



CAPE COD COMMISSION

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Date December 16, 1999
To Industrial Communications and Electronics, Inc.
From Cape Cod Commission
Project ICE Telecommunications Tower
Sagamore Beach, MA
Project # CCC#TR99016
Applicant Industrial Communications and Electronics, Inc.
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DECISION OF THE CAPE COD COMMISSION

SUMMARY

The Cape Cod Commission (Commission) hereby approves with conditions the application of Industrial Communications and Electronics, Inc., applicant (hereinafter the applicant or the proponent) for a Development of Regional Impact (DRI) permit, pursuant to the Cape Cod Commission Regulations of General Application, Chapter A, Section 3(i) for construction of a wireless communication tower exceeding thirty-five (35) feet in height from the natural grade of the site on which it is located. The tower is approved at 200 ft in height.

JURISDICTION

The proposed project qualifies as a Development of Regional Impact under Chapter A, Section 3(i) of the Commission's Regulations of General Application which states that "construction of any wireless communication tower exceeding thirty-five (35) feet in height from the natural grade of the site on which it is located" is presumed to be a Development of Regional Impact.

PROJECT DESCRIPTION

The proponent, Industrial Communications and Electronics, Inc. (ICE), proposed a 295 ft guyed telecommunications tower on a 4.2 acre lot located between Route 3A and Old Plymouth Road in Sagamore Beach, MA, identified as Lot 20.1 on Bourne Assessors Map 3. ICE provides specialized mobile radio service (SMRS) through its subsidiary, Industrial Wireless Technologies (IWT). Bell Atlantic Mobile and Omnipoint Communications have expressed in writing, and testified orally, to interest in co-locating on this tower. Other wireless providers



have indicated potential interest in the proposed site in the future to meet their anticipated capacity needs. The applicant has also indicated that they would make tower space available to town safety services without charge.

The project also includes a 2,332 sq ft equipment shelter with seven rental units, four parking spaces, and site access from Route 3A.

PROCEDURAL HISTORY

The project was referred to the Commission on May 18, 1999. A hearing was opened by hearing officer on July 14, 1999. The hearing was closed by hearing officer on October 7, 1999. A subcommittee of the Commission held a public hearing during the decision period on October 19, 1999 at the Jonathan Bourne Public Library, Bourne, MA. The subcommittee held public meetings on November 8, 1999, November 29, 1999, and December 7, 1999 at the Commission office. The proponent agreed to extend the decision period for review of the project until December 21, 1999. The subcommittee voted to recommend approval of the tower, with conditions, to the full Commission on November 29, 1999. The full Commission voted to approve the DRI application with conditions on December 16, 1999.

MATERIALS SUBMITTED TO THE RECORD

Proponent submittals:

- DRI application received at CCC June 3, 1999
- Additional application materials received at CCC June 18, 1999
- Letter from ICE to CCC dated July 27, 1999
- Letter and attachments from ICE to CCC dated August 4, 1999
- Letter and attachments from ICE to CCC dated August 10, 1999
- Letter and attachments from ICE to CCC dated August 23, 1999
- Letter and attachments from ICE to CCC dated September 7, 1999
- Letter from PiROD, Inc. to Dave Fenton, ICE dated October 22, 1999
- Letter and attachments from Gillis and Angley to the CCC dated October 19, 1999
- Letter and attachments from ICE to CCC dated October 22, 1999
- Letter and attachments from Ehresmann Engineering to ICE dated October 27, 1999, regarding 190 ft PiROD self supporting tower at Bourne, MA
- Letter and attachments from Ehresmann Engineering to ICE dated October 27, 1999, regarding 190 ft Rohn self supporting tower at Bourne, MA
- Letter and attachments from Ehresmann Engineering to ICE dated November 5, 1999
- Letter from Gillis and Angley to the CCC dated November 11, 1999
- Letter and attachments from ICE to the CCC dated November 15, 1999
- Letter from ICE to CCC dated December 3, 1999

Commission submittals:

- Letter from CCC to ICE dated May 20, 1999
- Letter from CCC to ICE dated June 30, 1999
- Letter from Broadcast Signal Lab to CCC dated July 9, 1999
- Letter from Broadcast Signal Lab to CCC dated July 9, 1999, regarding ICE DRI
- Email from Patty Daley to Heather McElroy dated August 24, 1999
- Letter from CCC to ICE dated August 28, 1999
- Analysis of ICE DRI proposal from Broadcast Signal Lab to CCC, received October 15, 1999
- Staff report dated October 15, 1999
- Memo from Broadcast Signal Lab to CCC dated October 20, 1999
- Memo from Broadcast Signal Lab to CCC dated October 21, 1999

Project update dated November 2, 1999
Extension agreement between CCC and ICE dated November 9, 1999
Letter from CCC to ICE dated November 9, 1999
Photos taken by CCC staff of 200 ft balloon/crane test, November 15, 1999
Project update dated November 23, 1999
Fax from Broadcast Signal Lab to the CCC dated December 3, 1999

Town submittals:

DRI referral received at CCC May 18, 1999

The application and notice of the public hearing relative thereto, the Commission's staff reports, exhibits, minutes of all hearings and meetings and all submissions received in the course of the proceedings, including materials submitted on file #TR99016 are incorporated into the record by reference.

TESTIMONY

Public Hearing, October 19, 1999

Edward Angley, Donald Cody, Dave Tivnan, and Kevin Delaney representing Industrial Communications and Electronics presented the project. Heather McElroy, Commission staff, and David Maxson, Broadcast Signal Lab, consulting for the Commission, presented the staff report. Jackie Slaga, representing Omnipoint, and Luis Teves, representing Bell Atlantic Mobile, commented on their companies' respective interest in siting on the proposed facility. Meredith Pickering, Bourne Town Planner, commented on the project's consistency with the Bourne Zoning Bylaw. No members of the public commented at this hearing.

Public Meeting, November 8, 1999

Heather McElroy provided a project update. The subcommittee discussed the project, and asked staff and the applicant for clarification on aspects of the proposal. David Maxson commented on the proposal as well.

Public Meeting, November 29, 1999

Heather McElroy provided a project update. The subcommittee voted to approve the tower at 200 ft height agl.

Public Meeting, December 7, 1999

The subcommittee discussed the draft decision, and voted to recommend a 200 ft tower with conditions to the full Commission.

FINDINGS

Based on the testimony received at the public hearings, application materials submitted by the project proponent, written materials submitted by all interested parties, and supporting technical information provided by staff, the Commission voted that a 200 ft guyed ICE Tower in Sagamore Beach, MA, be granted a DRI approval with conditions based on the following findings:

1. The proponent proposed a 295 ft guyed telecommunications tower, with three concrete guy-wire anchor pads, on a 4.2 acre lot located between Route 3A and Old Plymouth Road in Sagamore Beach, MA, identified as Lot 20.1 on Bourne Assessors Map 3. The parcel is zoned Business 2, and is located within a significant natural resource area. The project also

includes a 2,332 sq ft equipment shelter with seven rental units, a site drive, four parking spaces, and eight foot high chain link fence surrounding the base of the tower.

2. ICE provides specialized mobile radio service (SMR service, or SMRS) through its wholly owned subsidiary, IWT. The proponent has provided documentation establishing that IWT currently provides interconnected phone service, which qualifies the SMRS as a personal wireless service protected by the Telecommunications Act of 1996.
3. The proponent stated, and provided propagation plots demonstrating that IWT does not have coverage on Cape Cod, though IWT holds licenses to provide SMR service in Barnstable County. ICE's next closest tower is located in Plymouth.
4. The Cape Cod Commission Technical Bulletin 97-001, *Guidelines for DRI Review of Wireless Communication Towers, Adopted 10/9/97; Revised 3/4/99*, recommends that towers proposed on Cape Cod not exceed 150 ft above ground level (agl).
5. A tower greater than 200 ft agl at this site would be required by Federal Aviation Administration regulations to have night lighting, and to be painted or lighted in daytime for visibility to aircraft.
6. The proponent conducted crane and balloon tests onsite for a tower 295 ft in height, and for 200 ft in height, and submitted corresponding visual impact maps illustrating the anticipated visibility of the tower at these respective heights. The maps demonstrate that a 200 ft tower will be less visible from Route 3 north and south than a 295 ft tower at the same location. The Commission also anticipates, as a result of observation of the crane/balloon tests, that a 200 ft tower at this location is likely to have less of a visual impact on the residents of the Sagamore Beach area, specifically residents of Old Plymouth Road, than would a 295 ft tower.
7. The proponent conducted a limited alternative site analysis of existing structures, including the stack of the Southern Energy Electric Plant, the North Sagamore Water tower, and the existing wireless towers on Signal Hill in Bournedale. According to the proponent, the North Sagamore Water District did not respond to queries about colocation on the water tower. Southern Energy stated in writing that location of SMRS equipment at the top of the Canal Plant stack would interfere with the functioning of both the stack and IWT's equipment (though Southern Energy did not comment on the feasibility of a side mount). Engineering analyses by Ehresmann Engineering of the two towers located on Signal Hill indicated that these towers could not accommodate additional equipment without reconstruction and/or redesign.
8. The proponent stated in public hearings that ICE subsidizes the SMR service it provides through the lease of space on ICE's telecommunication towers to other wireless service providers, such as the proposed tenancy of Bell Atlantic Mobile and Omnipoint on this tower.
9. The proponent conducted an alternative site analysis of properly zoned properties within the Route 3 and Route 6 travel corridors in Bourne and Sandwich. The proponent did not consider sites within Bournedale as the Bournedale DCPC moratorium is in effect through March 8, 2000.

10. The proponent has maintained that it is the nature of its SMR service which dictates the height of the proposed tower. Its SMR service is established through market bases and population densities rather than through filling a gap in existing service coverage. Individual SMRS locations are sited independently of other sites without regard to overlapping service.
11. The firm providing consultation and analysis on the ICE tower proposal for the Cape Cod Commission, Broadcast Signal Lab (BSL), has demonstrated through propagation studies from the proposed location that IWT equipment located at the top of a 200 ft tower may provide similar, though somewhat reduced coverage, as a 295 ft tower at the same location. The reduction in coverage occurs primarily within portions of the Route 28 corridor in Falmouth, MA, and within portions of the Massachusetts Military Reservation. Other minor reductions occur in sparsely populated areas in southeastern Massachusetts, over Cape Cod Bay, and at Route 6 near Barnstable, MA.
12. There are few other carriers on Cape Cod providing service similar to that which IWT provides; NexTel is a direct competitor whose SMR system is designed on the principles of seamless cellular coverage, in contrast with the IWT SMR, which creates overlapping service areas that operate independently.
13. The proponent has stated that the impact on IWT coverage area as a result of reducing the proposed tower height from 295 ft to 200 ft may require ICE to construct an additional tower in Falmouth, MA in order to provide service in the Route 28 area of Falmouth.
14. The proponent has stated that ICE may need two or three additional towers on Cape Cod, of varying heights, in order to meet IWT's coverage goals.
15. The Commission finds that a 200 ft tower height at this site allows IWT to provide coverage of a reasonable amount of land area; that it does not preclude the development of future IWT facilities in its un-served areas; and that it does not discriminate against IWT with respect to providers of similar services.
16. Technical Bulletin 97-001 requires that the proponent co-locate where feasible and appropriate, and demonstrate a good faith effort to co-locate with other carriers. It is a significant benefit of the proposed project that two wireless carriers have committed to colocating on the proposed tower. Omnipoint Communications and Bell Atlantic Mobile have submitted letters, and their representatives have testified orally regarding their respective interests in colocating on the proposed ICE Tower at the proposed location in Sagamore Beach, MA. Both of these potential colocators' representatives indicated in public hearings their interest and ability in locating on a tower less than 295 ft agl. Omnipoint's representative stated that Omnipoint wished to locate at 225 ft agl, but that Omnipoint could make use of a location on the ICE tower at 150 ft agl. Bell Atlantic Mobile's representative stated that at 150 ft agl Bell Atlantic Mobile could eliminate their current coverage gap.
17. The proponents have stated their willingness to provide antenna locations on the ICE tower to Town of Bourne Police and Fire services without charge.
18. The proponents propose a tower designed by PiROD, Inc., as shown on the plans titled "Partial Extended Site Plan, sheet number CCC-2", and revised 6/02/99, and discussed in the letter from PiROD, Inc. to Dave Fenton dated October 22, 1999, designed to meet the 100 mph wind specification for this region, and designed with a dual guy wire system to help ensure that should the tower fail, it will be likely to fall within a fall zone entirely within the

bounds of the property controlled by the proponent. The Commission finds that the design specifications for the originally proposed 295 ft tower are a suitable means to ensure that a failing tower would collapse within the property controlled by the applicant.

19. The Commission is concerned about potential human exposure to emissions from wireless facilities. Carriers are required to file with the Massachusetts Department of Public Health (MDPH) to ensure that radio frequency emissions associated with proposed wireless communication facilities are compliant with MDPH safety limits.
20. The proponent has provided an analysis of radio frequency emissions which indicates that based on preliminary design elements at 295 ft, the proposed tower would generate RF power densities in accessible locations that would be hundreds of thousands of times lower than the federal safety standards. However, the parameters for this analysis did not consider the impacts of emissions from a 200 ft tower.
21. Based on information provided by the applicant, the tower is not expected to result in undue noise pollution in the surrounding residential area or generate noise from equipment and/or wind in excess of 50 db at the property line, except under a 24 hour emergency where generators will be employed to maintain uninterrupted coverage.
22. Through site design, the retention of natural buffers, and the provision of landscaping, the project related buildings, fencing, and parking will be adequately buffered from public ways, *i.e.* Route 3A and Old Plymouth Road, a town designated scenic road.
23. The project site is located within a significant natural resource area (SNRA), and therefore is required to provide 65% of the total upland area, or 2.73 acres, as permanently protected open space either through conservation restriction or donation to a conservation organization approved by the Commission. It is appropriate that open space should be configured on the lot in such a manner as to provide permanent buffers to Old Plymouth Road, a scenic road as designated by the Town of Bourne.
24. The project is not located within a historic district, and comments have been received by the Massachusetts Historical Commission to confirm that the project is unlikely to have impacts on significant historic or archaeological resources.
25. The proposed project is in an unmanned, private and secured compound. It is only accessed by trained technicians for periodic routine maintenance, and therefore does not require any water or sanitary sewer service.
26. The proponent must seek a special permit from the Bourne Planning Board to receive relief from the 40 ft building height limit in this B2 zoning district. The Planning Board must determine that the tower is of the minimum height necessary to achieve its purpose, and that the proposed tower will pose no hazard to abutting properties in the event of structural failure. The proponent must also seek a waiver from the Planning Board of the one-to-one fall zone requirement through the special permit process. Presently, a 200 ft tower on the site has a one-to-one fall zone area falling across Old Plymouth Road, and adjacent properties to the south.

CONDITIONS

1. All conditions shall be met, and the facility shall not become operational and shall not be used for commercial purposes prior to the issuance of a Certificate of Compliance by the

Commission. The proponent shall provide at least 30 days notice to the Commission before requesting a Certificate of Compliance to allow time for staff to inspect the site and ascertain that all conditions have been met.

2. The proponents shall construct a guyed tower of not more than 200 ft in height agl, any additional equipment inclusive, painted a neutral gray color to blend with the sky, designed by PiROD, Inc on the parcel identified on Bourne Assessors Map 3 as Lot 20.1. Site access shall be from Route 3A. The siting of the building, four parking spaces, and tower shall conform to the plans titled "Industrial Communications, Map 3, Lot 20.1, Route 3A, Bourne, MA, sheets 1-3, A1-4, and CCC1-3" as revised 6/02/99, with the exception of the reduction in tower height to 200 ft, and the relocation of the site drive from Old Plymouth Road to Route 3A. The tower facility shall accommodate IWT's SMRS equipment, and the equipment of at least two additional carriers, with the potential for additional colocation.
3. Any company or other party that intends to co-locate on the site is required to supply the Commission with radiofrequency radiation data showing all calculations and assumptions, using methods in accordance with FCC OET Bulletin 65, dated August, 1997, sixty days prior to installing any antenna arrays on the tower.
4. Carriers locating on the proposed tower facility shall receive written approval from the Massachusetts Department of Public Health to ensure that radiation emissions associated with this proposed wireless communication facility, in combination with other emissions, are compliant with public exposure limits (105 CMR 122). Such approval shall be promptly supplied to the Commission.
5. After the personal wireless facility is operational, the proponent shall submit to the Town of Bourne and Massachusetts Department of Public Health, within 90 days from the beginning of operations and at annual intervals from the date of issuance of the DRI Certificate of Compliance, an RFR assessment, including measurements as appropriate, of the tower facility. Such measurements shall be signed and certified by a RF engineer, stating that RFR measurements are accurate and meet FCC Guidelines as specified in the Radiofrequency Standards (sub-section VI. C.) of Technical Bulletin 97-001, or shall conform to the Commission's current assessment/measurement protocol as established by the Commission by the time of the assessment and as it may be amended from time to time. Consistent with the Telecommunications Act of 1996, such amendments shall not require the proponent to meet guidelines for RF emissions that are more restrictive than the FCC guidelines for RF emissions.
6. The proponent shall submit to the Town of Bourne and the Cape Cod Commission, within 90 days from the commencement of operations at the tower, and at annual intervals from the date of issuance of the DRI Certificate of Compliance until installation and operation of all potential colocators is complete, measurements of noise at the tower facility. Such measurements shall be signed by an acoustical engineer, stating that noise measurements are accurate and meet the Noise Standards (sub-section VI. B.) of Technical Bulletin 97-001. If noise levels exceed the standards in Technical Bulletin 97-001 (except during emergency operations as defined in finding #21, where an interruption of power not within the control of the proponent occurs), the Commission reserves the right to suspend or stop operations of the tower facility.

7. The proponent shall maintain the tower facility in good condition. Such maintenance includes, but is not limited to, painting, structural integrity of the mount and security barrier, and maintenance of the buffer areas and landscaping.
8. The proponent and all lessees shall ensure that the contents of the storage shelters, containment measures, and emergency backup systems of all carriers shall meet all hazardous materials and waste requirements in the Regional Policy Plan. In the event that a portable emergency generator is needed as emergency power, propane, bottled natural gas, or natural gas is required to be used as fuel.
9. Prior to the issuance of a Certificate of Compliance, landscaping shall be installed to buffer the view of the facility from Route 3A. The proponent shall submit a landscape plan prepared by a licensed landscape architect for Commission staff approval prior to the application for a Building Permit; after approval is granted, the applicant shall install the landscaping as approved. Landscaping shall include a maintenance contract for two full growing seasons that shall be approved by Cape Cod Commission staff and that shall be fully executed prior to the installation of plant materials.
10. Prior to the issuance of a Certificate of Compliance, the proponent shall provide the Cape Cod Commission with 2.73 acres of open space permanently protected either through deeding the land to a nonprofit conservation trust or through conservation restriction consistent with Massachusetts General Laws Chapter 184, Section 31-33, and accompanying plan to be approved by Commission counsel and recorded at the Registry of Deeds or Registry District of the Land Court on the lot identified on Town of Bourne Assessors Map 3 as Lot 20.1. Open space shall be configured on the lot in such a manner as to provide at least 40 ft permanent buffers to Old Plymouth Road, a scenic road, and shall be approved by Commission staff. Proof of recording of the open space shall be provided to the Commission prior to the issuance of a Certificate of Compliance.
Alternatively, prior to the issuance of a Certificate of Compliance, the proponent shall provide at least 1.73 acres of permanently protected open space onsite by either of the two methods of protection described above, and shall make a \$89,500 cash contribution to be held by the Cape Cod Commission in escrow for the purpose of acquiring and permanently protecting open space within Sagamore Beach, MA. The 1.73 acres of open space onsite shall be configured in such a way as to provide at least a 40 ft buffer to Old Plymouth Road along the length of the subject property, and the open space configuration shall be approved by Commission staff. The Commission's Executive Director shall release the \$89,500 cash contribution to the Town of Bourne or the town's designee for expenditure without further appropriation once a suitable parcel has been identified and is the subject of a purchase and sale agreement for conservation purposes.
11. Should the tower become abandoned for more than six months, the tower shall be removed and the site shall be restored to its prior state. Shall any antenna or hardware attached to the tower become abandoned for more than six months, it shall be removed. Prior to the issuance of a Certificate of Compliance, the proponent shall provide a bond of \$25,000 to the Town of Bourne to be held for the purposes of removal of the tower facility. Said bond shall be returned to the proponent at such time that the tower facility is removed and restored to its original condition.

12. ICE shall provide antenna space on the tower, and communications shelter space to the Town of Bourne police and fire services at no cost to the town.

CONCLUSION

The Commission finds that the benefits of the project outweigh the detriments, and that the project largely complies with the Bourne Zoning Bylaw (except as noted in finding #26). The Commission hereby approves with conditions the application of Industrial Communications and Electronics, Inc. for a Development of Regional Impact approval.

Thomas Broidrick

Thomas Broidrick, Chair

12/16/99

Date

Commonwealth of Massachusetts
Barnstable, ss.

Subscribed and sworn to before me this *16th* day of *Dec* 19*99*

Katharine L. Peters

Name, Notary Public

My commission expires:

