

Submitted by: Chair of the Assembly at
the Request of the Mayor
Prepared by: Planning Department
For reading: December 16, 2008

Postponed Indefinitely 5/26/09

ANCHORAGE, ALASKA
AO No. 2008-136

AN ORDINANCE AMENDING ANCHORAGE MUNICIPAL CODE SECTIONS
21.35.020 DEFINITIONS AND RULES OF CONSTRUCTION, 21.40 ZONING
DISTRICTS, 21.45 SUPPLEMENTARY DISTRICT REGULATIONS, AND 21.50
STANDARDS FOR CONDITIONAL USES AND SITE PLANS, TO DEFINE
WIND ENERGY CONVERSION SYSTEMS (WECS), TO ALLOW WECS IN
CERTAIN ZONING DISTRICTS AS ACCESSORY USES BY
ADMINISTRATIVE SITE PLAN REVIEW AND AS CONDITIONAL USES, TO
SET GENERAL STANDARDS AND CONDITIONAL USE STANDARDS.

THE ANCHORAGE ASSEMBLY ORDAINS:

Section 1. Anchorage Municipal Code section 21.35.020 is hereby amended to read
as follows: *(Other definitions in the referenced section are not affected and are therefore
not set out unless for context.)*

21.35.020 Definitions and rules of construction.

- B. The following words, terms and phrases, when used in this title, shall have
the meanings ascribed to them in this section, except where the context
clearly indicates a different meaning:

Watershed manager means the executive director of the office of planning,
development, and public works or designee, who is the administrator of, and
storm water program coordinator for, the National Pollutant Discharge
Elimination System municipal separate storm sewer system permit required under
federal law.

Wind Energy Conversion System (WECS) means any device or assemblage which
directly converts wind energy into usable thermal, mechanical, or electrical
energy, including such devices as windmills and wind turbines, towers and
supporting structures and such directly connected facilities as generators,
alternators, inverters, batteries, and associated control equipment.

- A. A small WECS has a rated power capacity of not more than 100 kW and is
intended to produce power primarily for on-site consumption, either
instead of or as a supplement to utility power.

B. A utility WECS has one or more WECS units with a rated capacity greater than 100 kW, and is intended primarily to provide distributed electric power as a public or private utility.

(GAAB 21.05.020; AO No. 77-355; AO No. 78-16; AO No. 78-28; AO No. 78-171; AO No. 78-231; AO No. 79-214; AO No. 80-42; AO No. 81-67(S); AO No. 81-97; AO No. 81-180; AO No. 82-54; AO No. 82-167; AO No. 83-91(S); AO No. 84-14; AO No. 84-52; AO No. 85-58; AO No. 85-159; AO No. 85-91, 10-1-85; AO No. 85-216; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 86-171; AO No. 88-172; AO No. 88-171(S-1), 12-31-88; AO No. 89-35, 4-7-89; AO No. 88-147(S-2); AO No. 90-50(S); AO No. 91-35; AO No. 90-152(S); AO No. 91-90(S); AO No. 91-184; AO No. 92-7(S-2); AO No. 92-26; AO No. 92-93; AO No. 92-128(S); AO No. 92-129(S); AO No. 93-58; AO No. 93-148, § 1, 11-16-93; AO No. 94-62, § 2, 4-12-94; AO No. 95-68(S-1), §§ 2, 3, 8-8-95; AO No. 95-173, § 1, 11-14-95; AO No. 96-41, § 1, 3-5-96; AO No. 96-131(S), § 1, 10-22-96; AO No. 98-106, § 1, 7-21-98; AO No. 98-160, § 3, 12-8-98; AO No. 99-62, § 2, 5-11-99; AO No. 2000-119(S), § 8, 2-20-01; AO No. 2001-79(S), § 1, 5-8-01; AO No. 2001-80, § 1, 5-8-01; AO No. 2002-101(S), § 2, 4-9-02; AO No. 2002-109, § 2, 9-10-02; AO No. 2002-117, § 4, 1-28-03; AO No. 2003-62(S-1), § 3, 10-1-03; AO No. 2003-97, § 1, 9-30-03; AO No. 2003-132, § 1, 10-7-03; AO No. 2003-124(S), § 1, 1-20-04; AO No. 2004-108(S), § 2, 10-26-04; AO No. 2005-9, § 1, 3-1-05; AO No. 2005-150(S-1), § 1, 2-28-06; AO No. 2005-185(S), § 1, 2-28-06; AO No. 2005-124(S-1A), § 4, 4-18-06; AO No. 2006-121, § 1, 9-26-06; AO No. 2006-64(S-1), § 1, 12-12-06)

Section 2. Anchorage Municipal Code subsection 21.40.020 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.020 PLI public lands and institutions district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

6. One free-standing small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

7. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of

section 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

22. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

23 Utility wind energy conversion systems.

(GAAB 21.05.050.A; AO No. 77-355; AO No. 79-25; AO No. 81-67(S); AO No. 81-178(S); AO No. 82-24; AO No. 83-78; AO No. 84-34; AO No. 85-18; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 86-19; AO No. 86-90; AO No. 88-7(S), 7-4-88; AO No. 90-152(S); AO No. 92-93; AO No. 93-148, § 3, 11-16-93; AO No. 95-68(S-1), § 4, 8-8-95; AO No. 96-131(S), § 3, 10-22-96; AO No. 99-62, § 3, 5-11-99; AO No. 99-131, § 6, 10-26-99; AO No. 99-149, § 1, 12-14-99; AO No. 2002-109, § 3, 9-12-02; AO No. 2003-132, § 2, 10-7-03; AO No. 2005-9, § 2, 3-1-05; AO No. 2005-42(S), § 1, 5-31-05; AO No. 2005-150(S-1), § 2, 2-28-06; AO No. 2005-185(S), § 2, 2-28-06; AO No. 2005-124(S-1A), § 5, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 3. Anchorage Municipal Code subsection 21.40.030 is hereby amended to read as follows: (*Subsections not affected by this ordinance are not set out unless for context.*)

21.40.030 R-1 and R-1A single-family residential districts.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.B; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 83-216; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-

23; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 98-53(S), § 1, 6-9-98; AO No. 99-49, § 1, 3-23-99; AO No. 99-62, § 4, 5-11-99; AO No 2002-109, § 3, 9-10-02; AO No. 2005-175, § 1, 1-10-06; AO No. 2005-178, § 2, 1-24-06; AO No. 2005-185(S), § 3, 2-28-06; AO No. 2005-124(S-1A), § 6, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 4. Anchorage Municipal Code subsection 21.40.040 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.040 R-2A two-family residential district (large lot); R-2D two-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.C; AO No. 77-355; AO No. 79-13; AO No. 80-27; AO No. 80-42; AO No. 81-67(S); AO No. 82-54; AO No. 83-217; AO No. 84-52; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 85-163; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 98-53(S), § 2, 6-9-98; AO No. 99-49, § 2, 3-23-99; AO No. 99-62, § 5, 5-11-99; AO No. 2005-175, § 2, 1-10-06; AO No. 2005-178, § 3, 1-24-06; AO No. 2005-185(S), § 4, 2-28-06; AO No. 2005-124(S-1A), § 7, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 5. Anchorage Municipal Code subsection 21.40.045 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.045 R-2M multiple-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.C; AO No. 77-355; AO No. 79-13; AO No. 80-27; AO No. 80-42; AO No. 81-67(S); AO No. 82-54; AO No. 83-217; AO No. 84-52; AO No. 85-18; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 85-163; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 98-53(S), § 3, 6-9-98; AO No. 99-49, § 3, 3-23-99; AO No. 99-62, § 6, 5-11-99; AO No. 2005-175, § 3, 1-10-06; AO No. 2005-178, § 4, 1-24-06; AO No. 2005-185(S), § 5, 2-28-06; AO No. 2005-124(S-1A), § 8, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 6. Anchorage Municipal Code subsection 21.40.050 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.050 R-3 multiple-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

8. One small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.D; AO No. 77-355; AO No. 80-27; AO No. 80-42; AO No. 81-67(S); AO No. 82-54; AO No. 83-218; AO No. 84-52; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 85-163; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 96-131(S), § 2, 10-22-96; AO No. 99-62, § 7, 5-11-99; AO No. 2005-175, § 4, 1-10-06; AO No. 2005-178, § 5, 1-24-06; AO No. 2005-185(S), § 6, 2-28-06; AO No. 2005-124(S-1A), § 9, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 7. Anchorage Municipal Code subsection 21.40.060 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.060 R-4 multiple-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One free-standing small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.

10. Building-mounted small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.E; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 96-131(S), § 2, 10-22-96; AO No. 99-62, § 8, 5-11-99; AO No. 2003-124(S), § 2, 1-20-04; AO No. 2005-175, § 5, 1-10-06; AO No. 2005-178, § 6, 1-24-06; AO No. 2005-185(S), § 7, 2-28-06; AO No. 2005-124(S-1A), § 10, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 8. Anchorage Municipal Code subsection 21.40.070 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.070 R-5 rural residential district; R-5A, rural residential district (large lot).

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.F; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 83-52; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 99-62, § 9, 5-11-99; AO No. 2002-63(S), § 1, 5-21-02; AO No. 2005-175, § 6, 1-10-06; AO No. 2005-178, § 7, 1-24-06; AO No. 2005-185(S), § 8, 2-28-06; AO No. 2005-124(S-1A), § 11, 4-18-06; AO No. 2006-121, § 2, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 9. Anchorage Municipal Code subsection 21.40.080 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.080 R-6 suburban residential district (large lot).

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.G; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 99-27, § 1, 2-23-99; AO No. 99-62, § 10, 5-11-99; AO No. 2005-175, § 7, 1-10-06; AO No. 2005-178, § 8, 1-24-06; AO No. 2005-185(S), § 9, 2-28-06; AO No. 2005-124(S-1A), § 12, 4-18-06; AO No. 2006-121, § 3, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 10. Anchorage Municipal Code subsection 21.40.090 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.090 R-7 intermediate rural residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

11. One small wind energy conversion systems by administrative site
plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.H; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No.
82-54; AO No. 83-219; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-
23; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No.
92-114; AO No. 99-62, § 11, 5-11-99; AO No. 2005-175, § 8, 1-10-06; AO No.
2005-178, § 9, 1-24-06; AO No. 2005-185(S), § 10, 2-28-06; AO No. 2005-124(S-
1A), § 13, 4-18-06; AO No. 2006-121, § 4, 9-26-06; AO No. 2006-64(S-1), §§ 2,
3, 12-12-06)

Section 11. Anchorage Municipal Code subsection 21.40.100 is hereby amended to
read as follows: *(Subsections not affected by this ordinance are not set out unless for
context.)*

21.40.100 R-8 rural residential district (large lot).

C. *Permitted accessory uses and structures.* Permitted accessory uses and
structures are as follows:

12. One small wind energy conversion systems by administrative site
plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.U; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No.
82-54; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 86-
90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 98-53(S), § 4, 6-
9-98; AO No. 99-62, § 12, 5-11-99; AO No. 2005-175, § 9, 1-10-06; AO No.
2005-178, § 10, 1-24-06; AO No. 2005-185(S), § 11, 2-28-06; AO No. 2005-
124(S-1A), § 14, 4-18-06; AO No. 2006-121, § 5, 9-26-06; AO No. 2006-64(S-1),
§§ 2, 3, 12-12-06)

Section 12. Anchorage Municipal Code subsection 21.40.110 is hereby amended to
read as follows: *(Subsections not affected by this ordinance are not set out unless for
context.)*

21.40.110 R-9 rural residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

12. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.V; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 98-53(S), § 5, 6-9-98; AO No. 99-62, § 13, 5-11-99; AO No. 2005-175, § 10, 1-10-06; AO No. 2005-178, § 11, 1-24-06; AO No. 2005-185(S), § 12, 2-28-06; AO No. 2005-124(S-1A), § 15, 4-18-06; AO No. 2006-121, § 6, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 13. Anchorage Municipal Code subsection 21.40.115 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.115 R-10 residential alpine/slope district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(AO No. 81-97; AO No. 81-217; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 98-53(S), § 6, 6-9-98; AO No. 99-49, § 1, 3-23-99; AO No. 99-62, § 14, 5-11-99; AO No. 2005-175, § 11, 1-10-06; AO No. 2005-178, § 12, 1-24-06; AO No. 2005-185(S), § 13, 2-28-06; AO No. 2005-124(S-1A), § 16, 4-18-06; AO No. 2006-121, § 7, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 14. Anchorage Municipal Code subsection 21.40.117 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.117 R-11 Turnagain Arm district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

8. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(AO No. 82-162; AO No. 84-34; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 86-122; AO No. 86-182; AO No. 88-143; AO No. 88-144, 11-26-88; AO No. 88-171(S-1), 12-31-88; AO No. 94-120, § 1, 8-23-94; AO No. 94-238(S), § 3, 2-28-94; AO No. 94-239, § 1, 2-14-95; AO No. 96-118, § 1, 8-22-96; AO No. 96-118, § 1, 8-13-96; AO No. 99-62, § 15, 5-11-99; AO No. 2001-88, § 1, 6-5-01; AO No. 2005-175, § 12, 1-10-06; AO No. 2005-178, § 13, 1-24-06; AO No. 2005-185(S), § 14, 2-28-06; AO No. 2005-124(S-1A), § 17, 4-18-06; AO No. 2006-121, § 8, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 15. Anchorage Municipal Code subsection 21.40.130 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.130 R-O residential-office district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

6. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.I; AO No. 77-219; AO No. 77-355; AO No. 78-199; AO No. 80-57; AO No. 81-67(S); AO No. 83-226; AO No. 85-18; AO No. 85-23; AO No. 85-69; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 86-171; AO No. 88-171(S-1),

12-31-88; AO No. 88-147(S-2); AO No. 91-97; AO No. 92-114; AO No. 96-131(S), § 3, 10-22-96; AO No. 99-62, § 16, 5-11-99; AO No. 2003-124(S), § 3, 1-20-04; AO No. 2005-175, § 13, 1-10-06; AO No. 2005-178, § 14, 1-24-06; AO No. 2005-185(S), § 15, 2-28-06; AO No. 2005-124(S-1A), § 18, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 16. Anchorage Municipal Code subsection 21.40.140 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.140 B-1A local and neighborhood business district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

6. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.J; AO No. 77-355; AO No. 78-28; AO No. 78-169; AO No. 81-67(S); AO No. 81-143; AO No. 83-210; AO No. 85-18; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 85-173, 3-17-86; AO No. 86-90; AO No. 87-62; AO No. 88-49(S); AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 96-131(S), § 2, 10-22-96; AO No. 99-62, § 17, 5-11-99; AO No. 2005-185(S), § 16, 2-28-06; AO No. 2005-124(S-1A), § 19, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 17. Anchorage Municipal Code subsection 21.40.150 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.150 B-2A central business district core.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. Building-mounted small wind energy conversion systems on buildings over 60 feet in height, by administrative site plan review

and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.W; AO No. 77-20; AO No. 77-355; AO No. 80-57; AO No. 81-67(S); AO No. 81-72; AO No. 82-49; AO No. 85-173, 3-17-86; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 87-62; AO No. 87-148; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 90-124; AO No. 91-1; AO No. 91-39; AO No. 91-144; AO No. 92-57; AO No. 95-68(S-1), § 6, 8-8-95; AO No. 98-160, § 4, 12-8-98; AO No. 98-188, §§ 1--3, 1-12-99; AO No. 99-62, § 19, 5-11-99; AO No. 99-131, § 7, 10-26-99; AO No. 2001-80, § 3, 5-8-01; AO No. 2005-185(S), § 18, 2-28-06; AO No. 2005-124(S-1A), § 21, 4-18-06; AO No. 2006-49, § 1, 5-16-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 5, 10-23-07)

Section 18. Anchorage Municipal Code subsection 21.40.160 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.160 B-2B central business district, intermediate.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. Building-mounted small wind energy conversion systems on buildings over 60 feet in height, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.Y; AO No. 77-20; AO No. 77-355; AO No. 80-57; AO No. 81-67(S); AO No. 81-72; AO No. 82-49; AO No. 85-173, 3-17-86; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 87-62; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 90-124; AO No. 91-1; AO No. 91-39; AO No. 91-144; AO No. 92-57; AO No. 95-68(S-1), § 7, 8-8-95; AO No. 96-131(S), § 3, 10-22-96; AO No. 98-160, § 5, 12-8-98; AO No. 98-188, §§ 4--6, 1-12-99; AO No. 99-62, § 20, 5-11-99; AO No. 99-131, § 8, 10-26-99; AO No. 99-149, § 2, 12-14-99; AO No. 2001-80, § 4, 5-8-01; AO No. 2005-185(S), § 19, 2-28-06; AO No. 2005-124(S-1A), § 22, 4-18-06; AO No. 2006-49, § 2, 5-16-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 6, 10-23-07)

Section 19. Anchorage Municipal Code subsection 21.40.170 is hereby amended to

read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.170 B-2C central business district, periphery.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

5. Building-mounted small wind energy conversion systems on buildings over 60 feet in height, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.X; AO No. 77-20; AO No. 77-355; AO No. 80-57; AO No. 81-67(S); AO No. 82-49; AO No. 85-173, 3-17-86; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 87-62; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 90-124; AO No. 91-1; AO No. 91-39; AO No. 91-144; AO No. 92-57; AO No. 95-68(S-1), § 8, 8-8-95; AO No. 96-131(S), § 3, 10-22-96; AO No. 98-160, § 6, 12-8-98; AO No. 98-173, § 4, 11-3-98; AO No. 98-188, §§ 7-9, 1-12-99; AO No. 99-62, § 21, 5-11-99; AO No. 99-131, § 9, 10-26-99; AO No. 99-149, § 3, 12-14-99; AO No. 2001-80, § 5, 5-8-01; AO No. 2005-185(S), § 20, 2-28-06; AO No. 2005-124(S-1A), § 23, 4-18-06; AO No. 2006-49, § 3, 5-16-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 7, 10-23-07)

Section 20. Anchorage Municipal Code subsection 21.40.180 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.180 B-3 general business district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

3. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.M; AO No. 77-355; AO No. 78-28; AO No. 80-57; AO No. 80-132; AO No. 81-67(S); AO No. 83-209; AO No. 85-18; AO No. 85-91, 10-1-85; AO No. 85-173, 3-17-86; AO No. 86-90; AO No. 86-182; AO No. 87-32; AO No. 87-62; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-26; AO No. 92-114; AO No. 95-68(S-1), § 9, 8-8-95; AO No. 96-107, § 1, 7-30-96; AO No. 96-131(S), § 3, 10-22-96; AO No. 98-160, § 7, 12-8-98; AO No. 99-62, § 22, 5-11-99; AO No. 2001-80, § 6, 5-8-01; AO No. 2004-108(S), § 3, 10-26-04; AO No. 2005-185(S), § 21, 2-28-06; AO No. 2005-124(S-1A), § 24, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 21. Anchorage Municipal Code subsection 21.40.200 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.200 I-1 light industrial district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of section 21.45.410.

5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

17. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

(GAAB 21.05.050.O; AO No. 77-355; AO No. 79-95; AO No. 81-67(S); AO No. 82-105; AO No. 84-57; AO No. 85-91, 10-1-85; AO No. 85-95; AO No. 86-50; AO No. 86-90; AO No. 87-32; AO No. 88-147(S-2); AO No. 90-50(S); AO No. 92-114; AO No. 95-68(S-1), § 11, 8-8-95; AO No. 95-76, § 1, 4-4-95; AO No. 95-

194, § 1, 1-2-96; AO No. 98-160, § 9, 12-8-98; AO No. 98-173, § 5, 11-3-98; AO No. 99-62, § 24, 5-11-99; AO No. 2001-80, § 8, 5-8-01; AO No. 2004-5, § 1, 1-20-04; AO No. 2004-108(S), § 5, 10-26-04; AO No. 2004-178(am), § 1, 1-25-05; AO No. 2005-9, § 3, 3-1-05; AO No. 2005-185(S), § 23, 2-28-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 22. Anchorage Municipal Code subsection 21.40.210 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.210 I-2 heavy industrial district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of section 21.45.410.

5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

8. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

9. Utility wind energy conversion systems.

(GAAB 21.05.050.P; AO No. 77-355; AO No. 85-91, 10-1-85; AO No. 87-32; AO No. 91-184; AO No. 93-148, § 4, 11-16-93; AO No. 96-60, § 1, 8-6-96; AO No. 96-125, § 1, 11-12-96; AO No. 97-78, § 2, 6-3-97; AO No. 99-62, § 25, 5-11-99; AO No. 2001-80, § 9, 5-8-01; AO No. 2005-185(S), § 24, 2-28-06; AO No. 2005-124(S-1A), § 26, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 23. Anchorage Municipal Code subsection 21.40.240 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.240 T transition district.

D. *Conditional uses.* Subject to the requirements of the conditional use and site plan standards and procedures of this title, the following uses may be permitted only as a conditional use:

12. Small wind energy conversion systems, subject to the requirements of section 21.50.470.

13. Utility wind energy conversion systems.

(GAAB 21.05.050.S; AO No. 77-355; AO No. 79-25; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 88-59(S); AO No. 88-171(S-1), 12-31-88; AO No. 98-160, § 10, 12-8-98; AO No. 99-62, § 28, 5-11-99; AO No. 2005-185(S), § 26, 2-28-06; AO No. 2005-124(S-1A), § 28, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 12, 10-23-07)

Section 24. Anchorage Municipal Code subsection 21.40.260 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.260 AF antenna farm district.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

4. Utility wind energy conversion systems.

(AO No. 88-147(S-2); AO No. 99-62, § 29, 5-11-99; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 25. Anchorage Municipal Code subsection 21.40.270 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.270 MC marine commercial district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

- ***
4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of 21.45.410.
 5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use and site plan standards and procedures of Sections 21.15.030 and 21.50.020, the following uses may be permitted:

- ***
2. Conditional uses with general standards in Section Chapter 21.50:
- ***
- f. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

(AO No. 98-160, § 11, 12-8-98; AO No. 99-62, § 30, 5-11-99; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 26. Anchorage Municipal Code subsection 21.40.280 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.280 MI marine industrial district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

- ***
4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of 21.45.410.
5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of sections 21.15.030 and 21.50.020, the following uses may be permitted:

- ***
6. Two or three small wind energy conversion systems, subject to the requirements of section 21.50.470.
7. Utility wind energy conversion systems.
- ***

(AO No. 99-62, § 31, 5-11-99; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 27. Anchorage Municipal Code chapter 21.45 is hereby amended to add a new section to read as follows:

21.45.410 Small wind energy conversion systems.

- A. *Purpose.* The purpose of this section is to regulate and provide standards for small wind energy conversion systems (WECS) as defined in this Code, and to encourage the development of small wind energy systems.
- B. *Approval Process.* Small WECS are subject to an administrative site plan review. Sufficient information shall be provided with the application to show that the standards below have been met. The planning director shall grant approval if the standards of this section have been met, and that the applicant has sized and sited the system to reduce impacts on surrounding properties to the maximum extent feasible.
- C. *Submittal Requirements.*

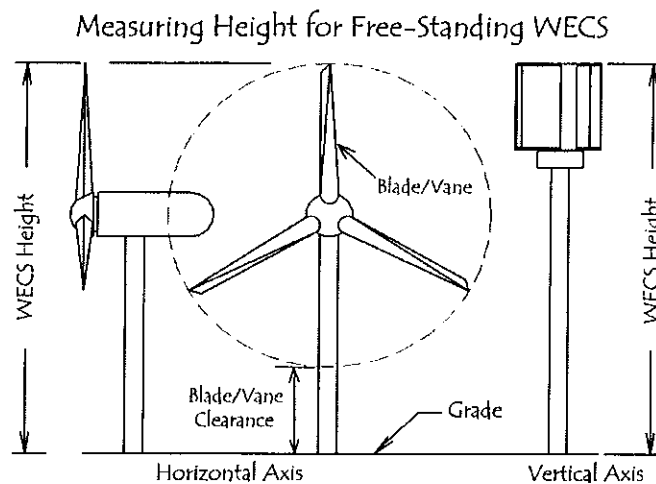
1. A description of the project, including the maximum rated power output capacity of the WECS.
2. The make, model, an illustrative photograph or brochure, manufacturer's specifications including noise decibels data for the proposed WECS, the support structure, and method of attachment to the ground and/or structure.
3. Elevation drawing of the WECS showing total height, turbine dimensions, tower and turbine colors, distance between ground and lowest point of any blade, and if proposed, the location of ladders, climbing pegs, and access doors.
4. If the WECS is not certified as meeting the IEEE 1547 standard (Institute of Electrical and Electronic Engineers), then an assessment of potential electromagnetic interference with microwave, radio, television, personal communication systems and other wireless communication is required.
5. Applications shall include a visual impact analysis of the proposed WECS as installed, which shall include color photographs of the proposed site from at least two locations accurately depicting the existing conditions. A computerized photographic simulation, demonstrating any visual impacts from strategic vantage points, is desirable and may be required at the Director's discretion. The applicant shall indicate any visual screening proposed to be incorporated into the project that is intended to lessen the system's visual prominence.

D. *Building-Mounted WECS.*

1. In residential districts on lots less than 20,000 square feet, a building mounted WECS shall not exceed the maximum height for principal structures of the underlying zoning district.
2. On buildings of 60 feet or less in height, building mounted WECS shall be no taller than 10 feet.
3. On buildings over 60 feet in height, building mounted WECS shall be set back from the structure edge by at least two feet for every one foot of height greater than 10 feet.
4. Building-mounted WECS shall meet the design standards for free-standing WECS in subsection E.5. below, with the exception of E.5.e.

E. *Free-Standing WECS.*

1. Number of WECS. Only one small WECS per lot is allowed in residential zoning districts. Adjoining lots under the same ownership shall be treated as one lot for purposes of this limitation.
2. Minimum Lot Area and Maximum Height.
 - a. The minimum lot area for a small WECS is 20,000 square feet.
 - b. The height of a small WECS shall be determined by compliance with the setback provisions of subsection E.4. below. In no instance shall a small WECS exceed 95 feet in height.
 - c. Height shall be measured as depicted in the illustration. Structures shall not interfere with Federal Aviation Administration Regulations on airport approaches. In no case shall the height exceed manufacturer's specifications.



3. *Blade or Vane Clearance.* Lowest point of moving elements, such as blades or vanes, shall be at least 25 feet above grade. No blades may extend over public sidewalks/trails.
4. *Setbacks.*
 - a. Except as allowed in 4.b. below, all WECS shall be setback from all property lines at least 1.1 times the height of system

- b. On lots abutting water bodies such as lakes or ponds, the WECS shall be setback at least 15 feet from the water body edge, but the setback distance required in 4.a. above may extend into the water body, provided that the full extent of the setback distance falls within the water body.
- c. All WECS shall be located so that the principal structure is between the WECS and the front property line.
- d. All systems shall be setback at least 1.1 times the height of the system from all overhead power and telecommunication lines, and any telecommunications towers.

5. *Design Standards.*

- a. Operational noise shall not exceed 50dBH at property line except for short-term high wind speed events such as storms.
- b. All systems shall be equipped with manual and automatic (mechanical or electrical) over-speed controls to limit the blade rotation speed to within the design limits of the system.
- c. The rotating turbine shall not produce vibrations that are humanly perceptible beyond the property lines of the site.
- d. Lattice type towers and towers using guy wires are prohibited.
- e. All power transmission and telemetry lines from the tower to any building or other structure shall be placed underground.
- f. No tower shall be illuminated unless required by a state or federal agency, such as the FAA.
- g. All structures in a project shall be finished in a single, non-reflective, matte finished, neutral color.
- h. No commercial or non-commercial advertisements, signs, or other messages shall be placed or painted on the tower, rotor, generator or tail vane, except that a system or tower's manufacturer's logo may be displayed on a system

generator housing in an unobtrusive manner.

- F. *Abandoned or unsafe wind energy conversion systems.* Any system that is not operated for a continuous period of 12 months shall be considered abandoned and shall be dismantled and removed from the property at the expense of the property owner.

Section 28. Anchorage Municipal Code chapter 21.50 is hereby amended to add new sections to read as follows:

21.50.470 Small wind energy conversion systems—multiple free-standing towers.

- A. *Purpose.* The purpose of this section is to provide standards for multiple free-standing small WECS in industrial districts and in the PLI district.
- B. *Submittal Requirements.* Multiple free-standing small WECS in industrial districts and in the PLI districts shall provide the minimum application information required by section 21.50.480B.
- C. *Maximum number of WECS.* No more than three WECS shall be allowed on any one lot. Adjoining lots under the same ownership shall be treated as one lot for purposes of this limitation.
- D. *Standards.* Multiple free-standing small WECS shall meet the standards of section 21.45.410E.
- E. *Abandoned or unsafe wind energy conversion systems.* Any system that is not operated for a continuous period of 12 months shall be considered abandoned and shall be dismantled and removed from the property at the expense of the property owner.

21.50.480 Utility wind energy conversion systems.

- A. *Purpose.* The purpose of this section is to provide standards for utility scale wind energy conversion systems (WECS) generally utilizing multiple towers designed to produce electric power as a public or private utility.
- B. *Submittal Requirements.* In addition to the minimum application information set forth in 21.15.030.C, the following shall be provided:
1. The make, model, an illustrative photograph or brochure, manufacturer's specifications including noise decibels data for the proposed WECS, and the support structure for each WECS model

proposed.

2. Elevation drawing of each WECS model showing total height, turbine dimensions, tower and turbine colors, distance between ground and lowest point of any blade, and if proposed, the location of ladders, climbing pegs, and access doors.
3. An assessment of potential electromagnetic interference with microwave, radio, television, personal communication systems and other wireless communication.
4. An analysis of impacts on local wildlife shall be prepared, regarding impacts anticipated during construction, reconstruction, modification or operation of WECS. Wildlife impacts to be considered shall include, at a minimum, anticipated impacts on birds.
5. If any habitable building is located within 1,300 feet of any proposed Utility WECS unit, then the applicant shall conduct a study on potential shadow flicker. The study shall identify locations where shadow flicker may be caused by the WECS and the expected durations of the flicker at these locations. The study shall identify areas where shadow flicker may interfere with habitable buildings and describe measures that shall be taken to eliminate or mitigate the problems. The applicant has the burden of proving that shadow flicker will not negatively impact neighboring uses.
6. Applications shall include a visual impact analysis of the proposed WECS as installed, which may include a computerized photographic simulation, demonstrating any visual impacts from strategic vantage points. Color photographs of the proposed site from at least two locations accurately depicting the existing conditions shall be included. The visual analysis shall also indicate the color treatment of the system's components and any visual screening incorporated into the project that is intended to lessen the system's visual prominence.
7. A noise analysis by a competent acoustical consultant documenting the noise levels associated with the proposed WECS. The study shall document projected noise levels at property lines. The noise analysis shall include low frequency noise.

C. *Height.* The height as measured from grade to the highest point of the fully operational system, including the turbine vane(s), shall not exceed 450 feet

1 in the AF, W, T, and PLI zoning districts, or 200 feet in any other district
2 in which a Utility WECS may be approved. A Utility WECS shall not
3 interfere with Federal Aviation Administration Regulations in the vicinity
4 of an airport. In no case shall the height exceed manufacturer's
5 specifications.

6
7 D. *Blade or Vane Clearance.* Lowest point of moving elements, such as
8 blades or vanes, shall be at least 30 feet above grade.

9
10 E. *Setbacks.*

11
12 1. All WECS shall setback from all residential property lines at least
13 3.0 times the height of system, and from all non-residential
14 property lines a minimum of 2.0 times the height of the system.

15
16 2. All systems shall be at least 325 feet from any telecommunications
17 towers.

18
19 3. The tower shall maintain a minimum separation distance equal to
20 1.1 times the height of system from all overhead power and
21 telecommunication lines.

22
23 F. *Design Standards.*

24
25 1. Operational noise shall not exceed 60dBH at property line except
26 for short-term high wind speed events such as storms.

27
28 2. The rotating turbine shall not produce vibrations that are humanly
29 perceptible beyond the property lines of the site.

30
31 3. Lattice type towers and towers using guy wires are prohibited.

32
33 4. All power transmission and telemetry lines from the tower to any
34 building or other structure shall be placed underground, unless
35 otherwise allowed by the planning and zoning commission.

36
37 5. No tower shall be illuminated unless required by a state or federal
38 agency, such as the FAA.

39
40 6. All structures in a project shall be finished in a single, non-
41 reflective, matte finished, neutral color.

42
43 7. No commercial or non-commercial advertisements, signs, or other
44 messages shall be placed or painted on the tower, rotor, generator
45 or tail vane, except that a system or tower's manufacturer's logo

1 may be displayed on a system generator housing in an unobtrusive
2 manner, as approved by the planning and zoning commission.
3

- 4 8. WECS structure shall be designed to prevent unauthorized external
5 access to electrical and mechanical components and shall have
6 access doors that are kept securely locked. No climbing pegs or
7 tower ladders shall be located closer than 12 feet to the ground
8 level at the base of the structure. A fence with a locking portal
9 may be required by the Planning and Zoning Commission to
10 enclose the entire WECS tower site.
11

- 12 G. *Abandoned or unsafe wind energy conversion systems.* Any system that is
13 not operated for a continuous period of 12 months shall be considered
14 abandoned and shall be dismantled and removed from the property at the
15 expense of the property owner.
16

17 **Section 29.** This ordinance shall become effective immediately upon its passage and
18 approval by the Assembly.
19

20 PASSED AND APPROVED by the Anchorage Assembly this ____ day of
21 _____, 200__.
22

23
24
25 _____
Chair

26 ATTEST:
27
28
29
30

Municipal Clerk

MUNICIPALITY OF ANCHORAGE
Summary of Economic Effects -- General Government

AO Number: 2008-136

Title: AN ORDINANCE AMENDING ANCHORAGE MUNICIPAL CODE SECTIONS 21.35.020 DEFINITIONS AND RULES OF CONSTRUCTION, 21.40 ZONING DISTRICTS, 21.45 SUPPLEMENTARY DISTRICT REGULATIONS, AND 21.50 STANDARDS FOR CONDITIONAL USES AND SITE PLANS, TO DEFINE WIND ENERGY CONVERSION SYSTEMS (WECS), TO ALLOW WECS IN CERTAIN ZONING DISTRICTS AS ACCESSORY USES BY ADMINISTRATIVE SITE PLAN REVIEW AND AS CONDITIONAL USES, TO SET GENERAL STANDARDS AND CONDITIONAL USE STANDARDS. (PZC Case No. 2008-127)

Sponsor: Mayor
Preparing Agency: Planning Department
Others Impacted:

CHANGES IN EXPENDITURES AND REVENUES:		(In Thousands of Dollars)				
	FY08	FY09	FY10	FY11	FY12	
Operating Expenditures						
1000 Personal Services						
2000 Non-Labor						
3900 Contributions						
4000 Debt Service						
TOTAL DIRECT COSTS:	\$ -	\$ -	\$ -	\$ -	\$ -	
Add: 6000 Charges from Others						
Less: 7000 Charges to Others						
FUNCTION COST:	\$ -	\$ -	\$ -	\$ -	\$ -	
REVENUES:						
CAPITAL:						
POSITIONS: FT/PT and Temp						
PUBLIC SECTOR ECONOMIC EFFECTS:						

Approval of this ordinance should have no significant impact on the public sector.

PRIVATE SECTOR ECONOMIC EFFECTS:

Approval of this ordinance should have no significant economic impact on the private sector. The ordinance facilitates the installation of Wind Energy Conversion Systems (WECS) for on-site and utility-scale renewable energy production.

Prepared by: Tyler Robinson, Physical Planning Supervisor Telephone: 343-7920

MUNICIPALITY OF ANCHORAGE

ASSEMBLY MEMORANDUM

No. AM 843-2008

Meeting Date: December 16, 2008

From: MAYOR

Subject: AN ORDINANCE AMENDING ANCHORAGE MUNICIPAL CODE SECTIONS 21.35.020 DEFINITIONS AND RULES OF CONSTRUCTION, 21.40 ZONING DISTRICTS, 21.45 SUPPLEMENTARY DISTRICT REGULATIONS, AND 21.50 STANDARDS FOR CONDITIONAL USES AND SITE PLANS, TO DEFINE WIND ENERGY CONVERSION SYSTEMS (WECS), TO ALLOW WECS IN CERTAIN ZONING DISTRICTS AS ACCESSORY USES BY ADMINISTRATIVE SITE PLAN REVIEW AND AS CONDITIONAL USES, TO SET GENERAL STANDARDS AND CONDITIONAL USE STANDARDS.

This ordinance would amend sections of Title 21 of the Anchorage Municipal Code to define Wind Energy Conversion Systems (WECS) and establish the standards and criteria by which WECS may be erected.

The ordinance addresses both utility-scale and small-scale WECS, the latter of which is intended for on-site use. Utility-scale WECS are often sited in "wind farms," where turbines can be mounted up to 300 feet high in order to harvest steady winds. Small WECS are designed for homes and businesses, and can either be pole- or building-mounted. Manufacturers also offer both traditional horizontal axis turbines as well as vertical axis turbines, which resemble a revolving DNA helix. As a response to market and regulatory demands in urban areas, manufacturers are designing WECS to be "architecturally integrated" to the buildings on which they are mounted.

The Department of Energy's (DOE's) Wind Program and National Renewable Laboratory indicates that "good" and "superb" potential for wind power exists in the state of Alaska, especially in western and coastal regions. For the most part, the potential for wind power in Anchorage is poor to fair. Exceptions include off-shore areas such as Fire Island and areas along the Turnagain Arm, as well as some of the prominent Chugach ridgelines. DOE's wind resource map is intended to show areas with the greatest potential for utility-scale production. Smaller scale wind energy may be viable in parts of the Municipality, and ultimately regardless of the energy payback, the investment is an individual decision.

Potential land use impacts associated with WECS include noise, aesthetic, safety, and property values. Additional considerations include flicker shadows, vibrations, and wildlife impacts. The following is a summary of the proposed ordinance:

Definitions

- “Small Wind Energy Conversion System (WECS)” defined as intended to produce power for on-site consumption with power capacity no greater than 100 kW.
- “Utility WECS” defined as intended to provide distributed electric power as a utility.

By administrative site plan review

- One Small WECS (free-standing or building-mounted) allowed as accessory use in R-1, R-1A, R-2A, R-2D, R-5, R-5A, R-6, R-7, R-8, R-9, R-10, R-11, R-O.
- One Small WECS (free-standing or building-mounted) allowed as accessory use on lots with only one principal structure in R-2M, R-3, R-4 (R-4 can have multiple building-mounted Small WECS).
- Building-mounted Small WECS (no limit on number) allowed as accessory use in PLI, B-1A, B-3.
- Building-mounted Small WECS (no limit on number) allowed on buildings over 60 feet high, as accessory use in B-2A, B-2B, B-2C.
- One free-standing and multiple building-mounted Small WECS allowed as accessory use in PLI, I-1, I-2, MC, MI.

By conditional use

- Two or three free-standing Small WECS in PLI, I-1, I-2, MC, MI.
- One to three free-standing Small WECS in T.
- Any WECS in W.
- Utility WECS in PLI, I-2, AF, MI, T.

Standards for Building-mounted Small WECS

- If lot size is less than 20,000 in residential districts, then WECS must meet underlying district standards, except that they may exceed maximum height by 10 feet.
- WECS height limited to 10 feet on buildings 60 feet high or less.
- Setback (2 feet for every 1 foot of WECS height over 10 feet) from building edge required for WECS on buildings taller than 60 feet.
- Same design standards as for Free-standing Small WECS below, except for undergrounding of power lines.

Standards for Free-standing Small WECS

- Minimum lot size is 20,000 square feet.
- WECS must be setback 1.1 times height from all property lines (except property line abutting lake or pond—some relief for that situation)
- Maximum height is 95 feet.
- Only monopoles allowed—no lattice towers or guyed towers.
- Design standards for location on lot (back yard), noise, vibration, blade clearance from ground, undergrounding of power lines, color, illumination, and signs.
- Maximum of three on any lot, if multiple are allowed in district.

Standards for Utility WECS

- Maximum height is 450 feet in PLI, AF, T, and W districts, and 200 in I-2 and MI.
- Utility WECS must be setback 3 times height from residential districts and 2 times height from nonresidential districts.
- Design standards for noise, vibration, blade clearance, undergrounding of power lines, color, illumination, signs, and access.
- Only monopoles allowed—no lattice towers or guyed towers.

This proposed ordinance was heard by the Planning and Zoning Commission on October 6, 2008. The Commission approved the ordinance with suggested staff amendments from the case packet and recommended an additional amendment below, which is supported by staff.

In Subsection 21.45.410.410.D.1, “In residential districts on lots less than 20,000 square feet, a building-mounted WECS shall not exceed the maximum height for the principal structures of the underlying zoning district by more than 10 feet.”

Planning and Zoning Commission Resolution No. 2008-073’s Attachment A shows the staff- and commission-recommended amendments in blue text.

The Administration feels that the ordinance facilitates the development of small- and utility-scale WECS while establishing standards to mitigate their impacts. This ordinance merits the consideration of the Assembly.

1 **THE ADMINISTRATION RECOMMENDS APPROVAL OF AN ORDINANCE**
2 **AMENDING ANCHORAGE MUNICIPAL CODE SECTIONS 21.35.020**
3 **DEFINITIONS AND RULES OF CONSTRUCTION, 21.40 ZONING DISTRICTS,**
4 **21.45 SUPPLEMENTARY DISTRICT REGULATIONS, AND 21.50 STANDARDS**
5 **FOR CONDITIONAL USES AND SITE PLANS, TO DEFINE WIND ENERGY**
6 **CONVERSION SYSTEMS (WECS), TO ALLOW WECS IN CERTAIN ZONING**
7 **DISTRICTS AS ACCESSORY USES BY ADMINISTRATIVE SITE PLAN REVIEW**
8 **AND AS CONDITIONAL USES, TO SET GENERAL STANDARDS AND**
9 **CONDITIONAL USE STANDARDS.**

10
11
12 Prepared by: Tyler Robinson, Planning Department
13 Approved by: Tom Nelson, Director, Planning Department
14 Concur: Mary Jane Michael, Executive Director
15 Office of Economic and Community Development
16 Concur: James N. Reeves, Municipal Attorney
17 Concur: Michael K. Abbott, Municipal Manager
18 Respectfully submitted, Mark Begich, Mayor
19
20
21

22 Attachments: 1. Planning and Zoning Commission Resolution No. 2008-073
23 2. Planning and Zoning Commission Minutes of October 6, 2008
24 3. Planning Department Staff Packet for PZC Case 2008-127, dated
25 September 29, 2008

MUNICIPALITY OF ANCHORAGE

PLANNING AND ZONING COMMISSION RESOLUTION NO. 2008-073

A RESOLUTION RECOMMENDING APPROVAL OF AN ORDINANCE AMENDING ANCHORAGE MUNICIPAL CODE SECTIONS 21.35.020 DEFINITIONS AND RULES OF CONSTRUCTION, 21.40 ZONING DISTRICTS, 21.45 SUPPLEMENTARY DISTRICT REGULATIONS, AND 21.50 STANDARDS FOR CONDITIONAL USES AND SITE PLANS, TO DEFINE WIND ENERGY CONVERSION SYSTEMS (WECS), TO ALLOW WECS IN CERTAIN ZONING DISTRICTS AS ACCESSORY USES BY ADMINISTRATIVE SITE PLAN REVIEW AND AS CONDITIONAL USES, TO SET GENERAL STANDARDS AND CONDITIONAL USE STANDARDS.

(Case 2008-127)

WHEREAS, wind energy has one of the highest payback ratios of any power technologies, and Wind Energy Conversion Systems (WECS) are available for both utility-scale and smaller scale production for on-site use; and

WHEREAS, the Planning Department has received several inquiries from Anchorage citizens and business owners to install WECS; however, Title 21 currently does not clearly or adequately deal with this emerging technology; and

WHEREAS, in response to these issues, the Planning Department has drafted an ordinance which provides regulations and standards to allow WECS in certain zoning districts; and

WHEREAS, the Planning and Zoning Commission held a public hearing on October 6, 2008; and

WHEREAS, the Commission deliberated on the WECS ordinance at its meeting of October 6, 2008.

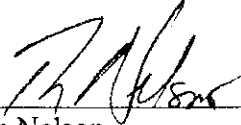
NOW, THEREFORE, BE IT RESOLVED by the Anchorage Planning and Zoning Commission that:

A. The Commission makes the following findings of fact:

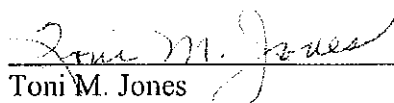
1. Title 21 should provide clear regulation and guidelines regarding the installation of both utility- and small-scale WECS.
2. The ordinance allowing WECS and providing standards for siting of WECS should balance the need to pursue new technologies for energy production with protection against potential impacts of the technology.
3. As WECS are installed in Anchorage and as innovation continues in the wind energy industry, it is likely that the ordinance will undergo revisions.

4. Planning Department staff thoroughly researched the issues of the ordinance, the Commission had a full and free discussion of the issues, and resolution was reached.
- B. The Commission recommends to the Anchorage Assembly approval of the draft ordinance prepared by the Planning Department staff dated September 29, 2008, with the following amendments:
1. In Subsection 21.45.410B., page 14, line 31, add line: "Structural stability of the foundation will be assured through the building permit process."
 2. In Subsection 21.45.410D.1., page 15, line 23, add: "by more than 10 feet."
 3. In Subsection 21.50.480B.1., page 18, lines 11-13, change to: "For each WECS model proposed, [T]he make, model, an illustrative photograph or brochure, manufacturer's specifications including noise decibels data for the proposed WECS, and drawings of the support structure stamped by a structural engineer registered in the State of Alaska [FOR EACH WECS MODEL PROPOSED]."
 4. In Subsection 21.50.480F. Design Standards, page 19, lines 23-24, replace with: "Except for short-term high wind speed events such as storms, operational noise shall not exceed 50dBH at any property line adjacent to a residential zoning district, and 60dBH at any property line adjacent to a nonresidential zoning district."

PASSED AND APPROVED by the Anchorage Planning and Zoning Commission this 6th day of October 2008.



Tom Nelson
Secretary



Toni M. Jones
Chair

Attachment A: Amended Draft Ordinance

Attachment A
To Planning and Zoning Commission Resolution No. 2008-073

Submitted by: Chair of the Assembly at
the Request of the Mayor
Prepared by: Planning Department
For reading:

ANCHORAGE, ALASKA
AO NO.

AN ORDINANCE AMENDING ANCHORAGE MUNICIPAL CODE SECTIONS 21.35.020
DEFINITIONS AND RULES OF CONSTRUCTION, 21.40 ZONING DISTRICTS, 21.45
SUPPLEMENTARY DISTRICT REGULATIONS, AND 21.50 STANDARDS FOR
CONDITIONAL USES AND SITE PLANS, TO DEFINE WIND ENERGY CONVERSION
SYSTEMS (WECS), TO ALLOW WECS IN CERTAIN ZONING DISTRICTS AS
ACCESSORY USES BY ADMINISTRATIVE SITE PLAN REVIEW AND AS
CONDITIONAL USES, TO SET GENERAL STANDARDS AND CONDITIONAL USE
STANDARDS.

THE ANCHORAGE ASSEMBLY ORDAINS:

Section 1. Anchorage Municipal Code section 21.35.020 is hereby amended to read
as follows: *(Other definitions in the referenced section are not affected and are therefore not set out
unless for context.)*

21.35.020 Definitions and rules of construction.

B. The following words, terms and phrases, when used in this title, shall have the
meanings ascribed to them in this section, except where the context clearly
indicates a different meaning:

Watershed manager means the executive director of the office of planning,
development, and public works or designee, who is the administrator of, and
storm water program coordinator for, the National Pollutant Discharge Elimination
System municipal separate storm sewer system permit required under federal
law.

Wind Energy Conversion System (WECS) means any device or assemblage
which directly converts wind energy into usable thermal, mechanical, or electrical
energy, including such devices as windmills and wind turbines, towers and
supporting structures and such directly connected facilities as generators,
alternators, inverters, batteries, and associated control equipment.

A. A small WECS has a rated power capacity of not more than 100 kW and is
intended to produce power primarily for on-site consumption, either instead of
or as a supplement to utility power.

B. A utility WECS has one or more WECS units with a rated capacity greater
than 100 kW, and is intended primarily to provide distributed electric power as
a public or private utility.

(GAAB 21.05.020; AO No. 77-355; AO No. 78-16; AO No. 78-28; AO No. 78-171; AO No. 78-231;

AO No. 79-214; AO No. 80-42; AO No. 81-67(S); AO No. 81-97; AO No. 81-180; AO No. 82-54; AO No. 82-167; AO No. 83-91(S); AO No. 84-14; AO No. 84-52; AO No. 85-58; AO No. 85-159; AO No. 85-91, 10-1-85; AO No. 85-216; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 86-171; AO No. 88-172; AO No. 88-171(S-1), 12-31-88; AO No. 89-35, 4-7-89; AO No. 88-147(S-2); AO No. 90-50(S); AO No. 91-35; AO No. 90-152(S); AO No. 91-90(S); AO No. 91-184; AO No. 92-7(S-2); AO No. 92-26; AO No. 92-93; AO No. 92-128(S); AO No. 92-129(S); AO No. 93-58; AO No. 93-148, § 1, 11-16-93; AO No. 94-62, § 2, 4-12-94; AO No. 95-68(S-1), §§ 2, 3, 8-8-95; AO No. 95-173, § 1, 11-14-95; AO No. 96-41, § 1, 3-5-96; AO No. 96-131(S), § 1, 10-22-96; AO No. 98-106, § 1, 7-21-98; AO No. 98-160, § 3, 12-8-98; AO No. 99-62, § 2, 5-11-99; AO No. 2000-119(S), § 8, 2-20-01; AO No. 2001-79(S), § 1, 5-8-01; AO No. 2001-80, § 1, 5-8-01; AO No. 2002-101(S), § 2, 4-9-02; AO No. 2002-109, § 2, 9-10-02; AO No. 2002-117, § 4, 1-28-03; AO No. 2003-62(S-1), § 3, 10-1-03; AO No. 2003-97, § 1, 9-30-03; AO No. 2003-132, § 1, 10-7-03; AO No. 2003-124(S), § 1, 1-20-04; AO No. 2004-108(S), § 2, 10-26-04; AO No. 2005-9, § 1, 3-1-05; AO No. 2005-150(S-1), § 1, 2-28-06; AO No. 2005-185(S), § 1, 2-28-06; AO No. 2005-124(S-1A), § 4, 4-18-06; AO No. 2006-121, § 1, 9-26-06; AO No. 2006-64(S-1), § 1, 12-12-06

Section 2. Anchorage Municipal Code subsection 21.40.020 is hereby amended to read as follows: (*Subsections not affected by this ordinance are not set out unless for context.*)

21.40.020 PLI public lands and institutions district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

- ***
6. One free-standing small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.
7. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

- ***
22. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.
23. Utility wind energy conversion systems.

(GAAB 21.05.050.A; AO No. 77-355; AO No. 79-25; AO No. 81-67(S); AO No. 81-178(S); AO No. 82-24; AO No. 83-78; AO No. 84-34; AO No. 85-18; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 86-19; AO No. 86-90; AO No. 88-7(S), 7-4-88; AO No. 90-152(S); AO No. 92-93; AO No. 93-148, § 3, 11-16-93; AO No. 95-68(S-1), § 4, 8-8-95; AO No. 96-131(S), § 3, 10-22-96; AO No. 99-62, § 3, 5-11-99; AO No. 99-131, § 6, 10-26-99; AO No. 99-149, § 1, 12-14-99; AO No. 2002-109, § 3, 9-12-02; AO No. 2003-132, § 2, 10-7-03; AO No. 2005-9, § 2, 3-1-05; AO No. 2005-42(S), § 1, 5-31-05; AO No. 2005-150(S-1), § 2, 2-28-06; AO No. 2005-185(S), § 2, 2-28-06; AO No. 2005-124(S-1A), § 5, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-

06)

Section 3. Anchorage Municipal Code subsection 21.40.030 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.030 R-1 and R-1A single-family residential districts.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.B; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 83-216; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 98-53(S), § 1, 6-9-98; AO No. 99-49, § 1, 3-23-99; AO No. 99-62, § 4, 5-11-99; AO No. 2002-109, § 3, 9-10-02; AO No. 2005-175, § 1, 1-10-06; AO No. 2005-178, § 2, 1-24-06; AO No. 2005-185(S), § 3, 2-28-06; AO No. 2005-124(S-1A), § 6, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 4. Anchorage Municipal Code subsection 21.40.040 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.040 R-2A two-family residential district (large lot); R-2D two-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.C; AO No. 77-355; AO No. 79-13; AO No. 80-27; AO No. 80-42; AO No. 81-67(S); AO No. 82-54; AO No. 83-217; AO No. 84-52; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 85-163; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 98-53(S), § 2, 6-9-98; AO No. 99-49, § 2, 3-23-99; AO No. 99-62, § 5, 5-11-99; AO No. 2005-175, § 2, 1-10-06; AO No. 2005-178, § 3, 1-24-06; AO No. 2005-185(S), § 4, 2-28-06; AO No. 2005-124(S-1A), § 7, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 5. Anchorage Municipal Code subsection 21.40.045 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.045 R-2M multiple-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.C; AO No. 77-355; AO No. 79-13; AO No. 80-27; AO No. 80-42; AO No. 81-67(S); AO No. 82-54; AO No. 83-217; AO No. 84-52; AO No. 85-18; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 85-163; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 98-53(S), § 3, 6-9-98; AO No. 99-49, § 3, 3-23-99; AO No. 99-62, § 6, 5-11-99; AO No. 2005-175, § 3, 1-10-06; AO No. 2005-178, § 4, 1-24-06; AO No. 2005-185(S), § 5, 2-28-06; AO No. 2005-124(S-1A), § 8, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 6. Anchorage Municipal Code subsection 21.40.050 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.050 R-3 multiple-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

8. One small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.D; AO No. 77-355; AO No. 80-27; AO No. 80-42; AO No. 81-67(S); AO No. 82-54; AO No. 83-218; AO No. 84-52; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 85-163; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 96-131(S), § 2, 10-22-96; AO No. 99-62, § 7, 5-11-99; AO No. 2005-175, § 4, 1-10-06; AO No. 2005-178, § 5, 1-24-06; AO No. 2005-185(S), § 6, 2-28-06; AO No. 2005-124(S-1A), § 9, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 7. Anchorage Municipal Code subsection 21.40.060 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.060 R-4 multiple-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One free-standing small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.

10. Building-mounted small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.E; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 96-131(S), § 2, 10-22-96; AO No. 99-62, § 8, 5-11-99; AO No. 2003-124(S), § 2, 1-20-04; AO No. 2005-175, § 5, 1-10-06; AO No. 2005-178, § 6, 1-24-06; AO No. 2005-185(S), § 7, 2-28-06; AO No. 2005-124(S-1A), § 10, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 8. Anchorage Municipal Code subsection 21.40.070 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.070 R-5 rural residential district; R-5A, rural residential district (large lot).

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.F; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 83-52; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 99-62, § 9, 5-11-99; AO No. 2002-63(S), § 1, 5-21-02; AO No. 2005-175, § 6, 1-10-06; AO No. 2005-178, § 7, 1-24-06; AO No. 2005-185(S), § 8, 2-28-06; AO No. 2005-124(S-1A), § 11, 4-18-06; AO No. 2006-121, § 2, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 9. Anchorage Municipal Code subsection 21.40.080 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.080 R-6 suburban residential district (large lot).

C. *Permitted accessory uses and structures.* Permitted accessory uses and

structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.G; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 99-27, § 1, 2-23-99; AO No. 99-62, § 10, 5-11-99; AO No. 2005-175, § 7, 1-10-06; AO No. 2005-178, § 8, 1-24-06; AO No. 2005-185(S), § 9, 2-28-06; AO No. 2005-124(S-1A), § 12, 4-18-06; AO No. 2006-121, § 3, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 10. Anchorage Municipal Code subsection 21.40.090 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.090 R-7 intermediate rural residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.H; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 83-219; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 99-62, § 11, 5-11-99; AO No. 2005-175, § 8, 1-10-06; AO No. 2005-178, § 9, 1-24-06; AO No. 2005-185(S), § 10, 2-28-06; AO No. 2005-124(S-1A), § 13, 4-18-06; AO No. 2006-121, § 4, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 11. Anchorage Municipal Code subsection 21.40.100 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.100 R-8 rural residential district (large lot).

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

12. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.U; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 98-53(S), § 4, 6-9-98; AO No. 99-62, § 12, 5-11-99; AO No. 2005-175, § 9, 1-10-06; AO No. 2005-178, § 10, 1-24-06; AO No. 2005-185(S), § 11, 2-28-06; AO No. 2005-124(S-1A), § 14, 4-18-06; AO No. 2006-121, § 5, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 12. Anchorage Municipal Code subsection 21.40.110 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.110 R-9 rural residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

12. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.V; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 98-53(S), § 5, 6-9-98; AO No. 99-62, § 13, 5-11-99; AO No. 2005-175, § 10, 1-10-06; AO No. 2005-178, § 11, 1-24-06; AO No. 2005-185(S), § 12, 2-28-06; AO No. 2005-124(S-1A), § 15, 4-18-06; AO No. 2006-121, § 6, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 13. Anchorage Municipal Code subsection 21.40.115 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.115 R-10 residential alpine/slope district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(AO No. 81-97; AO No. 81-217; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 98-53(S), § 6, 6-9-98; AO No. 99-49, § 1, 3-23-99; AO No. 99-62, § 14, 5-11-99; AO No. 2005-175, § 11, 1-10-06; AO No. 2005-178, § 12, 1-24-06; AO No. 2005-185(S), § 13, 2-28-06; AO No. 2005-124(S-1A), § 16, 4-18-06; AO No. 2006-121, § 7, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 14. Anchorage Municipal Code subsection 21.40.117 is hereby amended to

read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.117 R-11 Turnagain Arm district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

8. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(AO No. 82-162; AO No. 84-34; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 86-122; AO No. 86-182; AO No. 88-143; AO No. 88-144, 11-26-88; AO No. 88-171(S-1), 12-31-88; AO No. 94-120, § 1, 8-23-94; AO No. 94-238(S), § 3, 2-28-94; AO No. 94-239, § 1, 2-14-95; AO No. 96-118, § 1, 8-22-96; AO No. 96-118, § 1, 8-13-96; AO No. 99-62, § 15, 5-11-99; AO No. 2001-88, § 1, 6-5-01; AO No. 2005-175, § 12, 1-10-06; AO No. 2005-178, § 13, 1-24-06; AO No. 2005-185(S), § 14, 2-28-06; AO No. 2005-124(S-1A), § 17, 4-18-06; AO No. 2006-121, § 8, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 15. Anchorage Municipal Code subsection 21.40.130 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.130 R-O residential-office district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

6. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.I; AO No. 77-219; AO No. 77-355; AO No. 78-199; AO No. 80-57; AO No. 81-67(S); AO No. 83-226; AO No. 85-18; AO No. 85-23; AO No. 85-69; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 86-171; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 91-97; AO No. 92-114; AO No. 96-131(S), § 3, 10-22-96; AO No. 99-62, § 16, 5-11-99; AO No. 2003-124(S), § 3, 1-20-04; AO No. 2005-175, § 13, 1-10-06; AO No. 2005-178, § 14, 1-24-06; AO No. 2005-185(S), § 15, 2-28-06; AO No. 2005-124(S-1A), § 18, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 16. Anchorage Municipal Code subsection 21.40.140 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.140 B-1A local and neighborhood business district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and

structures are as follows:

6. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.J; AO No. 77-355; AO No. 78-28; AO No. 78-169; AO No. 81-67(S); AO No. 81-143; AO No. 83-210; AO No. 85-18; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 85-173, 3-17-86; AO No. 86-90; AO No. 87-62; AO No. 88-49(S); AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 96-131(S), § 2, 10-22-96; AO No. 99-62, § 17, 5-11-99; AO No. 2005-185(S), § 16, 2-28-06; AO No. 2005-124(S-1A), § 19, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 17. Anchorage Municipal Code subsection 21.40.150 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.150 B-2A central business district core.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. Building-mounted small wind energy conversion systems on buildings over 60 feet in height, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.W; AO No. 77-20; AO No. 77-355; AO No. 80-57; AO No. 81-67(S); AO No. 81-72; AO No. 82-49; AO No. 85-173, 3-17-86; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 87-62; AO No. 87-148; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 90-124; AO No. 91-1; AO No. 91-39; AO No. 91-144; AO No. 92-57; AO No. 95-68(S-1), § 6, 8-8-95; AO No. 98-160, § 4, 12-8-98; AO No. 98-188, §§ 1--3, 1-12-99; AO No. 99-62, § 19, 5-11-99; AO No. 99-131, § 7, 10-26-99; AO No. 2001-80, § 3, 5-8-01; AO No. 2005-185(S), § 18, 2-28-06; AO No. 2005-124(S-1A), § 21, 4-18-06; AO No. 2006-49, § 1, 5-16-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 5, 10-23-07)

Section 18. Anchorage Municipal Code subsection 21.40.160 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.160 B-2B central business district, intermediate.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. Building-mounted small wind energy conversion systems on buildings over

60 feet in height, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.Y; AO No. 77-20; AO No. 77-355; AO No. 80-57; AO No. 81-67(S); AO No. 81-72; AO No. 82-49; AO No. 85-173, 3-17-86; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 87-62; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 90-124; AO No. 91-1; AO No. 91-39; AO No. 91-144; AO No. 92-57; AO No. 95-68(S-1), § 7, 8-8-95; AO No. 96-131(S), § 3, 10-22-96; AO No. 98-160, § 5, 12-8-98; AO No. 98-188, §§ 4--6, 1-12-99; AO No. 99-62, § 20, 5-11-99; AO No. 99-131, § 8, 10-26-99; AO No. 99-149, § 2, 12-14-99; AO No. 2001-80, § 4, 5-8-01; AO No. 2005-185(S), § 19, 2-28-06; AO No. 2005-124(S-1A), § 22, 4-18-06; AO No. 2006-49, § 2, 5-16-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 6, 10-23-07)

Section 19. Anchorage Municipal Code subsection 21.40.170 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.170 B-2C central business district, periphery.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

5. Building-mounted small wind energy conversion systems on buildings over 60 feet in height, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.X; AO No. 77-20; AO No. 77-355; AO No. 80-57; AO No. 81-67(S); AO No. 82-49; AO No. 85-173, 3-17-86; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 87-62; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 90-124; AO No. 91-1; AO No. 91-39; AO No. 91-144; AO No. 92-57; AO No. 95-68(S-1), § 8, 8-8-95; AO No. 96-131(S), § 3, 10-22-96; AO No. 98-160, § 6, 12-8-98; AO No. 98-173, § 4, 11-3-98; AO No. 98-188, §§ 7--9, 1-12-99; AO No. 99-62, § 21, 5-11-99; AO No. 99-131, § 9, 10-26-99; AO No. 99-149, § 3, 12-14-99; AO No. 2001-80, § 5, 5-8-01; AO No. 2005-185(S), § 20, 2-28-06; AO No. 2005-124(S-1A), § 23, 4-18-06; AO No. 2006-49, § 3, 5-16-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 7, 10-23-07)

Section 20. Anchorage Municipal Code subsection 21.40.180 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.180 B-3 general business district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

3. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.M; AO No. 77-355; AO No. 78-28; AO No. 80-57; AO No. 80-132; AO No. 81-67(S); AO No. 83-209; AO No. 85-18; AO No. 85-91, 10-1-85; AO No. 85-173, 3-17-86; AO No. 86-90; AO No. 86-182; AO No. 87-32; AO No. 87-62; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-26; AO No. 92-114; AO No. 95-68(S-1), § 9, 8-8-95; AO No. 96-107, § 1, 7-30-96; AO No. 96-131(S), § 3, 10-22-96; AO No. 98-160, § 7, 12-8-98; AO No. 99-62, § 22, 5-11-99; AO No. 2001-80, § 6, 5-8-01; AO No. 2004-108(S), § 3, 10-26-04; AO No. 2005-185(S), § 21, 2-28-06; AO No. 2005-124(S-1A), § 24, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 21. Anchorage Municipal Code subsection 21.40.200 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.200 I-1 light industrial district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of section 21.45.410.

5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

17. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

(GAAB 21.05.050.O; AO No. 77-355; AO No. 79-95; AO No. 81-67(S); AO No. 82-105; AO No. 84-57; AO No. 85-91, 10-1-85; AO No. 85-95; AO No. 86-50; AO No. 86-90; AO No. 87-32; AO No. 88-147(S-2); AO No. 90-50(S); AO No. 92-114; AO No. 95-68(S-1), § 11, 8-8-95; AO No. 95-76, § 1, 4-4-95; AO No. 95-194, § 1, 1-2-96; AO No. 98-160, § 9, 12-8-98; AO No. 98-173, § 5, 11-3-98; AO No. 99-62, § 24, 5-11-99; AO No. 2001-80, § 8, 5-8-01; AO No. 2004-5, § 1, 1-20-04; AO No. 2004-108(S), § 5, 10-26-04; AO No. 2004-178(am), § 1, 1-25-05; AO No. 2005-9, § 3, 3-1-05; AO No. 2005-185(S), § 23, 2-28-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 22. Anchorage Municipal Code subsection 21.40.210 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.210 I-2 heavy industrial district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and

structures are as follows:

4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of section 21.45.410.

5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

8. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

9. Utility wind energy conversion systems.

(GAAB 21.05.050.P; AO No. 77-355; AO No. 85-91, 10-1-85; AO No. 87-32; AO No. 91-184; AO No. 93-148, § 4, 11-16-93; AO No. 96-60, § 1, 8-6-96; AO No. 96-125, § 1, 11-12-96; AO No. 97-78, § 2, 6-3-97; AO No. 99-62, § 25, 5-11-99; AO No. 2001-80, § 9, 5-8-01; AO No. 2005-185(S), § 24, 2-28-06; AO No. 2005-124(S-1A), § 26, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 23. Anchorage Municipal Code subsection 21.40.240 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.240 T transition district.

D. *Conditional uses.* Subject to the requirements of the conditional use and site plan standards and procedures of this title, the following uses may be permitted only as a conditional use:

12. Small wind energy conversion systems, subject to the requirements of section 21.50.470.

13. Utility wind energy conversion systems.

(GAAB 21.05.050.S; AO No. 77-355; AO No. 79-25; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 88-59(S); AO No. 88-171(S-1), 12-31-88; AO No. 98-160, § 10, 12-8-98; AO No. 99-62, § 28, 5-11-99; AO No. 2005-185(S), § 26, 2-28-06; AO No. 2005-124(S-1A), § 28, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 12, 10-23-07)

Section 24. Anchorage Municipal Code subsection 21.40.260 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.260 AF antenna farm district.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

4. Utility wind energy conversion systems.

(AO No. 88-147(S-2); AO No. 99-62, § 29, 5-11-99; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 25. Anchorage Municipal Code subsection 21.40.270 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.270 MC marine commercial district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of 21.45.410.

5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use and site plan standards and procedures of Sections 21.15.030 and 21.50.020, the following uses may be permitted:

2. Conditional uses with general standards in Section Chapter 21.50:

f. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

(AO No. 98-160, § 11, 12-8-98; AO No. 99-62, § 30, 5-11-99; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 26. Anchorage Municipal Code subsection 21.40.280 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.280 MI marine industrial district.

C. Permitted accessory uses and structures. Permitted accessory uses and structures are as follows:

4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of 21.45.410.

5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of 21.45.410.

D. Conditional uses. Subject to the requirements of the conditional use standards and procedures of sections 21.15.030 and 21.50.020, the following uses may be permitted:

6. Two or three small wind energy conversion systems, subject to the requirements of section 21.50.470.

7. Utility wind energy conversion systems.

(AO No. 99-62, § 31, 5-11-99; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 27. Anchorage Municipal Code chapter 21.45 is hereby amended to add a new section to read as follows:

21.45.410 Small wind energy conversion systems.

A. *Purpose.* The purpose of this section is to regulate and provide standards for small wind energy conversion systems (WECS) as defined in this Code, and to encourage the development of small wind energy systems.

B. *Approval Process.* Small WECS are subject to an administrative site plan review. Sufficient information shall be provided with the application to show that the standards below have been met. The planning director shall grant approval if the standards of this section have been met, and that the applicant has sized and sited the system to reduce impacts on surrounding properties to the maximum extent feasible. Structural stability of the foundation will be assured through the building permit process.

C. *Submittal Requirements.*

1. A description of the project, including the maximum rated power output capacity of the WECS.

2. The make, model, an illustrative photograph or brochure, manufacturer's

specifications including noise decibels data for the proposed WECS, the support structure, and method of attachment to the ground and/or structure.

3. Elevation drawing of the WECS showing total height, turbine dimensions, tower and turbine colors, distance between ground and lowest point of any blade, and if proposed, the location of ladders, climbing pegs, and access doors.

4. If the WECS is not certified as meeting the IEEE 1547 standard (Institute of Electrical and Electronic Engineers), then an assessment of potential electromagnetic interference with microwave, radio, television, personal communication systems and other wireless communication is required.

5. Applications shall include a visual impact analysis of the proposed WECS as installed, which shall include color photographs of the proposed site from at least two locations accurately depicting the existing conditions. A computerized photographic simulation, demonstrating any visual impacts from strategic vantage points, is desirable and may be required at the Director's discretion. The applicant shall indicate any visual screening proposed to be incorporated into the project that is intended to lessen the system's visual prominence.

D. Building-Mounted WECS.

1. In residential districts on lots less than 20,000 square feet, a building mounted WECS shall not exceed the maximum height for principal structures of the underlying zoning district by more than 10 feet.

2. On buildings of 60 feet or less in height, building mounted WECS shall be no taller than 10 feet.

3. On buildings over 60 feet in height, building mounted WECS shall be set back from the structure edge by at least two feet for every one foot of height greater than 10 feet.

4. Building-mounted WECS shall meet the design standards for free-standing WECS in subsection E.5. below, with the exception of E.5.e.

E. Free-Standing WECS.

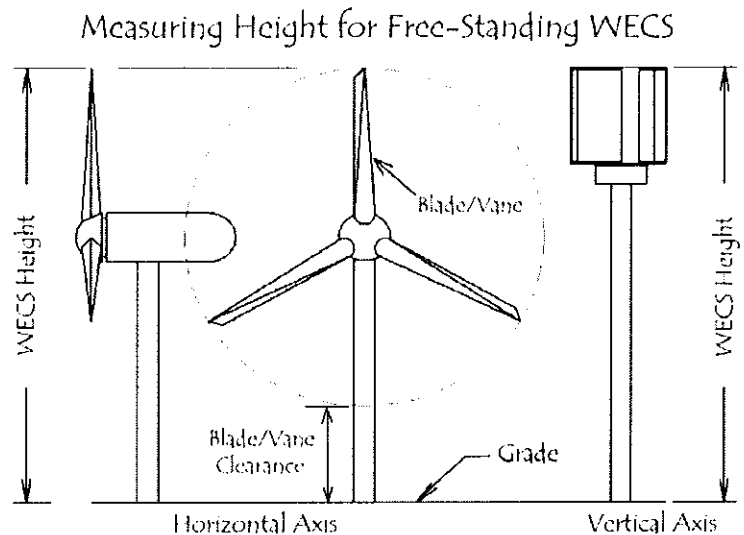
1. Number of WECS. Only one small WECS per lot is allowed in residential zoning districts. Adjoining lots under the same ownership shall be treated as one lot for purposes of this limitation.

2. Minimum Lot Area and Maximum Height.

a. The minimum lot area for a small WECS is 20,000 square feet.

b. The height of a small WECS shall be determined by compliance with the setback provisions of subsection E.4. below. In no instance shall a small WECS exceed 95 feet in height.

c. Height shall be measured as depicted in the illustration. Structures shall not interfere with Federal Aviation Administration Regulations on airport approaches. In no case shall the height exceed manufacturer's specifications.



3. *Blade or Vane*

Clearance. Lowest point of moving elements, such as blades or vanes, shall be at least 25 feet above grade. No blades may extend over public sidewalks/trails.

4. *Setbacks.*

a. Except as allowed in 4.b. below, all WECS shall be setback from all property lines at least 1.1 times the height of system

b. On lots abutting water bodies such as lakes or ponds, the WECS shall be setback at least 15 feet from the water body edge, but the setback distance required in 4.a. above may extend into the water body, provided that the full extent of the setback distance falls within the water body.

c. All WECS shall be located so that the principal structure is between the WECS and the front property line.

d. All systems shall be setback at least 1.1 times the height of the system from all overhead power and telecommunication lines, and any telecommunications towers.

5. *Design Standards.*

a. Operational noise shall not exceed 50dBH at property line except for short-term high wind speed events such as storms.

- b. All systems shall be equipped with manual and automatic (mechanical or electrical) over-speed controls to limit the blade rotation speed to within the design limits of the system.
 - c. The rotating turbine shall not produce vibrations that are humanly perceptible beyond the property lines of the site.
 - d. Lattice type towers and towers using guy wires are prohibited.
 - e. All power transmission and telemetry lines from the tower to any building or other structure shall be placed underground.
 - f. No tower shall be illuminated unless required by a state or federal agency, such as the FAA.
 - g. All structures in a project shall be finished in a single, non-reflective, matte finished, neutral color.
 - h. No commercial or non-commercial advertisements, signs, or other messages shall be placed or painted on the tower, rotor, generator or tail vane, except that a system or tower's manufacturer's logo may be displayed on a system generator housing in an unobtrusive manner.
- F. *Abandoned or unsafe wind energy conversion systems.* Any system that is not operated for a continuous period of 12 months shall be considered abandoned and shall be dismantled and removed from the property at the expense of the property owner.

Section 28. Anchorage Municipal Code chapter 21.50 is hereby amended to add new sections to read as follows:

21.50.470 Small wind energy conversion systems—multiple free-standing towers.

A. *Purpose.* The purpose of this section is to provide standards for multiple free-standing small WECS in industrial districts and in the PLI district.

B. *Submittal Requirements.* Multiple free-standing small WECS in industrial districts and in the PLI districts shall provide the minimum application information required by section 21.50.480B.

C. *Maximum number of WECS.* No more than three WECS shall be allowed on any one lot. Adjoining lots under the same ownership shall be treated as one lot for purposes of this limitation.

D. *Standards.* Multiple free-standing small WECS shall meet the standards of section 21.45.410E.

E. *Abandoned or unsafe wind energy conversion systems.* Any system that is not operated for a continuous period of 12 months shall be considered abandoned and shall be dismantled and removed from the property at the expense of the property owner.

21.50.480 Utility wind energy conversion systems.

A. *Purpose.* The purpose of this section is to provide standards for utility scale wind energy conversion systems (WECS) generally utilizing multiple towers designed to produce electric power as a public or private utility.

B. *Submittal Requirements.* In addition to the minimum application information set forth in 21.15.030.C, the following shall be provided:

1. For each WECS model proposed, t[T]he make, model, an illustrative photograph or brochure, manufacturer's specifications including noise decibels data for the proposed WECS, and drawings of the support structure stamped by a structural engineer registered in the State of Alaska[FOR EACH WECS MODEL PROPOSED].
2. Elevation drawing of each WECS model showing total height, turbine dimensions, tower and turbine colors, distance between ground and lowest point of any blade, and if proposed, the location of ladders, climbing pegs, and access doors.
3. An assessment of potential electromagnetic interference with microwave, radio, television, personal communication systems and other wireless communication.
4. An analysis of impacts on local wildlife shall be prepared, regarding impacts anticipated during construction, reconstruction, modification or operation of WECS. Wildlife impacts to be considered shall include, at a minimum, anticipated impacts on birds.
5. If any habitable building is located within 1,300 feet of any proposed Utility WECS unit, then the applicant shall conduct a study on potential shadow flicker. The study shall identify locations where shadow flicker may be caused by the WECS and the expected durations of the flicker at these locations. The study shall identify areas where shadow flicker may interfere with habitable buildings and describe measures that shall be taken to eliminate or mitigate the problems. The applicant has the burden of proving that shadow flicker will not negatively impact neighboring uses.
6. Applications shall include a visual impact analysis of the proposed WECS as installed, which may include a computerized photographic simulation, demonstrating any visual impacts from strategic vantage points. Color photographs of the proposed site from at least two locations accurately depicting the existing conditions shall be included. The visual analysis

shall also indicate the color treatment of the system's components and any visual screening incorporated into the project that is intended to lessen the system's visual prominence.

7. A noise analysis by a competent acoustical consultant documenting the noise levels associated with the proposed WECS. The study shall document projected noise levels at property lines. The noise analysis shall include low frequency noise.

C. *Height.* The height as measured from grade to the highest point of the fully operational system, including the turbine vane(s), shall not exceed 450 feet in the AF, W, T, and PLI zoning districts, or 200 feet in any other district in which a Utility WECS may be approved. A Utility WECS shall not interfere with Federal Aviation Administration Regulations in the vicinity of an airport. In no case shall the height exceed manufacturer's specifications.

D. *Blade or Vane Clearance.* Lowest point of moving elements, such as blades or vanes, shall be at least 30 feet above grade.

E. *Setbacks.*

1. All WECS shall setback from all residential property lines at least 3.0 times the height of system, and from all non-residential property lines a minimum of 2.0 times the height of the system.
2. All systems shall be at least 325 feet from any telecommunications towers.
3. The tower shall maintain a minimum separation distance equal to 1.1 times the height of system from all overhead power and telecommunication lines.

F. *Design Standards.*

1. Except for short-term high wind speed events such as storms, operational noise shall not exceed 50dBH at any property line adjacent to a residential zoning district, and 60dBH at any property line adjacent to a nonresidential zoning district[OPERATIONAL NOISE SHALL NOT EXCEED 60DBH AT PROPERTY LINE EXCEPT FOR SHORT-TERM HIGH WIND SPEED EVENTS SUCH AS STORMS].
2. The rotating turbine shall not produce vibrations that are humanly perceptible beyond the property lines of the site.
3. Lattice type towers and towers using guy wires are prohibited.
4. All power transmission and telemetry lines from the tower to any building or other structure shall be placed underground, unless otherwise allowed by the planning and zoning commission.

5. No tower shall be illuminated unless required by a state or federal agency, such as the FAA.

6. All structures in a project shall be finished in a single, non-reflective, matte finished, neutral color.

7. No commercial or non-commercial advertisements, signs, or other messages shall be placed or painted on the tower, rotor, generator or tail vane, except that a system or tower's manufacturer's logo may be displayed on a system generator housing in an unobtrusive manner, as approved by the planning and zoning commission.

8. WECS structure shall be designed to prevent unauthorized external access to electrical and mechanical components and shall have access doors that are kept securely locked. No climbing pegs or tower ladders shall be located closer than 12 feet to the ground level at the base of the structure. A fence with a locking portal may be required by the Planning and Zoning Commission to enclose the entire WECS tower site.

G. *Abandoned or unsafe wind energy conversion systems.* Any system that is not operated for a continuous period of 12 months shall be considered abandoned and shall be dismantled and removed from the property at the expense of the property owner.

Section 29. This ordinance shall become effective immediately upon its passage and approval by the Assembly.

PASSED AND APPROVED by the Anchorage Assembly this _____ day of _____, 2008.

Chair

ATTEST:

Municipal Clerk

right-of-way. Rexview Terrace, Tract B (Plat 70-162), located within the SW1/4 of Section 35, T12N, R3W, S.M., Alaska.

Staff member MARGARET O'BRIEN recommended return for redesign.

COMMISSIONER ISHAM moved to return for redesign. COMMISSIONER EARNHART seconded.

COMMISSIONER ISHAM supported the motion as the plat was designed based on the R-6 zone.

AYE: Phelps, Wang, Isham, Jones, Pease, Earnhart

NAY: None

ASTAIN: Weddleton

PASSED

3. 2008-127

Municipality of Anchorage. An Ordinance Amending Anchorage Municipal Code Sections 21.35.020 Definitions and Rules of Construction, 21.40 Zoning Districts, 21.45 Supplementary District Regulations, and 21.50 Standards for Conditional Uses and Site Plans, to Define Wind Energy Conversion Systems (WECS), to Allow WECS in Certain Zoning Districts as Accessory Uses by Administrative Site Plan Review and as Conditional Uses, to Set General Standards and Conditional Use Standards.

Staff member TYLER ROBINSON explained that this case is a proposed ordinance that facilitates the development of two types of wind energy conversion systems (WECS): at the utility scale and at the small, on-site scale. The price of energy is headed upward across the country. Rural and urban areas are looking to attempt to supplement their energy costs and one way to do that is through wind systems. In order to develop the proposals, the standards, and the zoning districts in which WECS are permitted, the Department used the American Planning Association inquiry service; a consulting contract with Clarion Associates; research of existing local zoning codes; and conversations with residents and distributors interested in pursuing wind energy options in Anchorage. A small system is defined as no greater than 100 KW and a utility system is larger. Small systems cannot be over 100 feet in height when they are pole mounted. They are permitted accessory uses in all residential districts, but a pole mounted system must be on a lot no smaller than 20,000 SF in size. The setback is required to be 1.1 times the height of the system from the property line. On lots smaller than 20,000 SF, a building mounted or rooftop system is allowed. These systems are required to abide by the height restrictions of residential districts. In commercial districts, height is limited to 10 feet and on buildings 60 feet or greater, they can exceed 10 feet, but for each foot in excess of 10 feet, they would have to be set back two feet from the building edge. MR. ROBINSON noted that he had distributed photographs of various wind systems for the Commission's and public's review.

COMMISSIONER WEDDLETON asked the height of the systems in the photographs. MR. ROBINSON did not know the specific heights. The turbine in photograph 9 is higher than 10 feet, but it is on a building over 60 feet. It would be subject to setback requirements under the code as proposed. He noted that photograph 5 shows large turbines that are noticeable, while others show turbines that are more integrated into the buildings. COMMISSIONER WEDDLETON asked what is the relative efficiency of the horizontal versus the vertical axis systems. MR. ROBINSON was unsure. COMMISSIONER WEDDLETON asked how the rules for cell phone towers compare with this ordinance, particularly the process for installing them; do they all require conditional use permits and what are the height restrictions. MR. ROBINSON replied that there is no way to develop a wind system under the current code. CHAIR JONES noted there are strict federal

requirements that make regulation of cell towers difficult. COMMISSIONER WEDDELTON explained that his experience through the community council is that people do not favor cell towers. MR. ROBINSON stated the Commission is being asked to weigh the benefits of wind energy with some of the potential impacts. COMMISSIONER WEDDLETON understood that these uses would be allowed in parks and asked what would be the process for that. MR. ROBINSON presumed that Parks and Recreation would have to put forward an application. COMMISSIONER WEDDLETON asked if they could sell the rights to locate several systems in a park without further public involvement. MR. ROBINSON replied that in the PLI zone, there could be one freestanding small WECS or multiple building mounted WECS, subject to administrative review. Multiple freestanding systems would be a conditional use, as would utility WECS. The small energy systems are designed to provide on-site energy so he was not sure there would be a rationale for locating anything other than a utility tower in PLI.

COMMISSIONER PEASE noted that on page 23 there is a requirement for a visual impact analysis of the proposed WECS as installed. She asked who reviews this analysis, does it tie into any policies or any other section of this ordinance, and would the visual analysis ever result in modifications or denial. MR. ROBINSON explained that the Department would review the application and, if there were some ways to offer additional screening, especially from adjacent property owners or viewsheds pointed out in that analysis, those would be suggested. COMMISSIONER PEASE thought there should be some tie into *Anchorage 2020* Policy 80 that says "utilities shall be located and designed with balanced regard for the environment, energy conservation" etc.

The public hearing was opened.

KIRK GERUTE, alternative energy user for 15 years, stated he is an alternative energy dealer and owner of Susitna Energy Systems. He provided photographs of some of the systems he has installed, as well as copies of brochures on wind energy systems. He stated that 60 of these systems are in use throughout the state in the Mat-Su Valley, Nome, Kotzebue, Kivalina and other locations. He uses one on his property and it provides 90% of the energy he consumes; he stores it in batteries. He stated that these wind turbines are virtually silent, producing a noise signature similar to the wind itself. Nearly every customer has had no complaints from a neighbor. Some people use these systems to reduce their carbon footprint, and others for

monetary reasons. Customers want to buy something that will eventually pay for itself.

COMMISSIONER EARNHART asked what does the Skystream 3.7 cost. MR. GERUTE replied that the unit is \$6,200, not including the tower and installation. Total cost is \$10,000. The taller the unit, the quieter it is. He noted that, in order to control costs, he encourages consumers to do the excavation and foundation work themselves.

COMMISSIONER WANG asked what is the estimated operational life of a turbine. MR. GERUTE replied that the Skystream has a warranty of five years and is estimated to last 15 years. He has had a turbine for 15 years and it is still operational. COMMISSIONER WANG asked if Skystream has a program to buy back units. MR. GERUTE replied that the utility would answer that. He stated that CEA favors these but they cannot be built because Title 21 does not allow it. People have applied for these for individual use, have been charged a filing fee, and have been told that these units are classified as a yard ornament.

COMMISSIONER WEDDELTON asked where in Anchorage these would work. MR. GERUTE replied that they would work at Campbell Lake and anywhere along the southern shore of Turnagain Arm. He noted that Boston Logan just installed a large wind farm and all terminals at the airport are being powered off of wind. The Hillside and Rabbit Creek are also appropriate locations. He stated that if he had suitable land without peat, he would put one on his land on Arctic. They typically run on 7 to 20 mph; 20 mph is peak production. COMMISSIONER WEDDLETON asked what is the relative efficiency of the vertical versus horizontal systems. MR. GERUTE stated that he has yet to see vertical axis turbines produce viable power in relation to cost. COMMISSIONER WEDDLETON asked how many of these systems might be in Anchorage within five years if this ordinance were adopted. MR. GERUTE imagined there would be 100. Not every location in Anchorage is a good wind site and not everyone would want one of these systems. COMMISSIONER WEDDLETON understood the maximum small WECS height is 95 feet but he understood that Mr. Gerute said most are 50 feet high. He asked if there would be objection to a limitation of 50 feet. MR. GERUTE replied that ideally the turbine should be 20 feet above a structure or 200 feet away from a structure. He has trees that are 65 to 75 feet high and he has a 100-foot tower. COMMISSIONER WEDDLETON asked if guy wires are required. MR. GERUTE replied that the picture is a 50-foot monopole. They require a foundation and are more aesthetically pleasing. Towers with guy wires are less expensive by half. COMMISSIONER

WEDDLETON asked about the cost of the lattice structure. MR. GERUTE was not aware of a lattice structure for that turbine.

COMMISSIONER ISHAM noted that guy wires and lattice towers are not permitted in the ordinance. MR. GERUTE understood that is the case.

COMMISSIONER PEASE asked if the tower on Mr. Gerute's property is a monopole. MR. GERUTE replied that it is technically a lattice tower, referred to as ROHN. COMMISSIONER PEASE asked if there is a height limitation on a monopole. MR. GERUTE stated he has been told there are 100-foot monopoles available and there are some on Minnesota. COMMISSIONER PEASE asked what maximum gusts can the 70- to 100-foot towers sustain. MR. GERUTE replied that the turbine is specified up to 140 miles per hour.

COMMISSIONER WEDDLETON stated that the code allows a monopole of 100 feet. He asked if monopoles could be built to greater heights. MR. GERUTE believed that this was possible, if engineered properly. COMMISSIONER WEDDLETON noted that utility WECS could be 450 feet high. MR. ROBINSON stated this was recommended by the consultant. Utility towers of this type are seen in the Lower 48. At that level of investment, there is little choice in the type of support. MR. GERUTE stated that the largest turbine he sells is up to 50 KW and it has a 30-foot blade. He did not believe anyone would want to install such a large unit. A 10 KW has a 26-foot blade and can run a large home. COMMISSIONER WEDDLETON understood the tower would be 77 feet high in order to have a 26-foot blade. MR. GERUTE stated that a Skystream has a 12-foot blade and the current code does not allow the height to be above 12 feet. MR. ROBINSON stated that page 24 includes a blade clearance section that requires a clearance of 20-feet from the ground for the lowest point of the blade. He thought a 50-foot tower with a 25-foot blade would provide that clearance. COMMISSIONER WEDDLETON presumed that the height included the blade. MR. ROBINSON confirmed that Mr. Weddleton was correct, and stated that the lower blade sets the clearance distance.

COMMISSIONER PEASE noted that from a distance Mr. Gerute's personal turbine could be seen as a monopole rather than a lattice. She asked what is the diameter of the lattice structure. MR. GERUTE stated that the diameter of the lattice is 35 feet from the center in a 120-degree radius. COMMISSIONER PEASE asked if the Skystream 50-foot monopole has a 6-foot blade. MR. GERUTE replied in the affirmative.

JERRY BUTLER, local distributor with Brown's Electric, representing the Vertical Axis Wind Turbine, submitted information on his product. He stated

that each case would be examined on an individual basis to determine if the proposal is appropriate. The product he represents does not require guy wires or a tower and it performs at low wind speeds to 2 mph. The viability of this unit is that it produces 50% more power than the typical horizontal axis wind turbine. The aesthetic appeal of this unit and its performance ratio lends itself perfectly to this application. He felt this unit is perfect for applications on local properties. There is no residential hum. This system is needed and there is a great deal of public interest.

COMMISSIONER ISHAM asked if the proposed ordinance would prohibit this system from being installed. MR. BUTLER stated that a minimum lot size of 20,000 SF is restrictive. COMMISSIONER ISHAM asked what Mr. Butler would suggest. MR. BUTLER suggested that plan review look at the application in terms of the neighborhood and aesthetic considerations. COMMISSIONER ISHAM asked if Mr. Butler was proposing these systems would be by right, but subject to a public hearing. MR. BUTLER replied in the affirmative.

COMMISSIONER PEASE noted that the proposed code allows building mounted WECS provided they do not exceed the maximum height allowed for principal structures. MR. BUTLER stated these could be placed on a building and are mounted on buildings around the country. COMMISSIONER PEASE noted that the literature indicates that the operating range of these systems is up to 90 mph. She asked if these units would blow apart in higher winds. MR. BUTLER stated they would not blow apart because 90 mph is a gusting speed, not a sustained wind speed. The units are manufactured up to 135 mph and the units are omni-directional.

COMMISSIONER WEDDLETON asked with regard to the requirement that building mounted WECS on lots less than 20,000 SF can have units no higher than the permitted heights in the district, whether there are other things allowed over the height such as chimneys. MR. ROBINSON responded that WECS on lots less than 20,000 SF would have to conform to the height limitations in the zoning district. COMMISSIONER WEDDLETON noted that there are telephone poles and other things in residential areas that exceed building heights, including satellite dishes and antennas. MR. ROBINSON stated that there are restrictions on small lots in Anchorage in an attempt to disperse the impacts.

COMMISSIONER PEASE stated that the height limitation in the R-1 and R-2 it is 30 feet and in the R-3 is 35 feet. She asked how tall are the shorter of the vertical access units. MR. BUTLER replied that the shorter unit is 15 feet. The 1 KW unit is 5 feet high and it is mounted on poles as short as 10

feet. MR. ROBINSON noted that a greater height would require setting the unit back two feet from the building edge for every foot of additional height.

COMMISSIONER EARNHART noted that the section on building mounted WECS says the WEC shall not exceed the building height for the zoning district. MR. ROBINSON explained that his remark was responding to a 20-foot high building with a 15-foot high unit; this raises a valid issue about the application in a small lot zoning district. COMMISSIONER EARNHART asked, other than aesthetically, is there any reason for this limitation. MR. ROBINSON stated the height limit came from work with the consultants and review of other codes. The rationale is aesthetic.

MR. BUTLER added that with a vertical axis unit the swept areas are very small.

The public hearing was closed.

COMMISSIONER ISHAM moved to approve an ordinance amending various sections of Anchorage Municipal Code Title 21 to define Wind Energy Conversion Systems (WECS) and allow WECS in certain zoning districts as Accessory Uses. COMMISSIONER EARNHART seconded.

COMMISSIONER ISHAM stated he did not realize that these units were prohibited and he felt they should be authorized. He assumed that as people go to install these items there could be problems and the ordinance may come back for amendment. He noted that the Commission's work on radio towers was a long and iterative process.

COMMISSIONER WEDDLETON asked to make the maximum height 50 feet. COMMISSIONER ISHAM did not accept this as a friendly amendment.

COMMISSIONER WEDDLETON moved to amend to change the requirement for small freestanding WECS to a maximum height of 50 feet. COMMISSIONER PEASE seconded.

COMMISSIONER WEDDLETON was generally supportive of the ordinance but was concerned with backlash against these units when someone installs a tall one. He believed that a 50-foot height is an industry norm and usable in Anchorage.

COMMISSIONER PEASE liked the idea of a more modest start than 95 feet, but wished to ensure that the lower standard would allow a reasonable generating capacity. MR. ROBINSON stated that the recommended height

was based on the consultant's recommendation and review of other codes. San Diego restricts height to 60 feet for less than 5 acre lots and 80 feet for greater than 5 acres. The American Wind Energy Association suggests a height of 80 feet for lots from .5 to 1 acre and unlimited height for lots over 1 acre. Given the tree canopy in Anchorage, it may be possible to reach the wind with a height of 50 feet, but he was uncertain what are the conditions and the market.

COMMISSIONER EARNHART opposed the amendment because it does not matter if the turbine is 50 or 95 feet, believing that neighbors will complain until they grow accustomed to it. He did not think the height is a big issue. He would rather preserve the flexibility, given the topography of Anchorage, to allow taller freestanding towers. He felt that reducing the height to 50 feet is being unduly restrictive without benefit.

COMMISSIONER WANG presumed that any noise might be more bothersome to the neighbor when it is closer than further away. Also, the cost increases with height, so he did not believe people would go to a greater height than needed.

COMMISSIONER ISHAM noted that the height is the top of the blade in a vertical position and is not the height of the tower. If the blades are 30 feet, the tower will stop at 60 feet because the blade has to be at least 25 feet from the ground. He added that the blades will not be visible when moving.

COMMISSIONER WEDDLETON noted that his thinking was that most houses are 35 feet and any freestanding WECS would be in the back yard and would be fairly hidden at 50 feet.

Amendment

AYE: Pease, Weddleton

NAY: Phelps, Wang, Isham, Jones, Earnhart

FAILED

COMMISSIONER EARNHART moved to amend 21.45.410.D.1 to add "by more than 10 feet." COMMISSIONER WANG seconded.

COMMISSIONER EARNHART felt that the requirement on lots less than 20,000 SF that the units not exceed the height limitations in that district is not workable, so this is a practical solution to that restrictions to allow an additional 10 feet of height.

COMMISSIONER WANG favored the amendment because he understood that these units must be up in clean air, which will not be possible if they cannot be higher than the height of surrounding buildings.

COMMISSIONER ISHAM noted that he did not object to this amendment.

Amendment

AYE: Phelps, Wang, Weddleton, Isham, Jones, Pease, Earnhart

NAY: None

PASSED

COMMISSIONER PEASE proposed for freestanding WECS in the 60- to 95-foot range there would be a visual compatibility review by the Director of Planning, with public notice, for conformity to Policy 80 of the Comprehensive Plan. COMMISSIONER WEDDLETON seconded.

COMMISSIONER PEASE was supportive of the ordinance, but because there was so much public concern over towers and there has been great public deliberation to locate them, a height of 95 feet concerned her. There is an environmental benefit, but most of that benefit inures to the homeowner.

COMMISSIONER ISHAM asked if Ms. Pease was suggesting a public hearing or a Director's review. COMMISSIONER PEASE wished to give a sense to Mr. Robinson that there should be review for conformity to Policy 80. The analysis is already required by the proposed code. She felt that public notice should be part of the review.

COMMISSIONER ISHAM noted that the visual impact analysis applies to any height and this amendment is asking for a more stringent review. COMMISSIONER PEASE agreed, but explained that there is no policy that would enable the Director to require height modification in the interest of Policy 80. COMMISSIONER ISHAM asked whether this should be left to the Director or to the neighbors. COMMISSIONER PEASE had a sense that neighbors should be able to have input and the Director would have the discretion to review. She asked what would be the fee for public notice. MR. ROBINSON did not have the fee schedule. He stated that if there are additional standards Ms. Pease would like to have considered, Staff could propose something, but asked what should be reviewed specifically in an additional review for a higher structure.

COMMISSIONER EARNHART noted that freestanding units are monopole and he felt comfortable leaving the review to the Director. He did not see any

benefit out of additional public input, presuming that people will object if their views are interrupted. This ordinance will allow views to be impacted in order to have cleaner energy.

COMMISSIONER PEASE did not see any Director's discretion to require screening or to modify the height of the tower. She clarified the language of her amendment to be: The Director has the discretion to review the height and location of freestanding WECS from 60 to 95 feet and require modifications to reduce visual impacts in conformity with Policy 80.

COMMISSIONER WEDDLETON accepted this clarification.

Amendment

AYE: Earnhart, Pease, Weddleton

NAY: Phelps, Wang, Isham, Jones

FAILED

COMMISSIONER WEDDLETON asked if the motion is subject to the Staff recommendations on page 5. COMMISSIONER ISHAM replied in the affirmative.

MR. ROBINSON stated there are recommendations to amend pages 14, 18, and 19, all of which should be included. *These were included in the main motion.*

COMMISSIONER PEASE supported the motion, feeling the public is rightly excited about clean and renewable energy. She had concern with taller towers and feared feedback when those are erected, but thought perhaps the Assembly will address them.

Main Motion

AYE: Phelps, Wang, Weddleton, Isham, Jones, Pease, Earnhart

NAY: None

PASSED

4. 2008-056

Municipality of Anchorage. A public hearing on the Title 21 Rewrite Economic Impact Analysis.


MR. ROBINSON noted that the Department has been conducting a variety of tests of the potential economic impacts from Title 21 and



Planning Department

MEMORANDUM

DATE: September 29, 2008

TO: Planning and Zoning Commission

THRU: Tom Nelson, Planning Director 

FROM: Tyler Robinson, Planning Supervisor 
Erika McConnell, Senior Planner 
Physical Planning Division

SUBJECT: Case: 2008-127, An Ordinance Amending Various Sections of Anchorage Municipal Code Title 21 to Define Wind Energy Conversion Systems (WECS) and Allow WECS in Certain Zoning Districts as Accessory Uses

ATTACHMENTS: 1. Draft Ordinance
2. Public Agency and Community Council Review Comments
3. General Public Review Comments

This ordinance, introduced by the Planning Department, regulates and provides standards for wind energy conversion systems (WECS), and facilitates the development of small WECS intended for on-site consumption as well as utility WECS to provide distributed electric power as a utility.

DISCUSSION:

Background

Wind power is emerging as the worldwide leader in renewal energy production; the Global Wind Energy Council reported a 31 percent increase in production last year as compared to 2006 (Urban Land, June 2008). In addition to being a readily available and renewable source of energy in the U.S., wind energy has one of the "highest energy payback ratios of any power technology" (AWEA Fact Sheet). Furthermore, the industry shows significant promise in terms of job growth and new technology development.

Generally speaking, there are two basic scales of wind energy production: utility-scale production, intended for either land or off-shore application, and smaller scale production for on-site use, intended for both remote and urban locations. Utility-scale wind turbines are often sited in "wind farms" which can have up to 100 turbines; the leading states in wind energy capacity are Texas, California, and Minnesota. Small wind systems are designed for homes and businesses, and can either be pole or building mounted. Manufacturers also offer both the

traditional horizontal axis turbine as well as vertical axis turbines, which resemble a revolving DNA helix. As a response to market and regulatory demands, manufacturers are designing wind turbines to be “architecturally integrated” to the buildings.

According to the American Wind Energy Association (AWEA) Small Wind Turbine Global Market Study (2008), urban and rooftop turbine sales represented only 1% of 2007 sales in the U.S. In the UK, growth of urban and building-integrated turbines is largely attributed to greenhouse gas reduction targets for buildings. Despite the relatively small share of the small turbine market, rising energy costs and quickly developing technology is increasing the demand for small wind systems.

Conditions for Wind Energy

Wind farms are generally located in areas that have average annual wind speed of 16 miles per hour or greater. Wind energy systems work best in areas with steady, non-turbulent wind. And while utility turbines are mounted up to 300 feet high in order to harvest steady winds, local cities and more urbanized counties tend to establish regulations to reduce the visual and noise impacts caused by wind turbines.

The Department of Energy’s Wind Program and National Renewable Laboratory publishes a wind resource map for every state. In many parts of Alaska, “good” to “superb” potential for wind power exists; the greatest potential exists in western and coastal areas of the state.

For the most part, the potential for wind power in Anchorage is poor to fair. Exceptions include off-shore areas such as Fire Island and areas along the Turnagain Arm, as well as some of the prominent Chugach ridgelines. The wind resource map is intended to show areas with the greatest potential for utility-scale production. Smaller scale wind energy may be viable in parts of the Municipality, and ultimately regardless of the energy payback, the investment is an individual decision.

The Proposed Ordinance

The ordinance defines a Wind Energy Conversion System (WECS) as:

“any device or assemblage which directly converts wind energy into useable thermal, mechanical, or electrical energy, including such devices as windmills and wind turbines, towers and supporting structures and such directly connected facilities as generators, alternators, inverters, batteries, and associated control equipment.”

Small WECS are defined as those rated with a power capacity of not more than 100 kW and intended for on-site consumption, and utility WECS greater than 100 kW and intended to provide distributed electric power as a public or private utility.

The Planning Department relied on several sources in compiling the proposed wind energy ordinance:

- American Planning Association inquiry service
- Consultant with Clarion Associates
- Research of existing local zoning codes
- Conversations with residents and distributors interested in pursuing wind energy options in Anchorage

Potential land use impacts associated with WECS include noise, aesthetic, safety, and property values. Most existing zoning ordinances establish height and setback standards; the setback standards, commonly 1.1 to 1.5 times the height of the WECS, are designed to accommodate noise impacts and to also allow sufficient setback so that in the event of the structure failure it will fall on the subject property.

Many jurisdictions permit WECS only on large lots, or primarily in its rural or suburban zoning districts. Height limits of freestanding WECS range from 60 to 80 feet to 200 feet. Typically only self-supporting towers are permitted. The APA recommends neutral colors, the prohibition of advertising or signage on wind systems, and restrictions in historic districts or scenic by-ways. And the approval processes range from administrative reviews to special or conditional use approvals, often with larger systems requiring a more stringent review process. Minneapolis, Chicago, and San Francisco require WECS to be building mounted unless lots are large (e.g., Minneapolis permits freestanding WECS on lots 1 acre or greater).

Additional considerations include flicker shadows, vibrations, and wildlife impacts. Considerations of these potential impacts are considered in the proposed ordinance, though these are more likely to be impacts associated with utility versus small WECS. The summary of the attached ordinance follows.

Summary of Proposed Ordinance

Definitions

- “Small Wind Energy Conversion System (WECS)” defined as intended to produce power for on-site consumption with power capacity no greater than 100 kW.
- “Utility WECS” defined as intended to provide distributed electric power as a utility.

By administrative site plan review

- One Small WECS (free-standing or building-mounted) allowed as accessory use in R-1, R-1A, R-2A, R-2D, R-5, R-5A, R-6, R-7, R-8, R-9, R-10, R-11, R-O.
- One Small WECS (free-standing or building-mounted) allowed as accessory use on lots with only one principal structure in R-2M, R-3, R-4 (R-4 can have multiple building-mounted Small WECS).

- Building-mounted Small WECS (no limit on number) allowed as accessory use in PLI, B-1A, B-3.
- Building-mounted Small WECS (no limit on number) allowed on buildings over 60 feet high, as accessory use in B-2A, B-2B, B-2C.
- One free-standing and multiple building-mounted Small WECS allowed as accessory use in PLI, I-1, I-2, MC, MI.

By conditional use

- Two or three free-standing Small WECS in PLI, I-1, I-2, MC, MI.
- One to three free-standing Small WECS in T.
- Any WECS in W.
- Utility WECS in PLI, I-2, AF, MI, T.

Standards for Building-mounted Small WECS

- If lot size is less than 20,000 in residential districts, then WECS must meet underlying district standards, including max. height of principal structure.
- WECS height limited to 10 feet on buildings 60 feet high or less.
- Setback (2 feet for every 1 foot of WECS height over 10 feet) from building edge required for WECS on buildings taller than 60 feet.
- Same design standards as for Free-standing Small WECS below, except for undergrounding of power lines.

Standards for Free-standing Small WECS

- Minimum lot size is 20,000 square feet.
- WECS must be setback 1.1 times height from all property lines (except property line abutting lake or pond—some relief for that situation)
- Maximum height is 95 feet.
- Only monopoles allowed—no lattice towers or guyed towers.
- Design standards for location on lot (back yard), noise, vibration, blade clearance from ground, undergrounding of power lines, color, illumination, and signs.
- Maximum of three on any lot, if multiple are allowed in district.

Standards for Utility WECS

- Maximum height is 450 feet in PLI, AF, T, and W districts, and 200 in I-2 and MI.
- Utility WECS must be setback 3 times height from residential districts and 2 times height from nonresidential districts.

- Design standards for noise, vibration, blade clearance, undergrounding of power lines, color, illumination, signs, and access.
- Only monopoles allowed—no lattice towers or guyed towers.

AGENCY COMMENTS:

The Project Management & Engineering Department (PM&E) recommends that the proposed ordinance further address the foundations required to mount WECS, and that an analysis of the foundation by a structural engineer be required. The Planning Department concurs with this recommendation, and recommends the following amendment by the Planning and Zoning Commission:

Page 14, line 31, Section 21.45.410 B Approval Process

Add line: "Structural stability of the foundation will be assured through the building permit process."

Page 18, Line 13, Section 21.50.480 B1 Submittal Requirements

Change to: "For each WECS model proposed, [T]he make, model, an illustrative photograph or brochure, manufacturer's specifications including noise decibels data for the proposed WECS, and drawings of the support structure stamped by a structural engineer registered in the State of Alaska [FOR EACH WECS MODEL PROPOSED]."

GENERAL PUBLIC COMMENTS:

Two general comments received were supportive of the proposed ordinance.

DEPARTMENT RECOMMENDATION:

The Department recommends the following amendment by the Planning and Zoning Commission:

Page 19, Lines 23-24, Section 21.50.480 F Design Standards

Replace with: "Except for short-term high wind speed events such as storms, operational noise shall not exceed 50dBH at any property line adjacent to a residential zoning district, and 60dBH at any property line adjacent to a nonresidential zoning district."

The Department recommends approval of the proposed ordinance amending various sections of Anchorage Municipal Code Title 21 to define Wind Energy Conversion Systems (WECS) and allow WECS in certain zoning districts as accessory uses.

DRAFT ORDINANCE

Submitted by: Assembly Chair at the request of
the Mayor
Prepared by: Planning Department
For reading:

ANCHORAGE, ALASKA
AO NO.

AN ORDINANCE AMENDING ANCHORAGE MUNICIPAL CODE SECTIONS 21.35.020
DEFINITIONS AND RULES OF CONSTRUCTION, 21.40 ZONING DISTRICTS, 21.45
SUPPLEMENTARY DISTRICT REGULATIONS, AND 21.50 STANDARDS FOR
CONDITIONAL USES AND SITE PLANS, TO DEFINE WIND ENERGY CONVERSION
SYSTEMS (WECS), TO ALLOW WECS IN CERTAIN ZONING DISTRICTS AS
ACCESSORY USES BY ADMINISTRATIVE SITE PLAN REVIEW AND AS
CONDITIONAL USES, TO SET GENERAL STANDARDS AND CONDITIONAL USE
STANDARDS.

THE ANCHORAGE ASSEMBLY ORDAINS:

Section 1. Anchorage Municipal Code section 21.35.020 is hereby amended to read
as follows: *(Other definitions in the referenced section are not affected and are therefore not set out
unless for context.)*

21.35.020 Definitions and rules of construction.

B. The following words, terms and phrases, when used in this title, shall have the
meanings ascribed to them in this section, except where the context clearly
indicates a different meaning:

Watershed manager means the executive director of the office of planning,
development, and public works or designee, who is the administrator of, and
storm water program coordinator for, the National Pollutant Discharge Elimination
System municipal separate storm sewer system permit required under federal
law.

Wind Energy Conversion System (WECS) means any device or assemblage
which directly converts wind energy into usable thermal, mechanical, or electrical
energy, including such devices as windmills and wind turbines, towers and
supporting structures and such directly connected facilities as generators,
alternators, inverters, batteries, and associated control equipment.

A. A small WECS has a rated power capacity of not more than 100 kW and is
intended to produce power primarily for on-site consumption, either instead of
or as a supplement to utility power.

B. An utility WECS has one or more WECS units with a rated capacity greater
than 100 kW, and is intended primarily to provide distributed electric power as
a public or private utility.

(GAAB 21.05.020; AO No. 77-355; AO No. 78-16; AO No. 78-28; AO No. 78-171; AO No. 78-231;

AO No. 79-214; AO No. 80-42; AO No. 81-67(S); AO No. 81-97; AO No. 81-180; AO No. 82-54; AO No. 82-167; AO No. 83-91(S); AO No. 84-14; AO No. 84-52; AO No. 85-58; AO No. 85-159; AO No. 85-91, 10-1-85; AO No. 85-216; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 86-171; AO No. 88-172; AO No. 88-171(S-1), 12-31-88; AO No. 89-35, 4-7-89; AO No. 88-147(S-2); AO No. 90-50(S); AO No. 91-35; AO No. 90-152(S); AO No. 91-90(S); AO No. 91-184; AO No. 92-7(S-2); AO No. 92-26; AO No. 92-93; AO No. 92-128(S); AO No. 92-129(S); AO No. 93-58; AO No. 93-148, § 1, 11-16-93; AO No. 94-62, § 2, 4-12-94; AO No. 95-68(S-1), §§ 2, 3, 8-8-95; AO No. 95-173, § 1, 11-14-95; AO No. 96-41, § 1, 3-5-96; AO No. 96-131(S), § 1, 10-22-96; AO No. 98-106, § 1, 7-21-98; AO No. 98-160, § 3, 12-8-98; AO No. 99-62, § 2, 5-11-99; AO No. 2000-119(S), § 8, 2-20-01; AO No. 2001-79(S), § 1, 5-8-01; AO No. 2001-80, § 1, 5-8-01; AO No. 2002-101(S), § 2, 4-9-02; AO No. 2002-109, § 2, 9-10-02; AO No. 2002-117, § 4, 1-28-03; AO No. 2003-62(S-1), § 3, 10-1-03; AO No. 2003-97, § 1, 9-30-03; AO No. 2003-132, § 1, 10-7-03; AO No. 2003-124(S), § 1, 1-20-04; AO No. 2004-108(S), § 2, 10-26-04; AO No. 2005-9, § 1, 3-1-05; AO No. 2005-150(S-1), § 1, 2-28-06; AO No. 2005-185(S), § 1, 2-28-06; AO No. 2005-124(S-1A), § 4, 4-18-06; AO No. 2006-121, § 1, 9-26-06; AO No. 2006-64(S-1), § 1, 12-12-06)

Section 2. Anchorage Municipal Code subsection 21.40.020 is hereby amended to read as follows: (*Subsections not affected by this ordinance are not set out unless for context.*)

21.40.020 PLI public lands and institutions district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

6. One free-standing small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

7. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

22. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

23. Utility wind energy conversion systems.

(GAAB 21.05.050.A; AO No. 77-355; AO No. 79-25; AO No. 81-67(S); AO No. 81-178(S); AO No. 82-24; AO No. 83-78; AO No. 84-34; AO No. 85-18; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 86-19; AO No. 86-90; AO No. 88-7(S), 7-4-88; AO No. 90-152(S); AO No. 92-93; AO No. 93-148, § 3, 11-16-93; AO No. 95-68(S-1), § 4, 8-8-95; AO No. 96-131(S), § 3, 10-22-96; AO No. 99-62, § 3, 5-11-99; AO No. 99-131, § 6, 10-26-99; AO No. 99-149, § 1, 12-14-99; AO No. 2002-109, § 3, 9-12-02; AO No. 2003-132, § 2, 10-7-03; AO No. 2005-9, § 2, 3-1-05; AO No. 2005-42(S), § 1, 5-31-05; AO No. 2005-150(S-1), § 2, 2-28-06; AO No. 2005-185(S), § 2, 2-28-06; AO No. 2005-124(S-1A), § 5, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-

06)

Section 3. Anchorage Municipal Code subsection 21.40.030 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.030 R-1 and R-1A single-family residential districts.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.B; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 83-216; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 98-53(S), § 1, 6-9-98; AO No. 99-49, § 1, 3-23-99; AO No. 99-62, § 4, 5-11-99; AO No 2002-109, § 3, 9-10-02; AO No. 2005-175, § 1, 1-10-06; AO No. 2005-178, § 2, 1-24-06; AO No. 2005-185(S), § 3, 2-28-06; AO No. 2005-124(S-1A), § 6, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 4. Anchorage Municipal Code subsection 21.40.040 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.040 R-2A two-family residential district (large lot); R-2D two-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.C; AO No. 77-355; AO No. 79-13; AO No. 80-27; AO No. 80-42; AO No. 81-67(S); AO No. 82-54; AO No. 83-217; AO No. 84-52; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 85-163; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 98-53(S), § 2, 6-9-98; AO No. 99-49, § 2, 3-23-99; AO No. 99-62, § 5, 5-11-99; AO No. 2005-175, § 2, 1-10-06; AO No. 2005-178, § 3, 1-24-06; AO No. 2005-185(S), § 4, 2-28-06; AO No. 2005-124(S-1A), § 7, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 5. Anchorage Municipal Code subsection 21.40.045 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.045 R-2M multiple-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

9. One small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.C; AO No. 77-355; AO No. 79-13; AO No. 80-27; AO No. 80-42; AO No. 81-67(S); AO No. 82-54; AO No. 83-217; AO No. 84-52; AO No. 85-18; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 85-163; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 98-53(S), § 3, 6-9-98; AO No. 99-49, § 3, 3-23-99; AO No. 99-62, § 6, 5-11-99; AO No. 2005-175, § 3, 1-10-06; AO No. 2005-178, § 4, 1-24-06; AO No. 2005-185(S), § 5, 2-28-06; AO No. 2005-124(S-1A), § 8, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 6. Anchorage Municipal Code subsection 21.40.050 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.050 R-3 multiple-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

8. One small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.D; AO No. 77-355; AO No. 80-27; AO No. 80-42; AO No. 81-67(S); AO No. 82-54; AO No. 83-218; AO No. 84-52; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 85-163; AO No. 86-19; AO No. 86-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 96-131(S), § 2, 10-22-96; AO No. 99-62, § 7, 5-11-99; AO No. 2005-175, § 4, 1-10-06; AO No. 2005-178, § 5, 1-24-06; AO No. 2005-185(S), § 6, 2-28-06; AO No. 2005-124(S-1A), § 9, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 7. Anchorage Municipal Code subsection 21.40.060 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.060 R-4 multiple-family residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

- ***
9. One free-standing small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.
10. Building-mounted small wind energy conversion systems on lots with only one principal structure, by administrative site plan review and subject to the requirements of section 21.45.410.
- ***

(GAAB 21.05.050.E; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 96-131(S), § 2, 10-22-96; AO No. 99-62, § 8, 5-11-99; AO No. 2003-124(S), § 2, 1-20-04; AO No. 2005-175, § 5, 1-10-06; AO No. 2005-178, § 6, 1-24-06; AO No. 2005-185(S), § 7, 2-28-06; AO No. 2005-124(S-1A), § 10, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 8. Anchorage Municipal Code subsection 21.40.070 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.070 R-5 rural residential district; R-5A, rural residential district (large lot).

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.
- ***

(GAAB 21.05.050.F; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 83-52; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 99-62, § 9, 5-11-99; AO No. 2002-63(S), § 1, 5-21-02; AO No. 2005-175, § 6, 1-10-06; AO No. 2005-178, § 7, 1-24-06; AO No. 2005-185(S), § 8, 2-28-06; AO No. 2005-124(S-1A), § 11, 4-18-06; AO No. 2006-121, § 2, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 9. Anchorage Municipal Code subsection 21.40.080 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.080 R-6 suburban residential district (large lot).

C. *Permitted accessory uses and structures.* Permitted accessory uses and

structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.G; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-18; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 99-27, § 1, 2-23-99; AO No. 99-62, § 10, 5-11-99; AO No. 2005-175, § 7, 1-10-06; AO No. 2005-178, § 8, 1-24-06; AO No. 2005-185(S), § 9, 2-28-06; AO No. 2005-124(S-1A), § 12, 4-18-06; AO No. 2006-121, § 3, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 10. Anchorage Municipal Code subsection 21.40.090 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.090 R-7 intermediate rural residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.H; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 83-219; AO No. 85-21; AO No. 85-28; AO No. 85-78; AO No. 85-23; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-114; AO No. 99-62, § 11, 5-11-99; AO No. 2005-175, § 8, 1-10-06; AO No. 2005-178, § 9, 1-24-06; AO No. 2005-185(S), § 10, 2-28-06; AO No. 2005-124(S-1A), § 13, 4-18-06; AO No. 2006-121, § 4, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 11. Anchorage Municipal Code subsection 21.40.100 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.100 R-8 rural residential district (large lot).

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

12. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.U; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 98-53(S), § 4, 6-9-98; AO No. 99-62, § 12, 5-11-99; AO No. 2005-175, § 9, 1-10-06; AO No. 2005-178, § 10, 1-24-06; AO No. 2005-185(S), § 11, 2-28-06; AO No. 2005-124(S-1A), § 14, 4-18-06; AO No. 2006-121, § 5, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 12. Anchorage Municipal Code subsection 21.40.110 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.110 R-9 rural residential district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

12. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.V; AO No. 77-355; AO No. 80-27; AO No. 81-67(S); AO No. 82-54; AO No. 85-21; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 98-53(S), § 5, 6-9-98; AO No. 99-62, § 13, 5-11-99; AO No. 2005-175, § 10, 1-10-06; AO No. 2005-178, § 11, 1-24-06; AO No. 2005-185(S), § 12, 2-28-06; AO No. 2005-124(S-1A), § 15, 4-18-06; AO No. 2006-121, § 6, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 13. Anchorage Municipal Code subsection 21.40.115 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.115 R-10 residential alpine/slope district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

11. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(AO No. 81-97; AO No. 81-217; AO No. 85-23; AO No. 85-28; AO No. 85-78; AO No. 86-90; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 98-53(S), § 6, 6-9-98; AO No. 99-49, § 1, 3-23-99; AO No. 99-62, § 14, 5-11-99; AO No. 2005-175, § 11, 1-10-06; AO No. 2005-178, § 12, 1-24-06; AO No. 2005-185(S), § 13, 2-28-06; AO No. 2005-124(S-1A), § 16, 4-18-06; AO No. 2006-121, § 7, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 14. Anchorage Municipal Code subsection 21.40.117 is hereby amended to

read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.117 R-11 Turnagain Arm district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

8. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(AO No. 82-162; AO No. 84-34; AO No. 85-28; AO No. 85-78; AO No. 85-91, 10-1-85; AO No. 86-122; AO No. 86-182; AO No. 88-143; AO No. 88-144, 11-26-88; AO No. 88-171(S-1), 12-31-88; AO No. 94-120, § 1, 8-23-94; AO No. 94-238(S), § 3, 2-28-94; AO No. 94-239, § 1, 2-14-95; AO No. 96-118, § 1, 8-22-96; AO No. 96-118, § 1, 8-13-96; AO No. 99-62, § 15, 5-11-99; AO No. 2001-88, § 1, 6-5-01; AO No. 2005-175, § 12, 1-10-06; AO No. 2005-178, § 13, 1-24-06; AO No. 2005-185(S), § 14, 2-28-06; AO No. 2005-124(S-1A), § 17, 4-18-06; AO No. 2006-121, § 8, 9-26-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 15. Anchorage Municipal Code subsection 21.40.130 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.130 R-O residential-office district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

6. One small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.I; AO No. 77-219; AO No. 77-355; AO No. 78-199; AO No. 80-57; AO No. 81-67(S); AO No. 83-226; AO No. 85-18; AO No. 85-23; AO No. 85-69; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 86-171; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 91-97; AO No. 92-114; AO No. 96-131(S), § 3, 10-22-96; AO No. 99-62, § 16, 5-11-99; AO No. 2003-124(S), § 3, 1-20-04; AO No. 2005-175, § 13, 1-10-06; AO No. 2005-178, § 14, 1-24-06; AO No. 2005-185(S), § 15, 2-28-06; AO No. 2005-124(S-1A), § 18, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 16. Anchorage Municipal Code subsection 21.40.140 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.140 B-1A local and neighborhood business district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and

structures are as follows:

6. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.J; AO No. 77-355; AO No. 78-28; AO No. 78-169; AO No. 81-67(S); AO No. 81-143; AO No. 83-210; AO No. 85-18; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 85-173, 3-17-86; AO No. 86-90; AO No. 87-62; AO No. 88-49(S); AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 96-131(S), § 2, 10-22-96; AO No. 99-62, § 17, 5-11-99; AO No. 2005-185(S), § 16, 2-28-06; AO No. 2005-124(S-1A), § 19, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 17. Anchorage Municipal Code subsection 21.40.150 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.150 B-2A central business district core.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. Building-mounted small wind energy conversion systems on buildings over 60 feet in height, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.W; AO No. 77-20; AO No. 77-355; AO No. 80-57; AO No. 81-67(S); AO No. 81-72; AO No. 82-49; AO No. 85-173, 3-17-86; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 87-62; AO No. 87-148; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 90-124; AO No. 91-1; AO No. 91-39; AO No. 91-144; AO No. 92-57; AO No. 95-68(S-1), § 6, 8-8-95; AO No. 98-160, § 4, 12-8-98; AO No. 98-188, §§ 1-3, 1-12-99; AO No. 99-62, § 19, 5-11-99; AO No. 99-131, § 7, 10-26-99; AO No. 2001-80, § 3, 5-8-01; AO No. 2005-185(S), § 18, 2-28-06; AO No. 2005-124(S-1A), § 21, 4-18-06; AO No. 2006-49, § 1, 5-16-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 5, 10-23-07)

Section 18. Anchorage Municipal Code subsection 21.40.160 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.160 B-2B central business district, intermediate.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. Building-mounted small wind energy conversion systems on buildings over

60 feet in height, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.Y; AO No. 77-20; AO No. 77-355; AO No. 80-57; AO No. 81-67(S); AO No. 81-72; AO No. 82-49; AO No. 85-173, 3-17-86; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 87-62; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 90-124; AO No. 91-1; AO No. 91-39; AO No. 91-144; AO No. 92-57; AO No. 95-68(S-1), § 7, 8-8-95; AO No. 96-131(S), § 3, 10-22-96; AO No. 98-160, § 5, 12-8-98; AO No. 98-188, §§ 4--6, 1-12-99; AO No. 99-62, § 20, 5-11-99; AO No. 99-131, § 8, 10-26-99; AO No. 99-149, § 2, 12-14-99; AO No. 2001-80, § 4, 5-8-01; AO No. 2005-185(S), § 19, 2-28-06; AO No. 2005-124(S-1A), § 22, 4-18-06; AO No. 2006-49, § 2, 5-16-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 6, 10-23-07)

Section 19. Anchorage Municipal Code subsection 21.40.170 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.170 B-2C central business district, periphery.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

5. Building-mounted small wind energy conversion systems on buildings over 60 feet in height, by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.X; AO No. 77-20; AO No. 77-355; AO No. 80-57; AO No. 81-67(S); AO No. 82-49; AO No. 85-173, 3-17-86; AO No. 85-91, 10-1-85; AO No. 86-90; AO No. 87-62; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 90-124; AO No. 91-1; AO No. 91-39; AO No. 91-144; AO No. 92-57; AO No. 95-68(S-1), § 8, 8-8-95; AO No. 96-131(S), § 3, 10-22-96; AO No. 98-160, § 6, 12-8-98; AO No. 98-173, § 4, 11-3-98; AO No. 98-188, §§ 7--9, 1-12-99; AO No. 99-62, § 21, 5-11-99; AO No. 99-131, § 9, 10-26-99; AO No. 99-149, § 3, 12-14-99; AO No. 2001-80, § 5, 5-8-01; AO No. 2005-185(S), § 20, 2-28-06; AO No. 2005-124(S-1A), § 23, 4-18-06; AO No. 2006-49, § 3, 5-16-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 7, 10-23-07)

Section 20. Anchorage Municipal Code subsection 21.40.180 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.180 B-3 general business district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

3. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

(GAAB 21.05.050.M; AO No. 77-355; AO No. 78-28; AO No. 80-57; AO No. 80-132; AO No. 81-67(S); AO No. 83-209; AO No. 85-18; AO No. 85-91, 10-1-85; AO No. 85-173, 3-17-86; AO No. 86-90; AO No. 86-182; AO No. 87-32; AO No. 87-62; AO No. 88-171(S-1), 12-31-88; AO No. 88-147(S-2); AO No. 92-26; AO No. 92-114; AO No. 95-68(S-1), § 9, 8-8-95; AO No. 96-107, § 1, 7-30-96; AO No. 96-131(S), § 3, 10-22-96; AO No. 98-160, § 7, 12-8-98; AO No. 99-62, § 22, 5-11-99; AO No. 2001-80, § 6, 5-8-01; AO No. 2004-108(S), § 3, 10-26-04; AO No. 2005-185(S), § 21, 2-28-06; AO No. 2005-124(S-1A), § 24, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 21. Anchorage Municipal Code subsection 21.40.200 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.200 I-1 light industrial district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of section 21.45.410.

5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

17. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

(GAAB 21.05.050.O; AO No. 77-355; AO No. 79-95; AO No. 81-67(S); AO No. 82-105; AO No. 84-57; AO No. 85-91, 10-1-85; AO No. 85-95; AO No. 86-50; AO No. 86-90; AO No. 87-32; AO No. 88-147(S-2); AO No. 90-50(S); AO No. 92-114; AO No. 95-68(S-1), § 11, 8-8-95; AO No. 95-76, § 1, 4-4-95; AO No. 95-194, § 1, 1-2-96; AO No. 98-160, § 9, 12-8-98; AO No. 98-173, § 5, 11-3-98; AO No. 99-62, § 24, 5-11-99; AO No. 2001-80, § 8, 5-8-01; AO No. 2004-5, § 1, 1-20-04; AO No. 2004-108(S), § 5, 10-26-04; AO No. 2004-178(am), § 1, 1-25-05; AO No. 2005-9, § 3, 3-1-05; AO No. 2005-185(S), § 23, 2-28-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 22. Anchorage Municipal Code subsection 21.40.210 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.210 I-2 heavy industrial district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and

structures are as follows:

4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of section 21.45.410.

5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of section 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

8. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

9. Utility wind energy conversion systems.

(GAAB 21.05.050.P; AO No. 77-355; AO No. 85-91, 10-1-85; AO No. 87-32; AO No. 91-184; AO No. 93-148, § 4, 11-16-93; AO No. 96-60, § 1, 8-6-96; AO No. 96-125, § 1, 11-12-96; AO No. 97-78, § 2, 6-3-97; AO No. 99-62, § 25, 5-11-99; AO No. 2001-80, § 9, 5-8-01; AO No. 2005-185(S), § 24, 2-28-06; AO No. 2005-124(S-1A), § 26, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 23. Anchorage Municipal Code subsection 21.40.240 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.240 T transition district.

D. *Conditional uses.* Subject to the requirements of the conditional use and site plan standards and procedures of this title, the following uses may be permitted only as a conditional use:

12. Small wind energy conversion systems, subject to the requirements of section 21.50.470.

13. Utility wind energy conversion systems.

(GAAB 21.05.050.S; AO No. 77-355; AO No. 79-25; AO No. 85-23; AO No. 85-91, 10-1-85; AO No. 88-59(S); AO No. 88-171(S-1), 12-31-88; AO No. 98-160, § 10, 12-8-98; AO No. 99-62, § 28, 5-11-99; AO No. 2005-185(S), § 26, 2-28-06; AO No. 2005-124(S-1A), § 28, 4-18-06; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06; AO No. 2007-121(S-1), § 12, 10-23-07)

Section 24. Anchorage Municipal Code subsection 21.40.260 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.260 AF antenna farm district.

D. *Conditional uses.* Subject to the requirements of the conditional use standards and procedures of this title, the following uses may be permitted:

4. Utility wind energy conversion systems.

(AO No. 88-147(S-2); AO No. 99-62, § 29, 5-11-99; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 25. Anchorage Municipal Code subsection 21.40.270 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.270 MC marine commercial district.

C. *Permitted accessory uses and structures.* Permitted accessory uses and structures are as follows:

4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of 21.45.410.

5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of 21.45.410.

D. *Conditional uses.* Subject to the requirements of the conditional use and site plan standards and procedures of Sections 21.15.030 and 21.50.020, the following uses may be permitted:

2. Conditional uses with general standards in Section Chapter 21.50:

f. Two or three free-standing small wind energy conversion systems, subject to the requirements of section 21.50.470.

(AO No. 98-160, § 11, 12-8-98; AO No. 99-62, § 30, 5-11-99; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 26. Anchorage Municipal Code subsection 21.40.280 is hereby amended to read as follows: *(Subsections not affected by this ordinance are not set out unless for context.)*

21.40.280 MI marine industrial district.

C. Permitted accessory uses and structures. Permitted accessory uses and structures are as follows:

4. One free-standing small wind energy conversion system by administrative site plan review and subject to the requirements of 21.45.410.

5. Building-mounted small wind energy conversion systems by administrative site plan review and subject to the requirements of 21.45.410.

D. Conditional uses. Subject to the requirements of the conditional use standards and procedures of sections 21.15.030 and 21.50.020, the following uses may be permitted:

6. Two or three small wind energy conversion systems, subject to the requirements of section 21.50.470.

7. Utility wind energy conversion systems.

(AO No. 99-62, § 31, 5-11-99; AO No. 2006-64(S-1), §§ 2, 3, 12-12-06)

Section 27. Anchorage Municipal Code chapter 21.45 is hereby amended to add a new section to read as follows:

21.45.410 Small wind energy conversion systems.

A. *Purpose.* The purpose of this section is to regulate and provide standards for small wind energy conversion systems (WECS) as defined in this Code, and to encourage the development of small wind energy systems.

B. *Approval Process.* Small WECS are subject to an administrative site plan review. Sufficient information shall be provided with the application to show that the standards below have been met. The planning director shall grant approval if the standards of this section have been met, and that the applicant has sized and sited the system to reduce impacts on surrounding properties to the maximum extent feasible.

C. *Submittal Requirements.*

1. A description of the project, including the maximum rated power output capacity of the WECS.

2. The make, model, an illustrative photograph or brochure, manufacturer's specifications including noise decibels data for the proposed WECS, the

support structure, and method of attachment to the ground and/or structure.

3. Elevation drawing of the WECS showing total height, turbine dimensions, tower and turbine colors, distance between ground and lowest point of any blade, and if proposed, the location of ladders, climbing pegs, and access doors.

4. If the WECS is not certified as meeting the IEEE 1547 standard (Institute of Electrical and Electronic Engineers), then an assessment of potential electromagnetic interference with microwave, radio, television, personal communication systems and other wireless communication is required.

5. Applications shall include a visual impact analysis of the proposed WECS as installed, which shall include color photographs of the proposed site from at least two locations accurately depicting the existing conditions. A computerized photographic simulation, demonstrating any visual impacts from strategic vantage points, is desirable and may be required at the Director's discretion. The applicant shall indicate any visual screening proposed to be incorporated into the project that is intended to lessen the system's visual prominence.

D. Building-Mounted WECS.

1. In residential districts on lots less than 20,000 square feet, a building mounted WECS shall not exceed the maximum height for principal structures of the underlying zoning district.

2. On buildings of 60 feet or less in height, building mounted WECS shall be no taller than 10 feet.

3. On buildings over 60 feet in height, building mounted WECS shall be set back from the structure edge by at least two feet for every one foot of height greater than 10 feet.

4. Building-mounted WECS shall meet the design standards for free-standing WECS in subsection E.5. below, with the exception of E.5.e.

E. Free-Standing WECS.

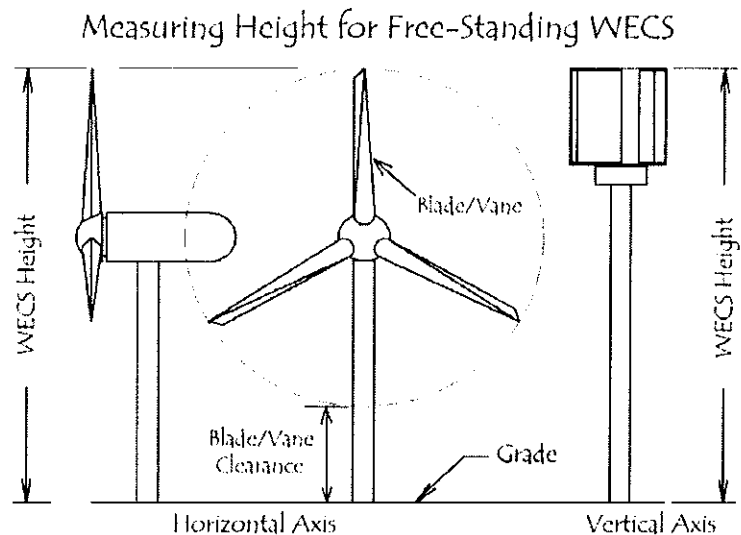
1. Number of WECS. Only one small WECS per lot is allowed in residential zoning districts. Adjoining lots under the same ownership shall be treated as one lot for purposes of this limitation.

2. Minimum Lot Area and Maximum Height.

a. The minimum lot area for a small WECS is 20,000 square feet.

b. The height of a small WECS shall be determined by compliance with the setback provisions of subsection E.4. below. In no instance shall a small WECS exceed 95 feet in height.

c. Height shall be measured as depicted in the illustration. Structures shall not interfere with Federal Aviation Administration Regulations on airport approaches. In no case shall the height exceed manufacturer's specifications.



3. *Blade or Vane*

Clearance. Lowest point of moving elements, such as blades or vanes, shall be at least 25 feet above grade. No blades may extend over public sidewalks/trails.

4. *Setbacks.*

a. Except as allowed in 4.b. below, all WECs shall be setback from all property lines at least 1.1 times the height of system

b. On lots abutting water bodies such as lakes or ponds, the WECS shall be setback at least 15 feet from the water body edge, but the setback distance required in 4.a. above may extend into the water body, provided that the full extent of the setback distance falls within the water body.

c. All WECS shall be located so that the principal structure is between the WECS and the front property line.

d. All systems shall be setback at least 1.1 times the height of the system from all overhead power and telecommunication lines, and any telecommunications towers.

5. *Design Standards.*

a. Operational noise shall not exceed 50dBH at property line except for short-term high wind speed events such as storms.

- b. All systems shall be equipped with manual and automatic (mechanical or electrical) over-speed controls to limit the blade rotation speed to within the design limits of the system.
 - c. The rotating turbine shall not produce vibrations that are humanly perceptible beyond the property lines of the site.
 - d. Lattice type towers and towers using guy wires are prohibited.
 - e. All power transmission and telemetry lines from the tower to any building or other structure shall be placed underground.
 - f. No tower shall be illuminated unless required by a state or federal agency, such as the FAA.
 - g. All structures in a project shall be finished in a single, non-reflective, matte finished, neutral color.
 - h. No commercial or non-commercial advertisements, signs, or other messages shall be placed or painted on the tower, rotor, generator or tail vane, except that a system or tower's manufacturer's logo may be displayed on a system generator housing in an unobtrusive manner.
- F. *Abandoned or unsafe wind energy conversion systems.* Any system that is not operated for a continuous period of 12 months shall be considered abandoned and shall be dismantled and removed from the property at the expense of the property owner.

Section 28. Anchorage Municipal Code chapter 21.50 is hereby amended to add new sections to read as follows:

21.50.470 Small wind energy conversion systems—multiple free-standing towers.

A. *Purpose.* The purpose of this section is to provide standards for multiple free-standing small WECS in industrial districts and in the PLI district.

B. *Submittal Requirements.* Multiple free-standing small WECS in industrial districts and in the PLI districts shall provide the minimum application information required by section 21.50.480B.

C. *Maximum number of WECS.* No more than three WECS shall be allowed on any one lot. Adjoining lots under the same ownership shall be treated as one lot for purposes of this limitation.

D. *Standards.* Multiple free-standing small WECS shall meet the standards of section 21.45.410E.

1 E. *Abandoned or unsafe wind energy conversion systems.* Any system that is
2 not operated for a continuous period of 12 months shall be considered
3 abandoned and shall be dismantled and removed from the property at the
4 expense of the property owner.

5 **21.50.480 Utility wind energy conversion systems.**

6 A. *Purpose.* The purpose of this section is to provide standards for utility scale
7 wind energy conversion systems (WECS) generally utilizing multiple towers
8 designed to produce electric power as a public or private utility.

9 B. *Submittal Requirements.* In addition to the minimum application information
10 set forth in 21.15.030.C, the following shall be provided:

11 1. The make, model, an illustrative photograph or brochure, manufacturer's
12 specifications including noise decibels data for the proposed WECS, and
13 the support structure for each WECS model proposed.

14 2. Elevation drawing of each WECS model showing total height, turbine
15 dimensions, tower and turbine colors, distance between ground and
16 lowest point of any blade, and if proposed, the location of ladders,
17 climbing pegs, and access doors.

18 3. An assessment of potential electromagnetic interference with microwave,
19 radio, television, personal communication systems and other wireless
20 communication.

21 4. An analysis of impacts on local wildlife shall be prepared, regarding
22 impacts anticipated during construction, reconstruction, modification or
23 operation of WECS. Wildlife impacts to be considered shall include, at a
24 minimum, anticipated impacts on birds.

25 5. If any habitable building is located within 1300 feet of any proposed Utility
26 WECS unit, then the applicant shall conduct a study on potential shadow
27 flicker. The study shall identify locations where shadow flicker may be
28 caused by the WECSs and the expected durations of the flicker at these
29 locations. The study shall identify areas where shadow flicker may
30 interfere with habitable buildings and describe measures that shall be
31 taken to eliminate or mitigate the problems. The applicant has the burden
32 of proving that shadow flicker will not negatively impact neighboring uses.

33 6. Applications shall include a visual impact analysis of the proposed WECS
34 as installed, which may include a computerized photographic simulation,
35 demonstrating any visual impacts from strategic vantage points. Color
36 photographs of the proposed site from at least two locations accurately
37 depicting the existing conditions shall be included. The visual analysis
38 shall also indicate the color treatment of the system's components and
39 any visual screening incorporated into the project that is intended to

lessen the system's visual prominence.

7. A noise analysis by a competent acoustical consultant documenting the noise levels associated with the proposed WECS. The study shall document projected noise levels at property lines. The noise analysis shall include low frequency noise.

C. *Height.* The height as measured from grade to the highest point of the fully operational system, including the turbine vane(s), shall not exceed 450 feet in the AF, W, T, and PLI zoning districts, or 200 feet in any other district in which a Utility WECS may be approved. A Utility WECS shall not interfere with Federal Aviation Administration Regulations in the vicinity of an airport. In no case shall the height exceed manufacturer's specifications.

D. *Blade or Vane Clearance.* Lowest point of moving elements, such as blades or vanes, shall be at least 30 feet above grade.

E. *Setbacks.*

1. All WECS shall setback from all residential property lines at least 3.0 times the height of system, and from all non-residential property lines a minimum of 2.0 times the height of the system.
2. All systems shall be at least 325 feet from any telecommunications towers.
3. The tower shall maintain a minimum separation distance equal to 1.1 times the height of system from all overhead power and telecommunication lines.

F. *Design Standards.*

1. Operational noise shall not exceed 60dBH at property line except for short-term high wind speed events such as storms.
2. The rotating turbine shall not produce vibrations that are humanly perceptible beyond the property lines of the site.
3. Lattice type towers and towers using guy wires are prohibited.
4. All power transmission and telemetry lines from the tower to any building or other structure shall be placed underground, unless otherwise allowed by the planning and zoning commission.
5. No tower shall be illuminated unless required by a state or federal agency, such as the FAA.
6. All structures in a project shall be finished in a single, non-reflective, matte finished, neutral color.

1 7. No commercial or non-commercial advertisements, signs, or other
2 messages shall be placed or painted on the tower, rotor, generator or tail
3 vane, except that a system or tower's manufacturer's logo may be
4 displayed on a system generator housing in an unobtrusive manner, as
5 approved by the planning and zoning commission.

6 8. WECS structure shall be designed to prevent unauthorized external
7 access to electrical and mechanical components and shall have access
8 doors that are kept securely locked. No climbing pegs or tower ladders
9 shall be located closer than 12 feet to the ground level at the base of the
10 structure. A fence with a locking portal may be required by the Planning
11 and Zoning Commission to enclose the entire WECS tower site.

12 G. *Abandoned or unsafe wind energy conversion systems.* Any system that is
13 not operated for a continuous period of 12 months shall be considered
14 abandoned and shall be dismantled and removed from the property at the
15 expense of the property owner.

16 **Section 29.** This ordinance shall become effective immediately upon its passage and
17 approval by the Assembly.

18 PASSED AND APPROVED by the Anchorage Assembly this _____ day of
19 _____, 2008.

20 _____
21 Chair

22 ATTEST:

23 _____
24 _____
25 Municipal Clerk

REVIEW COMMENTS

**PUBLIC AGENCIES
COMMUNITY COUNCILS**

2008-127

Graves, Jill A.

From: Schwan, Martin K.
Sent: Monday, August 11, 2008 3:55 PM
To: Stewart, Gloria I.; Pierce, Eileen A; Graves, Jill A.
Cc: Weaver Jr., Jerry T.; Long, Patty R.
Subject: Fire plat review August 2008

Attachments: Fire plat review August 2008.doc



Fire plat review
August 2008.d...

2008-122 Tudor Centre Tr D-1A & Tr D-5A No Objection

2008-125 Glenn Hghts Sub, Tr A-1 Comment: The fire department opposes further development of this area until such time a second approved fire apparatus access road meeting the requirements of the IFC is constructed. Applicant may set-up a meeting to go over AFD access requirements

2008-128¹²⁷ Ordinance amending title 21 for WECS No objection
WECS = wind energy conversions systems

**Municipality Of Anchorage
ANCHORAGE WATER & WASTEWATER UTILITY**

RECEIVED

SEP 02 2008

M E M O R A N D U M

DATE: August 27, 2008
TO: Jerry Weaver, Zoning Division Administrator, Planning Department
FROM: Paul Hatcher, Engineering Technician III, AWWU *PH*
SUBJECT: **Zoning Case Comments**
Planning & Zoning Commission Hearing September 29, 2008
Agency Comments due September 1, 2008

AWWU has reviewed the materials and has the following comments.

08-122 TUDOR CENTRE TR D-1A & 5A, Rezoning to R-OSL Residential-office district with special limitations, Grid SW1736

1. AWWU water main located in Tudor Centre Drive currently serves these properties.
2. AWWU sanitary sewer main located in Tudor Centre Drive currently serves these properties.
3. AWWU has no objection to this rezoning.

08-125 GLENN HEIGHTS TR A1, Rezoning to R-OSL Residential-office district with special limitations, Grid SW1142

1. AWWU water main located in Easement along east property line currently serves this property.
2. AWWU sanitary sewer main located in Centennial Drive currently serves this property.
3. AWWU has no objection to this rezoning.

08-127 An ordinance amending Title 21 for wind energy conversion systems,

1. AWWU water and sanitary sewer mains not affected by Title 21 amendment for wind energy conversion systems.
2. AWWU has no objection to this ordinance amending.

If you have any questions pertinent to public water and sanitary sewer, you may call me at 564-2721 or the AWWU planning section at 564-2739, or e-mail paul.hatcher@awwu.biz.

2008-127

Graves, Jill A.

From: Walsh, Sharen A.
Sent: Tuesday, September 02, 2008 6:00 PM
To: Autor, Mary P.; Barrett, Al W. (Zoning); Bartels, Gloria A.; Chambers, Angela C.; Graves, Jill A.; Stewart, Gloria I.; Weaver Jr., Jerry T.
Cc: Keefer, Don C.
Subject: PH 20080929.doc
Attachments: PH 20080929.doc

RECEIVED

SEP 03 2008



PH 20080929.doc
(137 KB)

Please especially note the comments about the need for an engineered foundation analysis for wind systems.

Sharen



Municipality of Anchorage
Project Management & Engineering Department



Comments to Miscellaneous Planning and Zoning Applications

DATE: September 2, 2008
TO: Jerry Weaver, Platting Officer
FROM: Sharen Walsh, P.E. – Private Development - Plan Review Engineer
SUBJECT: Comments for Planning and Zoning Commission Public Hearing date:
September 29, 2008

SEP 09 2008

Case No. 2008-122– A request for a rezone to R-OSL Residential office district with special limitations

Project Management and Engineering has no objection to the request to rezone.

Case No. 2008-125– A request for a rezone to R-OSL Residential office district with special limitations.

Project Management and Engineering has no objection to the request to rezone.

Case No. 2008-127 – A proposed ordinance amending Title 21 for wind energy conversion systems

Except for prohibiting lattice type towers and towers using guy wires, the design standards in proposed sections 21.45.410 and 21.50.480 do not address the types of allowable foundations for these systems, nor do they require analysis of the foundation by a structural engineer registered in the State of Alaska. Wind energy systems are generally designed to "feather out" and go off-line in times of very high wind velocities, but still – there are several engineering considerations to supporting the wind turbines adequately. The ordinance should require that foundations be properly analyzed and required submittals should include drawings that are stamped by a structural engineer as noted above.



**Municipality of Anchorage
Development Services Department
Building Safety Division**



MEMORANDUM

DATE: September 4, 2008
TO: Jerry Weaver, Jr., Platting Officer, CPD
FROM: Daniel Roth, Program Manager, On-Site Water and Wastewater Program
SUBJECT: Comments on Cases due September 1, 2008

SEP 04 2008

The On-Site Water & Wastewater Program has reviewed the following cases and has these comments:

2008 – 122 Rezoning to R-OSL Residential – office district with special limitations

No objection

2008 – 125 Rezoning to R-OSL Residential – office district with special limitations

No objection

2008 – 127 An ordinance amending Title 21 for wind energy conversion systems

No objection



MUNICIPALITY OF ANCHORAGE

Development Services Department

Right of Way Division

Phone: (907) 343-8240 Fax: (907) 343-8250



DATE: September 4, 2008
TO: Planning Department, Zoning and Platting Division
THRU: Jack L. Frost, Jr., Right of Way Supervisor
FROM: Lynn McGee, Senior Plan Reviewer
SUBJ: Request for Comments on Assembly case(s) for September 29, 2008.

RECEIVED

SEP 04 2008

Right of Way Division has reviewed the following case(s) due September 1, 2008.

08-122 Tudor Centre, Tract D-1A & D-5A, grid 1736
(Rezoning Request, R-OSL to R-OSL)
Right of Way Division has no comments at this time.
Review time 15 minutes.

08-125 Glenn Heights, Tract A-1, grid 1142
(Rezoning Request, T Transitional District to R-OSL)
Right of Way Division has no comments at this time.
Review time 15 minutes.

08-127 Ordinance Amendment
(Title 21 for Wind Energy Conversion Systems)
Right of Way Division has no comments at this time.
Review time 15 minutes.

S-11680-1 Creekview Estates, Lots 1-18, & Tracts A, B, & C, grid 3138
(Site Plan Review)

Right of Way Division sees no merit in not relocating the roads to the center of the existing and proposed rights of way. The terrain is not steep and no apparent drainages impede the construction. More importantly, the existing and proposed roads are for public use and are not legally allowed to trespass on private property.
Review time 15 minutes.

REVIEW COMMENTS

GENERAL PUBLIC

Zoning and Platting Cases On-line

View Case Comments

[Submit a Comment](#)

**** These comments were submitted by citizens and are part of the public record for the cases ****

Questions? If you have questions regarding a case, please contact Zoning at **907-343-7943** or Platting & Variances at **907-343-7942**.

1. Select a Case: 2008-127 ▼

[View Comments](#)

2. View Comments:

Case Num: 2008-127

An ordinance amending Title 21 for wind energy conversion systems

Site Address: N/A

Location: AN ORDINANCE AMENDING ANCHORAGE MUNICIPAL CODE SECTIONS 21.35.020 DEFINITIONS AND RULES OF CONSTRUCTION, 21.40 ZONING DISTRICTS, 21.45 SUPPLEMENTARY DISTRICT REGULATIONS, AND 21.50 STANDARDS FOR CONDITIONAL USES AND SITE PLANS, TO DEFINE WIND ENERGY CONVERSION SYSTEMS (WECS), TO ALLOW WECS IN CERTAIN ZONING DISTRICTS AS ACCESSORY USES BY ADMINISTRATIVE SITE PLAN REVIEW AND AS CONDITIONAL USES, TO SET GENERAL STANDARDS AND CONDITIONAL USE STANDARDS.

[Details](#) | [Staff Report](#) | [submit a comment](#)

Public Comments

9/8/08

Denis Aubut

The use of wind power at higher elevations can be a very worthwhile investment. To be able to reduce your electric bill by almost 90% with the use of wind power is amazing. I hope this ammendment passes and they allow the use of wind towers for alternative energy reasons.

8/6/08

Al Mitchell

2521 St Elias Drive
Anchorage AK 99517

If this modification of Title 21 allows for the construction of towers to be used for mounting wind energy systems, I'm all for it. The municipality should not be preventing residents from exploring and installing alternative energy systems such as wind systems that utilize towers. It is my understanding that Title 21 does not allow for such towers at this time.

[Zoning & Platting Cases On-line website](#)

Zoning and Platting Cases On-line

View Case Comments

[Submit a Comment](#)

**** These comments were submitted by citizens and are part of the public record for the cases ****

Questions? If you have questions regarding a case, please contact Zoning at **907-343-7943** or Platting & Variances at **907-343-7942**.

1. Select a Case: [View Comments](#)

2. View Comments:

Case Num: 2008-127

An ordinance amending Title 21 for wind energy conversion systems

Site Address: N/A

Location: AN ORDINANCE AMENDING ANCHORAGE MUNICIPAL CODE SECTIONS 21.35.020 DEFINITIONS AND RULES OF CONSTRUCTION, 21.40 ZONING DISTRICTS, 21.45 SUPPLEMENTARY DISTRICT REGULATIONS, AND 21.50 STANDARDS FOR CONDITIONAL USES AND SITE PLANS, TO DEFINE WIND ENERGY CONVERSION SYSTEMS (WECS), TO ALLOW WECS IN CERTAIN ZONING DISTRICTS AS ACCESSORY USES BY ADMINISTRATIVE SITE PLAN REVIEW AND AS CONDITIONAL USES, TO SET GENERAL STANDARDS AND CONDITIONAL USE STANDARDS.

[Details](#) | [Staff Report](#) | [submit a comment](#)

Public Comments

9/26/08

Robert Gill

12110 Business Blvd Suite 6 box 325

Eagle River AK 99577

Wind power is the best way to wean our dependence on foreign oil and build our economy at the same time. ANWR drilling, Natural gas, and conservation are all important, but we should make wind energy the next Manhattan project. If we could have 30% of our power generated by wind in the next 10 years, we can minimize the influence of oil despots such as Hugo Chavez, the Nehru jacket creep in Iraq and the host of others who use oil as a weapon to maintain power. Reasonable regulations allowing wind power on large lots for example an acre that would allow us to sell power back to our local utility would be welcome. If feasible and economic, I would like to be the first in the Southfork of Eagle River to have a wind generator in my back yard. The price of electricity, natural gas and oil will not go down in the future. If we wish to maintain our sovereignty, and economic way of life, then wind power must be part of the mix. Respectfully submitted, Bob Gill

Content ID: 007162**Type:** Ordinance - AO

An Ordinance Amending Anchorage Municipal Code Sections 21.35.020 Definitions and Rules of Construction, 21.40 Zoning Districts, 21.45 Supplementary District Regulations, and 21.50 Standards for Conditional Uses

Title: and Site Plans, to Define Wind Energy Conversion Systems (WECS), to Allow WECS In Certain Zoning Districts as Accessory Uses by Administrative Site Plan Review and as Conditional Uses, to Set General Standards and Conditional Use Standards.

Author: perrysu

Initiating Dept: Planning

Description: Wind Energy Ordinance**Keywords:** Wind Energy Ordinance

Date Prepared: 11/20/08 8:13 PM

Director Name: Tom Nelson

Assembly Meeting Date: 12/16/08

Public Hearing Date: ~~11/16/09~~ 3/3/09

Workflow Name	Action Date	Action	User	Security Group	Content ID
Clerk_Admin_SubWorkflow	12/5/08 9:56 AM	Exit	Heather Handyside	Public	007162
MuniMgrCoord_SubWorkflow	12/5/08 9:56 AM	Approve	Heather Handyside	Public	007162
MuniManager_SubWorkflow	12/5/08 9:56 AM	Approve	Heather Handyside	Public	007162
Legal_SubWorkflow	11/24/08 3:21 PM	Approve	Rhonda Westover	Public	007162
Finance_SubWorkflow	11/21/08 2:43 PM	Approve	Sharon Weddleton	Public	007162
OMB_SubWorkflow	11/21/08 11:40 AM	Approve	Wanda Phillips	Public	007162
ECD_SubWorkflow	11/21/08 9:14 AM	Approve	Tawny Klebesadel	Public	007162
Planning_SubWorkflow	11/21/08 8:56 AM	Approve	Tom Nelson	Public	007162
AllOrdinanceWorkflow	11/20/08 8:17 PM	Checkin	Susan Perry	Public	007162