Memorandum

MIAMI-DADE COUNTY

GOE Substitute no. 2 Agenda Item No. 3(A)

Date: December 11, 2007

To: Honorable Chairperson Bruno A. Barreiro
and Members, Board of County Commissioners

From: R. A. Cuevas, Jr.
County Attorney

Subject: Ordinance relating to the safety of cranes and other hoisting equipment

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The accompanying ordinance was prepared and placed on the agenda at the request of Commissioner Audrey M. Edmonson.

The second substitute was prepared to address the recommendations of the Crane and Heavy Equipment Advisory Committee formulated in its meeting of November 26th. It differs from the first substitute in the following material respect:

1. The effective date as it relates to qualifications and certification of crane operators is pushed back to January 1, 2009 to allow for implementation. The effective date is further clarified with respect to its application to existing equipment.
2. The Building Official is allowed the discretion to reduce the wind load requirements applicable to cranes upon application of identified safety factors.
3. It adds reference to the Miami-Dade County Transit Adjacent Construction Manual in connection with the siting of the Hoisting Equipment.
4. It identifies the Board of Rules and Appeals as the administrative board empowered to consider appeals of decisions of the Building Officials under the Chapter and to render interpretive rulings.
5. It corrects technical references and makes minor modifications to other sections.

The second substitute also contains a grandfathering provision to allow certification of crane operators with three (3) years' demonstrated experience.

R. A. Cuevas, Jr.
County Attorney

RAC/HB/es

MEMORANDUM
(Revised)

TO: Honorable Chairman Bruno A. Barreiro and Members, Board of County Commissioners

DATE: January 10, 2008

FROM: R. A. Cuevas, Jr. County Attorney

SUBJECT: Agenda Item No.

Please note any items checked.

_____ **"4-Day Rule" ("3-Day Rule" for committees) applicable if raised**

_____ **6 weeks required between first reading and public hearing**

_____ **4 weeks notification to municipal officials required prior to public hearing**

_____ **Decreases revenues or increases expenditures without balancing budget**

_____ **Budget required**

✓ **Statement of fiscal impact required**

_____ **Bid waiver requiring County Manager's written recommendation**

_____ **Ordinance creating a new board requires detailed County Manager's report for public hearing**

_____ **Housekeeping item (no policy decision required)**

_____ **No committee review**

Approved _____ Mayor
Veto _____
Override _____

Substitute No. 2
Agenda Item No.

ORDINANCE NO. _____

ORDINANCE RELATING TO THE SAFETY OF CRANES AND OTHER HOISTING EQUIPMENT; PROVIDING DEFINITIONS; PROVIDING STANDARDS FOR MANUFACTURE AND INSTALLATION; PROVIDING FOR EDUCATION AND CERTIFICATION OF OPERATORS; ESTABLISHING STANDARDS FOR HURRICANE PREPAREDNESS; PROVIDING FOR ENFORCEMENT; CREATING CHAPTER 8E OF THE CODE; PROVIDING SEVERABILITY, INCLUSION IN THE CODE, AND AN EFFECTIVE DATE

WHEREAS, Miami-Dade County is in the midst of an unprecedented construction boom; and

WHEREAS, there are more than 100 major projects under construction in the Miami-Dade County metropolitan area utilizing heavy hoisting equipment such as tower cranes; and

WHEREAS, the construction boom and use of cranes and other heavy hoisting equipment have resulted in an increased number of tragic accidents and fatalities; and

WHEREAS, OSHA statistics show 14 construction fatalities in the South Florida area during the period from January to May, 2006 which nearly match fatalities for the entire year of 2005; and

WHEREAS, Miami-Dade County's geographical location exposes it to the onslaught of hurricanes of increasing frequency in recent seasons; and

WHEREAS, the presence of a substantial number of cranes and other heavy hoisting equipment during hurricane season poses serious concerns of public safety; and

WHEREAS, large metropolitan areas such as Los Angeles and New York City have local laws that govern crane operations and safety; and

WHEREAS, a number of responsible equipment owners/manufacturer's representatives, operators, and other members of the construction industry have served in the Crane and Heavy Equipment Advisory Committee (the "Committee"), an advisory board to Miami-Dade County's efforts to enhance these safety regulations; and

WHEREAS, the Committee has recommended the enhanced safety regulation of cranes and heavy hoisting equipment in substantially the form of the following ordinance as necessary and desirable for the protection of public health and safety,

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that:

Section 1. Chapter 8E of the Code of Miami-Dade County is hereby created to read in its entirety as follows:

8E. CRANES AND HOISTING EQUIPMENT

Section 8E-1. Definitions.

As used in this chapter, the following words and terms shall have the following meaning:

(a) Accredited Certifying Entity - Accredited Certifying Entity. A certifying entity is any organization whose certification program is accredited by the National Commission for Certifying Agencies (NCCA).

(b) Crane - means a machine for lifting or hovering a load and moving it horizontally, in which the consisting mechanism is an integral part of the machine. It may be driven manually or by power and may be a fixed or mobile machine and includes tower crane and mobile tower crane. The term does not include stackers, lift trucks, power shovels, backhoes, excavators, concrete pouring equipment, or straddle type mobile boat hoists.

(c) Hoisting Equipment – includes mast climbing work platforms, tower cranes, mobile cranes and personnel and material hoists.

(d) Mast – A vertical structure that supports and guides the elevating assembly.

(e) Mast Climbing Work Platform – A powered device consisting of an elevating assembly, base or chassis and mast, that when erected, is capable of supporting personnel, material, equipment, tools, and is capable of traveling vertically in infinitely adjustable increments to reach the desire work level.

(f) Tower Crane – a hammerhead, luffing, or other type of tower crane that is regularly assembled and disassembled for use at various sites. It is usually characterized by provisions to facilitate erection and dismantling and may include features to permit climbing or telescoping.

(g) Mobile Cranes – means a mobile or locomotive crane covered within the scope defined in Section I, American Society of Mechanical Engineers (ASME) B30.5 and includes crawler cranes, locomotive cranes, wheel mounted cranes, and any variation hereof that retain the same fundamental characteristics.

(h) Personnel and Material Hoist - A mechanism and its hoistway for use in connection with the construction, alteration, on-going maintenance or demolition of a building, structure or other work. It is used for hoisting and lowering workers or material or both, and is equipped with a car that moves vertically on guide members.

Section 8E-2. Purpose, Scope, Exceptions.

This chapter shall provide a uniform standard for the construction, installation, operation and use of Hoisting Equipment, for the inspection and certification of Hoisting Equipment, and for the education and certification of Hoisting Equipment operators. This chapter shall be of uniform applicability throughout incorporated and unincorporated Miami-Dade County. The following Hoisting Equipment is specifically exempted from the application of this chapter:

(a) Mobile cranes having a boom length of less than 25 feet or a maximum rated load capacity of less than 15,000 pounds.

(b) Operators of electric line trucks.

(c) Marine terminal operations.

(d) Aerial work platforms or boom supported platforms covered by the ANSI/SIA A92 series of standards.

Section 8E-3. Referenced Codes and Standards.

The codes and standards referenced in this chapter shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this Chapter and referenced codes and standards, the provisions of this chapter shall apply. Where differences occur between different provisions of referenced codes and standards, the conflict shall be resolved in favor of the provision that provides the greatest measure of protection to the public safety. Where standards are not otherwise specified, the applicable standards shall be those set forth by the manufacturer's published literature including all updates with respect to the equipment at issue.

Section 8E-4. Tower Crane Manufacture, Installation and Use.

The following standards shall be applicable to tower cranes proposed to be installed and used within the incorporated and unincorporated areas of Miami-Dade County:

(a) the equipment manufacturers (O.E.M.) specifications,

(b) the mandatory rules contained within the applicable ASME B30 standard of the American Society of Mechanical Engineers made applicable to construction Tower Cranes (ASME B30.3),

(c) the most current standards of the U.S. Department of Labor, Occupational Safety and Health Administration ("OSHA") applicable to cranes including 29 CFR 1926.550,

(d) the wind load standards contained within SEI/ASCE-7 for High Velocity Hurricane Zones as applied to the crane base foundation, the tie-ins to the building, the free-standing height and the height above the top tie-in. In applying the

provisions of SEI/ASCE-7 for temporary installations, the design velocity reduction factors contained in SEI/ASCE 37-02 may be considered in factoring the wind speed at the discretion of the Building Official. The decision shall be made by the Building Official on a site-by-site basis. Factors to be considered include, but are not limited to, proximity to other structures, density, swing radius of the crane, hoist location and other safety requirements.

Section 8E-5. Standards for Mobile Crane Manufacture, Installation and Use.

The following standards shall be applicable to mobile cranes proposed to be installed and used within the incorporated and unincorporated areas of Miami-Dade County:

(a) the equipment manufacturers (O.E.M.) specifications,

(b) the mandatory rules contained within the applicable standard of the American Society of Mechanical Engineers made applicable to construction Mobile Cranes (ASME B30.5),

(c) the most current standards of the U.S. Department of Labor, Occupational Safety and Health Administration ("OSHA") applicable to cranes including 29 CFR 1926.550 and 29 CFR 1910.80.

Section 8E-6. Standards for Personnel/Material Hoist Manufacture, Installation and Use.

The following standards shall be applicable to personnel/material hoists proposed to be installed and used within the incorporated and unincorporated areas of Miami-Dade County:

(a) the equipment manufacturers (O.E.M.) specifications,

(b) the mandatory rules contained within the applicable ANSI standard (ANSI A10.4). Bridging devices may be used provided they meet manufacturers specifications,

(c) the most current standards of the U.S. Department of Labor, Occupational Safety and Health Administration ("OSHA") applicable to cranes including 29 CFR 1926.552,

(d) the wind load standards contained within SEI/ASCE-7 for High Velocity Hurricane Zones as applied to the hoist tie

ins and the floor shoe connections. In applying the provisions of SEI/ASCE-7 for temporary installations, the design velocity reduction factors contained in SEI/ASCE 37-02 may be considered in factoring the wind speed at the discretion of the Building Official. The decision shall be made by the Building Official on a site-by-site basis. Factors to be considered include, but are not limited to, proximity to other structures, density, swing radius of the crane, hoist location and other safety requirements.

Section 8E-7. Crane Siting.

Together with the permit documents, the permit applicant shall submit to the Building Official all required applications and/or approvals related to the operation of the crane on site, including but not limited to any required by the Federal Aviation Administration pursuant to 14 CFR Part 77 and FAA Advisory Circular AC70/7460-2K and the Miami-Dade County Transit Adjacent Construction Manual.

Section 8E-8. Building Permits and Inspections.

(a) Permits. In addition to the requirements of the Florida Building Code, and of Section 8-10 of this Code, the following shall apply to any construction involving the placement or erection of Hoisting Equipment regulated by this chapter. The structural building plan for any threshold building shall contain sufficient information for the Building Official to determine whether the Hoisting Equipment to be used in the construction complies with the standards set forth in this section. In the event that the complete fabrication, including the connection to the foundation, base structural support and attachment to the building structure, requires the preparation and approval of shop drawings, the Building Official may issue the building permit subject to permit holds. The permit holds shall be released upon completion and approval of all required information. In the event that the permitted construction is not of a threshold building, the Hoisting Equipment information shall be supplied to the Building Official together with the permit application.

(b) Inspections. In the event that any construction involves the use of Hoisting Equipment regulated by this chapter, the Building Official shall require the use of a Special Crane Inspector. The Special Crane Inspector shall perform the inspections set forth in the approved inspection plan and report to the Building Official the results of the inspections in forms designed for that purpose. The

Building Official shall be authorized to suspend or revoke the building permit relating to any construction for gross negligence, gross incompetence, failures to correct any identified failures to comply with the applicable standards, or willful or repeated disregard of any occupational safety standard or order involving the crane. Decisions of the Building Official may be appealed to the Board of Rules and Appeals in the manner set forth in this Code.

(c) Schedule. The inspection plan shall provide for crane inspection which shall occur at a minimum as follows:

Tower Cranes

- After initial erection of crane
- After each time top-climbing is completed on the crane and/or after each period of 6 months the crane has been erected on a construction project
- After the passage of a hurricane or catastrophic wind event in the area of installation of the crane
- After a major incident/accident involving the tower crane

Mobile Cranes

- Annual inspection with a rated load test within the configuration of the crane and the manufacturer's recommended load chart
- After a major incident/accident involving the mobile crane
- After the passage of a hurricane or catastrophic wind event in the area of an assembled and erected mobile crane

Personnel/Material Hoists

- After initial erection of personnel/material hoist, including a full rated load drop test
- Every 90 days, including a full load drop test
- After a hurricane
- After a major incident/accident involving the personnel/material hoist

(d) Hoisting Equipment Inspection Companies. To perform inspections of Hoisting Equipment, companies and/or individuals shall comply at a minimum with the following requirements:

- Incorporated in the State of Florida conducting third party inspections on cranes and/or personnel/material hoists.

- Cannot be wholly or partly owned by an Equipment Owner or Equipment Manufacturer in the crane and hoisting industry.

- Cannot be receiving financial support from an equipment Owner or Equipment Manufacturer in the crane and hoisting industry.

- Must carry a minimal of $1,000,000 professional liability insurance.

- Must carry a minimal of $1,000,000 general liability insurance.
- Must have in its full time employment an individual who is qualified to perform inspections as set forth in subpart (e) below.

(e) Qualification of individuals performing crane inspections. To perform the requisite crane inspections, individuals must possess the following qualifications:

- Minimal five (5) years of work experience in the crane industry specifically erecting, operating, maintaining, inspecting and supervising equipment. Two (2) of the five (5) years of documented work experience must be in the capacity of conducting inspections of cranes.

- Must provide proof, reasonably satisfactory to the Certifying Entity of completion of at least one (1) factory sponsored or approved technical course to inspect the subject equipment.

- Cannot be an employee of an Equipment Owner or Equipment Manufacturer in the crane and hoisting industry.

(f) Qualifications of personnel/material hoist employee inspector. To perform the requisite inspections, an individual must possess the following qualifications:

- Minimal five (5) years of work experience in the personnel/material hoisting industry, specifically erecting, operating, maintaining, inspecting and supervising of equipment. Two (2) years of the five (5) years of documented work experience must be in the capacity of conducting inspections of personnel/material hoists and following all applicable codes and standards.

- Must provide proof, reasonably satisfactory to the Certifying Entity of completion of at least one (1) factory sponsored or approved technical course to inspect the subject equipment

(g) The Office of Building Code Compliance of Miami-Dade County shall be the Certifying Entity responsible for certifying and decertifying Special Hoisting Equipment Inspectors in accordance with the provisions of this Chapter. To implement the provisions of this Chapter, the County Manager shall issue an implementing order to be approved by this Board.

(h) Decisions of the Building Official based on the application of this Chapter shall be appealed to the Board of Rules and Appeals in the manner set forth in this Code.

(i) The Board of Rules and Appeals may interpret provisions of this Chapter in order to cover a special case if it appears the provisions do not definitely cover the point raised or if the intent of the provision is not clear, or that ambiguity exists in the wording, but shall have no authority to grant variances where this Chapter is clear and specific

Section 8E-9. Tower Crane and Mobile Crane Operator Qualifications and Certifications.

(a) Tower cranes and mobile cranes shall only be operated by individuals certified in accordance with this Section. Certificates shall be issued by the Accredited Certifying Entity and shall be valid for five years. Certificates shall be issued to operators who:

(1) Pass a physical examination conducted by a physician which at a minimum shall include the examination criteria specified in the American Society of Mechanical Engineers (ASME) B30.5-2000 standard, Chapter 5-3.1.2(a)(1-5, 7, 8) or the U.S. Department of Transportation (US DOT) physical examination requirements contained in 49 CFR Sections 391.41 through 391.49.

(2) Pass a substance abuse test. The level of testing shall be consistent with the standard practice for the industry where the crane is in use and this test shall be conducted by a recognized laboratory service.

(3) Pass a written examination developed, validated, and administered in accordance with the Standards for Educational and Psychological Testing (Copyright 1999) published jointly by the Joint Committee of the American Educational Research Association, the American Psychological Association, and the National Council in Measurement in Education. The exam shall test knowledge and skills identified as necessary for safe crane operations and shall, at a minimum, include the following:

(a) Operational characteristics and controls, including characteristic and performance questions appropriate to the crane type for which qualification is sought;

(b) emergency control skills, such as a response to fire, power line contact, loss of stability, or control malfunction;

(c) a demonstration of basic arithmetic skills necessary for crane operation and the ability to read and comprehend the crane manufacturer's operation and maintenance instruction materials, including load capacity information (load charts) for the crane for which certification is sought;

(d) knowledge of the requirements of this chapter, chapters 5-0 through 5-3 of The American Society of Mechanical Engineers (ASME) B30.5-2000 and B30.5a-2002 Addenda to the standard for mobile and locomotive cranes or chapters 4-0 through 4-3 of the ASME B30.4-1996 standard for portal, tower, and pedestal cranes or Chapter 3-3 of the ASME B30.3-1993 standard for Construction Tower Cranes, depending on the type of crane(s) the operator intends to operate.

(4) Pass a "hands-on" examination to demonstrate proficiency in operating the specific type of crane, which at a minimum shall include pre-start and post-start inspection, maneuvering skills, shutdown, and securing procedures.

(b) Re-certification. Crane operators shall re-certify every five (5) years and shall be required to meet all of the qualifications set forth in subsection (a). Operators with at least one-thousand (1,000) hours of documented experience operating the specific type of crane for which re-certification is sought as covered by this section during the immediately preceding certification period and who meet the physical examination, substance abuse, and written examination requirements set forth in subsections (a)(1), (a)(2) and (a)(3) of this section shall not be required to take the "hands-on" examination specified in subsection (a)(4) to re-certify. (c) Trainees may be authorized to operate mobile or tower cranes provided they are under the direct supervision of an operator possessing a valid certificate of competency for the type of crane operated by the trainee. The term direct supervision means the supervising operator is in the immediate area of the trainee and within visual sighting distance and able to effectively communicate with the trainee. When performing direct supervision, the supervising operator shall have no other duties other than to observe the operation of the crane by the trainee.

(c) Existing Operators. For the period commencing on the effective date and ending one year thereafter, the certification requirements of this Section shall be deemed satisfied by any individual who satisfies the waiver requirements of this subsection. To be certified by waiver an individual must: (a) make written application for waiver from the Accredited Certifying Entity; (b) demonstrate to the Accredited Certifying Entity three years experience in the operation of tower cranes and mobile cranes and (c) pass a hands-on examination to demonstrate proficiency in operating the specific type of crane. A certification obtained by waiver shall be valid only for five years and shall be subject to recertification in the same manner provided for in subsection (b) above.

Section 8E-10. Communications.

(a) Crane to Crane. When more than one crane is used within the same swing radius an independent and clear channel of radio communication and operable equipment to transmit same between the cranes shall be provided.

(b) Signal persons. Prior to signaling crane operators, all signal persons shall be tested and demonstrate their qualifications in the following areas:

(1) basic understanding of crane operation and limitations,

(2) standard hand and voice signals as provided in the applicable American National Standard (ANSI).

Certification of the signal person shall be in accordance with any recognized federal, state or local testing program.

Section 8E-11. Hurricane Preparedness.

General. Hoisting Equipment shall abide by the following hurricane precautions:

(1) Hoisting Equipment shall abide by all manufacturers recommendations relating to hurricane preparedness including any relating to the placement and removal of advertisement banners, the use and removal of rigging.

(2) Tower crane turntable must be lubricated prior to the event.

(3) Mobile cranes with fixed booms must be laid down whenever feasible.

(4) Hydraulic cranes must have booms retracted and stored.

(5) Any counterweighted hoist must have the counterweight locked below the top tie-in.

(6) Tower crane must be set in the weathervane position.

(7) All rigging must be removed from the hoist block.

(8) All power at base of tower shall be disconnected by a general contractor.

(9) A hurricane preparedness plan which conforms with the requirements of this section shall be available at the site for inspection.

Section 8E-12. Additional Enforcement.

In addition to other methods for enforcement provided in this Chapter, the Miami-Dade County Building Code Compliance Office shall be authorized to enforce the provisions of this Section through the issuance of civil violations fines in the manner more specifically provided in

Chapter 8CC of this Code. Violation of this Chapter involving any damages to the public health and safety may also be addressed by the County through an action in court for injunctive or other available relief.

Section 2. Chapter 8CC of the Code of Miami-Dade County, Florida, is hereby amended to read as follows:[1]

* * *

Sec. 8CC-10. Schedule of civil penalties.

* * *

Code Section	*Description of Violation*	*Civil Penalty*
	* * *	
>>8E	Failure to maintain or operate crane or heavy equipment in a safe condition in accordance with applicable standards; failure to abide by hurricane preparedness plan<<	$500.00

Section 3. If any section, subsection, sentence, clause or provision of this ordinance is held invalid, the remainder of this ordinance shall not be affected by such invalidity.

Section 4. It is the intention of the Board of County Commissioners, and it is hereby ordained that the provisions of this ordinance, including any Sunset provision, shall become and be made a part of the Code of Miami-Dade County, Florida. The sections of this ordinance may be renumbered or re-lettered to accomplish such intention, and the word "ordinance" may be changed to "section," "article," or other appropriate work.

Section 5. This ordinance shall become effective ten (10) days after the date of

[1] Words stricken through and/or [[double bracketed]] shall be deleted. Words underscored and/or >>double arrowed<< constitute the amendment proposed. Remaining provisions are now in effect and remain unchanged.

enactment unless vetoed by the Mayor, and if vetoed, shall become effective only upon an override by this Board. By exception, the provisions of this ordinance relating to the qualifications and certification of crane operators shall become effective on January 1, 2009. Existing installations shall be governed by the standards provided in Section IV of ASME B30.3

PASSED AND ADOPTED:

Approved by County Attorney as
to form and legal sufficiency.

Prepared by:

Hugo Benitez

Sponsored by Commissioner Audrey M. Edmonson