STATE OF MAINE
SAGADAHOC COUNTY SUPERIOR COURT

FRIENDS OF MERRYMEETING BAY,
KATHLEEN MCGEE, ED FRIEDMAN,
and COLLEEN MOORE,

Plaintiffs,

v.

COMPLAINT FOR NUISANCE
(Jury Trial Demanded)

CENTRAL MAINE POWER COMPANY,

Defendant.

NOW COME the Plaintiffs to state as follows:

I. Introduction

1. For eight decades, two 195-foot tall towers supported up to two power lines across the Chops Passage of the Kennebec River at Merrymeeting Bay, Maine.

2. The towers were unlit and the power lines were unmarked. But because they were located in an area of low and declining air traffic, and well below the minimum safe altitude for aircraft (1,000 feet above the highest obstacle), there was never an air safety problem.

3. In 2019, Central Maine Power Company ("CMP") replaced those old towers with new towers that are modestly (23% or 45') taller.

4. In part for liability reasons, CMP placed orange, white, and yellow marking balls on a cable crossing the Chops Passage to make the power lines more visible to aviators.

5. Plaintiffs have no issue with this passive air safety measure.

6. But CMP went further. It installed multiple tower lights that each **flash sixty times a minute** visible over an area of **nearly four thousand square miles**.

7. CMP should never have done so, as the lights are forbidden by local zoning codes. For example, the City of Woolwich's code explicitly bans "flashing lights" in the Rural District its tower is located in.

8. No public hearings were held prior to installation of the lights, and CMP did not disclose the proposed lights on its Permit by Rule application to the Department of Environmental Protection (DEP) under Maine's Natural Resources Protection Act.

9. The flashing lights were not required by the Federal Aviation Administration ("FAA"). And the rate of flashing is double what the FAA has determined to be optimal. As a result, the lights have caused a variety of problems for Plaintiffs, all of whom are neighboring property owners and or who work in the viewshed.

10. The lights have made it difficult for Plaintiffs to sleep, impacted Plaintiffs' businesses, their ability to work and reduced the value and enjoyment of Plaintiffs' property and of their time on Merrymeeting Bay itself.

11. Furthermore, the light pollution causes adverse wildlife impacts undermining the purpose and values of conservation easements owned by Plaintiff Friends of Merrymeeting Bay (FOMB) and of FOMB's mission: "To preserve, protect and enhance the unique ecosystems of Merrymeeting Bay."

12. Plaintiffs engaged with CMP to try to find alternative, less impactful methods of achieving CMP's goals, but were rebuffed.

13. For these reasons and additional reasons described herein, the lights are not required for air safety, are barred by local ordinance, and constitute a nuisance under Maine law.

14. Plaintiffs now sue to end Defendants' nuisance.

II. Parties

15. Defendant **Central Maine Power Company** ("CMP") is a Maine business corporation, with charter number 19050014 D. CMP is a subsidiary of AVANGRID, and serves more than 620,000 electricity customers in an 11,000 square-mile service area in central and

southern Maine. Eighty-five percent owned by the Spanish energy giant company, Iberdrola SA, AVANGRID owns eight electricity, natural gas or combination utilities in Connecticut, Maine, Massachusetts, and New York and has a business presence in 24 states. CMP operates the towers and lighting system at issue in this case.

16. Plaintiff **Friends of Merrymeeting Bay** ("FOMB") is a Maine non-profit corporation (Title 13-B), with charter number 19750226ND. Founded in 1975, FOMB takes a holistic approach to protecting the Bay, combining research, education, advocacy, and land conservation. With approximately 450 members, one staff person, and 125 volunteers contributing over 3,000 hours of service annually, FOMB is the only conservation organization in the area implementing these diverse tactics to achieve biological and cultural protection of the Bay as a whole. FOMB has members who live near, own property near, and recreate on and near Merrymeeting Bay and the rivers that flow into the Bay. Among other activities, FOMB members navigate (power, sail, kayak and canoe), recreationally hunt and fish, commercially guide, hike, photograph, and observe aquatic life and wildlife in and around Merrymeeting Bay and its watershed. FOMB members receive economic value from Merrymeeting Bay and its environs through, among other activities, commercial fishing, guiding, farming, photography and timber harvesting. Many of FOMB's members are owners of property directly impacted by the Chops Point Towers. FOMB itself is the owner of multiple conservation easements directly impacted by the Chops Point Towers.

17. Plaintiff **Ed Friedman** is a resident of Bowdoinham, ME and Chairman of FOMB. He owns a piece of residential property in Bowdoinham that lies 1.6 miles from the eastern Chops Point tower and operates several home businesses from here. His property is in direct view of the towers.

18. Plaintiff **Colleen Moore** is a resident of Pleasant Point in Topsham, ME and member of FOMB. She owns residential property on the shore of the Bay in direct view of the towers.

19. Plaintiff **Kathleen McGee** is a resident of Bowdoinham, ME and a FOMB member. She owns a share of residential property on the shore of the Bay in direct view of the towers.

20. All individual plaintiffs have owned their properties well before the new towers were erected and lit.

III. JURISDICTION AND VENUE

21. The Maine Superior Court has jurisdiction over this civil action pursuant to Title 14 M.R.S. § 704-A.

22. Venue is properly in this County pursuant to Title 14 M.R.S. § 501 and because the action arose in this County, and one or more of the Plaintiffs reside in this County.

IV. STATEMENT OF FACTS

A. About Merrymeeting Bay

23. Formed by the confluence of six rivers, including the Kennebec and Androscoggin, Merrymeeting Bay is the largest freshwater estuary system north of Chesapeake Bay; it drains 38% of Maine's fresh water. Biologically it is considered tidal riverine (freshwater and tidal) and geologically an inland delta.

24. Merrymeeting Bay is linked to the Gulf of Maine and the Atlantic Ocean by the Lower Kennebec River.

25. The central Bay's connection to the Lower Kennebec River is via a 280-yard slot in the bedrock called the Chops.

26. The Chops divides the cities of Bath, Maine, and Woolwich, Maine.

27. Merrymeeting Bay is bordered by the towns and cities of Richmond, Brunswick, Bath, Topsham, Woolwich, Bowdoinham, Dresden, and Pittston.

28. The Bay is a resource of international significance, considered highest value habitat by USFWS and an area of ecological significance. It is the largest staging ground for migratory waterfowl in the northeast, it is the only estuary providing spawning and nursery habitat for all diadromous fish species in the Gulf of Maine, and it is home to a number of rare and endangered plant, and animal species including Parker's pipewort, stiff arrowhead, shortnose and Atlantic sturgeon, wild Atlantic salmon and a recovering bald eagle population.

29. Merrymeeting Bay supports runs of migratory fish, including the endangered wild Atlantic salmon and shortnose sturgeon. Some of the other species include Atlantic sturgeon, shad, alewives, American eel, striped bass and Rainbow smelt; a number of which are threatened, species of concern or species of greatest conservation need.

30. The Bay is classified as a Globally Important Bird Conservation Area by the American Bird Conservancy.

B. For at least eighty years, the Chops had two unlit towers without incident.

31. For at least eight decades, there were two 195-foot tall towers at the Chops.

32. The purpose of the towers was to convey electric powerlines across the Chops.

33. At some point, the towers were marked with alternating bands of red and white paint. But they had no lights and there were no marking balls on the powerlines.

34. The unlit towers existed at the time of the region's most intense air traffic. Air traffic escalated nationwide after World War II, with "local" vs. itinerant flights building to a peak in the late 1970's a few years after the first oil crisis. As fuel prices continued climbing, general aviation nationwide began declining.

35. Numbers of very small aircraft based at Merrymeeting Field reached a maximum of 38 around 1995. Currently there are only three or four very small aircraft at that field.

36. Air traffic in the area declined further after the Brunswick Naval Air Station closed and Merrymeeting Field was sold to a developer.

37. But the unlit towers and lines existed for at least eighty years without incident, even during the region's peak air traffic years.

38. Because the towers were unlit, lights did not disturb local property owners' use of their property or FOMB members use of the Bay. The night sky remained dark until the new towers were lit.

C. In 2018, CMP replaced the old Chops Point towers with new, somewhat taller ones. CMP outfitted the new towers with lights that shine over an area of at least 3,848 square miles, flashing day and night at 200% the FAA-determined optimal rate.

39. In 2018, Central Maine Power Company ("CMP") replaced the pre-existing towers with new, somewhat taller towers. The new towers are 23% taller than the old towers.

40. They have a greater superstructure in their upper reaches and thus easier to see, even when unlit.

41. Specifically, the new towers are at 47 feet site elevation (SE), are 240 and 244 feet above ground level (AGL), and are 287 and 291 feet above mean sea level.

42. Despite being only somewhat taller than the old towers, CMP has outfitted the new towers with drastically different aircraft notification devices.

43. They did so even though the region's air traffic is sparser now than at any point since World War II.

44. The new aircraft notification devices take two forms:

a. The powerline has three-foot-wide orange, white and yellow spheres every 200 feet; and

b. The towers are each outfitted with five lights that each flash at a rate of 60 flashes per minute ("FPM"), white during the day and red at night.

45. The 60 FPM flash rate is approximately double the optimal rate. According to the Federal Aviation Administration, the "optimal flash rate for the brighter lights to flash

simultaneously was determined to be between 27 and 33 flashes per minute (fpm). Flashing at slower speeds (under 27 fpm) did not provide the necessary conspicuity for pilots to clearly acquire the obstruction at night without the steady-burning lights, and flashing at faster speeds (over 33 fpm), the lights were not off long enough to be less of an attractant to migratory birds."[1]

46. The lights shine across an area of at least 3,848 square miles.[2]

Fig. 1: The new tower lights as visible from Browns Point on May 31, 2020.

[1] James W. Patterson, Jr., *Evaluation of New Obstruction Lighting Techniques to Reduce Avian Fatalities*, DOT/FAA/TC-TN12/9. U.S. Department of Transportation, Federal Aviation Administration Technical Note. (May 2012).

[2] The lights have been observed as far as Oxford, Maine, 35 miles away.

Fig. 2: The (red) lights of the new towers shine across Merrymeeting Bay, polluting the previously dark skies and when the Bay is calm or covered with ice, those surfaces, from the reflection. Photo taken by Ed Friedman on June 1, 2020.

E. The FAA recommended – but did not require – lighting the Chops Point towers.

47. On March 12, 2018, the Federal Aviation Administration ("FAA") issued Notices of Determination of No Hazard to Air Navigation for the towers.

48. The Notices stated that: "As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 1, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8 (MDual), & 12."

49. The idea of lighting the towers was suggested to the FAA by CMP.

50. On March 25, 2020, the FAA issued new Notices. The new Notices stated that as "a condition to this Determination, the structure should continue to be marked/lighted utilizing a med-dual system" and endorsed an Active Aircraft Detection Lighting System. (An Active Aircraft Detection Lighting System blankets a region in microwave radiation from radar, and uses that radar to determine when aircraft are present. If there are aircraft, it turns the lights on; if not, it turns the lights off.)

51. These notices were FAA *recommendations*, but they were not in any sense *requirements* or *legal orders*.

52. The advisory nature of the notices is due to the fact that the towers do not meet the criteria for mandatory lighting under FAA regulations.[3]

[3] 14 CFR § 77.17 specifies that an object is "an obstruction to air navigation" if it meets certain criteria. Objects under 499 feet AGL are only presumptively obstructions if within a certain distance of airports, within certain obstacle clearance areas, or the "surface of a takeoff and landing area of an airport or any imaginary surface established under § 77.19, 77.21, or 77.23."

Chapter 2.1 of FAA Advisory Circular 70/7460-1 indicates that:

> Any temporary or permanent structure, including all appurtenances, that exceeds an overall height of 200 feet (61 m) above ground level (AGL) or exceeds any obstruction standard contained in 14 CFR Part 77 *should* [not "shall" or "must"] be marked and/or lighted. *However, an FAA aeronautical study may reveal that the absence of marking and/or lighting will not impair aviation safety.* [Emphasis added.] Conversely, the object *may* [not "must"] present such an extraordinary hazard potential that higher standards may be recommended for increased conspicuity to ensure

53. CMP's expert agrees. On January 27, 2020, Clyde Pittman, Director of Engineering of Federal Airways & Airspace, Inc. wrote an opinion letter. Pittman agreed that "the Chop Point towers do not meet the requirements of 14 CFR Part 77 to automatically require lighting/marking because the towers are not located within the mandated distance from an airport."

F. Plaintiff FOMB Proposed Less Intrusive Options for the Chops Point Towers.

54. In a letter of December 24, 2019, FOMB proposed a less intrusive option that would still address air-safety concerns.

55. Specifically, FOMB proposed three safety elements: (1) marking the towers; (2) issuing a Notice to Airmen (NOTAM) of unlit towers and powerline crossing;[4] and (3) maintaining the unlit marking balls or additional unlit balls on the wires.[5]

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aviation safety.

Here, Wiscasset (KIWI) is the closest qualifying airport to the Chop Point Towers. It is 5.1 miles away, and has a runway length of 3,397' (longer than the 3,200' minimum length to qualify). If the Chop Point towers were within 3 miles of KIWI, they would be considered an obstacle to air navigation at 200'. Since they are 5 miles from KIWI however, 100' is added for each additional mile up to a maximum of 499'. At 5 miles then, to meet the qualifying standard and be deemed an obstruction to air navigation, the towers need to be at least 400' AGL. At 240' AGL, the Chop Point towers are too short to be a presumptive obstruction.

[4] FAR 91.103 mandates that "each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight."
[5] Ex. 1.

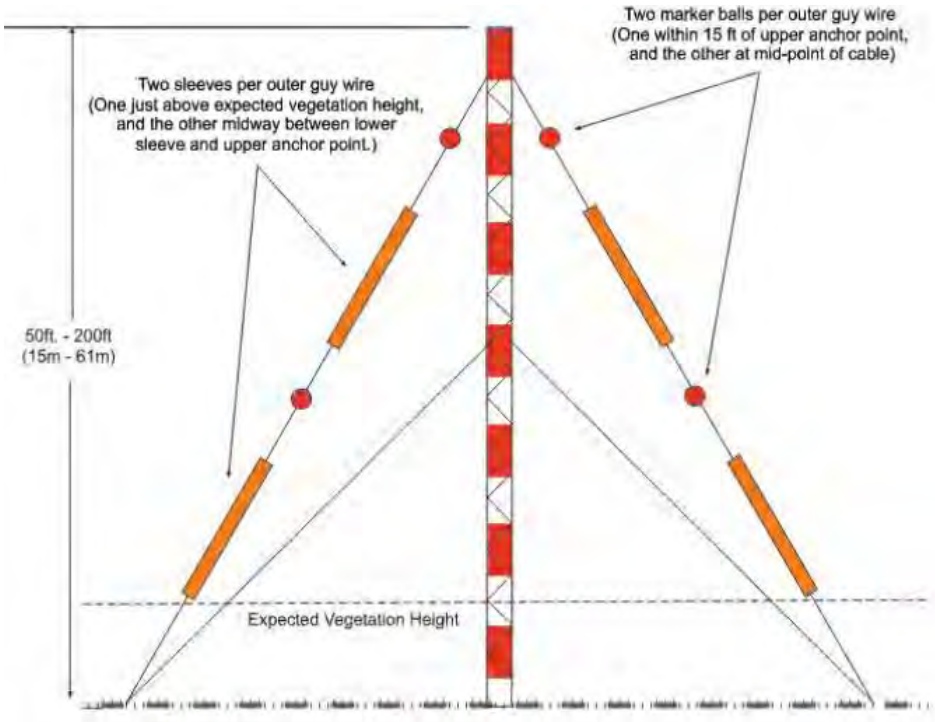

Fig. 3: A diagram of marking of a tower.[6]

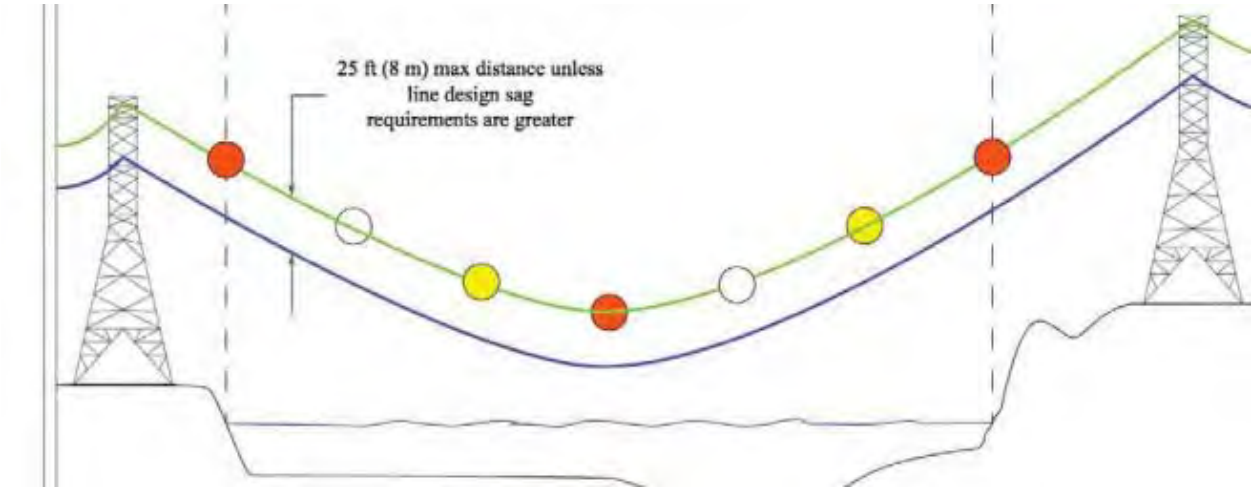

Fig. 4: A diagram of unlit marking balls.[7]

56. In April 2020, FOMB suggested another alternative: "If lights are necessary for air safety, FOMB proposes a Passive Aircraft Detection Lighting Systems (PADLS) in lieu of an active system."

[6] Federal Aviation Administration, Advisory Circular 70/7460-1L CHG 1, Appendix A (Dec. 4, 2015) at page A-15.
[7] Id. at page A-2

57. Unlike active systems, Passive Aircraft Detection Lighting Systems do not blanket an area with radar. Instead, using only receivers, they "exploit existing radio emissions, such as FM, TV and cellular telephony signals, trying to detect echoes which would indicate the potential presence of a flying target."[8]

58. Passive detection systems have been used to activate warning lights on electric-generation windmills, for example.[9]

59. A passive system would work at the Chops. According to Jörg Heckenbach of the Fraunhofer Institute for High Frequency Physics and Radar Techniques, who has worked with the PARASOL passive detection system. What would be required would be a (1) a site survey; (2) a short study; (3) modification to software; and (4) installation of the system. According to Mr. Heckenbach the "hardware is compatible and should be fine."

60. On July 6, 2020, FOMB suggested another alternative, a pilot-controlled lighting system:

> One alternative to an Active System would be a Pilot-Controlled Lighting System. Such a system would allow pilots to send a signal that activates tower lights. They would accomplish that by the simple process of keying the microphone button of the regular VHF communication transmitter in the approaching aircraft. No special airborne equipment or adapters would be required. Thus, if a pilot were unsure of her position relative to the towers, all she would need to do would be to press the button on her microphone a few times, and the lights would come on.
>
> We spoke to Mark Richardson, an expert at ADB Safegate, one of the world's leading suppliers of airport lighting solutions including pilot-controlled systems. He confirmed that such a system would be relatively simple and inexpensive to install. It would be orders of magnitude cheaper than the proposed Active System. For example, the ADB Safegate L-854 radio-control unit is listed for approximately $3,000[10] and could be installed by a Maine licensed electrician. The unit is simply an AC powered VHF receiver hooked up to the desired lighting. The easiest installation would be one box for each tower keyed to the same VHF radio frequency. No FCC license needed.

61. On July 17, 2020, CMP declined to adopt the pilot-controlled proposal.

[8] Oikonomou, Dimitrios & Nomikos, Panagiotis & Limnaios, George & Zikidis, Konstantinos. (2019). Passive Radars and their use in the Modern Battlefield. 9. 37-61.
[9] See https://www.dirkshof.de/fileadmin/Dateien/Passivradar_Infos/Parasol_06_2018_E.pdf
[10] https://adbsafegate.com/product-center/airfield/?prod=l-854-digital-radio-control

62. These five elements (marking with paint, unlit balls, a Notice to Airmen, and or a PADLS or pilot-controlled system) should be more than sufficient for air safety considering that the Chops Passage is not navigable airspace for most aircraft at the altitude of the towers.

63. Specifically, the minimum safe altitude for most aircraft over any congested area of a city, town, or settlement, is an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

64. Over open water or sparsely populated areas, an aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure. Since the waterway measures 790' wide at the Chops, a float plane flying up the middle at or below wire height would only have 400' on either side to shore. From the channel center to the closest Chop Pt School structure (a cabin) would not be 500', and so most planes cannot traverse the Chops Passage.

65. And for any aircraft except when necessary for takeoff or landing, no person may operate an aircraft below an altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

66. This was confirmed by the FAA, which generated a Traffic Pattern Report for the towers and determined that they were not in a "Traverseway."[11]

G. CMP rejected FOMB's alternatives on the false premise that CMP has "no choice."

67. CMP rejected FOMB's proposed alternatives on the theory that CMP had "no choice" but to install the lights.

68. CMP claimed the FAA had "compelled" the lights.

69. For example, in an email of February 13, 2020, CMP issued the following statement:

> **Can different lighting or no lighting be a solution?**
>
> Requests for modification to the current lighting on the towers, including the changing of the lighting system, or any deviation from the standards in the Advisory Circular must be submitted to the FAA. A request received after a determination is issued may

[11] Ex. 8.

> require a new study and could possibly result in a new determination including the need for additional lighting. Since it is the expert opinion of our consultants that **it is highly unlikely that if requested the FAA would eliminate the lighting requirement**, our consultants have advised CMP that an additional request to the FAA would only result in additional time delays -- delays that would impact the more immediate focus on, and planning for, the radar solution.

(emphasis added).

70. In a letter of April 13, 2020, CMP's Executive Chairman David Flanagan wrote that the lights were required by "an outstanding FAA decision, which has the force of law, 14 CFR Part 77, which is not merely advisory, but compels [CMP] to install and maintain warning lights on these towers."[12]

71. Mr. Flanagan opined that CMP therefore has "no choice but to comply," and concluded that "we simply cannot unilaterally defy a lawful Federal order."

72. CMP was wrong.

73. The Notices of No Hazard Determinations are "recommendations," not "orders." And they have no enforceable legal effect.

74. The FAA itself describes them as recommendations. In April 15, 2020 letter, the FAA wrote that Notices were issued "for a marking and lighting recommendation." (Emphasis added.)

75. This has been corroborated by federal courts: the "FAA's hazard determinations, by themselves, have 'no enforceable legal effect.'" *Town of Barnstable, Mass. v. FAA*, 659 F. 3d 28, 31 (D.C. Cir. 2011), *citing BFI Waste Sys. v. FAA*, 293 F.3d 527, 530 (D.C. Cir. 2002) ("A hazard/no-hazard determination has "no enforceable legal effect."). *See also Air Line Pilots' Association International v. FAA*, 446 F.2d 236, 240 (5th Cir. 1971) (no hazard determinations ask encourage only "voluntary cooperation.")

76. And the FAA has confirmed this specifically with regard to the Chop Point towers. Richard Doucette, of the FAA's New England Office, wrote with regard to the towers:

[12] Ex. 2.

"Every determination issued is 'advisory.' It has no regulatory weight. . . .We issued an advisory opinion after CMP filed an airspace case. I do not know under what circumstances it would be mandatory, except if it was on airport property, where the FAA would have some real authority."[13]

77. Even after FOMB explained to CMP that the Notices were merely recommendations, and not "Federal orders,"[14] CMP declined to change course.[15]

78. Why wouldn't CMP change course after realizing it was wrong? One possibility is that FOMB's proposed cheaper alternatives would mean less profit for CMP. In an email of June 22, 2020, CMP confirmed that the "total cost of the project is estimated to be $10M and [the cost] will be shared among customers in Maine and the New England region."

79. And due to FERC and ISO New England rate-setting mechanisms, CMP and its shareholders typically receive approximately 14% annual returns on their equity investment.

80. So an expensive equity investment project like the one at issue here – even if unnecessary for safety – results in a profit for CMP's *shareholders*, at the expense of Maine and New England *rate payers*.

H. CMP's proposed radar system will void the FAA No Hazard Determinations.

81. CMP claimed that the lights are required by the FAA's No Hazard Determinations. That was not true.

82. But even if that were true, the No Hazard Determinations will soon be voided by CMP's actions.

83. Both the 2018 and 2020 No Hazard Determinations for the Chop Point towers indicate that "This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause

[13] Ex. 5
[14] Ex. 3 (Letter to CMP).
[15] Ex. 4 (Letter from CMP).

Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination."

84. But CMP's proposed Active Aircraft Detection Lighting would use X-band radar at 9.2-9.5 GHz, frequencies not covered by the Colo Void Clause Coalition rule.

85. Accordingly, CMP is poised to void the very document that they rely on to justify their use of lights and an active detection system.

H. <u>The towers are forbidden by local ordinance.</u>

86. One of the towers lies in the Town of Woolwich; the other lies in the Town of Bath.

87. Both Towns' ordinances forbid CMP's lighting system.

88. The easterly tower lies within the Town of Woolwich's Rural District.

89. According to the Town of Woolwich's Planning Ordinance, the Rural District "shall be mainly farm and forest areas."

90. According to Article XI § F of that ordinance the following are banned from a Rural District: any "moving signs or devises, including but not limited to promotional flags, pennants **and flashing lights**." (Emphasis added.)

91. CMP did not seek or obtain a variance from the Woolwich Planning Ordinance for the tower's flashing lights.

92. The western Chop Point tower sits within the City of Bath's R3 Low Density Residential District. Compare Figure 5 (overlay of zoning map with location of tower) with City of Bath Zoning Map Key.[16]

93. According to the City's planning code, "Low-intensity development of this district is allowed for residential and home-based businesses that are compatible with the physical capability of the land." City of Bath Land Use Code, Section 8.03 (A).

[16] Available online at https://evocloud-prod3-public.s3.us-east-2.amazonaws.com/26/media/10494.pdf

94. The western Chop Point tower also falls within a Natural Resource Preservation Overlay District. Compare Figure 5 (overlay of zoning map with location of tower) with City of Bath Zoning Map Key.[17]

95. The Natural Resource Preservation Overlay District is "established along natural corridors and boundary areas associated with water bodies, wetlands, significant wildlife habitat, and unique natural and environmentally sensitive features." City of Bath Land Use Code, Section 8.18 (A).

96. Its purpose is to allow only "limited residential development while protecting fragile shoreline ecological systems that, if developed, would adversely affect water quality, wildlife and aquatic habitat and biotic systems, or ecological relationships." *Id.*

97. Here, the western tower, with its 5 lights flashing a total of 300 times per minute, is compatible with neither Bath's R3 Low Density Residential District nor its Natural Resource Preservation Overlay District.

[17] Available online at https://evocloud-prod3-public.s3.us-east-2.amazonaws.com/26/media/10494.pdf

Figure 5: An overlay of the City of Bath Zoning Map on top of satellite imagery. The yellow pin is the western-most tower of the Chop Point towers.

H. The towers' lights harm Plaintiffs' property.

A. The Towers Harm Plaintiff FOMB's Conservation Easements

98. FOMB is the owner of several conservation easements on land in the vicinity of the Chops Point towers.

99. Two of these easements are contiguous and lie directly across the Bay from the towers. They are about a mile away, and have a direct line-of-sight to the towers. They include about 62 acres of upland, 4,000 feet of waterfront and over 100 acres of highest value tidal wetland full of bird life, rare plants and millions of young fish. There is one perennially active bald eagle nest at the point closest to the Chops. Another 66 acres of upland easement and 30 acres of tidal wetland are just about 2 miles away.

100. FOMB has led efforts to protect over 1,500 acres around the Bay that are owned in fee by other parties now, either state agencies or other NGO's.

101. One of these properties, in direct view of the towers, includes a parcel of about 125 acres of wooded upland and wetland on the mainland, about 61 acres of highest-value tidal wetland, and the entire 3-acre Brick Island complete with perennially active bald eagle nest. There are approximately 6,000 feet of waterfront. FOMB has over $100,000.00 invested in protecting this parcel.

Fig 6: Brick Island, one of the pieces of property protected by FOMB's efforts.

102. The towers' lights undermine the conservation values of those easements and fee properties by disrupting ecosystems and critically altering nighttime environments.

103. According to Christopher Kyba of the German Research Center for Geoscience, for nocturnal animals, "the introduction of artificial light probably represents the most drastic change human beings have made to their environment."

104. Glare from artificial lights can also impact wetland habitats that are home to amphibians such as frogs and toads, whose nighttime croaking is part of the breeding ritual. Artificial lights disrupt this nocturnal activity, interfering with reproduction and reducing populations.

105. Birds that migrate or hunt at night navigate by moonlight and starlight. Artificial light can alter their behavior, attracting them or causing them to wander off course.

106. Many insects are drawn to light, but artificial lights can create a fatal attraction and may be a primary driver of massive worldwide insect decline. (Owens 2018)[18]

[18] https://onlinelibrary.wiley.com/doi/epdf/10.1002/ece3.4557

107. Thus, for wildlife, the less artificial light, the better; "minimum intensity, maximum off-duration". *See Manville*, USFWS 2007.

108. The use of artificial lights is of particular impact to the area's population of Northern Long-eared Bat (*Myotis septentrionalis*). The Northern Long-eared Bat is listed as "Threatened wherever found" under the federal Endangered Species Act,[19] and due to its nocturnal nature could be affected by the project's high-intensity nighttime lights.

109. For the Northern Long-eared Bat, the U.S. Fish & Wildlife Service recommends seeking to "minimize light pollution by angling lights downward or via other light minimization measures."[20] The same applies to Maine's endangered Little Brown Bat and the rest of our eight bats all considered "species of greatest conservation need" by the Maine Department of Inland Fisheries & Wildlife.

110. The lighting also has an impact on Merrymeeting Bay's bald eagle population. Although the bald eagle is no longer protected under the Maine Endangered Species Act (MESA) and the Federal Endangered Species Act (ESA), it continues to be protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (Eagle Act) and associated regulations. When listed under the MESA, one-quarter mile (1,320 ft.) regulatory Essential Habitat zones were created around all eagle nests. Here, there are at least four bald eagle nest sites in the immediate vicinity of the Chop Point towers, and at least eleven more in a somewhat broader area. The one-quarter mile protection zones persist as management guidelines under the Eagle Act. See Figure 7, below. Second only to Cobscook Bay, Merrymeeting Bay has been the next most successful area in the state for bald eagle recovery.

[19] https://ecos.fws.gov/ecp0/profile/speciesProfile.action?spcode=A0JE
[20] Key to the Northern Long-Eared Bat 4(d) Rule for Federal Actions that May Affect Northern Long-Eared Bats. Available online at https://www.fws.gov/Midwest/endangered/mammals/nleb/pdf/KeyFinal4dNLEB_FedAgencies17Feb2016.pdf

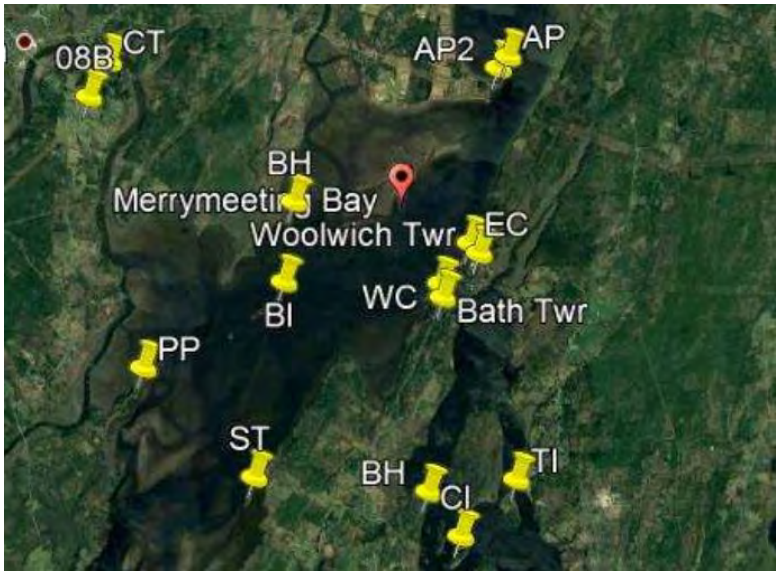

Figure 7: A map of surveyed bald eagle nests (yellow pins). The WC and EC pins are closest to the Chop Point towers.

111. These impacts, plus impacts to the insects, fish, and mammals that thrive in FOMB's conservation lands, undermine the purpose and value of FOMB's easements and other conservation lands as well as FOMB's mission and years of work.

B. The Towers Cause Harm to Ed Friedman's Use of His Property

112. Plaintiff Ed Friedman owns a piece of residential property on Abbagadasset Pt. in Bowdoinham that lies 1.6 miles from the eastern Chops Point tower.

113. He chose the property because of its location and view, which was unmarred by significant artificial light.

114. The CMP lights shine into Mr. Friedman's living room, dining room, kichen, office, porches, and bedroom.

115. The CMP lights have caused a decline in the resale value of Mr. Friedman's property.

116. Ed Friedman has more than 40 years as an instrument rated private pilot and 12 years as a commercial rotorcraft pilot with an active helicopter business in the Bay area.

117. Along with wildlife surveys and other environmental work, Friedman's helicopter business focuses on aerial photography and scenic flights.

118. The lights have negatively impacted the economic value of Mr. Friedman's helicopter business, by diminishing the rural nature of the area.

119. Friedman is a Maine Guide and also has operated a kayak business since 1985 offering guided tours and instruction. At times he has spent five days a week on the Bay with customers.

120. The lights have negatively impacted the economic value of Mr. Friedman's kayak business, by diminishing the rural nature of the area.

121. Friedman is disabled with lymphoplasmacytic lymphoma, an incurable type of non-Hodgkins lymphoma. His treating oncologist and osteopath both have recommended he minimize exposure to low-level radiofrequency radiation (RFR) to mitigate the progression of his lymphoma-related symptoms.

122. The proposed radar system would emit the kind of RFR Friedman's doctors have recommended he not be exposed to.

C. The Towers Cause Harm to Colleen Moore's Use of Her Property

123. Plaintiff Colleen Moore is a resident of Pleasant Point in Topsham, ME.

124. She owns residential property on the shore of the Bay in direct view of the towers.

125. Moore purchased her property in part due to its proximity to the water, as she is a world-class canoe racer.

126. The towers' lighting impairs her ability to practice her sport. When reflected off the water or in her peripheral vision, the blinking of the lights distract her from her focus on the water and her canoe stroke. That is because competitive canoe racing requires keeping close eye

on the environment to react to and take advantage of the environment, including waves, wind, etc. But the flashing of the lights impairs her ability to do that.

127. As a result, Moore is not able to practice at her property in the mornings.

128. The lights shine through into her, directly onto her deck, into her living room and home office, and into the dining room.

129. If Moore sits and looks at the lights from her deck or living room for a few minutes, she experiences some amount of nausea.

130. The lights have impaired Moore's ability to sleep in certain parts of her home.

131. At high tide, the light reflects off the water and increases the impact of the lights.

132. Moore experiences particular health sensitivity to RFR, and makes efforts to reduce exposure to RFR.

133. The lights have caused a decline in Moore's use and enjoyment of her property and also in the resale value of Moore's property.

D. The Towers Cause Harm to Kathleen McGee's Use of Her Property

134. Plaintiff Kathleen McGee owns, through an LLC, a share in shoreline property in Bowdoinham, ME.

135. McGee chose the property because of its location and view, which was unmarred by significant artificial light.

136. Her property is partly used for residential purposes, but she also has an apartment that she rents out.

137. The lights shine into the bedroom of her house, and into the living room and kitchen of the apartment she rents.

138. The lights have decreased the rental value of Ms. McGee's apartment.

139. The lights have caused a decline in McGee's use and enjoyment of her property and also in the resale value of her property.

I. The Active Aircraft Detection Lighting System's blanketing of a nearly 2,400 square miles with microwave radiation frequencies will exacerbate impacts on properties, people and wildlife in the area.

140. As described above, CMP has proposed to install an Active Aircraft Detection Lighting System on the Chops Point towers.

141. Despite the fact that CMP does not yet have permission from the FCC to operate the Active System, it is still moving forward with installation.

142. In a letter of May 11, 2020, CMP indicated that it is "expeditiously moving forward" with the installation of the Active Aircraft Detection Lighting System.

143. In an email of July 13, 2020, CMP wrote that "Beginning Wednesday, July 29, weather dependent, we will begin installing the radar system on the Woolwich-side lattice tower. Please anticipate some helicopter noise and some increased traffic on Chops Point Road. Given the anticipation for the radar system's installation, especially the presence of the helicopter, this activity is sure to draw attention. **For safety reasons, please do not go near the area**." (Emphasis added.)

144. The Active System, if operated, would blanket Merrymeeting Bay in X-band radar at radiofrequencies of 9.2-9.5 GHz.

145. The Active System would extend radar radiofrequency radiation to an area of 2,396 square miles surrounding the towers.[21]

146. The radar would then turn the lights on and off, depending on whether aircraft are detected approximately 3.5 miles from the towers present.

147. But while the Active System would ameliorate the light impacts of the towers, it would create a new impact potentially injurious to residents and the Bay's special environment.

[21] Ex. 7 (Viewshed Analysis) (Based on correspondence with DETECT, the radar system extends to a radius of 24 nautical miles, which covers a circle of 2396 square miles.)

148. Illustrative of this is a 2010 meta-analysis of peer-reviewed literature investigating possible effects of electromagnetic radiation (EMR) on humans and wildlife. Figure 2 from that report is replicated below:

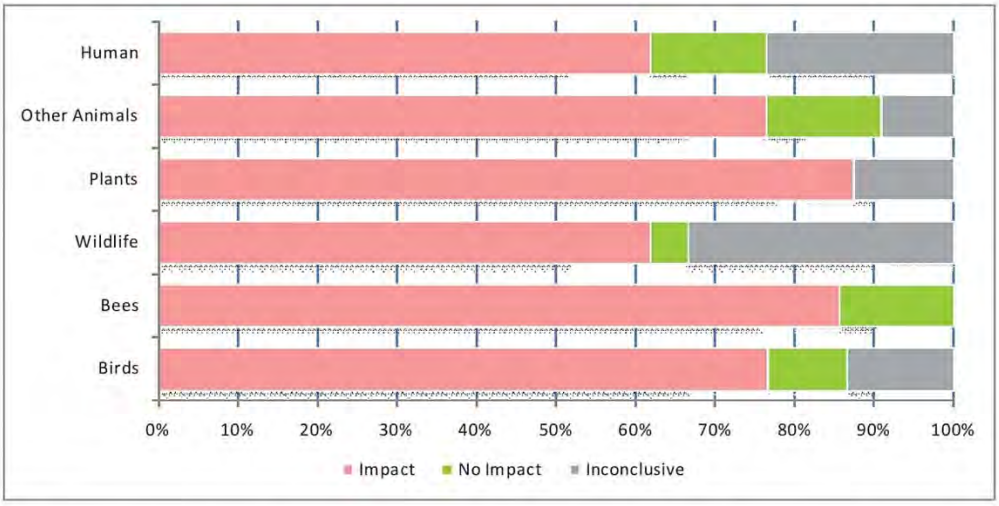

Fig. 2, Proportion of study results in various groups of organisms (n=919). The "Impact" (in red) indicates percentage of studies that reported harmful effect of EMR. (*Report on Possible Impacts of Communication Towers on Wildlife Including Birds and Bees, Ministry of Environment and Forest, Government of India, 2010*)

149. According to the U.S. Fish & Wildlife Service ("USFWS"), the Service is "growing concerned about potential impacts of tower radiation on resident and migrating birds and bats, listed species under our jurisdiction, and other potentially listed species under our jurisdiction, and other potentially impacted living resources including bees."[22]

150. The impacts identified by USFWS are particularly germane to the Bay's recovering bald eagle population: "A. Balmori (2003) provided USFWS preliminary research from Valladolid, Spain, showing strong negative correlations b/w levels of tower-emitted microwave radiation and bird breeding, nesting, and roosting in vicinity."[23]

151. Balmori's research published in 2005 showed productivity of bird nests within 200 meters of the RFR antenna to be approximately half of nests located beyond 300 meters

[22] Manville, Albert M., Senior Wildlife Biologist, USFWS, *U.S. Fish & Wildlife Service Concerns Over Potential Radiation Impacts of Cellular Potential Radiation Impacts of Cellular Communication Towers on Migratory Birds and Communication Towers on Migratory Birds and Other Wildlife Other Wildlife – Research Opportunities.* (May 10, 2007)
[23] *Id*.

from the stations, a significant reduction. He also found 12 nests (40%) in proximity to the antenna did not have chicks whereas only 1 nest (3.3%) beyond 300 meters was barren.

152. Sheridan, *et al.* in 2015 studied the effects of radar on avian populations and found that birds appeared to avoid stationary radar units and when faced with mobile radar units, these tended to elicit escape behavior in the birds.

153. Nicholls, *et al.* in 2009 found activity and foraging per unit of time significantly reduced in bats when exposed to EMR vs the control populations. They conducted this investigation hypothesizing that perhaps EMR transmitters could be deployed at wind farms to deter turbine mortality when bats hunted insects attracted to lights and or were caught up in blade eddies.

154. Similarly, the radar installation may have an impact on the base of the food chain. Thielens, *et al.* 2018, found insects show a maximum in absorbed radio frequency power at wavelengths that are comparable to their body size. They show a general increase in absorbed radio-frequency power above 6 GHz (until the frequencies where the wavelengths are comparable to their body size), which indicates that if the used power densities do not decrease, but shift (partly) to higher frequencies (*as with radar*, emphasis added), the absorption in the studied insects will increase as well. A shift of 10% of the incident power density to frequencies above 6 GHz would lead to an increase in absorbed power between 3–370%. This could lead to changes in insect behaviour, physiology, and morphology over time due to an increase in body temperatures, from dielectric heating.[24]

155. In 2011, the International Agency for Research on Cancer/World Health Organization (IARC/WHO) classified radiofrequency radiation (RFR) in frequencies from 30 KHz-300 GHz as a Group 2B possible human carcinogen.[25]

[24] Thielens, A., Bell, D., Mortimore, D.B. et al. Exposure of Insects to Radio-Frequency Electromagnetic Fields from 2 to 120 GHz. Sci Rep 8, 3924 (2018). https://doi.org/10.1038/s41598-018-22271-3
[25] https://www.iarc.fr/wp-content/uploads/2018/07/pr208_E.pdf

156. Since 2011 further research has been done in this field. A ten-year study by the National Institutes of Health's National Toxicology Program found "clear evidence" of heart tumors in male rats, "some evidence" of brain tumors in male rats, "some evidence" of adrenal tumors in male rats. The study also found significant increases in DNA damage to the frontal cortex of the brain in RFR exposed male mice, the blood cells of female mice, and the hippocampus of male rats.[26]

157. As described above, the active detection system proposed by CMP would utilize X-band radar at radiofrequencies of 9.2-9.5 GHz, squarely within what the WHO defined as a possible human carcinogen.

158. Plaintiffs are also concerned about the possible non-cancer impacts of the radar system's RFR. Lamech, 2014 found the most common RFR symptoms from RFR-emitting smart electric meters to be insomnia (48%), headaches (45%), tinnitus (33%), lethargy (32%), cognitive disturbance (30%), dysesthesias, including nerve pain, neuropathy, burning sensations, tremors, cold extremities, and poor circulation (20%), dizziness-loss of balance (19%), heart palpations (16%), and nausea (15%).

159. The relatively common suite of symptoms (and related ones) described by Lamech and many others, are indicative of adverse biological effects some suffer from microwave exposure. Because they were first observed and documented in developers of radar, they were diagnosis as radar sickness or "microwave illness." (Carpenter, 2015)[27] And, as Goldsmith noted in 1997[28]: "These findings suggest that RF exposures are potentially carcinogenic and have other health effects. Therefore, prudent avoidance of unneeded exposures is recommended as a precautionary measure."

160. There are also other problems with the proposed radar system. The FAA conducted a "Long Range Radar Report" with the Department of Defense and Department of

[26] https://ntp.niehs.nih.gov/whatwestudy/topics/cellphones/index.html
[27] https://pubmed.ncbi.nlm.nih.gov/26556835/
[28] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1469943/

Homeland Security, and determined that there would be an "[i]mpact highly likely to Air Defense and Homeland Security radars."[29]

161. Thus, if the nuisance lighting system is allowed to continue in operation, the proposed Active System will open up a new range of impacts on surrounding properties, residents and Merrymeeting Bay's unique wildlife and ecological resources.

V. Causes of Action

Cause One: Statutory Nuisance per M.R.S. 17, §2701
(All Plaintiffs Against Defendant)

162. 17 M.R.S. § 2701 provides that "Any person injured in his comfort, property or the enjoyment of his estate by a common and public or a private nuisance may maintain against the offender a civil action for his damages, unless otherwise specially provided."

163. Nuisances include the "erection, continuance or use of any building or place for the exercise of a trade, employment or manufacture that, by noxious exhalations, offensive smells or other annoyances, becomes injurious and dangerous to the health, comfort or property of individuals or of the public." 17 M.R.S. § 2802.

164. A building that is "offensive to the neighborhood" may be a nuisance. 17 M.R.S. § 2804.

165. Light impacts are explicitly contemplated by Maine statute as among the methods by which something may be a nuisance. *See* 17 M.R.S. § 2793 (lights are a nuisance when they "impair the vision of the driver of any motor vehicle upon said street or highway" or simulate "the flashing or rotating lights used on school buses, police, fire or highway vehicles, except safety signaling devices required by law.").

166. A successful nuisance suit can result in damages and costs, and also an order that "the nuisance [be] abated or removed at the expense of the defendant." 17 M.R.S. § 2702.

[29] Ex. 6.

167. Here, CMP has, through its unnecessary lighting system, created an annoyance injurious and dangerous to the health, comfort and property of individuals and the public.

Cause Two: Public Nuisance
(All Plaintiffs Against Defendant)

168. A public nuisance is actionable if "the defendant has violated or threatens to violate a public right and the plaintiff has suffered an injury different in kind from that sustained by the public generally." *Hanlin Group v. Intern. Minerals & Chemical Corp*., 759 F. Supp. 925, 935 (D. Me. 1990).

169. In determining whether a nuisance exists, courts look to: (a) whether the conduct involves a significant interference with the public health, the public safety, the public peace, the public comfort or the public convenience, or (b) whether the conduct is proscribed by a statute, ordinance or administrative regulation, or (c) whether the conduct is of a continuing nature or has produced a permanent or long-lasting effect, and, as the actor knows or has reason to know, has a significant effect upon the public right. Restatement (Second) of Torts §821B (1979)

170. Here, the towers' lighting system separately and or inclusive of the in-process AADLS meets all three tests for a public nuisance.

171. First, it involves a significant interference with the public health, the public safety, the public peace, the public comfort or the public convenience.

172. Second, it is proscribed by a statute, ordinance or administrative regulation. That is because the westerly Chop Point tower falls within the City of Bath's Natural Resource Preservation Overlay District. The Natural Resource Preservation Overlay District is "established along natural corridors and boundary areas associated with water bodies, wetlands, significant wildlife habitat, and unique natural and environmentally sensitive features."[30] Its purpose is to allow only "limited residential development while protecting fragile shoreline ecological systems that, if developed, would adversely affect water quality, wildlife and aquatic

[30] City of Bath Land Use Code, Section 8.18 (A).

habitat and biotic systems, or ecological relationships."[31] Here, the towers' lighting system is not "limited residential development," and so is proscribed by ordinance.

173. And in Woolwich, the easterly tower is proscribed by the Woolwich Planning Code which subjects development in the Rural District to the same restrictions as in the Resource Protection District namely: *C. Uses Permitted only by Special Exception Permits: After review and approval by the Planning Board on finding that:1. The proposed use is not harmful to natural resources or scenic values in, nor incompatible with use of, the surrounding area.2. The proposed use will not degrade the air or water or soil, and is not harmful to natural resources or scenic values in the area of proposed use.* Here, the towers' lighting system is not compatible with use of the surrounding area, and so is proscribed by ordinance.

174. On information and belief, there was no review and approval by the Woolwich Planning Board for a Special Exception Permit.

175. In Woolwich, no project application was even submitted to the Planning Board.

176. And third, the lighting system by itself (or inclusive of the in-process AADLS) is of a continuing nature or has produced a permanent or long-lasting effect, and, as the actor knows or has reason to know, has a significant effect upon the public right.

177. Plaintiffs separately and or as FOMB members are all persons and entities who have suffered injury different in kind from that sustained by the public generally. They are owners of specific properties and property rights impacted by the lights, and or users of Merrymeeting Bay

178. FOMB, in addition to its specific property rights, suffers particularized injury different in kind from that sustained by the public generally due to its charter to preserve, protect and improve the unique ecosystems of Merrymeeting Bay. *See Sierra Club v. Morton*, 405 U.S. 727 (1972).

[31] *Id*.

VI. Relief Requested

179. Plaintiffs request the following relief:

a. An injunction requiring CMP to deactivate the Chops Towers lighting system.

b. An injunction preventing CMP from installing its proposed Active Aircraft Detection Lighting System.

c. Damages in an amount to be determined at trial.

d. Costs

e. Any other relief this Court may determine to be just.

VII. Jury Demand

179. Plaintiffs hereby demand a Trial by Jury on all issues and claims so triable.

Respectfully Submitted,

/s/Bruce M. Merrill
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Exhibit 1

Friends of Merrymeeting Bay

P.O. Box 233, Richmond, ME 04357 www.fomb.org

12/24/19

Doug Herling, President, CEO
c/o Ken Farber, Senior Counsel
Central Maine Power
83 Edison Dr.
Augusta, ME 04336

Re. Chops Pt. Towers & Crossing, Merrymeeting Bay
Via E-mail to: kenneth.farber@avangrid.com

Doug,

As you no doubt have heard, the new CMP towers at the Chops crossing intrude dramatically on Merrymeeting Bay airspace and viewshed with their excessive and as it turns out, unneeded lighting. We understand too that an active aircraft detection lighting system is being considered as an alternative and this could worsen things further, blanketing the area with radar microwaves, often harmful to people and with evidence of adverse behavioral changes to birds, bats and other wildlife. For a densely populated area, this is a particularly bad idea. Friends of Merrymeeting Bay (FOMB) is adamantly opposed to such a system.

According to federal regulation (14 CFR § 77.17 a. 2.), contrary to popular opinion, these towers even unlit, are not obstructions to air navigation. Fortunately, the simplest solution, turning the lights off, provides the most satisfactory outcome for all parties and at the least cost. We are requesting CMP extinguish the lights and issue a Notice to Airmen (NOTAM) of unlit towers and wire crossing at these coordinates, at least pending resolution of a FAA Marking and Lighting Study which we ask you to apply for. Given the update cycles of FAA paper charts and that these towers are charted, the NOTAM need should expire when the pertinent charts are updated (6 month cycle for VFR Sectionals). Our recommendation is current unlit marking balls be kept in place and only if necessary, additional unlit balls marking the lower wires be installed. Please see below for details.

Thank you,

Ed Friedman, Chair
Friends of Merrymeeting Bay

Contents

2. Merrymeeting Bay, Chops
3. Dark Skies
4. Area Aviation
5. FAA Obstruction, Marking & Lighting Advisory Circular
6. FAA Obstruction Standards
7. Alternatives
   7A. Active ADLS
   7B. Passive ADLS
   7C. Lights Off-NOTAM
8. Recommendation
9. Exhibits

1. Friends of Merrymeeting Bay (FOMB) is an environmental non-profit with a membership of approximately 450 households. Our mission is to preserve and protect the unique ecosystems of Merrymeeting Bay and we do this through research, advocacy, education and land conservation. We have been here since 1975 and because we are uniquely holistic in our approach, sometimes our activities extend throughout the Gulf of Maine and beyond. www.fomb.org I write this not only on behalf of FOMB but also from the perspective of more than 40 years as an instrument rated private pilot and 12 years as a commercial rotorcraft pilot with an active helicopter business in the Bay area.

2. Merrymeeting Bay is an estuarine freshwater tidal riverine inland delta at the confluence of six rivers including two of Maine's largest, the Kennebec and Androscoggin. Our watershed includes nearly 40% of the state and part of NH and drains via the Chops and Kennebec River about 17 miles to the ocean. The upper Bay runs from the north end of Swan Island to Abbagadasset Pt., the middle Bay from Abbagadasset Pt. to the Chops and the lower Bay from the Chops to Thorne Head. Merrymeeting Bay is listed as an Important Bird Area by the American Bird Conservancy. It is the largest U.S. staging area for migratory waterfowl north of Chesapeake Bay and the second most successful recovery area for bald eagles in the state after Cobscook Bay. The Bay is globally unique and significant not just because of its geography, hydrography and varied bird life but for its populations of rare plants inhabiting the inter-tidal and 12 species of diadromous fish using the Bay for spawning and nursery habitat. It is the only body of water providing this habitat for all the migratory fish species in the Gulf of Maine. There are approximately eight bat species here, a plethora of songbirds and a seasonally consistent population of seals in the vicinity of the Chops crossing.
   http://www.friendsofmerrymeetingbay.org/fombnew/pages/about_bay/about_bay.htm

3. Dark Skies. Particularly for our proximity to population centers, Merrymeeting Bay has until erection of the new MPRP towers at Abbagadasset Pt. and the Abbagadasset River, been blessed with a wonderfully dark, peaceful and quiet night sky. Addition of the FAA approved catenary crossing lighting scheme at the Chops has ratcheted up the disturbance beyond belief. Virtually everyone around the Bay considers our airspace violated by the new night lights and adverse effects on wildlife even with blinking rather than steady lights can be profound. For wildlife, the less artificial light, the better; "minimum intensity, maximum off-duration". **(Ex. 1, Manville, USFWS 2007, PDF pg. 11)**

   A wide variety of increasing problems and dissatisfaction with light pollution of the night skies has spawned an International Dark Skies movement. https://www.darksky.org/ . Artificial lights disrupt ecosystems critically altering nighttime environments. According to research scientist Christopher Kyba, for nocturnal animals, "the introduction of

artificial light probably represents the most drastic change human beings have made to their environment."

"Predators use light to hunt, and prey species use darkness as cover," Kyba explains "Near cities, cloudy skies are now hundreds, or even thousands of times brighter than they were 200 years ago. We are only beginning to learn what a drastic effect this has had on nocturnal ecology." https://www.darksky.org/light-pollution/wildlife/

Glare from artificial lights can also impact wetland habitats that are home to amphibians such as frogs and toads, whose nighttime croaking is part of the breeding ritual. Artificial lights disrupt this nocturnal activity, interfering with reproduction and reducing populations.

Birds that migrate or hunt at night navigate by moonlight and starlight. Artificial light can cause them to wander off course and toward the dangerous nighttime landscapes of cities. Every year millions of birds die colliding with needlessly illuminated buildings and towers. Migratory birds depend on cues from properly timed seasonal schedules. Artificial lights can cause them to migrate too early or too late and miss ideal climate conditions for nesting, foraging and other behaviors.

Many insects are drawn to light, but artificial lights can create a fatal attraction and may be a primary driver of massive worldwide insect decline. (Owens 2018) https://onlinelibrary.wiley.com/doi/epdf/10.1002/ece3.4557 Declining insect populations negatively impact all species that rely on insects for food or pollination. Some predators exploit this attraction to their advantage, affecting food webs in unanticipated ways.

Thielens, et al 2018, found insects show a maximum in absorbed radio frequency power at wavelengths that are comparable to their body size. They show a general increase in absorbed radio-frequency power above 6 GHz (until the frequencies where the wavelengths are comparable to their body size), which indicates that if the used power densities do not decrease, but shift (partly) to higher frequencies (*as with radar, emphasis added*), the absorption in the studied insects will increase as well. A shift of 10% of the incident power density to frequencies above 6 GHz would lead to an increase in absorbed power between 3–370%. This could lead to changes in insect behaviour, physiology, and morphology over time due to an increase in body temperatures, from dielectric heating. https://www.nature.com/articles/s41598-018-22271-3 In a dramatic example of how aphids appear responding to radar 14 miles away, Dr. John Nash Ott has this short clip: https://www.youtube.com/watch?v=VKEnAPt4KEQ

4. Area Aviation. The old towers had been on site, (unlit) for more than 80 years according to CMP as quoted in The Times Record on 7/23/19. The Abbbagadasset Pt. and River towers were also unlit until the MPRP project. During this historic period, prior to escalating fuel prices following the 1973 oil crisis, area air traffic was substantially greater than in recent years, particularly with the Brunswick Naval Air Station closure and sale of Merrymeeting field to a developer. Merrymeeting Field (08B) in Bowdoinham began operations in 1945, Wiscasset (KIWI) in 1961 and Brunswick (now KBXM) in 1935 with alternating civil and military use over the years. Merrymeeting, now a private short field with turf runway open to the public is 2.6 nautical miles (NM) from the Chops, Wiscasset 5.1 NM and Brunswick 6.8 NM.

5. FAA Obstruction, Marking and Lighting Advisory Circular. **(Ex. 2, PDF pg. 35)** This 8/17/18 edition of the Advisory Circular (AC) sets forth standards for marking and lighting *obstructions that have been deemed to be* a hazard to air navigation. The FAA

recommends the guidelines and standards in this AC for determining the proper way to light and mark obstructions affecting *navigable airspace*.

> **Navigable airspace means airspace** at and above the *minimum flight altitudes* prescribed by or under this chapter, including airspace needed for safe takeoff and landing. **(**49 U.S. Code § 40102. Definitions**)**
>
> **§ 91.119 Minimum safe altitudes**: General
>
> Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:
>
> (a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.
>
> (b) Over *congested areas*. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft. (*The FAA does not define "congested area." "Rather than publish a definition so pilots can know how to shape their aeronautical behavior, the FAA purposefully doesn't—it comes up with its definition on a case-by-case basis. The FAA says it does that so it can balance the pilot's interests with the need to protect persons and property. In enforcement actions, the FAA has successfully declared that a congested area includes a group of people on an airport ramp, sunbathers on a beach, a small subdivision covering less than a quarter mile, and traffic on an Interstate highway."* *https://pilot-protection-services.aopa.org/news/2016/january/15/congested-area*)
>
> **(c)** Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.
>
> (d) Helicopters, powered parachutes, and weight-shift-control aircraft. If the operation is conducted without hazard to persons or property on the surface -
>
> (1) A helicopter may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section, provided each person operating the helicopter complies with any routes or altitudes specifically prescribed for helicopters by the FAA; and
>
> (2) A powered parachute or weight-shift aircraft may be operated at less than the minimums prescribed in paragraph (c) of this section.

This AC does not constitute a regulation and, in general, is not mandatory. *However, a sponsor proposing any type of construction or alteration of a structure that* ***may*** *affect the National Airspace System (NAS) is required under the provisions of Title 14 Code of Federal Regulations to notify the FAA by completing the Notice of Proposed Construction or Alteration form (FAA Form 7460-1)*. These guidelines *may* become mandatory as part of the FAA's determination **(Ex. 3 & 4, PDF pgs. 135, 141)** and *should* (not shall) *be followed on a case-by-case basis, as required.* (Emphasis added).

We interpret this to mean for structures that qualify as obstructions affecting navigable airspace, notification to the FAA via Form 7460-1 is required to ascertain whether or not they *may* be a hazard to air navigation vis a vis marking and lighting, but in general lighting and marking requirements are recommendations, not requirements. An FAA determination of a qualifying obstruction (see 6.) could become mandatory if it is an obstruction *and* if deemed to be an air navigation hazard. But, there is quite a bit of flexibility in those determinations and their "case by case" details. The prerequisite is whether or not a structure meets the obstruction standard. If a structure has, correctly or incorrectly already been subject to an FAA determination under 7460-1, it probably is necessary for a re-filing of 7460-1 to change that status if only to revise notifications to airmen via navigation charts. (4. *Why do I need to request a marking and lighting change? To remain in compliance with Title 14 CFR Part 77 and enable the FAA to ensure the change is captured in the Digital Obstacle File and made available to the flying community*.
https://oeaaa.faa.gov/oeaaa/external/searchAction.jsp?action=malFAQs).

§ 77.29 Evaluating aeronautical effect notes at (b), If you withdraw the proposed construction or alteration or revise it so that it is no longer identified as an obstruction, or if no further aeronautical study is necessary, the FAA may terminate the study

6. FAA Obstruction Standards. (14 CFR § 77.17). Any structure 499' above ground level (AGL) is considered an obstruction. The oft cited 200' threshold for obstacle lighting and marking comes from number (a) 2. of this section but its qualifiers regarding proximity to qualifying airports and subsequent conditions have in the instant case been overlooked.

> (a) An existing object, including a mobile object, is, and a future object would be an obstruction to air navigation if it is of greater height than any of the following heights or surfaces:
>
> **(2)** A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point (*center point*) of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet.

At 5.1 miles and a runway length of 3,397', Wiscasset (KIWI) is the closest qualifying airport to the Chops. **(Ex. 5, PDF pg. 147)** If the Chops towers were within 3 miles of KIWI, they would be considered an obstacle to air navigation at 200'. Since they are 5 miles from KIWI however, 100' is added for each additional mile up to a maximum of 499'. ***At 5 miles then, to meet the qualifying standard and be possibly deemed an obstruction to air navigation, the towers need to be at least 400' AGL. At 240' AGL, they simply are too short.*** And, *even if* the Advisory Circular standards were mandatory, these towers would not reach the minimum height to qualify as possible obstructions.

The unlit towers themselves do not appear, by definition, obstructions to air navigation. For their distance from KIWI, the closest qualifying airport, they fall substantially below what would be the 400' AGL threshold. Including actual transmission or catenary crossing lines in this evaluation, which is why the towers are present and which are less obviously visible, we look at minimum safe altitudes for air navigation under visual flight rules (VFR) and these depend on a case by case evaluation of whether the area is "congested" or not. If this area is considered congested which it no doubt would be when Chop Pt. School has students, campers or possibly just staff present, then minimum safe altitude is 1,000' over the highest obstacle which would be the 240' tower or 1,240 AGL. The same thing applies on West Chop Pt. because of the subdivision.

Even if the catenary lines were considered to be in an "uncongested area" according to **§ 91.119,** 500' above the surface would be the required minimum safe altitude unless over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure. Since the waterway measures 790' wide at the Chops **(Ex. 6, PDF pg. 149)**, a float plane flying up the middle would only have 400' on either side to shore and from the channel center to the closest Chop Pt School structure (a cabin) would still not be 500'. Offset to the west an aircraft could attain the necessary setback from Chop Pt. School but would come too close to the tower on West Chop Pt. and if not careful, some of the homes there. For fixed wing aircraft, a flight through the Chops below 500' AGL would not be in navigable airspace.

The only aircraft exempted from the minimum safe altitude requirements are helicopters, powered parachutes and weight-shift controlled aircraft. ("Flying Neighborly" has been a program of HAI, Helicopter Association International since 1982. Their recommendation is when avoidance is not possible, pilots flying VFR flights over noise-sensitive areas should make every effort to fly at not less than 2,000 feet above the surface, weather permitting, even though flight at a lower level may be consistent with the provisions of 91.119, Minimum Safe Altitudes."
https://www.portlandoregon.gov/transportation/article/701922 The Fly Neighborly Guide is one most helicopter pilots are familiar with and of course every licensed pilot knows to check charts and NOTAMS before flying into an unknown area where towers may be present. Pilots are also taught when confronted with transmission towers, to fly over them rather than risk hitting an unseen fine wire between them.

7. Alternatives. All of which probably require the filing of Form 7460-1 with the FAA.

7A. Active Aircraft Detection Lighting Systems (AADLS). Recognizing the Dark Sky issues discussed in Section 3 above, revised FAA Obstruction, Marking & Lighting Advisories now offer ADLS as an alternative to recommended lighting guidelines. Unfortunately, these systems, as approved by the FAA, use *active* radar to distinguish aircraft in the vicinity of structures, whether wind farms or transmission towers.

Pros: Full-time lighting of structures is avoided.

Cons: High costs, particularly at scales less than for large multi-structure scale deployments like wind farms. Adverse health and behavioral effects to people and wildlife. In 2011, the International Agency for Research on Cancer/World Health Organization (IARC/WHO) classified radiofrequency radiation (RFR) in frequencies from 30 KHz-300 GHz as a Group 2B possible human carcinogen.
https://www.iarc.fr/wp-content/uploads/2018/07/pr208_E.pdf RFR has been shown to cause carcinogenic and non-carcinogenic effects. Having worked on environmental issues for 50 years, I consider RFR proliferation to be the most important toxics issue of our time if only because of its ubiquitous nature. Others, like Bandara & Carpenter, (2018) **(Ex. 7, PDF pg. 151)** also believe the planetary aspect of exposure warrants immediate further attention.

The IARC cancer classification includes all sources of RFR. The exposure from mobile phone base stations, Wi-Fi access points, smart phones and meters, laptops, radar and tablets can be long-term, sometimes around the clock, both at home, work and at school. For children this risk may be accentuated because of a cumulative effect during a long lifetime use. Developing and immature cells can also be more sensitive to exposure to RF radiation.

Since 2011 further research has been done in this field and the "gold standard" 10 year-$30 million National Toxicology Program (NTP is part of the National Institutes of Health) stands out, finding "*clear evidence*" of heart tumors in male rats, "*some evidence*" of brain tumors in male rats , "*some evidence*" of adrenal tumors in male rats. The study also found significant increases in DNA damage to the frontal cortex of the brain in RFR exposed male mice, the blood cells of female mice, and the hippocampus of male rats.
https://ntp.niehs.nih.gov/whatwestudy/topics/cellphones/index.html?utm_source=direct&utm_medium=prod&utm_campaign=ntpgolinks&utm_term=cellphone

Since the NTP study and independent confirmation in a similar study by the Ramazzini Institute in Italy https://www.ncbi.nlm.nih.gov/pubmed/29530389 , many scientists have been calling for a reevaluation of the WHO classification, (Miller, et al 2019 https://www.frontiersin.org/articles/10.3389/fpubh.2019.00223/full) to Group 2A-probable or Group 1-known human carcinogen. (Belpomme, et al., 2018 https://ecfsapi.fcc.gov/file/12103008105187/nonionizing%20radiation%20international%20perspective%20Belpomme%20Hardell%20Carpenter%202018.pdf)

Cancers can have long latency periods, often 30 years before detection. In contrast, non-cancer effects from RFR exposure can occur very rapidly from minutes to days with very debilitating effects. As an AADLS is considered at the Chops, it is critical to understand proximity to radar is where electromagnetic sensitivity first became commonly known. Microwave generating equipment first became prevalent during World War II with the development of radar. Soviet bloc countries reported that individuals exposed to microwaves frequently developed headaches, fatigue, loss of appetite, sleepiness, difficulty in concentration, poor memory, emotional instability, and labile cardiovascular function, and established stringent exposure standards.

For a variety of reasons these reports were discounted in Western countries, where the prevailing belief was that there could be no adverse health effects of electromagnetic fields (EMFs) that were not mediated by tissue heating. The reported Soviet effects were at lower intensities than those that cause heating. However, there were several accidental exposures of radar operators in Western countries that resulted in persistent symptoms similar to those described above.

The Soviets irradiated the US Embassy in Moscow with microwaves during the period 1953-1975, and while no convincing evidence of elevated cancer rates was reported, there were reports of "microwave illness". Officials passed these complaints off as being due to anxiety, not effects of the microwave exposure. There is increasing evidence that the "microwave syndrome" or "electro-hypersensitivity" (EHS) is a real disease that is caused by exposure to EMFs, especially those in the microwave range.

The reported incidence of the syndrome is increasing along with increasing exposure to EMFs from electricity, WiFi, mobile phones and towers, smart meters and many other wireless devices. Why some individuals are more sensitive is unclear. While most individuals who report having EHS do not have a specific history of an acute exposure, excessive exposure to EMFs, even for a brief period of time, can induce the syndrome. **(Ex. 8, Carpenter 2015, PDF pg. 155)**.

Adverse effects of RFR are not limited to people but affect wildlife as well. Testimony by The Environmental Heath Trust (www.ehtrust.org) regarding proposed expansion of cell coverage in Teton National Park does an excellent job at providing many top-quality references to wildlife effects. **(Ex. 9, Davis, 2018, PDF pg. 162)**. Research specific to radar effects on bats includes Nicholls, (2009)

https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0006246&type=printable and on birds, Sheridan (2015) https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2728&context=icwdm_usdanwrc

As bad as the tower lights are, an Active ADLS is far worse because of the health risks and again, no active deterrent is needed. Exposure to electromagnetic fields is considered high risk by major insurers like Loyd's of London. In request for clarification on this policy language: *General Insurance Exclusions: 31) directly or indirectly arising out of, resulting from or contributed to by electromagnetic fields, electromagnetic radiation, electromagnetism, radio waves or noise*., this response was received on Feb. 18, 2015 from CFC Underwriting LTD, London, UK agent for Lloyd's: "'The Electromagnetic Fields Exclusion (Exclusion 32) is **a General Insurance Exclusion and is applied across the market as standard. The purpose of the exclusion is to exclude cover for illnesses caused by continuous long-term non-ionising radiation exposure i.e. through mobile phone usage."** https://nowhere.news/index.php/2018/10/27/lloyds-refuses-liability-coverage-for-emf-radiation-exposure-mobile-phones/ FOMB is vehemently opposed to AADLS.

7B. Passive Aircraft Detection Lighting Systems (PADLS). Passive radar detection using only receivers, takes opportunistic advantage of commercial broadcasting in the vicinity to discern aircraft, noting the differences using multiple receivers, when those broadcast signals are penetrated by the target and then determining location. (Griffiths, 2017) https://in.bgu.ac.il/en/engn/ece/radar/Radar2017/Documents/Prof.%20Hugh%20Griffiths%20-%20Passive%20Radar%20-%20From%20Inception%20to%20Maturity.pdf (Limnaios, 2019) https://www.researchgate.net/publication/332119662_Passive_Radars_and_their_use_in_the_Modern_Battlefield ; (Hensoldt, 2019) https://www.hensoldt.net/fileadmin/hensoldt/Solutions/Air/Surveillance_Reconnaissance/0570_18_TwInvis_Passive_Radar_datasheet_E_preview.pdf

Pros: No emissions, no electro-magnetic pollution, lower cost than AADLS, flexible in deployment, excellent at tracking low flying small aircraft, no FCC licensing issues. (Dirkshof, 2018) https://www.dirkshof.de/fileadmin/Dateien/Passivradar_Infos/Parasol_06_2018_E.pdf

Cons: Thus far, the only commercially available PADLS is called PARASOL, designed by Fraunhofer and manufactured in conjunction with Dirkshof, a wind farm firm in Germany. https://www.fhr.fraunhofer.de/en/press-media/press-releases/PARASOL-receives-accreditation-from-german-air-traffic-control.html It has been approved by German Air Traffic Control for ADLS throughout the country where Germans have protested strongly about red nighttime warning lights (required for towers over 300m) and electromagnetic radiation from AADLS. In email correspondence with Fraunhofer about the Chops project as a possible demonstration site, they did some research and found North American commercial broadcasting occurs at somewhat different modulations than in Europe and so their technology is not transferable out of the box. Fraunhofer is interested in researching our markets but is concentrating closer to home at the moment.

While PADLS's are acceptable to FOMB, like lights or AADLS, they are not needed.

7C. Lights off - Notice to Airmen (NOTAM). https://www.faa.gov/documentLibrary/media/Order/7930.2S_Notices_to_Airmen_(NOTAM).pdf

Pros: A NOTAM for unlit towers at Chops crossing can be actuated with a simple phone call to 1-877-487-6867. This is sort of the opposite of CMP's "Flip a switch and we're there" advertisements. Modern updates to the NOTAM system can be read about here: https://www.faa.gov/about/initiatives/notam/. Lights off are better for wildlife, residents, dark skies, zero cost [once FAA process is complete) and because of smart grid, lights remain easily functional for emergency use on request [i.e. For SAR in immediate area], Turning the lights off provides excellent PR for CMP and because it's the simplest and cheapest solution to a problem that actually exists (vs. TRC's "off the shelf solution" to a problem that did not exist), it truly creates a win/win for all parties.

Con: Turning the lights off is considered an alteration and in accordance with 14 CFR Part 77.9, if you propose "any of the following types of construction or alteration, you must file a 7460-1 notice with the FAA at least 45 days prior to beginning construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:…OR any construction or alteration exceeding 200 feet above ground level, regardless of location." It is unclear to me if this is considered synonymous with or the initiation of a Marking & Lighting Study request suggested by Dave Maddox who signed off on the original Determination of No Hazard to Air Navigation. In a phone call, Dave also emphasized to me that the FAA was flexible in working with the "sponsor" (CMP) and that neighborhood input can play a role in their decision

8. Recommendation:

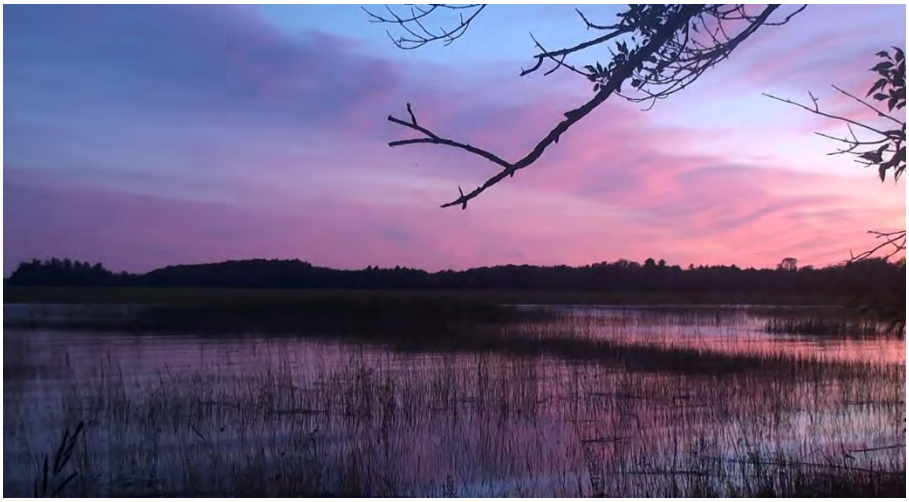
a. Call in interim NOTAM for unlit towers at Chops at least pending Marking and Lighting Study and or acceptance of alteration proposal.
b. Please turn lights off within 14 days.

.

Basis for alteration-

1. Guidelines are recommendations unless they *may* become mandatory on a case by case basis based on determination
2. Towers not obstacles by virtue of height and distance from KIWI
3. Catenary wires not obstacles to fixed wing aircraft by virtue of minimum safe altitudes and proximity to structures and people.
4. Virtually no air traffic, 80 year history no lights at catenary crossing
5. Nobody flies that low at night
6. Community opposed to lights
7. Significant wildlife corridor area-adverse impacts of lights
8. Active ADLS-harmful EMR emissions

Exhibits



No lights

New Dusk (actually red)

New Night (actually bright red)

Exhibit 2

CENTRAL MAINE POWER

David T. Flanagan
Executive Chairman CMP

April 13, 2020

Ed Friedman
Via E-mail

Dear Ed:

Now that our back to back storms are behind us, I am anxious to get back to you. Please be assured I have read your letter and done my best to become very familiar with the project, its history, and efforts by CMP to improve the power reliability to the 8,000 residents of the area while mitigating the impacts of the transmission tower lights.

The fundamental issue is very straightforward. Contrary to your conclusion, there is, in fact, an outstanding FAA decision, which has the force of law, 14 CFR Part 77, which is not merely advisory, but compels us to install and maintain warning lights on these towers. It's further my understanding that the FOMB challenged this determination and made its own request to the FAA on February 21 to rescind this requirement, but this request was denied by the FAA on March 12.

CMP is acting in accordance with a lawful safety requirement imposed by an agency of the federal government and we have no choice but to comply unless and until the decision of the FAA is changed. Far from failing to exercise good citizenship as you suggest, following a lawful, mandatory agency decision made in the interest of public safety, while finding solutions to mitigate the impacts on the local community, is exactly the definition of responsible corporate citizenship.

Ed, we simply cannot unilaterally defy a lawful Federal order. But we are doing everything we can to mitigate the amount and duration of light in the area, including taking the extra step of installing lights that are only activated when an aircraft is in the vicinity. If, as you assert, the number of aircraft in the area and at the triggering altitude is extremely low, then the lights should only activate very rarely and very briefly.

Finally, as you delve into the business of utility capital expenditures, I want to assure you that these extra measures and extra costs that CMP is taking on are the result of our desire to accommodate the community to the greatest degree possible under the law. CMP has a long-term capital investment plan focused on improving system reliability for the state, while

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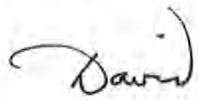
www.cmpco.com, email: david.flanagan@cmpco.com

AVANGRID

strengthening the grid for the region. But we cannot and will not knowingly violate a legal order issued by a federal agency with jurisdiction.

I appreciate your understanding.

Sincerely,



David T. Flanagan
Executive Chairman

Cc
Eloise Vitelli
Denise Tepler
Sean Paulhus
Seth Berry
Allison Hepler
Barry Hobbins

Exhibit 3

Law Office of William Most

201 St. Charles Ave., Ste. 114, # 101 ♦ New Orleans, LA 70170

(504) 509-5023 williammost@gmail.com

David T. Flanagan
Executive Chairman
Central Maine Power
83 Edison Drive
Augusta, ME 04336
Via email to david.flanagan@cmpco.com

April 29, 2020

Re: Whether CMP is Under a "Federal Order" to Light the Chop Point Towers

Dear Mr. Flanagan,

I represent Friends of Merrymeeting Bay ("FOMB") regarding its concerns about the Chop Point Towers. I was very glad to read your April 13, 2020 letter to Mr. Friedman for two reasons. First, because I appreciate your openness to dialogue about FOMB's concerns, which I hope we can continue. And second, because your letter identified a fundamental issue that we can resolve very quickly.

That issue is that you believe there is a "an outstanding FAA decision, which has the force of law, 14 CFR Part 77, which is not merely advisory, but compels [CMP] to install and maintain warning lights on these towers." You explain that you have "no choice but to comply" because you are following a "lawful Federal order."

FOMB, of course, has no wish for CMP to violate any Federal order. Fortunately, that is not the situation here. There are two things that you might be referring to as a "Federal order": the first being 14 CFR Part 77, and the second FAA's Notice of No Hazard Determinations. Neither of them, however, is an order compelling CMP to install lighting.

A. According to CMP's expert Clyde Pittman, 14 CFR Part 77 does not compel lighting.

14 CFR Part 77 does not mandate lighting of the Chop Point Towers. Under that section of the federal regulations, the Chops Point Towers would have to be at least 400' AGL to count as an automatic obstruction, and thus automatically require lighting and marking. At 240' AGL, the Chop Point towers are far below that threshold.

And your expert agrees. CMP hired Clyde Pittman, Director of Engineering of Federal Airways & Airspace, Inc. to issue an opinion about the Chop Point Towers. In his opinion letter of January 27, 2020, he concluded that "the Chop Point towers do not meet the requirements of 14 CFR Part 77 to automatically require lighting/marking because the towers are not located within the mandated distance from an airport." (Emphasis added.)

B. The Notice of No Hazard Determinations are "recommendations," not orders – and have "no enforceable legal effect."

The other "order" you might be referring to is the pair of No Hazard Determinations issued by the FAA for the Chop Point Towers. Those notices suggest that the No Hazard Determinations are conditioned on the structures being "marked/lighted in accordance with FAA Advisory circular 70/7460-1."

But these are merely recommendations, not orders. How do we know this? The FAA itself describes them as recommendations. In its April 15, 2020 letter, the FAA says that a discretionary review is not appropriate *because* the Determination of No Hazard is issued "for a marking and lighting recommendation." (Emphasis added; letter enclosed.)

This has been corroborated by federal courts: the "FAA's hazard determinations, by themselves, have 'no enforceable legal effect.'" *Town of Barnstable, Mass. v. FAA*, 659 F. 3d 28, 31 (D.C. Cir. 2011), *citing BFI Waste Sys. v. FAA*, 293 F.3d 527, 530 (D.C. Cir. 2002) ("A hazard/no-hazard determination has "no enforceable legal effect."). See also *Air Line Pilots' Association International v. FAA*, 446 F.2d 236, 240 (5th Cir. 1971) (no hazard determinations ask encourage only "voluntary cooperation.")

The FAA has confirmed this with regard to the Chop Point Towers. Richard Doucette, of the FAA's New England Office, wrote with regard to the Towers: "Every determination issued is 'advisory.' It has no regulatory weight. . . .We issued an advisory opinion after CMP filed an airspace case. I do not know under what circumstances it would be mandatory, except if it was on airport property, where the FAA would have some real authority."

C. Conclusion

If CMP really believed that that it was subject to a "Federal order" with "no choice but to comply," it is very understandable that it would have moved forward with the lighting system.

However, now that you understand that the FAA has merely made a *recommendation* with "no enforceable legal effect," we expect that you will reconsider FOMB's request.

Specifically, rather than a med-dual lighting system and an Active Aircraft Detection Lighting System, they propose a Notice to Airmen (NOTAM) of unlit towers and wire crossing at these coordinates, plus the maintenance of the current unlit marking balls or additional unlit balls marking the lower wires if necessary. If lights are necessary for air safety, FOMB proposes a Passive Aircraft Detection Lighting Systems (PADLS) in lieu of an active system.

When would be a good time for FOMB to meet with your team to discuss possible options for the Chop Point Towers?

Very truly yours,

William Most

Cc: Ed Friedman, Chair, Friends of Merrymeeting Bay
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denise.tepler@legislature.maine.gov;
sean.paulhus@legislature.maine.gov;

seth.berry@legislature.maine.gov;
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barry.hobbins@maine.gov

Exhibit 4

Kenneth Farber
Senior Counsel

May 11, 2020

Law Office of William Most
201 St. Charles Ave. Suite 114, # 101
New Orleans, Louisiana 70170

Dear Mr. Most:

Thank you for your April 29, 2020 letter on behalf of the Friends of Merrymeeting Bay. Based on our review as well as conversations between our office and officials at the Federal Aviation Administration, we have concluded that the Company is acting both reasonably and responsibly. We heard the community concerns with the current lighting. In response, we sought and received FAA approval of the aircraft detection lighting system and are expeditiously moving forward with its installation. This course of action should eliminate the community impacts of the current lighting, protect aviators, and help ensure safe and reliable service to our customers.

CMP made the decision to pursue the radar system option to address the community concerns. In making that decision we sought input from aviation technical experts as well as advice from a prominent Washington D.C. law firm with an extensive aviation practice. We did so because our Company is expert in providing electric utility services. We are not, however, aviation experts. Based on our experts' collective input, our internal understanding and the feedback from the FAA, we are certain that our course of action has been the safest, most appropriate decision. Your client's longstanding suggestion to eliminate the lighting altogether and ignore the FAA's March 25, 2020 Determination of No Hazard to Navigation Letter that is conditioned on including the radar system would not be a responsible or reasonable course of action.

Respectfully, we believe your letter downplays the significance of the FAA Determination Letter and is not accurate regarding the guidance Mr. Pittman provided to CMP regarding the implications of the Determination Letter. While you note that Mr. Pittman stated that the tower did not meet the requirements of 14 CFR 77 that automatically required lighting, you did not note that the letter also said that "because the FAA Determination letter specifically includes an obstruction lighting specification, it is the FAA policy that the lighting is mandatory." His position is consistent with the language in the FAA Advisory Circular that states:

> Application: The FAA recommends the guidelines and standards in this AC for determining the proper way to light and mark obstructions affecting navigable airspace. This AC does not constitute a regulation and, in general, is not mandatory. However, a sponsor proposing any type of construction or alteration of a structure that may affect the National Airspace System (NAS) is required under the provisions of Title 14 Code of Federal Regulations to notify the FAA

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> by completing the Notice of Proposed Construction or Alteration form (FAA Form 7460-1). These guidelines may become mandatory as part of the FAA's determination and should be followed on a case-by-case basis, as required. (emphasis added).

Mr. Pittman's understanding is consistent with the feedback CMP received from Capitol Airspace Group, an expert that CMP retained to provide another set of eyes on the issue. Also, in January when the Company was considering going back to the FAA in response to the community feedback, each of the consultants separately advised the Company that the FAA would require some form of lighting. We were also advised by the aviation attorneys that on technical issues such as the one we were facing, it would be prudent to rely on the recommendations of our aviation technical experts, which we did.

Let me address your comments regarding the FAA's March 25, 2020, Determination of No Hazard letter to CMP. That determination was specifically conditioned on the structures being marked / lighted with a med-dual system. The letter also authorized the use of the proposed Aircraft Detection Lighting System. In your letter, you quoted a portion of the case law that found "the FAA determination has no enforceable legal effect." However, that statement is out of context as it doesn't include the rest of the paragraph, which reads:

> Once issued, a hazard/no-hazard determination has no enforceable legal effect. The FAA is not empowered to prohibit or limit proposed construction it deems dangerous to air navigation. Nevertheless, the ruling has substantial practical impact. The Federal Communications Commission, for example, considers the FAA's classification in granting permits for the construction of broadcast towers. 47 C.F.R. s 17.4 (1978). The ruling may also affect the ability of a sponsor proposing construction to acquire insurance or to secure financing. Primarily, however, the determination promotes air safety through "moral suasion" by encouraging the voluntary cooperation of sponsors of potentially hazardous structures. Air Line Pilots' Association International v. FAA, 446 F.2d 236, 240 (5th Cir. 1971).

So while the FAA might not have enforcement authority, the FAA's determination carries great weight and significance in other regulatory and business settings as well as in personal injury litigation. The FAA's determination, establishes the standard of care to be followed consistent with the FAA's statutory obligations to provide for aviation safety. Abdullah v. American Airlines, Inc. 181 F.3d. 363 367, (3rd Cir. 1999). (Federal law establishes the applicable standards of care in the field of air safety, generally, thus preempting the entire field from state and territorial regulation.) Moreover, if there were a personal injury claim as a result of an accident, under Maine law, the failure to follow the FAA's directive would likely be used by a plaintiff's attorney to demonstrate evidence of negligence. *Castine Energy Const., Inc. v. T.T. Dunphy, Inc.*, 2004 ME 129, ¶ 9, 861 A.2d 671. It would be irresponsible for CMP to disregard the FAA's safety determination. Such an action would subject the Company to substantially greater liability risks if there were an accident and frankly creates more likelihood that an accident could occur, which CMP firmly wants to avoid.

After the Company received the Determination Letter conditioned on the lighting, your client commented that CMP should have requested that no lighting be required for the

new Chop Point towers, and that the Company could still make that request. I understand that it has been your client's opinion that, based on the specific facts, the FAA would likely grant such a request. In response, we want to assure you that we had fully run this aspect to ground here at CMP. Therefore, the legal team followed up with the FAA directly to understand the status and options around reconsideration. In speaking with the FAA specialist who handled the application from the Friends of Merrymeeting Bay as well as CMP's application, it was made clear that the FAA would not have issued a Determination of No Hazard letter for an application that did not include lighting, given the facts of this matter. In addition, the CMP attorney also spoke with the applicable supervisor who was familiar with the applications as he had reviewed them. He confirmed that lighting is necessary and a request for no lighting would not have been acceptable given the height of the towers and their locations. I hope this puts to rest your client's thought that CMP should have requested no lighting and that the request would have been granted.

Finally, your letter recommends that if lighting is necessary, CMP should use a Passive Aircraft Detection Lighting System ("PADLS"). We have been advised by our expert that at this point, the FAA would not allow a system like that to mitigate obstruction lighting. As he explained, PADLs pose technical/operational challenges that make them an unacceptable alternative. First, for the system to ensure safety, all aircraft must have compliant transponder systems. Second, to be effective, the PADL must be located in a region where multiple radars already exist to supply 100% detection within the region. The issue in the United States is that not only are there no areas in existence where detection of low flying aircraft are near 100%, but also that there are thousands upon thousands of aircraft with no transponder system onboard. This is simply not a viable alternative.

As we have previously commented to your client, CMP has acted appropriately and in the best interests of the community in pursuing the radar system to address the concerns raised by the residents. Of course, Friends of Merrymeeting Bay are always free to submit its own recommendation to the FAA. This time we would welcome receiving a copy of any communications you may wish to have with them. Thank you for your consideration.

Sincerely,

Kenneth W. Farber

Kenneth Farber
Senior Counsel
Avangrid Service Company on Behalf of Central Maine Power

Cc: Ed Friedman, Chair, Friends of Merrymeeting Bay
eloise.vitelli@legislature.maine.gov;
denise.tepler@legislature.maine.gov;
sean.paulhus@legislature.maine.gov;
seth.berry@legislature.maine.gov;
allison.hepler@legislature.maine.gov;
barry.hobbins@maine.gov

Exhibit 5

Gmail

William Most <williammost@gmail.com>

FW: Question/Comment about Order 5050.4B

William Most <williammost@gmail.com> Sat, Apr 18, 2020 at 11:33 AM
To: William Most <williammost@gmail.com>

From: Doucette, Richard (FAA) [mailto:richard.doucette@faa.gov]
Sent: Monday, March 02, 2020 11:38 AM
To: Ed Friedman
Subject: RE: Question/Comment about Order 5050.4B

That “may” after “guidelines” is key. Even the word “guidelines” indicates it is not mandatory. I do not know under what circumstances it would be mandatory, except if it was on airport property, where the FAA would have some real authority.

The trigger for filing for an airspace determination is whether the structures is 200ft or more above ground. If its less than 200ft tall then there is no requirement to file, and likely no obstruction lights…unless the power company has its own “guidelines”.

Richard P. Doucette

Federal Aviation Administration

1200 District Avenue

Burlington MA 01803

781-238-7613

From: Ed Friedman <edfomb@comcast.net>
Sent: Monday, March 02, 2020 11:26 AM
To: Doucette, Richard (FAA) <richard.doucette@faa.gov>
Subject: RE: Question/Comment about Order 5050.4B

Thanks, the below is what makes it confusing.

From the AC

3. **Application.**

   The FAA recommends the guidelines and standards in this AC for determining the proper way to light and mark obstructions affecting navigable airspace. This AC does not constitute a regulation and, in general, is not mandatory. However, a sponsor proposing any type of construction or alteration of a structure that may affect the National Airspace System (NAS) is required under the provisions of Title 14 Code of Federal Regulations to notify the FAA by completing the Notice of Proposed Construction or Alteration form (FAA Form 7460-1). **These guidelines may become mandatory as part of the FAA's determination and should be followed on a case-by- case basis, as required.**

From the Determination of No Hazard-

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 1, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8(MDual),& 12.

From: Doucette, Richard (FAA) [mailto:richard.doucette@faa.gov]
Sent: Monday, March 02, 2020 8:33 AM
To: Ed Friedman
Subject: RE: Question/Comment about Order 5050.4B

Airspace determinations made by the FAA are recommendations/advisory. Airspace determinations are not permits/approvals.

Richard P. Doucette

Federal Aviation Administration

1200 District Avenue

Burlington MA 01803

781-238-7613

From: Ed Friedman <edfomb@comcast.net>
Sent: Sunday, March 01, 2020 8:14 PM
To: Doucette, Richard (FAA) <richard.doucette@faa.gov>; Lamprecht, Michael (FAA) <Michael.Lamprecht@faa.gov>
Subject: RE: Question/Comment about Order 5050.4B

To clarify, you are saying the attached have no regulatory weight even once issued? I read your response below as that the environmental review side of your house issued an advisory opinion [We issued an advisory opinion after CMP filed an airspace case.] but from your immediate response just below, perhaps you were

referring to the attached determinations and no environmental opinion was requested or issued? The “We” in brackets above being the FAA, not your part of it?

Thanks,

Ed

From: Doucette, Richard (FAA) [mailto:richard.doucette@faa.gov]
Sent: Sunday, March 01, 2020 6:52 PM
To: Ed Friedman; Lamprecht, Michael (FAA)
Subject: Re: Question/Comment about Order 5050.4B

Every determination issued is "advisory". It has no regulatory weight.
It does not meet the NEPA definition of a federal action.
The

From: Ed Friedman <edfomb@comcast.net>
Sent: Friday, February 28, 2020 11:07:50 PM
To: Doucette, Richard (FAA) <richard.doucette@faa.gov>; Lamprecht, Michael (FAA) <Michael.Lamprecht@faa.gov>
Subject: RE: Question/Comment about Order 5050.4B

Thank you for your response. Can you please provide me a copy of the advisory opinion you mention below, assuming it is different than the Notices of No Hazard Determination I sent you?

Thanks,

Ed

From: Doucette, Richard (FAA) [mailto:richard.doucette@faa.gov]
Sent: Friday, February 28, 2020 9:24 PM
To: Ed Friedman; Lamprecht, Michael (FAA)
Subject: Re: Question/Comment about Order 5050.4B

Mr Friedman

FAA airspace determinations are advisory only, and they are not handled by this division of the FAA. Your concerns RE actions taken by CMP must be raised with them. If CMP has proposed lower structures, the FAA office may have advised differently. I cannot say, as this office does not manage airspace issues outside the boundary of an airport.

The FAA took no federal action under NEPA. We issued no permits or approvals. We issued an advisory opinion after CMP filed an airspace case. Airspace determinations are not federal actions subject to NEPA

We do not conduct NEPA review of other agencies actions. Our environmental orders provide guidance to the FAA on how we conduct NEPA for our federal actions. These orders are not relevant here. Your best, perhaps only, recourse is to direct your concerns to CMP. If they are not responsive then I would seek assistance from you state/federal elected representatives.

Richard Doucette
FAA New England

From: Ed Friedman <edfomb@comcast.net>
Sent: Friday, February 28, 2020 5:59:53 PM
To: Lamprecht, Michael (FAA) <Michael.Lamprecht@faa.gov>
Cc: Doucette, Richard (FAA) <richard.doucette@faa.gov>; Ed Friedman <edfomb@comcast.net>
Subject: Question/Comment about Order 5050.4B

Michael & Richard,

Thanks for getting back to me.

I have been working on the NEPA initial CATEX checklist to facilitate some level of review by your office. There are many areas of concern on the checklist. This is not an airport project but "off airport" projects are certainly subject to obstruction review and permitting by the FAA. I had sent you the Notices of No Hazard Determination issued by the Obstruction Division provided marking and lighting was done according to the sponsor's application. These were exhibits in the large letter we wrote to CMP, the sponsor, and are attached here separately. The sponsor had unfortunately never gone to the Obstruction Division with a lesser proposal and the Obstruction staff told me they do not take into consideration any environmental effects in their evaluations.

Here is where it starts getting confusing:

Specific FAA actions subject to NEPA review include, but are not limited to, grants, loans, contracts, leases, construction and installation actions, ***procedural actions****, research activities, rulemaking and* ***regulatory actions****, certifications, licensing, permits,* ***plans requiring approval****,*

and legislation proposed by the FAA. ***See FAA Order 1050.1F*** *for more detail on actions subject to NEPA.*

While the Notices of Determination certainly appear to be at minimum procedural issues-sponsors are supposed to check in with the FAA when an obstruction is 200' AGL or higher, and while the Marking and Lighting Circular https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_-_Obstuction_Marking_and_Lighting_-_Change_2.pdf at first glance appears to be advisory in nature and only applicable to structures deemed to be hazards to air navigation- [Someone of course needs to make that determination].

1.Purpose. This Advisory Circular (AC) sets forth standards for marking and lighting obstructions that have been deemed to be a hazard to air navigation. The change number and date of the change material are located at the top of the page. Advisory Circular 70/7460-1L is effective September 6, 2018.

It also appears that Agency determinations can become mandatory-

6. Application. The FAA **recommends** the guidelines and standards in this AC for determining the proper way to light and mark obstructions affecting navigable airspace. **This AC does not constitute a regulation and, in general, is not mandatory.** However, a sponsor proposing any type of construction or alteration of a structure **that may affect** the National Airspace System (NAS) **is required** under the provisions of Title 14 Code of Federal Regulations to notify the FAA by completing the Notice of Proposed Construction or Alteration form (FAA Form 7460-1). These guidelines **may become mandatory as part of the FAA's determination** and should be followed on a case-by case basis, as required.

From 1050.1F

1-9. Applicability and Scope. The provisions of this Order and the CEQ Regulations apply to actions directly undertaken by the FAA and to actions undertaken by a non-Federal entity where the FAA has authority to condition a permit, license or approval. ***The requirements in this Order apply, but are not limited, to*** *the following actions: grants, loans, contracts, leases, construction and installation actions, procedural actions, research activities, rulemaking and regulatory actions, certifications, licensing, permits, plans submitted to the FAA by state or local agencies for approval, and legislation proposed by the FAA.* ***Exceptions to these requirements are listed in Paragraph 2-1.2.***

2-1.2. Federal Aviation Administration Actions Not Subject to National Environmental Policy Act Review*.*

a. General. Actions are not subject to NEPA review if applicable Federal law expressly prohibits or makes compliance with NEPA impossible.

b. Advisory Actions. Some Federal actions are of an advisory nature. Actions of this type are not considered major Federal actions under NEPA, and NEPA review is therefore not required. *If it is known or anticipated that some subsequent Federal action would be subject to NEPA, the FAA must so indicate in the advisory action.* ***Examples of advisory actions include****:*

(1) Determinations under 14 CFR part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace*;*

(2) Determinations under 14 CFR part 157, Notice of Construction, Alteration, Activation, and Deactivation of Airports, which applies to civil or joint-use airports, helipads, and heliports; and

(3) Designation of alert areas and warning areas under FAA Order 7400.2, Procedures for Handling Airspace Matters.

c. Judicial or Administrative Civil Enforcement Actions

If I'm interpreting this correctly, while the recommended advisory actions found in the AC may become mandatory, it does not change the fact NEPA review is not required. **The question remains, given a substantive environmental impact, as demonstrated on the FAA NEPA checklist, can a NEPA review if requested, be done?**

From the Notice of Determination:

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 1, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8(MDual),&

12.

We note the Notice does not evaluate the air navigation hazard without the marking and lighting system because the FAA was not asked to do so. There is also the following language in the Notice which may or may not be “boiler plate” and directed at met or communication towers since unless a radar system is installed here I’m not sure why the FCC would be involved:

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the

structure is subject to their licensing authority.

So, given the total lack of due process in creating this environmental disaster, FOMB asks that your office use its discretion to initiate an environmental review of the Chops crossing project. I will work a bit more on the FAA NEPA checklist over the weekend and email it to you early next week in order to better inform your decision. In part I’m awaiting some input from a colleague at Maine’s Department of Inland Fisheries and Wildlife [IF&W] who is endangered species coordinator for the state. This project could not be in a more sensitive location both for environmental and social impacts.

Just the other day we were successful in initiating a marking and lighting aeronautical study and assigned this number, but again, environmental impacts will not be considered by the Obstructions Division. Your filing is assigned Aeronautical Study Number(s) (ASN): 2020-ANE-1230-OE, 2020-ANE-1231-OE

Thanks,

Ed

-----Original Message-----

From: Lamprecht, Michael (FAA) [mailto:Michael.Lamprecht@faa.gov]

Sent: Friday, February 28, 2020 10:18 AM

To: Ed Friedman

Cc: Doucette, Richard (FAA)

Subject: RE: Message from www.faa.gov: Question/Comment about Order 5050.4B

Ed,

At this point it does not appear to have been an airport project but I am still waiting on further information. If there was no FAA involvement in the decision we would not have any environmental decision documents on the project. I will let you know what else I hear.

Thank you for your patience.

Michael

Michael Lamprecht

Environmental Protection Specialist

Federal Aviation Administration

800 Independence Avenue SW

Washington, D.C. 20591

(202) 267-6496

-----Original Message-----

From: Ed Friedman <edfomb@comcast.net>

Sent: Thursday, February 27, 2020 1:44 AM

To: Lamprecht, Michael (FAA) <Michael.Lamprecht@faa.gov>

Cc: Doucette, Richard (FAA) <richard.doucette@faa.gov>

Subject: RE: Message from www.faa.gov: Question/Comment about Order 5050.4B

Michael, et al.,

Please see our attached letter to CMP from this past December. A response, annotated by me and a short video clip are front and center on our FOMB website. In short, CMP had a powerline crossing over the Kennebec at Merrymeeting Bay for 80 years supported by 200'AGL lattice towers on either side. Neither towers nor wires were ever marked through years of much more aviation than in the past couple of decades. Last year they replaced the towers with new ones 40' higher and for the first time they were lit and done so in accordance with stock FAA guidelines for catenary crossings- three levels of strobing LED's white in day and red at night. So long to our dark night. The powerlines were marked with colored spheres which is a good thing. Everyone around the unique Bay is extremely upset at the lighting which was done with absolutely no public input and was not included in plans that went to either town]Bath or Woolwich] the towers are located in. Neither were lighting plans included to the state DEP in CMP's application for a Natural Resource Protection Act permit for activities with 75' of the water.

For many of us, the FAA lighting alternative of an active radar aircraft detection lighting system is unacceptable because of harm to people and wildlife from microwave radiation. These towers are off-airport and 5 miles from the closest airport with runway exceeding the threshold length for considering whether nearby structures create obstructions to air navigation or not. Please see the attached. These towers would need to be 400' AGL, not 240' AGL to be considered obstructions given their 5 mile distance from Wiscasset [KIWI]. There is virtually no air traffic in the vicinity at this low altitude and it seems lighting and radar efforts are needless off the shelf "solutions" looking for a problem that does not exist yet creating serious new ones.

Thanks,

Ed

207-666-3372

www.friendsofmerrymeetingbay.org

-----Original Message-----

From: Lamprecht, Michael (FAA) [mailto:Michael.Lamprecht@faa.gov]

Sent: Wednesday, February 26, 2020 7:15 AM

To: edfomb@comcast.net

Cc: Doucette, Richard (FAA)

Subject: RE: Message from www.faa.gov: Question/Comment about Order 5050.4B

Mr. Friedman,

I checked with the Regional Environmental Protection Specialist and he has not heard of this project. Is this for a power line? Is it on the airport? I am guessing that you are talking of Merrymeeting Field Airport. Could you please submit more information on this?

Thank you.

Michael

Michael Lamprecht

Environmental Protection Specialist

Federal Aviation Administration

800 Independence Avenue SW

Washington, D.C. 20591

(202) 267-6496

-----Original Message-----

From: edfomb@comcast.net <edfomb@comcast.net>

Sent: Friday, February 21, 2020 5:12 PM

To: Lamprecht, Michael (FAA) <Michael.Lamprecht@faa.gov>

Subject: Message from www.faa.gov: Question/Comment about Order 5050.4B

This email was sent through the Federal Aviation Administration's public website. You have been contacted via an email link on the following page: www.faa.gov/airports/resources/publications/orders/environmental_5050_4/

Message:

Michael,

Please let me know how to file a request for NEPA review of a catenary crossing project here in Maine, assuming a review has not been done. To our knowledge no review was ever done to determine whether CATEX, EA or EIS apply. The project, 2018 ANE 1642 and 1643-OE is in place and lighting is an unmitigated and totally unneeded disaster for many reasons. Neither is ADLS an acceptable alternative because of proximity to population and wildlife sensitive to microwaves.

Thank you.

Ed Friedman, Chair

Friends of Merrymeeting Bay

3 attachments

FAA NEPA Checklist arp-SOP-510-catex Filling In.docx
271K

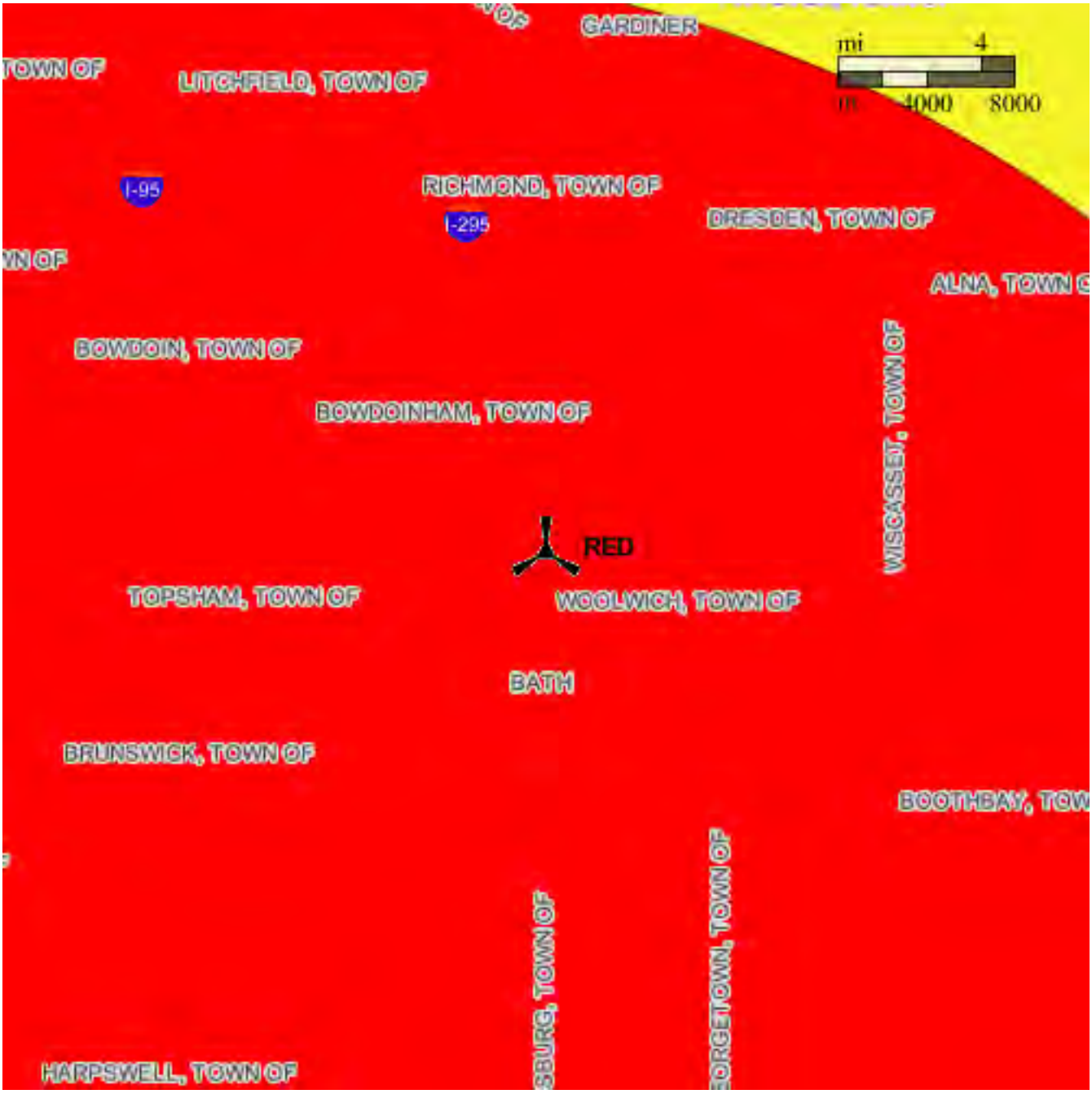
FCC NEPA_Factsheet_111816.pdf
409K

Chazell_NEPA NRC Major Determination Capstone Paper_FINAL 2014.pdf
434K

Exhibit 6

Federal Aviation Administration
DOD and DHS Long Range Radar Report
ASN: 2020-ANE-1540-OE
SYSTEM OEAAA
Mon Mar 09 12:44:21 EDT 2020

Latitude:	43-58-59.59N	SE:	47
Longitude:	69-49-41.33W	AGL:	244
Case information in NAD 83 datum.		AMSL:	291



Map Legend

Green:	No anticipated impact to Air Defense and Homeland Security radars. Aeronautical study required.
Yellow:	Impact likely to Air Defense and Homeland Security radars. Aeronautical study required.
Red:	Impact highly likely to Air Defense and Homeland Security radars. Aeronautical study required.

Exhibit 7

2817, Highway 77 Panama City, Florida 32405 USA Tel 850.763.7200
2550 5th Ave. Suite 510 San Diego, CA USA 92103 Tel 619.795.3714
Afon House, Worthing Rd, Horsham, West Sussex RH12 1TL UK Tel 44 (0) 1403.788.315
Web www.detect-inc.com www.dronewatcher.com

Aircraft Birdstrike Avoidance Radars | Avian Radar Systems | Aircraft Detection Lighting Systems | Bird Control Radar Systems | Airspace & Marine Security Networks | Drone Detection & Defense Systems | Ground-Based Sense-and-Avoid Radars

Chops Point ADLS FAA Submission information:

Radar sensor is the following: X Band Radar (9.2 - 9.5 GHz).
Peak Power 188 Watts
PRR/PRI/or PRF 1020/2041Hz depending on pulselength.
PW 100ns 8uS and 40 or 66uS) 18.8w or 14.1w depending on pulselength.
Ave Power in watts or DBM Not above 28.2W Worst Case
Antenna Gain LPA-A25 32dBi
Antenna pointing azimuth 360 degrees rotating

WGS 84 Datum
Latitude: 43.983219
Longitude: -69.828147
Site Elevation (AMSL - feet): 47 ft
Total Structure Height (To the top of the antenna, AMSL - feet): 291 ft

CENTRAL MAINE
POWER

February 19th, 2020

This letter is certifies that the proposed installation of the ADLS for the Chops Point Project at CMP will meet the requirements of the current version AC 70/7460-1 Obstruction Marking and Lighting, and will be in accordance with the most recent Technical Note issued for this system.

CMP certifies that the proposed ADLS for the Chops Point Project will be continuously monitored in accordance with the current version of AC 70-7460-1 Obstruction Marking and Lighting, and the Technical Note issued for the system. We will ensure this responsibility is specifically transferred to any subsequent owners of the project.

Yours Sincerely,

Jenna Muzzy
Manager – Lines Projects
83 Edison Drive
Augusta, Maine 04336
207.629.2029
Jenna.muzzy@cmpco.com

2817, Highway 77 Panama City, Florida 32405 USA Tel 850.763.7200
2550 5th Ave. Suite 510 San Diego, CA USA 92103 Tel 619.795.3714
Afon House, Worthing Rd, Horsham, West Sussex RH12 1TL UK Tel 44 (0) 1403.788.315
Web www.detect-inc.com www.dronewatcher.com

Aircraft Birdstrike Avoidance Radars | Avian Radar Systems | Aircraft Detection Lighting Systems | Bird Control Radar Systems | Airspace & Marine Security Networks | Drone Detection & Defense Systems | Ground-Based Sense-and-Avoid Radars

2/11/2020

ADLS Certification Vendor Statement

Obstruction Evaluation Group

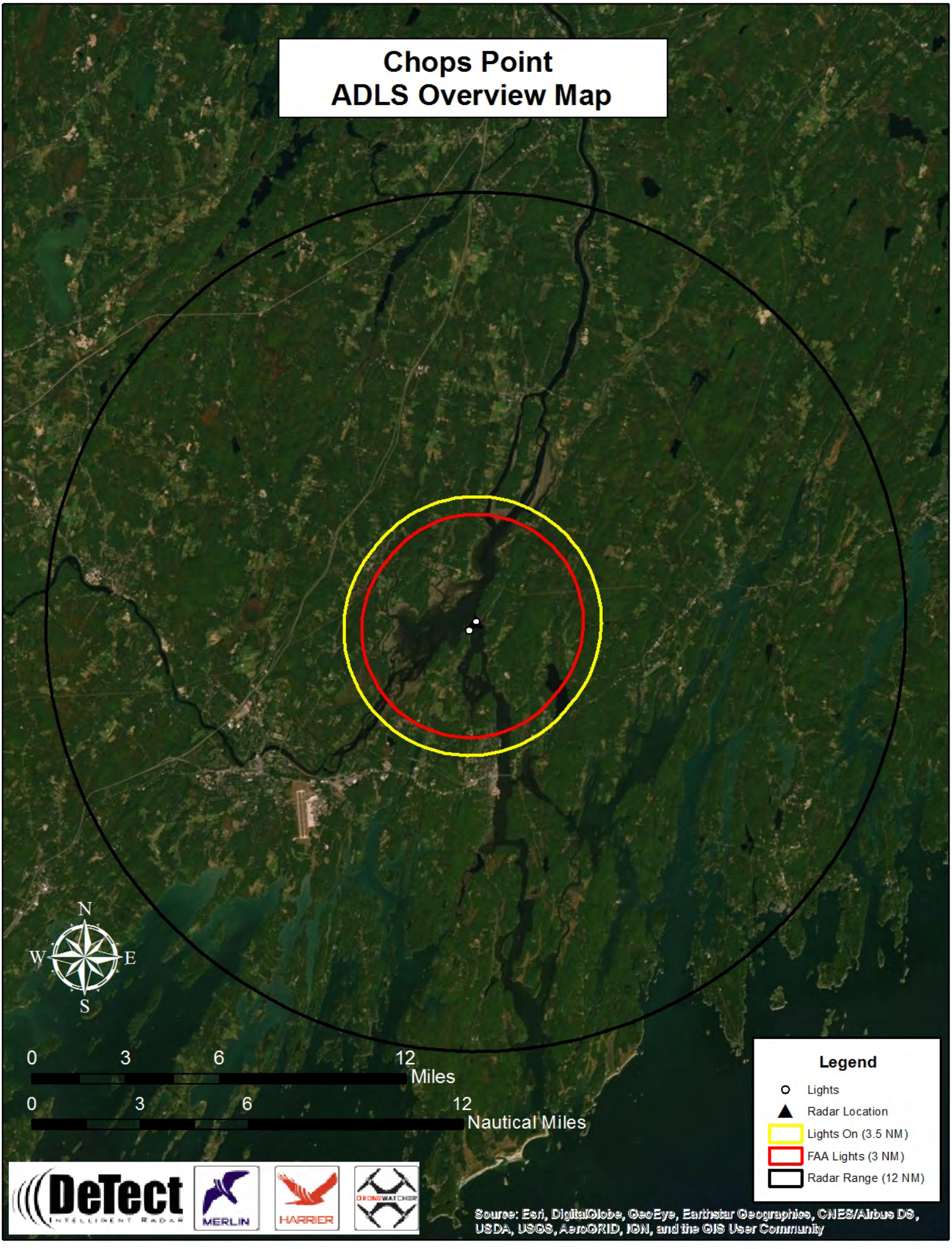
DeTect has performed radar coverage modeling for the Chops Point Aircraft Detection Lighting System (ADLS) and has determined the proposed installation of the ADLS for the project will meet the requirements of the current version of AC 70/7460-1L Obstruction Marking and Lighting, and will be in accordance with the most recent Technical Note issued for the applicable system. DeTect has modeled one radar location for the site. This radar location provides adequate airspace coverage to activate lights and viewshed maps are provided as part of the submission. Please reach out to DeTect, Inc. if you have any questions about the documents that were submitted.

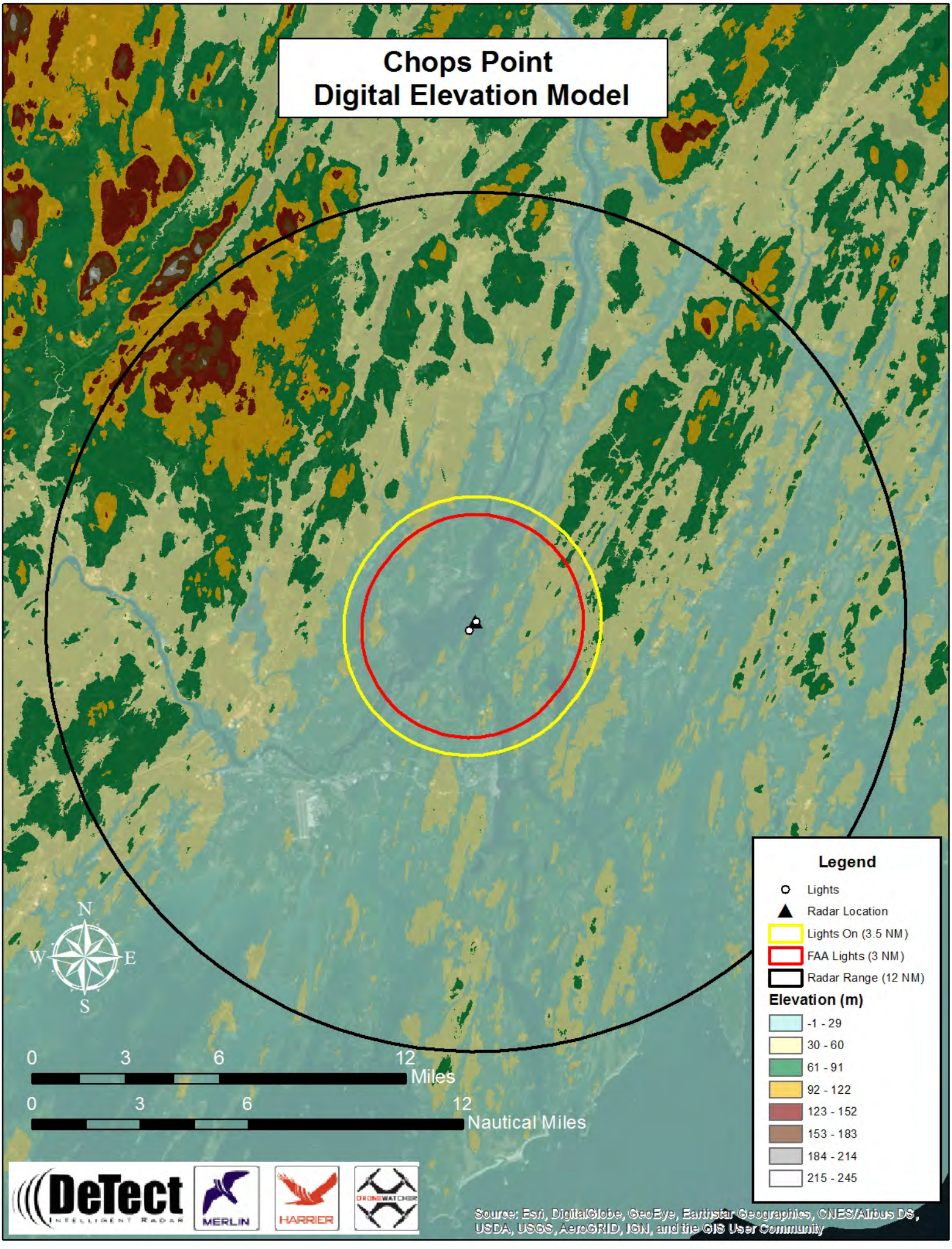
Sincerely,

DeTect, Inc.

Jesse Lewis
General Manager, DeTect Americas
Jesse.lewis@detect-inc.com
850.763.7200

Chops Point
ADLS Overview Map




Chops Point
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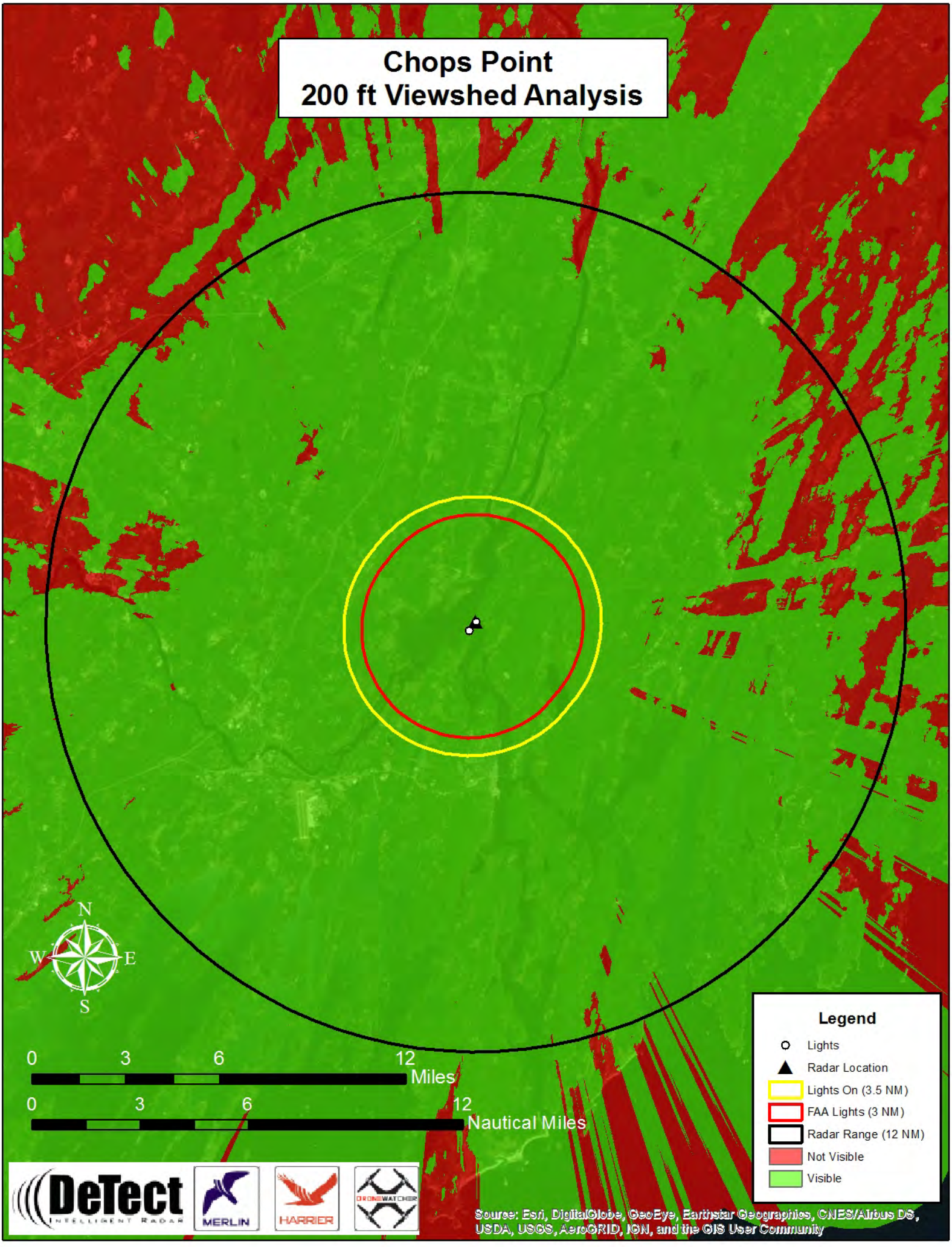
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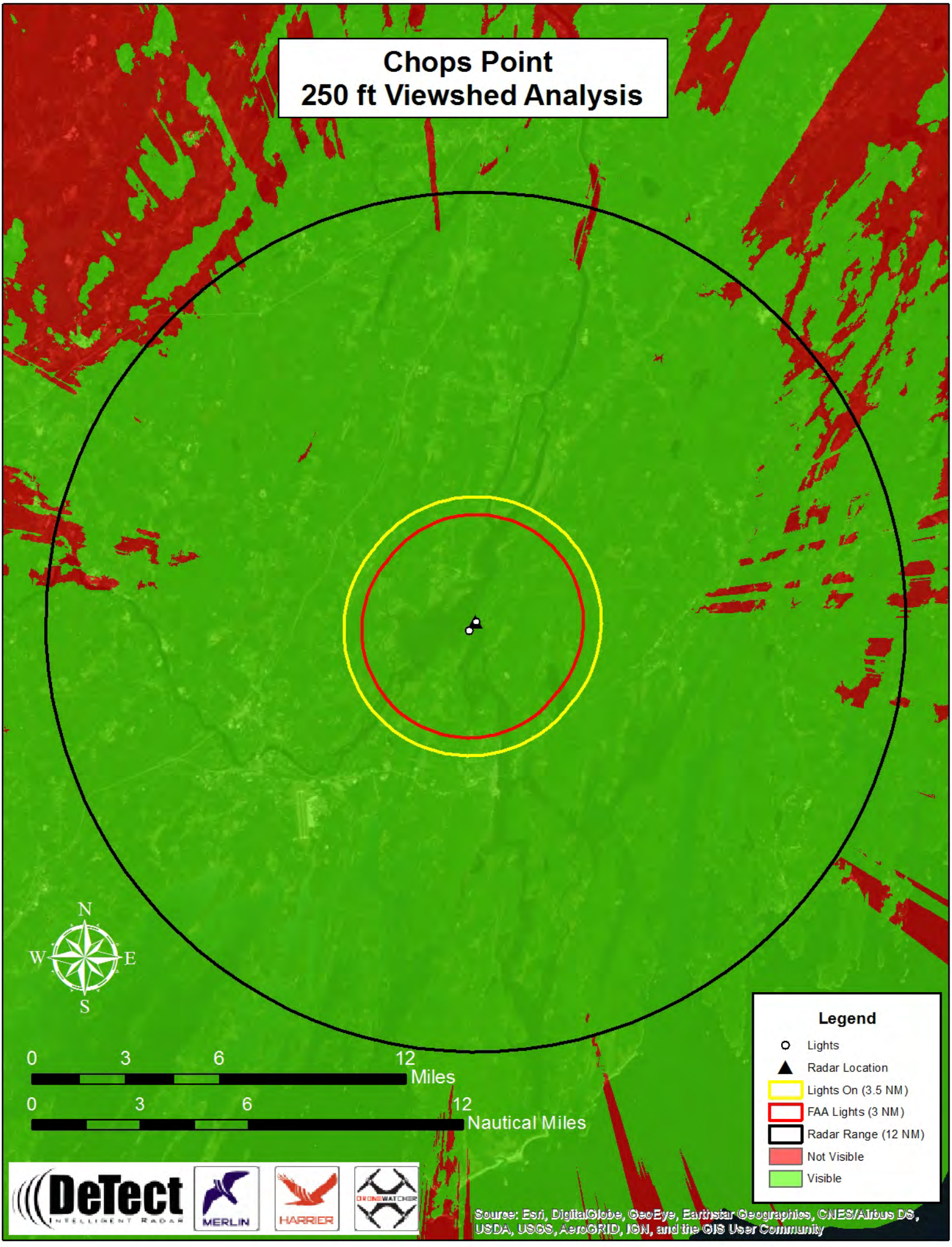
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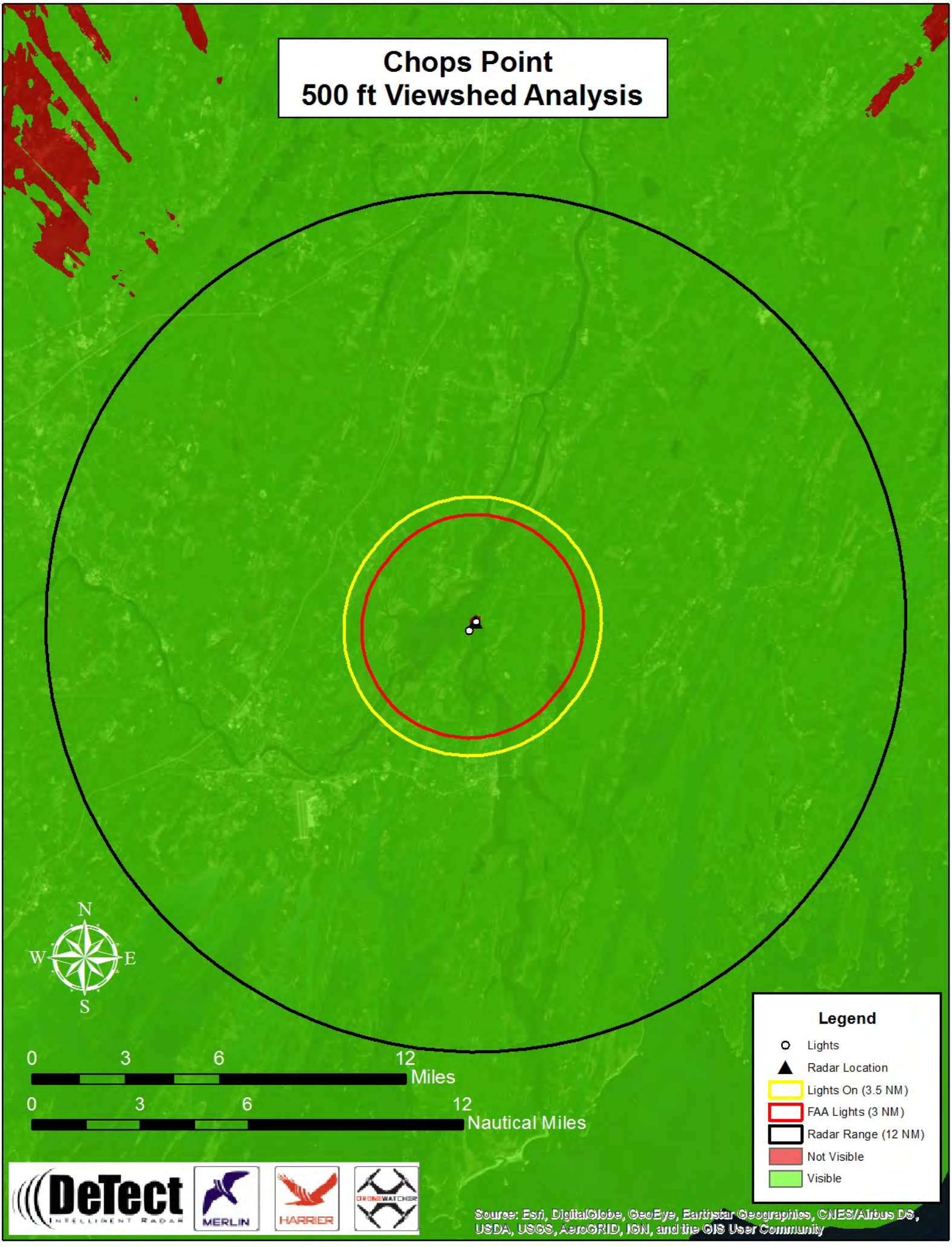
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HARRIER
DRONEWATCHER
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Chops Point
1000 ft Viewshed Analysis

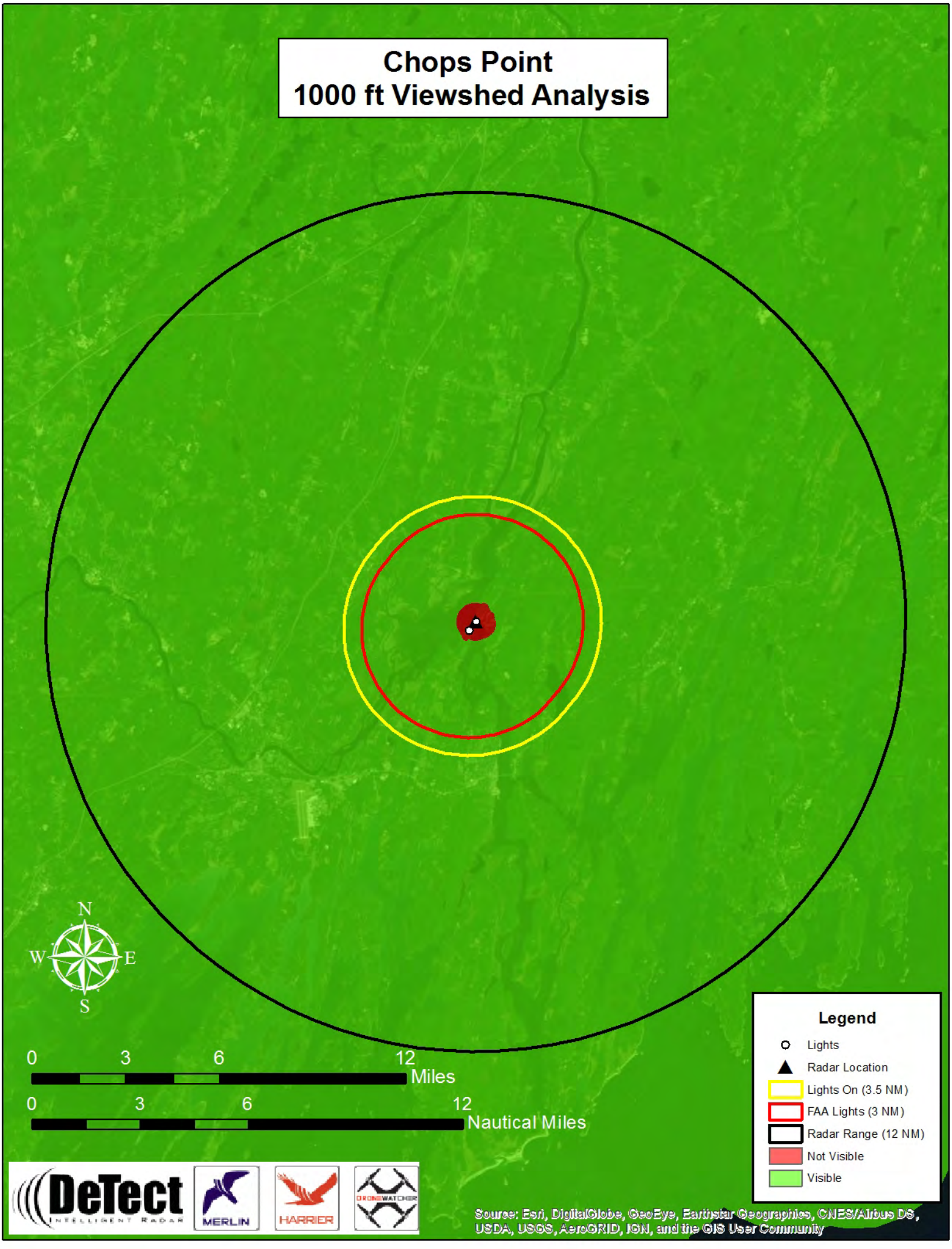

Exhibit 8

Federal Aviation Administration
Traffic Pattern Report
ASN: 2016-ANE-708-OE
Generated By Earl Newalu on Wed May 18 09:44:10 EDT 2016

Traffic Pattern Evaluation

Latitude:	43-58-46.15N	SE:	47
Longitude:	69-49-56.07W	AGL:	240
Traverse Way:	No Traverseway	Additional Height:	0
Case Information & Traffic Pattern results use NAD 83 datum		AMSL:	287

Traffic Pattern Interaction Results:

2 Traffic Pattern(s) Interactions were found

Traffic Pattern Interaction # 1:

Site Type:	Airport
Traffic Pattern Name:	Climb Area "D" Left "D" Left
Penetration in feet:	-124
Airport ID:	08B
Runway ID:	14/32
Runway End ID:	14

Traffic Pattern Interaction # 2:

Site Type:	Airport
Traffic Pattern Name:	Climb Area "D" Left "D" Left_Ultimate
Penetration in feet:	-128
Airport ID:	U_08B
Runway ID:	14/32
Runway End ID:	14