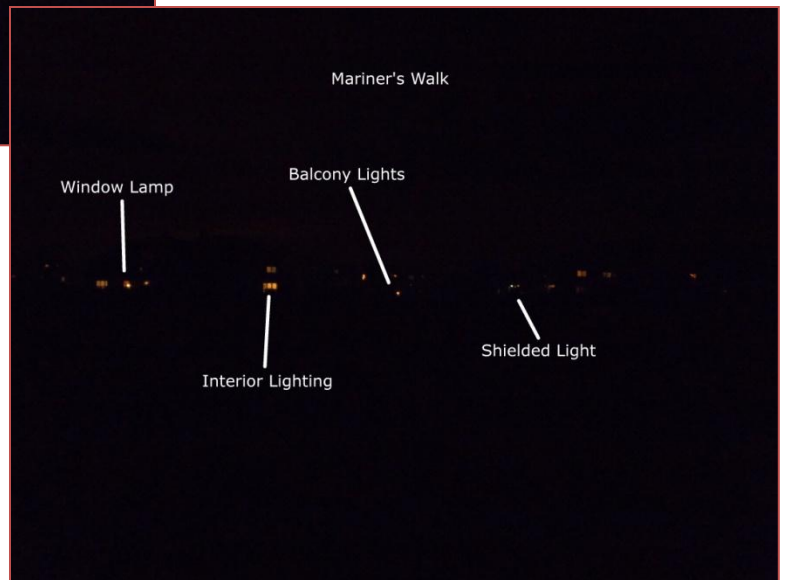
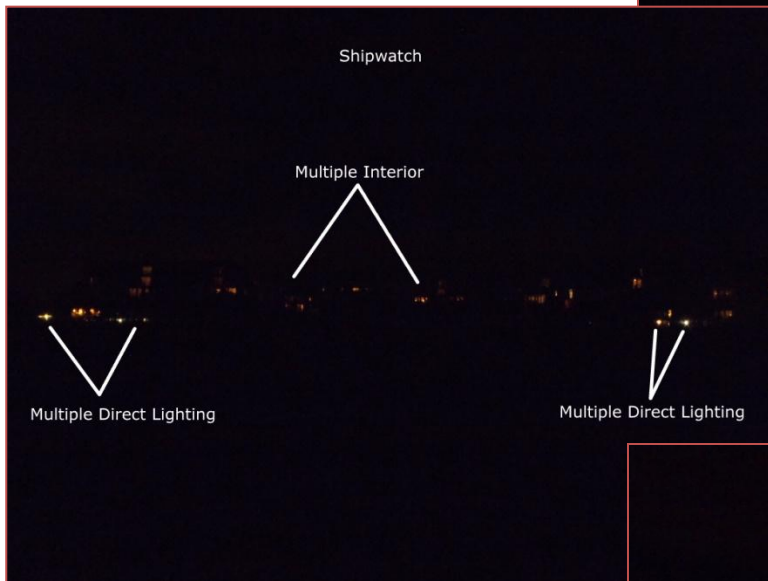
Port O'Call — Several units had lamps, TVs, or ceiling lights directly visible from the beach (42), and others had interior lighting which illuminated walls or curtains, producing ambient lighting observable from the beach (38). Multiple pole lights around the pool were a direct light source (39). Luminaries on the beach walkovers were not shaded and were a direct light source (40).

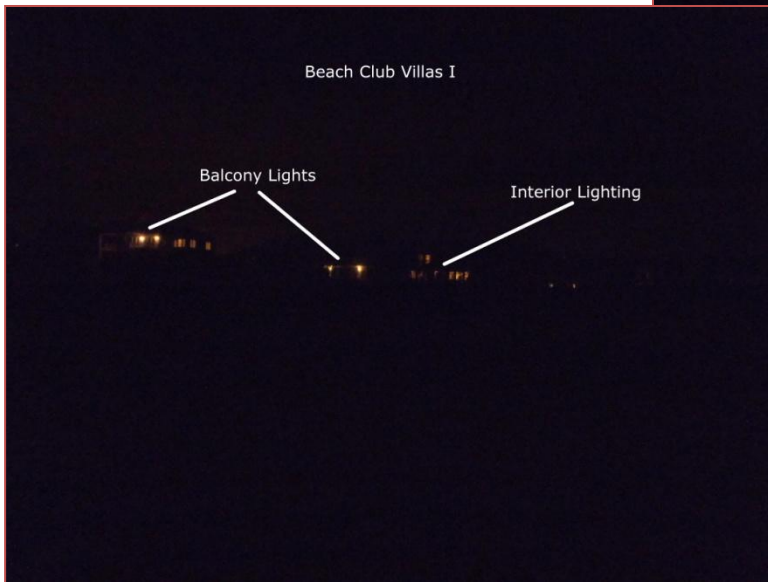
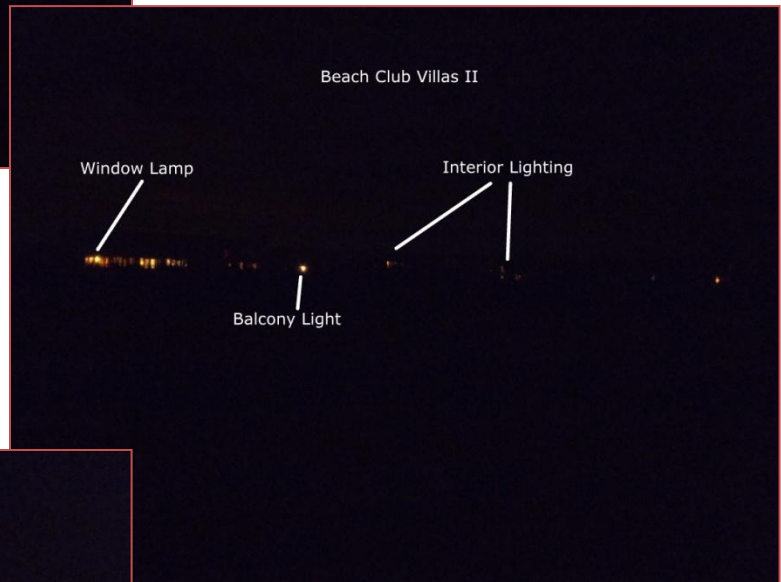
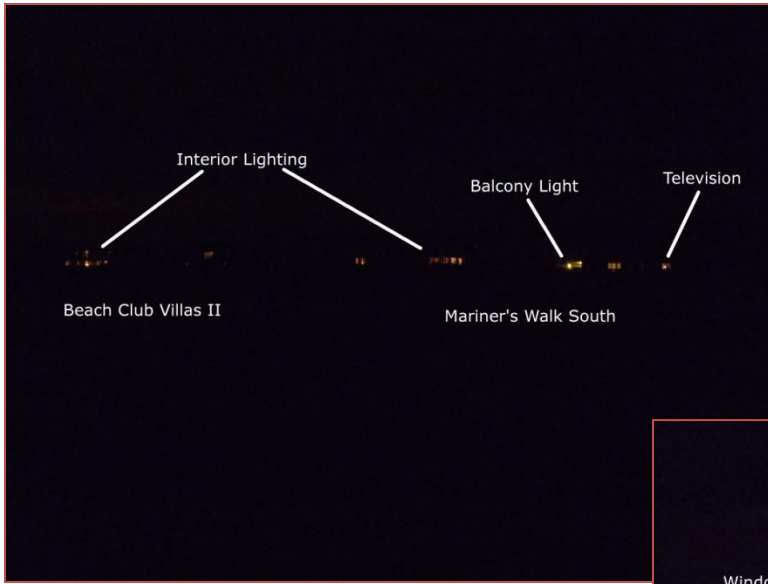
Seascape — Several units had lamps or TVs directly visible from the beach (46, 48, 51), and others had interior lighting which illuminated walls or curtains, producing ambient lighting observable from the beach (47). Pole lights around the pool provided a direct source of light (45). Lighting in the ground-floor garage provided a direct light source (44). Landscape lighting and the above lighting illuminated the walls of the complex. Balcony lights on the landward side of the building are visible from the beach (50, 52).

Ocean Club — Several units had lamps, ceiling lighting, or TVs directly visible from the beach (55, 56, 57, 60), and others had interior lighting which illuminated walls or curtains, producing ambient lighting observable from the beach (54, 61). Parking lights from the garage underneath the building were also directly observable from the beach (56, 62).











In general, the July 2012 survey yielded similar findings as the March 2012 survey. The majority of light sources are interior lights such as lamps, TVs, and ceiling fixtures. Safety and security lighting remain visible from the beach, though some minimum level of lighting is likely necessary along stairwells, etc. Efforts to shield safety and security lights should be implemented to eliminate and/or reduce light reaching the beach. Similarly, lighting around pool facilities continues to be visible from the beach. Improvements were observed at the Wild Dunes Property Owners Beach House.

CSE recommends the City provide notices to each regime reminding them of the ordinance and identifying specific problems revealed from this survey. Regime managers should be encouraged to have maintenance personnel or volunteer owners periodically observe the property at night from the beach to identify light sources and recommend source-specific solutions to ensure that the property is in compliance with the ordinance and is not impacting sea turtles. CSE offered additional suggestions in the report from the March 2012 lighting survey which may still apply.

Please let me know if CSE can assist the City in producing letters to the regimes or obtaining additional information regarding lighting impacts to sea turtles. As always, we appreciate the opportunity to assist the City with managing the beach.

Sincerely,

Coastal Science & Engineering (CSE)

Steven Traynum
Coastal Scientist

cc: Dave Kynoski, WDCA
Mary Hope Green, USACE
Melissa Bimbi, USFWS
Susan Davis, SCDNR
Haiqing Kaczkowski, CSE
