

BODY -

DRAFTER'S ANALYSIS: This ordinance amends Subsection 29.20 of the Madison General Ordinances regarding building restrictions in sites adjacent to landfills. This ordinance updates the specific landfill zones of concern covered by the ordinance to better reflect the City's 20 years of monitoring results. In addition, maps of the zones of concern have been added to better inform the public about the location of these areas. This ordinance also replaces the approved construction practices and safety precautions that must be followed within landfill zones of concern with current best practices. Of note, new homes inside the boundaries will be required to include passive ventilation systems that can be activated in the future if there is a problem, and commercial buildings will be required to have activated systems.

The Common Council of the City of Madison do hereby ordain as follows:

Subsection (20) entitled "Building Restrictions Adjacent to Solid Waste Disposal Sites" of Section 29.20 entitled "Items to be Enforced Over Wisconsin Administrative Code Section 29.20" is amended to read as follows:

"(20) Building Restrictions Adjacent to Solid Waste Disposal Sites.

(a) Statement of Purpose.

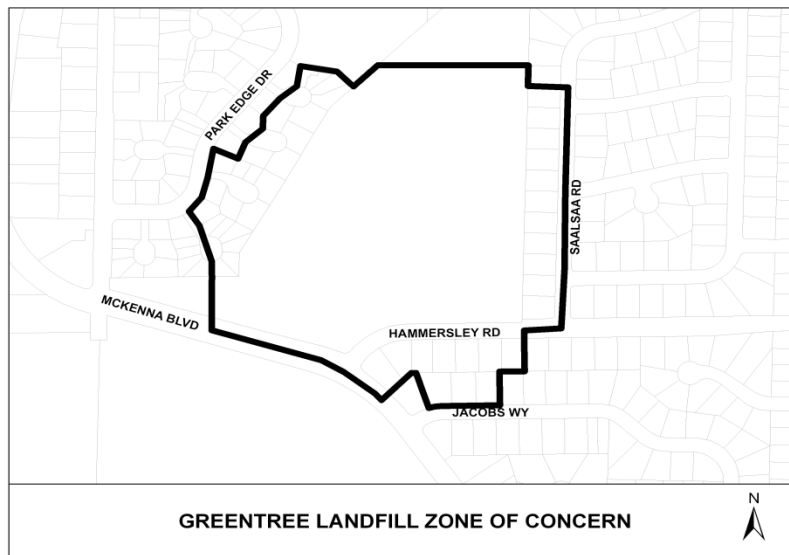
1. Organic refuse or fill material deposited in a solid waste disposal site can be expected to decompose over an extended period of time continuously creating landfill gas as a by-product. The State Uniform Dwelling Code recognizes that landfill gas can be explosive and may seep into buildings through underground passages and openings. However, the Code sets no construction standards for restricting such gas intrusion and, unless and until said solid waste disposal site is designated stable by the City Engineer, it is necessary for the preservation of public health and safety to impose the building code requirements described hereafter.
2. Landfills without Specific Zones of Concern Established by the City Engineer.
 - a. If a disposal site is equipped with an operating extraction system to mechanically ventilate landfill gas, buildings located within five hundred (500) feet of the lesser of the limits of the disposal site's zoning lot, or a line within said disposal site as determined by the City Engineer, shall be constructed as herein required in such fashion as to make them more resistant to landfill gas intrusion.
 - b. If a disposal site is not equipped with an extraction system to mechanically ventilate landfill gas, buildings located within one thousand (1000) feet of the lesser of the limits of the disposal site's zoning lot, or a line within said disposal site as determined by the City Engineer, shall be constructed as herein required in such fashion as to make them more resistant to landfill gas intrusion.
3. Landfills with Specific Zones of Concern. The following disposal sites shall have zones of concern as specified:
 - a. Greentree Hills Landfill. The zone of concern for Greentree Hills Landfill is as follows: ~~Part of the West 1/2 of Section 36, Town 7 North, Range 8 East, City of Madison, Dane County, Wisconsin, more fully described as follows:~~
~~Beginning at the point of intersection of the centerlines of Hammersley Road and Saalsaa Road; thence Northerly along the centerline of Saalsaa Road to the point of intersection with the Southeasterly extension of the North line of Lot 107, Third Addition to Chapel Hill; thence Northwesterly along said Southeasterly extension and said North line to the Northwest corner of said Lot 107; thence Northwesterly on a straight line to the Northeast corner of Lot 41, First Addition to Park Ridge; thence Westerly along the North line of said Lot 41 to the Northwest corner of said Lot 41; thence S22°29'53"W to the point of intersection with the centerline of Park Ridge Drive; thence Southerly~~

along the centerline of Park Ridge Drive to the point of intersection with the Northerly extension of the West line of Lot 65, First Addition to Park Ridge; thence Southerly along said Northerly extension and the West line of Lots 65 and 64 of the First Addition to Park Ridge and the West line of Certified Survey 4393 to the Southwest corner of said certified survey; thence S00°00'00"E to the point of intersection with the centerline of McKenna Boulevard; thence Southeasterly along said centerline to the point of intersection with the Southwesterly extension of the Southeast line of lot 83 of Park Ridge Heights; thence Northeasterly along said Southwesterly extension and said Southeast line to the Southeast corner of said Lot 83; thence Easterly along the South line of Lot 82 to the Southeast corner of said Lot 82; thence Northerly along the East line and said East line extended to the point of intersection with the centerline of Jacobs Way; thence Easterly along said centerline to the point of intersection with the Southerly extension of the East line of Lot 29 of Park Ridge Heights; thence Northerly along said Southerly extension and said East line to the Northeast corner of said Lot 29; thence Easterly to the Southeast corner of Lot 18 of Park Ridge Heights; thence Northerly along the East line of said Lot 18 and said East line extended Northerly to the point of intersection with the centerline of Hammersley Road; thence Easterly along said centerline to the point of beginning. Part of the West 1/2 of Section 36, Town 7 North, Range 8 East, City of Madison, Dane County, Wisconsin, more fully described as follows:

Beginning at the point of intersection of the centerlines of Hammersley Road and Saalsaa Road; thence Northerly along the centerline of Saalsaa Road to the point of intersection with the Easterly extension of the South line of Lot 108, Third Addition to Chapel Hill; thence Westerly, along said extension and South line, to the Southwest corner of said Lot 108; thence Northerly, along the West line of said Lot 108, to the Northwest corner of said Lot 108; thence Westerly, along the Westerly extension of the North line of said Lot 108, 578 feet, more or less, to the intersection of the Southeast line of Lot 41, First Addition to Park Ridge; thence Southwesterly, along the said Southeast line, 153 feet, more or less, to the most Southern corner of said Lot 41, also being the most Eastern corner of CSM 7468; thence Northwesterly, along the Northeasterly line of said CSM, to the most Northern corner of said CSM, also being the Northeast corner of CSM 6995; thence Northwesterly, along the Northeasterly line of said CSM 6995, to the Northwest corner of said CSM; thence Southwesterly, along the Northwesterly line of said CSM, to the Southwest corner of said CSM; thence Southwesterly on a straight line, to the most Northern corner of Lot 46, First Addition to Park Ridge; thence Southwesterly and Southerly, along the Westerly lines of said Lot 46, to the Southwest corner of said Lot 46; thence Southwesterly on a straight line, to the East corner of Lot 52, First Addition to Park Ridge; thence Southwesterly, along the Southeast Line of said Lot 52, to the South corner of said Lot 52; thence Northwesterly, along the Southwest Line of said Lot 52, to the West corner of said Lot 52, also being a point on the Southeast right-of-way line of Park Ridge Drive; thence Southwesterly, along the said Southeast right-of-way line, to the West corner of Lot 59, First Addition to Park Ridge; thence Southeasterly, along the Southwest line of said Lot 59, to the South corner of said Lot 59; thence Southeasterly on a straight line, to the common line between CSM 4393 and CSM 4426; thence Southerly, along said common line and its extension to the point of intersection with the centerline of McKenna Boulevard; thence Southeasterly along said centerline to the point of intersection with the Southwesterly extension of the Northwest line of lot 25, Park Ridge Heights; thence Northeasterly, along the said Northwest line, to the Northerly Line of said Lot 25; thence

Easterly, along the North Line of said Lot 25, to the Northeasterly Line of said Lot 25; thence Southeasterly, along the Northeasterly Line, to the Northerly right-of-way Line of Jacobs Way; thence Easterly, along the said Northerly right-of-way, to the West Line of Lot 29, Park Ridge Heights; thence Northerly, along the said West Line, to the Northwest corner of said Lot 29; thence Easterly, along the North Line of said Lot 29 and the South Line of Lot 18, Park Ridge Heights, to the East line of said Lot 18; thence Northerly along the East line of said Lot 18 and said East line extended Northerly to the point of intersection with the centerline of Hammersley Road; thence Easterly along said centerline to the point of beginning. (Figure 1)

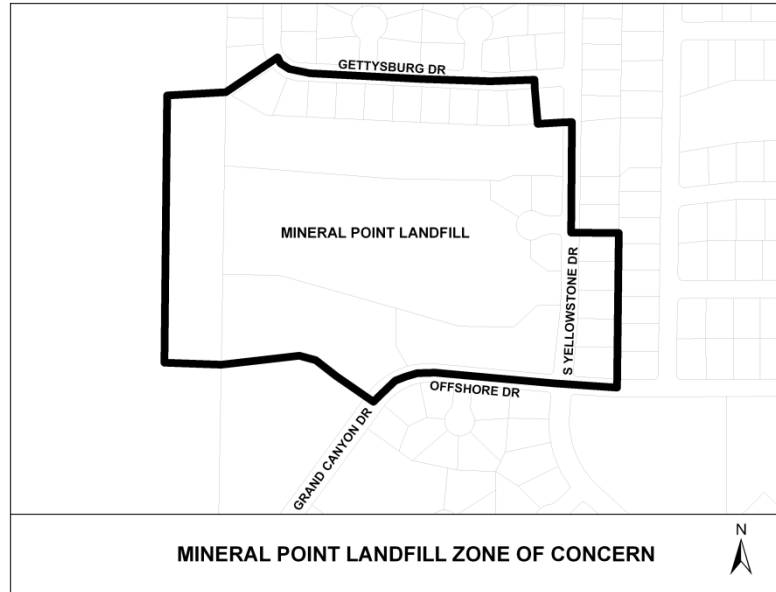
Figure 1.



- b. Mineral Point Landfill. The zone of concern for the Mineral Point Landfill is as follows: Part of the Southwest 1/4 of Section 24, Town 7 North, Range 8 East, City of Madison, Dane County, Wisconsin, more fully described as follows:
~~Beginning at the intersection of the centerline of South Yellowstone Drive and Gettysburg Drive; thence Westerly on the centerline of Gettysburg Drive to a point of intersection with the Northeasterly extension of the Southeast line of Lot 14, Parkwood Hills Plat; thence Southwesterly along said Northeasterly extension and said Southeast line to the Southwest corner of said Lot 14; thence South along the West line of Lot 2 and Lot 1, Parkwood Hills, and Lot 4, Parkwood West, to the Southwest corner of said Lot 4; thence Southeasterly on the South line of said Lot 4 and said South line extended to the point of intersection with the centerline of Offshore Drive; thence Easterly along said centerline to the point of intersection with the Southerly prolongation of the East line of Lot 18, Parkwood West; thence North along said Southerly prolongation and the East line of Lots 18, 17, 16, 15 and 14 of Parkwood West Plat to the Northeast corner of said Lot 14; thence West along the North line of said Lot 14 and the Westerly extension of said North line to the point of intersection with the centerline of South Yellowstone Drive; thence North along the centerline of South Yellowstone Drive to the point of beginning. Excepted from the above described area are the buildings addressed 26-38 and 102-120 Grand Canyon Drive which lie on the South line of Lot 4,~~

Parkwood West. Part of the Southwest 1/4 of Section 24, Town 7 North, Range 8 East, City of Madison, Dane County, Wisconsin, more fully described as follows: Beginning at the intersection of the centerline of Gettysburg Drive and the northerly extension of the West line of Lot 3, Parkwood Hills; thence Westerly on the centerline of Gettysburg Drive to a point of intersection with the Northeasterly extension of the Southeast line of Lot 14, Parkwood Hills Plat; thence Southwesterly along said Northeasterly extension and said Southeast line to the Southwest corner of said Lot 14; thence Westerly 200 feet, more or less, to a line that is parallel to and 200 feet West of, as measured by right angles to, the West line of the East 1/2 of the Southwest 1/4 of said Section 24, also being the West line of Parkwood Hills and Parkwood West; thence Southerly, along said parallel line, to a point that is Westerly of the Southwest corner of Lot 4, Parkwood West; thence Easterly 200 feet, more or less, to the said Southwest corner of Lot 4; thence Southeasterly on the South line of said Lot 4 and said South line extended to the point of intersection with the centerline of Offshore Drive; thence Easterly along said centerline to the point of intersection with the Southerly prolongation of the East line of Lot 18, Parkwood West; thence North along said Southerly prolongation and the East line of Lots 18, 17, 16, 15 and 14 of Parkwood West Plat to the Northeast corner of said Lot 14; thence West along the North line of said Lot 14 and the Westerly extension of said North line to the point of intersection with the centerline of South Yellowstone Drive; thence North along the centerline of South Yellowstone Drive, to the intersection with the easterly extension of the South line of Lot 3, Parkwood Hills; thence Westerly, along the said extension and South line, to the Southwest corner of said Lot 3; thence Northerly, along the West line of said Lot 3 and its extension to the point of beginning. Excepted from the above described area are the buildings addressed 26-38 and 102-120 Grand Canyon Drive which lie on the South line of Lot 4, Parkwood West. (Figure 2)

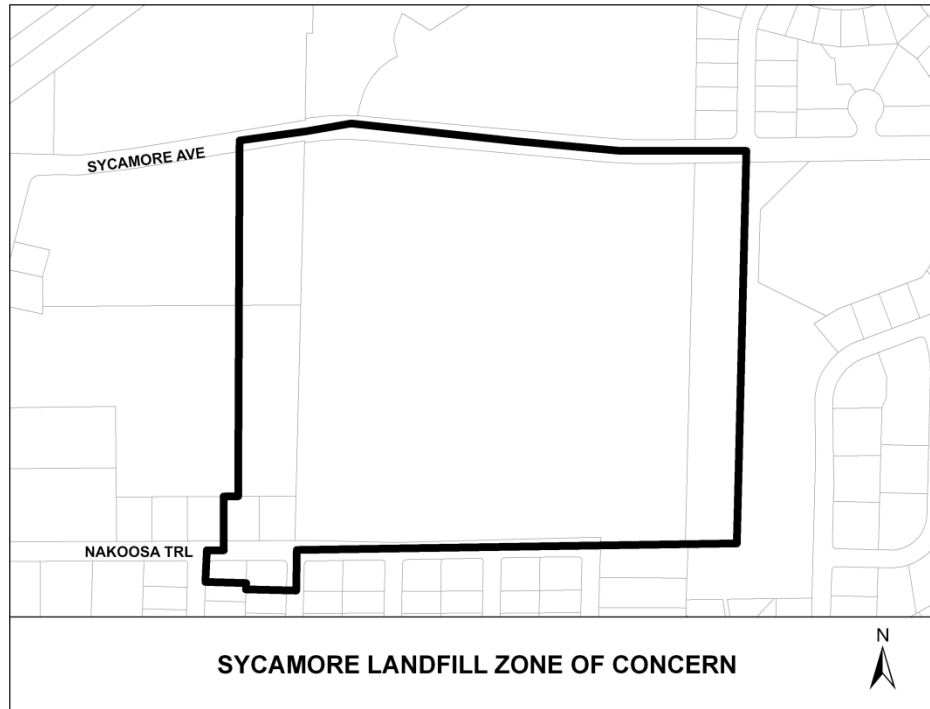
Figure 2.



- c. Sycamore Landfill. The zone of concern for Sycamore Landfill is as follows: Part of the West 1/2 of Section 34, Town 8 North, Range 10 East, City of Madison, Dane County, Wisconsin, more fully described as follows:
~~Beginning at the intersection of the centerline of Sycamore Avenue and the West line of said Section 34; thence Southwesterly along said West line to the Northwest corner of the Southwest 1/4 of the Southwest 1/4 of said Section 34; thence Easterly along said North line to a point on the North line of the Southeast 1/4 of the Southwest 1/4 of said Section 34 which is 150 feet East of the Northwest corner of said Southeast 1/4 of the Southwest 1/4; thence Northerly along a line that is parallel to and 150 feet East of, measured at right angles to, the West line of the Northeast 1/4 of the Southwest 1/4 of said Section 34 to the point of intersection with the centerline of Sycamore Avenue; thence Westerly on said centerline to the point of beginning. Part of the East 1/2 of Section 33 and part of the West 1/2 of Section 34, Town 8 North, Range 10 East, City of Madison, Dane County, Wisconsin, more fully described as follows: Beginning at the intersection of the centerline of Sycamore Avenue and a line parallel to and 200 feet west of, measured at right angles to, the West line of said Section 34; thence Southerly, along said parallel line, to the North line of Lot 4, Ziegler Addition to Burke Heights; thence Westerly, along said North line, to the Northwest corner of said Lot 4; thence Southerly, along the West line and its extension of said Lot 4, to the centerline of Nakoosa Trail; thence Westerly, along said centerline, to the northerly extension of the East right-of-way line of Brandie Rd; thence Southerly, along said extension and East right-of-way line, to the Northwest corner of Lot 2, Jim's Addition to Burke Heights; thence Easterly, along the North line of said Lot 2, to the Northeast corner of said Lot 2; thence Southerly, along the East line of said Lot 2, to the Northwest corner of Lot 76, Second Addition to Burke Heights; thence Easterly, along the North line of said Lot 76 and its extension, to the West line of said Section 34; thence Northerly, along the said West line of Section 34, to the Northwest corner of the Southwest 1/4 of the Southwest 1/4 of said Section 34; thence Easterly along the North line of the said Southwest 1/4 of the Southwest 1/4 to a point on the North line of the Southeast 1/4 of the Southwest 1/4 of said Section 34 which is 150 feet East of the Northwest corner of said~~

Southeast 1/4 of the Southwest 1/4; thence Northerly along a line that is parallel to and 150 feet East of, measured at right angles to, the West line of the Northeast 1/4 of the Southwest 1/4 of said Section 34 to the point of intersection with the centerline of Sycamore Avenue; thence Westerly on said centerline to the point of beginning. (Figure 3)

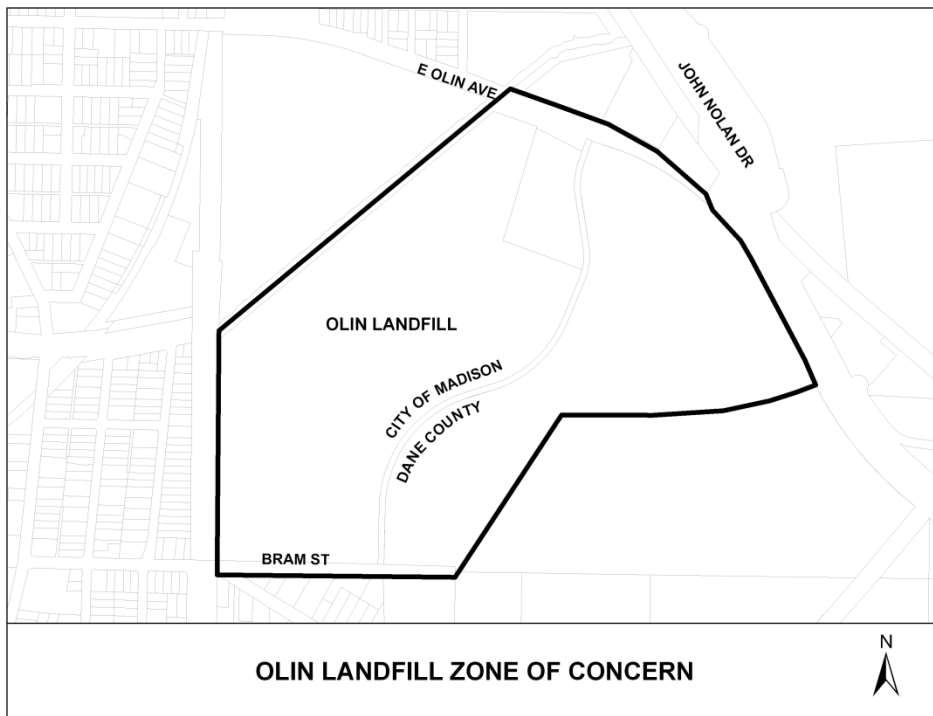
Figure 3.



- d. Olin Landfill. The zone of concern for Olin Landfill is as follows: Part of the Southeast 1/4 of Section 26, Town 7 North, Range 9 East, City of Madison, Dane County, Wisconsin, more fully described as follows: Beginning at the point of intersection of the centerline of Olin Avenue and the centerline of Wingra Creek; thence Southwesterly along the said centerline of Wingra Creek to the point of intersection with the East line of the Chicago and North Western Railroad; thence South along said East line to the point of intersection with the South line of the Southeast 1/4 of said Section 26; thence East on said South line to a point 150 feet East of measured at right angles to, the East right-of-way line of Quann-Olin Parkway (formerly Expo Parkway); thence Northerly, Northeasterly and Northerly along a line that is parallel to and 150 feet East of, measured at right angles to, the East right-of-way line of said Quann-Olin Parkway, 2100 feet, more or less, to the point of intersection with the Easterly prolongation of the South line of Lot 1, Certified Survey Map No. 10594; thence N70°32'55" W, along the Easterly prolongation line and the South line of said Lot 1, 683.08 feet to the Southwest corner of said Lot 1; thence N16°05'16" E, along the West line of said Lot 1, and the Northerly prolongation of said West line, 761.11 feet to the centerline of Olin Avenue; thence Westerly, along said Olin Avenue centerline, 300 feet, more or less, to the point of intersection with the centerline of Olin Avenue. Part of the Southeast 1/4 of Section 26, part of the Southwest 1/4 of Section 25 and part of the Northeast 1/4 of Section 35, all in Town 7 North, Range 9 East, City of Madison, Dane County, Wisconsin, more fully described as follows: Beginning at the point of intersection of the Northeasterly right-of-way of Olin Avenue and the centerline of Wingra Creek; thence Southeasterly, along the said Northeasterly right-of-way,

to the point of intersection with the Southwesterly right-of-way of John Nolen Dr; thence Southeasterly, along the said Southwesterly right-of-way, 1232 feet, more or less, to the point of intersection with the centerline of a private access road for the Alliant Energy Center; thence Southwesterly and Westerly, along the said private access road, 1409 feet, more or less, thence Southwesterly, on a straight line, 1080 feet, more or less, to the Easterly terminus of the South right-of-way of Bram Street; thence Westerly, along the said South right-of-way, to the point of intersection with the Southerly extension of the East line of the Union Pacific Railroad; thence Northerly, along the said extension and East line, to the point of intersection with the centerline of Wingra Creek; thence Northeasterly, along the said centerline, to the point of beginning. (Figure 4)

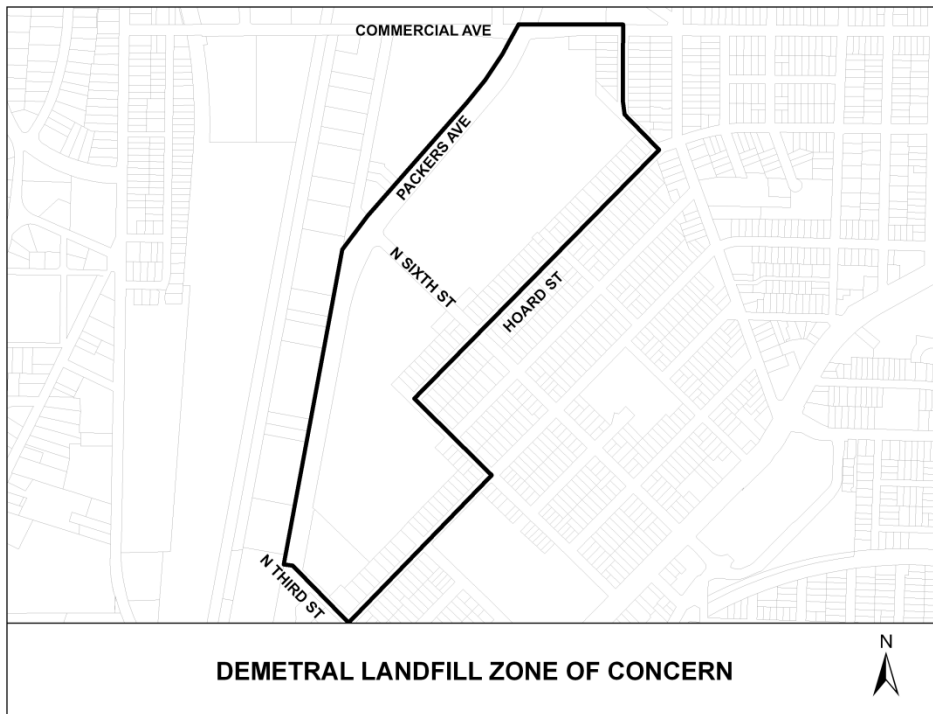
Figure 4.



- e. Demetral Landfill. The zone of concern for Demetral Landfill is as follows: Part of the Northeast, Northwest and Southwest 1/4's of Section 6, Town 7 North, Range 10 East, City of Madison, Dane County, Wisconsin, more fully described as follows: Beginning at the point of intersection of the centerline of Commercial Avenue and the centerline of Schofield Street; thence Southerly along the said centerline of Schofield Street to the intersection with the centerline of Eighth Street; thence Southeasterly along the centerline of Eighth Street to the point of intersection with the centerline of Hoard Street; thence Southwesterly along said centerline of Hoard Street to the point of intersection with the centerline of Fifth Street; thence Southeasterly along said centerline of Fifth Street to the point of intersection with the centerline of East Johnson Street; thence Southwesterly along said centerline of East Johnson Street to the point of intersection with the centerline of Third Street; thence Northwesterly along said centerline of Third Street to the point of intersection with the centerline of Pennsylvania Avenue; thence Northeasterly along said centerline of Pennsylvania Avenue and along the centerline of Packers Avenue to the point of intersection of Packers Avenue and Commercial

Avenue; thence Easterly along said centerline of Commercial Avenue to the point of beginning. Part of the Northeast, Northwest and Southwest 1/4's of Section 6, Town 7 North, Range 10 East, and part of the Southeast 1/4 of Section 31, Town 8 North, Range 10 East, City of Madison, Dane County, Wisconsin, more fully described as follows: Beginning at the point of intersection of the North right-of-way of Commercial Avenue and the centerline of Schofield Street extended; thence Southerly along the said extension and centerline of Schofield Street to the intersection with the centerline of Eighth Street; thence Southeasterly along the centerline of Eighth Street to the point of intersection with the centerline of Hoard Street; thence Southwesterly along said centerline of Hoard Street to the point of intersection with the centerline of Fifth Street; thence Southeasterly along said centerline of Fifth Street to the point of intersection with the centerline of East Johnson Street; thence Southwesterly along said centerline of East Johnson Street to the point of intersection with the centerline of Third Street; thence Northwesterly along said centerline of Third Street to the point of intersection with the Northwesterly right-of-way line of Pennsylvania Avenue; thence Northeasterly along said Northwesterly right-of-way line of Pennsylvania Avenue and the Northwesterly right-of-way line of Packers Avenue to the point of intersection of the Northwesterly right-of-way line Packers Avenue and the North right-of-way of Commercial Avenue; thence Easterly along said North right-of-way of Commercial Avenue to the point of beginning. (Figure 5)

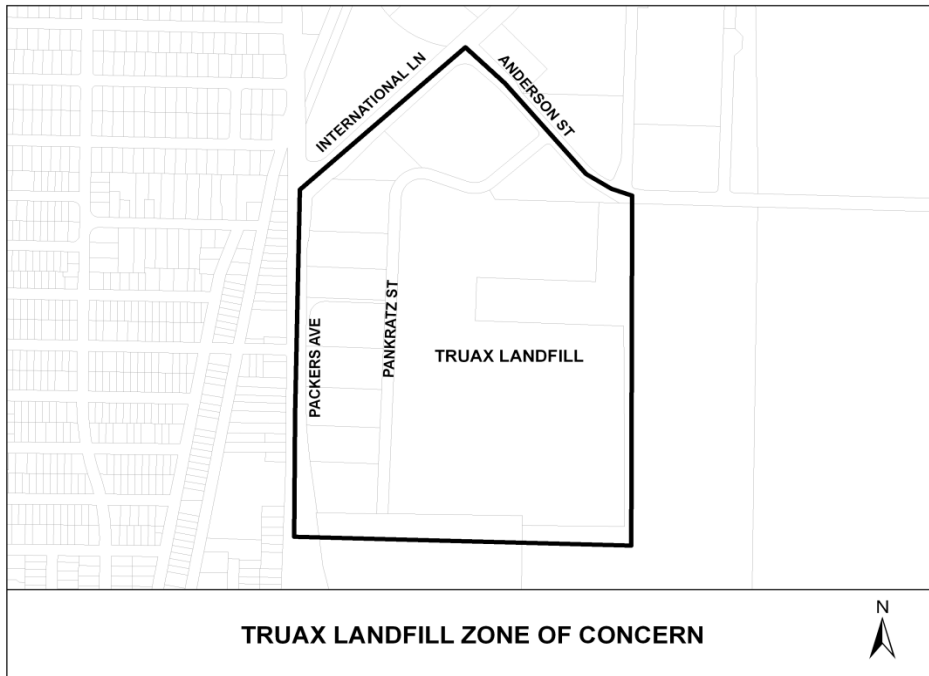
Figure 5.



- f. Truax Landfill. The zone of concern for Truax Landfill is as follows: Part of the Southeast 1/4 of Section 30 and the Northeast 1/4 of Section 31, Town 8 North, Range 10 East, City of Madison, Dane County, Wisconsin, more fully described as follows: Beginning at the point of the intersection of the centerline of International Lane and the West line of the Northeast 1/4 of said Section 31; thence Southerly on said West line to the point of intersection with a line parallel to and 470 feet North of the South line of the Northeast 1/4 of said

Section 31; thence Easterly on said line to the point of intersection with the East right-of-way line of Grim Street extended Southerly; thence Northerly on said Southerly extension and said East right-of-way line to a point on the East right-of-way line of Grim Street 500 feet North of the South line of the Southeast 1/4 of said Section 30; thence West on a line that is parallel to and 500 feet North of, measured at right angles to, said South line to the point of intersection with the centerline of Anderson Street; thence Northwesterly on said centerline to the intersection with the centerline of International Lane; thence Southwesterly on said centerline to the point of beginning. (Figure 6)

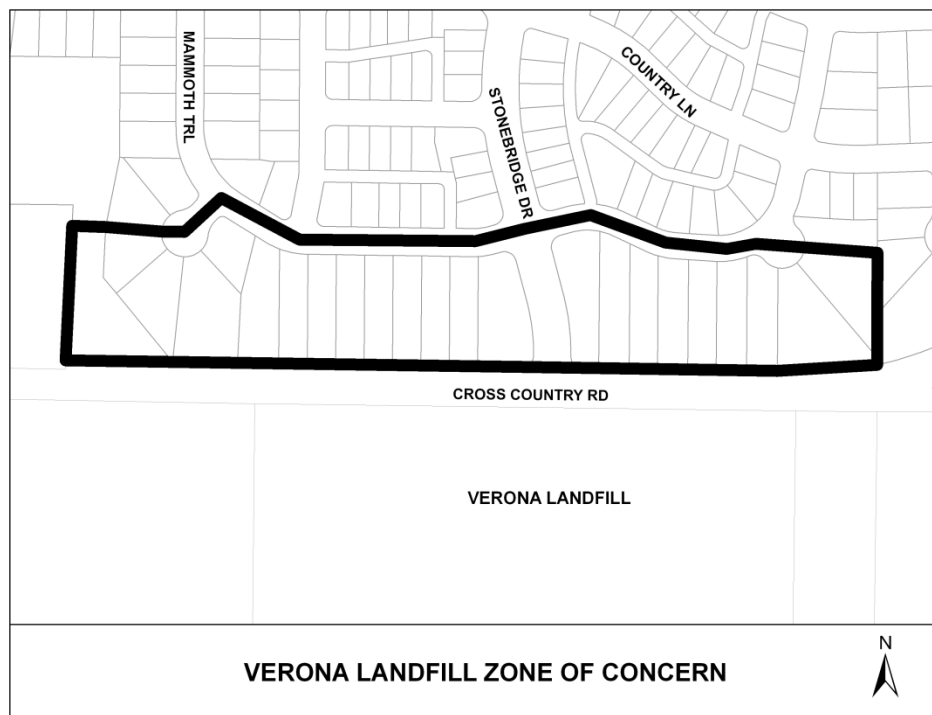
Figure 6.



- g. Verona Landfill. The zone of concern for Verona Landfill is as follows: Part of the Southeast 1/4 of Section 11 and part of the Northeast 1/4 of Section 14, all in Town 6 North, Range 8 East, City of Madison, Dane County, Wisconsin, described as follows: Beginning at the Southeast corner of said Section 11; thence S00°22'24"E, along the Southerly prolongation of the East line of the Southeast 1/4 of said Section 11, 5.51 feet to the Southerly right of way line of Cross Country Road as presently located; thence S89°35'13"W, along said Southerly right of way, 1744.88 feet; thence N01°56'46"E, 172.24 to a point on a line that is 500.00 feet Northwesterly of, measured at right angles to, the North limits of Verona Landfill waste as established from coordinate values by the Dane County Surveyor dated June 15, 1999; thence N63°40'36"E, parallel with and 500.00 feet Northwesterly of, measured at right angles to, the North limits of said Verona Landfill waste, 470.49 feet; thence East, parallel with and 500.00 feet Northerly of, measured at right angles to, the North limits of Verona Landfill waste, 1255.44 feet; thence S21°48'05"E, parallel with and 500.00 feet Northeasterly of, measured at right angles to, the North limits of Verona Landfill waste, 161.62 feet to the East line of the Southeast 1/4 of Section 11; thence S00°22'24"E, along said East line, 237.94 feet to the point of beginning. Containing 624,938 square feet or 14.35 acres. Part of the Southeast 1/4 of Section 11, Town 6 North, Range 8 East, City of Madison, Dane County, Wisconsin, described as follows:

Commencing at the Southeast corner of said Section 11, thence Northerly, along the East line of the Southeast 1/4 of said Section 11, 83.46 feet, to the Northerly right of way line of Cross Country Road as presently located and the point of beginning; thence Westerly, along said Northerly right of way, to the point of intersection with the South corner of Lot 423, also being the Southeast corner of Outlot 11, Heather Glen Addition to the Crossing; thence continuing Westerly, along said Northerly right of way, 229.23 feet, to a Westerly line of said Outlot 11; thence Northerly, along the said Westerly line, 292 feet, more or less, to the point of intersection with the Westerly prolongation of the North line of Lot 422, Heather Glen Addition to the Crossing; thence Easterly, along the said Westerly prolongation and North line and its Easterly prolongation, 242 feet, more or less, to the point of intersection with the centerline of Mammoth Circle; thence Northeasterly, along the said centerline, 111 feet, more or less, to the point of intersection with the centerline of Mammoth Trail; thence Easterly, along the said centerline of Mammoth Trail and centerline of Drumlin Lane, to the point of intersection with the Westerly prolongation of the North line of Lot 131, Heather Glen; thence Easterly, along the said Westerly prolongation and North line, 276 feet, more or less, to the Northeast corner of said Lot 131, also being a point on the East line of the Southeast 1/4 of said Section 11; thence Southerly, along said East line, 240.32 feet, to the point of beginning. (Figure 7)

Figure 7.



4. It is the City of Madison's policy that the owner/operator of a solid waste disposal site shall be required to undertake, to the maximum extent technically and economically feasible, such measures as may be determined by the City Engineer to be necessary to control underground methane gas migration and contain said gas within said site's zoning lot.
5. These building code requirements shall apply to any closed former waste disposal sites which are designated herein by the City Engineer and to all operating waste disposal sites and to all new waste disposal sites licensed after adoption of the original ordinance on December 4, 1984. The following sites are

the only closed Solid Waste Disposal Sites designated by the City Engineer to which this section shall apply:

- a. Sycamore Landfill, 4603 Sycamore Avenue.
- b. Demetral Landfill, 2301 Pennsylvania Avenue.
- c. Truax Landfill, 1801 Pankratz Avenue.
- d. Olin Landfill, 121 East Olin Avenue.
- e. Mineral Point Landfill, 120 South Yellowstone Drive.
- f. Greentree Hills Landfill, 6750 Hammersley Road.
- g. Rodefeld Landfill, 7102 East Broadway.
- h. Verona Landfill, 6718 East Verona Avenue.

(b) Construction Practices and Safety Precautions.

1. Subject to Paragraphs 2., 3. and 4. following, the building construction practices and safety precautions described in Paragraph 5. below shall be implemented by the owner of any building located within the limits of a solid waste disposal site described in paragraphs (a)2. and 3. above. These precautions are in addition to measures taken by an owner/operator of an adjacent disposal site. The owner and any subsequent owner of any such building shall thereafter maintain the gas-resistant integrity of such building as so modified during any period of ownership.
2. A building permit application for new construction subject to this ordinance shall include on the building plans a description of the approved construction practices to be used to make such building more resistant to underground landfill gas intrusion.
3. A building permit application for all below-grade additions, ~~and alterations and enlargements~~, subject to this ordinance, in excess of fifty percent (50%), shall state on the building plans a description of the approved construction practices to be used to make such building more resistant to underground landfill gas intrusion. The building plans shall also include a description of the building construction practices described in Subparagraphs b., c., d. and e. of Paragraph 5. below. Said building construction practices (where building foundation cracks, joints and exterior walls are accessible) shall be concurrently completed for the existing below-grade building structure.
4. All building permit applications for restoration of damaged buildings subject to Section 28.05(3)(d) of the Madison General Ordinances are not subject to these provisions except when below-grade restorations are undertaken. When below-grade restorations are planned the building plans shall include a description of the building construction practices in Subparagraphs b., c., d. and e. in Paragraph 5. below. Said building construction practices (where building foundation cracks, joints and exterior walls are accessible) shall be concurrently completed for the existing below-grade building structure.
5. The approved construction practices and safety precautions shall include a sub-slab depressurization system (passive or active) that includes the following components:
 - a. ~~A clay cutoff shall be installed as near to the property line as feasible in utility trenches which emanate from the direction of the zoning lot of the current or former disposal site.~~
 - b. ~~All foundation walls shall be treated with hand-applied foundation sealing material or an equivalent treatment.~~
 - c. ~~All foundation penetrations shall be plugged using concrete, or other approved material that will not disintegrate with age.~~
 - d. ~~All basement floor openings except drains, such as boxouts for backflow devices, clean-outs, and sump pump systems shall be sealed or fitted with a cover and gasket as detailed in Figures 1 and 2 below.~~
 - i. ~~Figure 1.~~
(Editor's Note: Please see Attachments: "Current Figures 1 & 2")
 - ii. ~~Figure 2.~~
(Editor's Note: Please see Attachments: "Current Figures 1 & 2")
 - e. ~~A high-grade silicone or equivalent sealant shall be applied along all basement floor cracks and joints, including the construction joint between the basement floor and the foundation wall.~~

- ~~f. To minimize future cracks, new concrete basement floors or slabs on grade shall be at least four (4) inches thick using a five-bag mix with no more than a five-inch slump.~~
- ~~g. A four-mil plastic membrane or an equivalent treatment shall be installed beneath the basement floors or interior slabs on grade.~~
- ~~h. The use of a chimney-vented heating appliance shall be considered where natural gas service is available.~~
- ~~i. Other measures deemed advisable by a building design professional may be used to accomplish the above-stated purposes. The design professional's report, if any, shall be submitted to the Building Inspection Superintendent and the City Engineer for approval prior to the issuance of a building permit.~~
- a. Gravel. A layer of clean, coarse gravel or alternative shall be placed below the foundation. Alternatives include perforated piping or a collection mat.
- b. Plastic Sheeting or Vapor Retarder. A heavy duty plastic sheeting (6 mil. polyethylene or equivalent) or a vapor retarder shall be placed on top of the gravel to inhibit potential landfill gas from entering the building.
- c. Vent Pipe. A three-inch or four-inch (3" - 4") solid PVC schedule forty (40) vent pipe shall run vertically through the building's conditioned space and roof to safely vent potential landfill gas outside above the house. The pipe shall be labeled "Sub-Slab Depressurization System". For residential buildings with three units or more and for commercial buildings over 2,500 square feet, the schedule 40 PVC should be sized to accommodate a larger capacity fan.
- d. Sealing and Caulking. All openings, cracks, and crevices in the concrete foundation floor and walls shall be sealed and caulked with flexible caulk to prevent potential landfill gas from entering the building. This includes but is not limited to all floor openings, concrete joints, condensate drains, sumps, foundation walls, slab perimeter cracks, clean-outs, and backflow devices. All foundation walls shall also be treated with hand-applied foundation sealing material or an equivalent treatment.
- e. Junction Box. An electrical junction box (outlet) shall be installed in the attic for use with a vent fan, should one be required in the future. Activation of the system with an adequately sized vent fan is required for residential buildings with three units or more and for commercial buildings over 2,500 square feet. Smaller buildings are not required to activate the system at the time of installation unless noted by the City.
- f. Clay Cutoff. A clay cutoff shall be installed as near to the property line as feasible in utility trenches which emanate from the direction of the zoning lot of the current or former disposal site.
- g. Other measures deemed advisable by a building design professional may be used to accomplish the above-stated purposes. The design professional's report, if any, shall be submitted to the Building Inspection Superintendent and the City Engineer for approval prior to the issuance of a building permit.
In general, meeting the requirements of the Appendix F of the 2009 International Residential Code, *Radon Control Methods*, shall satisfy the requirements of this ordinance.

- (c) Annual Disposal Site Monitoring Report. The owner of all landfills listed in subdivision (a), Paragraph 5. above, shall submit annually to the City Engineer a Landfill Environmental Assessment Report unless comparable documents have already been prepared for the Wisconsin Department of Natural Resources, as determined by the City Engineer. The Landfill Environmental Assessment Report shall include, but shall not be limited to the following:\

1. A tabulation of the previous year's landfill gas monitoring data.
2. An assessment of data monitored during the reporting period.
3. An outline of the planned gas monitoring program for the upcoming year."