

**List of Appendices****Appendix A****Description of GPD Grant Programs****State Homeland Security Program (SHSP)**

**Purpose:** This core assistance program provides funds to build capabilities at the state and local levels and to implement the goals and objectives included in state homeland security strategies and initiatives in the State Preparedness Report.

**Urban Areas Security Initiative (UASI) Program**

**Purpose:** The UASI program focuses on enhancing regional preparedness in major metropolitan areas. The UASI program directly supports the National Priority on expanding regional collaboration in the National Preparedness Guidelines and is intended to assist participating jurisdictions in developing integrated regional systems for prevention, protection, response and recovery.

**Metropolitan Medical Response System (MMRS) Program**

**Purpose:** The MMRS program supports the integration of emergency management, health, and medical systems into a coordinated response to mass casualty incidents caused by any hazard. Successful MMRS grantees reduce the consequences of a mass casualty incident during the initial period of a response by having augmented existing local operational response systems before the incident occurs.

**Citizen Corps Program (CCP)**

**Purpose:** The Citizen Corps mission is to bring community and government leaders together to coordinate community involvement in emergency preparedness, planning, mitigation, response and recovery.

**State Homeland Security Program Tribal (SHSP Tribal)**

**Purpose:** To provide supplemental funding to directly eligible tribes to help strengthen the nation against risks associated with potential terrorist attacks. Pursuant to the 9/11 Act, “a directly eligible tribe applying for a grant under section 2004 [SHSP] shall designate an individual to serve as a tribal liaison with [DHS] and other federal, state, local, and regional government officials concerning preventing, preparing for, protecting against and responding to acts of terrorism.”

**Nonprofit Security Grant Program (NSGP)**

**Purpose:** NSGP provides funding support for target-hardening activities to nonprofit organizations that are at high risk of a terrorist attack and are located within one of the specific UASI-eligible urban areas.

**Operation Stonegarden (OPSG)**

**Purpose:** The intent of OPSG is to enhance cooperation and coordination among local, state and federal law enforcement agencies in a joint mission to secure the United States borders along

routes of ingress from international borders to include travel corridors in States bordering Mexico and Canada, as well as states and territories with international water borders.

### **Transit Security Grant Program (TSGP)**

**Purpose:** The TSGP provides grant funding to the nation's key high-threat urban areas to enhance security measures for their critical transit infrastructure including bus, ferry and rail systems.

### **Freight Rail Security Grant Program (FRSGP)**

**Purpose:** The FRSGP funds security training for frontline employees, the completion of vulnerability assessments, the development of security plans within the freight rail industry and GPS tracking systems for railroad cars transporting toxic inhalation materials (TIH).

### **Intercity Passenger Rail (Amtrak)**

**Purpose:** The purpose of the Intercity Passenger Rail (IPR) is to create a sustainable, risk-based effort to protect critical surface transportation infrastructure and the traveling public from acts of terrorism, major disasters and other emergencies within the Amtrak rail system.

### **Port Security Grant Program (PSGP)**

**Purpose:** The PSGP provides grant funding to port areas for the protection of critical port infrastructure from terrorism. PSGP funds are primarily intended to assist ports in enhancing maritime domain awareness, enhancing risk management capabilities to prevent, detect, respond to and recover from attacks involving improvised explosive devices (IEDs), weapons of mass destruction (WMDs) and other non-conventional weapons, as well as training and exercises and Transportation Worker Identification Credential (TWIC) implementation.

### **Intercity Bus Security Grant Program (IBSGP)**

**Purpose:** The IBSGP provides funding to create a sustainable program for the protection of intercity bus systems and the traveling public from terrorism. The program seeks to assist operators of fixed-route intercity and charter bus services in obtaining the resources required to support security measures such as enhanced planning, facility security upgrades and vehicle and driver protection.

### **Trucking Security Program (TSP)**

**Purpose:** TSP funding will be awarded to eligible applicants to implement security improvement measures and policies deemed valuable by DHS as indicated in the [Security Action Items](#) publication of June 26, 2008. These items are primarily focused on the purchase and installation or enhancement of equipment and systems related to tractor and trailer tracking systems. Additionally, the TSP will provide funding to develop a system for DHS to monitor, collect and analyze tracking information; and develop plans to improve the effectiveness of transportation and distribution of supplies and commodities during catastrophic events.

### **Buffer Zone Protection Program (BZPP)**

**Purpose:** The BZPP provides funding to increase the preparedness capabilities of jurisdictions responsible for the safety and security of communities surrounding high-priority pre-designated Tier 1 and Tier 2 critical infrastructure and key resource (CIKR) assets, including chemical

facilities, financial institutions, nuclear and electric power plants, dams, stadiums and other high-risk/high-consequence facilities, through allowable planning and equipment acquisition.

### **Emergency Management Performance Grants (EMPG)**

**Purpose:** The purpose of the EMPG program is to assist state and local governments in enhancing and sustaining all-hazards emergency management capabilities.

### **Interoperable Emergency Communications Grant Program (IECGP)**

**Purpose:** IECGP provides governance, planning, training and exercise and equipment funding to states, territories, and local and tribal governments to carry out initiatives to improve interoperable emergency communications, including communications in collective response to natural disasters, acts of terrorism and other man-made disasters. According to the legislation that created IECGP, all proposed activities must be integral to interoperable emergency communications and must be aligned with the goals, objectives and initiatives identified in the grantee's approved statewide Communication Interoperability Plans (SCIP). IECGP will also advance DHS near-term priorities that are deemed critical to improving interoperable emergency communications and are consistent with goals and objectives of the National Emergency Communications Plan.

### **Emergency Operations Center (EOC) Grant Program**

**Purpose:** The EOC grant program is intended to improve emergency management and preparedness capabilities by supporting flexible, sustainable, secure, and interoperable Emergency Operations Centers (EOCs) with a focus on addressing identified deficiencies and needs. This program provides funding for construction or renovation of a state, local, or tribal governments' principal EOC. Fully capable emergency operations facilities at the state and local levels are an essential element of a comprehensive national emergency management system and are necessary to ensure continuity of operations and continuity of government in major disasters caused by any hazard.

### **Driver's License Security Grant Program**

**Purpose:** The purpose of the Driver's License Security Grant Program is to prevent terrorism, reduce fraud, and improve the reliability and accuracy of personal identification documents that States and territories issue.

### Appendix B

#### FEMA CATEXs and Applicability to GPD-Funded Actions

Projects funded under the various homeland security and emergency preparedness grant programs administered by FEMA's Grant Programs Directorate (GPD) that were awarded in Fiscal Year 2007 and later shall be reviewed under FEMA's environmental procedures at 44 Code of Federal Regulations (CFR) Part 10.<sup>1</sup> This guidance is intended to help ensure the consistent application of 44 CFR Part 10.8 Categorical Exclusions (CATEXs) to GPD-funded projects.

Although a Categorical Exclusion under the National Environmental Policy Act (NEPA) may apply to a GPD-funded project, the project must still be reviewed for compliance with other environmental and historic preservation laws, Presidential executive orders, and regulations.

In order to qualify as a CATEX, the project must fit entirely within the parameters of the CATEX and extraordinary circumstances must not be present or must be mitigated below the level requiring an Environmental Assessment.

A project may fit under more than one CATEX; for example, the purchase of security cameras may fall under CATEX VI, and the installation of those cameras inside an existing Emergency Operations Center may fall under CATEX XVII.

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#### **(v) Training activities and both training and operational exercises utilizing**

##### **existing facilities in accordance with established procedures and land use designations**

CATEX V covers classroom and web-based training. It may also cover field exercises related to homeland security and emergency preparedness, such as mock emergency response scenarios involving mass casualties, mass evacuations, and terrorist attacks, and TOPOFF, tabletop, and continuity of operations exercises, etc.

#### **(vi) Procurement of goods and services for support of day-to-day and emergency operational activities, and the temporary storage of goods other than hazardous materials, so long as storage occurs on previously disturbed land or in existing facilities**

CATEX VI may cover, but is not limited to, the use of grant funds to purchase the following types of equipment:

- Vehicles
- Boats
- ID cards
- Hand-held or portable equipment (e.g. radios, cell phones, GPS units, scuba dive gear, personal protective equipment (vests, masks, etc.), computers, televisions, etc.)

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<sup>1</sup> GPD projects awarded in FY06 and earlier shall be reviewed under DHS Management Directive 5100.1, Environmental Planning Program.

- Navigation, communication, or detection equipment (including sonar) to be installed on boats, vehicles, or other mobile units

**(ix) Acquisition, installation, or operation of utility and communication systems that use existing distribution systems or facilities, or currently used infrastructure rights-of-way**

CATEX IX may cover, but is not limited to, the following projects and activities. Any ground disturbance must take place on previously disturbed ground. Any communication tower projects must meet the US Fish and Wildlife Service guidelines on the siting, construction and operation of communications towers.

- Construction of communication towers
- Addition of antennas/dishes to existing towers
- Structural extensions of existing towers to support additional equipment
- Laying of cable, electric lines, telephone lines, etc., including necessary trenching
- Installation of surveillance cameras, including poles necessary to mount the cameras
- Installation of lighting, including poles necessary to mount the lights

**(xv) Repair, reconstruction, restoration, elevation, retrofitting, upgrading to current codes and standards, or replacement of any facility in a manner that substantially conforms to the pre-existing design, function, and location**

CATEX XV may cover the repair, reconstruction, restoration, elevation, retrofitting, upgrading to current codes and standards, or replacement of a variety of facilities including but not limited to those listed under CATEX XVI below.

**(xvi) Improvements to existing facilities and the construction of small scale hazard mitigation measures in existing developed areas with substantially completed infrastructure, when the immediate project area has already been disturbed, and when those actions do not alter basic functions, do not exceed capacity of other system components, or modify intended land use; provided the operation of the completed project will not, of itself, have an adverse effect on the quality of the human environment**

CATEX XVI may cover the installation outdoors of a variety of physical security enhancements to improve security at and/or restrict access to existing facilities, including but not limited to:

- Fencing
- Lighting
- Gates
- Bollards
- Tire puncture treadles
- Jersey barriers
- Sonar (fixed position, i.e. mounted on poles, docks, etc.)
- Generators
- Security guard buildings
- Equipment buildings

**(xvii) Actions conducted within enclosed facilities where all airborne emissions, waterborne effluent, external radiation levels, outdoor noise, and solid and bulk waste disposal practices comply with existing Federal, Federal, state, and local laws and regulations**

CATEX XVII may cover the installation of a variety of types of equipment and/or physical security devices inside existing buildings, including but not limited to:

- ID card reader machines
- Biometric devices
- X-ray machines
- Generators
- Impact/blast-resistant doors, gates, and windows
- Motion detection systems
- Surveillance cameras
- CCTV
- Detection systems for explosives or biological or chemical substances
- Lighting
- Generators

Appendix C

Construction and Air Quality Impacts

CALCULATION SHEET-COMBUSTIBLE EMISSIONS

Assumptions for Combustible Emissions							
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs		
Water Truck	1	300	8	240	576000		
Diesel Road Compactors	1	100	8	90	72000		
Diesel Dump Truck	2	300	8	90	432000		
Diesel Excavator	1	300	8	90	216000		
Diesel Hole Trenchers	0	175	8	90	0		
Diesel Bore/Drill Rigs	0	300	8	90	0		
Diesel Cement & Mortar Mixers	1	300	8	240	576000		
Diesel Cranes	1	175	8	240	336000		
Diesel Graders	1	300	8	90	216000		
Diesel Tractors/Loaders/Backhoes	2	100	8	90	144000		
Diesel Bull Dozers	1	300	8	90	216000		
Diesel Front End Loaders	1	300	8	90	216000		
Diesel Fork Lifts	2	100	8	90	144000		
Diesel Generator Set	12	40	8	90	345600		

  

Emission Factors							
Type of Construction Equipment	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	PM-10 g/hp-hr	PM-2.5 g/hp-hr	SO2 g/hp-hr	CO2 g/hp-hr
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740	536.200
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740	536.300
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740	535.800
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730	529.700
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730	529.700
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730	530.200
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740	536.300
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950	691.100
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740	536.300
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740	536.200
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950	690.800
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

CALCULATION SHEET-COMBUSTIBLE EMISSIONS

Emission factors (EF) were generated from the NONROAD2005 model for the 2006 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD2005 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD2005 model is based on the population in U.S. for the 2006 calendar year.

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.279	1.314	3.485	0.260	0.254	0.470	340.227
Diesel Road Paver	0.029	0.117	0.389	0.027	0.026	0.059	42.544
Diesel Dump Truck	0.209	0.985	2.614	0.195	0.190	0.352	255.170
Diesel Excavator	0.081	0.309	1.095	0.076	0.074	0.176	127.657
Diesel Hole Cleaners/Trenchers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Bore/Drill Rigs	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Cement & Mortar Mixers	0.387	1.473	4.621	0.305	0.298	0.463	336.228
Diesel Cranes	0.163	0.481	2.118	0.126	0.122	0.270	196.318
Diesel Graders	0.083	0.324	1.126	0.079	0.076	0.176	127.657
Diesel Tractors/Loaders/Backhoes	0.294	1.303	1.146	0.217	0.211	0.151	109.669
Diesel Bull Dozers	0.086	0.328	1.133	0.079	0.076	0.176	127.657
Diesel Front End Loaders	0.090	0.369	1.190	0.083	0.081	0.176	127.633
Diesel Aerial Lifts	0.314	1.231	1.358	0.221	0.214	0.151	109.622
Diesel Generator Set	0.461	1.432	2.274	0.278	0.270	0.308	223.674
<b>Total Emissions</b>	<b>2.477</b>	<b>9.668</b>	<b>22.548</b>	<b>1.946</b>	<b>1.894</b>	<b>2.929</b>	<b>2124.055</b>

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-TRANSPORTATION COMBUSTIBLE EMISSIONS

Construction Worker Personal Vehicle Commuting to Construction Site-Passenger and Light Duty Trucks										
Pollutants	Emission Factors		Assumptions				Results by Pollutant			
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr	
VOCs	1.36	1.61	60	240	15	15	0.32	0.38	0.71	
CO	12.4	15.7	60	240	15	15	2.95	3.74	6.69	
NOx	0.95	1.22	60	240	15	15	0.23	0.29	0.52	
PM-10	0.0052	0.0065	60	240	15	15	0.00	0.00	0.00	
PM 2.5	0.0049	0.006	60	240	15	15	0.00	0.00	0.00	

Heavy Duty Trucks Delivery Supply Trucks to Construction Site										
Pollutants	Emission Factors		Assumptions				Results by Pollutant			
	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig	Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr	
VOCs	0.29	0.55	60	240	2	2	0.01	0.02	0.03	
CO	1.32	3.21	60	240	2	2	0.04	0.10	0.14	
NOx	4.97	12.6	60	240	2	2	0.16	0.40	0.56	
PM-10	0.12	0.33	60	240	2	2	0.00	0.01	0.01	
PM 2.5	0.13	0.36	60	240	2	2	0.00	0.01	0.02	

Pollutants	Emission Factors		Assumptions				Results by Pollutant			
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of Cars	Number of trucks	Total Emissions cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr	
VOCs	1.36	1.61	30	240			-	0.00	-	
CO	12.4	15.7	30	240			-	0.00	-	
NOx	0.95	1.22	30	240			-	0.00	-	
PM-10	0.0052	0.0065	30	240			-	0.00	-	
PM 2.5	0.0049	0.006	30	240			-	0.00	-	

Truck Emission Factor Source: USEPA 2005 Emission Facts: Average annual emissions and fuel consumption for gasoline-fueled passenger cars and light trucks. EPA 420-F-05-022 August 2005. Emission rates were generated using MOBILE.6 highway vehicle emission factor model.

CALCULATION SHEET-FUGITIVE DUST

Construction Fugitive Dust Emissions

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
General Construction Activities	0.19 ton PM10/acre-month		MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42 ton PM10/acre-month		MRI 1996; EPA 2001; EPA 2006

PM2.5 Emissions

PM2.5 Multiplier	0.10	(10% of PM10 emissions assumed to be PM2.5)	EPA 2001; EPA 2006
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Control Efficiency

Control Efficiency	0.50	(assume 50% control efficiency for PM10 and PM2.5 emissions)	EPA 2001; EPA 2006
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Project Assumptions

Construction Area (0.19 ton PM10/acre-month)

Duration of Construction Project	6	months
Length	0	miles
Length (converted)	0	feet
Width	0	feet
Area	11.00	acres

Conversion Factors

Conversion Factor 1	0.000022957	acres per feet
Conversion Factor 2	5280	feet per mile

Staging Areas

Duration of Construction Project		months
Length		miles
Length (converted)		feet
Width		feet
Area	0.00	acres

	Project Emissions (tons/year)			
	PM10 uncontrolled	PM10 controlled	PM2.5 uncontrolled	PM2.5 controlled
Construction Area (0.19 ton PM10/ac	12.54	6.27	1.25	0.63
Staging Areas	0.00	0.00	0.00	0.00
<b>Total</b>	<b>12.54</b>	<b>6.27</b>	<b>1.25</b>	<b>0.63</b>

**Appendix D****Scope of EHP Review of GPD-Funded Actions****A. Introduction**

FEMA will use the following guidelines to determine the appropriate scope of FEMA's environmental planning and historic preservation (EHP) review of actions funded by FEMA's Grant Programs Directorate (GPD). These guidelines are based on the Council of Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) in 40 CFR 1508.25 for projects triggering an Environmental Impact Statement (EIS). FEMA believes that the same principles can be extended for determining the scope of NEPA review for projects subject to FEMA Categorical Exclusions (CATEXs), Environmental Assessments (EAs), and this Programmatic Environmental Assessment (PEA), and may also be used in determining the scope of FEMA's review under other EHP review requirements.

Using 40 CFR 1508.25 as a reference, the scope of the EHP analysis should include actions connected to the FEMA action (i.e. the GPD grant-funded project) with the exception of the unique situations addressed in Sections B and C below. Connected actions are those that:

- Are automatically triggered by FEMA's action; or
- Automatically trigger a FEMA action; or
- Cannot or will not proceed unless the FEMA action is taken previously or simultaneously; or
- Will not allow the FEMA action to proceed unless it is taken previously or simultaneously; or
- Are interdependent parts of a larger FEMA action and are dependent on the larger FEMA action for its justification; or
- Are larger actions in which the FEMA action is an interdependent component and justify the particular FEMA action.

**B. Federalization**

The use of GPD grant funds for a portion or component of a larger project may have the effect of subjecting the full project to the Federal EHP review. This is called "Federalization" of the project for EHP review purposes. However, even if FEMA funds are involved, Federalization may not always occur. FEMA will limit the scope of EHP review just to the small portion or component that is the target of its discretionary grant assistance when the following conditions are met:

- FEMA's contribution is relatively small compared to the State, Territory, Tribal, local, or private contribution to the full project;
- FEMA's contribution does not provide the agency with sufficient control or influence over the design and implementation of the full project; and
- The full State, Territory, Tribal, local, or private project will very likely be carried out regardless of FEMA's contribution to the small portion or component of interest.

### C. Segmentation

Segmentation occurs when a Federal agency improperly divides an action into multiple components to avoid conducting the EHP review on the entire action or group of connected actions and more specifically, in the NEPA context, to avoid a finding of significant impact on the human environment. Typically segmentation occurs when a Federal agency treats connected actions within its own purview as separate components and conducts independent EHP review on each. In some instances, however, agencies can properly divide what appear to be connected actions and conduct independent EHP reviews. For GPD-funded projects, FEMA may divide seemingly connected actions and conduct separate EHP reviews on each of those actions if:

- The actions do not share the same funding source; and
- The actions will occur at different times; and
- Each component has independent utility.

All of these conditions must be met in order for FEMA to appropriately evaluate seemingly connected actions independently. A method that is widely used across the Federal government and the courts to evaluate connectivity of actions for NEPA purposes is the “independent utility” test. A project has independent utility if it can be considered a stand-alone project, i.e. it on its own serves a distinct purpose or function assuming no other project is contemplated or implemented in the project area. It is FEMA’s position that actions should be evaluated together if they are likely to occur simultaneously or if they share the same funding source (e.g. same grant program), even if each component has independent utility, to ensure a more efficient EHP review process. Even when FEMA is conducting independent EHP reviews of actions that have independent utility, the agency will always take into account the potential cumulative impacts to determine if any of the actions would have a significant impact on the human environment.

Another concern is the scope of EHP review when more than one Federal agency is involved in the same project or is involved in actions that are directly related to each other because they are functionally interdependent. When this is the case and the action triggers an EIS, CEQ requires the Federal agencies to establish a lead agency pursuant to 40 CFR 1501.5 and establish Cooperating Agencies pursuant to 40 CFR 1501.6 to avoid duplicative NEPA reviews. CEQ also encourages agencies to evaluate similar actions together when they are in close geographic proximity or timing (40 CFR 1508.25(a)(3)). Although these requirements were developed for situations where the action triggers an EIS, FEMA believes that the principles of Federal-to-Federal agency coordination can be extended to CATEXs, EAs or other EHP review requirements to avoid the unnecessary duplication of EHP reviews and the appropriate consideration of cumulative impacts of all the foreseeable Federal actions. FEMA will utilize the same “independent utility” test above to determine if the multiple Federal actions could be evaluated together and will work closely with other Federal agencies that are potentially involved to ensure a coordinated EHP review process.

**Appendix E****Adoption of Other (non-FEMA) EHP Reviews for a GPD-Funded Action****A. Introduction**

In a few cases, environmental planning and historic preservation (EHP) analyses may have been conducted by another Federal, State or Territory, Tribal, or local agency for an action proposed for funding under one of FEMA's Grant Programs Directorate (GPD) grant programs before the proposed action is submitted to FEMA for review. Several EHP review requirements (e.g. National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act (NHPA), General Conformity under the Clean Air Act (CAA), Section 7 of the Endangered Species Act (ESA), etc.) allow for the adoption of analyses conducted by other entities (Federal and State) but not for adoption of the findings made by those other entities. FEMA is legally responsible for its findings and decisions based on analyses conducted by other entities and therefore must conduct its own "independent review" of such analyses.

FEMA will use the following guidelines for the adoption of other agencies' analyses when they exist. These guidelines establish FEMA's independent review process for EHP analyses that cover proposed GPD-funded actions.

**B. Adoption of other Federal EHP reviews**

FEMA will carry out the following steps to determine if adoption of another Federal agency's EHP analyses on the same action is appropriate:

1. Determine if the scope of the other Federal agency's EHP review adequately covers the action proposed for GPD funding.
2. Determine if the level of NEPA analysis conducted by the other Federal agency was appropriate or would have been the same level of analysis if FEMA had reviewed the proposed action. Currently, FEMA cannot adopt another agency's categorical exclusion determination (CATEX) or finding. Documentation prepared by another Federal agency that supports its CATEX determination may be used by FEMA to determine if the proposed action is covered by a FEMA CATEX or by this Programmatic Environmental Assessment (PEA).
3. Determine if the appropriate level of public involvement was conducted. Although this is driven by the level of NEPA analysis, it is important to note that FEMA has high standards for public involvement for actions that require an Environmental Assessment (EA).
4. Determine if all other EHP requirements typically taken into account by FEMA were adequately addressed in the analysis performed by the other Federal agency. This includes determining whether those analyses or reviews adequately covered the scope of the proposed FEMA action and were legally sufficient.

Examples include, but are not limited to, evaluating whether the Biological Assessment prepared under Section 7 of ESA (if one is needed) adequately addressed the proposed FEMA action and its impacts, whether the identification and evaluation and Area of Potential Effect (APE) was appropriate for FEMA's proposed action under Section 106,

whether any resource agency consultation conducted appropriately covered FEMA's proposed action, whether Tribal governments were appropriately consulted when needed, and whether the agency conducted an adequate 8-step decision-making process for actions in or affecting floodplains or wetlands.

FEMA may find a deficiency in any one of these evaluations. If deficiencies are identified, FEMA will notify the Grantee or Subgrantee and work with them to ensure all EHP requirements are met before making a final determination or finding.

5. Document through a Record of Environmental Consideration (REC) or memorandum to the file FEMA's independent review and those elements of the other Federal agency's EHP analysis that FEMA will adopt.
6. Independently make any findings or determinations such as a Finding of No Significant Impact (FONSI), no effect, not likely to adversely effect, etc.

### **C. Adoption of State EHP reviews**

Approximately fifteen to eighteen States and Territories and a number of Tribal governments have their own environmental impact assessment legislation that functions similar to NEPA (commonly referred to as "little NEPA" statutes). Some are procedural; others are substantive and treat the requirement like a permit process. At present, these little NEPA statutes do not substitute for the Federal NEPA process. However, Federal agencies can use the information derived from the little NEPA process to determine the level of NEPA analysis needed or to make a finding of significance based on those analyses. If State, Tribes, and local governments wish for FEMA to consider the adoption of their little NEPA analyses, they must ensure that their documents include:

- Purpose and Need
- Alternatives
- Environmental conditions
- Environmental impact analysis including cumulative impacts
- Mitigation (if any)
- Public involvement
- Coordination with other agencies, including resource agencies (e.g. U.S. Fish and Wildlife Service, State Historic Preservation Office)

It is important to note that FEMA integrates other Federal EHP review requirements into its NEPA analyses. Therefore, there will be situations where a State, Tribe, or local agency may have prepared a little NEPA analysis pursuant to its State or Tribal little NEPA statute, but the document may be deemed insufficient because it has not met, for example, the Section 7 consultation under ESA, Section 106 consultation under NHPA, or the Executive Order 11988 – Floodplain Management 8-step process, which are responsibilities of Federal agencies. Some States and Tribes may have equivalent statutes for the consideration of impacts on historic properties, floodplains, threatened and endangered species and critical habitat, environmental justice, cumulative impacts, important farmland, wetlands, air and water quality, coastal zones,

etc. In these cases, FEMA may use the information prepared or analyses performed to make its own findings and determinations under the various EHP review requirements.

FEMA will carry out the following steps to determine if adoption of EHP analyses carried out by a State, Territory, Tribal, or local agency (e.g. under a little NEPA statute) of the same action is appropriate:

1. Determine if the scope of the State or Tribe's EHP review adequately covers the action proposed for GPD funding
2. Determine if the level of NEPA analysis conducted at the State, Territory, or Tribal level was appropriate or would have been similar if FEMA had reviewed the proposed action.  
FEMA cannot adopt a State or Tribal agency's CATEX-equivalent determination or finding. Documentation prepared by a State or Tribal agency that supports their CATEX-equivalent determination may be used by FEMA to determine if the proposed action is covered by a FEMA CATEX or by this PEA.
3. Determine if the appropriate level of public involvement was conducted. It is important to note that FEMA has high standards for public involvement for actions that require an EA.
4. Determine if all other EHP requirements typically taken into account by FEMA were adequately addressed in the analysis performed by the State, Territory, or Tribal agency. This includes determining whether those analyses or reviews adequately covered the scope of the proposed FEMA action and were legally sufficient.  
Given that most of these requirements are a Federal responsibility, FEMA will likely still have to engage in these Federal EHP review requirement but may use some of the information provided by the Grantee or Subgrantee to expedite FEMA's EHP review process.
5. Document through a REC or memorandum to the file FEMA's independent review and those elements of the State, Territory, Tribal, or local government EHP analysis that FEMA will adopt.
6. Independently make any findings or determinations such as a FONSI, no effect, not likely to adversely effect, etc.

### **Appendices F through K (Information provided on the following pages)**

#### **Appendix F**

Comments from the U.S. Fish and Wildlife Service Division on Migratory Birds to the Federal Communications Commission for the Notice for Proposed Rulemaking, “Effects of Communication Towers on Migratory Birds”

#### **Appendix G**

Draft Memorandum of Understanding Between the Federal Emergency Management Agency and the United States Fish and Wildlife Service Regarding Implementation of Executive Order 12186, “Responsibilities of Federal Agencies to Protect Migratory Birds”

#### **Appendix H**

Template of FEMA’s Record of Environmental Considerations (REC)

#### **Appendix I**

Draft Program Comment for the National Telecommunications Information Administration and the U.S. Department of Agriculture’s RUS Regarding the Effects of Communication Facilities Construction or Modification Subject to Review by the Federal Communications Commission

#### **Appendix J**

FEMA’s Comment to the ACHP Draft Program Comment

#### **Appendix K**

Final Program Comment for Streamlining Section 106 Review for Wireless Communication Facilities Construction and Modification Subject to Review under the FCC Nationwide Programmatic Agreement and/or the Nationwide Programmatic Agreement for the Collocation of Wireless Antenna

Appendix F  
Comments from the Fish and Wildlife Service and the Federal Communications Commission

United States Department of the Interior  
Fish and Wildlife Service  
Washington, D.C. 20240

In Reply Refer To: FWS/AMB/DMBM/DCN029118

February 2, 2007

Mr. Louis Peraertz, Esq.  
Spectrum and Competition Policy Division  
Wireless Telecommunications Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

Dear Mr. Peraertz:

The U.S. Fish and Wildlife Service is pleased to provide the attached comments and recommendations to the Federal Communications Commission on WT Docket No. 03-187, FCC 06-164, Notice of Proposed Rulemaking, "Effects of Communication Towers on Migratory Birds."

We strongly encourage the FCC to include in rulemaking the recommendations we are providing herein. If you do, avian collision mortality at communication towers should be significantly reduced, based on the best scientific evidence currently available. We look forward to working collaboratively with the FCC to allow providers to continue full communication services and capabilities while protecting migratory birds. Should you have any questions about our comments, please contact Dr. Albert Manville, Division of Migratory Bird Management, at 703/358-1963.

Sincerely,

/s/

Kenneth Stansell  
Acting Deputy Director

Attachment

Office of the Director  
U.S. Fish and Wildlife Service  
Washington, D.C. 20240

February 2, 2007

Mr. Louis Peraertz, Esq.  
Spectrum and Competition Policy Division  
Wireless Telecommunications Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

**Re:** Comments of the U.S. Fish and Wildlife  
Service Submitted **Electronically** to the FCC  
on 47 CFR Parts 1 and 17, **WT Docket No. 03-187**,  
**FCC 06-164**, Notice of Proposed Rulemaking,  
“Effects of Communication Towers on  
Migratory Birds” on

cc: [Louis.Peraertz@fcc.gov](mailto:Louis.Peraertz@fcc.gov), hard copy via mail.

Dear Mr. Peraertz:

The U.S. Fish and Wildlife Service (the Service, or FWS) is pleased to provide comments on the Notice of Proposed Rulemaking (NPRM), WT Docket No. 03-187, FCC 06-164, published in the *Federal Register* on November 22, 2006 (volume 71[225]: 67510-67518), addressing issues pertaining to the “effects of communication towers on migratory birds.” Kindly also include in the record our Service comments submitted to the Federal Communications Commission (FCC) on November 7, 2003, and Service reply comments submitted to FCC on February 11, 2005, and March 9, 2005, all applicable to Docket 03-187 .

**SYNOPSIS; COMMENTS ON LEGAL FRAMEWORK AND STATUTORY AUTHORITY** (*Federal Register* pp. 67510-67512, 67515)

**FCC NPRM Request:** “*We seek comment on the extent of any effect of communication towers on migratory birds and whether any such effect warrants*”

*regulations specifically designed to protect migratory birds. We request comment on the Commission's legal framework governing the Commission's obligations in this area. We seek comment on the nature and scope of the Commission's responsibilities, if any, under the [Migratory Bird Treaty Act]. We seek comment on the take of migratory birds and endangered species." (pp. 67510-67511)*

**Service Response:** We are providing our comments pursuant to the Migratory Bird Treaty Act (MBTA; 16 U.S.C. 703-712), the Bald and Golden Eagle Protection Act (BGEPA; 16 U.S.C. 668-668d), and the Endangered Species Act (ESA; 16 U.S.C. 1531 *et seq.*). The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by FWS. The word "take" is defined as, "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect." The unauthorized taking of even one bird is legally considered a "take" under MBTA and is a violation of the law. Bald and Golden Eagles are afforded additional legal protection under BGEPA.

Section 9 of the ESA prohibits the take of any Federally-listed animal species by any person subject to the jurisdiction of the U.S. The term "person" is defined as, "... an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal government, of any State, municipality, or political subdivision of a State, or any other entity subject to the jurisdiction of the United States." Section 11 of the Act provides for both civil and criminal penalties for those convicted of Section 9 violations. As defined in ESA, take means, "... to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" in the definition of take means an act which kills or injures wildlife. Such acts may include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering (50 CFR Part 17.3). "Harass" means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.

Executive Order 13186 (January 10, 2001), "Responsibilities of Federal Agencies to Protect Migratory Birds," states that, "each Federal agency

[taking] actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement... a Memorandum of Understanding (MOU) with the Fish and Wildlife Service that shall promote the conservation of migratory bird populations.” (Section 3). Each agency is further “encouraged to immediately begin implementing the conservation measures set forth in this section, as appropriate and applicable” (*Federal Register* 66(11): 3853-3856). The Service is of the opinion that the actions of the FCC with respect to communication towers are the type of actions intended to be covered by this Executive Order even though the FCC is not defined as a “Federal Agency” under 5 USC 104. However, to date, the FCC has decided against developing an MOU with the Service.

Currently, migratory birds (except those listed under ESA or critical habitat designated by this statute) are not subject to National Environmental Policy Act (NEPA; 42 U.S.C. 4332(2)(C)) review under FCC’s tower permitting and licensing process. The Service has asserted since 1999 (Willis 1999) that such exclusion is a major shortcoming of the FCC tower review and permitting process. The Service continues to feel that the assessment of each tower as it may impact migratory birds and the cumulative impacts of all towers on migratory birds must be part of FCC’s required review process under NEPA. We have raised these issues at all meetings of the Communication Tower Working Group since 1999, in an all-day seminar to FCC staff conducted by the Service, in a Service briefing to the senior attorneys for all of the FCC Commissioners, and in our comments in the NOI. FCC’s tower review process constitutes, in the Service’s mind, a major Federal action affecting the “quality of the human environment.” The Service, however, is pleased to learn that,

*“[the FCC] tentatively conclude[s] that the obligation under NEPA to identify and take into account the environmental effects of actions that [it] undertake[s] or authorize[s] may provide a basis for the Commission to make the requisite public interest determination under the Communications Act to support the promulgation of regulations specifically for the protection of migratory birds, provided that there is probative evidence that communication towers are adversely affecting migratory birds.”* (p. 67511)

Some of the evidence that communication towers are adversely affecting migratory birds is detailed below.

As the action agency designated by law and regulation to license communication towers, the FCC regulates the operation of communication towers transmitting and/or receiving signals within certain frequencies.

These include but are not limited to radio, television, cellular telephone, pager, emergency broadcast, ship-to-shore, and electronic communications for other purposes. In the Service's view, the FCC should also regulate those entities which operate communication towers that have been well documented to kill migratory birds.

By rulemaking, the Commission can establish regulations designed to minimize "take" of migratory birds, discussed below in considerable detail. In the Service's view, the Commission has the authority (spelled out in Executive Order 13186) to draft regulations that minimize take of migratory birds. Where a tower erector, owner or operator fails to comply with FCC regulations, and migratory birds are killed, FCC can refer that case to special agents within our Office of Law Enforcement (OLE). However, if an erector, owner, or operator complies with all FCC regulations and "take" still occurs, the Service's OLE has clarified in our voluntary communication tower (and, more recently, in our voluntary wind turbine guidelines) its investigative and prosecutorial responsibilities and obligations. That explanation reads,

"The Migratory Bird Treaty Act prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the Act has no provision for allowing unauthorized take, it must be recognized that some birds may be killed at structures such as communication towers even if all reasonable measures to avoid it are implemented. The Service's Division [*sic* Office] of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement, but also through fostering relationships with individuals and industries that proactively seek to eliminate their impacts on migratory birds. While it is not possible under the Act to absolve individuals or companies from liability if they follow these recommended guidelines, the Division of Law Enforcement and Department of Justice have used enforcement and prosecutorial discretion in the past regarding individuals or companies who have made good faith efforts to avoid the take of migratory birds." (Director's September 14, 2000, cover memorandum to the Regional Directors)

We thus feel that regulations implemented by the Commission to minimize take of migratory birds would not impede the Commission's responsibility under the Communication Act of 1934, as amended (47 U.S.C. 151, 154(i), 301, 303(q), 303(r)).

**FCC NPRM Request:** *"Some commenters argue that under the MBTA, a party may be liable for any unintentional, incidental death of a migratory bird, such as through a collision with a communication tower.*

*Others contend that the MBTA has a narrower purpose to prohibit only intentional kills of migratory birds, such as by hunting or through a program to control a migratory bird population. We seek comment on the nature and scope of the Commission's responsibilities, if any, under this statute.”(p. 67511)*

**Service Response:** This request raises 2 separate legal issues. First, do the prohibitions of the MBTA apply to deaths of migratory birds caused unintentionally, as by operation of a communication tower? Second, if they do, can a regulatory agency like the Commission be held liable?

Regarding the first issue, in United States v. Moon Lake Electric Ass'n, Inc., 45 F. Supp.2d 1070 (D. Colo.1999), the issue was also liability for migratory bird deaths caused by introducing a structure hazardous to birds into the environment, in that case electric power lines. The Court held that 1) the BGEPA and MBTA applied to both intentional and unintentional harmful conduct, and 2) proscription against killing birds, contained in both Acts, was not limited to physical conduct normally exhibited by hunters or poachers. While this is a U.S. District Court decision, it nonetheless provides a thoughtful analysis of the legislative history of the MBTA, concluding that there is no clearly expressed legislative intent that the MBTA regulates only physical conduct associated with hunting or poaching. We note that the court in Moon Lake was endorsing the position of the Department of Justice, which brought the prosecution at issue, and which ultimately sets the litigation position of the United States. We also note that the fact that the MBTA applies to some unintentional take does not mean that it applies to all unintentional take. See Seattle Audubon Society v. Evans, 952 /f,2d 297 (9<sup>th</sup> Cir. 1991) (making a distinction between “direct” and “indirect” unintentional take).

Nonetheless, an agency of the Federal Government should not require the threat of criminal liability to ensure compliance with other Federal laws when carrying out its responsibilities. Thus, it is our opinion that the Commission should require its licensees to adopt and comply with all reasonable and prudent measures to avoid take of migratory birds, particularly endangered and threatened birds, bald eagles and species of conservation concern. Requiring licensees to maximize collocation opportunities is an excellent example of such a “reasonable and prudent” measure.

**Summary of Avian Mortality.**

The U.S. peer-reviewed scientific literature documents many examples of substantial tower kills. For example, since 1948 when Aronoff (1949) described a large bird kill at a radio tower near Baltimore, Maryland, the scientific literature has been replete with references to large bird kills and results of long-term tower mortality monitoring studies. These include but are by no means limited to the following studies. Kemper (1996) conducted the longest avian-tower collision study yet completed – over 38 years – beginning in 1957. He collected nearly 121,560 birds representing 123 species and he still holds the all-time record for most birds collected and identified from a single-night tower strike. More than 12,000 birds were retrieved and identified one night in 1963 from the base of a tall television tower in Eau Claire, Wisconsin, not accounting for almost certain scavenging by wild and domestic predators. Able (1973) reported single night kills exceeding 1,000 birds at television towers in Tennessee and Florida during the fall 1972. The first long-term study of the impact of a television tower on migratory birds was begun in 1955 at Tall Timbers Research Station, northern Florida. After the first 25 years of the study, 42,384 birds representing 189 species were tallied (Crawford and Engstrom 2001). They reported on average, 1,517 birds killed per year over the entire 29-year period of the study, 65% of the mortality documented in the fall and 20% in the spring. Kills occurred nearly every night from mid-August through mid-November. Moderate numbers of migrants were killed under perfectly clear skies, but the toll increased markedly with overcast conditions at the Tall Timbers Research Station. Theoretically, the small kills on clear nights were not from birds drawn to the tower lights, but from birds that happened to be flying near the tower and did not see a guy wire, resulting in a “blind collision” (S. Robertson, FWS 2007 pers. comm.). Several hundred birds retrieved from single night mortality events at a television tower in Kansas have recently been reported in the literature (Ball *et al.* 1995, Robbins *et al.* 2000). Manville (2005) and Gauthreaux and Belser (2006) cited a number of additional literature references regarding avian-tower collisions.

In continuing studies conducted over 29 years at 3 tall television towers by A. Clark in Buffalo, New York (Morris *et al.* 2003), Clark noted a gradual decrease in the number of bird kills at the towers he studied – ranging from a high of 4,787 in 1982 to a low of 6 in 1992. The authors hypothesized the decline in the rate of mortality to 4 possible factors: 1) an overall decrease in migratory bird populations, 2) change in weather and wind patterns, 3) increases in predation and scavenging around tower bases, and 4) changes in migration patterns. However, during the fall 2005 migration season, Clark (Buffalo Museum of Science, ret., 2006 pers. comm.) documented the largest annual kill at his study towers since 1982. That year, he retrieved 1,223 birds at the bases of the 3 western New York towers (878 whole carcasses and 345 “parts thereof” representing 55 species). This

included more than 200 Golden-crowned and Ruby-crowned Kinglets. This information was provided to FWS as a yearly condition of Mr. Clark's scientific collecting permit.

During the fall 2005 migration season, additional troubling reports from the East of large bird kills at both tall and short communication towers surfaced, particularly kills that occurred during a week-long inclement weather event that coincided with songbird migration in October. W. Evans (Executive Director, Old Bird, Inc. 2005 pers. comm.) estimated more than 500 songbirds killed in a 3-night period in mid-October at an 1,100-foot-tall above-ground-level (AGL) tower near West Monroe, New York. During this same period, the U.S. Coast Guard reported retrieving 5-6 bird carcasses from a parking lot in front of their station, but admitted that most of the grounds around their 700-foot LORAN tower in Romulus, New York, had not been surveyed for dead birds. Evans also reported "scattered feather spots" at an 850-ft television tower in Elmira, New York, surveyed on October 15. Of particular interest, because they are so infrequently reported at communication towers, was his discovery of a Red-tailed Hawk carcass adjacent to this tower. Evans also reported several intact, but decaying warbler carcasses including a Hooded Warbler at a 200-foot cellular telephone tower near Alfred, New York, on October 15.

Evans also indicated that significant mortality had been documented at towers in Pennsylvania during that same weather event. He reported one observer near a cellular telephone tower, who "went up the hill to get better cell phone reception found 'dead Goldfinches and Bluebirds' everywhere near the cell phone tower. The observer estimated that there might be 'a thousand birds total.'" At another nearby cellular telephone tower in Pennsylvania, Evans also reported "147 salvaged birds, mostly Blackpoll Warblers." Both cellular telephone towers appeared to be less than 150 feet AGL in height. Evans reported the above-reference information on the Cornell University ([CAYUGABIRDS-L@cornell.edu](mailto:CAYUGABIRDS-L@cornell.edu)) and New York State list serves ([nysbirds-l@cornell.edu](mailto:nysbirds-l@cornell.edu)). In the cases of the cell phone towers, nearby solid/steady-burning bright light sources appeared to result in the bird congregations that led to the kills.

On September 7-8, 2005, and again on September 13-14, an estimated 400 birds were killed each night at the 1,100-foot WMTV tower near Madison, Wisconsin. In the second kill, 172 carcasses of 23 species were retrieved, including 5 Golden-winged Warblers – of particular concern to the FWS since these warblers are declining species designated in the FWS's 2002 *Birds of Conservation Concern*, a report mandated by Congress. Scavengers including crows and cats were implicated in the removal of many of the injured and dead birds (S. Ugoretz, wildlife biologist, Wisconsin Dept.

Natural Resources 2005 pers. comm.). Searchers did not survey the heavily timbered area north of this tower (Seely 2005).

A 2003-2005 multiple tower study in Michigan by Gehring *et al.* (2006) has validated that birds are killed at both lit unguyed and lit guyed towers, including relatively short 380-480 ft AGL towers. Mortality, not unexpectedly, was far greater at tall (> 1,000 ft AGL) lit, guyed towers.

Reviewing the Gehring *et al.* (2006) 2005 study results, 203 birds representing 47 species were collected at 24 towers during spring 2005, while 173 birds representing 42 species were collected at the same 24 towers during fall 2005. Most were night-migrating songbirds – Red-eyed Vireos and Gray Catbirds during the spring, and Blackpoll Warblers and Mourning Doves (generally considered a diurnal migrant) during the fall. The highest 2005 single-night kill was 16 birds at a > 1,000-ft AGL guyed tower. All 24 study towers were lit (see beyond for more details on lighting impacts) and were further divided into unguyed (N=9 total State Police towers) and guyed towers (N=12 total State Police towers, N= 3 private towers). Previous 2003 and 2004 field research showed that unguyed, self-support towers killed significantly fewer birds than towers supported with guy wires. It is important to note that the research protocol used by Gehring *et al.* (2006) was anonymously peer-reviewed by 3 professional ornithologists recommended by the Ornithological Council. J. Gehring has presented the results from this study at 4 professional wildlife conferences, and the preliminary results of the study have been made public in multiple reports to the State of Michigan, the FCC, and the Service.

Communication towers in aggregate nationwide are estimated to continue to take a significant number of migratory birds each year in the United States. Since the mid-1970s, the Service has developed several estimates of mortality from collisions with communication towers. We did this because the FCC does not require licensees or operators to monitor or even report bird mortality and because reported mortality in the literature only represents a small fraction of total number of collision deaths. Banks (1979) assessed avian mortality at some 505 of the then existing 1,010 tall radio and television towers in the U.S. in 1975, estimating 1.25 million birds killed/year at towers. Evans (1998), collaborating with FWS, reassessed mortality based on increased numbers of tall towers considerably greater in number than what Banks had studied in 1975, estimating 2-4 million birds killed/year. Manville (2001a), based on a 1999 evaluation, estimated some 4-5 million bird deaths per year from tower collisions in the U.S. as tower placement continued to grow exponentially. However, in 2000, Manville (2001b) again cited the 4-5 million annual mortality estimate, but indicated that mortality could range as high as 40-50 million birds deaths per year, the

latter estimate, however, predicated on validation through a nationwide cumulative impacts analysis of U.S. communication tower effects on migratory birds. The Service more recently reiterated the latter mortality estimate – conservatively 4-5 million, to perhaps as high as 40-50 million birds killed per year (Manville 2005).

In addition to the fact that these “takings” are in violation of the MBTA and the spirit and intent of Executive Order 13186, they may also be impacting avifauna at a population level, especially for “species of conservation concern” and State and Federally-listed birds. In 1995, the Service designated 124 species of “migratory nongame birds of management concern” (USFWS 1995). However, by the next mandated update of this publication in 2002, 131 “birds of conservation concern” were delineated (USFWS 2002). In addition, there currently are 77 Federally endangered and 15 threatened birds listed on ESA.

Evidence collected on the make-up of species most frequently killed by collisions with communication towers indicates a high number of “species of conservation concern” that fall victim to tower collisions. The Service has raised concerns – most recently in the 2005 literature (Manville 2005) -- that nearly 350 species of neotropical songbirds are vulnerable to collisions with tall structures. In their literature review, Shire *et al.* (2000) found 230 bird species documented killed at communication towers. They reviewed 47 avian collision tower studies in 31 States and 2 Canadian Provinces east of the Rocky Mountains, tabulating a total of 184,797 birds killed and identified from these studies. Of these 230 species, 52 (N= 23%) were listed either as “nongame birds of management concern” (USFWS 1995), and/or were listed on the Partners in Flight (PIF) Watch List. In addition, 2 Federally-threatened Red-cockaded Woodpeckers were retrieved from 1 tower. The birds most frequently killed include members of the warbler, thrush, and vireo families. In one case, 164 Cerulean Warblers – a FWS “species of conservation concern” and a PIF Watch List “extremely high priority” species – were reported collected at 5 towers.

Longcore *et al.* (2005) extrapolated from the Shire *et al.* (2000) report those birds most frequently reported killed at communication towers, including “birds of conservation concern” (BCC). Based on the Service’s estimated range of mortality, they developed their own ranges of estimated mortality based on bird numbers tabulated from the Shire *et al.* (2000) report, assuming the proportion of birds collected equaled the proportion of birds killed nationwide at towers each year. For example, 10,397 Common Yellowthroat (subspecies *sinuosa* a BCC) represented 5.6% of the birds reported killed from the 47 studies. Longcore *et al.* (2005) then estimated from 225,047 to 2,250,469 Yellowthroats were being killed per year at

communication towers. For the Bay-breasted Warbler (BCC), 10,396 specimens were collected and identified representing 5.6% of the collected dead birds. Their estimated mortality range was nearly identical to that of the Common Yellowthroat. For Blackpoll Warblers (BCC), 6,304 specimens (3.4%) were identified, providing an estimated range of 136,452 to 1,364,524 birds killed per year. For the Federally threatened Red-cockaded Woodpecker, 2 carcasses were collected (0.001%) representing 43 to 433 Woodpeckers being killed per year. Based on an estimated population of Red-cockaded Woodpeckers of ~11,000 (Jackson 1994, Longcore *et al.* 2005), this could represent an annual loss of 0.4 to 4.0% of the population – a negative population effect, significant at the high end of the estimate. While one can argue that the true percentages of birds killed may differ, even the low end mortality estimates for these species could be having impacts on their populations.

Collision mortality has been reported at communication towers and other tall structures throughout Alaska. The extent of the Service's concern regarding bird strikes is largely a factor of tower location and construction. While the reports of tower strikes from Alaska are limited, most documented fatalities involve waterfowl and other water birds striking communication towers and power lines along the coast (E. Lance, Anchorage Fish and Wildlife Field Office, FWS 2007 pers. comm. and unpubl. data). Bird fatalities have included Spectacled and Steller's Eiders, both listed as "threatened" under ESA. In addition, museum collectors have used tall communication towers in coastal Alaska as a sampling tool to supplement their documentation of bird species ranges (Dickerman *et al.* 1998).

When discussing the impacts of communication towers on migratory birds – especially warblers, thrushes, and vireos – it is important to note that anthropocentric-caused mortality is only one of the impacts to these species. Natural mortality from predation (*i.e.*, including wild, feral and domestic predators), disease (*e.g.*, West Nile virus, avian influenza, botulism, or avian cholera), and non-human-related accidents (*e.g.*, nestlings falling out of nests) – although very difficult to cumulatively quantify – may already be negatively impacting avian populations. Habitat loss and degradation, including the growing documented impacts of global climate change, can hugely impact avifauna.

As warblers, thrushes, vireos, and other songbirds are killed by communication towers, they are removed from those populations which could otherwise benefit humans. Birds pollinate flowers and remove insect pests from many important commercial food crops and forest species, making possible a multi-billion-dollar industry extremely dependent upon birds for its success. One pair of warblers can remove the defoliating caterpillars from

more than 1 million leaves during the 2-3 week period that they are feeding their nestlings. In the Pacific Northwest, 24 species of neotropical songbirds feed on the western spruce budworm and the Douglas fir tussock moth, 2 of the most destructive defoliating insects found in that region. Birds also remove countless weed seeds, including exotic plant species that compete for food crop and forest production. Birds distribute seeds of important forest tree and shrub species whose survival could not exist without seed dispersal by birds (Smithsonian Migratory Bird Center 1994, Ornithological Council 1997, Manville 2001a). If avifauna are removed by tower kills, the benefits they provide are lost.

Birds are also big business in North America. In 1996, some 63 million Americans 16 years and older enjoyed activities such as feeding, photographing, and watching birds. These wildlife watchers spent an estimated \$28.9 billion pursuing these activities (USFWS 1997, Fenwick 1997, Manville 2001a). In a slightly more recent estimate, more than 71 million adult Americans – 1 in 4 – were estimated to feed, photograph, and watch birds (Manville 2001b).

In summary, the Service feels that immediate action needs to be taken to reverse these tower collision impacts on migratory birds, which may, upon more detailed examination, prove to be additive mortality to some populations, especially listed and BCC species.

#### **COMMENTS ON SYNOPSIS, PART 3, SIGNIFICANT EFFECTS** (*Federal Register* p. 67511)

**FCC NPRM Request:** *Can the Commission rely upon anecdotal evidence of bird kills at individual towers or must it have broader studies before taking action specifically for the protection of migratory birds?* (p. 67511) *What is the relevance, if any, of other causes of avian mortality, such as buildings, transmission lines, and vehicles?* (p. 67511)

**Service response:** Anecdotal evidence may be the best biological information available if robust studies have not been conducted. However, anecdotal evidence of bird mortality studies at towers in Alaska, for example, can be a significant underestimate of total mortality due to carcass removal by scavengers. Scavenging removal is presumed high in many of Alaska's remote tower sites due to the density of terrestrial and avian scavengers such as foxes, bears, mink, otter, rats, eagles and ravens. Preliminary results of a scavenging removal study at one location on the Alaska Peninsula suggest that carcass removal from scavenging is as high as 50% removal/day (P. Flint, USGS Alaska Science Center and E. Lance, Anchorage Fish and

Wildlife Field Office, FWS 2007 unpubl. data). This degree of scavenging is consistent with what Stoddard (Crawford and Engstrom 2001) found in Florida where ~92% of the tower killed carcasses were removed by predators and scavengers within 24 hours before a scavenger removal program was initiated. Further, because there have been significant documented events resulting in the death of thousands of birds in 1 night (Seets and Bohen 1977, Carter and Parnell 1978, Kemper 1996, Nehring and Bivens 1999), best biological information, which may be anecdotal in nature, must be used to assess conservation risks to migratory birds at individual communication towers.

The impacts of all avian mortality, both natural and human-induced, must be factored into the cumulative impact analysis for each species of migratory bird that is vulnerable to tower collision. Building windows, for example, are estimated to take from 97 to 980 million birds per year in the U.S. (O'Connell 1998, Klem 1990, Manville 2005), vehicular strikes may kill from 60-80 million birds per year, power line electrocutions from tens to hundreds of thousands per year, and power line collisions from hundreds of thousands to perhaps 175 million birds per year in the U.S., based on extrapolations (Manville 2005). While at the moment it may be very difficult to seriously reduce window strike and automobile collisions, very positive steps have been taken by the electric utility industry to reduce power line electrocutions and collisions. If the FCC implements what we recommend here in our Service comments, avian collisions at communication towers should significantly be reduced, thus lowering the potential cumulative impacts of towers on migratory birds. When installing new towers, however, care must be taken not to resolve one problem by creating yet another one. Communication towers in remote Alaskan villages sometimes require the installation of lengthy power transmission lines, creating an increased threat of collisions. ESA-listed Spectacled and Steller's Eiders, other waterfowl, Bald Eagles, Gyrfalcons, and shorebirds have all been documented in collisions with power lines in Alaska (E. Lance, Anchorage Fish and Wildlife Field Office, FWS 2007 unpubl. data). We, therefore, strongly recommend that tower erectors work with transmission line authorities to minimize impacts from power line collisions and electrocutions by using electric utility best management practices when power lines are being installed, published in *Suggested Practices* documents (APLIC 1994, APLIC 2006).

The Service stresses the need for the FCC to address the cumulative impacts of some 100,000-FCC registered towers across the U.S. landscape on migratory birds. In our Southwest Service Region (2), for example, a minimum of 6,600 existing communication towers greater than 200 ft AGL in height are currently estimated to exist there. One tower that kills 2 birds per night might seem to be practically inconsequential when viewed as an

individual unit or a one-time event. However, in the larger picture, if 6,600 communication towers are each taking 1 bird per night during spring (generally 60 days in length) and fall migration (generally 90 days in length), this alone could result in the death of 990,000 migratory birds within the Service's Region 2. While some towers may not kill a minimum of 1 bird per night during migration, others may kill far greater numbers. When the estimated mortality figures for all the Service's 7 Regions nationwide are combined, the total truly becomes quite significant. Additionally, mortality during breeding and wintering seasons may not be as high, but it still adds to total annual mortality (D. Krueper, Migratory Bird Program, FWS 2007 pers. comm.).

## COMMENTS ON THE FCC'S PROPOSAL TO CHANGE OUT LIGHTING AND USE OF GUY WIRES (*Federal Register* pp. 67512-67514)

### White Strobe Lights.

**FCC NPRM Request:** *The FCC “tentatively conclude[d] that medium intensity white strobe lights<sup>1</sup> for nighttime conspicuity is to be considered the preferred system over red obstruction lighting systems<sup>2</sup> to the maximum extent possible without compromising aircraft navigation safety. We seek comment on this tentative conclusion and on issues related to its implementation.”* (p. 67511)

**Recommendation to FCC:** The Service generally concurs with the FCC's recommendation. To insure minimum avian attraction to strobe lights, to diminish public sentiment against use of white strobe lights at night, and to maintain proper pilot warning (*i.e.*, conspicuity) at night, the Service continues to recommend use of minimum intensity nighttime white strobe lighting (ideally less than 2,000 candela [cd]; FAA 2000, A1-15, Fig. 14), illuminated at the maximum “off” time currently allowed by the Federal Aviation Administration (FAA 2000:A1-1; *i.e.*, 3 seconds between flashes/20 flashes per minute). Where possible, we also recommend up-shielding of strobe lights to minimize their impacts on local residents at night. These continue to be recommendations presented in our September 2000 voluntary communication tower guidance (recommendation no. 5).

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<sup>1</sup> By “medium intensity white strobe lights,” the Service presumes FCC is referring to L-865 lighting as described by the Federal Aviation Administration (FAA 2000: A1-1).

<sup>2</sup> When the FCC refers to “red obstruction lighting systems,” the Service presumes that they are referring to solid/steady burning incandescent (L-810) and pulsating/flashing (on-off; L-864) red incandescent lights (FAA 2000:A1-1) and not to red strobe-lit systems (which unfortunately the FAA does not differentiate from red flashing incandescent lights).

Because the FCC is recommending “medium intensity” L-865 flashing white strobe lighting (FAA 2000: A1-15, Fig. 14) which illuminates 40 times per minute, we would suggest that FCC recommend to FAA that they conduct further conspicuity pilot tests on white strobe lights flashing at 20 times per minute, with intensity reduced below the currently recommended 2,000cd for nighttime warning (FAA 2000: A1-15, Fig. 14) such that pilots are still well aware of the lighting but which is least attracting to migratory birds, especially in inclement weather.

**Justification for Service Recommendation:** Past and recent scientific research supports the FCC’s white-strobe-light recommendation. Two key elements – inclement weather and steady-burning lighting on towers – have been implicated in the published literature to be major impediments, when combined, to bird survival. Light appears to be a key attractant for night-migrating songbirds, especially when nighttime visibility is poor, cloud ceilings are low, fog is heavy, or various other forms of precipitation are associated with either passing or stationary cold fronts (Tordoff and Mengel 1956, Ball *et al.* 1995, Manville 2005).

The attractant effects of steady-burning lights were first reported in Forest and Stream (1874) and later Allen (1880, cited in Cochran and Graber 1958) reported birds killing themselves by flying against lighthouse lights. Cochran and Graber (1958) reported that songbirds were heavily attracted to steady-burning L-810 red incandescent lights at a television tower during inclement weather. In 2 studies where lighted towers attracted songbirds, and the lights were extinguished, birds continued on their migrations leaving previously lit, cloud enshrouded towers (Cochran and Graber 1958, Avery *et al.* 1976). In both studies, when the lights were turned back on, within minutes birds began circling the towers in large numbers. Larkin and Frase (1988) used modified marine radar to document the deviations in flight patterns of birds and their likely attraction to lit communication towers. Gauthreaux and Belser (1999, 2006) showed a greater proportion of bird attraction to red flashing (non-strobe lighting) and red-solid incandescent lights than to white strobes; strobes still attracted some birds compared to unlit controls that attracted none. Whether birds were attracted to white strobes or whether the less linear tracks of birds in the vicinity of white-strobed towers versus the control towers was due to bird avoidance of the tower structure remains unclear. When nighttime weather conditions and visibility improved, in all cases reported in the literature, the birds left the lighted towers, apparently continuing on their migrations.

J. Johnson (Swarthmore College undergraduate research project, unpublished data, 2005 pers. comm.; April 2005 report to the Communication

Tower Working Group [CTWG]) replicated the studies by Larkin and Frase (1988) and Gauthreaux and Belser (1999, 2006) using modified marine radar to track “target” movements in relation to their attraction to 8 tall (> 1,080 ft AGL) lighted communication towers northwest of Philadelphia, Pennsylvania. All towers were lit with both steady burning red (L-810) incandescent lights and red pulsating (L-864) beacons. She also used microphones to record bird flight calls and “ground truth” radar images. The study was conducted for 4 seasons in 2002 and 2003, providing 1,871 bird tracts. In good visibility with no fog or precipitation, a high density of birds moved away from the towers, appearing to actively avoid them. However, during conditions of low clouds and fog, she found distinct curvilinear movements and aggregations of birds (1,300 of 1871 “targets” were curved) toward the lights at the study towers versus her control towers – just as Larkin and Frase (1988) and Gauthreaux and Belser (2006) had found. The towers examined in the studies by Cochran and Graber (1958), Avery *et al.* (1976), Larkin and Frase (1988), Nehring (1998), and Gauthreaux and Belser (2006) all had multiple tiers of slow flashing red light beacons each alternating with a tier of steady burning red incandescent lights. Two Gauthreaux and Belser (2006) study towers were only white-strobe-lit.

In bad weather, bird strikes have been recorded near or at ground level, usually associated with steady-burning lighting. Lord (1951) reported 200 birds of 23 species killed after apparently being confused by floodlights and striking a lodge on the Blue Ridge Parkway during a foggy night in the fall 1950. James (1956) retrieved 2,421 bird carcasses of 39 species (mostly warblers) beneath light poles on a coastal island following a single stormy spring night in 1951. Findings from existing research therefore strongly suggest a relationship between nighttime tower lighting systems and the likelihood of collisions particularly during inclement weather. Especially implicated are the effects of solid/steady burning and pulsating (non-strobe) incandescent lighting, especially when these lighting systems are used together on the same tower.

To assess avian impacts from communication towers in a more systematic and robust way, research was begun in Michigan in 2003 on 24 tall towers (21 belonging to the Michigan State Police [MSP] and the remaining 3 privately owned). J. Gehring served as the principal investigator (PI) for this study, and P. Kerlinger (Curry & Kerlinger, LLP) and A. Manville (FWS) were co-PIs. A peer-reviewed pilot study was initiated during the fall 2003, and in 2004, 2 peak-season, 20-day-each peer-reviewed surveys were performed on 24 towers with the “status quo” lighting regime (red-strobe at the top and mid levels, and steady-burning red incandescent lighting at the  $\frac{3}{4}$  and  $\frac{1}{3}$  height levels for MSP towers; steady burning and blinking red incandescent lighting on the privately-owned

towers [FAA 2000 A-14, FAA Style A red obstruction lighting standards]). The FAA kindly provided variances in 2004 that allowed lights to be changed on 18 of the MSP towers for the 2 seasons of monitoring in 2005. Once lights were changed out, the 18 MSP towers included unguyed and guyed towers, N=6 (3 unguyed, 3 guyed) with all white strobe lights, N=6 (3 unguyed and 3 guyed) with all red strobe lights, N=6 (3 unguyed and 3 guyed) with all red-blinking incandescent lights, and N=3 guyed with “status quo” lighting. This represented the first time the FAA did not require lit study towers to contain any steady burning red incandescent (L-810) lights.

With the changed out lighting, the results from the 2005 field seasons were very telling. Of the MSP towers with changed out lighting that did not contain any steady burning L-810 red incandescent lights, on average 3.72 birds/tower were killed during the 2 seasons at towers with either all strobe (L-865 white strobes or L-864 red strobes) or all blinking red incandescent lights (L-864 flashing beacon lights<sup>3</sup>). On average, 13.0 birds/tower were killed during the 2 seasons at towers that contained steady-burning lights and blinking or strobe lights. Although a slight trend exists toward less attraction to white strobe than to red strobe lights, Gehring *et al.* (2006) and J. Gehring (manuscript in prep., statistical analysis, 2006 pers. comm.) did not find a statistical difference between white strobes and red strobes provided that no steady burning L-810 lights were present. P. Kerlinger (partner, Curry & Kerlinger, 2006 pers. comm.) and W. Erickson (consultant, WEST Inc., 2006 pers. comm.) reviewed lighting and bird attraction data from studies conducted at wind turbine facilities. Their reviews suggested the same trend that blinking and strobe lights are not as attractive as steady burning lights.

Evans *et al.* (2007) subjected night-migrating birds in cloud conditions at ground level (100% cloud cover) to alternating short periods of different artificial light, including lights of various intensities, wavelengths, and flash rates from a ground-based lighting device. The study, conducted in October 2005 in Ithaca, New York, represented the first direct investigation of these variables causing bird aggregation in inclement weather. An acoustic transducer and directional microphone, positioned 16 feet from the light source, were used to identify a strong or weak presence of birds near the light source. Spectrographic analysis was performed on loud calls and species classification was based on the flight call reference guide by Evans and O'Brien (2002). Bird aggregation was also visually documented at the site. Birds were induced to congregate at all wattage levels of white steady-burning light tested, included the lowest lumen output of a 250W halogen lamp in a reflector housing. However, no aggregation was noted during any

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<sup>3</sup> The FAA does not differentiate between L-864 red lights other than that one is a flashing beacon (FAA 2000: A1-14, Fig. 13) and the other is a strobe light (FAA 2000: A1-18, Fig. 17).

of the 5 nights of 100% overcast conditions at the 1,500W white flashing halogen light (24 flashes/min., 0.2 sec. on-time/flash). The results from this study further reinforce the conclusions reached by Gehring *et al.* (2006), Gauthreaux and Belser (2006), and J. Johnson (CTWG report 2005 pers. comm.).

Based on recent lighting research, the Service feels there exists adequate, statistically significant data to support recommending use of medium -- or if allowed by FAA, minimum intensity (< 2,000cd) -- white strobe lighting flashing ideally 20 times per minute provided no steady-burning (L-810) lighting is used in conjunction with strobe lighting.

**FCC NPRM Request:** “*We invite comments on the possible use and benefits of other lighting systems, such as red strobe or red blinking incandescent lights...*” (p. 67512)

### **Red Strobe and Red-blinking Incandescent Lighting.**

**Recommendation to FCC:** If minimum intensity white strobe lights cannot be used on a communication tower (*e.g.*, a local zoning ordinance prohibits it), the Service recommends that the FCC provisionally require use of minimum intensity, maximum off-phased red strobe lighting (L-864 red strobe; 20 flashes per minute,  $\leq$  2,000 cd) and/or red flashing incandescent lighting (L-864 red beacon, 20 flashes/min.,  $\leq$  2,000 cd) as a secondary option. This recommendation is made provided that no steady-burning lights (L-810) are used in conjunction with strobe or blinking lights. Once future research results become available in 2007 and beyond, we hope to better understand the role of light color, flash rate, duration and intensity. Studies are slated to begin in spring 2007 at 6 tall (> 1,000-ft AGL) towers in Michigan using the 3 tall (> 1,000 ft AGL) private towers from the MSP study, 3 other tall towers in that State, and a 650-ft AGL LORAN tower in Cape May, New Jersey. It is hoped that the FAA will also allow lighting variances on these towers as they did in 2004 for 18 of the MSP study towers. If these findings and perhaps others further reinforce the Gehring *et al.* (2006) research results showing minimum bird attraction to towers illuminated only with red strobe or red blinking lights, this leaves open the opportunity for FCC to modify the regulation requiring secondary use of red strobes or red blinking lights without re-instituting proposed rulemaking.

**Justification for Service Recommendation:** Gehring *et al.* (2006) found that by extinguishing steady-burning/non-blinking L-810 red lights, avian fatalities at Michigan towers were reduced by 71%. While there is a possible trend and some statistical support that white strobes (L-865) are involved in

the fewest avian fatalities, followed by red strobes (L-864 strobes), and then by blinking red incandescent lights (L-864 beacons), Gehring *et al.* (2006) did not find a statistical difference in avian fatalities among towers lit by white and red strobes, and red blinking incandescent lights. The findings suggest that a blinking light versus a steady-burning light is more important than the color of the blinking light. These findings have been reinforced by research conducted by Avery *et al.* (1976), Gauthreaux and Belser (2006), and others.

Evans *et al.* (2007), however, did not find either steady-burning red (L-810) or red flashing lights (L-864 beacons) induced bird aggregation when tested separately at ground level in 100% cloud cover in Upstate New York. As one possible explanation, they suggested that the disorientation to red light only occurs if birds are actively using magnetoreception and the red light creates an imbalance in the magnetoreception mechanism. On clear nights, for example, some avifauna use star and moon light as sources for navigation, especially stellar arrays around the North Star (Sauer 1957, Emlen 1967). On cloudy nights, however, evidence suggests that birds may orient by sensing the axial inclination of the earth's magnetic field through a light-dependent mechanism, probably located in the avian eye (Wiltschko *et al.* 1993, Ritz *et al.* 2004, Thalau *et al.* 2005, Wiltschko *et al.* 2006). Gauthreaux and Belser (2006) first published this hypothesis in a peer-reviewed publication (Rich and Longcore 2006) that aggregation around communication towers with red lights may be due to disruption of magnetoreception caused by the red light. Their theory was based, in part, on the laboratory studies conducted by Wiltschko *et al.* (1993), Deutschlander *et al.* (1999), Wiltschko and Wiltschko (1999), and Wiltschko and Wiltschko (2002). The Evans *et al.* (2007) study was conducted over 5 nights of 100% cloud cover down to ground level, allowing light manipulation during 29 hours. Because of the challenges in sorting out the mechanism(s) of bird aggregation to artificial lights, the short duration of the Evans *et al.* study, and the lack of replication of this research, more laboratory and field studies will be necessary to better understand aggregation to certain light types as well as the role of magnetoreception.

While further research is needed, especially focused on blinking/strobe versus steady-burning lights, and on lighting color, the Service concurs that evidence from Gehring *et al.* (2006) study is substantial and statistically significant to provisionally support use of red strobe and/or red blinking lighting regimes as a secondary option if white strobes cannot be used. This recommendation is predicated on the use of no steady-burning lights. The Service suggests that such rulemaking should be written in a manner that accommodates later changes in FAA Advisory [lighting] Circulars, and inclusion of later research findings, without a future change in

FCC's rules. This lighting change would require the approval of the FAA and the re-issuance of any no-hazard determinations for pilots.

**Red Strobes or Red Blinking Incandescent Light Use Without Steady Burning Lights.**

**FCC NPRM Request:** *“We invite comments on the possible use and benefits of lighting systems ... including the use of red strobe or red blinking incandescent lights without the use of red steady lights.”*(p. 67513).

**Recommendation to FCC:** The existing research strongly suggests that there is a relationship between a communication tower's nighttime lighting system and its propensity to cause avian collisions. The 5-season MSP tower study (Gehring *et al.* 2006) clearly documented in a statistically significant fashion that by eliminating (extinguishing) steady-burning L-810 lights on communication towers avian injuries and fatalities were reduced by 71%. The scientific evidence also supports the conclusion that lights that flash or blink appear to be more important in minimally attracting birds than is the color of the blinking light (currently only white and red lights are allowed by the FAA as pilot warning colors on communication towers).

We encourage the FCC to work directly with the FAA's Hughes Technical Center, encouraging the FAA to perform conspicuity tests evaluating red and white strobe and red-blinking tower lighting systems without the presence of any steady-burning L-810 lights. We suggest this recommendation be included as part of the rulemaking. Once the FAA conducts pilot conspicuity tests on these lighting regimes and feels comfortable amending their most recent lighting Advisory Circular, the FCC should include this update as a part of their regulations without a future change in FCC's rules. This recommendation would allow tower erectors and owners/operators additional options which also should significantly reduce avian collision injury and mortality.

**FCC NPRM Request:** *“We seek comment on any action we should take regarding the lighting of existing towers.”* (p. 67513)

**Recommendation to FCC:** To minimize the financial burden on tower owners and operators currently managing existing towers while minimizing impacts to migratory birds, the Service recommends that:

- 1) once tower broadcast licenses expire and must be re-issued, tower lighting systems must be retrofitted preferably with minimum intensity, maximum off-phased white strobe

lighting as a first option; followed by minimum intensity, maximum off-phased red strobe lighting; and finally with minimum intensity maximum off-phased red blinking incandescent lighting. Pending FAA approval, all L-810 steady burning lights should also be removed as part of the retrofit.

- 2) All new towers must be fitted in decreasing order of priority with white strobes, red strobes, or blinking incandescent lighting as previously recommended. No L-810 side lights should be used.
- 3) When L-810 lights burn out, they should each be replaced in decreasing order of priority with white strobe, red strobe, or red blinking incandescent lighting as previously recommended.
- 4) From the time this rulemaking is finalized and published as regulation, we recommend that all towers be retrofitted within no longer than 5 years of that date (preferably a shorter duration) in decreasing order of priority with white strobe, red strobe, or red blinking incandescent lighting as previously recommended. No L-810 side lights should be used.

### **Guyed vs. Unguyed (self-supporting) Towers and Tower Height.**

**FCC NPRM Request:** *“We seek comment on whether we should adopt any requirements governing the use of guy wires because of the potential impact posed to migratory birds.”* (p. 67513-67514). *“We seek comment on whether to adopt any requirements relating to the height of communication towers in order to minimize the impact of such towers on migratory birds.”* (p. 67514)

**Service Response:** Virtually all the previously cited literature in this review indicates that large bird kills occurred at tall, guyed towers (Manville 2005, Gauthreaux and Belser 2006). These collision events tend to occur in both spring and fall when weather conditions are inclement and songbirds are migrating. During nighttime bad weather, broad front neotropical songbird migrations may be disrupted. Clouds, precipitation, fog or related inclement weather force birds down to lower altitudes. This puts songbirds in direct contact with lighted structures and thus at risk. It has been proposed by Graber (1968) that birds are not attracted to tower lights from great distances but rather bird aggregation around lights results when bird migratory trajectories by chance intersect with the lighted auras of towers created by the water droplets in clouds, fog, or precipitation. Later studies by

Avery *et al.* (1976) and Larkin and Frase (1988) reinforced this conclusion. Whatever the specific mechanism of the attraction, a detailed list of literature sources (*e.g.*, Manville 2005, Gauthreaux and Belser 2006) confirm that tall, guy-supported towers put birds at serious risk in inclement weather.

In a recent study at guyed communication towers in Wisconsin, Kruse (1996) found a high correlation between the specific locations of dead birds and their immediate proximity to guy support wires. The study strongly implicated the guy wires as the cause of death.

The MSP tower study (Gehring *et al.* 2006) provides the most definitive evidence yet available regarding the impacts of tall-guyed (> 1,000 ft AGL) and medium-height guyed (380-480 ft AGL) towers on migratory birds. Based on the results of three, 20-day field seasons in 2003 and 2004 in Michigan, 7.5 birds per tower were found dead under guyed towers 380-480 ft AGL in height while a mean of 0.5 birds per tower were found under unguyed towers the same height. Guyed towers > 1,000 ft AGL killed significantly more birds – averaging 32.5 birds per tower -- than both guyed and unguyed 380-480 ft AGL towers. As expected, unguyed towers proved to be least impacting to migratory birds. While the focus of 2005 research was on bird attraction to various lighting regimes, the tall (> 1,000 ft AGL), guyed towers killed on average 42.0 birds/tower during those 2 seasons of study (Gehring *et al.* 2006).

**Recommendation to FCC:** These findings further reinforce the Service's second and seventh recommendations in our voluntary communication tower guidelines to avoid using guy wires whenever possible, and to construct towers no higher than 199 ft AGL, avoiding lighting. The Service recommends that:

- 1) the FCC – provided they have the authority – require tower owners and operators to collocate proposed new communication towers on existing towers or other tall structures such as water and electric transmission line towers, where practical.<sup>4</sup> New towers should be designed structurally and electronically to accommodate the applicant's antenna and antennas for at least 6 to 10 additional users, unless the design would require the addition of lights and/or guy wires to an otherwise unlit and/or

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<sup>4</sup> Where frequencies compete (*e.g.*, cellular phone frequencies overlap/"bleed") or where frequency length or broadcast distance requires higher towers, collocation may not be feasible.

- unguyed tower. This suggestion coincides with the Service's first 2000 voluntary tower guideline.
- 2) The FCC establish by rule that communication towers, where practicable, be less than 200 ft AGL in height,
  - 3) be of monopole or lattice design,
  - 4) contain no guy wires and no lights<sup>5</sup>, and
  - 5) that this rule represent the environmentally preferred industry standard for tower placement, construction, and operation.
  - 6) We suggest the FCC require this standard for the construction of all new communication towers, where possible<sup>6</sup>, and the repair or re-construction of outdated or existing damaged towers, and the upgrade and modification of existing towers, again where monopole or lattice replacements can be used.
  - 7) We suggest that the FCC require that towers no longer functioning be removed within 12 months of becoming inoperative, coinciding with our 12<sup>th</sup> voluntary guideline.
  - 8) Where tower height and guy wires become an issue, the Service recommends more, shorter, un-guyed towers as opposed to fewer but higher, guyed and lighted towers in order for operators to provide equivalent service. This coincides with the seventh recommendation in our guidance where we suggest that a larger footprint is preferable to the use of guy wires.
  - 9) Taller towers exceeding 199 feet in height, up to some 800+ ft AGL, do not necessarily need to be guyed. For example, an un-guyed, lattice tower near the campus of Catholic University, Washington, DC, is some 750 ft AGL in height. We recommend that the FCC work with tower owners and operators, environmental representatives, and agencies to agree upon a minimum communication tower threshold height above the 199-ft AGL level where towers would remain unguyed (*i.e.*, monopole or lattice), recognizing that in areas subjected to hurricanes, tornadoes, williwaws and high winds, they may need to be guyed.

### **Marking Guy Wires.**

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<sup>5</sup> Pilot warning lighting may be required for towers less than 200 ft AGL within 3.8 statute miles of airport approach and departure control runways, and along major highway travel corridors.

<sup>6</sup> We recognize that some towers, such as radio, television, LORAN, and others, by their very nature and frequency – must be taller than 199 ft AGL.

**FCC NPRM Request:** “*We seek comment on the effectiveness of [guy] wire markings in mitigating migratory bird collisions with communication towers.*”(p. 67514)

**Service Response:** Considerable research has been conducted on the effectiveness of bird deterrent devices (*e.g.*, marker balls, bird diverters, and paint) in the reduction of avian collisions at high-tension transmission power lines, with some results published in the scientific literature. For example, strikes were reduced by 53% at a South Carolina transmission line outfitted with yellow marker balls (Savereno *et al.* 1996). In southwestern Colorado, polyvinyl chloride plastic dampers reduced collisions of cranes and waterfowl by 61% while yellow fiberglass square plates reduced mortality to the same species by 63% (Brown and Drewien 1995). In Alaska, where wind and ice loading are serious concerns for tower stability, guy wires have been marked with a number of devices, primarily to prevent wire collisions by ESA-listed Spectacled and Steller’s Eiders (E. Lance, Anchorage Fish and Wildlife Field Office, 2007 FWS pers. comm.). Balls, coils and sections of guy guards have withstood severe weather without compromising the integrity of towers. Flapper type bird flight diverters have less successfully met the challenges posed by Alaskan weather.

However, while considerable research continues on the efficacy of bird diverters and other warning devices on electric transmission lines (see Bridges *et al.* 2005 for an overview), there are many deterrent products on the market purported to reduce avian strike mortality at wires including guy supports at communication towers. Virtually all the scientific evidence supporting their efficacy at guy wires, however, is at best based on anecdotal reports. The Service is unaware of any peer-reviewed journal-published studies of such devices on communication tower guy wires. While the issue involves making the wires visible to birds, diurnally active avifauna tend to avoid marked wires by flying above them (Manville 2005). Whether the same mechanism occurs at marked guy wires on communication towers remains unclear. There is yet no published scientific studies on the effects of marked guy wires on night migrating songbirds, particularly in inclement weather.

If the major purpose of marking guy wires is to minimize nighttime songbird collisions, the Service is unable to support their use until peer-reviewed studies are published in the scientific literature validating their efficacy. We continue to encourage the developers of deterrents to test them in scientifically rigorous ways and publish their results in pertinent scientific journals.

**Recommendation to FCC:** The Service currently recommends limited use of bird deterrent devices on tower guy support wires. In the case of

endangered species such as the Whooping Crane, the loss of even 1 bird is significant when the total number of birds in the only remaining natural wild flock is less than 250. Collision with power lines is the number one source of mortality of fledged Whooping Cranes (Manville 2005). Although a Whooping Crane has never been documented hitting a communication tower or its guy support wires, most collisions go undetected. It is reasonable to expect that a Crane would have as much difficulty seeing a guy wire as it would seeing a power line, especially when Whooping Cranes are flying in low light conditions, when the weather is inclement, or when they occasionally fly at night. To reduce the chance of even a single mortality event of a Whooping Crane hitting a tower, guy wires should be marked on all towers within the Whooping Crane migration corridor. This corridor is a pathway approximately 150 miles wide running through the middle of the States of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas, and includes extreme eastern Montana (T. Stehn, FWS Whooping Crane Coordinator, 2006 pers. comm.). These marking devices should also protect Sandhill Cranes that also migrate through this area.

In the case of threatened Spectacled and Steller's Eiders, the Service continues to recommend using marking devices on guy wires best able to withstand the severe weather conditions in Alaska without compromising tower integrity. Unpublished data supports this recommendation (E. Lance, Anchorage Fish and Wildlife Field Office, 2007 pers. comm.).

As new studies are conducted on the efficacy of deterrents on guy wires, and the results are published in scientific journals, the Service recommends that FCC provide an opportunity to amend their regulations regarding use of guy wire markers without a change in rulemaking.

### **Tower Location.**

**FCC NPRM Request:** *"We seek comment on whether towers located in certain areas might cause a significant environmental impact on migratory birds."*(p. 67515) *"We seek comment as to whether to amend section 1.1307(a) of the Commission's rules to routinely require environmental processing with respect to migratory birds."*(p. 67515).

**Service Response:** The FCC procedures for NEPA compliance require applicants to consider the potential environmental effects, as well as the effects on historic properties, from construction of antenna facilities or structures if the proposed facility is located in or may affect resources identified within 1 of 8 listed categories. Those effects must be disclosed in an environmental assessment (EA) filed with the FCC for review. Migratory birds, however, unless Federally listed or their habitats are designated

“critical,” are not included in the FCC location review process. Neither the individual impacts of a tower nor the cumulative impacts of all communication towers are included as part of the NEPA review process. The Service first raised this concern in 1999 at a public workshop on avian collisions at towers held at Cornell University (Willis 1999). More recently, we have raised it at all meetings of the Communication Tower Working Group, in a Service briefing for FCC staff, in a Service briefing for the senior legal advisors to the FCC Commissioners, and in the NOI.

The Service developed voluntary guidelines for the wind turbine industry, published in July 2003, outlining the need for a voluntary site evaluation and review process for wind development on private lands. We provided a series of recommendations for an environmental review in our wind turbine guidance (<http://www.fws.gov/habitatconservation/wind.pdf>; this website also includes the appended 2000 voluntary FWS communication tower guidelines). The intent, primarily, is to minimize impacts to birds, bats,<sup>7</sup> other trust resources and their habitats from wind development. Where a Federal nexus exists (*e.g.*, public land, public funding, or a Federal permit), birds are considered part of the NEPA review process for wind energy development. The Service feels the same should hold true for the communication tower industry. Since the FCC already includes listed avifauna (and other listed species) and their critical habitats in their NEPA review process, migratory birds should also be included as part of their NEPA review requirements.

In the Service’s voluntary 2000 communication tower guidelines, we suggested the need for a post-construction monitoring and review process (recommendation no. 11). Conducting such a review at each communication tower, or at least at a statistically significant sample of communication towers of different height classes, would validate (or negate) the pre-construction tower assessment conducted through NEPA review suggested herein.

Permanent, bright, steady-burning lights on the ground near towers can further contribute to the hazards posed by an FCC-regulated communication tower, especially during nighttime inclement weather conditions. The situation of ground lighting was implicated in the October 2005 Pennsylvania bird kill, previously referenced. It was also documented

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<sup>7</sup> Bat carcasses are invariably discovered during bird mortality studies conducted at communication towers around the country, but until very recently have not been included as part of the mortality datasets in reports released to the public or published in the scientific literature. However, with recent documented high levels of bat mortality at 2 wind energy facilities in the East, the Service recommends that bats – especially any State-listed or “candidate” species – should be included as part all communication tower reviews. Any Federally listed bats should already be covered under the existing NEPA review process.

in September 1999 at a brightly-lit television station at the base of a 533-ft AGL tower in Binghamton, New York. Especially during inclement weather, birds appeared to be more attracted to and congregated in the spotlight-illuminated area that remained lit all night (W. Evans, Old Bird Inc., 2006 pers. comm.). Bright, steady-burning lights near the base of wind turbines in West Virginia were very likely responsible for the largest yet-recorded bird kill at a U.S. wind turbine facility during heavy fog in fall 2004 (P. Kerlinger, Curry & Kerlinger LLP, 2004 pers. comm.).

The impacts from tower location in Alaska tend to be coastal-based. Most tower collisions noted in the Service's Alaska database occurred at coastal locations, and many occurred during periods of low visibility, including fog and darkness (E. Lance, Anchorage Fish and Wildlife Field Office, 2007 FWS unpubl. data). The mean number of days of heavy fog in coastal Alaska, 1971-2000, was approximately 26 days/year. However, the greatest risk of bird collisions occurs within coastal villages, generally those that do not exceed a few hundred residents and are situated in compact communities. As a result, most towers – regardless of their height – are considered within aircraft navigation safety corridors and are lighted with steady-burning red lights.

Disturbance can result in effects to populations which may cumulatively impact their survival. The FWS Wyoming Field Office, for example, recommends maintaining a disturbance-free zone of 0.5 mile around raptor nests during the nesting season (February 1 through August 15) for all species except Ferruginous Hawks and Bald Eagles. The latter should be protected by a 1-mile, disturbance-free buffer (B. Kelly, Field Supervisor WY Field Office, FWS 2006 pers. comm.). Little attention in this NPRM has been given to the visual disturbance of communication towers to avifauna, especially impacts to “prairie grouse” (*e.g.*, Greater and Lesser Prairie-chickens, Gunnison and Greater Sage-grouse, and Columbia Sharp-tailed Grouse) and other grassland (*e.g.*, Bobolink, Savanna Sparrow, and Sedge Wren) and shrub-steppe avifauna (*e.g.*, Sage Sparrow, Brewer's Sparrow, and Sage Thrasher). Tall structures have been shown to result in abandonment of nest site areas and leks, especially for “prairie grouse” (Manville 2004). Site disturbance is another issue which needs to be reviewed as part of procedures for tower placement (see beyond for recommendations).

The placement of communication towers continues to be of concern to the Service, and should be addressed on a site by site basis. For example, a tower's location on the landscape may impact migratory birds. Diurnal raptors use escarpments and ridges preferentially due to favorable wind conditions. Like the Service's recommendation to set wind turbines back from ridge and escarpment edges, placing communication towers several

hundred feet back from ridge fronts, cliffs, and escarpment edges should decrease risk of raptor collisions (D. Krueper, Migratory Bird Program, FWS 2007 pers. comm.).

Another issue of communication tower siting concern involves wetlands, as has been mentioned elsewhere in this document. The Service wishes to stress the importance of avoiding tower siting in wetlands whenever possible. This issue needs especially careful consideration by the FCC in regard to proposals for siting towers.

In the Service's earlier NOI response to Docket 03-187, we discussed at length the need for additional research. The Services' New Jersey Field Office (NJFO) has, for example, recommended that their State be considered a priority area for tower research. The Field Office is aware of only 1 small study conducted to date in New Jersey. Due to a high human population density with its incumbent demand for more phone, radio, television, and Internet access, growth of towers in New Jersey continues at an exponential rate. New Jersey is also a critically important area for migratory birds due to its latitude, geography, and high diversity of ecosystems and habitats in a small State (Dunne 1989, Vernachio *et al.* 2003). Recently, the Cape May Bird Observatory agreed to study towers in the Meadowlands with funding from the State, but work has yet to begin due to access and other issues. If funding becomes available, staff from the NJFO are available to facilitate tower research. As previously mentioned, a tower study at a U.S. Coast Guard LORAN tower in Cape May is slated to begin this spring.

Not all communication towers pose a serious risk to migratory birds, bats (including Federally listed chiropteran) and/or their habitats. As previously documented, unguyed and unlit towers less than 200 ft AGL generally pose the least risk to trust resources and/or their habitats – with the exception of short towers that may impact wildlife species on wildlife refuges, conservation areas, native prairies, hill or mountain tops, wetlands, rookeries, and breeding colonies and major foraging areas, or where Federally listed threatened and endangered species are present and/or their habitats are designated as “critical.” If unguyed, unlit towers pose the least risk it seems reasonable and prudent to recommend that they generally be exempted from resource review and assessment for birds, bats, and their habitats – with the exceptions mentioned above. If the FCC agrees to establish into rulemaking an “environmentally preferred industry standard” that addresses height, lighting, and tower construction (*i.e.*, unguyed lattice or monopole), as we have previously recommended in these comments, then deviations from such standards could be one of the criteria requiring an applicant to perform a detailed study of a proposed tower along with the preparation of an EA. The determination of risk to migratory birds, bats, and

their habitats, and thus the possible need for more study, could also be based on Service review of a revised Tower Site Evaluation Form, similar to the one developed by the Service that accompanied the 2000 tower guidance (see the previously referenced wind turbine guidance website above to access this form). If an amended evaluation form could be agreed upon by the Service, the FCC, industry, and the conservation community, the FCC could require through rulemaking that the industry use, complete, and submit this form to the appropriate Service Field Office for review. This would allow the Service to make “study-no study” and “go-no go EA” determinations. Work loads would be minimized on our Field Office and FCC staff, and it would not place undue burden on applicants.

**Service Recommendation:** We recommend the following:

- 1) The FCC establish by rule that communication towers, where practicable, be less than 200 ft AGL in height, be monopole or lattice in design, contain no guy wires and no lights, and that this rule represent the environmentally preferred industry standard for tower placement, construction and operation (see recommendations to the FCC under “guyed vs. unguyed [self-supporting] towers and tower height”, previously suggested).
- 2) Determining risk from communication towers to migratory birds and their habitats – and thus the need for future study and a possible EA – is very important. We recommend that the FCC through rulemaking require the development and use of a Tower Site Evaluation Form, similar to the one created by the Service that accompanied the 2000 tower guidance. The Evaluation Form should be developed by the FCC in consultation with the Service, industry, and the conservation community. Once completed, the FCC should require through rulemaking that the industry use, complete, and submit this form to the appropriate Service Field Office for review, allowing the Service to make a “study or no-study” determination and a recommendation for conducting an EA.
- 3) If the FCC is willing to establish an environmentally preferred industry standard and require the applicants to complete a Site Evaluation Form to be provided to the Service for review, we recommend a ninth category be added to the FCC’s NEPA procedures at 47 CFR 1.1307(a) which should read as follows: “(9) Facilities that due to their proposed location and/or structural makeup (height, support, and lighting) may result in substantial risk of collisions by migratory birds and/or adverse modification of habitats supporting migratory birds. To ascertain whether a proposed action may affect

migratory birds, an applicant shall complete a Site Evaluation Form and provide it to the U.S. Fish and Wildlife Service Ecological Services Field Office having jurisdiction for the area in which the facility is proposed to be located. If, after review of the Site Evaluation Form, the Service is of the opinion that the applicant has made all reasonable efforts to minimize the impacts of the proposed facility on migratory birds, including compliance with the Commission's environmentally preferred industry standards, the Service will advise the applicant of that fact. If, however, the Service is of the opinion that the applicant has not made all reasonable efforts to minimize the impacts of the proposed facility on migratory birds and that an EA should be prepared by the applicant for the facility, the Service will forward the Site Evaluation Form and the Service's recommendation to the Commission for its consideration and will alert the applicant of that action."

- 4) This evaluation process should include reviews of all proposed new and modified towers.
- 5) Where further environmental studies are recommended by the Service, these studies should include review of on-the-ground and airspace resources.
- 6) For airspace resources (*i.e.*, birds and bats) we recommend that FCC require applicants to provide data from remote sensing studies involving the uses of radar and supporting technology such as acoustic and/or infrared monitoring to demonstrate that the airspace that would be occupied by the tower(s) at the applicant's preferred site(s) does not present a substantial risk to migratory birds and/or their habitats. This airspace review should include the spatial habitat at least to the height of the proposed tower(s), and if the tower(s) is to be guyed, the spatial area that is to include the guy support wires.
- 7) For on-the-ground resources, we recommend that FCC require studies commensurate with the setting and site conditions. A brownfield site or an urban setting, for example, would not need the same level of study and analysis as an unfragmented area containing native vegetation and natural habitat.
- 8) Where towers are to be constructed, we recommend that FCC strongly discourage proponents from installing and using ground-based, steady-burning lighting.

- 9) We recommend that FCC require through rulemaking a post-construction monitoring process that assesses and evaluates mortality and/or habitat fragmentation and disturbance at a statistically significant sample of communication towers of different height classes (*i.e.*, unlit, lit, un-guyed, guyed, cellular, radio, television, DTV, emergency broadcast, and others) within the United States. Ideally, post-construction monitoring should be required for at least 3 years post-development, and mortality would be reported annually to the FWS as a condition of a scientific collecting permit.
  
- 10) We recommend that FCC implement the Service's 2000 voluntary communication tower guidelines into rulemaking. The FCC would be responsible for informing license permit applicants of the guidelines, overseeing implementation of the guidelines, and would not depend on applicants independently contacting the Service for recommendations. Adopting the guidelines into rulemaking would expedite the consultation process, eliminate the need for the Service to review every communication tower project other than through a Site Evaluation Form, and would establish a basis for programmatic consultation.<sup>8</sup>

## **Summary**

Thank you for the opportunity to comment on this very important initiative. We have been working with the FCC for more than 7 years to include migratory birds as part of the tower siting, review, and licensing process. We encourage the FCC to include in rulemaking the recommendations suggested herein by the Service that will significantly reduce avian impacts but continue to allow providers full communication services and capabilities. Should you have any specific questions about this review, kindly contact Dr. Albert Manville, Wildlife Biologist, Division of Migratory Bird Management, at 703/358-1963 or [Albert.Manville@fws.gov](mailto:Albert.Manville@fws.gov).

Respectfully submitted,

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<sup>8</sup> During the past 2 years, for example, the Wyoming Ecological Services Field Office (WYFO) has reviewed on average 1 FCC communication tower project per month. The WYFO is aware of additional towers built in Wyoming without the benefit of Service guidance since project proponents have not contacted the Field Office. The Service's NJFO has reported that, among others, very tall broadcast towers have often not been submitted for Service review. These have included towers at Corbin City (765 ft AGL), Little Egg Harbor (1,000 ft AGL, at a coastal site), and Bayonne (2,000 ft AGL, a key migratory pathway). In each case, the NJFO learned of these proposals from third-party or media sources rather than project proponents or the FCC. When proposed tower projects are not submitted to a Field Office for review, there is the potential for towers to be built without the project proponent's full understanding of FCC responsibilities under MBTA, BGEPA, and ESA.

/s/

Kenneth Stansell  
Acting Deputy Director

## LITERATURE CITED

- Able, K.P. 1973. The changing seasons. *American Birds* 27(1): 19-23.
- Aronoff, A. 1949. The September migration tragedy. *Linnaean News-Letter* 3(1):2.
- Avery, M., P.F. Springer, and J.F. Cassel. 1976. The effects of a tall tower on nocturnal  
bird migration – a portable ceilometer study. *The Auk* 93: 281-292.
- Avian Power Line Interaction Committee (APLIC). 1995. Mitigating bird collisions with  
power lines: the state of the art in 1994. Edison Electric Inst., Washington, DC. 103 pp.
- Avian Power Line Interaction Committee (APLIC). 2006. Suggested practices for avian  
protection on power lines: the state of the art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission, Washington, DC and Sacramento, CA. 207 pp.
- Ball, L.G., K. Zyskowski, and G. Escalona-Sequera. 1995. Recent bird mortality at a  
Topeka television tower. *Kansas Ornithological Society Bulletin* 46(4): 33-36.
- Banks, R.C. 1979. Human related mortality of birds in the United States. U.S. Fish & Wildlife Service, Natl. Fish & Wildlife Lab., Special Scientific Report – Wildlife No. 215: 1-16. GPO 848-972.
- Bridges, J.M., T.R. Anderson, D. Shulund, L. Spiegel, and T. Chervick. 2005. Minimizing bird collisions: what works for the birds and what works for the utility? Report of the Western Area Power Administration to the Technical Advisory Committee, Audubon National Wildlife Refuge, ND, transmission line study. 5 pp.

Brown, W.M. and R.C. Drewien. 1995. Evaluation of two power line markers to reduce crane and waterfowl collision mortality. *Wildlife Society Bulletin* 23(2): 217-227.

Carter, J.H. and J.F. Parnell. 1978. TV tower kills in eastern North Carolina: 1973-1977. *Chat* 42: 67-70.

Cochran, W.W. and R.R. Graber. 1958. Attraction of nocturnal migrants by lights on a television tower. *The Wilson Bulletin* 70(4): 378-380.

Crawford, R.L. and R.T. Engstrom. 2001. Characteristics of avian mortality at a north Florida television tower: a 29-year study. *Journal Field Ornithology* 72(3): 380- 388.

Deutschlander, M.E., J.B. Phillips, and S.C. Borland. 1999. The case of light-dependent magnetic orientation in animals. *Journal Experimental Biology* 202: 891-908.

Dickerman, R.W., K. Winker, and D.D. Gibson. 1998. Sooty tern reaches the Aleutian Islands, Alaska. *Western Birds* 29: 122-123.

Dunne, P. (ed.). 1989. *New Jersey at the crossroads of migration*. New Jersey Audubon Society, Bernardsville, NJ. 75 pp.

Emlen, S.T. 1967. Migratory orientation in the indigo bunting, *Passerina cyanea* Part I: Evidence of use of celestial cues. *Auk* 84: 309-342.

Evans, W. 1998. Two to four million birds a year: calculating avian mortality at communication towers. *Bird Calls*, American Bird Conservancy, March 1998: 1 p.

Evans, W.R. and M. O'Brien. 2002. *Flight calls of migratory birds – eastern North American landbirds*. Ithaca, New York, Old Bird, Inc.

Evans, W.R., Y. Akashi, N.S. Altman, and A.M. Manville, II. 2007. Response of night-

migrating birds in clouds to colored and flashing light. *North American Birds*, in press. And January 2007 Final Report to the Communication Tower Working Group, 25 pp.

Federal Aviation Administration. 2000. Change 1 to obstruction marking and lighting. Advisory Circular, AC No. 70/7460-1K, April 15, 2000. 19 pp.

Fenwick, G.H. 1997. The sound of 63 million birders in unison. *Bird Conservation*, spring 1997: 2.

Forest and Stream. 1874. Editor, *Forest and Stream*. The St. Augustine Press 3(10): 150.

Gauthreaux, S.A., Jr. and C.G. Belser. 1999. The behavioral responses of migrating birds to different lighting systems on tall towers. 1 p. *In* W.R. Evans and A.M. Manville, II (eds.). *Proceedings of the Workshop on Avian Mortality at Communication Towers*, August 1999, Cornell University. Available electronically at <http://migratorybirds.fws.gov/issues/towers/agenda.html>.

Gauthreaux, S.A., Jr. and C.G. Belser. 2006. Effects of artificial night lighting on migrating birds. Pp. 67-93 *In* C. Rich and T. Longcore (eds.). *Ecological Consequences of Artificial Night Lighting*, Island Press, Covelo, California, and Washington, DC.

Gehring, J.L., P. Kerlinger, and A.M. Manville, II. 2006. The relationship between avian collisions and communication towers and nighttime tower lighting systems and tower heights. Draft summary report to the Michigan State Police, Michigan Attorney General, Federal Communications Commission, and U.S. Fish and Wildlife Service. 19 pp.

Graber, R.R. 1968. Nocturnal migration in Illinois – different points of view. *Wilson Bulletin* 80: 36-71.

Jackson, J.A. 1994. Red-cockaded Woodpecker (*Picoides borealis*) Pp. 1-16 *In* A. Poole, P. Stettenheim, and F. Gill (eds.). *The Birds of North America*, Vol. 85, The Academy of Natural Sciences, Philadelphia. The American Ornithologist's Union, Washington, DC.

- James, P. 1956. Destruction of warblers on Padre Island, Texas in May 1951. *The Wilson Bulletin* 68(3): 224-227.
- Kemper, C.A. 1996. A study of bird mortality at a west central Wisconsin TV tower from 1957-1995. *The Passenger Pigeon* 58(3): 219-235.
- Klem, D., Jr. 1990. Collisions between birds and windows: mortality and prevention. *Journal Field Ornithology* 61: 120-128.
- Kruse, K. 1996. A study of the effects of transmission towers on migrating birds. M.Sc. thesis, Environmental Science and Policy, University Wisconsin, Green Bay.
- Larkin, R. and B. Frase. 1988. Circular paths of birds flying near a broadcasting tower in clouds. *Journal Comparative Psychology* 102: 90-93.
- Lord, W.G. 1951. Bird fatalities at Bluff's Lodge on the Blue Ridge Parkway, Wilkes Country, N.C. *Chat* 15(1): 15-16.
- Longcore, T., C. Rich, and S.A. Gauthreaux, Jr. 2005. Scientific basis to establish policy regulating communication towers to protect migratory birds: response to Avatar Consulting, LLC, report regarding migratory bird collisions with communication towers, WT Docket No. 03-187, Federal Communications Commission Notice of Inquiry, reply comments, Land Protection Partners and Clemson University. 33 pp.
- Manville, A.M., II. 2001a. The ABC's of avoiding bird collisions at communication towers: next steps. Pages 85-103, 324, 330. *In* R.G. Carlton (ed.). *Proceedings of Workshop on Avian Interactions with Utility and Communication Structures*, December 2-3, 1999, Charleston, SC. Technical Report. Electric Power Research Institute, Inc., Palo Alto, CA. 343 pp.
- Manville, A.M., II. 2001b. Avian mortality at communication towers: steps to alleviate a growing problem. Pp. 75-86, 227-228. *In*: B.B. Levitt (ed.). *Proceedings of the "Cell Towers Forum" State of the Science/State of the Law*, December 2, 2000, Litchfield, CT. 348 pp. ISBN 1-884820-62-X.

Manville, A.M., II. 2004. Prairie grouse leks and wind turbines: U.S. Fish and Wildlife Service justification for a 5-mile buffer from leks; additional grassland songbird recommendations. Division of Migratory Bird Management, USFWS, Arlington, VA, peer-reviewed briefing paper. 17 pp.

Manville, A.M., II. 2005. Bird strikes and electrocutions at power lines, communication towers, and wind turbines: state of the art and state of the science – next steps toward mitigation. Bird Conservation Implementation in the Americas: Proceedings 3<sup>rd</sup> International Partners in Flight Conference 2002, C.J. Ralph and T. D. Rich (eds.). U.S.D.A. Forest Service General Technical Report PSW-GTR-191, Pacific Southwest Research Station, Albany, CA: 1051-1064

Morris, S.R., A.R. Clark, L.H. Bhatti, and J.L. Glasgow. 2003. Television tower mortality of migrant birds in western New York and Youngstown, Ohio. *Northeastern Naturalist* 10(1): 67-76.

Nehring, J. 1998. Assessment of avian population change using migration casualty data from a television tower in Nashville, Tennessee. M.S. Thesis, Middle Tennessee State University, Murfreesboro, Tennessee.

Nehring, J. and S. Bivens. 1999. A study of bird mortality at Nashville's WSMV television tower. *Migrant* 70: 1-8.

O'Connell, T. 1998. Glass windows and bird deaths. *In* Proceedings, North American Ornithological Conference, April 8, 1998, St. Louis, MO.

Ornithological Council. 1997. Saving birds and their habitat creates jobs and income. *Issue Brief* 1(3): 2 pp.

Rich, C., and T. Longcore (editors). 2006. Ecological consequences of artificial night lighting. Island Press, Washington, DC. 458 pp.

Ritz, T., P. Thalau, J.B. Phillips, R. Wiltschko, and W. Wiltschko. 2004. Resonance effects indicate a radical-pair mechanism for avian magnetic compass. *Nature* 429: 177-180.

Robbins, M.B., B.R. Barber, and E.A. Young. 2000. Major bird mortality at a Topeka television tower. *Kansas Ornithological Society Bulletin* 46: 33-36.

Sauer, E.G.F. 1957. Die Sternorientierung nachtllich ziehender Grasmucken, *Sylvia atricapilla*, *borin* and *curra*. *Zeitschrift fur Tierpsychologie* 14: 20-70.

Savereno, A.J., L.A. Savereno, R. Boettcher, and S.M. Haig. 1996. Avian behavior and mortality at power lines in coastal South Carolina. *Wildlife Society Bulletin* 24(4): 636-648.

Shire, G.G., K. Brown, and G. Winegrad. 2000. Communication towers: a deadly hazard to birds. *American Bird Conservancy Special Report*. 23 pp.

Seely, R. 2005. TV tower wires kill 400 birds in one night. *Wisconsin State Journal*, October 5, electronic copy. 2 pp.

Seets, J.W. and H.D. Bohlen. 1977. Comparative mortality of birds at television towers in central Illinois. *Wilson Bulletin* 89(3): 422-433.

Smithsonian Migratory Bird Center. 1994. How birds keep our world safe from plagues of insects. Fact Sheet No. 2. National Zoological Park, Washington, DC

Thalau, P., T. Ritz, K. Stapput, R. Wiltschko, and W. Wiltschko. 2005. Magnetic compass orientation of migratory birds in the presence of 1.315 MHz oscillating field. *Naturwissenschaften* 92: 86-90.

Tordoff, H.B. and R.M. Mengel. 1956. Studies of birds killed in nocturnal migration. *University of Kansas Museum Natural History Publication* 10: 1-44.

U.S. Fish and Wildlife Service. 1995. Migratory nongame birds of management concern in the United States: the 1995 list. Office of Migratory Bird Management, Washington, DC. 22 pp.

U.S. Fish and Wildlife Service. 1997. 1996 national survey of fishing, hunting, and wildlife-associated recreation. State Overview. Department of Interior.

U.S. Fish and Wildlife Service. 2002. Birds of conservation concern 2002. Division of

Migratory Bird Management, Arlington, VA. 99 pp. Available electronically at <http://migratorybirds.fws.gov/reports/bcc2002.pdf>.

Vernachio, B., D. Friedday, and D.A. Rosselet. 2003. Wild journeys: migration in New Jersey. New Jersey Audubon Society, Bernardsville, NJ. 120 pp.

Willis, R. 1999. Permitting, NEPA, endangered species, and refuge issues – the role of

the Fish and Wildlife Service. 2 pp. *In* W.R. Evans and A.M. Manville, II (eds.).

Proceedings of the Workshop on Avian Mortality at Communication Towers,

August 1999, Cornell University. Available electronically at <http://migratorybirds.fws.gov/issues/towers/agenda.html>.

Wiltschko, W., U. Munro, H. Ford, and R. Wiltschko. 1993. Red light disrupts magnetic orientation of migratory birds. *Nature* 364: 525-527.

Wiltschko, W. and R. Wiltschko. 1999. The effect of yellow and blue light on magnetic compass orientation in European robins, *Erithacus rubecula*. *Journal Comparative Physiology A* 184: 295-299.

Wiltschko, W. and R. Wiltschko. 2002. Magnetic compass orientation in birds and its physiological basis. *Naturwissenschaften* 89: 445-452.

Wiltschko, R., T. Ritz, K. Stapput, P. Thalau, and W. Wiltschko. 2005. Two different types of light-dependent responses to magnetic fields in birds. *Current Biology* 15: 1518-1523.

# Record of Environmental Consideration

See 44 Code of Federal Regulation Part 10.

**Project Name/Number:**

**Project Location:**

**Project Description:**

## **Documentation Requirements**

- No Documentation Required **(Review Concluded)**
- (Short version)** All consultation and agreements implemented to comply with the National Historic Preservation Act, Endangered Species Act, and Executive Orders 11988, 11990 and 12898 are completed and no other laws apply. **(Review Concluded)**
- (Long version)** All applicable laws and executive orders were reviewed. Additional information for compliance is attached to this REC.

## **National Environmental Policy Act (NEPA) Determination**

- Statutorily excluded from NEPA review. **(Review Concluded)**
- Programmatic Categorical Exclusion - Category \_\_\_\_\_ (Reference PCE in comments) **(Review Concluded)**
- Categorical Exclusion - Category \_\_\_\_\_
  - No Extraordinary Circumstances exist.  
Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
  - Extraordinary Circumstances exist (See Section IV).
    - Extraordinary Circumstances mitigated. (See Section IV comments)  
Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
- Environmental Assessment
- Supplemental Environmental Assessment (Reference EA or PEA in comments)
- Environmental Impact Statement

Comments: \_\_\_\_\_

## **Reviewer and Approvals**

- Project is Non-Compliant (See attached documentation justifying selection).

FEMA Environmental Reviewer.  
Name:

Signature \_\_\_\_\_ . Date \_\_\_\_\_ .

FEMA Regional Environmental Officer or delegated approving official.

Name:

Signature \_\_\_\_\_, Date \_\_\_\_\_.

## **I. Compliance Review for Environmental Laws (other than NEPA)**

### **A. National Historic Preservation Act**

- Not type of activity with potential to affect historic properties. **(Review Concluded)**
- Applicable executed Programmatic Agreement (insert date) Otherwise, conduct standard Section 106 review.
  - Activity meets Programmatic Allowance # \_\_\_\_\_
  - Are project conditions required?  Yes (see section V)  No **(Review Concluded)**

#### **HISTORIC BUILDINGS AND STRUCTURES**

- No historic properties that are listed or 45/50 years or older in project area. **(Review Concluded)**
- Building or structure listed or 45/50 years or older in project area and activity not exempt from review.
  - Determination of No Historic Properties Affected (FEMA finding/SHPO/THPO concurrence on file)  
Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
  - Determination of Historic Properties Affected (FEMA finding/SHPO/THPO concurrence on file)
    - Property a National Historic Landmark and National Park Service was provided early notification during the consultation process. If not, explain in comments
    - No Adverse Effect Determination (FEMA finding/SHPO/THPO concurrence on file).  
Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
    - Adverse Effect Determination (FEMA finding/SHPO/THPO concurrence on file)
      - Resolution of Adverse Effect completed. (MOA on file)
      - Are project conditions required  Yes (see section V)  No **(Review Concluded)**

#### **ARCHEOLOGICAL RESOURCES**

- Project affects only previously disturbed ground. **(Review Concluded)**
- Project affects undisturbed ground.
  - Project area has no potential for presence of archeological resources
    - Determination of no historic properties affected (FEMA finding/SHPO/THPO concurrence or consultation on file). **(Review Concluded)**
  - Project area has potential for presence of archeological resources
    - Determination of no historic properties affected (FEMA finding/SHPO/THPO concurrence on file)  
Are project conditions required  Yes (see section V)  No **(Review Concluded)**
    - Determination of historic properties affected
      - NR eligible resources not present (FEMA finding/SHPO/THPO concurrence on file).  
Are project conditions required  Yes (see section V)  No **(Review Concluded)**
      - NR eligible resources present in project area. (FEMA finding/ SHPO/THPO concurrence on file)
        - No Adverse Effect Determination. (FEMA finding/ SHPO/THPO concurrence on file)  
Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
        - Adverse Effect Determination. (FEMA finding/ SHPO/THPO concurrence on file)
          - Resolution of Adverse Effect completed. (MOA on file)
          - Are project conditions required?  Yes (see section V)  No **(Review Concluded)**

Comments:

Correspondence/Consultation/References:

### **B. Endangered Species Act**

- No listed species and/or designated critical habitat present in areas affected directly or indirectly by the Federal action. **(Review Concluded)**

- Listed species and/or designated critical habitat present in the areas affected directly or indirectly by the Federal action.
  - No effect to species or designated critical habitat. (See comments for justification)
    - Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
  - May affect, but not likely to adversely affect species or designated critical habitat (FEMA determination/USFWS/NMFS concurrence on file) **(Review Concluded)**
    - Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
  - Likely to adversely affect species or designated critical habitat
    - Formal consultation concluded. (Biological Assessment and Biological Opinion on file)
      - Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### C. Coastal Barrier Resources Act

- Project is not on or connected to CBRA Unit or Otherwise Protected Area **(Review Concluded)**.
- Project is on or connected to CBRA Unit or Otherwise Protected Area. (FEMA determination/USFWS consultation on file)
  - Proposed action an exception under Section 3505.a.6? **(Review Concluded)**
  - Proposed action not excepted under Section 3505.a.6.
    - Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### D. Clean Water Act

- Project would not affect any waters of the U.S. **(Review Concluded)**
- Project would affect waters, including wetlands, of the U.S.
  - Project exempted as in kind replacement or other exemption. **(Review Concluded)**
  - Project requires Section 404/401/or Section 9/10 (Rivers and Harbors Act) permit, including qualification under Nationwide Permits.
    - Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### E. Coastal Zone Management Act

- Project is not located in a coastal zone area and does not affect a coastal zone area **(Review concluded)**
- Project is located in a coastal zone area and/or affects the coastal zone
  - State administering agency does not require consistency review. **(Review Concluded)**.
  - State administering agency requires consistency review.
    - Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### F. Fish and Wildlife Coordination Act

- Project does not affect, control, or modify a waterway/body of water. **(Review Concluded)**
- Project affects, controls or modifies a waterway/body of water.
  - Coordination with USFWS conducted
    - No Recommendations offered by USFWS. **(Review Concluded)**
    - Recommendations provided by USFWS.

Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### G. Clean Air Act

- Project will not result in permanent air emissions. **(Review Concluded)**
  - Project is located in an attainment area. **(Review Concluded)**
  - Project is located in a non-attainment area.
    - Coordination required with applicable state administering agency..
- Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### H. Farmland Protection Policy Act

- Project does not affect designated prime or unique farmland. **(Review Concluded)**
  - Project causes unnecessary or irreversible conversion of designated prime or unique farmland.
    - Coordination with Natural Resource Conservation Commission required.
      - Farmland Conversion Impact Rating, Form AD-1006, completed.
- Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### I. Migratory Bird Treaty Act

- Project not located within a flyway zone. **(Review Concluded)**
- Project located within a flyway zone.
  - Project does not have potential to take migratory birds. **(Review Concluded)**
    - Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
  - Project has potential to take migratory birds.
    - Contact made with USFWS
      - Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### J. Magnuson-Stevens Fishery Conservation and Management Act

- Project not located in or near Essential Fish Habitat. **(Review Concluded)**
- Project located in or near Essential Fish Habitat.
  - Project does not adversely affect Essential Fish Habitat. **(Review Concluded)**
    - Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
  - Project adversely affects Essential Fish Habitat (FEMA determination/USFWS/NMFS concurrence on file)
    - NOAA Fisheries provided no recommendation(s) **(Review Concluded)**
      - Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
    - NOAA Fisheries provided recommendation(s)
      - Written reply to NOAA Fisheries recommendations completed.
        - Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### K. Wild and Scenic Rivers Act

- Project is not along and does not affect Wild or Scenic River (WSR) - **(Review Concluded)**
- Project is along or affects WSR
  - Project adversely affects WSR as determined by NPS/USFS. **FEMA cannot fund the action.** (NPS/USFS/USFWS/BLM consultation on file) **(Review Concluded)**
  - Project does not adversely affect WSR. (NPS/USFS/USFWS/BLM consultation on file)  
Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### L. Other Relevant Laws and Environmental Regulations

Identify relevant law or regulations, resolution and any consultation/references

## II. Compliance Review for Executive Orders

### A. E.O. 11988 - Floodplains

- No Effect on Floodplains/Flood levels and project outside Floodplain - **(Review Concluded)**
- Located in Floodplain or Effects on Floodplains/Flood levels
  - No adverse effect on floodplain and not adversely affected by the floodplain. **(Review Concluded).**  
Are project conditions required?  Yes (see section V)  No **(Review Concluded)**
  - Beneficial Effect on Floodplain Occupancy/Values **(Review Concluded).**
  - Possible adverse effects associated with investment in floodplain, occupancy or modification of floodplain environment
    - 8 Step Process Complete - documentation on file  
Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### B. E.O. 11990 - Wetlands

- No Effects on Wetland(s) and project located outside Wetland(s) - **(Review Concluded)**
- Located in Wetland or effects Wetland(s)
  - Beneficial Effect on Wetland - **(Review Concluded)**
  - Possible adverse effect associated with constructing in or near wetland
    - Review completed as part of floodplain review
    - 8 Step Process Complete - documentation on file  
Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

Comments:  
Correspondence/Consultation/References:

### C. E.O. 12898 - Environmental Justice For Low Income and Minority Populations

- No Low income or minority population in, near or affected by the project - **(Review Concluded)**
- Low income or minority population in or near project area
  - No disproportionately high and adverse impact on low income or minority population- **(Review Concluded)**

- Disproportionately high or adverse effects on low income or minority population  
Are project conditions required?  YES (see section V)  NO **(Review Concluded)**

*Comments:*  
*Correspondence/Consultation/References:*

### **III. Other Environmental Issues**

**Identify other potential environmental concerns in the comment box not clearly falling under a law or executive order (see environmental concerns scoping checklist for guidance).**

*Comments:*  
*Correspondence/Consultation/References:*

### **IV. Extraordinary Circumstances**

**Based on the review of compliance with other environmental laws and Executive Orders, and in consideration of other environmental factors, review the project for extraordinary circumstances.**

\* A “Yes” under any circumstance may require an Environmental Assessment (EA) with the exception of (ii) which should be applied in conjunction with controversy on an environmental issue. If the circumstance can be mitigated, please explain in comments. If no, leave blank.

**Yes**

- (i) Greater scope or size than normally experienced for a particular category of action
- (ii) Actions with a high level of public controversy
- (iii) Potential for degradation, even though slight, of already existing poor environmental conditions;
- (iv) Employment of unproven technology with potential adverse effects or actions involving unique or unknown environmental risks;
- (v) Presence of endangered or threatened species or their critical habitat, or archaeological, cultural, historical or other protected resources;
- (vi) Presence of hazardous or toxic substances at levels which exceed Federal, state or local regulations or standards requiring action or attention;
- (vii) Actions with the potential to affect special status areas adversely or other critical resources such as wetlands, coastal zones, wildlife refuge and wilderness areas, wild and scenic rivers, sole or principal drinking water aquifers;
- (viii) Potential for adverse effects on health or safety; and
- (ix) Potential to violate a federal, state, local or tribal law or requirement imposed for the protection of the environment.
- (x) Potential for significant cumulative impact when the proposed action is combined with other past, present and reasonably foreseeable future actions, even though the impacts of the proposed action may not be significant by themselves.

*Comments:*

## **V. Environmental Review Project Conditions**

General comments:

Project Conditions:

Monitoring Requirements:

Management (ICH)," June 2006 (<http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm073511.pdf>), and FDA's guidances for industry entitled "PAT—A Framework for Innovative Pharmaceutical Development, Manufacturing, and Quality Assurance," September 2004 (<http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm070305.pdf>), and "Quality Systems Approach to Pharmaceutical CGMP Regulations," September 2006 (<http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm070337.pdf>). Quality-by-design and risk-based approaches are also described in "Q10 Pharmaceutical Quality Systems," April 2009 (<http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm073517.pdf>).

The agency's Office of New Drug Quality Assessment in OPS, CDER, initiated a pilot program (70 FR 40719, July 14, 2005) to gain experience in assessing CMC sections of new drug applications (NDAs) that demonstrate an applicant's product knowledge and process understanding at the time of submission. This pilot was extremely useful in helping identify appropriate information to be shared regarding quality-by-design for small molecules. Although many of the principles of quality-by-design apply equally to small molecules and more complex pharmaceuticals, the ability to assess relevant attributes is a much greater challenge for complex pharmaceuticals.

Because the pilot program initiated in 2005 proved constructive, on July 2, 2008, FDA announced this pilot program to provide additional information to FDA for use in facilitating quality-by-design, risk-based approaches for complex molecules. Based on experience gained during the pilot program and prior knowledge, FDA will develop procedures to facilitate implementing a quality-by-design, risk-based approach for complex products. In addition, the experience gained by FDA under this pilot is expected to facilitate the development of guidance for industry. The pilot is open to original submissions and postapproval supplements to biologics license applications (BLAs) and NDAs reviewed by the Office of Biotechnology Products (OBP).

The July 2, 2008, notice provided deadlines related to the submission of certain information related to the pilot program. To ensure inclusive and

relevant results from the pilot program, this document extends the deadline for requests to participate in this pilot program for products regulated by OBP from September 30, 2009, to September 30, 2010. Because the deadline for requests to participate in the pilot is being extended, FDA is also extending the application submission deadlines. As explained in the July 2, 2008, notice, it is preferable for original applications to enter the pilot as INDs. FDA is extending the deadline for submission of INDs from March 31, 2010, to March 31, 2011. FDA is also extending the deadline for submission of postapproval supplements from March 31, 2010, to March 31, 2011. In addition, the pilot is being expanded from five to eight original applications for products reviewed by OBP (BLA or NDA) in Common Technical Document format, paper or electronic. See the July 2, 2008, notice for instructions on submitting requests to participate in the pilot program and additional information regarding the pilot program.

Dated: September 11, 2009.

**David Horowitz,**

*Assistant Commissioner for Policy.*

[FR Doc. E9-22378 Filed 9-16-09; 8:45 am]

BILLING CODE 4160-01-S

## ADVISORY COUNCIL ON HISTORIC PRESERVATION

### Draft Program Comment for the National Telecommunications and Information Administration and the U.S. Department of Agriculture's Rural Utilities Service Regarding the Effects of Communication Facilities Construction or Modification Subject To Review by the Federal Communications Commission

**AGENCY:** Advisory Council on Historic Preservation.

**ACTION:** Notice of Intent to Issue Program Comments for the National Telecommunications and Information Administration and the U.S. Department of Agriculture's Rural Utilities Service Regarding the Effects of Communication Facilities Construction or Modification Subject to Review by the Federal Communications Commission.

**SUMMARY:** The Advisory Council on Historic Preservation (ACHP) is considering issuing a Program Comment for the National Telecommunications and Information Administration and the U.S. Department of Agriculture's Rural Utilities Service that would relieve them of the need to conduct a separate Section 106 review regarding the effects

of communication facilities construction or modification that will be subject to such review by the Federal Communications Commission. The ACHP seeks public input on the proposed Program Comment.

**DATES:** Submit comments on or before October 8, 2009.

**ADDRESSES:** Address all comments concerning this proposed Program Comment to Blythe Semmer, Office of Federal Agency Programs, Advisory Council on Historic Preservation, 1100 Pennsylvania Avenue, NW., Suite 803, Washington, DC 20004. Fax (202) 606-8647. You may submit electronic comments to: [bsemmer@achp.gov](mailto:bsemmer@achp.gov).

**FOR FURTHER INFORMATION CONTACT:** Blythe Semmer, (202) 606-8552, [bsemmer@achp.gov](mailto:bsemmer@achp.gov); or Laura Dean, PhD, RUS Federal Preservation Officer, (202) 720-9634, [laura.dean@wdc.usda.gov](mailto:laura.dean@wdc.usda.gov).

**SUPPLEMENTARY INFORMATION:** Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their undertakings on historic properties and to provide the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment with regard to such undertakings. The ACHP has issued the regulations that set forth the process through which Federal agencies comply with these duties. Those regulations are codified under 36 CFR part 800 (Section 106 regulations).

Under Section 800.14(e) of those regulations, agencies can request the ACHP to provide a "Program Comment" on a particular category of undertakings in lieu of conducting individual reviews of each individual undertaking under such category, as set forth in 36 CFR 800.4 through 800.7.

The ACHP is now considering issuing a Program Comment to the National Telecommunications and Information Administration (NTIA) and the U.S. Department of Agriculture's Rural Utilities Service (RUS) that would relieve them of the need to conduct a separate Section 106 review regarding the effects of communication facilities construction or modification that will be subject to such review by the Federal Communications Commission (FCC).

## I. Background

On February 17, 2009, President Obama signed the American Recovery and Reinvestment Act of 2009 (Recovery Act) into law. The Recovery Act provides the NTIA and the RUS with \$7.2 billion to expand access to broadband services in the United States. In implementing this responsibility, NTIA, through its Broadband

Technology Opportunities Program (BTOP), will award grants to expand public computer capacity, encourage sustainable adoption of broadband service and deploy broadband infrastructure to unserved and underserved areas. RUS, through its Broadband Initiatives Program (BIP), will use loan and grant combinations to support broadband deployment in rural communities.

Technological solutions available to speed the deployment of affordable broadband under those programs are diverse and include the construction and modification of communications towers and antennas. Some of those communication towers and antennas will be regulated by the FCC. For such proposals that are regulated by the FCC and assisted by RUS and/or NTIA, each agency would be individually responsible for compliance with Section 106.

The FCC, ACHP, and the National Conference of State Historic Preservation Officers (NCSHPO) have executed the Nationwide Programmatic Agreement for Review of Effects on Historic Properties For Certain Undertakings Approved by the FCC (FCC Nationwide PA) and the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas (FCC Collocation PA) to govern how FCC meets its Section 106 responsibilities for certain undertakings, including communication towers and antennas. In implementing the terms of those programmatic agreements, FCC has established a procedure that is supported by innovative approaches that expedite review and facilitate the involvement of stakeholders, most notably Indian tribes, to ensure that effects to historic properties are taken into account.

Currently, it is not possible for RUS and NTIA to benefit from the implementation of those programmatic agreement solutions in meeting their individual Section 106 responsibilities, because the FCC Nationwide PA stipulates that it does not govern the Section 106 responsibilities of any federal agency other than the FCC. This means that FCC, RUS and NTIA must each conduct separate Section 106 reviews for the same proposed undertaking. Such an approach does not seem to be efficient, particularly within the context of the compressed schedules established by the Recovery Act. Accordingly, pursuant to 36 CFR 800.14(e), NTIA and RUS have requested the ACHP to issue a program comment that removes their requirement to comply with Section 106 with regard to the effects of

communications facilities construction or modification that has undergone, will undergo, or is exempt from, Section 106 review by the FCC under the cited FCC programmatic agreements.

Under the Recovery Act, all NTIA and RUS grants and loans must be awarded by September 30, 2010. Construction of proposals receiving awards must be complete within three years of the award. Recovery Act responsibilities of NTIA and RUS, therefore, will extend to 2013. In order to accommodate for currently unknown contingencies, RUS and NTIA have requested that the effective termination of the proposed program comment be extended to September 30, 2015.

RUS and NTIA have informed the ACHP that, prior to their formal request, they sought to share their intent to develop this program comment with the following historic preservation, tribal, and telecommunications industry organizations: National Trust for Historic Preservation, NCSHPO, American Cultural Resources Association, National Association of Tribal Historic Preservation Officers (NATHPO), United South and Eastern Tribes (USET), National Congress of American Indians, Affiliated Tribes of Northwest Indians, Office of Hawaiian Affairs (OHA), CTIA The Wireless Association, PCIA—The Wireless Infrastructure Association, and the Association of Public Safety Communications Officials. RUS and NTIA discussed this proposal with all of the listed parties except OHA, and reported that, in general, those organizations contacted were supportive, noting that this approach represented a common sense solution. In addition to those parties, NTIA and RUS have worked closely with the FCC throughout the development of the proposed program comment.

RUS and NTIA also reported that several parties expressed concern that the proposed program comment would alter or modify the FCC Nationwide PA. That is not the intent of the proposed program comment and a statement to that effect has been included in the proposal itself.

RUS and NTIA anticipate that BTOP/EIP applications will not consist solely of tower construction and modification. Accordingly, they have clarified the applicability of the program comment for multi-component proposals.

NCSHPO was concerned about how this program comment would affect existing agreements. If, under the program comment, RUS and NTIA are not responsible for compliance with Section 106 for FCC regulated towers,

then the trigger for existing agreements has been removed.

USET explained to RUS and NTIA that it did not support expansion of the scope of the proposed program comment to all federal agencies. Accordingly, the proposal submitted to the ACHP applies to only NTIA and RUS. Finally, USET expressed concern that this process is being rushed and, as a consequence, tribes will not be allowed sufficient time to consult with agencies. However, the congressionally mandated Recovery Act schedules argue for an expedited process.

### III. Text of the proposed Program Comment

The text of the proposed Program Comment is included below:

#### **Program Comment for Streamlining Section 106 Review for Wireless Communication Facilities Construction and Modification Subject To Review Under the FCC Nationwide Programmatic Agreement and/or the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas**

*I. Background:* The Rural Utilities Service (RUS) and the National Telecommunications and Information Administration (NTIA) provide financial assistance to applicants for broadband deployment, which can involve the construction and placement of communications towers and antennas, and therefore RUS and NTIA must comply with Section 106 of the National Historic Preservation Act, 16 U.S.C. 470f, and its implementing regulations at 36 CFR part 800 (Section 106). Some of those communications towers and antennas are also regulated by the Federal Communications Commission (FCC), and therefore undergo, or are exempted from, Section 106 review under the Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the FCC (FCC Nationwide PA) and the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas (FCC Collocation PA). The FCC Nationwide PA was executed by the FCC, the Advisory Council on Historic Preservation (ACHP), and the National Conference of State Historic Preservation Officers (NCSHPO) on October 4, 2004. The FCC Collocation PA was executed by the FCC, ACHP, and NCSHPO on March 16, 2001. The undertakings addressed by the FCC Nationwide PA primarily include the construction and modification of communication towers. The undertakings addressed by the FCC

Collocation PA include the collocation of communications equipment on existing structures and towers.

This Program Comment is intended to streamline Section 106 review of the construction and modification of communication towers and antennas for which FCC and RUS or NTIA share Section 106 responsibility.

Nothing in this Program Comment alters or modifies the FCC Nationwide PA or the FCC Collocation PA, or imposes Section 106 responsibilities on the FCC for elements of an RUS or NTIA undertaking that are unrelated to a communications facility within the FCC's jurisdiction or are beyond the scope of the FCC Nationwide PA.

*II. Establishment and Authority:* This Program Comment was issued by the ACHP on (date to be determined) pursuant to 36 CFR 800.14(e).

*III. Date of Effect:* This Program Comment went into effect on (date to be determined).

*IV. Use of this Program Comment to Comply with Section 106 for the Effects of Facilities Construction or Modification Reviewed under the FCC Nationwide PA and/or the FCC Collocation PA:* RUS and NTIA will not need to comply with Section 106 with regard to the effects of communication facilities construction or modification that has either undergone or will undergo Section 106 review, or is exempt from Section 106 review, by the FCC under the FCC Nationwide PA and/or the FCC Collocation PA. For purposes of this program comment, review under the FCC Nationwide PA means the historic preservation review that is necessary to complete the FCC's Section 106 responsibility for an undertaking that is subject to the FCC Nationwide PA.

When an RUS or NTIA undertaking includes both communications facilities construction or modification covered by the FCC Nationwide PA or Collocation PA and components in addition to such communication facilities construction or modification, RUS and NTIA will comply with Section 106 in accordance with the process set forth at 36 CFR 5 800.3 through 800.7, or 36 CFR 800.8(c), or another applicable alternate procedure under 36 CFR 800.14, but will not have to consider the effects of the communication facilities construction or modification component of the undertaking on historic properties. Whenever RUS or NTIA uses this Program Comment for such undertakings, RUS or NTIA will apprise the relevant State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) of the use of this Program Comment for the

relevant communication facilities construction or modification component.

*V. Amendment*—The ACHP may amend this Program Comment after consulting with FCC, RUS, NTIA and other parties as appropriate, and publishing notice in the **Federal Register** to that effect.

*VI. Sunset Clause*—This Program Comment will terminate on September 30, 2015, unless it is amended to extend the period in which it is in effect.

*VII. Termination*—The ACHP may terminate this Program Comment by publication of a notice in the **Federal Register** thirty (30) days before the termination takes effect.

**Authority:** 36 CFR 800.14(e).

Dated: September 10, 2009.

**John M. Fowler,**

*Executive Director.*

[FR Doc. E9-22273 Filed 9-16-09; 8:45 am]

**BILLING CODE 4310-K6-P**

## DEPARTMENT OF HOMELAND SECURITY

### Coast Guard

[Docket No. USCG-2009-0744]

### Certificate of Alternative Compliance for the Offshore Supply Vessel TYLER STEPHEN

**AGENCY:** Coast Guard, DHS.

**ACTION:** Notice.

**SUMMARY:** The Coast Guard announces that a Certificate of Alternative Compliance was issued for the offshore supply vessel *Tyler Stephen* as required by 33 U.S.C. 1605(c) and 33 CFR 81.18.

**DATES:** The Certificate of Alternative Compliance was issued on July 29, 2009.

**ADDRESSES:** The docket for this notice is available for inspection or copying at the Docket Management Facility (M-30), U.S. Department of Transportation, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also find this docket on the Internet by going to <http://www.regulations.gov>, inserting USCG-2009-0744 in the "Keyword" box, and then clicking "Search."

**FOR FURTHER INFORMATION CONTACT:** If you have questions on this notice, call CWO2 David Mauldin, District Eight, Prevention Branch, U.S. Coast Guard, telephone 504-671-2153. If you have questions on viewing or submitting material to the docket, call Renee V.

Wright, Program Manager, Docket Operations, telephone 202-366-9826.

### SUPPLEMENTARY INFORMATION:

#### Background and Purpose

The offshore supply vessel *Tyler Stephen* will be used for offshore supply operations. Full compliance with 72 COLREGS and the Inland Rules Act will hinder the vessel's ability to maneuver within close proximity of offshore platforms. Due to the design of the vessel, it would be difficult and impractical to build a supporting structure that would put the side lights within 5.4' from the greatest breadth of the Vessel, as required by Annex I, paragraph 3(b) of the 72 COLREGS and Annex I, Section 84.05(b), of the Inland Rules Act. Compliance with the rule would cause the lights on the offshore supply vessel *Tyler Stephen* to be in a location which will be highly susceptible to damage from offshore platforms. The offshore supply vessel *Tyler Stephen* cannot comply fully with lighting requirements as set out in international regulations without interfering with the special function of the vessel (33 U.S.C. 1605(c); 33 CFR 81.18).

Locating the side lights 6'-9<sup>5</sup>/<sub>8</sub>" inboard from the greatest breadth of the vessel on the pilot house will provide a shelter location for the lights and allow maneuvering within close proximity to offshore platforms.

In addition, the horizontal distance between the forward and aft masthead lights may be 23'-1<sup>1</sup>/<sub>8</sub>". Placing the aft masthead light at the horizontal distance from the forward masthead light as required by Annex I, paragraph 3(a) of the 72 COLREGS, and Annex I, Section 84.05(a) of the Inland Rules Act, would result in an aft masthead light location directly over the aft cargo deck, where it would interfere with loading and unloading operations.

The Certificate of Alternative Compliance allows for the placement of the side lights to deviate from requirements set forth in Annex I, paragraph 3(b) of 72 COLREGS, and Annex I, paragraph 84.05(b) of the Inland Rules Act. In addition the Certificate of Alternative Compliance allows for the horizontal separation of the forward and aft masthead lights to deviate from the requirements of Annex I, paragraph 3(a) of 72 COLREGS, and Annex I, Section 84.05(a) of the Inland Rules Act.

This notice is issued under authority of 33 U.S.C. 1605(c), and 33 CFR 81.18.

## Appendix K



*Preserving America's Heritage*

### **Program Comment for Streamlining Section 106 Review for Wireless Communication Facilities Construction and Modification Subject to Review Under the FCC Nationwide Programmatic Agreement and/or the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas.**

#### **I. Background:**

The Rural Utilities Service (RUS), the National Telecommunications and Information Administration (NTIA), and the Federal Emergency Management Agency (FEMA) provide financial assistance to applicants for various undertakings, including broadband deployment, which can involve the construction and placement of communications towers and antennas. RUS, NTIA, and FEMA must therefore comply with Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470f, and its implementing regulations at 36 C.F.R. part 800 (Section 106) for these undertakings. Some of those communications towers and antennas are also regulated by the Federal Communications Commission (FCC), and therefore undergo, or are exempted from, Section 106 review under the Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the FCC (FCC Nationwide PA) and the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas (FCC Collocation PA). The FCC Nationwide PA was executed by the FCC, the Advisory Council on Historic Preservation (ACHP), and the National Conference of State Historic Preservation Officers (NCSHPO) on October 4, 2004. The FCC Collocation PA was executed by the FCC, ACHP, and NCSHPO on March 16, 2001. The undertakings addressed by the FCC Nationwide PA primarily include the construction and modification of communication towers. The undertakings addressed by the FCC Collocation PA include the collocation of communications equipment on existing structures and towers.

This Program Comment is intended to streamline Section 106 review of the construction and modification of communication towers and antennas for which FCC and RUS, NTIA, or FEMA share Section 106 responsibility.

Nothing in this Program Comment alters or modifies the FCC Nationwide PA or the FCC Collocation PA, or imposes Section 106 responsibilities on the FCC for elements of a RUS, NTIA, or FEMA undertaking that are unrelated to a communications facility within the FCC's jurisdiction or are beyond the scope of the FCC Nationwide PA.

#### **II. Establishment and Authority:**

This Program Comment was issued by the ACHP on October 23, 2009 pursuant to 36 C.F.R. § 800.14(e).

### III. Date of Effect:

This Program Comment went into effect on October 23, 2009.

### IV. Use of this Program Comment to Comply with Section 106 for the Effects of Facilities Construction or Modification Reviewed under the FCC Nationwide PA and/or the FCC Collocation PA:

RUS, NTIA and FEMA will not need to comply with Section 106 with regard to the effects of communication facilities construction or modification that has either undergone or will undergo Section 106 review, or is exempt from Section 106 review, by the FCC under the FCC Nationwide PA and/or the FCC Collocation PA. For purposes of this program comment, review under the FCC Nationwide PA means the historic preservation review that is necessary to complete the FCC's Section 106 responsibility for an undertaking that is subject to the FCC Nationwide PA.

When an RUS, NTIA, or FEMA undertaking includes both communications facilities construction or modification covered by the FCC Nationwide PA or Collocation PA and components in addition to such communication facilities construction or modification, RUS, NTIA, or FEMA, as applicable, will comply with Section 106 in accordance with the process set forth at 36 C.F.R. §§ 800.3 through 800.7, or 36 C.F.R. § 800.8(c), or another applicable alternate procedure under 36 C.F.R. § 800.14, but will not have to consider the effects of the communication facilities construction or modification component of the undertaking on historic properties. Whenever RUS, NTIA, or FEMA uses this Program Comment for such undertakings, RUS, NTIA or FEMA will apprise the relevant State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) of the use of this Program Comment for the relevant communication facilities construction or modification component.

### V. Amendment:

The ACHP may amend this Program Comment after consulting with FCC, RUS, NTIA, FEMA, and other parties as appropriate, and publishing notice in the Federal Register to that effect.

### VI. Sunset Clause:

This Program Comment will terminate on September 30, 2015, unless it is amended to extend the period in which it is in effect.

### VII. Termination:

The ACHP may terminate this Program Comment by publication of a notice in the Federal Register thirty (30) days before the termination takes effect.