BOARD OF COUNTY COMMISSIONERS
INDIAN RIVER COUNTY, FLORIDA

SPECIAL CALL MEETING
A G E N D A

WEDNESDAY, JULY 11, 2007 – 5:30 P.M.

County Commission Chamber
County Administration Building
1840 25th Street. Vero Beach, Florida, 32960-3365

COUNTY COMMISSIONERS

Gary C. Wheeler, Chairman	**District 3**	**Joseph A. Baird, County Administrator**
Sandra L. Bowden, Vice Chairman	**District 5**	**William G. Collins II, County Attorney**
Wesley S. Davis	**District 1**	**Jeffrey K. Barton, Clerk to the Board**
Joseph E. Flescher	**District 2**	
Peter D. O'Bryan	**District 4**	**WWW.IRCGOV.COM**

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1. CALL TO ORDER **5:30 P.M.** **PAGE**

2. INVOCATION Commissioner Wesley S. Davis

3. PLEDGE OF ALLEGIANCE Commissioner Joseph E. Flescher

4. PUBLIC HEARING

A. Consideration of Proposed Amendments to the LDR Chapter 911 Table of Uses for Industrial Districts
(memorandum dated June 27, 2007) 1-47

5. ADJOURNMENT

NOTICE: All proceedings before this Board are electronically recorded. Any person who decides to appeal any action taken by the Board at these meetings will need a record of the proceedings and for such purpose may need to ensure that a verbatim record of the proceedings is made. Anyone who needs a special accommodation for this meeting may contact the County's Americans with Disabilities Act Coordinator at 226-1223, (TDD # 772-770-5215) at least 48 hours in advance of the workshop.

PUBLIC HEARING
LDR AMENDMENT
(LEGISLATIVE)

INDIAN RIVER COUNTY, FLORIDA

M E M O R A N D U M

TO: Joseph A. Baird; County Administrator

DEPARTMENT HEAD CONCURRENCE:

Robert M. Keating, AICP; Community Development Director

THROUGH: Stan Boling, AICP; Planning Director

FROM: Brian Freeman, AICP; Senior Planner, Current Development BF

DATE: June 27, 2007

SUBJECT: **Consideration of Proposed Amendments to the LDR Chapter 911 Table of Uses for Industrial Districts**

It is requested that the data herein presented be given formal consideration by the Board of County Commissioners at its special meeting of July 11, 2007.

BACKGROUND

At its regular meeting of March 6, 2007, Sebastian resident Rex Nelson requested that the Board of County Commissioners (BCC) direct staff to amend the Land Development Regulations to eliminate heavy process uses from the IL (Light Industrial) zoning district. At the direction of the BCC, staff analyzed Mr. Nelson's request and reported back to the BCC at its March 20, 2007 meeting. At that meeting, the BCC directed staff to initiate a change to the LDRs to restrict industrial uses that process large quantities of materials, produce dust and noise, and have outdoor activities to the IG (General Industrial) district.

Since the March 20th BCC meeting, staff has conducted more analysis and research and has prepared LDR amendments consistent with the BCC's direction. Both the Professional Services Advisory Committee and the Planning and Zoning Commission have reviewed the proposed amendments. Because the LDR amendments will affect the listed uses allowed in certain zoning districts, two board public hearings are required under state law. This is the first public hearing; the second public hearing will be held at the BCC's July 24, 2007 regular meeting.

The BCC is now to consider the amendment, direct staff to make any necessary changes, and announce its intention to adopt the final ordinance at its July 24, 2007 regular meeting.

➢ **Professional Services Advisory Committee Action**

At its May 17, 2007 meeting, the PSAC considered the proposed amendments. Prior to that meeting, three PSAC members submitted conflict of interest statements. Because the conflicts of interest for these three members were disclosed prior to the meeting, they were eligible to participate in the discussion, but were not eligible to vote on the matter. Upon the request of an attorney attending the meeting and representing opponents of the ordinance, two additional PSAC members recused themselves. These two members were neither eligible to participate in the discussion nor to vote. Although a quorum was present, only four members were able to vote on the draft ordinance. After much discussion and several failed motions, the PSAC was unable to adopt any advisory position on the draft ordinance (see Attachment #5). The PSAC, however, did determine that the proposed ordinance should move forward without further action by that committee, and the County Attorney concurred. That determination is consistent with the PSAC's past practice of providing no recommendation to the BCC when a consensus could not be achieved on an advisory recommendation.

➢ **Planning and Zoning Commission Action**

At its June 14, 2007 meeting, the Planning and Zoning Commission voted 6-1 to recommend that the BCC adopt the ordinance proposed by staff. While all seven PZC members expressed support for the proposed amendments, one member voted against the motion in order to express opposition to applying the proposed amendments to any existing development applications already filed and under review. Other members also expressed concern regarding the fairness of applying the proposed amendments to existing applications. Two separate motions addressing the issue of existing applications failed, however, due to lack of a second (see Attachment #6).

ANALYSIS

As structured, the county's comprehensive plan future land use element (FLUE) and corresponding land use map establish Commercial/Industrial (C/I) land use designations within which commercial and industrial zoning districts and uses may be located. Besides establishing C/I designations, the comprehensive plan (FLUE Policy 1.17) states that LDRs governing commercial and industrial uses shall address various elements of commercial/industrial development, including land use compatibility, buffering and landscaping, access, open space, character of an area, and environmental impacts (see Attachment #1). Complementing policy 1.17, FLUE Policy 1.41 establishes locational criteria for rezoning decisions involving various commercial and industrial zoning districts, including the county's two industrial zoning districts: IL and IG.

Although these criteria are not exclusive and apply only to rezoning decisions, it is instructive that the criteria for both IL and IG district decisions are almost identical (see Attachment #2). The criteria indicate that IL and IG zoned sites are appropriate along arterials and railroad tracks, near industrial areas, and in areas separated from residential development and office/retail uses. Thus, the comprehensive plan provides no real distinctions between the IL and IG districts. Such distinctions appear only in zoning code section 911.11.

The first section 911.11 distinction between the IL and IG districts appears in the district descriptions. Those descriptions state that the IL district is intended for "...limited manufacturing and industrial uses...", while the IG district is intended for "...a broad range of industrial activities".

The second distinction is found in the 911.11 use table. That table, like all use tables within the county's zoning code, consists of use categories derived from the Standard Industrial Classification (SIC) code, which was superseded by the North American Industry Classification System (NAICS) in 1997. That code was established and is maintained by the US Office of Management and Budget and provides a system of use categories and subcategories for all types of land use activities. Using SIC categories, the 911.11 use table allows a variety of repair, "heavy commercial", warehouse, and vehicle-related uses, as well as many manufacturing uses, within the IL district. Overall, fewer use categories are allowed within the IG district, and certain "heavy" uses are allowed only within the IG district. The uses that are exclusive to the IG district include petroleum products (includes asphalt plants), rubber and plastics, tanning and finishing, industrial machinery/equipment, transportation equipment, junkyards, and demolition debris sites.

Currently, IL district regulations allow certain uses that involve the processing of large quantities of material and associated outdoor storage, as well as off-loading and loading activities. These uses are:

- Pulp and paper mills (sub-categories of the "paper and allied products" category)
- Glass and bottle plants*
- Brick and tile plants*
- Concrete and block plants*

(*all 3 are sub-categories of the current "stone, glass, and clay" category)

At present, there are no pulp or paper mills, or plants that manufacture glass, bottles, brick or tile, within the unincorporated area of the county. There are, however, five concrete plants currently located in the unincorporated area of the county. No concrete plant operates within any of the municipalities in Indian River County.

➢ Comparison of IL and IG Districts

As stated above, there are two industrial zoning districts in unincorporated Indian River County: IL, Light Industrial, and IG, General Industrial. In addition to these conventional districts, there are also PD, Planned Development, districts that have been established for specific industrial uses. An example of an Industrial PD district is the Indian River Park of Commerce, located on the north side of SR 60, west of Interstate 95. That PD district was established to accomodate light industrial and commercial uses.

As the following table shows, the IL district is distributed throughout the north (north county line to 77th Street), central (77th Street to SR 60), and south county areas (SR 60 to the south county line). In all three areas, some amount IL zoning exists along the FEC railroad. Other areas containing IL zoning include the 102nd Terrace area (north county), the west Gifford area (central county), the SR 60/I-95 interchange area (south county), and the Oslo Road area (south county). Overall, the greatest concentration of IL zoning is in the central county area, with the north and south county areas containing nearly equal amounts.

Table 1: Distribution of the IL District

County Area	Area (Acres)	Perimeter (Feet)	Perimeter Adjacent to Residential Zoning (Feet)	Perimeter Adjacent to Residential Zoning (Percent)
North	185.8	41,164	12,737	30.9%
Central	325.7	70,493	29,703	42.1%
South	199.6	41,640	5,236	12.6%
Total	711.1	153,297	47,676	31.1%

As the following table shows, the IG district is located only in the central and south county areas. Presently, there is no IG zoning in the north county. Much of the IG zoning is located along the FEC railroad. In addition, two other areas contain IG zoning. These are the west Gifford area (central county) and the Oslo Road area (south county).

Table 2: Distribution of the IG District

County Area	Area (Acres)	Perimeter (Feet)	Perimeter Adjacent to Residential Zoning (Feet)	Perimeter Adjacent to Residential Zoning (Percent)
North	0	0	0	-
Central	255.6	42,975	16,131	37.5%
South	202.9	28,845	0	0%
Total	458.5	71,820	16,131	22.5%

In general, IL zones are located in closer proximity to nearby residential areas than are IG zones. For the entire unincorporated county, approximately 31.1% of IL district boundaries are adjacent to a residential zoning district, compared to approximately 22.5% for IG districts. Moreover, the actual linear footage (47,676 feet) of IL district boundaries abutting residential zoning is approximately three times the distance for IG districts (16,131 feet). In many cases, industrial districts are actually separated from the adjacent residential zoning district by a thoroughfare plan roadway or the FEC railroad.

Because there is greater interaction between IL zones and residential areas than between IG zones and residential areas, it would be appropriate to restrict heavy industrial activities to the IG district.

➢ **Concrete Plants in Indian River County**

As stated above, five concrete plants are currently located in the unincorporated area of the county. All five plants are located within the central and south county areas; no concrete plants presently exist in the north county area. These existing plants are:

- Russell Concrete 1400 block of 10th Avenue/US Highway 1
- Russell Concrete 3800 block of 71st Street
- Rinker 3100 block of 53rd Street
- Rinker 900 block of 12th Street

- Tarmac Industrial Blvd between 53rd Street and 49th Street

All five sites are zoned IG (General Industrial), and all five sites have FEC railroad access. FEC railroad access is important for concrete plants because rail is the only cost effective way of transporting the raw materials (cement, sand, and aggregate) needed in the production of ready-mix concrete.

In addition to these existing concrete plants, site plan applications have been submitted for two new concrete plants. The first site plan application (Prestige Concrete) is for a concrete plant on an IG-zoned property located on the south side of 45th Street, west of 43rd Avenue. The second site plan application (Ocean Concrete) is for a concrete plant on an IL-zoned site located along the FEC railroad on Old Dixie Highway south of CR 512.

As evidenced by petitions and letters of objection submitted to staff, the Ocean Concrete project is opposed by many residents of Sebastian and the north county. It is also opposed by the City of Sebastian. That project's application will expire on December 6, 2007, if the project is not approved by that date.

Over the past few years, staff has had several inquiries about siting new concrete plants adjacent to the FEC railroad in the central and north county area. Consequently, staff believes there is some market demand for such a plant. Recently, Prestige Concrete applied for a plant located more than a mile away from the FEC railroad. Raw materials for the Prestige Concrete plant will be transported by truck from existing facilities in Melbourne and Fort Pierce. Therefore, it appears economically feasible for at least some concrete plant operations to be located away from the railroad.

➢ **Proposed LDR Amendments**

The ordinance will limit certain "heavy" industrial uses to the IG district. These uses involve a significant degree of outdoor storage and processing associated with processing large quantities of materials with resulting noise and dust impacts. The proposed revisions will prohibit the following uses in the IL district (see Attachment #10):

- Paper manufacturing: Industries in this NAICS category make pulp, paper, and converted paper products. Affected land uses include paper mills, newsprint mills, paperboard mills, and plants that manufacture boxes, laminated paper, paper bags, envelopes, and other paper products. Printing uses are not included within this category and will continue to be permitted within both the IL and IG districts.

- Chemical manufacturing: Industries in the NAICS category transform organic and inorganic raw materials by chemical processes. Affected land uses include plants that produce pigments and dyes, chlorine, pesticides, fertilizer, paint, adhesives, detergents, printing ink, and explosives.

- Brick and tile manufacturing: NAICS classifies this as a subcategory of the Nonmetallic Mineral Product Manufacturing category. Affected land uses include plants that manufacture

brick, clay tile, ceramic tile, and floor tile.

- Glass and glass product manufacturing: NAICS classifies this as a subcategory of the Nonmetallic Mineral Product Manufacturing category. Affected land uses include plants that manufacture glass, bottles, and glass containers.

- Cement and concrete product manufacturing: NAICS classifies this as a subcategory of the Nonmetallic Mineral Product Manufacturing category. Affected land uses include plants that manufacture cement, ready-mix concrete, concrete pipe, and concrete block.

- Other nonmetallic mineral product manufacturing: This includes all other subcategories of the NAICS category for Nonmetallic Mineral Product Manufacturing. Affected land uses include plants that manufacture pottery, ceramics, vitreous china, lime, gypsum, cut stone products, and similar products.

Most of these uses can be characterized as heavy industries. As such, these uses have the potential to adversely impact nearby properties. These impacts can arise from noise, air emissions, and other operational characteristics of these uses.

Concrete plants, for example, create both noise and dust impacts. In fact, the Environmental Protection Agency (EPA) has documented that air emissions are created during the concrete batching process, primarily in the form of particulate dust (see Attachment #9). It is reasonable, therefore, to conclude that a concrete batch plant would have a negative impact on nearby residential uses.

Generally, IG districts are located further away from concentrations of residential areas than IL districts and are therefore more appropriate for uses that involve outdoor activities associated with processing large quantities of materials with resulting noise and dust impacts. In staff's opinion, limiting large processing uses to the IG district would be appropriate with respect to the location of IG districts and with respect to the purpose and intent of the IL and IG districts.

Such a change could also protect IL areas, such as the IL-zoned area on 102nd Terrace north of CR512, which are targeted for purely clean and light industries. In many cases, light clean industries seek locations away from heavy industrial uses.

Restricting concrete plants to IG would be consistent with the zoning of existing plants. Such a restriction, however, would limit future opportunities for a concrete provider to locate along the FEC railroad in the north county area unless properties along the railroad were rezoned to IG.

As part of its research, staff surveyed other jurisdictions to determine their zoning requirements for concrete plants (see Attachment #7). Although each jurisdiction's zoning ordinance is different, other jurisdictions generally prohibit concrete plants in light industrial districts and permit concrete plants in general or heavy industrial districts. Therefore, the proposed amendment which prohibits concrete plants and other uses in the IL district is consistent with the zoning regulations in a majority of other jurisdictions.

Instead of prohibiting the above uses in the IL district, another approach would be to classify the above uses as special exception uses in the IL district. The concept of such an approach was discussed at the May 17th PSAC meeting. A special exception use is one that may not generally be appropriate throughout a zoning district, but may be appropriate in certain cases when regulated by specific criteria affecting a specific application's scale, location, and relationship to surrounding uses. All special exception uses require review by the PZC and approval by the BCC via a public hearing process.

In staff's view, it is preferable to restrict the identified "heavy" uses to the IG district rather than use the special exception approach. While appropriate in many circumstances, the special exception approach would not adequately address the incompatibility issues between "heavy" uses and adjacent residential or commercial uses as well as compatibility with adjacent light "clean" industry uses within the IL district. At the May 17th PSAC meeting, where there was discussion of this approach, PSAC members concluded that establishing a concrete plant in an IL-zoned area would likely have a negative impact upon efforts to retain or recruit light industry to surrounding IL-zoned properties.

Presently, IG-zoned areas are located in a manner that addresses all of the identified compatibility concerns. In addition, an applicant seeking to locate a concrete plant on an IL-zoned site would have the ability to seek a rezoning from IL to IG or a rezoning to an industrial PD and, through that process, demonstrate the appropriateness of a particular site for "heavy" uses. Therefore, staff concludes that the most appropriate approach to regulating the identified "heavy" uses is the approach used in the proposed ordinance.

In conclusion, staff believes that there is a logical rationale for restricting heavy process uses, such as concrete plants and paper mills, to the IG (General Industrial) district. Such processes involve the outdoor storage and handling of large quantities of material which result in noise and dust impacts. Such operations are more appropriately located in IG districts, removed from concentrations of residential areas, and separated from commercial uses and light "clean" industry.

RECOMMENDATION

Staff recommends that the Board of County Commissioners consider the proposed LDR amendments to Section 911.11, Industrial Districts, direct staff to make any necessary revisions to the proposed ordinance, and announce its intention to adopt the ordinance at its July 24, 2007 regular meeting.

Attachments:

1. Comprehensive Plan Future Land Use Element Policy 1.17
2. Comprehensive Plan Future Land Use Element Policy 1.41
3. Excerpts from the Minutes of the March 6, 2007 BCC Meeting
4. Excerpts from the Minutes of the March 20, 2007 BCC Meeting
5. Draft Excerpts from the Minutes of the May 17, 2007 PSAC Meeting
6. Draft Excerpts from the Minutes of the June 14, 2007 PZC Meeting
7. Survey of Other Jurisdictions

8. Memo from County Attorney's Office
9. Information on Concrete Batching from the United States Environmental Protection Agency (EPA)
10. Proposed LDR Amendment

APPROVED AGENDA ITEM:

FOR: July 11, 2007

BY: Joseph A. Baird

Indian River Co,	Approved	Date
Admin.		7/5/07
Legal	MC	7/2/07
Budget		7/2/07
Dept.	RMK	6/29/07
Risk Mgr.		

Policy 1.17: Land development regulations shall provide performance standards for commercial/industrial development which at a minimum address, but are not limited to, the following:

Land use compatibility, buffering and landscaping
Access points, traffic controls, and parking
Signage
Gross floor area, impervious surface ratios
Open space
Character of an area
Environmental impact

Policy 1.18: Commercial/Industrial designated areas shall be structured as nodes. These nodes shall be located along roads with functional classifications appropriate to the level of activity.

Policy 1.19: Indian River County recognizes that, because of the scale of the Future Land Use Map, the exact boundaries of Commercial/Industrial nodes delineated on the map may require interpretation in order to determine the exact land use designation of various parcels, lots, and tracts. Therefore, when necessary, the following criteria shall be used to establish the location of a specific node boundary line on large-scale node boundary maps and on the county's zoning atlas:

a. A node boundary line is subject to interpretation only when an inspection of the Future Land Use Map reveals that a boundary line does not obviously correspond to a major roadway right-of-way, canal, water body, section line, or corporate limit delineated on the Map.

b. If the location of a node boundary line is subject to interpretation because it does not obviously correspond to a natural or man-made feature listed above, then the location of the boundary line shall be determined by the following criteria:

1. If inspection of the Future Land Use Map and maps depicting lot, parcel or tract lines reveals that a node boundary line splits a lot, parcel or tract, and if the portion of the split lot, parcel or tract within the node is precluded from development, as permitted by the Future Land Use Map designation, because of such split, then the node boundary line shall be located to exclude the entire lot, parcel or tract from the node; or

2. If inspection of the Future Land Use Map and maps depicting lot, parcel or tract lines reveals that a node boundary line splits a lot, parcel or tract, and if the portion of the split lot, parcel or tract outside the node is precluded from development, as permitted by the Future Land Use Map designation, because of such split, then the node

ATTACHMENT 1

Policy 1.40: To the extent feasible, the county shall collocate public facilities, such as parks, libraries, and community centers, with schools.

Policy 1.41: The Board of County Commissioners shall rezone land only in a manner that is consistent with Future Land Use Element Table 2.13. Furthermore, the Board recognizes that not every zoning district allowed in a land use designation is appropriate for every site within that land use designation. For any parcel, the Board of County Commissioners may deny a rezoning request (even when the requested zoning district is consistent with the parcel's land use designation) if the denial serves a legitimate public purpose. A Board of County Commissioners' determination that the requested zoning district is not appropriate for the parcel may also be based upon the absence of the following locational criteria:

1. For the *OCR, Office, Commercial, Residential* zoning district:
   - adjacent to existing office uses
   - as a buffer between residential zoning districts and arterial roads or other commercial zoning districts.
   - at node perimeters
2. For the *MED, Medical* zoning district:
   - within commercial/industrial nodes containing hospitals and major medical facilities
   - separated from industrial areas
3. For the *CL, Limited Commercial* zoning district:
   - areas that are easily accessed from residential areas
   - between residential areas and general commercial areas or major roadways
   - separated from industrial areas
   - at node perimeters
4. For the *CG, General Commercial* zoning district:
   - along arterial roads and major intersections
   - separated from residential development
   - separated from industrial areas
   - near retail and office areas
5. For the *CH, Heavy Commercial* zoning district:
   - along arterial roads
   - along railroad tracks
   - between general commercial and industrial areas
   - separated from residential development
6. For the *IL, Light Industrial* zoning district:
   - along arterial roads
   - along railroad tracks
   - near industrial areas
   - separated from residential development
   - separated from retail and office areas
7. For the *IG, General Industrial* zoning district:
   - along arterial roads and major intersections
   - along railroad tracks
   - near industrial areas
   - separated from residential development
   - separated from retail and office areas

HOMELESS CENTER ON 37TH STREET

Mr. Metz did not need to speak further based on the decision to bring the matter back for a rehearing (see Item 9.B.3). Item WITHDRAWN.

Chairman Wheeler called a break at 4:41 p.m. and reconvened the meeting the meeting at 4:51 p.m.

9.B.6. REQUEST TO SPEAK FROM REX NELSON REGARDING MODIFICATION OF ZONING CODE

Rex Nelson, 710 Fischer Circle, Sebastian was, amazed at the "maze" of ordinances, codes, procedures and rules that pertain to the Industrial Light classification site plan approval that have been denied over the last 70 days. He requested that the Board direct staff to review criteria for light industrial zoning and to take steps necessary to modify the zoning code. His main point was that we have "process industries" being able to be in a light industrial zone and "process industries" do not belong because they are capital intensive and do not belong in close proximity of residential properties. He urged the Board to try to accomplish this as soon as possible.

Chairman Wheeler would be interested in looking at this, getting staff's evaluation and getting the pros and con on this.

Director Stan Boling said staff could report back with pros and cons.

There was CONSENSUS for staff to consider the matter and bring this back to the Board.

Chairman Wheeler did not agree with Commissioners O'Bryan or Bowden, he stated that there is a process already set-up and thought it should be followed.

NO BOARD ACTION REQUIRED OR TAKEN

11.A.3. CONSIDERATION OF CHANGES TO CHAPTER 911 OF THE LAND DEVELOPMENT REGULATIONS TO MODIFY THE USES ALLOWED IN THE IL (LIGHT INDUSTRIAL) ZONING DISTRICT

Director Boling informed the Board that this item was brought back from the March 6, 2007 meeting where Rex Nelson requested the Board amend the Land Development Regulations eliminating heavy process uses from the IL (Light Industrial) zoning district. Through a PowerPoint presentation (copy on file) he briefed the Board on the analysis context for the zoning districts and how they were set-up. He said this was brought to the Board so they could decide if they wanted staff to initiate the process.

> ON MOTION by Commissioner Davis, SECONDED by Commissioner O'Bryan, the Board unanimously directed staff to initiate a change to the LDRs to restrict industrial uses such as concrete plants and paper mills that process large quantities of materials, produce dust and noise, and have outdoor activities to the IG (General Industrial) district, as recommended in the memorandum of March 13, 2007.

George Christopher, 945 Painted Bunting Lane, specified that since there is an active site application, any changes to the regulation should not affect the application. He

ATTACHMENT 42

thought this was a decision the Board should make when the LDR goes before them. He suggested staff advise the Board of the equities on both sides and the Board hold a public hearing before making a decision.

County Attorney Collins clarified that it is the rules that are in effect at the time the permit is issued that control, not those in place at the time an application is made.

There was a brief question and answer period between Joseph Paladin and County Attorney Collins regarding changes in land use regulations.

11.A.4. DEMOLITION OF VARIOUS STRUCTURES LOCATED AT 5900 5TH STREET SW

Director Keating presented this item as a continuation from the February 20, 2007 meeting where the Board tabled action and requested Mr. Legwen to provide information prior to the Board making a decision to delay demolition.

Glenn Legwen, 5900 5th Street, S.W., expressed that his buildings were not "residence storage" structures but "farm" structures. He said he consulted with three engineering firms for a proposed plan to salvage the structures, bring them up to code and obtain an estimated cost. He was still evaluating the information to decide if it would be advantageous to repair or demolish the buildings. Should he decide to bring them up to code, he said he would apply for a permit within two weeks. He informed the Board that he had removed two of the five buildings since February. Mr. Legwen wanted the Board to remove the demolition order.

Commissioner Davis did not want to remove the demolition order, however, he was willing to give Mr. Legwen two more weeks.

PROFESSIONAL SERVICES ADVISORY COMMITTEE

There was a meeting of the Indian River County (IRC) Professional Services Advisory Committee (PSAC) on Thursday, May 17, 2007 at 12:15 p.m. in the First Floor Conference Room "A" of the County Administration Building, 1840 25th Street, Vero Beach, Florida.

Present were Chairman Rodney Paradise, Real Estate Broker Appointee; Vice Chairman Warren Dill, Law Appointee; Peter Robinson, Development Appointee; Stephen Moler, Engineer Appointee; Todd Smith, Engineer Appointee; Alan Schommer, General Contractor Appointee; John Blum, Civil Engineer Appointee; George Kulczycki, Forester, Biologist, Botanist, Horticulturalist, or Arborist Appointee; and Ryan Morrell, Environmental Issues Appointee.

Absent were Robert Brackett, Finance and Business Appointee; and Robert Gaskill, Architect Appointee (both unexcused).

Also present were IRC staff: Stan Boling, Planning Director; Bob Keating, Community Development Director; Will Collins, County Attorney, and Misty L. Pursel, Interim Staff Assistant IV. Others present: Amanda Avery and George Maib, Ocean Concrete, Inc.; Geoffrey Smith, Smith & Associates; Rebecca Grohall, City of Sebastian; Rex Nelson, Don Liesen, Alice Allard; Bill Sandy; Betty McGuigan; Joseph Klucsarets; Carol and James Berry; Jeffrey and Claudia Kracht; Baxter Coston; Ray Walloran; Peter Kiernan; Sandy Poe; Richard Marco; KIB MacDonald; Norma Cox; Jo Fancher; Bill Cox; Robert Nyberg; Charles and Sharon Cartwright; G.E. Acevedo; Helen and John Laitinen; Barbara Cook; and Sharon Nonins, concerned citizens.

Call To Order

Chairman Paradise welcomed everyone and all stood for the Pledge of Allegiance.

Chairman Paradise called the meeting to order at 12:15 p.m.

Approval of Minutes of the April 19, 2007 Meeting

ON MOTION BY Mr. Robinson, SECONDED BY Mr. Schommer, the members voted unanimously (9-0) to approve the April 19, 2007 minutes, as submitted.

Old Business

None.

New Business

A. Proposed Amendments to Chapter 911 of the Land Development Regulations to Modify the Uses Allowed in the LI (Light Industrial) Zoning

Chairman Paradise announced the filing of Form 8B, Memorandum of Voting Conflict for County, Municipal, and Other Local Public Officers prior to the commencement of the meeting, having been excused from voting on this item by:

Mr. Todd N. Smith; a copy of this form is on file in the Commission Office and identified Mr. Smith as the engineer of record for Ocean Concrete, Inc. which has a site plan pending which could be affected by the proposed ordinance amendment.

Mr. Peter Gamble Robinson; a copy of this form is on file in the Commission Office and identified Mr. Robinson as the father of a property owner whose home value may be affected by the proposed ordinance amendment.

Mr. George Kulczycki; a copy of this form is on file in the Commission Office and identified Mr. Kulczycki as owner of light industry land in Indian River County.

:03 Mr. Stan Boling, Planning Director, informed the Committee the subject matter at hand was a proposed change to the land development regulations, specifically regulations dealing with use allowances/categories for the County's industrial districts in the unincorporated areas, the light industrial (IL) and the general industrial (IG) districts. He provided background and analysis outlined in the Memorandum dated May 8, 2007 regarding Consideration of Proposed Amendments to the Table of Uses for Industrial Districts of LDR Chapter 911, a copy of which is on file with the Commission Office.

Mr. Boling indicated staff's recommendation was for PSAC to recommend the Board of County Commissioners (BCC) adopt the purposed land development regulation amendments. He stated the next step, however, was the Planning and Zoning Commission (P&Z) public hearing in June, 2007; wherein the BCC would entertain both recommendations of PSAC and P&Z at a public hearing in July, 2007.

:11

Mr. Will Collins, County Attorney described the situations in which it was considered to have a voting conflict in cases involving appointed public officials such as members of PSAC, who could not participate in discussions without first disclosing the nature of interests giving rise to the conflict, prior to the meeting. He stated if the disclosure was made prior to the meeting and filed with the recording clerk, the members with the voting conflict can participate in the discussion; however could not vote on the matter.

Mr. Collins further stated if a conflict does not come to light until the meeting and disclosure was announced at the meeting, the member can neither participate in the discussion, nor vote. He stated the Statute provided the conflicts were to be filed with the recording secretary and read into the minutes of the next meeting.

Mr. Geoffrey Smith, an attorney representing the interests of Ocean Concrete, raised as a point of order two other conflicts among members and asked for declaration of conflict by: Member Blum, a consultant with Carter and Associates in opposition to the Ocean Concrete project; and Member Dill, who represented an owner of property along Dixie Highway, as part of discussions with Ocean Concrete concerning potential road improvements.

Mr. Warren W. Dill submitted Form 8B, Memorandum of Voting Conflict for County, Municipal, and Other Local Public Officers, upon commencement of the meeting to excuse himself from voting on this item. A copy of this form is on file in the Commission Office and identified Mr. Dill as an attorney who represented the interests of a property owner, Dr. Henry Fischer, Henry Fischer & Sons, Inc.

Mr. John H. Blum submitted Form 8B, Memorandum of Voting Conflict for County, Municipal, and Other Local Public Officers, upon commencement of the meeting to excuse himself from voting on this item. A copy of this form is on file in the Commission Office and identifies Mr. Blum as a business associate of Carter Associates, Inc.

Mr. Geoffrey Smith raised the question whether there was a quorum, being the quorum required a majority of committee members capable of voting. Mr. Collins believed the case was the quorum of the members present in the first instance and if members were to abstain because of a voting conflict, the main members of the original quorum would vote. There were 9 members present, with 5 abstained from voting. The objection was noted for the record.

:20

Mr. Boling reviewed the proposed revisions to Section 911.11(4) Table of Uses for Industrial Districts, specifically on Page 3, Attachment 3, of the memorandum dated May 8, 2007, previously indicated.

A discussion ensued regarding consideration for possible requirements of particular uses, i.e., administrative permit type to address for instance, distance from residential areas, or a special exception use and the difference of criteria in the permitting process between the uses.

Mr. Todd Smith, who declared conflict prior to the meeting and was allowed to participate in discussion, mentioned the intent of the Ordinance change and the possible effect on pending applications, more specifically, by Ocean Concrete. He recommended the Committee deny the ordinance prepared by staff and the Committee consider more of an administrative use to be developed for the businesses.

A discussion ensued regarding problems with current IL sites within the County and the need for a continued review of the uses of the sites for future definition and changes.

:50 Public comments were heard regarding the positives and negatives of having a concrete plant, specifically Ocean Concrete, at the current site under pending application. Mr. Rex Nelson, handed out a statement which urged the Committee to approve staff's recommendation to the BCC and adopt the amendments affecting permitted uses in the IL and IG districts, a copy of which is on file with the Commission Office.

1:11 Mr. Schommer reminded the Committee and the public the purpose of the present meeting was to review the proposed Ordinance and judge, if from a technical merit, not from who was right or wrong.

ON MOTION BY Mr. Schommer, SECONDED by Mr. Moler, to recommend to the Board of County Commissioners to modify Chapter 911 of the Land Development Regulations by not excluding the uses from the Light Industrial Zoning District, but develop criteria so the uses could be approved only as special exceptions within that district.

UNDER DISCUSSION, Mr. Robinson, who declared conflict prior to the meeting and was allowed to participate in discussion, gave an example of a light industry relocating to another county because the zoning was not compatible to their light industrial business' environmental requirements in support of moving paper plants and concrete plants to an IG zoning district.

Public comments were made in opposition to a concrete plant being built at the proposed site. Continual reminders were made to the public indicative of the

purpose for the forum was for technical advisory review of the ordinance and the final decision was in the hands of the elected officials.

Attorney Collins defined a special exception use as something generally not appropriate in a zoning district, but if carefully regulated, i.e., buffering compatibility and specific criteria, it may be allowable. He further provided each special exception meets general criteria, for instance, compatibility, buffering, lighting, and then specific criteria which may go to how wide was the buffer, how opaque was it, or how many feet from an existing residence.

Attorney Collins stated if all the specific criteria was met, the proposal was generally entitled to an approval, so there was not discretion in the County Commission to deny special exceptions which meet the specific criteria; however the general criteria can be more subjective to argument. He noted an established criteria in the Ordinance be applied to every project, not changed for a specific application.

Attorney Collins provided a planned development was more discretionary due to not applying a particular set of adoptive rules to a project application. He added someone had a choice to make application for a planned development which is more of a bargain for district. The planned development district itself sets out the development parameters and were either agreed to or not by the County and the applicant. When it goes under a permitted use or special exception use, there was an entitlement to proceed if the criteria were met. If in a planned development district, it was subjected to additional limitations on the property in exchange for an approval which was more discretionary.

1:35 **THE CHAIRMAN CALLED FOR THE QUESTION** and the Motion failed by a vote of (1-3), Rodney Paradise, Ryan Morrell, and Alan Schommer opposed.

ON MOTION BY Mr. Schommer to recommend to the Board of County Commissioners to change concrete plants, asphalt plants and mining type services from special exception to fall under only a planned development, within General Industry or Light Industry. THE MOTION DIED DUE TO LACK OF SECOND.

ON MOTION BY Mr. Moler, SECONDED BY Mr. Morrell, the members voted (2-2) which FAILED DUE TO LACK OF MAJORITY, to recommend to the Board of County Commissioners to allow the uses by special exception right in only the General Industrial if staff found criteria.

ON MOTION BY Mr. Morrell to recommend to the Board of County Commissioners to approve staff's recommendation DIED DUE TO LACK OF SECOND.

ON MOTION BY Mr. Schommer to recommend to the Board of County Commissioners to allow the uses in General Industrial and Light Industrial becoming available only through a planned development with the Board of County Commissioners having absolute discretion DIED DUE TO LACK OF SECOND.

Chairman Paradise advised based upon all the information brought before the Committee and not being able to come to any advisory position, he recommended the matter be placed before the Planning and Zoning Commission.

Other Matters

None.

Adjournment

There being no further business, the meeting adjourned at 1:58 p.m.

Discussion was held regarding:

- The possibility of switching the east and west entrances so some of the oak trees could be saved.
- Mr. Jodah, Biddle, representing Schulke, Bittle, and Stoddard, LLC pointed out although the applicant was amenable to changing the east and west entrances, most of the trees would be removed by the County any for road improvements.

Chairman Bruce closed the public hearing at 7:20 p.m.

ON MOTION BY Mr. Hamner, SECONDED BY Ms. Keys, the members voted unanimously (6-0) to approve the request for major site plan and preliminary plat approval for a 116-unit multi-family residential development with a caveat regarding changing the east and west driveways.

Public Hearing (26:03)

Chairman Bruce read the following into the record:

A. Consideration of Proposed Amendments to the LDR Chapter 911 Table of Uses for Industrial Districts **[Legislative]**

Mr. Freeman reviewed the information contained in his memorandum, a copy of which is on file in the Commission Office.

Discussion was held regarding:

- What zoning other concrete plants were located within. Mr. Freeman reported the other plants in IRC were located within IG (General Industrial) versus the IL (Light Industrial) zoning districts.

Chairman Bruce opened the public hearing at 7:34 p.m.

The following people spoke:

Mr. Geoffrey Smith, an attorney representing the interests of Ocean Concrete, gave a PowerPoint presentation, a copy of which is on file in the Commission Office.

Mr. Todd Smith, an engineer for Ocean Concrete, reviewed his PowerPoint presentation, a copy of which is also on file in the Commission Office. Mr. Smith summarized the P&Z did not have a complete picture and asked to have time set aside to review the information or to not have the amendments apply retroactively.

Mr. Lawrence arrived at 8:06 p.m.

Mr. Wayne Wilco, Melrose, Florida, a faculty member at the University of Florida Department of Civil and Coastal Engineering, explained the difference between concrete batching and concrete production. He noted concrete batching involved mixing small amounts of cement with water, sand, rock or aggregate and stated all materials were kept wet so there would be very little dust.

Mr. Fred Mensing, Vero Beach, expressed IRC needed to wake up and get diversified industry to bring in high paying jobs.

Mr. Kelly Mather, Sebastian, Florida, felt all concrete plants belonged in IG zoning.

Mrs. Dale Simchick, Sebastian, asked the P&Z to honor the City of Sebastian's character and recommended the amendment to the LDR Chapter 911.

(1:28) Chairman Bruce called for a break at 8:28 p.m. and resumed the meeting at 8:35 p.m.

Mr. Baxter Coston, Sebastian, was against a concrete plant being located in the IL zoning and supported approving the LDR amendments.

Ms. Deb Robinson, Vero Beach, stated there was much discussion regarding an individual concrete plant and felt the issue was not the individual plant, the issue was the planning across the County. She opined there was a lot of work needing to be done to the Comprehensive Plan.

Mr. Rex Nelson and Ms. Betty McWiggin, Sebastian, were in favor of the amendments.

Mr. Jeff Kracht, Sebastian, thought the buyer of the property for Ocean Concrete should have researched the IG zoning for all other concrete plants.

Mr. Ralph Brown, Jacksonville Beach, Florida, explained his family owned property in Sebastian and felt the zoning in IL should not allow concrete plants.

Mr. Chris Pontello, consulting engineer with W.F. McCain and Associates, indicated a concrete plant should be allowed along railroads and felt the County should be held to the integrity of the LDR's. He felt this decision should be a staff only approval.

Mr. George Maib, President of Ocean Concrete, related he did his research when purchasing the property and a concrete plant was allowed on the property in the current zoning. He relied on the laws and the codes and would like to be grandfathered if the amendments were approved.

Mr. Jay Bumpers, Vero Beach, stated he was a developer and he had done his homework when he bought his property also. He felt the Ocean Concrete people should have their project grandfathered if the LDR amendments go into effect because the rules were changed after-the-fact.

Ms. Wilma Cox, Sebastian, had concerns with environmental health involving heavy industry.

Ms. Carol Barry, Sebastian, stated she was against heavy industry in the area being discussed.

Chairman Bruce closed the public hearing at 8:58 p.m.

Discussion was held regarding whether or not the applicant could request the grandfathering-in clause when going before the Board of County Commissioners.

ON MOTION BY Ms. Keys, SECONDED BY Mr. Hamner, the members voted (6-1) to approve staff's recommendations of amending the Land Development Regulations of Chapter 911 as presented. Mr. Fletcher opposed.

Mr. Fletcher asked it to be made part of the record that he voted against the motion because he felt the applicants with applications submitted before the amendments went into affect should be grandfathered.

ON MOTION BY Mr. Lawrence to request the Board of County Commissioners consider grandfathering Ocean Concrete. THE MOTION DIED DUE TO LACK OF SECOND.

ON MOTION BY Mr. Smith to recommend to the Board of County Commissioners that all applicants that had applied before the amendments were put in place to be grandfathered. THE MOTION DIED DUE TO LACK OF SECOND.

Commissioners Matters (2:14)

A. **Consideration of LDR Amendments for Mines in Agricultural Areas**

Mr. Stan Boling, IRC Planning Director, reviewed the LDR amendment included in the agenda packet, copies of which are on file in the Commission Office.

ON MOTION BY Mr. Hamner, SECONDED BY Mr. Fletcher, the members voted unanimously (7-0) to approve the Land Development Amendments for Mines in Agricultural Areas as presented.

B. **Discussion of State Road (SR)60/58th Avenue Improvements**

Ms. Keys related she had asked for this information to be presented. Mr. Chris Mora, IRC Assistant Public Works Director, gave a PowerPoint presentation, copies of which are on file in the Commission Office.

Chairman Bruce introduced new P&Z member, George Lawrence and welcomed him to the committee.

Planning Matters (3:01)

Mr. Boling reviewed the revised matrix which was generated from the April 25, 2007 Quality of Development Workshop, copies of which are on file in the Commission Office.

SURVEY OF OTHER JURISDICTIONS:
INDUSTRIAL DISTRICTS AND CONCRETE PLANTS

Jurisdiction	Districts	Concrete Plants
Indian River County	IL, Light Industrial	Permitted by right.
	IG, General Industrial	Permitted by right.
City of Vero Beach	M, Manufacturing	Prohibited.
City of Sebastian	IN, Industrial	Permits "industrial activities" (no definition provided in code).
	AI, Airport Industrial	Prohibited.
Brevard County	IU, Light Industrial	Prohibited.
	IU-1, Heavy Industrial	Conditional use (requires approval by BCC at public hearing, *similar to IRC special exception use*). Conditional use criteria: Access – Must have direct access to a major arterial or access to a major arterial through a nonresidential area. Setbacks – 200' from major arterial with 20' landscape strip & 6' screen. Performance standards – must comply with all industrial performance standards.
Martin County	M-1, Light Industrial	Prohibited.
	M-2, General Industrial	Prohibited.
	M-3, Heavy Industrial	Permitted by right.
Lee County	IL, Light Industrial	Prohibited.
	IG, General Industrial	Permitted by right.
	IR, Rural Industrial	Prohibited.
Sarasota County	IR, Industrial & Research & ILW, Industrial, Light Manufacturing, and Warehousing	Limited use or "use permitted with limitations" *(similar to IRC staff-level administrative use permit)*
Palm Beach County	IL, Light Industrial	Permitted if approved by BCC (no criteria)
	IG, General Industrial	Permitted if approved by Zoning Commission (no criteria)

Office of
INDIAN RIVER COUNTY ATTORNEY

William G. Collins II, County Attorney
Marian E. Fell, Assistant County Attorney
William K. DeBraal, Assistant County Attorney
George A. Glenn, Assistant County Attorney

INTEROFFICE MEMORANDUM

TO: Will Collins, County Attorney

FROM: George Glenn, Assistant County Attorney

DATE: May 17, 2007

RE: **Supplemental Memo on Vested Right Determinations**

Issue

What effect would amending the Indian River County Land Development Regulations have on an applicant currently in the process of applying for a development order?

Facts

The current situation involves the county clarifying proper uses for industrial zoned land in the county. Cement and concrete plants are not identified in the current code, but have been allowed on land zoned General Industrial. Under the proposed amendments, these types of activities would only be permitted on General Industrial. Land zoned Light Industrial would exclude these activities. An applicant is in the process of applying for a development order that would permit them to build a concrete plant on Light Industrial zoned land.

The Indian River County Land Development Regulations define the two classifications as follows: The IL, light industrial district, is intended to provide opportunities for limited manufacturing and industrial uses and to promote the establishment of employment centers which are accessible to urban services and facilities, the area labor force, and local industrial and business markets while minimizing the potential for any adverse impacts upon nearby properties.

The IG, general industrial district, is intended to provide areas where a broad range of industrial activities may locate and operate without significant adverse impacts upon nearby properties. The IG district is further intended to promote the establishment of employment centers which are accessible to the transportation system and other necessary urban services.

ATTACHMENT 8 25

The Indian River County Comprehensive Plan is relatively silent on the distinction between General and Light Industrial zoning classifications. The only distinction is made in Policy 1.41 which list locational criteria for where proper zoning classifications are appropriate. Even there, the two classifications carry nearly identitical locational criteria.

Legal Analysis

A "vested right" has been defined as "[a] right that so completely and definitely belongs to a person that it cannot be impaired or taken away without the person's consent." *Black's Law Dictionary* (7th ed.1999).

A long line of Florida cases has evaluated the question of when a party acquires a vested right to such things as sign permits, building (construction) permits, and liquor licenses. The overarching pattern in Florida's case law is that vested rights can be created--thus creating an enforceable entitlement in the face of subsequent changes in the law--only in two circumstances. Coral Springs Street Systems v. City of Sunrise, 371 F.3d 1320 (11th Cir. 2004)

The first and more common way a vested right is created occurs when a party has reasonably and detrimentally relied on existing law, creating the conditions of equitable estoppel. The Florida courts have made it abundantly clear that when a property owner incurs a substantial investment of time or money in reasonable reliance on existing laws and with no reason to know that the laws are likely to change, he may acquire a vested right in a building permit. Thus, under Florida law, the doctrine of equitable estoppel may be invoked against a local government "when a property owner (1) in good faith (2) upon some act or omission of the government (3) has made such a substantial change in position or has incurred such extensive obligations and expenses that it would be highly inequitable and unjust to destroy the right he acquired." Hollywood Beach Hotel Co. v. City of Hollywood, 329 So.2d 10 (Fla.1976). see also City of Ft. Pierce v. Davis, 400 So.2d 1242 (FLA APP. 1981). However, the mere existence of a present right to a particular use of land, derived from a less restrictive zoning ordinance is not a sufficient "act" of government upon which to base equitable estoppel. Pasco County v. Tampa Development Corp., 364 So.2d 850 (Fla. 2d DCA 1978).

In the second, less common case, a vested right may be created in the absence of a showing of detrimental reliance when the defendant municipality has acted in a clear display of bad faith. The Florida Supreme Court concluded that a City's actions in delaying the plaintiffs' ability to begin construction constituted "unfair dealing," and therefore invoked the principle of equitable estoppel- *Hollywood Beach Hotel Co. v. City of Hollywood*, 329 So.2d 10 (Fla.1976).

The converse is equally true: in the absence of equitable estoppel, Florida's courts have consistently denied vested rights. *See, e.g.*, City of Gainesville v. Cone, 365 So.2d 737, 739 (Fla.Dist.Ct.App.1978) (denying claim for vested rights in existing zoning laws because "[a]n

owner of property acquires no vested rights in the continuation of existing zoning or land use regulations as to such property unless matters creating an estoppel against the zoning authority have arisen"); City of Ft. Pierce v. Davis, 400 So.2d 1242, 1244 (Fla.Dist.Ct.App.1981) (holding that $4,000 that the plaintiff spent, most of it *after* the plaintiff had notice of the City's intent to change, was not enough to trigger equitable estoppel). City of Miami Beach v. Jonathon Corp., 238 So.2d 516, 519-20 (Fla.Dist.Ct.App.1970) (rejecting the claim that a vested right in a permit was created at the moment of application regardless of later acts by the City, in the absence of a showing of bad faith or arbitrariness).

Application

Factual situations implicating vested rights come about when a local government receives some sort of rezoning request or permit application from an applicant, but then, after the applicant has incurred substantial expenses in reliance on the governments regulatory scheme, amends its regulations. Vested rights are also created when local governments act in "bad faith" by "stonewalling" an application or request for government approvals, when at the time of submittal, all laws and regulations were dutifully complied with. Certain questions might be pertinent in determining whether an applicant has established vested rights:

1. Has the local government taking some affirmative action, such as granting a rezoning, issuing a permit, amending its comprehensive land use plan at the request of an applicant.
2. Does the local government have knowledge that an applicant is expending significant dollars under a reasonable belief that the they have some sort of right to a particular zoning.
3. Has an applicant requested government action pertaining to a request of some sort in which it is reasonable to believe the applicant is entitled to the action, and the local government attempts to stonewall the applicant in an attempt to change existing regulations that would result in the denial of the request.
4. Has the local government issued clear statements to the public of the possibility that certain ordnances are undergoing review and could be amended in the near future.

Conclusion

Absent a particularly strong factual setting showing unfairness supporting estoppel, or substantial reliance on government action or omission, case law suggests that the appropriate time for determining which set of regulations apply to a development order is at issuance, and not application.

11.12 CONCRETE BATCHING

11.12-1 Process Description [1-5]

Concrete is composed essentially of water, cement, sand (fine aggregate) and coarse aggregate. Coarse aggregate may consist of gravel, crushed stone or iron blast furnace slag. Some specialty aggregate products could be either heavyweight aggregate (of barite, magnetite, limonite, ilmenite, iron or steel) or lightweight aggregate (with sintered clay, shale, slate, diatomaceous shale, perlite, vermiculite, slag pumice, cinders, or sintered fly ash). Supplementary cementitious materials, also called mineral admixtures or pozzolan minerals may be added to make the concrete mixtures more economical, reduce permeability, increase strength, or influence other concrete properties. Typical examples are natural pozzolans, fly ash, ground granulated blast-furnace slag, and silica fume, which can be used individually with portland or blended cement or in different combinations. Chemical admixtures are usually liquid ingredients that are added to concrete to entrain air, reduce the water required to reach a required slump, retard or accelerate the setting rate, to make the concrete more flowable or other more specialized functions.

Approximately 75 percent of the U.S. concrete manufactured is produced at plants that store, convey, measure and discharge these constituents into trucks for transport to a job site. At most of these plants, sand, aggregate, cement and water are all gravity fed from the weight hopper into the mixer trucks. The concrete is mixed on the way to the site where the concrete is to be poured. At some of these plants, the concrete may also be manufactured in a central mix drum and transferred to a transport truck. Most of the remaining concrete manufactured are products cast in a factory setting. Precast products range from concrete bricks and paving stones to bridge girders, structural components, and panels for cladding. Concrete masonry, another type of manufactured concrete, may be best known for its conventional 8 x 8 x 16-inch block. In a few cases concrete is dry batched or prepared at a building construction site. Figure 11.12-1 is a generalized process diagram for concrete batching.

The raw materials can be delivered to a plant by rail, truck or barge. The cement is transferred to elevated storage silos pneumatically or by bucket elevator. The sand and coarse aggregate are transferred to elevated bins by front end loader, clam shell crane, belt conveyor, or bucket elevator. From these elevated bins, the constituents are fed by gravity or screw conveyor to weigh hoppers, which combine the proper amounts of each material.

11.12-2 Emissions and Controls [6-8]

Particulate matter, consisting primarily of cement and pozzolan dust but including some aggregate and sand dust emissions, is the primary pollutant of concern. In addition, there are emissions of metals that are associated with this particulate matter. All but one of the emission points are fugitive in nature. The only point sources are the transfer of cement and pozzolan material to silos, and these are usually vented to a fabric filter or "sock". Fugitive sources include the transfer of sand and aggregate, truck loading, mixer loading, vehicle traffic, and wind erosion from sand and aggregate storage piles. The amount of fugitive emissions generated during the transfer of sand and aggregate depends primarily on the surface moisture content of these materials. The extent of fugitive emission control varies widely from plant to plant. Particulate emission factors for concrete batching are give in Tables 11.12-1 and 11.12-2.

Types of controls used may include water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, central duct collection systems, and the like. A major source of potential emissions, the movement of heavy trucks over unpaved or dusty surfaces in and around the plant, can be controlled by good maintenance and wetting of the road surface.

Predictive equations that allow for emission factor adjustment based on plant specific conditions are given in the Background Document for Chapter 11.12 and Chapter 13. Whenever plant specific data are available, they should be used with these predictive equations (e.g. Equations 11.12-1 through 11.12-3) in lieu of the general fugitive emission factors presented in Table 11.12-1 through11.12-5 in order to adjust to site specific conditions, such as moisture levels and localized wind speeds.

11.12-3 Updates since the 5th Edition.

October 2001 – This major revision of the section replaced emissions factors based upon engineering judgment and poorly documented and performed source test reports with emissions tests conducted at modern operating truck mix and central mix facilities. Emissions factors for both total PM and total PM_{10} were developed from this test data.

June 2006 – This revision of the section supplemented the two source tests with several additional source tests of central mix and truck mix facilities. The measurement of the capture efficiency, local wind speed and fines material moisture level was improved over the previous two source tests. In addition to quantifying total PM and PM_{10}, $PM_{2.5}$ emissions were quantified at all of the facilities. Single value emissions factors for truck mix and central mix operations were revised using all of the data. Additionally, parameterized emissions factor equations using local wind speed and fines material moisture content were developed from the newer data.

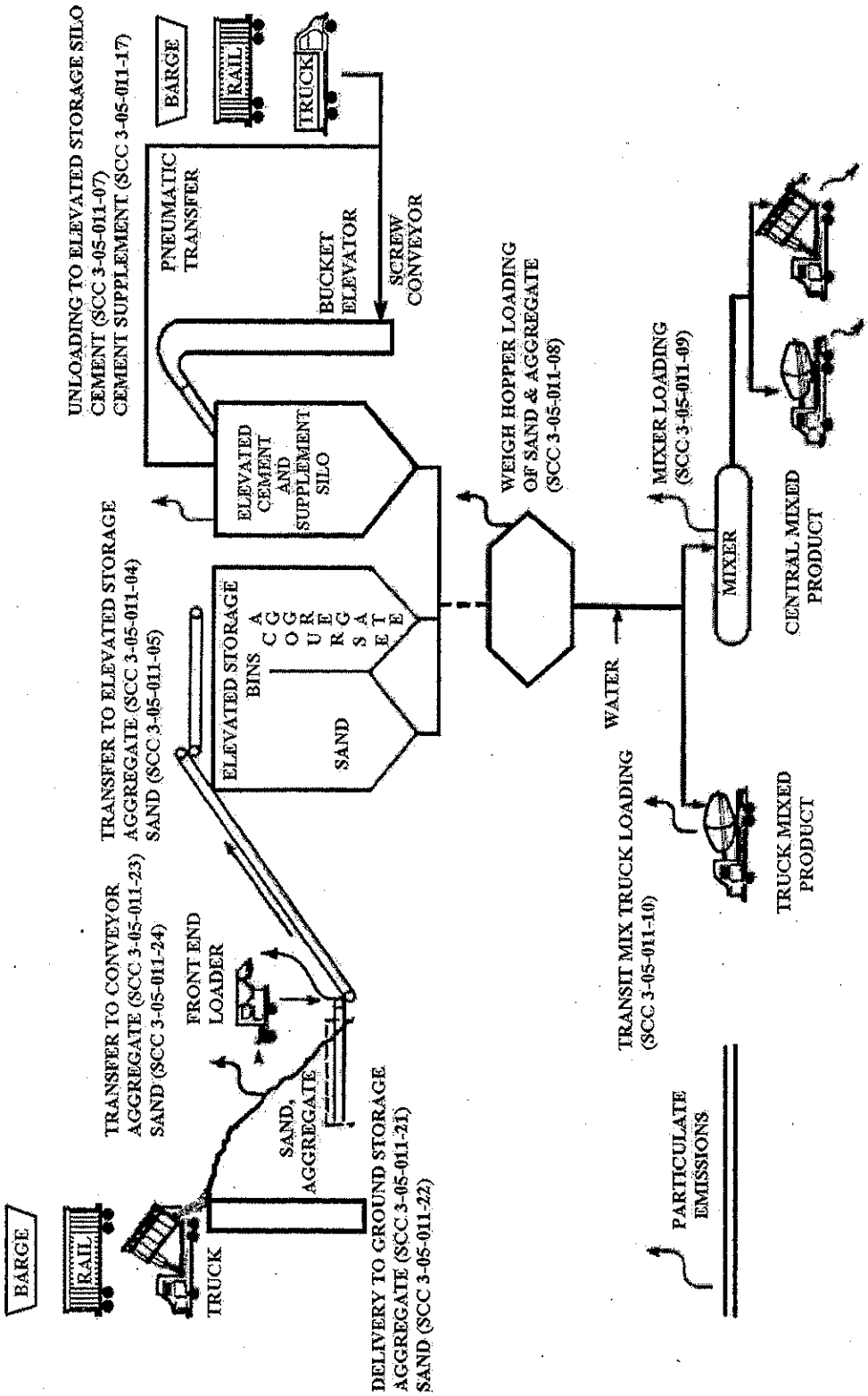

Figure 11.12-1. Typical Concrete Batching Process.

TABLE 11.12-1 (METRIC UNITS)
EMISSION FACTORS FOR CONCRETE BATCHING [a]

Source (SCC)	Uncontrolled				Controlled			
	Total PM	Emission Factor Rating	Total PM_{10}	Emission Factor Rating	Total PM	Emission Factor Rating	Total PM_{10}	Emission Factor Rating
Aggregate transfer [b] (3-05-011-04,-21,23)	0.0035	D	0.0017	D	ND		ND	
Sand transfer [b] (3-05-011-05,22,24)	0.0011	D	0.00051	D	ND		ND	
Cement unloading to elevated storage silo (pneumatic)[c] (3-05-011-07)	0.36	E	0.23	E	0.00050	D	0.00017	D
Cement supplement unloading to elevated storage silo (pneumatic)[d] (3-05-011-17)	1.57	E	0.65	E	0.0045	D	0.0024	E
Weigh hopper loading [e] (3-05-011-08)	0.0026	D	0.0013	D	ND		ND	
Mixer loading (central mix)[f] (3-05-011-09)	0.272 or Eqn. 11.12-1	B	0.067 or Eqn. 11.12-1	B	0.0087 or Eqn. 11.12-1	B	0.0024 or Eqn. 11.12-1	B
Truck loading (truck mix)[g] (3-05-011-10)	0.498	B	0.139	B	0.0280 or Eqn. 11.12-1	B	0.0080 or Eqn. 11.12-1	B
Vehicle traffic (paved roads)	See AP-42 Section 13.2.1							
Vehicle traffic (unpaved roads)	See AP-42 Section 13.2.2							
Wind erosion from aggregate and sand storage piles	See AP-42 Section 13.2.5							

ND = No data

[a] All emission factors are in kg of pollutant per Mg of material loaded unless noted otherwise. Loaded material includes course aggregate, sand, cement, cement supplement and the surface moisture associated with these materials. The average material composition of concrete batches presented in references 9 and 10 was 846 kg course aggregate, 648 kg sand, 223 kg cement and 33kg cement supplement. Approximately 75 liters of water was added to this solid material to produce 1826 kg of concrete.

[b] Reference 9 and 10. Emission factors are based upon an equation from AP-42, Section 13.2.2, with k_{PM-10} =.35, k_{PM} = .74, U = 10mph, $M_{aggregate}$ =1.77%, and M_{sand} = 4.17%. These moisture contents of the materials ($M_{aggregate}$ and M_{sand}) are the averages of the values obtained from Reference 9 and Reference 10.

[c] The uncontrolled PM & PM-10 emission factors were developed from Reference 9. The controlled emission factor for PM was developed from References 9, 10, 11, and 12. The controlled emission factor for PM-10 was developed from References 9 and 10.

[d] The controlled PM emission factor was developed from Reference 10 and Reference 12, whereas the controlled PM-10 emission factor was developed from only Reference 10.

[e] Emission factors were developed by using the Aggregate and Sand Transfer Emission Factors in conjunction with the ratio of aggregate and sand used in an average yard^3 of concrete. The unit for these emission factors is kg of pollutant per Mg of aggregate and sand.

[f] References 9, 10, and 14. The emission factor units are kg of pollutant per Mg of cement and cement supplement. The general factor is the arithmetic mean of all test data.

[g] Reference 9, 10, and 14. The emission factor units are kg of pollutant per Mg of cement and cement supplement. The general factor is the arithmetic mean of all test data.

TABLE 11.12-2 (ENGLISH UNITS)
EMISSION FACTORS FOR CONCRETE BATCHING [a]

Source (SCC)	Uncontrolled				Controlled			
	Total PM	Emission Factor Rating	Total PM_{10}	Emission Factor Rating	Total PM	Emission Factor Rating	Total PM_{10}	Emission Factor Rating
Aggregate transfer [b] (3-05-011-04,-21,23)	0.0069	D	0.0033	D	ND		ND	
Sand transfer [b] (3-05-011-05,22,24)	0.0021	D	0.00099	D	ND		ND	
Cement unloading to elevated storage silo (pneumatic)[c] (3-05-011-07)	0.72	E	0.46	E	0.00099	D	0.00034	D
Cement supplement unloading to elevated storage silo (pneumatic)[d] (3-05-011-17)	3.14	E	1.10	E	0.0089	D	0.0049	E
Weigh hopper loading [e] (3-05-011-08)	0.0051	D	0.0024	D	ND		ND	
Mixer loading (central mix)[f] (3-05-011-09)	0.544 or Eqn. 11.12-1	B	0.134 or Eqn. 11.12-1	B	0.0173 or Eqn. 11.12-1	B	0.0048 or Eqn. 11.12-1	B
Truck loading (truck mix)[g] (3-05-011-10)	0.995	B	0.278	B	0.0568 or Eqn. 11.12-1	B	0.0160 or Eqn. 11.12-1	B
Vehicle traffic (paved roads)	See AP-42 Section 13.2.1							
Vehicle traffic (unpaved roads)	See AP-42 Section 13.2.2							
Wind erosion from aggregate and sand storage piles	See AP-42 Section 13.2.5							

ND = No data

[a] All emission factors are in lb of pollutant per ton of material loaded unless noted otherwise. Loaded material includes course aggregate, sand, cement, cement supplement and the surface moisture associated with these materials. The average material composition of concrete batches presented in references 9 and 10 was 1865 lbs course aggregate, 1428 lbs sand, 491 lbs cement and 73 lbs cement supplement. Approximately 20 gallons of water was added to this solid material to produce 4024 lbs (one cubic yard) of concrete.

[b] Reference 9 and 10. Emission factors are based upon an equation from AP-42, Section 13.2.2, with k_{PM-10} =.35, k_{PM} = .74, U = 10mph, $M_{aggregate}$ =1.77%, and M_{sand} = 4.17%. These moisture contents of the materials ($M_{aggregate}$ and M_{sand}) are the averages of the values obtained from Reference 9 and Reference 10.

[c] The uncontrolled PM & PM-10 emission factors were developed from Reference 9. The controlled emission factor for PM was developed from References 9, 10, 11, and 12. The controlled emission factor for PM-10 was developed from References 9 and 10.

[d] The controlled PM emission factor was developed from Reference 10 and Reference 12, whereas the controlled PM-10 emission factor was developed from only Reference 10.

[e] Emission factors were developed by using the Aggregate and Sand Transfer Emission Factors in conjunction with the ratio of aggregate and sand used in an average yard^3 of concrete. The unit for these emission factors is lb of pollutant per ton of aggregate and sand.

[f] References 9, 10, and 14. The emission factor units are lb of pollutant per ton of cement and cement supplement. The general factor is the arithmetic mean of all test data.

[g] Reference 9, 10, and 14. The emission factor units are lb of pollutant per ton of cement and cement supplement. The general factor is the arithmetic mean of all test data.

The particulate matter emissions from truck mix and central mix loading operations are calculated in accordance with the values in Tables 11.12-1 or 11.12-2 or by Equation 11.12-1[14] when site specific data are available.

$$E = k\,(0.0032)\left[\frac{U^a}{M^b}\right] + c \qquad \text{Equation 11.12-1}$$

E	=	Emission factor in lbs./ton of cement and cement supplement
k	=	Particle size multiplier (dimensionless)
U	=	Wind speed at the material drop point, miles per hour (mph)
M	=	Minimum moisture (% by weight) of cement and cement supplement
a, b	=	Exponents
c	=	Constant

The parameters for Equation 11.12-1 are summarized in Tables 11.12-3 and 11.12-4.

Table 11.12-3. Equation Parameters for Truck Mix Operations

Condition	Parameter Category	k	a	b	c
Controlled[1]	Total PM	0.8	1.75	0.3	0.013
	PM_{10}	0.32	1.75	0.3	0.0052
	$PM_{10-2.5}$	0.288	1.75	0.3	0.00468
	$PM_{2.5}$	0.048	1.75	0.3	0.00078
Uncontrolled[1]	Total PM	0.995			
	PM_{10}	0.278			
	$PM_{10-2.5}$	0.228			
	$PM_{2.5}$	0.050			

Table 11.12-4. Equation Parameters for Central Mix Operations

Condition	Parameter Category	k	a	b	c
Controlled[1]	Total PM	0.19	0.95	0.9	0.0010
	PM_{10}	0.13	0.45	0.9	0.0010
	$PM_{10-2.5}$	0.12	0.45	0.9	0.0009
	$PM_{2.5}$	0.03	0.45	0.9	0.0002
Uncontrolled[1]	Total PM	5.90	0.6	1.3	0.120
	PM_{10}	1.92	0.4	1.3	0.040
	$PM_{10-2.5}$	1.71	0.4	1.3	0.036
	$PM_{2.5}$	0.38	0.4	1.3	0

1. Emission factors expressed in lbs/tons of cement and cement supplement

To convert from units of lbs/ton to units of kilograms per mega gram, the emissions calculated by Equation 11.12-1 should be divided by 2.0.

Particulate emission factors per yard of concrete for an average batch formulation at a typical facility are given in Tables 11.12-5 and 11.12-6. For truck mix loading and central mix loading, the

emissions of PM, PM-10, PM-10-2.5, and PM-2.5 are calculated by multiplying the emission factor calculated using Equation 11.12-2 by a factor of 0.282 to convert from emissions per ton of cement and cement supplement to emissions per yard of concrete. This equation is based on a typical concrete formulation of 564 pounds of cement and cement supplement in a total of 4,024 pounds of material (including aggregate, sand, and water). This calculation is summarized in Equation 11.12-2.

$$\text{PM, PM10, PM10-2.5, PM2.5 emissions}\left(\frac{\text{pounds}}{\text{yd}^3 \text{ of concrete}}\right) = 0.282\,(\text{Equation 11.12-1 factor or Table 11.12-2 Factor})$$

Equation 11.12-2

Metals emission factors for concrete batching are given in Tables 11.12-6 and 11.12-7. Alternatively, the metals emissions from ready mix plants can be calculated based on (1) the weighted average concentration of the metal in the cement and the cement supplement (i.e. flyash) and (2) on the total particulate matter emission factors calculated in accordance with Equation 11.12-3. Emission factors calculated using Equation 11.12-3 are rated D.

$$\text{Metal}_{EF} = \text{PM}_{EF}\left(\frac{aC + bS}{C + S}\right)$$

Equation 11.12-3

Where:

Metal_{EF}	=	Metal Emissions, Lbs. As per Ton of Cement and Cement Supplement
PM_{EF}	=	Controlled Particulate Matter Emission Factor (PM, PM10, or PM2.5) Lbs. per Ton of Cement and Cement Supplement
a	=	ppm of Metal in Cement
C	=	Quantity of Cement Used, Lbs. per hour
b	=	ppm of Metal in Cement Supplement
S	=	Quantity of Cement Supplement Used, Lbs. per hour

This equation is based on the assumption that 100% of the particulate matter emissions are material entrained from the cement and cement supplement streams. Equation 11.12-3 over-estimates total metal emissions to the extent that sand and fines from aggregate contribute to the total particulate matter emissions.

TABLE 11.12-5 (ENGLISH UNITS)
PLANT WIDE EMISSION FACTORS PER YARD OF TRUCK MIX CONCRETE [a]

	Uncontrolled		Controlled	
	PM (lb/yd^3)	PM-10 (lb/yd^3)	PM (lb/yd^3)	PM-10 (lb/yd^3)
Aggregate delivery to ground storage (3-05-011-21)	0.0064	0.0031	0.0064	0.0031
Sand delivery to ground storage (3-05-011-22)	0.0015	0.0007	0.0015	0.0007
Aggregate transfer to conveyor (3-05-011-23)	0.0064	0.0031	0.0064	0.0031
Sand transfer to conveyor (3-05-011-24)	0.0015	0.0007	0.0015	0.0007
Aggregate transfer to elevated storage (3-05-011-04)	0.0064	0.0031	0.0064	0.0031
Sand transfer to elevated storage (3-05-011-05)	0.0015	0.0007	0.0015	0.0007
Cement delivery to Silo (3-05-011-07 controlled)	0.0002	0.0001	0.0002	0.0001
Cement supplement delivery to Silo (3-05-011-17 controlled)	0.0003	0.0002	0.0003	0.0002
Weigh hopper loading (3-05-011-08)	0.0079	0.0038	0.0079	0.0038
Truck mix loading (3-05-011-10)	See Equation 11.12-2			

TABLE 11.12-6 (ENGLISH UNITS)
PLANT WIDE EMISSION FACTORS PER YARD OF CENTRAL MIX CONCRETE [a]

	Uncontrolled		Controlled	
	PM (lb/yd^3)	PM-10 (lb/yd^3)	PM (lb/yd^3)	PM-10 (lb/yd^3)
Aggregate delivery to ground storage (3-05-011-21)	0.0064	0.0031	0.0064	0.0031
Sand delivery to ground storage (3-05-011-22)	0.0015	0.0007	0.0015	0.0007
Aggregate transfer to conveyor (3-05-011-23)	0.0064	0.0031	0.0064	0.0031
Sand transfer to conveyor (3-05-011-24)	0.0015	0.0007	0.0015	0.0007
Aggregate transfer to elevated storage (3-05-011-04)	0.0064	0.0031	0.0064	0.0031
Sand transfer to elevated storage (3-05-011-05)	0.0015	0.0007	0.0015	0.0007
Cement delivery to Silo (3-05-011-07 controlled)	0.0002	0.0001	0.0002	0.0001
Cement supplement delivery to Silo (3-05-011-17 controlled)	0.0003	0.0002	0.0003	0.0002
Weigh hopper loading (3-05-011-08)	0.0079	0.0038	0.0079	0.0038
Central mix loading (3-05-011-09)	See Equation 11.12-2			

[a] Total facility emissions are the sum of the emissions calculated in Tables 11.12-4 or 11.12-5. Total facility emissions do not include road dust and wind blown dust. The emission factors in Tables 11.12-4 and 11.12-5 are based upon the following composition of one yard of concrete.

Coarse Aggregate	1865. pounds
Sand	1428. pounds
Cement	491. pounds
Cement Supplement	73. pounds
Water	20. gallons (167 pounds)

TABLE 11.12-7 (METRIC UNITS)
CONCRETE BATCH PLANT METAL EMISSION FACTORS [a]

	Arsenic	Beryllium	Cadmium	Total Chromium	Lead	Manganese	Nickel	Total Phosphorus	Selenium	Emission Factor Rating
Cement Silo Filling [b]										
(SCC 3-05-011-07)	8.38e-07	8.97e-09	1.17e-07	1.26e-07	3.68e-07	1.01e-04	8.83e-06	5.88e-05	ND	E
w/ Fabric Filter	2.12e-09	2.43e-10	2.43e-10	1.45e-08	5.46e-09	5.87e-08	2.09e-08	ND	ND	E
Cement Supplement Silo Filling [c]										
(SCC 3-05-011-17)	ND	ND	ND	ND	ND	ND	ND	ND	ND	E
w/ Fabric Filter	5.02e-07	4.52e-08	9.92e-09	6.10e-07	2.60e-07	1.28e-07	1.14e-06	1.77e-06	3.62e-08	E
Central Mix Batching [d]										
(SCC 3-05-011-09)	1.16e-07	ND	5.92e-09	7.11e-07	1.91e-07	3.06e-05	1.64e-06	1.01e-05	ND	E
w/ Fabric Filter	9.35e-09	ND	3.55e-10	6.34e-08	1.83e-08	1.89e-06	1.24e-07	6.04e-07	ND	E
Truck Loading [e]										
(SCC 3-05-011-10)	1.52e-06	1.22e-07	1.71e-08	5.71e-06	1.81e-06	3.06e-05	5.99e-06	1.92e-05	1.31e-06	E
w/ Fabric Filter	5.80e-07	5.18e-08	4.53e-09	2.05e-06	7.67e-07	1.04e-05	2.39e-06	6.16e-06	5.64e-08	E

ND=No data

[a] All emission factors are in kg of pollutant per Mg of material loaded unless noted otherwise. Loaded material includes course aggregate, sand, cement, cement supplement and the surface moisture associated with these materials. The average material composition of concrete batches presented in references 9 and 10 was 846 Kg course aggregate, 648 kg sand, 223 kg cement and 33kg cement supplement. Approximately 75 liters of water was added to this solid material to produce 1826 kg of concrete.

[b] The uncontrolled emission factors were developed from Reference 8. The controlled emission factors were developed form Reference 9 and 10. Although controlled emissions of phosphorous compounds were below detection, it is reasonable to assume that the effectiveness is comparable to the average effectiveness (98%) for the other metals.

[c] Reference 10.

[d] Reference 9. The emission factor units are kg of pollutant per Mg of cement and cement supplement. Emission factors were developed from a typical central mix operation. The average estimate of the percent of emissions captured during each run is 94%.

[e] Reference 9 and 10. The emission factor units are kg of pollutant per Mg of cement and cement supplement. Emission factors were developed from two typical truck mix loading operations. Based upon visual observations of every loading operation during the two test programs, the average capture efficiency during the testing was 71%.

TABLE 11.12-8 (ENGLISH UNITS)
CONCRETE BATCH PLANT METAL EMISSION FACTORS [a]

	Arsenic	Beryllium	Cadmium	Total Chromium	Lead	Manganese	Nickel	Total Phosphorus	Selenium	Emission Factor Rating
Cement Silo Filling [b] (SCC 3-05-011-07)	1.68e-06	1.79e-08	2.34e-07	2.52e-07	7.36e-07	2.02e-04	1.76e-05	1.18e-05	ND	E
w/ Fabric Filter	4.24e-09	4.86e-10	4.86e-10	2.90e-08	1.09e-08	1.17e-07	4.18e-08	ND	ND	E
Cement Supplement Silo Filling [c] (SCC 3-05-011-17)	ND	ND	ND	ND	ND	ND	ND	ND	ND	E
w/ Fabric Filter	1.00e-06	9.04e-08	1.98e-10	1.22e-06	5.20e-07	2.56e-07	2.28e-06	3.54e-06	7.24e-08	E
Central Mix Batching [d] (SCC 3-05-011-09)	2.32e-07	ND	1.18e-08	1.42e-06	3.82e-07	6.12e-05	3.28e-06	2.02e-05	ND	E
w/ Fabric Filter	1.87e-08	ND	7.10e-10	1.27e-07	3.66e-08	3.78e-06	2.48e-07	1.20e-06	ND	E
Truck Loading [e] (SCC 3-05-011-10)	3.04e-06	2.44e-07	3.42e-08	1.14e-05	3.62e-06	6.12e-05	1.19e-05	3.84e-05	2.62e-06	E
w/ Fabric Filter	1.16e-06	1.04e-07	9.06e-09	4.10e-06	1.53e-06	2.08e-05	4.78e-06	1.23e-05	1.13e-07	E

ND=No data

[a] All emission factors are in lb of pollutant per ton of material loaded unless noted otherwise. Loaded material includes course aggregate, sand, cement, cement supplement and the surface moisture associated with these materials. The average material composition of concrete batches presented in references 9 and 10 was 1865 lbs course aggregate, 1428 lbs sand, 491 lbs cement and 73 lbs cement supplement. Approximately 20 gallons of water was added to this solid material to produce 4024 lbs (one cubic yard) of concrete.

[b] The uncontrolled emission factors were developed from Reference 8. The controlled emission factors were developed form Reference 9 and 10. Although controlled emissions of phosphorous compounds were below detection, it is reasonable to assume that the effectiveness is comparable to the average effectiveness (98%) for the other metals.

[c] Reference 10.

[d] Reference 9. The emission factor units are lb of pollutant per ton of cement and cement supplement. Emission factors were developed from a typical central mix operation. The average estimate of the percent of emissions captured during each test run is 94%.

[e] Reference 9 and 10. The emission factor units are lb of pollutant per ton of cement and cement supplement. Emission factors were developed from two typical truck mix loading operations. Based upon visual observations of every loading operation during the two test programs, the average capture efficiency during the testing was 71%.

References for Section 11.12

1. *Air Pollutant Emission Factors*, APTD-0923, U.S. Environmental Protection Agency, Research Triangle Park, NC, April 1970.

2. *Air Pollution Engineering Manual*, 2nd Edition, AP-40, U.S. Environmental Protection Agency, Research Triangle Park, NC, 1974. Out of Print.

3. Telephone and written communication between Edwin A. Pfetzing, PEDCo Environmental., Inc., Cincinnati, OH, and Richards Morris and Richard Meininger, National Ready Mix Concrete Association, Silver Spring, MD, May 1984.

4. *Development Document for Effluent Limitations Guidelines and Standards of Performance, The Concrete Products Industries, Draft*, U.S. Environmental Protection Agency, Washington, DC, August 1975.

5. Portland Cement Association. (2001). Concrete Basics. Retrieved August 27, 2001 from the World Wide Web: http://www.portcement.org/cb/

6. *Technical Guidance for Control of Industrial Process Fugitive Particulate Emissions*, EPA-450/3-77-010, U.S. Environmental Protection Agency, Research Triangle Park, NC, March 1977.

7. *Fugitive Dust Assessment at Rock and Sand Facilities in the South Coast Air Basin*, Southern California Rock Products Association and Southern California Ready Mix Concrete Association, Santa Monica, CA, November 1979.

8. Telephone communication between T.R. Blackwood, Monsanto Research Corp., Dayton, OH, and John Zoller, PEDCo Environmental, Inc., Cincinnati, OH, October 18, 1976.

9. *Final Test Report for USEPA* [sic] *Test Program Conducted at Chaney Enterprises Cement Plant*, ETS, Inc., Roanoke, VA April 1994.

10. *Final Test Report for USEPA* [sic] *Test Program Conducted at Concrete Ready Mixed Corporation*, ETS, Inc., Roanoke, VA April 1994.

11. *Emission Test for Tiberi Engineering Company*, Alar Engineering Corporation, Burbank, IL, October, 1972.

12. *Stack Test "Confidential"* (Test obtained from State of Tennessee), Environmental Consultants, Oklahoma City, OK, February 1976.

13. *Source Sampling Report, Particulate Emissions from Cement Silo Loading*, Specialty Alloys Corporation, Gallaway, Tennessee, Reference number 24-00051-02, State of Tennessee, Department of Health and Environment, Division of Air Pollution Control, June 12, 1984.

14. Richards, J. and T. Brozell. "*Ready Mixed Concrete Emission Factors, Final Report*" Report to the Ready Mixed Concrete Research Foundation, Silver Spring, Maryland. August 2004.

ORDINANCE 2007-_____

AN ORDINANCE OF INDIAN RIVER COUNTY, FLORIDA CONCERNING AMENDMENTS TO LAND DEVELOPMENT REGULATIONS (LDRs); PROVIDING FINDINGS; PROVIDING FOR AMENDMENTS TO CHAPTER 911, ZONING, BY REVISING THE TABLE OF USES FOR INDUSTRIAL DISTRICTS IN SECTION 911.11(4); PROVIDING FOR REPEAL OF CONFLICTING PROVISIONS; CODIFICATION; SEVERABILITY; AND EFFECTIVE DATE.

BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF INDIAN RIVER COUNTY, FLORIDA THAT THE INDIAN RIVER COUNTY LAND DEVELOPMENT REGULATIONS (LDR'S) BE AMENDED AS FOLLOWS:

SECTION #1: AMENDMENTS

Section 911.11, Uses in the Industrial Districts, is hereby amended to read as follows:

(4) *Uses.* Uses in the industrial districts are classified as permitted uses, administrative permit uses, and special exception uses. Site plan review shall be required for the construction, alteration and use of all structures and buildings.

	District	
Use	*IL*	*IG*
Agriculture		
Agricultural Production Crops		
Horticultural and landscape	P	P
Plants and specialties		
Mulch products and services	P	P
Kennels and animal boarding	P	P
Services		
Farm labor and management services	P	P
Landscape services	P	P
Veterinary services ~~2~~	P	P
Commercial fisheries	P	-
Commercial		
Construction		
General building contractors	P	P
Special trade contractors	P	P
Personal Services		
Linen supply	P	-

	District	
Use	*IL*	*IG*
Carpet and upholstery cleaning	P	-
Dry cleaning plants	P	-
Auto Repair, Services and Parking		
Automobile parking and storage	P	-
Automobile Repair		
Body and paint shops	P	P
General automotive repair	P	P
Carwashes	P	-
Miscellaneous Repairs		
Electrical repair	P	P
Reupholstery and furniture	P	P
Welding	P	P
Heavy machinery	P	P
Social Services		
Job training services	P	P
Wholesale Trade		
Durable goods	P	P
Non-durable goods	P	P
Auction facilities, unenclosed	S	-
Flea market	A	-
Auto and home supply stores	P	-
Gasoline service stations	P	S
Boat dealers	P	-
Recreational vehicle dealers	P	-
Motorcycle dealers	P	-
Automobile sales (new and/or used)	P	-
Automotive fluid sales and services (other than gasoline)	-	A
Eating and Drinking Establishments		
Restaurants	P	-
Take out restaurants	P	P
Drive through	P	-

	District	
Use	*IL*	*IG*
Bars and lounges	P	-
Bottle clubs	P	-
Fuel dealers	P	P
Adult entertainment facilities	S	S
Marine-Related Commercial Activities		
Boat sales and rental	P	-
Commercial marina	P	-
Marine repair and services	P	P
Industrial		
Manufacturing	~~P~~	~~P~~
Food and kindred products	P	P
Tobacco products	P	P
Fruit and vegetable juice extraction	A	P
Fruit and vegetable packing houses	A	P
Textile products	P	P
Lumber and wood	P	P
Furniture and fixtures	P	P
~~Paper and allied products and printing and publishing~~	~~P~~	~~P~~
Paper manufacturing	-	***P***
Printing and related support activities	***P***	***P***
Chemicals ~~and allied products~~	-	***P***
Petroleum products	-	P
Rubber and plastics	-	P
Tires	-	P
Rubber and plastic footwear	P	P
Hose, belts, gaskets and packing	P	P
Fabricated rubber products	P	P
Drugs and pharmaceuticals	P	P
Tanning and finishing	-	P
Footwear	P	P

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	District	
Use	*IL*	*IG*
Other leather goods	P	P
Brick and tile	-	***P***
Glass and glass products	-	***P***
Cement and concrete products	-	***P***
Other nonmetallic mineral products ~~Stone glass and clay~~	- ~~P~~	P
Primary metal industries	-	P
Fabricated metal products	P	P
Machine shops	P	P
Industrial machinery and equipment	-	P
Electronic and other electric equipment	P	P
Transportation equipment	-	P
Instruments and related products	P	P
Junk and salvage yards	-	S
Demolition debris site	-	S
Transportation and Utilities		
Airports/airstrips	S	S
Heliports/helipads	S	S
Railroad and bus transportation services	P	P
Trucking and courier services	P	P
Commercial warehousing & storage	P	P
Moving and storage	P	P
Trucking terminals	P	P
Self storage	P	P
Outdoor storage	P	P
Vehicle storage lot (paved/unpaved)[2]	P	P
Postal services	P	P
Water transport services	P	-
Air transport services	P	-
Pipelines	P	P
Transportation Services		

	District	
Use	*IL*	*IG*
Communications towers (wireless facilities)	A[3]	A[3]
Communications towers (non-wireless facilities)		
Amateur radio (accessory use)		
Less than 80 feet	P	P
80 feet or taller (see 971.44(4) for special criteria)	S	S
Commercial		
Up to 70 feet:		
Camouflaged	P	P
Non-camouflaged	P	P
70 feet to 150 feet:		
Camouflaged	A	A
Monopole (minimum of 2 users)	A	A
Not camouflaged and not monopole	A/S*	A/S*
Over 150 feet:		
All tower types (see 971.44(1) for special criteria)	S	S
Freight transport arrangement	P	P
Utilities		
Public and private utilities, heavy	S	S
Gas services	P	P
Electric services	P	P
Water services	P	P
Sanitary services	P	P
Irrigation systems	P	P
Residential Uses		
Accessory housing (watchmen)	A	A

P= Permitted use
A= Administrative permit use
S= Special exception use

[1]The requirements of section 917.06(11) of the accessory uses and structures chapter, shall apply to towers less than seventy (70) feet.

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[2] Standards for unpaved vehicle storage lots are found in section 954.08(6).

[3]For wireless commercial facilities regulations, see section 971.44(5), Section 4 use table.

*See 971.44(4) to determine whether the administrative permit or special exception use process applies.

SECTION #2: SEVERABILITY

If any clause, section or provision of this Ordinance shall be declared by a court of competent jurisdiction to be unconstitutional or invalid for any cause or reason, the same shall be eliminated from this Ordinance and the remaining portion of this Ordinance shall be in full force and effect and be as valid as if such invalid portion thereof had not been incorporated therein.

SECTION #3: REPEAL OF CONFLICTING ORDINANCES

The provisions of any other Indian River County ordinance that are inconsistent or in conflict with the provisions of this Ordinance are repealed to the extent of such inconsistency or conflict.

SECTION #4: INCLUSION IN THE CODE OF LAWS AND ORDINANCES

The provisions of this Ordinance shall become and be made a part of the Code of Laws and Ordinances of Indian River County, Florida. The sections of the Ordinance may be renumbered or relettered to accomplish such, and the word "ordinance" may be changed to "section", "article", or any other appropriate word.

SECTION #5: EFFECTIVE DATE

This Ordinance shall take effect immediately upon filing with the Department of State.

Approved and adopted by the Board of County Commissioners of Indian River County, Florida, on this _____ day of _____, 2007.

This ordinance was advertised in the Press-Journal on the _____ day of _____, 2007, for a public hearing to be held on the _____ day of _____, 2007, at which time it was moved for adoption by Commissioner _____, seconded by Commissioner_____, and adopted by the following vote:

Chairman Gary C. Wheeler _____

Vice Chairman Sandra L. Bowden _____

Commissioner Joseph E. Flescher _____

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ORDINANCE 2007-_____

Commissioner Wesley S. Davis _____

Commissioner Peter D. O'Bryan _____

BOARD OF COUNTY COMMISSIONERS
OF INDIAN RIVER COUNTY

BY: _____
Gary C. Wheeler, Chairman

ATTEST BY: _____
Jeffrey K. Barton, Clerk

This ordinance was filed with the Department of State on the following date: _____, and is to take effect on _____

APPROVED AS TO FORM AND LEGAL SUFFICIENCY

_____
William G. Collins II, County Attorney

APPROVED AS TO PLANNING MATTERS

_____
Robert M. Keating, AICP; Community Development Director

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