

HUSCH BLACKWELL

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June 1, 2018

VIA E-MAIL

Town of Ledgeview Board of Supervisors
c/o Sarah Burdette
Town of Ledgeview Clerk
3700 Dickinson Road
De Pere, WI 54115
sburdette@ledgeviewwisconsin.com

Re: Ledgeview Farms Livestock Siting Approval
Response to Mead & Hunt Memorandum dated May 28, 2018

Dear Ledgeview Town Board:

As you know, we represent Ledgeview Farms in connection with its pending application for approval of the expansion of its existing dairy farm located in the Town. On Monday, May 28, 2018, we received a copy of a memorandum prepared by Mead & Hunt that addressed a variety of matters related the Ledgeview Farms existing and past farming operations as well as its pending application. We were surprised to receive it on the day of the Town's scheduled public hearing, particularly given the many weeks the Town had to review Ledgeview Farms' application for completeness. Be that as it may, we appreciate the opportunity to provide a response to the Mead & Hunt memorandum prior to the Town Board's decision in order to ensure that the Town Board properly considers the matter before it—namely, the pending application.

Importantly, the Mead & Hunt memorandum is mostly comprised of assertions that are irrelevant to the pending application. Rather than limiting its focus to whether Ledgeview Farms' application is compliant with the applicable legal standards for approval, the Mead & Hunt memorandum addresses a number of alleged past operational and other deficiencies under federal, state and local law. It is unclear whether the Town Board intends to take the legal position that alleged past violations form a basis for denial of the pending application. The Mead & Hunt memorandum does not squarely address that issue and, other than a closed session meeting with the Town's counsel on May 28, 2018, we are unaware of any advice the Town Board has received concerning the governing legal standards in this case.

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The purpose of this letter is to respond to the Mead & Hunt memorandum and to make clear that alleged items of past noncompliance do not, as a legal matter, form the basis for denial of Ledgeview Farms' pending application. Pursuant to Wis. Admin Code § ATCP 51.34(1), the Town is required to grant Ledgeview Farms' application if the following two factors are met: (1) the application complies with Wis. Admin Code § ATCP 51.30; and (2) the *proposed livestock facility* meets (or is exempt from) the livestock standards contained in subchapter II. The subchapter II technical standards relate to the location of livestock structures on a property, odor and air emissions, nutrient management, waste storage facilities and runoff management. Wis. Admin Code §§ ATCP 51.12-51.20.

As to the issue of compliance with the Siting Law's technical standards, the focus is on the proposed livestock facility. The proposed livestock facility is the one that will exist once approved, permitted, constructed and then operated. The extensive focus of the Mead & Hunt memorandum on allegations of past concerns, not to mention the unnecessary and unfair characterization that "Ledgeview Farms has not been very forthcoming with the Town" (p. 14) is not only beside the point, it suggests bias and prejudice in the analysis of the application. Those matters are irrelevant and should be disregarded by the Town Board in the first instance. Indeed, the Town Board should welcome the opportunity to see Ledgeview Farms operating consistent with the technical standards set forth in the Siting Law and related regulatory requirements mandated by the State. That is the purpose of the pending application and the Town will facilitate that purpose by approving the application.

Based on the materials submitted by Ledgeview Farms, the Town Board must approve the pending application.

We now address specific matters raised in the Mead & Hunt memorandum. Please note that we do not, and given the short time frame allowed are unable to, address every single item in that memorandum. That said, we do not waive the right to explain at a later date why items addressed in the Mead & Hunt memorandum are irrelevant to the Town Board's consideration of this matter. It is Ledgeview Farms' position that the materials it has submitted with its application, or are otherwise part of the record, constitute sufficient credible information requiring approval of its application. Moreover, there is simply no information to the contrary, let alone any clear and convincing evidence necessary under Wis. Admin Code § ATCP 51.34.

Mead & Hunt Alleged Application Deficiencies and Ledgeview Farms' Responses.

1. The waste storage facility proposed at the Heifer site is indicated to be set back 350-feet from the Lime Kiln Road right-of-way (ROW) to presumably comply with the regulations of ATCP 51. The proposed facility, as illustrated, is only 270-feet from the Lime Kiln Road ROW.

RESPONSE: In order to avoid any doubt, the construction plans have been adjusted to provide for a 355-foot setback between the Waste Storage Facility (WSF) and the Lime Kiln Road right-of-way (ROW). The updated construction plans are attached hereto as Exhibit A.

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The property lines and ROW have been established using Brown County GIS data and located property pins. The WSF point of setback from the property line and ROW is the inside top of the WSF. This is the same reference point that is established by the Odor Score Worksheet in ATCP 51. The WSF setback as shown on the site plan is at a minimum of 355 feet from ROW to account for minor variations in the actual location of the property line and ROW.

As noted above, the Mead & Hunt memorandum asserts that the plans for the WSF provide for a setback of only 270 feet from the Lime Kiln Road right of way (ROW). This assertion is based on the contention that Ledgeview Farms measured the setback from the eastern side of the Road, as opposed the western side. It is unclear, on the face of the memorandum, what the basis for this contention is. However, it is Ledgeview Farms' clear intention to construct the WSF no less than 350 feet from the properly identified ROW—and it will do so even if Mead & Hunt's contention about the prior plans is correct. The plans can accommodate further movement if necessary upon an agreed upon understanding of the location of the ROW line. Conditioning approval on compliance with the 350-foot setback requirement is sufficient and the Town will be able to ensure said compliance.

2. The waste storage facility as proposed does not comply with the required minimum setback specified in the Section 135-85 of the Town's Zoning Code. The required setback of 1,320-feet is not provided.

RESPONSE: This issue was addressed in our previous letter to the Town Board dated May 25, 2018. For reasons contained in that letter, the Town's regulation imposing a 1,320-foot setback is void and unenforceable.

3. A new, ~114' x ~640' (~72,960 SF) freestall heifer barn is illustrated on the plan set at the Heifer site. This facility appears to have a setback of 40-feet off of the Lime Kiln Road ROW. ATCP 51 would require a 100-foot setback from the ROW, and this is not proposed.

RESPONSE: The referenced heifer barn is no longer proposed and has been removed from the site plan.

4. The required engineering plan and construction details are not provided for the freestall heifer barn proposed at the Heifer site.

RESPONSE: The referenced heifer barn is no longer proposed and has been removed from the site plan.

5. The Town's Livestock Siting regulations require a minimum setback of 1,000-feet for the freestall barn. The proposed facility does not meet this requirement.

RESPONSE: The referenced heifer barn is no longer proposed and has been removed from the site plan.

6. The plans for the expansion of the feed storage area at the Heifer Site do not illustrate the inclusion of a subsurface system to collect leachate that could penetrate the concrete floor of the feedlot.

RESPONSE: The plans submitted as part of the Livestock Siting application show a future expansion of the Feed Storage Area (FSA). The FSA was shown expanded to the full extent possible in order to properly size the Detention Basin (DB) for future expansion. Under Wis. Admin Code § NR 243.13 (2)(2), the FSA DB is required to capture leachate and the runoff from a 25-year, 24-hour rain event. The proposed DB will also collect the required runoff and leachate as required under National Resources Conservation Service (NRCS), Field Office Technical Guide (FOTG), Section IV, Standard 629 Waste Treatment.

As the FSA is not proposed to be expanded at this time, no liner, drainage layer or work surface has been provided as part of the pending application. Before the FSA is expanded construction plans and specifications will be developed and submitted to the required regulatory authorities for the required permits and approvals.

7. The unpermitted waste storage facility constructed in 2015 does not include secondary containment systems or liquid level monitoring system beyond the permeant level markers to prevent overtopping in its design.

RESPONSE: The WSF constructed in 2015 was permitted by Brown County Land and Water Conservation in 2015. As part of the WPDES permit application, Roach & Associates, LLC (R&A) prepared and submitted an evaluation of the 2015 WSF to the Wisconsin Department of Natural Resources (WDNR). On May 3, 2018 WDNR approved the 2015 WSF with the addition of an emergency overflow. The overflow can be installed as maintenance and no plans and specifications are required (See Exhibit B).

NRCS, FOTG, Section IV, 313 Waste Storage Facility (1/14) does not require secondary containment or liquid level monitoring systems beyond the permeant level markers to be installed.

8. The waste storage facility proposed at the Heifer site does not include secondary containment systems or liquid level monitoring system beyond the permeant level markers to prevent overtopping in its design.

RESPONSE: Neither Wis. Admin Code § NR 243.07(2) nor NRCS, FOTG, Section IV, 313 Waste Storage Facility (10/17) requires secondary containment or liquid level monitoring systems beyond the permeant level markers to be installed.

9. The modifications of the Animal Lot at the Headquarters site does not provide adequate capacity to contain one (1) day's manure production, the rainfall 25yr/24hr rainfall event, and 6 inches of freeboard for safety.

RESPONSE: The Animal Lot at the Headquarters Site design has been adjusted to provide for one full day's manure production, plus 6 inches extra depth for safety and the volume of runoff and/or precipitation from a 25-year, 24-hour rainfall event.

Calculations:

Total Volume of Containment (determined by CADD)	6,353 ft ³
One Day's Manure Production (300 head x .32 ft ³ /Hd/day)	96 ft ³
Volume of 25-year, 24-hour Rain Event	2,070 ft ³
Freeboard (0.5 feet x 5,976 ft ²)	2,990 ft ³
Total Volume Provided in Excess of Required	1,197 ft³

10. The Town has no information indicating that each of the unauthorized discharges of manure and process wastewater indicated in the USEPA violation correspondence, described below, have been or will be corrected.

RESPONSE: The plans and specs for the proposed livestock facility are, by definition, designed to resolve any such issues. The Mead & Hunt memorandum fails to acknowledge this critical point and implies by the above contention that past alleged violations form the basis for denial of the pending application. As we discuss above, they do not. The question is whether the information submitted shows that the *proposed livestock facility* will satisfy the technical standards in the Siting Law. The information submitted is sufficient to make that showing.

Deficiencies Alleged By Mead & Hunt Concerning Past Operations.

As noted above, most of the Mead & Hunt memorandum focuses on alleged past operational deficiencies as opposed to whether Ledgeview Farms' application complies with the applicable standards for approval. Such allegations are irrelevant to the Town's consideration of the pending application and Ledgeview Farms has no obligation to respond to them. We do, however, address some of those issues here in order to provide additional background concerning Ledgeview Farms. Also provided is a timeline, which lists both agency actions and Ledgeview Farms' actions since 2007, related to the matters raised by Mead & Hunt. (See Exhibit C)

First, it should be noted that in July of 2015, when Jason Pansier was working on building the structures necessary to bring the farm into compliance, Mr. Pansier's tractor flipped over and landed on top of him, causing severe and permanent disabilities. Mr. Pansier spent six weeks in the hospital and did not regain the ability to walk until 2016. In addition to the obvious personal challenges that this accident presented for Mr. Pansier, the accident also resulted in significant operational challenges for the farm, as Mr. Pansier was a critical member of the family business and had been for years.

WPDES Permit Application.

The Mead & Hunt memorandum addresses concerns about Ledgeview Farms' failure to previously obtain a WPDES permit from WDNR. However, Ledgeview Farms has submitted its application for a WPDES permit and has been working closely with WDNR to facilitate prompt approval of the permit application. The public notice period for that pending application began on May 30, 2018 and a public hearing is scheduled for July 10, 2018.

Importantly, while Ledgeview Farms needs to and will obtain a WPDES permit (likely within the next few months), approval of the pending siting permit application is not dependent upon the issuance of the WPDES permit. Wis. Admin Code § ATP 51.34(1). Indeed, under the siting regulations in that section, if an applicant already has a WPDES permit, it is exempt from having to demonstrate the proposed livestock facility's compliance with the technical standards of subchapter II.

Town Building and Soil Disturbance Permits.

The Mead & Hunt memorandum notes that Ledgeview farms constructed its existing 5M-gallon waste storage facility at the Headquarters site in 2015 without first obtaining building and soil disturbance permits from the Town. The issuance of such permits is routine and ministerial and it is unclear what Mead & Hunt's concern is about such permits as it relates to the pending application. If the Town has concerns about the failure to obtain such permits prior to construction, it has recourse that is entirely unrelated to consideration of the pending application. We would presume the Town would address those matters in the same manner it does with respect to other land owners who inadvertently begin construction projects before obtaining a building or soil disturbance permits.

Proposed Changes to ATP 51.

The Mead & Hunt memorandum states that, as part of its periodic review procedures, DATCP has proposed changes to ATP 51 related to minimum setbacks for manure storage structures and livestock housing structures. As noted, the DATCP Board has not taken action on those proposed changes. It is also unknown whether such changes will be approved.

It goes without saying, however, that the law as it exists is the law that must be applied in this case. Proposed changes to the law, regardless of whether those changes may become effective in the future, may not be considered. Indeed, it would be a violation of fundamental due process rights for the Town to base its decision on anything other than the current regulations contained in ATP 51.

Nutrient Management and Public Health Concerns.

The Mead & Hunt memorandum discusses the importance of proper nutrient management and the need to develop a nutrient management plan (NMP) to ensure the stored manure is properly land applied. Ledgeview Farms has an approved NMP, which is updated every year as required by law. Further discussion in the Mead & Hunt memorandum about

research performed by Drs. Muldoon and Borchart related to the geology in certain regions of the state is interesting, but it does not apply to the pending application. To the extent such research leads to future regulatory changes, such changes will apply in the future. Ledgeview Farms is entitled to the review of its application under existing law.

Impact on Property Values.

The Mead & Hunt memorandum also discusses a study in Kewaunee County related to the impact of large dairy farms on neighboring property values. Again, while potentially interesting to some, this has no relevance to the pending application.

Community Trust.

As referenced above, Mead & Hunt appears to have already taken a biased position against Ledgeview Farms on the basis of matters extraneous to the standards applicable to the pending application. Under the heading of "Community Trust" Mead & Hunt asserts that "Ledgeview Farms has not been very forthcoming" and appears to dismiss the fact that Ledgeview is indeed a family farm that "was operating long before the surrounding growth occurred." (p. 14). Yet, community trust is a two-way street. The manner in which the Town Board has sought to thwart Ledgeview Farms' plans by enacting ordinance amendments that specifically target those plans does not promote trust on the part of the Pansier family or the farming community in general. Moreover, the Pansier family have been long-standing members of and contributors to the Ledgeview community for decades. That should, in fact, mean something to the members of the Town Board. Even if it doesn't, however, that is ultimately beside the point.

The purpose of the Siting Law is to provide state-wide standards for new and expanded livestock facilities, and to ensure that farmers have a timely, efficient and predictable process for the consideration of siting applications. The Siting Law did not contemplate that both a farmer and a town would need to hire expensive Madison law firms to go to battle over proposed livestock facilities. The Town's approach to Ledgeview Farms' expansion plans has resulted in that occurring here. That is unfortunate, but in the spirit of community trust, we would encourage the Town Board to apply the proper legal standards and approve Ledgeview Farms' application, thereby demonstrating that even where there are disagreements over such projects, the rule of law must ultimately prevail.

Conclusion.

We respectfully request that the Town Board approve Ledgeview Farms' application for its proposed livestock facility expansion.

Best regards,



Eric M. McLeod
Partner

cc: Larry Konopacki
Vanessa Wishart

EXHIBIT A



NTS



SITE VICINITY MAP

LEGEND

---	300	EXISTING CONTOURS
---	500	PROPOSED CONTOURS
---	---	PROPOSED CONCRETE
---	---	EXISTING CONCRETE
---	---	PROPOSED ASPHALT
---	---	COMPACTED FILL
---	---	PROPOSED GRAVEL DRIVE
---	---	IN-PLACE EARTH LINER
---	---	COMPACTED CLAY LINER
---	---	EXISTING BUILDING
---	---	PROPOSED BUILDING
---	---	PRESSURE TRANSFER PIPE
---	---	GRAVITY TRANSFER PIPE
---	---	TILE LINE
---	---	SILT FENCE
---	---	BALE DIVERSION
---	---	ELECTRIC LINE
---	---	WETLAND (DELINEATED)
---	---	DITCH CHECK
---	---	TEST PIT
---	---	WELL
---	---	BENCH MARK

NO REPRESENTATION IS MADE BY ROACH & ASSOCIATES AS TO THE EXISTENCE OR NONEXISTENCE OF UNDERGROUND HAZARDS. PRIOR TO THE START OF CONSTRUCTION THE OWNERS OF UTILITIES MUST BE NOTIFIED OF THE PENDING CONSTRUCTION. CONTRACTOR WILL BE LIABLE FOR DAMAGES RESULTING FROM CONSTRUCTION ACTIVITIES. (CALL DIGGERS HOTLINE)

LEDGEVIEW FARM, LLC 2017 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS

3688 LIME KILN ROAD
DE PERE, WI
BROWN COUNTY

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4	WASTE STORAGE FACILITY PROFILES
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	2: PROFILE - WASTE STORAGE FACILITY
	3: PROFILE - WASTE STORAGE FACILITY
	4: 5" CONCRETE DETAIL
	5: 3" CONCRETE DETAIL
5	DETENTION BASIN PLAN AND PROFILES
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	3: FILTER SOCK DETAIL
	4: CONSTRUCTION SCHEDULE
	5: CUT & FILL QUANTITIES
	6: EROSION CONTROL NOTES
	7: SOIL LOSS & SEDIMENT DISCHARGE CALCULATIONS

ENGINEER:

ROACH & ASSOCIATES, LLC
856 N. MAIN ST., SEYMOUR, WI 54165
PHONE: 920-833-6340

To the best of my professional knowledge, judgment and belief, this design and these construction plans 2017 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS, meet the criteria, standards and specifications outlined in USDA Natural Resources Conservation Service Field Office Technical Guide, Section IV, Standards 313(10/17), 522(10/12), and 634(1/14), Spec.'s 4(10/12), 004(10/17), 204(10/12) and 634(8/16)

Date

REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
12/06/2017	MTS	MOVED WSP ADPT WEST			

LEDGEVIEW FARM, LLC
2017 WASTE STORAGE FACILITY AND RUNOFF
MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE

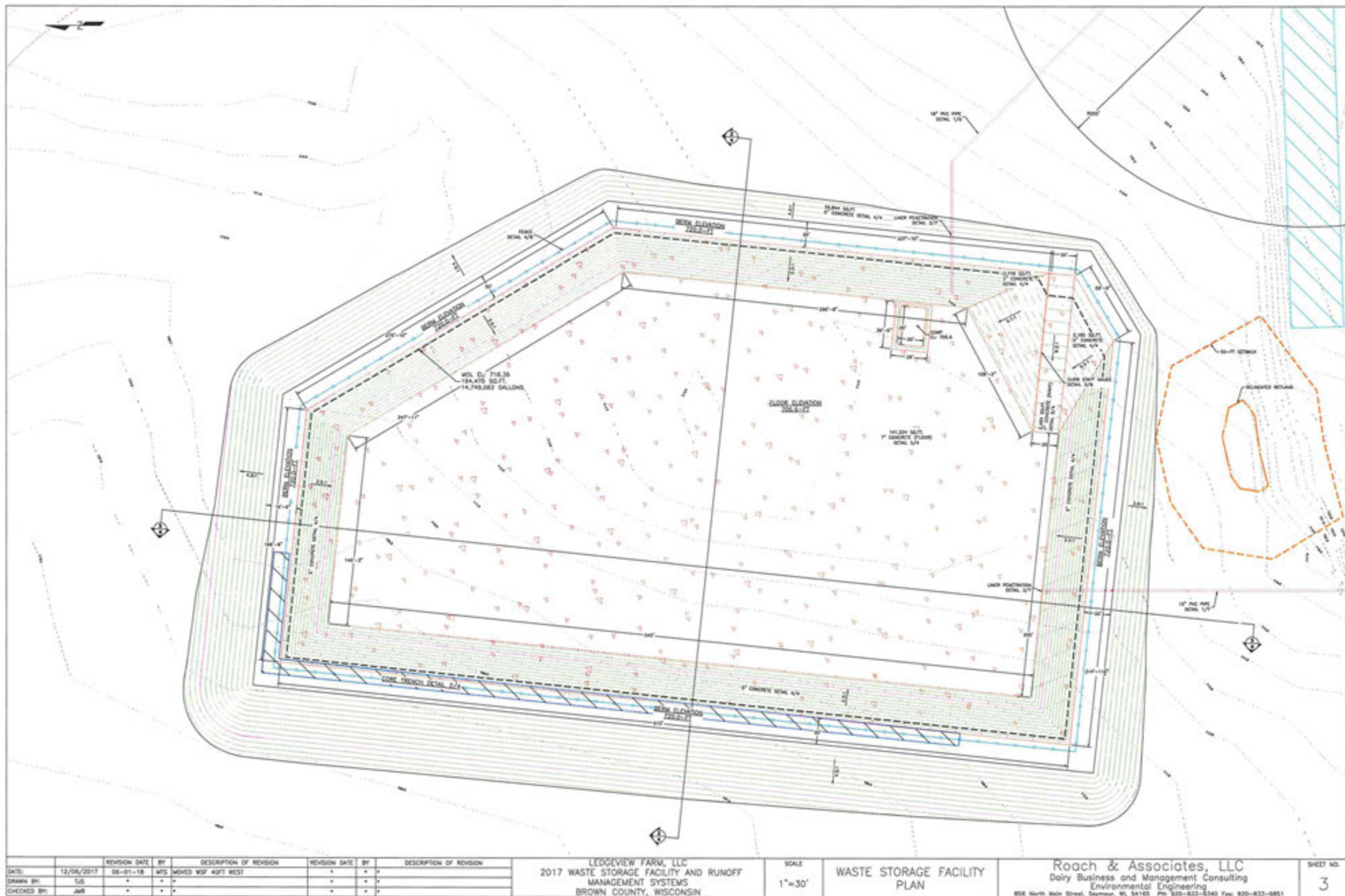
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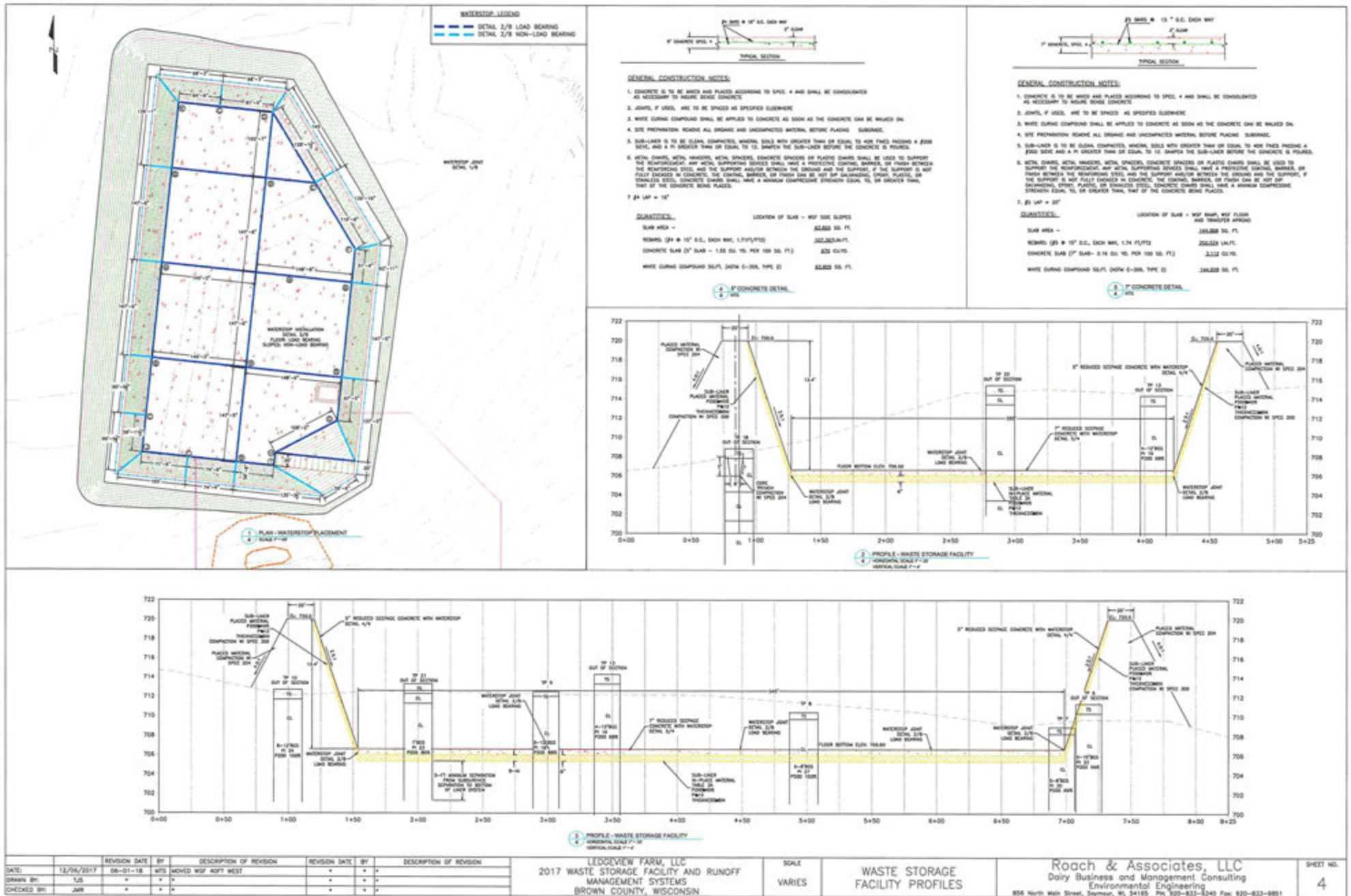
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Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI 54165 PH: 920-833-6340 Fax: 920-833-6851

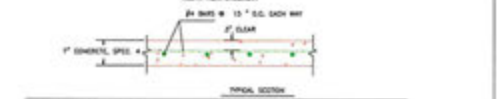
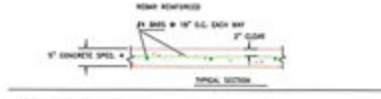
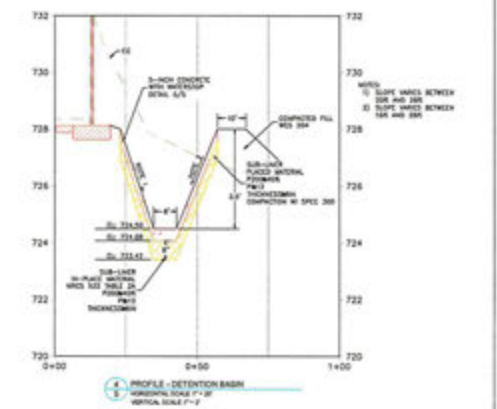
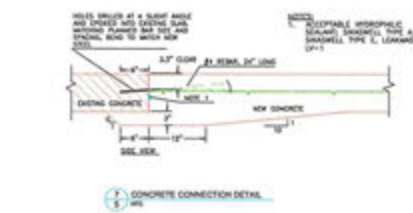
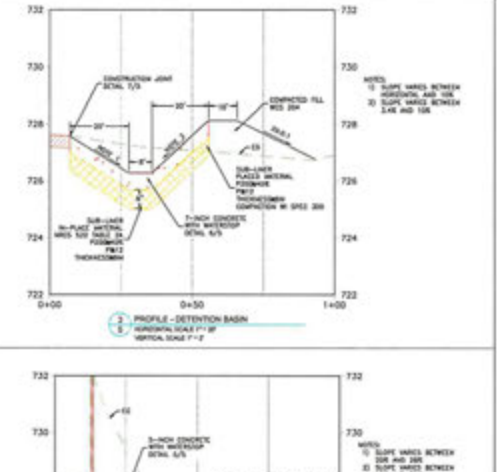
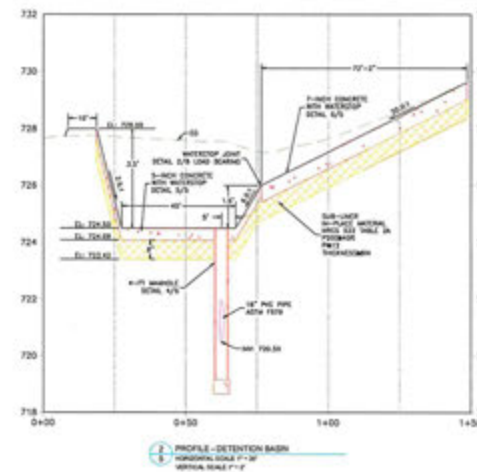
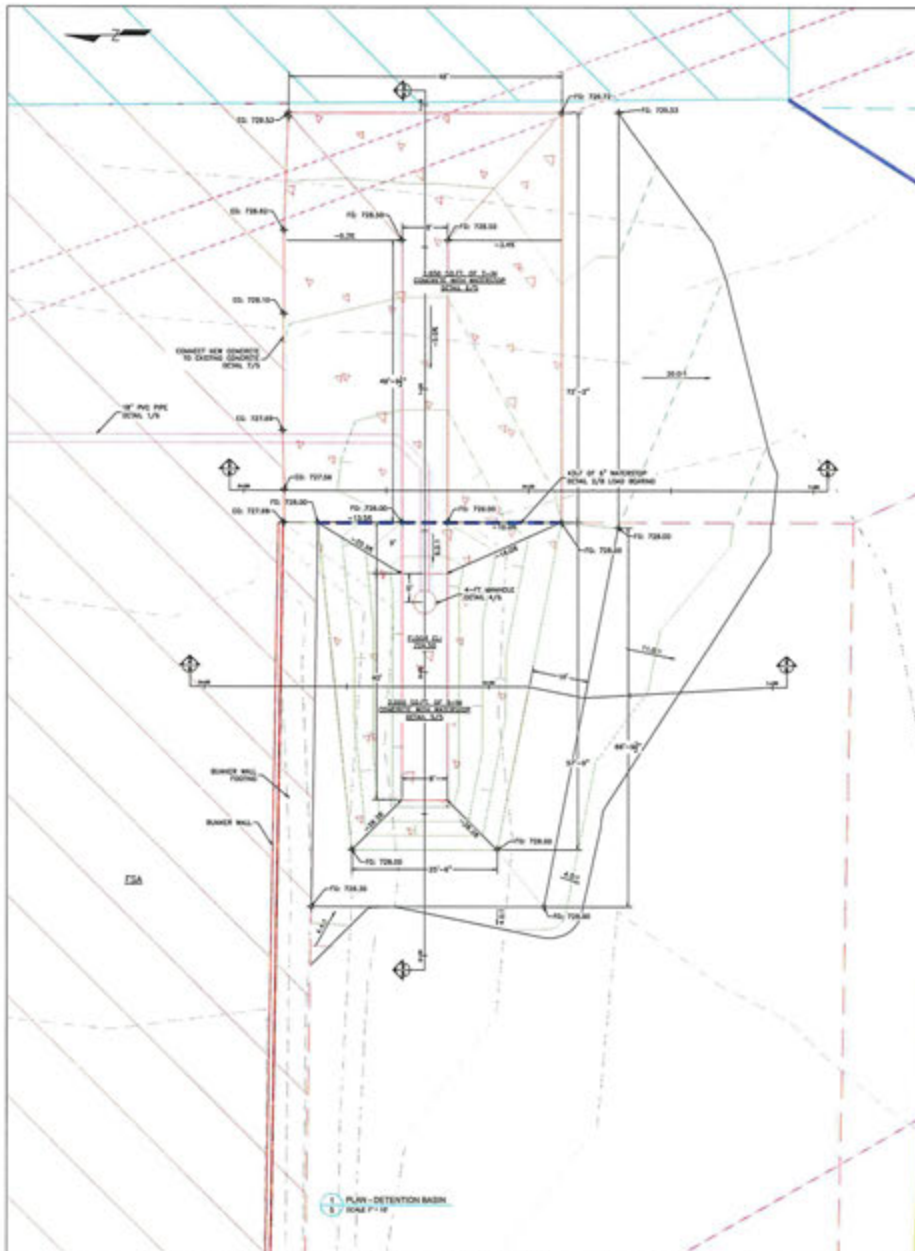
SHEET NO.

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DATE	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	SCALE	WASTE STORAGE FACILITY PROFILES	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI 53185 PH: 920-832-8240 FAX: 920-832-8851	SHEET NO.
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DRAWN BY: JLS										
CHECKED BY: JMR										



DATE	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
12/06/2017						
12/06/2017						
12/06/2017						

LEDGEVIEW FARM, LLC
2017 WASTE STORAGE FACILITY AND RUNOFF
MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE
VARIES
DETENTION BASIN
PLAN AND PROFILES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI 54155 PH: 920-833-5242 FAX: 920-833-9851

SHEET NO.
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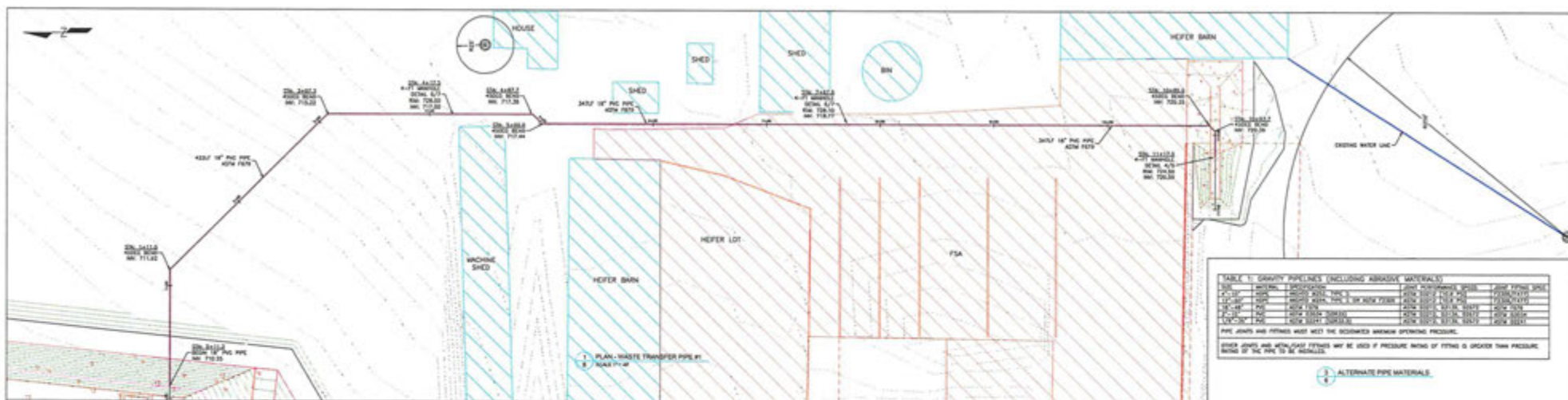
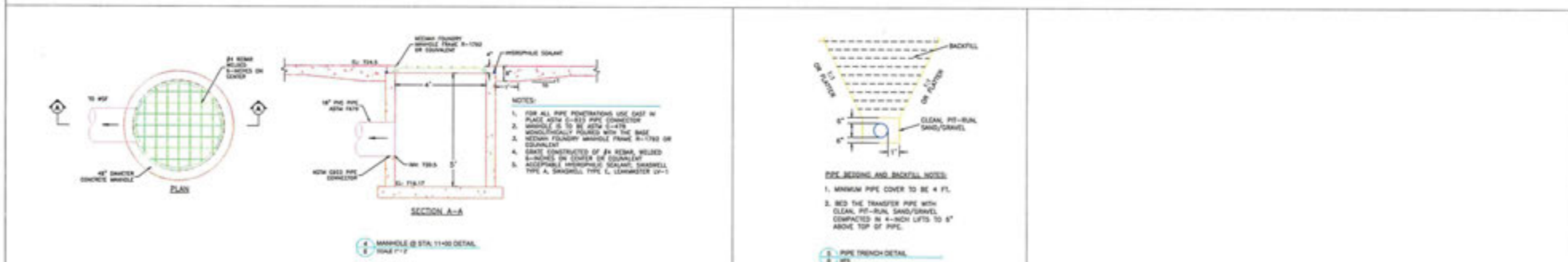
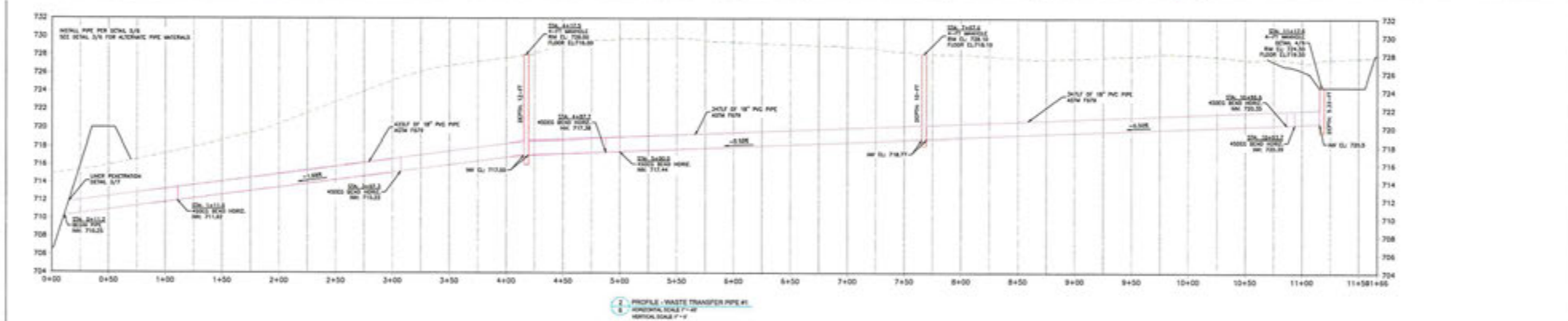


TABLE 1: GRAVITY PIPELINES (EXCLUDING ABRASIVE MATERIALS)

PIPE SIZE	PIPE TYPE	PIPE WALL THICKNESS	PIPE SLOPE	PIPE JOINTS
12" DIA.	HDPE	0.250"	0.001"	100% BUTT WELD
18" DIA.	HDPE	0.375"	0.001"	100% BUTT WELD
24" DIA.	HDPE	0.500"	0.001"	100% BUTT WELD
30" DIA.	HDPE	0.625"	0.001"	100% BUTT WELD
36" DIA.	HDPE	0.750"	0.001"	100% BUTT WELD
42" DIA.	HDPE	0.875"	0.001"	100% BUTT WELD
48" DIA.	HDPE	1.000"	0.001"	100% BUTT WELD
54" DIA.	HDPE	1.125"	0.001"	100% BUTT WELD
60" DIA.	HDPE	1.250"	0.001"	100% BUTT WELD
66" DIA.	HDPE	1.375"	0.001"	100% BUTT WELD
72" DIA.	HDPE	1.500"	0.001"	100% BUTT WELD

PIPE JOINTS AND FITTINGS MUST MEET THE SPECIFIED MINIMUM OPERATING PRESSURE.
SHED JOINTS AND FITTINGS MUST BE USED IF PRESSURE RATING OF FITTING IS GREATER THAN PRESSURE RATING OF THE PIPE TO BE INSTALLED.

ALTERNATE PIPE MATERIALS



DATE	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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CHECKED BY: JMR						

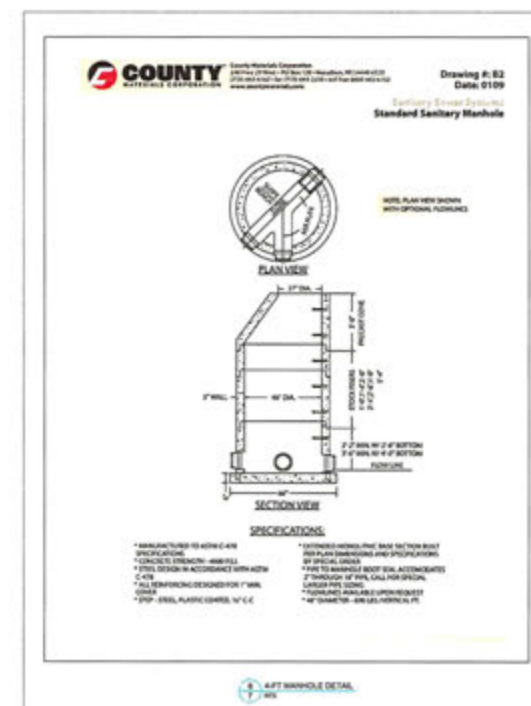
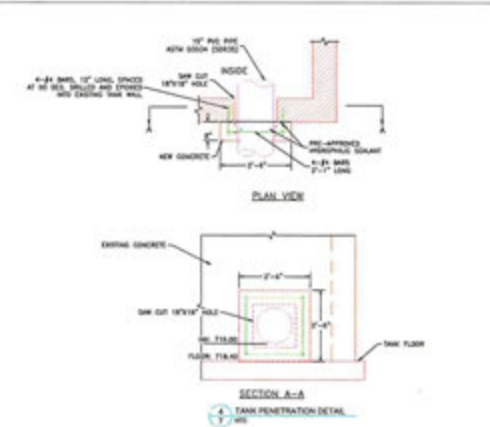
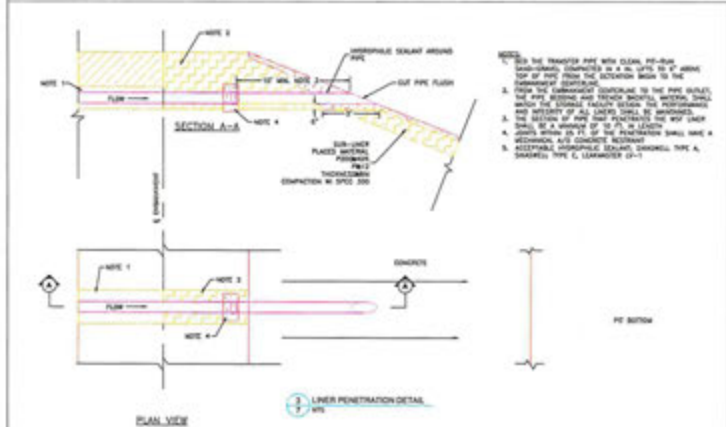
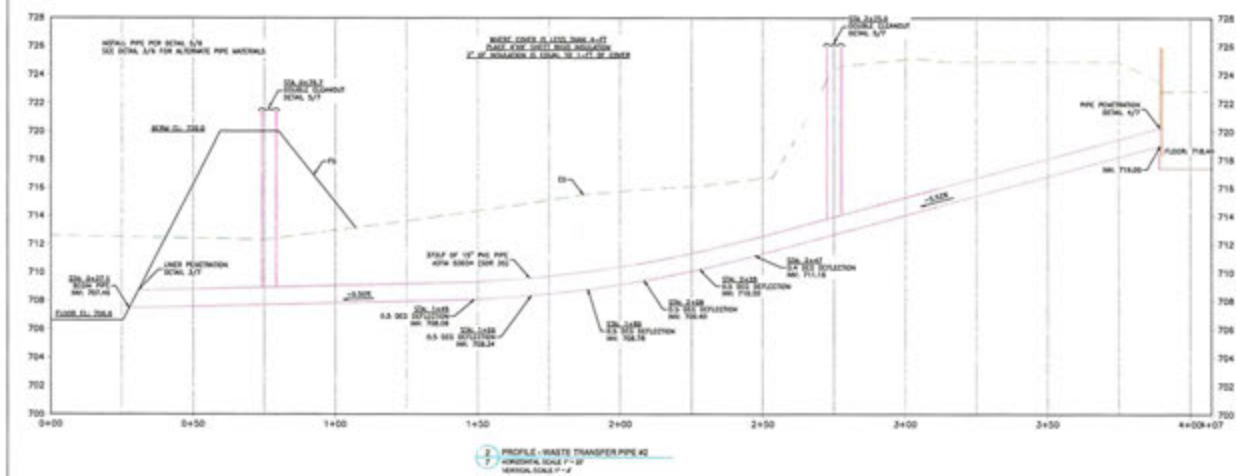
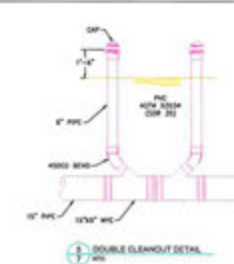
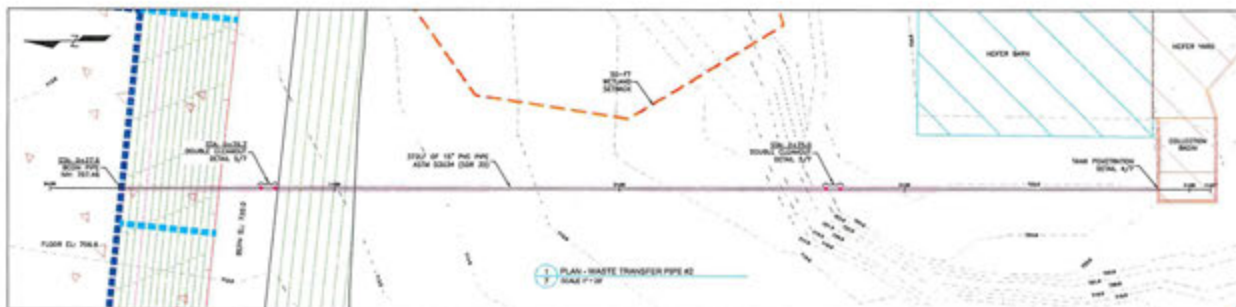
LEDGEVIEW FARM, LLC
2017 WASTE STORAGE FACILITY AND RUNOFF
MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE
VARIES

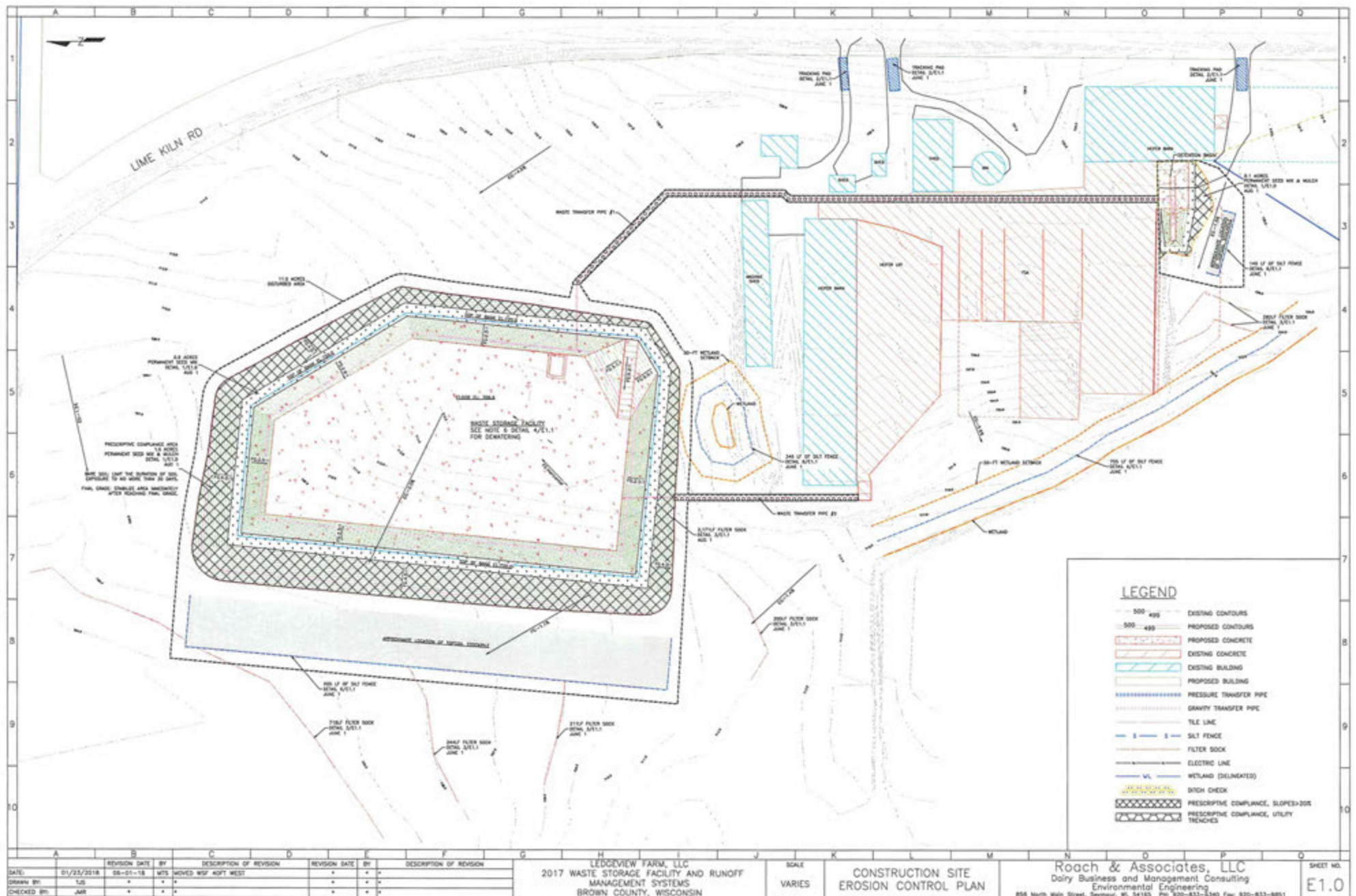
WASTE TRANSFER PIPE #1
PLAN AND PROFILE

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
850 North Main Street, Seymour, WI 54155 Ph: 920-833-8240 Fax: 920-833-8851

SHEET NO.
6

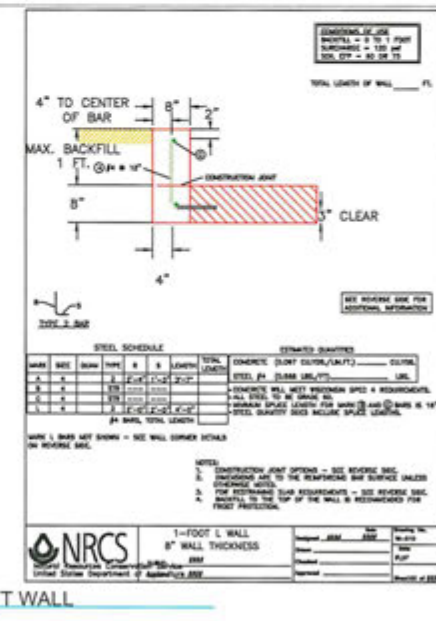
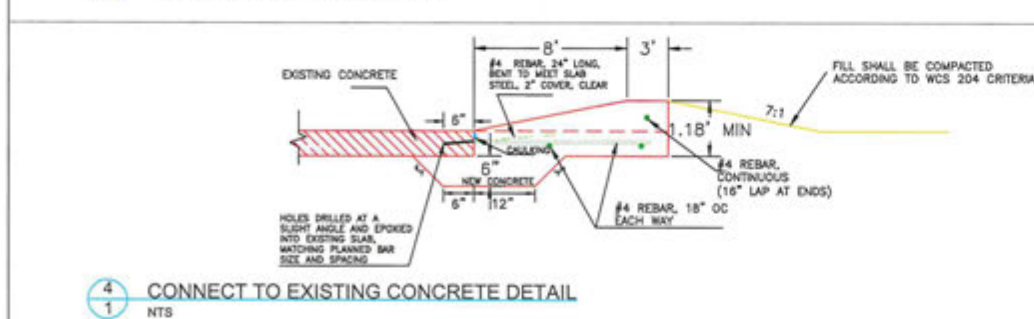
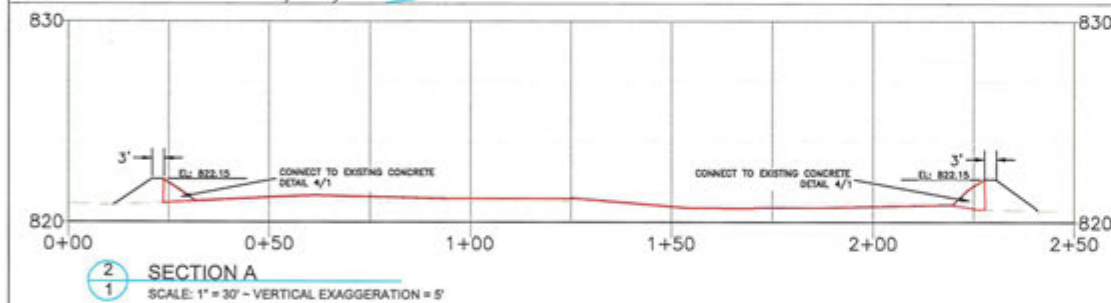
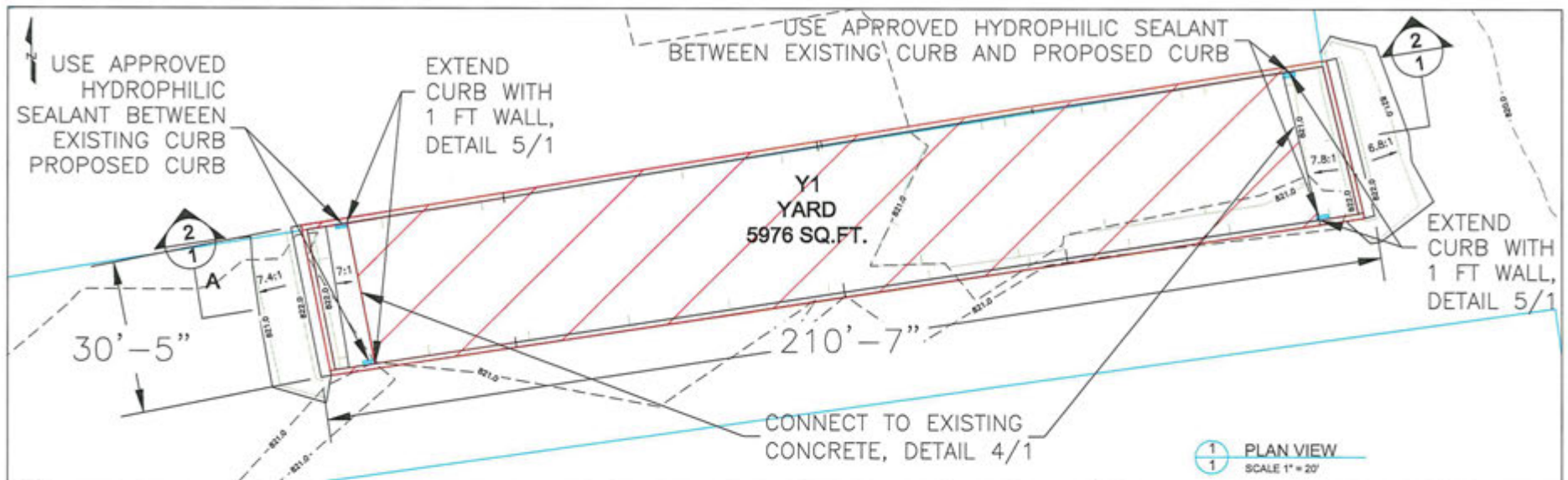


DATE: 12/06/2017	REVISION DATE: 06-01-18	BY: MTS	DESCRIPTION OF REVISION: MOVED WSF 40FT WEST	REVISION DATE: 06-01-18	BY: MTS	DESCRIPTION OF REVISION: MOVED WSF 40FT WEST	SCALE: VARIES	WASTE TRANSFER PIPE #2 PLAN AND PROFILE	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI 53155 Ph: 920-833-3340 Fax: 920-833-9851	SHEET NO. 7
CHECKED BY: JMB	DATE: 06-01-18	BY: MTS	DESCRIPTION OF REVISION: MOVED WSF 40FT WEST	REVISION DATE: 06-01-18	BY: MTS	DESCRIPTION OF REVISION: MOVED WSF 40FT WEST				



SEEDING SCHEDULE PLANTING LOG

DATE	PERIOD	DATE	TYPE OF SEEDING
01/15/2018	01/15-01/20	01/15	Permanent
01/20/2018	01/20-01/25	01/20	Permanent
01/25/2018	01/25-02/01	01/25	Permanent
02/01/2018	02/01-02/07	02/01	Permanent
02/07/2018	02/07-02/14	02/07	Permanent
02/14/2018	02/14-02/21	02/14	Permanent
02/21/2018	02/21-02/28	02/21	Permanent
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06/01/2022	06/01-06/08	06/01	Permanent
06/08/2022	06/08-06/15	06/08	Permanent
06/15/2022	06/15-06		



DATE: 2/1/2018	REVISION DATE: 08-01-18	BY: MTS	DESCRIPTION OF REVISION: INCREASED VOLUME OF Y1 YARD	REVISIONS BY: MTS	DATE: 08-01-18	DESCRIPTION OF REVISION: INCREASED VOLUME OF Y1 YARD
DRAWN BY: MTS	CHECKED BY: JWR					

LEDGEVIEW FARM, LLC
2017 WASTE STORAGE FACILITY AND RUNOFF
MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE: VARIES

HEADQUARTERS
Y1 YARD

Roach & Associates, LLC
Daly Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI 54155 PH: 920-833-4340 FAX: 920-833-9851

SHEET NO. 1



NTS



SITE VICINITY MAP

LEGEND

900' ±	EXISTING CONTOURS
500' ±	PROPOSED CONTOURS
	PROPOSED CONCRETE
	EXISTING CONCRETE
	PROPOSED ASPHALT
	COMPACTED FILL
	PROPOSED GRAVEL DRIVE
	IN-PLACE EARTH LINER
	COMPACTED CLAY LINER
	EXISTING BUILDING
	PROPOSED BUILDING
	PRESSURE TRANSFER PIPE
	GRAVITY TRANSFER PIPE
	TILE LINE
	SILT FENCE
	BALE DIVERSION
	ELECTRIC LINE
	WETLAND (DELINEATED)
	DITCH CHECK
	TEST PIT
	WELL
	BENCH MARK

NO REPRESENTATION IS MADE BY ROACH & ASSOCIATES AS TO THE EXISTENCE OR NONEXISTENCE OF UNDERGROUND HAZARDS. PRIOR TO THE START OF CONSTRUCTION THE OWNERS OF UTILITIES MUST BE NOTIFIED OF THE PENDING CONSTRUCTION. CONTRACTOR WILL BE LIABLE FOR DAMAGES RESULTING FROM CONSTRUCTION ACTIVITIES. (CALL DODGERS HOTLINE)

LEDGEVIEW FARM, LLC
2017 WASTE STORAGE FACILITY AND RUNOFF
MANAGEMENT SYSTEMS

3688 LIME KILN ROAD
DE PERE, WI
BROWN COUNTY

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4	WASTE STORAGE FACILITY PROFILES
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	2. PROFILE - WASTE STORAGE FACILITY
	3. PROFILE - WASTE STORAGE FACILITY
	4. 8" CONCRETE DETAIL
	5. 12" CONCRETE DETAIL
5	DETENTION BASIN PLAN AND PROFILES
	1. PLAN - DETENTION BASIN
	2. PROFILE - DETENTION BASIN
	3. PROFILE - DETENTION BASIN
	4. PROFILE - DETENTION BASIN
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E1.1	EROSION CONTROL DETAILS
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	2. TRAPING POND
	3. FILTER POND DETAIL
	4. CONSTRUCTION EROSION
	5. SLOPE & FILL GRADING
	6. EROSION CONTROL NOTES
	7. SOIL LOSS & SEDIMENT DISCHARGE CALCULATIONS

DEFICE USE ONLY

LEDGEVIEW FARM, LLC
2017 WASTE STORAGE
FACILITY AND RUNOFF
MANAGEMENT SYSTEMS

To the best of my professional knowledge, judgment and belief, this design and these construction plans 2017 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS, meet the criteria, standards and specifications outlined in USDA Natural Resources Conservation Service Field Office Technical Guide, Section IV, Standards 313(10/17), 522(10/12), and 634(1/14), Spec's 4(10/12), 004(10/17), 204(10/12) and 634(8/16)

Richard G. Seas

Date 6/1/18

ENGINEER:

ROACH & ASSOCIATES, LLC
856 N. MAIN ST., SEYMOUR, WI 54165
PHONE: 920-833-6340



DATE	REVISION DATE	BY	DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	SCALE	TITLE SHEET	Roach & Associates, LLC Design Business and Management Consulting Environmental Engineering 434 North Main Street, Seymour, WI 54165 PH: 920-833-6340 Fax: 920-833-6341	SHEET NO.
12/01/2017										1
01/01/18										
06/01/18										

LEDGEVIEW FARM, LLC
2017 WASTE STORAGE FACILITY AND RUNOFF
MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE
VARIES

TITLE SHEET

Ledgeview Farm, LLC
Cluster B
Livestock Siting Distance to Neighbors

Livestock Structures	Nearest Neighbor		
	N1	E1	S1
	(feet)		
Collection Basin - CB	1,309	1,156	1,773
Waste Storage Facility - W2	363	532	2,002
Bedded Pack Barn - L1	1,226	855	1,631
Freestall Barn - L2	1,748	1,213	1,043
Concrete Yard - Y1	1,309	930	1,519
Detention Basin-FSA - DB	1,821	1,343	1,108
Feed Storage Area	1,472	1,029	1,098

Update 6.1.18

Livestock Facility:
Location:

Ledgeview Farm, LLC - Cluster B
N1 North Neighbor

Odor Score Spreadsheet - Ver. 2.0

11/21/17

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (Fl. ²)	Dist. to Nearest Neighbor (Fl.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Bedded Pack - Dairy and Beef	2	34,279	1,226	Diet manipulation	0.8	None	1	None	1	5
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	81,532	1,748	Diet manipulation	0.8	None	1	None	1	26
1C											
1D											
1E											
1F											
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area (Fl. ²)	Dist. to Nearest Neighbor (Fl.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W2	Liquid storage - Long term (pit and tank) Open anaerobic	13	194,475	363	Natural Crust	0.3	None	1	None	1	76
CB	Liquid storage - Short term (pit and tank) Open anaerobic	28	638	1,309	None	1	None	1	None	1	2
DB	Liquid storage - Short term (pit and tank) Open anaerobic	28	9,952	1,821	None	1	None	1	None	1	28
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area (Fl. ²)	Dist. to Nearest Neighbor (Fl.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	42,660	1,309	Clean frequently (within 3 days)	0.4	Water Control (gutters & diversions)	0.8	None	1	5
Y2	Paved	4	4,494	1,735	Clean frequently (within 3 days)	0.4	None	1	None	1	1

4. Separation Distance

Weighted Distance to Neighbor	986
Direction of Nearest Neighbor	North
Adjusted Weighted Distance	986
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor 143

Separation Score 601

Basic Management Score 80

Advanced Management Score 20

Odor Score 558

Livestock Facility:
Location:

Ledgeview Farm, LLC - Cluster B
E1 East Neighbor

Odor Score Spreadsheet - Ver. 2.0

11/21/17

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (Ft. ²)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Bedded Pack - Dairy and Beef	2	34,279	855	Diet manipulation	0.8	None	1	None	1	5
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	81,532	1,213	Diet manipulation	0.8	None	1	None	1	26
1C											
1D											
1E											
1F											
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area (Ft. ²)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W2	Liquid storage - Long term (pit and tank) Open anaerobic	13	194,475	532	Natural Crust	0.3	None	1	None	1	76
CB	Liquid storage - Short term (pit and tank) Open anaerobic	28	638	1,156	None	1	None	1	None	1	2
DB	Liquid storage - Short term (pit and tank) Open anaerobic	28	9,952	1,343	None	1	None	1	None	1	28
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area (Ft. ²)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	42,660	930	Clean frequently (within 3 days)	0.4	Water Control (gutters & diversions)	0.8	None	1	5
Y2	Paved	4	4,494	1,233	Clean frequently (within 3 days)	0.4	None	1	None	1	1

4. Separation Distance

Weighted Distance to Neighbor	853
Direction of Nearest Neighbor	East
Adjusted Weighted Distance	939
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor 143

Separation Score 601

Basic Management Score 80

Advanced Management Score 20

Odor Score 558

Livestock Facility:

Ledgview Farm, LLC - Cluster B

Odor Score Spreadsheet - Ver. 2.0

11/21/17

Location:

S1 South Neighbor

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (Ft. ²)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Bedded Pack - Dairy and Beef	2	34,279	1,631	Diet manipulation	0.8	None	1	None	1	5
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	81,532	1,043	Diet manipulation	0.8	None	1	None	1	26
1C											
1D											
1E											
1F											
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area (Ft. ²)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W2	Liquid storage - Long term (pit and tank) Open anaerobic	13	194,475	2,002	Natural Crust	0.3	None	1	None	1	76
CB	Liquid storage - Short term (pit and tank) Open anaerobic	28	638	1,773	None	1	None	1	None	1	2
DB	Liquid storage - Long term (pit and tank) Open anaerobic	13	9,952	1,108	None	1	None	1	None	1	13
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area (Ft. ²)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	42,660	1,519	Clean frequently (within 3 days)	0.4	Water Control (gutters & diversions)	0.8	None	1	5
Y2	Paved	4	4,494	1,079	Clean frequently (within 3 days)	0.4	None	1	None	1	1

4. Separation Distance

Weighted Distance to Neighbor	1,672
Direction of Nearest Neighbor	South
Adjusted Weighted Distance	2,007
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor 128

Separation Score	845
Basic Management Score	80
Advanced Management Score	20
Odor Score	817



EXHIBIT B



May 3, 2018

FILE REF: R-2017-0237a
WPDES Permit #: WI-0065421

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Rd.
De Pere, WI 54115

Subject: Revised Evaluation Review for Ledgeview Farms, LLC, (Headquarters and Heifer Sites), Sec 33, T23N, R21E, Ledgeview Township, Brown County – FURTHER ACTIONS ARE REQUIRED

Dear Mr. Pansier:

This letter is to inform you that the Wisconsin Department of Natural Resources (Department) requires additional actions in order to complete its review of an evaluation submitted under certification by Richard Seas, P.E., Roach & Associates, LLC on December 15, 2017 on behalf of Ledgeview Farms, LLC. Richard Seas, P.E. evaluated the facilities listed below based on applicable NRCS Standards and ch. NR 243 Wis. Adm. Code.

The Department reviews submitted evaluations in accordance with s. 243.16, Wis. Adm. Code, and applicable NRCS standards. Under s. 243.16(3), Wis. Adm. Code, the Department may require additional practices, conditions, or permittee actions based on Department review of the submitted evaluation. For the following facilities, additional practices, conditions or permittee actions are required. The original evaluation was submitted on December 15, 2017. This revised letter is an update to the letters referenced as R-2017-0237, 0237i and 0237p dated February 1, 2018.

Headquarters Farm Waste Storage Facility #1: Due to the facility's location, an emergency overflow is necessary to direct a potential overflow away from a residential neighborhood to the north and to maintain the structural integrity of the facility. The following actions must be completed:

- Documentation that permanent markers have been installed in accordance with s. NR 243.15(3)(e), Wis. Adm. Code as well as identifying the location and elevation.
- Documentation for the installation of the emergency overflow. This is considered a maintenance activity because the overflow is armoring the liner. Therefore, no plans and specifications are required.

Headquarters Feed Storage Bunker: The bunker is an 8,700 ft² earthen lined bunker. The evaluation states that there are no runoff controls and that runoff flows into the "surface water drainage system". The drainage system naturally flows to the wetland and an unnamed stream that are located about 115 and 190 feet to the west respectively. The stream flows into Bower Creek, a navigable water.

- Submit plans and specifications to construct feed storage area runoff controls in accordance with s. NR 243.15(2), Wis. Adm. Code.

Headquarters Farm Production Area Runoff Controls: The animal lot is located on the east side of barn L5 and is about 6,000 ft². The evaluation stated that the animal lot has no containment for manure laden runoff. The runoff will flow west to an intermittent stream and then into Hower Creek.

- Submit plans and specifications for the production area runoff controls in accordance with s. NR 243.15(2), Wis. Adm. Code.

Abandonments: The evaluation stated that the facilities listed below need to be abandoned due to structural defects or the cost for maintenance activities. Should a facility be repurposed, an abandonment plan is still required, however an evaluation shall also be submitted to the Department to demonstrate that the facility will be in compliance with its new use.

- **Headquarters Farm Pit #1 and Pit #2:** Submit plans and specifications for the abandonment plan in accordance with s. NR 243.17(7), Wis. Adm. Code.

- Headquarters Farm Solids Stacking Area: Submit plans and specifications for the abandonment plan in accordance with s. NR 243.17(7), Wis. Adm. Code. This area is located east of barns L5 and L6.
- Heifer Farm Stacking Area: Submit plans and specifications for the abandonment plan in accordance with s. NR 243.17(7), Wis. Adm. Code. This area is located east of barns L1.

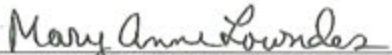
Plans and specifications must be submitted via the DNR's e-Permitting system at <http://dnr.wi.gov/permits/water/> according to the due dates within the Schedules section of the WPDES permit, due date listed in an enforcement notice or date scheduled by the DNR CAFO Specialist in the permit. Questions concerning the review may be directed to Jeff Kreider, and questions concerning timelines and permit issues may be directed to the DNR CAFO Specialist. (Contact information at the end of this letter.)

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to WIS. STAT. §§ 227.52 and 227.53, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to WIS. STAT. § 227.42, you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN. by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES



Mary Anne Lowndes
Chief, Runoff Management Section
Bureau of Watershed Management



Jeff C. Kreider
Water Resources Engineer
Bureau of Watershed Management

Email: Richard Seas, P.E.
Roach & Associated, LLC
(920) 833-6340; richard@jmroach.com

Mike Mushinski; County Conservationist
Brown County
(920) 391-4621; Mushinski_ML@co.brown.wi.us

Matt Woodrow, P.E.
DATCP
(920) 427-8505; matthew.woodrow@wisconsin.gov

Heidi Schmitt Marquez; DNR CAFO Specialist
DNR, Northeast Region
(920) 662-5187; Heidi.SchmittMarquez@Wisconsin.gov

Jeff Kreider
DNR, Central Office
(608) 266-0856; jeff.kreider@wisconsin.gov

EXHIBIT C

Ledgeview Farms, LLC Event Timeline	
Legend	Agency Actions
	Ledgeview Farms, LLC Actions
Date	Item
October, 2007	WDNR Claims greater than 1000 AU
July, 2008	WDNR Claims greater than 1000 AU
October, 2008	WPDES Permit pre application submitted to WDNR
February, 2009	WDNR NOV Issued
January, 2010	NMP Submitted to WDNR and Brown County - AgSource
April, 2010	Submitted evidence of less than 1000 AU
April, 2010	Initiated corrective measures to resolve Feb, 2009 NOV
May, 2010	WDNR Closes Feb 2009 NOV
March, 2011	NMP Annual Update submitted to WDNR and Brown County - AgSource
March, 2012	NMP Annual Update submitted to WDNR and Brown County - AgSource
March, 2013	NMP Annual Update submitted to WDNR and Brown County - AgSource
April, 2013	EPA Inspection
September, 2013	EPA Administrative order for compliance
October, 2013	Brown County LCD site visit to discuss corrective measures in response to EPA order
October, 2013	Interim measures installed at both sites to eliminate contaminated runoff
January, 2014	WPDES required records recorded
March, 2014	NMP Annual Update submitted to WDNR and Brown County - AgSource
March, 2014	5 year NMP submitted to WDNR for WPDES Permit Application - AgSource
March, 2014	EPA Annual Report - AgSource
March, 2014	Corrective actions plan submitted to EPA
March, 2014	Pasture abandoned
March, 2014	Concrete Cattle Yards Abandoned
March, 2014	Vertical wall WSF interim repair
March, 2014	Brown County LCD Designs WSF 1
April, 2014	WPDES permit pre application submitted to WDNR
June, 2014	WPDES permit final application submitted to WDNR
November, 2014	Brown County WSF 1 Permit issued

Date	Item
January, 2015	WPDES required records recorded
March, 2015	EPA Annual Report - AgSource
April, 2015	EPA Inspection
April, 2015	Report documenting abandonment of Yards & Lots at the HQ site
March, 2015	NMP Annual Update submitted to WDNR and Brown County - AgSource
March, 2015	5 year NMP submitted for WPDES Permit Application - AgSource
May, 2015	Bunker walls backfilled with clay to prevent leaks
July 2015	WSF 1 constructed
October, 2015	Discontinued use of vertical walled concrete structures
October, 2015	After the fact CSEC plan submitted to DNR
January, 2016	WPDES required records recorded
March, 2016	NMP Annual Update submitted to WDNR and Brown County - AgSource
March, 2016	As built documentation for WSF 1 prepared by the Brown County LCD
March, 2016	EPA Annual Report - AgSource
November, 2016	EPA Notice of Intent to File Civil Administrative Complaint Against Ledgeview Farms
January, 2017	WPDES required records recorded
March, 2017	5 year NMP submitted to WDNR for WPDES Permit Application - AgSource
March, 2017	NMP Annual Update submitted to WDNR and Brown County - AgSource
March, 2017	EPA Annual Report - AgSource
May, 2017	WDNR approves NMP for WPDES permit
July, 2017	WDNR Site inspection for WPDES permit application
August, 2017	WSF 1 Certificate of Completion from the Brown County
September, 2017	Roach & Associates, LLC engagement
September, 2017	Roach & Associates requests WPDES permit application extension
September, 2017	WDNR grants WPDES Permit Application Extension
October, 2017	WPDES Permit final application submitted to WDNR
December, 2017	WDNR NOV Issued for alleged incomplete WPDES permit application
December, 2017	Plans and specifications for WSF, transfer systems, and LMS submitted to DNR & Brown County
December, 2017	WPDES Permit Application Submitted

Date	Item
January, 2018	WPDES required records recorded
January, 2018	WDNR completeness determination of the WPDES Permit application
January, 2018	WDNR completeness determination of LMS and WSF plans and specifications
January, 2018	WDNR high capacity well permit approval
January, 2018	WDNR approval of plans and specifications for WSF 2, waste transfer and leachate management system
January, 2018	Brown County Permit for WSF 2, waste transfer and leachate management system
February, 2018	WDNR approves existing waste transfer facilities at HQ site
March, 2018	NMP Annual Update submitted to WDNR and Brown County - AgSource
March, 2018	EPA Annual Report - AgSource
April, 2018	Town of Ledgeview completeness determination of Livestock Siting Application
May, 2018	Comprehensive Nutrient Management Plan submitted to Natural Resources Conservation Service
May, 2018	WDNR approves WSF1 evaluation
May, 2018	Town of Ledgeview Zoning and Planning Committee Meeting
May, 2018	Town of Ledgeview Town Board Meeting - Livestock Siting Application and CU permit
May, 2018	WDNR public notice period begins for WPDES permit
July, 2018	WDNR Public hearing for WPDES permit

AFFIDAVIT OF POSTING

STATE OF WISCONSIN)
Town of Ledgeview)
Brown County)

I, Charlotte K. Nagel, Town Clerk of the Town of Ledgeview, Brown County, Wisconsin, attest and affirm all of the following:

1. That the following action was posted pursuant to s. 60.80, Wis. stats:

The Ledgeview Town Board Meeting scheduled for Monday, June 4, 2018 at 6:00 p.m., a copy here onto attached;

2. That the above-noted action was posted as required in the following 3 places in the Town of Ledgeview, Brown County, Wisconsin:

Ledgeview Town Hall, 3700 Dickinson Road, De Pere, WI 54115

Piggly Wiggly, 575 Swan Road, De Pere, WI 54115

I-43 Shell Station, 3285 Cedar Hedge Lane, Green Bay, WI 54311

Town of Ledgeview website at www.ledgeviewwisconsin.com

3. That the posting of this action occurred at the following times and dates:

Prior to 5:00 p.m. on Friday, June 1, 2018.

That I filed this affidavit in the records of the town clerk for the Town of Ledgeview on

June 4th, 2018.

Dated this 4th day of June, 2018.

Charlotte Nagel
Charlotte Nagel, Town Clerk
Town of Ledgeview, Brown County, WI

Subscribed and sworn to before me this 4th day of June, 2018.

Sarah K. Burdette

Sarah K. Burdette

Town Administrator

Town of Ledgeview, Brown County, WI



LEDGEVIEW TOWN BOARD AGENDA
Monday, June 4, 2018 at 6:00 p.m.
or as soon thereafter as possible
Ledgeview Municipal Building
3700 Dickinson Road, De Pere, WI 54115

The Town Board may discuss and act on the following:

- A. CALL TO ORDER
- B. PLEDGE OF ALLEGIANCE
- C. ROLL CALL
- D. AGENDA APPROVAL

Town Board

Philip J. Danen, Chairman
Renee Van Rossum, Supervisor
Ken Geurts, Supervisor
Cullen Peltier, Supervisor
Mark Danen, Supervisor

CONSENT AGENDA

- 1. Regular Board Meeting Minutes:
 - a. May 7, 2018 Town Board Minutes
 - b. May 29, 2018 Public Hearing Meeting Minutes
- 2. Routine Reports: None.
- 3. Committee/Commission Reports: None.
- 4. Operator's Licenses: May 7, 2018 – June 1, 2018.
- 5. Other Committee Minutes. Accept and place on file: None.
- 6. Pay Requests:
 - a. Community Center/Fire Station #1 Boldt Invoice 16200-007 in the amount of \$387,496.91.
 - b. Community Center/Fire Station #1 Boldt Invoice 16200-008 in the amount of \$129,249.47.
- 7. Special Event & Street Closure Permits: None.

All items listed under "Consent Agenda" are considered to be routine and non-controversial by the Town Board and will be approved by one motion. There will be no separate discussion. If discussion is desired by members, that item will be removed from the consent agenda and discussed separately immediately after consent agenda is approved.

PUBLIC COMMENT:

PUBLIC HEARING: None.

ZONING & PLANNING: None.

NEW TOWN FACILITIES: None.

NEW BUSINESS:

- 1. Discuss and act on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.
- 2. Recommendation from Park & Recreation Committee to approve the Town of Ledgeview Community Identity Guide.
- 3. Recommendation from Park & Recreation Committee to approve Community Sponsorship Guide.

OLD BUSINESS: None.

COMMUNICATIONS: None.

ORDINANCES: None.

REPORTS: Administrator, Clerk, Treasurer, Engineer, Planner, Public Works, Code Enforcement, Fire Chief and Board Comments.

APPROVAL OF THE VOUCHERS:

CLOSED SESSION:

1. The Town Board may convene into closed session pursuant to WI State Statute §19.85 (1).
2. The Town Board may remain in closed session pursuant to WI State Statute §19.85 (1)(e) deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session.
3. The Board may then reconvene into open session to take action on items discussed in closed session.

ADJOURNMENT:

NEXT REGULAR MEETING TUESDAY, JUNE 19, 2018 AT 4:30 PM

BY THE DIRECTION OF THE TOWN BOARD CHAIRMAN:

Charlotte Nagel

Charlotte Nagel, Clerk

Town of Ledgeview, Brown County, WI

Signed, dated and posted: June 1, 2018

Notice is hereby given that the Ledgeview Town Board may take action on any specific item listed within this agenda. Where citizens provide input to the Ledgeview Town Board on items not specifically listed within this agenda, the only appropriate action is referral to a Committee or to a subsequent Town Board meeting. Any person wishing to attend who, because of disability, requires special accommodations should contact the Town Clerk at (920) 336-3360, 3700 Dickinson Road, at least 48 hours prior to the meeting so arrangements can be made.

Charlotte Nagel

From: Charlotte Nagel <cnagel@ledgeviewwisconsin.com>
Sent: Friday, June 01, 2018 2:24 PM
To: 'metro@greenbaypressgazette.com'; 'Anderson, Jonathan'
Subject: Ledgeview Town Board Agenda
Attachments: 18-06-04 Town Board Meeting - FINAL.pdf

Greetings,

Attached is the Ledgeview Town Board Agenda for Monday, June 4, 2018 at 6:00 p.m.

Sincerely,

Charlotte Nagel, Clerk



Town of Ledgeview
3700 Dickinson Road
De Pere, WI 54115
Telephone: (920) 336-3360, Ext. 104
Fax: (920) 336-8517
cnagel@ledgeviewwisconsin.com
Population: 7,431



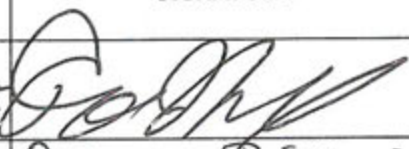
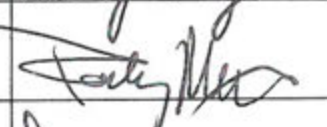

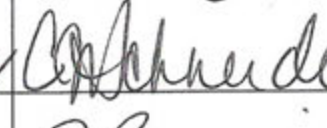

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AGENDA REVIEW SHEET
Ledgeview Town Board Meeting of June 4, 2018

AGENDA ITEM	PURPOSE		RECOMMEND -ATION	STAFF
New Business:				
1.	Discuss and act on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.	Follow up to the May 29 th Public Hearing on the conditional use and livestock siting applications, the Board will review, discuss, and take action on said applications.	Review/ Discussion/ Approval	Staff
2.	Recommendation from Park & Recreation Committee to approve the Town of Ledgeview Community Identity Guide.	The purpose of the Community Identity Guide is to guide the implementation of a consistent and cohesive signage and identification system over time. This document provides brand elements for the design and installation of signage to assist the Town in identifying, maintaining, and meeting public expectations for lands under its control. By incorporating graphics, imagery, and colors that portray the “Town brand”, with each new element added, a more unified community and sense of place will be built.	Review/ Discussion/ Approval	Staff
3.	Recommendation from Park & Recreation Committee to approve Community Sponsorship Guide.	In recent years an increase in development in Ledgeview has afforded the opportunity to improve the Town’s Park and Recreation system from lands dedicated to the public. In addition to the Town’s financial commitments to develop these lands into functional, safe, and aesthetically pleasing park facilities, citizens of the Town have increasingly shared their interest in making private contributions. The purpose of this guide is to establish a simple and efficient method of supporting these requests, the Town has identified sponsorship opportunities for specific park amenities based on requests and local precedent.	Review/ Discussion/ Approval	Staff

**TOWN OF LEDGEVIEW
SIGN-UP SHEET**

Town Board Meeting – Monday June 4, 2018 at 6:00 PM

PRINT NAME	SIGNATURE	ADDRESS
Don Karkhott		3848 Dickison Rd
Brian & Jeanette Brittain	Jeanette Brittain Brian Brittain	2226 Meadow Ridge Drive
Holly Schlag	Holly Ly	2038 Wayside Pl
Fancy Marx		Green Bay Wisconsin 3207 Fairway Dr.
Jean Pansier	Jean Pansier	Ledgeview Farms
Tricia Adams		611 Marble Rock Cir
Ronald Diny	Ronald Diny	6584 Blake Rd. Greenleaf
Barb Billing	Barbara J Gilley	2273 Fox Den Ct
Charity Schneider		3626 Beachmont Rd
J. Bonacci	J Bonacci	3800 Dickinson
J W Liddell	J W Liddell	" "
Andy Schlag		2247 Scray Hill Rd

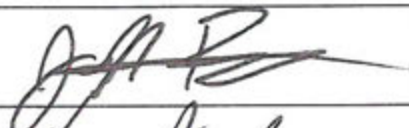

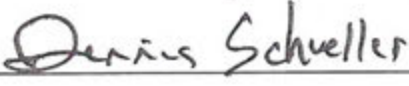





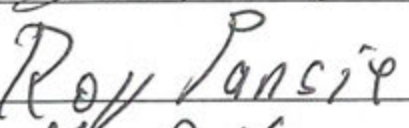



**TOWN OF LEDGEVIEW
SIGN-UP SHEET**

Town Board Meeting – Monday June 4, 2018 at 6:00 PM

PRINT NAME	SIGNATURE	ADDRESS
John Reed	<i>John Reed</i>	856 North Main St. Seymour
Tim Drisk	<i>Tim Drisk</i>	224 Heritage
Chris Anderson	<i>Chris Anderson</i>	2262 Meadow Ridge Rd DePue, WI 54115
Patti Cousineau	<i>Patti Cousineau</i>	2513 Harvest Moon Ct Green Bay, WI 54311
Susan Tesar	<i>Susan Tesar</i>	2505 Lime Kiln Rd E. B, WI
Justin Redman	<i>Justin Redman</i>	3535 Meadow Sound
Randy Edinger	<i>Randy Edinger</i>	4315 Heritage Rd.
Connie Kellogg	<i>Connie Kellogg</i>	661 Marble Rock Circle
Julie Enright	<i>Julie K. Enright</i>	2277 Dollar Rd.
Cristy Janitch	<i>Cristy Janitch</i>	2264 Fox Den Ct
Amanda Aricchio	<i>Amanda Aricchio</i>	718 Iron Horse Way
Sean Moran	<i>Sean Moran</i>	709 Iron Horse Way

**TOWN OF LEDGEVIEW
SIGN-UP SHEET**

Town Board Meeting – Monday June 4, 2018 at 6:00 PM

PRINT NAME	SIGNATURE	ADDRESS
Jeff Pansier		2025 Heritage Rd De Pere, WI
Ken Faust		2801 Madrid Dr. Green Bay WI 21600 Gorman Rd Mount Pleasant
Dennis Schueller		21600 Gorman Rd Mount Pleasant
Jason Pansier		Ledgeview
Mick Barron		2273 Fox Den Ct
Andrew Tenor		3851 Dickinson Rd
Courtney Pouch		Rouch and associates 3685 Beachmont De Pere
Steve & Patty Kahl		De Pere
Roy Pernie		Lederien Farms
Kevin P. Kane		4151 Dickinson Rd.
Jim Jadin		
Tony Layonski		720 E 20th Ave Green Bay WI 54301

The Ledgeview Town Board held a meeting on **Monday, June 4, 2018 at 6:00 p.m.** at the Municipal Building located at 3700 Dickinson, De Pere, WI 54115.

A. CALL TO ORDER

The meeting was called to order by Chairman Danen at 6:00 p.m.

B. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was recited by all in attendance.

C. ROLL CALL

Members present were Chairman Danen, Supervisors Renee Van Rossum, Cullen Peltier, and Mark Danen. Supervisor Ken Geurts was excused.

Staff present were Administrator Sarah Burdette, Engineer Scott Brosteau, Planner Dustin Wolff, Public Works Superintendent Andy Tenor, and Clerk Charlotte Nagel.

D. AGENDA APPROVAL

MOTION by Peltier/Van Rossum to approve the agenda. No further discussion. Motion carried in a voice vote, 4-0.

CONSENT AGENDA

1. Regular Board Meeting Minutes:
 - a. May 7, 2018 Town Board Minutes
 - b. May 29, 2018 Public Hearing Meeting Minutes
2. Routine Reports: None.
3. Committee/Commission Reports: None.
4. Operator's Licenses: May 7, 2018 – June 1, 2018.
5. Other Committee Minutes. Accept and place on file: None.
6. Pay Requests:
 - a. Community Center/Fire Station #1 Boldt Invoice 16200-007 in the amount of \$387,496.91.
 - b. Community Center/Fire Station #1 Boldt Invoice 16200-008 in the amount of \$129,249.47.
7. Special Event & Street Closure Permits: None.

All items listed under "Consent Agenda" are considered to be routine and non-controversial by the Town Board and will be approved by one motion. There will be no separate discussion. If discussion is desired by members, that item will be removed from the consent agenda and discussed separately immediately after consent agenda is approved.

MOTION by Van Rossum/Peltier to approve the Consent Agenda. No further discussion. Motion carried in a voice vote, 4-0.

PUBLIC COMMENT:

Chairman Danen advised that anyone can speak on any item on or off the agenda but it should be noted that the public hearing held May 29, 2018 and this was not to be a repeat of the public hearing. Chairman Danen invited anyone who had anything new to add to the record to please do so and that comments would be limited to 3 minutes.

Jeff Pansier, 2025 Heritage Road – Mr. Paniser is a family member of Ledgeview Farms owners. Mr. Paniser feels this is a personal attack on his family in efforts to choke out the farming community. He stated his family feels they're being portrayed as horrible people and bad neighbors when in fact they're good people who

served and continue to serve on the Ledgeview Volunteer Fire Department for years. He stated that the manure pit is required by the DNR and the EPA, and his family is working with the DNR on a schedule to complete it. Mr. Pansier stated that the farm was here long before the subdivision behind it and that the property owners should have done their homework before building in that subdivision. In his opinion, the ordinance change made last year changed the rules and feels the Town going after local businesses.

Tim Drewiske, 2224 Heritage Road – Worked for Ledgeview Farms and the Pansier Family in the past and that they are good people. His opinion is that this is a personal attack on the Pansier family and that the family is trying to follow the rules, but the rules were changed by adopting last year's ordinance changes.

Ronald Dane 6584 Lake Road – The Pansier's are clients of Mr. Dane in the ag-business. States there's a government push for all farms to keep the environment and water clean which is hurting the farming community. Denial of the conditional use permit will only strap Ledgeview Farms further.

Linda Borley, 2350 Dollar Lane – The Pansiers are good God fearing, hardworking people, and she is proud to call them neighbors.

Jeanette Brittain, 2226 Meadow Ridge Drive – Never heard a bad word spoken about the Pansier Family, this is more about community health. The farm was much smaller when she first bought her home and the expansion of the farm has taken place without any notification to anyone. Discussion needs to take place so the community as a whole is notified, but this is not a personal attack on the family.

Atty. Eric McLeod, 33 E. Main Street, Madison – Representing Ledgeview Farms. Atty. McLeod believes this is a simple matter. Since the Board is a quasi-judicial body, the law must be applied to the application according to the current statewide standards. Atty. McLeod urged The Board to consider the law, apply the facts, and make the right decision.

Tricia Adams, 608 Marble Rock Circle – Believes this is not an emotional decision. This is about public safety and welfare.

Public comment was closed at 6:14 PM.

PUBLIC HEARING: None.

ZONING & PLANNING: None.

NEW TOWN FACILITIES: None.

NEW BUSINESS:

1. **Discuss and act on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.**

The Board had an opportunity to review all submitted documentation whether for or against the conditional use permit/livestock siting application. A public hearing on the matter took place on May 29, 2018, with the opportunity for additional submittals to be given to the Board.

MOTION by Peltier/M. Danen to deny the conditional use permit application. Discussion was had.

The denial was based on the Board's privity to do so, there is an appeal process for the petitioner to pursue if they choose, and alternatives were not presented. This is a case where development meets farming, a situation that lends itself to conflicts. This is not a personal attack on the family and the town doesn't want to get rid of farming. Both sides knew what they were getting into when development occurred.

There is the issue of non-compliance with required permitting on behalf of Ledgeview Farms. The farm grew internally from a family farm to a Concentrated Animal Facility Operations (CAFO) without the proper permitting despite all the contacts with DNR, EPA, Brown County, and Town.

No further discussion. Chairman Danen called the question. Motion carried in a voice vote, 4-0.

A written findings fact and determination will be issued to Ledgeview Farms on June 5, 2018.

2. Recommendation from Park & Recreation Committee to approve the Town of Ledgeview Community Identity Guide.

Since 2016, the Park, Recreation and Forestry Committee has been developing a Community Identity Guide based on an update to the CTH GV Corridor Amenity Study (2011). The purpose of the Community Identity Guide is to guide the implementation of a consistent and cohesive signage and identification system over time.

MOTION by Van Rossum/M. Danen to approve the Community Identity Guide. No further discussion. Motion carried in a voice vote, 4-0.

3. Recommendation from Park & Recreation Committee to approve Community Sponsorship Guide.

This document summarizes the evaluation of sponsorship opportunities within Ledgeview, highlighting key aspects of developing a sponsorship program and considerations for program design and implementation.

MOTION by Van Rossum/M. Danen to approve the Community Sponsorship Guide. No further discussion. Motion carried in a voice vote, 4-0.

OLD BUSINESS: None.

COMMUNICATIONS: None.

ORDINANCES: None.

REPORTS:

Administrator:

- Staff is wrapping up edits to the strategic plan document update. The final draft will be presented to the Board at the next meeting.
- The new town facilities work is going well. Estimated move in is June 25th -July 6th. Existing building demolition will occur starting July 9th. Substantial completion will be August 8th.
- Final sign bid package is near complete and bids advertisement will occur soon.
- Central Brown County Water Authority hired a new employee to replace the retiring manager.
- The Circuit Court process of vacating the small piece of land on Ava Hope will take place on June 25th.
- There was a smooth transition with the Building Inspection Services.
- Update on the Hwy. 57 pedestrian trail was given.

Clerk:

- Dollar Hill Equestrian Center Rodeo incident was discussed. Future rodeos will require the owner to contact with Brown County Sheriff for security services.
- Liquor License Public Hearing and renewal will be on the next agenda.
- Special Election for Wards 4-7 for the 1st Senate District will be held June 12th.

Engineer:

- Status updates were given on the following projects:
 - Oak Ridge Circle Urbanization Project – Waiting on wetland delineation
 - Scray Hill Road Sewer and Water Extension
 - Olde School Square Park starting
 - Curb & gutter starting in Grand Ridge Second Addition

Planner:

- Will be attending Glenmore meeting regarding Van Straten Family Park.

Public Works: None.

Code Enforcement:

- Establishment of a fireworks permit was discussed. The Board Is not interested.

APPROVAL OF THE VOUCHERS:

MOTION by Van Rossum/M. Danen to approve the vouchers. No further discussion. Motion carried in a voice vote, 4-0.

CLOSED SESSION:

1. **The Town Board may convene into closed session pursuant to WI State Statute §19.85 (1).**
The Board did not go into closed for this item.
2. **The Town Board may remain in closed session pursuant to WI State Statute §19.85 (1)(e) deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session.**

MOTION by P. Danen/Peltier for the Board to go into closed session pursuant to WI State Statute §19.85 (1)(e) deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session. No further discussion.

Roll call vote: Van Rossum – Aye, P. Danen – Aye, Peltier – Aye, M. Danen – Aye. Motion carried in a roll call vote, 4-0.

At 7:02 PM the Town Board entered into closed session.

MOTION by Van Rossum/Peltier for the Town Board to reconvene into open session. No further discussion. Motion carried in a voice vote, 4-0.

3. **The Board may then reconvene into open session to take action on items discussed in closed session.**

MOTION by Van Rossum/Peltier to direct the staff begin working on an amendment to Tax Incremental District #1. No further discussion. Motion carried in a voice vote, 3-0-1 with P. Danen abstaining from all discussion or action regarding this item.

ADJOURNMENT:

MOTION by P. Danen/M. Danen to adjourn. No further discussion. Motion carried in a voice vote, 4-0. Meeting adjourned at 7:19 PM.

Charlotte K. Nagel, Clerk
Town of Ledgeview, Brown County, WI



LEDGEVIEW TOWN BOARD AGENDA
Monday, June 4, 2018 at 6:00 p.m.
or as soon thereafter as possible
Ledgeview Municipal Building
3700 Dickinson Road, De Pere, WI 54115

The Town Board may discuss and act on the following:

- A. CALL TO ORDER
- B. PLEDGE OF ALLEGIANCE
- C. ROLL CALL
- D. AGENDA APPROVAL

Town Board

Philip J. Danen, Chairman
Renee Van Rossum, Supervisor
Ken Geurts, Supervisor
Cullen Peltier, Supervisor
Mark Danen, Supervisor

CONSENT AGENDA

- 1. Regular Board Meeting Minutes:
 - a. May 7, 2018 Town Board Minutes
 - b. May 29, 2018 Public Hearing Meeting Minutes
- 2. Routine Reports: None.
- 3. Committee/Commission Reports: None.
- 4. Operator's Licenses: May 7, 2018 – June 1, 2018.
- 5. Other Committee Minutes. Accept and place on file: None.
- 6. Pay Requests:
 - a. Community Center/Fire Station #1 Boldt Invoice 16200-007 in the amount of \$387,496.91.
 - b. Community Center/Fire Station #1 Boldt Invoice 16200-008 in the amount of \$129,249.47.
- 7. Special Event & Street Closure Permits: None.

All items listed under "Consent Agenda" are considered to be routine and non-controversial by the Town Board and will be approved by one motion. There will be no separate discussion. If discussion is desired by members, that item will be removed from the consent agenda and discussed separately immediately after consent agenda is approved.

PUBLIC COMMENT:

PUBLIC HEARING: None.

ZONING & PLANNING: None.

NEW TOWN FACILITIES: None.

NEW BUSINESS:

- 1. Discuss and act on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.
- 2. Recommendation from Park & Recreation Committee to approve the Town of Ledgeview Community Identity Guide.
- 3. Recommendation from Park & Recreation Committee to approve Community Sponsorship Guide.

OLD BUSINESS: None.

COMMUNICATIONS: None.

ORDINANCES: None.

REPORTS: Administrator, Clerk, Treasurer, Engineer, Planner, Public Works, Code Enforcement, Fire Chief and Board Comments.

APPROVAL OF THE VOUCHERS:

CLOSED SESSION:

1. The Town Board may convene into closed session pursuant to WI State Statute §19.85 (1).
2. The Town Board may remain in closed session pursuant to WI State Statute §19.85 (1)(e) deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session.
3. The Board may then reconvene into open session to take action on items discussed in closed session.

ADJOURNMENT:

NEXT REGULAR MEETING TUESDAY, JUNE 19, 2018 AT 4:30 PM

BY THE DIRECTION OF THE TOWN BOARD CHAIRMAN:

Charlotte Nagel

Charlotte Nagel, Clerk

Town of Ledgeview, Brown County, WI

Signed, dated and posted: June 1, 2018

Notice is hereby given that the Ledgeview Town Board may take action on any specific item listed within this agenda. Where citizens provide input to the Ledgeview Town Board on items not specifically listed within this agenda, the only appropriate action is referral to a Committee or to a subsequent Town Board meeting. Any person wishing to attend who, because of disability, requires special accommodations should contact the Town Clerk at (920) 336-3360, 3700 Dickinson Road, at least 48 hours prior to the meeting so arrangements can be made.

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Tuesday, May 29, 2018 11:11 AM
To: Charlotte Nagel
Subject: FW: Ledgeview Farms LLC WPDES Permit Public Notice

Please include this in the record.

Sarah K. Burdette
Administrator
Town of Ledgeview



3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com



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From: Schmitt Marquez, Heidi S - DNR [mailto:Heidi.SchmittMarquez@wisconsin.gov]
Sent: Tuesday, May 29, 2018 9:44 AM
To: Sarah Burdette (sburdette@ledgeviewwisconsin.com) <sburdette@ledgeviewwisconsin.com>; Wolff, Dustin <dustin.wolff@meadhunt.com>
Subject: Ledgeview Farms LLC WPDES Permit Public Notice

Good morning,

I just wanted to let you know that the Ledgeview Farms LLC draft permit will be public noticed in the GB Press Gazette tomorrow, May 30. The public notice period is 30 days. Written comments on the draft permit documents can be sent directly to me and oral/written comments will be accepted during the public hearing on July 10. Here is the link for the DNR public noticed permits website where the draft permit documents will be posted during the public notice period: <https://dnr.wi.gov/topic/wastewater/publicnotices.html>. This website is for all WPDES permits that are public noticed, so you will have to look for the permittee name for the associated documents; the list is organized by public notice date, so Ledgeview Farms LLC should be the first one listed tomorrow.

Let me know if you have any other questions.

Thanks,

Heidi Schmitt Marquez

Agricultural Runoff Management Specialist
Bureau of Watershed Management
Wisconsin Department of Natural Resources
2984 Shawano Ave, Green Bay, WI 54313
Phone: (920) 662-5187
Mobile: (920) 366-3302
Fax: (920) 662-5498
Heidi.SchmittMarquez@Wisconsin.gov

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dnr.wi.gov



STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES
PUBLIC NOTICE OF AVAILABILITY OF A NUTRIENT MANAGEMENT PLAN AND INFORMATIONAL
HEARING AND INTENT TO ISSUE A WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM
(WPDES) PERMIT No. WI-0065421-01-0

Permittee: Ledgeview Farms LLC, 3870 Dickinson Rd, De Pere, WI 54115

Facility Where Discharge Occurs: Ledgeview Farms LLC, 3875 Dickinson Road & 3688 Lime Kiln Road, De Pere

Receiving Water and Location: Surface water and groundwater within the Unnamed Tributaries and Bower Creek within the East River Watershed, and groundwaters of the state

Brief Facility Description: Ledgeview Farms LLC is a proposed Concentrated Animal Feeding Operation (CAFO). Ledgeview Farms LLC is owned and operated by Jason Pansier. It currently has 2,764 animal units (1,084 milking & dry cows, 576 heifers, 642 steers, and 390 calves) animal units and is proposing to expand through internal growth to 3,077 animal units (1,566 milking & dry cows, 832 heifers, and 624 calves) by the final year of the permit term, 2023. The main farm site is located at 3875 Dickinson Rd and the heifer site is located at 3688 Lime Kiln Rd. The main farm site consists of three freestall barns, two bedded pack barns for heifers, one calf barn, milking parlor, feed storage area, heifer feedlot, one waste storage facility, and one storm water pond. A waste transfer system collects and discharges animal waste and process wastewater from the largest freestall barn and milking parlor to the waste storage facility. The remaining barns produce solid waste that is managed through stacking areas and direct land application. The heifer site consists of one freestall barn, one bedded pack barn for heifers, feed storage area, heifer feedlot, and one reception tank for collection of waste from the heifer feedlot. The farm currently does not operate any pasture or grazing areas. Approximately 10 million gallons of liquid manure and process wastewater and 7,500 tons of solid manure are produced annually at the current herd size. Ledgeview Farms LLC has a total of 2,759 acres available for land application of manure and process wastewater. Of this acreage, 735 acres are owned and 2,024 acres are rented.

The Department has tentatively decided that the above specified WPDES permit should be issued.

Permit Drafter: Heidi Schmitt Marquez, DNR, NER, 2984 Shawano Ave, Green Bay, WI 54313, (920) 662-5187, heidi.schmittmarquez@wisconsin.gov

Public Hearing Date, Time, and Location: **Tuesday, July 10, 2018, 5:00 p.m., at the DNR Green Bay Service Center, Lake Michigan Room, 2984 Shawano Avenue, Green Bay, WI 54313-6727**

The Department of Natural Resources, pursuant to Section 283.49, Wisconsin Statutes, has scheduled a public informational hearing for the purpose of giving all interested persons an opportunity to make a statement with respect to the proposed permit action, the terms of the nutrient management plan, and the application for this operation.

The hearing officer will conduct the hearing in an orderly fashion and will use procedures specified in Subchapter II of ch. NR 203, Wis. Adm. Code, necessary to insure broad public participation in the hearing. The hearing officer will open the hearing and make a concise statement of the scope and purpose of the hearing and shall state what procedures will be used during the course of the hearing. The hearing officer shall explain the method of notification of the final decision to grant or deny the permit and the methods by which the decision may be reviewed in a public adjudicatory hearing.

The hearing officer may place limits on individual oral statements to insure an opportunity for all persons present to make statements in a reasonable period of time and to prevent undue repetition. The hearing officer may also limit the number of representatives making oral statements on behalf of any person or group. Informational and clarifying questions and oral statements shall be directed through the hearing officer. Cross-examination shall not be allowed.

Persons wishing to comment on or object to the proposed permit action, the terms of the nutrient management plan, or the application, are invited to do so by attending the public hearing or by submitting any comments or objections in writing to the Department of Natural Resources, at the permit drafter's address. All comments or suggestions received from members of the public no later than 7 days following the date of this public hearing will be used, along with other information on file and testimony presented at the hearing, in making a final determination. Anyone providing comments in response to this public notice will receive a notification of the Department's final decision regarding permit coverage. Where designated as a reviewable surface water discharge permit, the U.S. Environmental Protection Agency is allowed up to 90 days to submit comments or objections regarding this permit determination.

Information on file for this permit action, including the draft permit and fact sheet (if required), the operation's nutrient management plan and application may be inspected and copied at the permit drafter's office, Monday

through Friday (except holidays), between 9:00 a.m. and 3:30 p.m. Please call the permit drafter for directions to their office location, if necessary. Information on this permit action may also be obtained by calling the permit drafter at (920) 662-5187 or by writing to the Department. Reasonable costs (15 cents per page for copies and 7 cents per page for scanning) will be charged for information in the file other than the public notice and fact sheet. Permit information is also available on the internet at: <http://dnr.wi.gov/topic/wastewater/PublicNotices.html>. Pursuant to the Americans with Disabilities Act, reasonable accommodation, including the provision of informational material in an alternative format, will be made to qualified individuals upon request.

PUBLISHING NEWSPAPER: Green Bay Press Gazette, PO Box 23430, Green Bay, WI 54305-3430
Date Notice Issued: May 30, 2018

Charlotte Nagel

From: manar alshahrouri <mshahrouri71@icloud.com>
Sent: Wednesday, May 30, 2018 5:00 PM
To: cnelson@ledgeviewwisconsin.com
Subject: Town Hall meeting data from yesterday
Attachments: resp.pdf; Untitled attachment 00038.txt

Thank you again for the opportunity .

Enclosed is part of the data I quoted regarding the health effects of the manure pit .

I am not sure how much data you would like but I have plenty . This is medical grade material as such I am happy to provide further explanations as needed .

Manar Shahrouri

733 Iron Horse way

<http://worh.org/files/AgHealth/resp.pdf>



AGRICULTURAL RESPIRATORY HAZARDS AND DISEASE

A PRIMER FOR WISCONSIN PRACTITIONERS AND HEALTH/SAFETY PROFESSIONALS

Steven R. Kirkhorn, M.D., M.P.H., F.A.C.O.E.M.

Associate Clinical Professor

University of Minnesota Family Practice and Community Health

Faculty-University of Minnesota Rural Family Practice Residency, Waseca, MN.

Medical Director

Occupational Health Resources

Immanuel St. Joseph's-Mayo Health System

INTRODUCTION

The agriculture workplace has long been known to be associated with respiratory disease. Respiratory disease is among the main chronic health conditions affecting farmers (Brackbill et al, 1994). Those who are at potential risk include farmers and farm families, agricultural workers, abattoir workers, greenhouse and nursery workers, veterinarians, and grain elevator workers. While the massive exposures leading to severe acute disease have decreased, it is postulated that there has been a significant increase in subacute and chronic respiratory disease resulting from increased indoor air exposure (Donham 2000; Von Essen and Donham, 1999). Animal confinement workers or dairy technicians may spend as much time as 40-50 hours or more a week indoors in larger operations, resulting in longer exposures to higher levels of gases and dusts. This is a result from changing animal production techniques with higher animal densities and shift work in animal feeding units (AFOs) and high density concentrated animal feeding operations (CAFOs). Many of these conditions are found in Wisconsin. In fact, some of the early work in establishing the methods in the diagnosis of Farmer's Hypersensitivity Pneumonitis (FHP), formerly known as Farmer's Lung Disease, and Organic Dust Toxic Syndrome (ODTS) was performed in Wisconsin at the Marshfield Clinic. There are a number of common exposures that will lead to respiratory illnesses, often with overlapping clinical signs and symptoms (See Table 1). These include organic dusts, molds, bacteria, and gases from fermentation of silage and manure. Other respiratory hazards include inorganic dusts, pesticides, and other agricultural chemicals. There are also infectious respiratory conditions that are not unique to agriculture but may be encountered in the work and living environments associated with farm families See Table 1 for a compendium of agricultural respiratory diseases.

This chapter will provide an overview of the agricultural respiratory hazards that can be commonly encountered in Wisconsin, as well as those respiratory conditions that are more likely to be encountered by agricultural workers, farmers and their families. Rural providers are on the front lines and are in an excellent position to decrease morbidity and disability resulting from acute and chronic exposure to agricultural respiratory toxins. Prevention of unnecessary exposures and the early accurate



diagnosis of respiratory disease resulting from the agricultural environment is best performed initially in the primary care clinic, rather than the tertiary referral center. Unfortunately, it is recognized that rural primary care health care providers often do not have the training to provide this method of preventive health care (Hartye, 1990). The focus of this paper will be to provide some of the tools for rural health care providers to recognize and accurately diagnose and treat respiratory conditions resulting from agricultural exposures utilizing an accurate occupational and environmental history and appropriate differential diagnosis. The occupational and environmental respiratory toxins and sources of exposures, pathophysiology, diagnosis and treatment, and prevention of the of the resulting respiratory clinical conditions will be discussed.

LEARNING OBJECTIVES

At the completion of this chapter, the health care provider will be able to:

Describe five common agricultural respiratory toxins and their sources.

Identify four respiratory conditions associated with agricultural dusts and gases and the differential diagnosis of those conditions, particularly the difference between Farmer's Hypersensitivity Pneumonitis (farmer's lung) and organic dust toxic syndrome.

Describe the basics of clinical evaluation and treatment of the common agricultural respiratory conditions.

Identify three preventive strategies to decrease exposure to agricultural respiratory toxins. Describe which personal respirators are appropriate for agricultural dusts, gases, and immediately dangerous to life and health conditions.

Agricultural Exposures from a Wisconsin Perspective

It is helpful the health professional to have an understanding of the type of agricultural operations that occur in their region in order to anticipate the potential significant respiratory hazards that may occur in the farmers and farm family that present to the clinic. The various agricultural commodities, whether crop or animal, have unique associated respiratory hazards and work practices that affect the exposure. Each county's extension health/safety educator or University of Wisconsin are excellent sources of information in providing this information.

According to the most recent statistics available from 2000, the Wisconsin Agricultural Statistics Service, lists Wisconsin as a leading agricultural producing state ranking 10th nationally in overall production (USDA Agricultural Statistics Services, 2001). Wisconsin ranks in the top five nationally in dairy, corn for silage, cabbage, sweet corn for fresh market (See Table 2). Wisconsin is also a leading state in the production of cranberries, turkeys and ducks, forage, ginseng, and livestock. Hog production is not as significant in Wisconsin as other agricultural states but it does occur and ranks #18 nationally. The top five commodities grown in Wisconsin in descending order are dairy, cattle and calves, corn, potatoes, and soybeans. (See Table 3) Producing and processing these different



commodities result in varying exposures to the respiratory tract and include organic dusts, gases, microorganisms, infectious disease, and agricultural chemicals, including pesticides. Farm sites and work practices that are associated with respiratory toxins include barns, chicken coops, silos, grain bins, applying pesticides to crops and vegetables, and manure storage pits. If the clinician has an understanding of the type of agricultural commodity that their patient produces or works and lives around, the appropriate screening and diagnostic questions can be asked. This will lead to the correct diagnosis and prevention of recurrence and progression of the disease.

It is important to understand that agricultural work is undergoing significant change as a result of biotechnological advances and respiratory hazards can continue to evolve over time. The size of a farm will also affect the respiratory hazards. Presently the majority of Wisconsin farms ranges in size from 50 to 499 acres and are predominately family owned (USDA Agricultural Statistics Service, 2001). Because of the small size of the farms and the small number of employees, Occupational Health and Safety Administration (OSHA) health and safety regulations are not applied or enforced. As farms become larger and/or corporate owned, such as dairy farms that employ over 11 or more employees with shift work, OSHA regulations may extend to the farm site and help decrease unnecessary exposure to respiratory toxins. Until that time occurs, the rural health care provider can play an important role in the recognition and prevention of agricultural respiratory disease.

AGRICULTURAL RESPIRATORY HAZARDS

DUSTS

Organic Dusts

Due to the nature of Wisconsin farming, organic dusts are the most common cause of agricultural respiratory disease on most Wisconsin farms. Silos, dairy and poultry barns, and grain bins are sources of high levels of organic dusts. Organic dust is a complex mixture of vegetable matter, pollens, animal dander, insect, rodent and bird feces, feathers, microorganisms, bacterial and fungal cell wall toxins, pesticides, and antibiotics and can be thought of as a chemical soup. These components lead to an inflammatory response in the mucous membranes and respiratory tract. The components can lead to simple inflammation or an IgE-mediated immune response to allergens contained in the dust. Allergens include animal products, antibiotics and animal feed additives, pollens, storage mites, fungal and bacterial molds, and protein components of grain dusts. **Bacterial sources**, particularly thermophilic **actinomycetes** such as *Saccharopolyspora rectivirgula*, and **fungal molds**, particularly members of *Aspergillus* genus, are associated with sensitization leading to hypersensitivity pneumonitis. Allergic conditions can include upper airway allergic symptoms such as rhinitis, as well as asthma. The levels of molds and bacteria can be extremely high, particularly in moldy bedding, feed, and silage. High levels of dusts and molds are associated with particular activities such as unloading grain bins, and silo unloading and uncapping in the fall (See Table 4). Aerosols that are inhaled while working in these areas contain in the range of 10^4 to 10^7 bacterial colony forming units/ cubic meter (cfu/m^3) and 10^3 to 10^6 fungal cfu/m^3 . The size of these particles is also important and range from less than 0.1 microns to 100 microns. **Respirable dust particles**, or those particles that are 5.0 microns (μ) in diameter or smaller, make up 40% of the organic dust and penetrate deeply into the air exchange



unit consisting of the terminal bronchioles and alveoli. Respirable particles primarily damage the lower airways and terminal alveolar unit while the larger particles that settle out in the upper airways and are associated with upper airway irritation.

A significant component of grain dust associated with inflammation is bacterial **endotoxin**. This consists of a heat-stable lipopolysacchride (LPS) found in bacterial cell walls, primarily from gram-negative bacteria, and released with bacterial death and cell wall lysis. LPS contains the biologically active lipid A that is considered to be responsible for the inflammatory effects. Endotoxins are found in dusts associated with agricultural operations found in Wisconsin, including animal confinement operations, livestock farming, grain elevators, and potato processing. Routine measurement of endotoxins are not performed on agricultural operations nor are there regulatory levels set at this time for safe exposure to endotoxins. Research has demonstrated a dose-response effect and deterioration of pulmonary functions have been shown at levels over 100 endotoxin units/m³ (EU/m³) and also with organic dust levels (Schenker, 1998; Donham et al, 2000; Reynolds et al, 1996; Schwartz et al, 1995a; Schwartz et al, 1995b). Other microbial products that are probable sources of inflammation include (1,3) beta-d-glucans from fungal species, exotoxins from gram-positive bacteria, phytotoxins from plants, and T-cell-activating superantigens (Schenker, 1998).

Inorganic Dusts

Inorganic dusts are primarily an issue in field activities associated with plowing, tilling, haying, and harvesting. The newer tractors and combines generally provide adequate respiratory protection because of the air filtration in enclosed cabs, but is dependent upon changing the filtration regularly. Grain handling, manual harvesting of tree fruit and grapes, Christmas tree farms, potato harvesting, and small vegetable harvesting by hand can also cause an exposure to inorganic dust that may be higher than OSHA regulatory levels for nuisance dust (Schenker, 1998). Inorganic dust is much less of an issue in Wisconsin as compared to the Great Plains and the major fruit producing areas. **Silicates**, including primarily the **noncrystalline diatomite silica** but also crystalline silica or quartz, make up the bulk of inorganic dust (Neiwenhuijsen and Schenker, 1999). Burning stubble, particularly rice stubble, can also expose workers to aerosolized inorganic dust (McCurdy et al, 1996). Inorganic dust is not as significant as organic dust or as toxic as industrial sources of quartz dust. Those individuals with underlying chronic obstructive pulmonary disease, including asthma and chronic bronchitis, can experience aggravation of the underlying disease. Persistent and repetitive exposure to high levels could lead to restrictive lung disease but that would be uncommon in Wisconsin. A common work practice in Wisconsin is hiring both retirees and students to sort potatoes on a conveyor belt during harvest which results in exposure to inorganic dust.

ANIMAL CONFINEMENT GASES

The primary animal confinement gases of human health concern are **hydrogen sulfide (H₂S)** and **ammonia (NH₃)**. Carbon dioxide (CO₂) and methane (CH₄) are also formed and are considered simple asphyxiants and are of secondary concern. CO₂ is produced from animal respiration and is of concern if 5000 ppm or greater. CH₄ may be a risk for explosion at higher concentrations. Bacterial decomposition of animal manure and urine results in the gas production. Hot summer days result in



higher levels of gas production. Under facility manure storage pits and outdoor lagoons contain both high levels of hydrogen sulfide and methane but also oxygen deficient environments at levels immediately dangerous to life and health (IDLH) that are insufficient to support human life. These environments can be toxic to animals and humans. They also are sources of lethal exposures in a farm child's home environment, as well as an occupational exposure. Concentrations of dusts and gases are higher in the winter when ventilation is decreased to save on heating costs.

Hydrogen Sulfide

Hydrogen sulfide (H_2S) is a very toxic **chemical asphyxiant** and has a mechanism similar to cyanide. The primary mechanism is to inhibit the cytochrome oxidase system and interrupt the oxidative phosphorylation process. Paralysis of the respiratory center is the primary lethal toxic effect and results in immediate "knockdown" at high concentrations. H_2S is heavier than air and colorless. It has a very low odor threshold, which results in an unpleasant "rotten egg" odor at 1-3ppm. The toxic effects begin at 100-150 ppm with **paralysis of the olfactory nerve** and inability to detect the smell of H_2S at the higher toxic concentrations. Pulmonary edema can occur after thirty minutes of exposure to 250 ppm. Knockdown occurs at 500+ ppm and respiratory paralysis occurs at 500-1000 ppm. (See Table 5 for significant levels of H_2S). Generally, the concentrations of H_2S are at low levels and may cause eye or respiratory irritation. Cough, dyspnea, and chest pain may occur at irritant levels. There is significant danger of **lethal levels of hydrogen sulfide when manure is agitated**, which occurs when under barn manure pits are emptied. H_2S , which is normally heavier than air, is carried into the air in gas bubbles and can result in indoor concentrations as high as 1000-1500 ppm. Permanent neurologic damage, including demyelination and basal ganglia damage and ataxia can occur after respiratory arrest if death does not occur. Temporary neurologic effects include hearing, visual, and olfactory loss.

Treatment consists of immediate removal from exposure and removal of contaminated clothes in a manner not to risk other exposures. **Mouth-to-mouth resuscitation is not recommended** (Deng, 2001). Supplemental 100% oxygen and treatment of metabolic acidosis is imperative as is consultation with the Regional Poison Center (See Table 10). Treatment is considered to be similar to cyanide exposures but not as effective. A recommended treatment of **10 ml of a 3% intravenous sodium nitrite infusion injected over 2-4 minutes** is given to induce methemoglobin to scavenge the sulfide (Deng, 2001). Initially amyl nitrate ampoules may be given by inhalation in the Emergency Department if the sodium nitrite infusion is not ready (Deng, 2001; Kerns and Kirk, 1998). Hyperbaric oxygen treatment should be considered in severe poisonings with associated coma and pulmonary edema.

Rescue should be performed only by a person trained in use of a SCBA and with a properly maintained SCBA and a rescue harness and spotters. Family members or co-workers should not enter a manure pit or lagoon to perform a rescue without those precautions or multiple deaths may result. As difficult as it is, the only appropriate course of action is to call 911 and await properly trained and equipped rescue response team. Prevention consists of keeping the manure pit levels below twelve inches of the top of the pit, removal of animals and humans during times of manure agitation and emptying and not entering for 24 hours after emptying. A person should never enter a manure pit or lagoon without a safety harness and line, an additional person readily available, and monitoring of H_2S



and oxygen content if a SCBA is not worn.

Ammonia

Ammonia (NH_3) is a pungent respiratory and mucous membrane irritant with a low odor threshold. It is lighter than air and causes respiratory inflammation. Ammonia is additive with the effects of dusts and can be carried further into the terminal respiratory bronchioles by adsorbing unto respirable dust. It is at least additive and probably synergistic with cigarette smoke. Eye, nose, and throat irritation is common and higher concentrations result in cough and chest pain. Tolerance develops with continued exposure. This will lead to deeper and greater respiratory exposure as deeper breaths will occur when the person adapts to the irritant effects of ammonia. Ammonia does not exist as a single exposure agent but in combination with organic dusts and endotoxin and often results in **sinusitis and chronic bronchitis** after years of exposure. The regulatory Occupational Safety and Health Administration (OSHA) permissible exposure levels (PEL) are 25 ppm but recent research has indicated that respiratory disease can occur after chronic ongoing exposure to concentrations as low as 7 ppm (Donham et al, 2000; Reynolds et al, 1996). Prevention involves proper ventilation and the use of an ammonia specific chemical cartridge respirator and goggles. Gas concentrations can be measured with colorimetric tubes that are available through agricultural safety catalogues.

NONINFECTIOUS RESPIRATORY DISEASES AND SYNDROMES

Many respiratory conditions may initially present as a viral-like syndrome and may be misdiagnosed and treated inappropriately as bacterial sinusitis and bronchitis with antibiotics. **Table 6** lists agriculturally related respiratory conditions that may have an initial presentation similar to viral syndrome or bronchitis. Obtaining a good occupational history and having a high clinical index of suspicion is essential in making the correct diagnosis. The exposure causing the diseases in the following section may be from organic dust or a mixed exposure of dust and animal confinement gases.

Farmer's Hypersensitivity Pneumonitis

"Doc, I think I have Farmer's Lung".

"Well, you farm and have a cough and shortness of breath so you must be right.

You might as well stop farming"

Farmer's Hypersensitivity Pneumonitis (FHP) is what was previously referred to as Farmer's Lung Disease. It is a form of hypersensitivity pneumonitis, or allergic alveolitis, that is specific to sensitization to **thermophilic actinomycetes** (Gram + filamentous bacteria) or ***Aspergillus* fungal species** found in organic dust in agricultural operations. Occupations at risk include dairy farmers, poultry workers, zoo keepers, and nursery workers. It is more common in the northern temperate regions in the Northeast, North Central, and Great Plains northern states. Typical exposures occur in the early winter through late spring and involve moldy silage, feed, and hay and straw bedding. Due to the existing combination of environmental factors, the predominance of smaller family dairy operations, and the large numbers of dairy cattle found in Wisconsin, FHP is as or more common in Wisconsin than in many of the other agricultural states in the United States. However, it is still not that common and not as common as Organic Dust Toxic Syndrome (ODTS) and is frequently misdiagnosed



due to an inadequate evaluation and incomplete differential diagnosis. It is more likely to be found in dairy operations than hog confinement operations. It is estimated that the prevalence of sensitization to the organism causing FHP is 5-20% based upon seroprevalence. The estimates of the prevalence of actual FHP disease ranges from 1-10% (May and Schenker, 1996). FHP is not as frequently seen as in previous generations due to greater awareness of the disease by farmers and agricultural workers and greater availability of proper respiratory protection.

FHP is considered to be a complex disease characterized by sensitization to the antigenic dust components with elements of both an immunologic cell-mediated and a humoral response. Continued exposure to the antigen will result in both an antigen-antibody Type III immunologic response and a late-phase T-cell mediated response with granuloma formation consistent with a Type IV reaction. Eventually irreversible interstitial fibrosis and restrictive lung disease occurs from the persistent inflammatory response with repeated exposures to the antigen at lower concentrations.. **A common pathway in developing FHP is the repeated exposure to high levels of organic dusts without proper personal respiratory protection during dust high dust producing activities.**

Three stages of FHP have been identified. The **acute stage** is what is most commonly thought of as Farmer's Lung. The symptoms are identical to ODS (See Table 7 contrasting FHP and ODS) and consist of delayed viral-like symptoms 4-8 hours after exposure to organic dusts. The symptoms commonly are a spectrum of chills, fever, myalgias (body aches), headache, nausea, pleuritic chest pain, cough, and shortness of breath. It is a self-limited condition and the severe symptoms will resolve in approximately 48 hours if no further exposure occurs while fatigue and cough may persist for 5-7 days. Physical examination will reveal tachycardia, respiratory distress with tachypnea, and bibasilar crackles. Wheezing is much less common unless there is associated underlying asthma. The **subacute stage** may take longer to develop after exposure and is associated with recurrent episodes of acute symptoms and weight loss and fatigue are more commonly seen. Clinical symptoms may continue for 7-10 days and dyspnea on exertion can last for several months. The **chronic stage** can be very difficult to identify as respiratory symptoms are much less common. Fatigue, progressive dyspnea on exertion, and weight loss are the more common nonspecific symptoms. Evidence of cor pulmonale (right-sided heart failure) with associated clubbing and cyanosis can be seen in advanced cases. Progression to respiratory failure and death may occur with inadequate treatment and continued respiratory exposure.

Diagnostic criteria for FHP are listed in Table 8. **Diagnostic tests** include leukocytosis (elevated white blood cell count) with a left shift and arterial blood gases with **decreased arterial PaO₂ and oxygen saturation**. **Chest radiographic findings** typically show a **bibasilar interstitial infiltrate** in the acute and subacute stages but may be normal in 10% of those with symptoms. **Pulmonary function testing** plays an essential role and will show **restrictive lung disease in the acute and subacute stages** with a **decreased forced vital capacity (FVC)** on pulmonary function tests with a **decreased diffusing capacity of CO (DLCO)**. In the chronic stages, emphysema and an obstructive pattern (decreased FEV₁) resulting in a mixed obstructive/restrictive pattern may also occur. **Bronchoalveolar lavage (BAL)** with an increased **mononuclear lymphocytosis** of greater than 20% and often greater than 60% lymphocytes, can be very helpful in establishing a diagnosis. High resolution chest CT (HRCCT) will show a ground glass pattern in the acute stage; diffuse micronodules in the subacute stage; and nodules, honeycombing, interstitial disease in the chronic stage. Diagnostic biopsy will show typical granulomas and interstitial lung disease but is generally not indicated. **Serum precipitins or antibody serology is**



often positive, up to 90%, in the acute stage. It is less likely to be positive in the chronic stages. The antigen causing the sensitization may not be present in the standard Farmer's Lung panel of serum precipitins and a false negative test will occur. **Negative antibody testing does not rule out FHP if the other clinical signs and diagnostic tests indicate FHP.** Positive serum precipitins also may indicate sensitization but not active disease if the clinical pattern does not fit FHP.

The **differential diagnosis** includes allergic bronchopulmonary aspergillosis. Eosinophilia and solid brown plugs of phlegm with fungal elements characterize this form of pulmonary infection. Acute asthma would involve more of an obstructive pattern and eosinophils in the BAL fluid. Psittacosis is considered when there is close contact with poultry and high titers to *Chlamydia psittaci* Group B. Barn allergy is associated with rhinitis and allergic asthma with an obstructive pulmonary pattern. The treatment of FHP includes intravenous corticosteroids and nebulized bronchodilators in moderate to severe disease to decrease acute inflammation and shorten the course of disease for the acute forms. In new onset acute disease, removal from exposure is adequate. Steroids are not recommended once irreversible interstitial disease has occurred in the chronic stage. Several treatment regimens of prednisone have been recommended including 30-60 mg/day for 1-2 months and then taper, 0.5-1.0 mg/kg for 1-2 months, or 40 mg/day and taper over one month (Gudmundsson and Wilson, 1999; Sharma, 2002). Substitution of inhaled corticosteroids is acceptable when there is clinical improvement. The avoidance of the sensitizing antigen is essential. Antibiotics are not necessary. Specific diagnostic guidelines in the diagnosis of FHP have been published with four essential elements which include: (a) the history and physical findings and pulmonary function tests indicate interstitial disease, (b) the chest radiograph is consistent with interstitial disease, (c) there is an exposure to a recognized cause of FHP, (d) there is antibody to the antigen. If these criteria are not met, then biopsy is recommended. (Richerson et al, 1989). **Consultation with a pulmonologist experienced in the treatment of hypersensitivity pneumonitis is recommended prior to biopsy as the history, CXR, PFTs, BAL findings, and HRCCT may be sufficient to avoid biopsy** (Patel et al, 2000). The American Thoracic Society has listed several very important take home points of FHP including the fact that FHP may be progressive and fatal if not recognized and adequately treated, chronic irreversible lung disease, including emphysema, is a result of untreated FHP, and that the pattern of recurrence of disease will indicate the long-term clinical outcome (Schenker, 1998).

Prevention includes adequate drying of grain and hay before storage to **avoid excessive mold contamination and wearing respiratory protection around high dust-producing activities.** Persons with diagnosed FHP have been able to work around agricultural operations without recurrent symptoms if adequate respiratory protection is worn (Ohtsuka, 1995) and by avoiding obviously mold contaminated feed or bedding. (See Prevention section later in chapter). **The minimum respiratory protection is a NIOSH approved 2-strap air purifying respirator.** Those with more severe disease will need increased protection with a helmet powered respirator. **Ongoing monitoring with PFTs and oxygen saturation** is essential to ensure that progressive deterioration from pulmonary fibrosis and restrictive lung disease is not occurring. **Those with FHP that have not progressed to the chronic or advanced stage can continue to work in agricultural operations if the respiratory antigen is avoided or decreased by changes in work practices and the use of effective personal respiratory protection, and monitoring does not indicate respiratory deterioration.**



Organic Dust Toxic Syndrome

Organic Dust Toxic Syndrome (ODTS) is identical to acute FHP in the initial presenting clinical symptom complex and occurs in similar environments of high dust producing activities (See Table 7). **An essential difference is that the toxic inflammatory pulmonary reaction causing ODTS is caused by exposure to massive doses of organic dust with associated molds and bacteria but immunologic sensitization does not occur as it does in FHP.** Endotoxin is considered to be a probable chief cause of the inflammatory response but grain dust, particularly of grain sorghum and soybeans, can be inflammatory in itself (Von Essen et al, 1995). Symptoms of ODTS have been identified in over a third of farmers and are particularly common in hog confinement workers (Von Essen and Donham, 1999; Von Essen et al, 1999). Unlike FHP, there are no abnormalities of the arterial blood gases or pulmonary infiltrates. ODTS is self limited and removal from the high levels of dust is adequate. Symptoms are the most severe for 24-72 hours then improve over another 2-7 days. Corticosteroids or antibiotics are not recommended. Prevention recommendations for ODTS are similar for FHP other than powered air purifying respirators are not necessary. There is debate whether chronic ODTS can occur but it is more likely that recurrent exposure to high levels of organic dust can lead to immunologic sensitization leading to either FHP or occupational asthma. Many farmers experience repeated symptoms with recurrent exposures but ODTS is not thought to progress as occurs in recurrent attacks of FHP.

Asthma and Occupational Asthma

Asthma is a classic IgE antigen-antibody mediated sensitization to an environmental antigen and is **defined as a chronic inflammatory pulmonary disorder with reversible obstruction of the lungs as a result of exposure to variable stimuli.** The obstruction may reverse either spontaneously or with treatment. The clinical hallmarks are wheezing, cough, and dyspnea (air hunger). The most common cause is from environmental allergens. Generally, farmers and agricultural workers have a lower prevalence of asthma than the general population. This may be because of the healthy worker effect in which those who do not tolerate the dusty work conditions leave that occupation. There is a recent body of literature from Europe and Australia that suggests that children growing up on farms have a lower prevalence of asthma, hay fever, respiratory, and allergic, or atopic, diseases compared to children not raised on farms (Downs et al, 2001; Ernst and Cormier, 1999; Klintberg et al, 2001; Leynaert et al, 2001; Reidler et al, 2002; Von Ehrenstrein et al, 2000). It is hypothesized that early exposure to antigens in **traditional agricultural operations** provides life-long protection against the development of allergy. Occupational asthma (OA) is a form of asthma that occurs to an antigen that is unique or present at higher concentrations in the work place. OA is not generally common, usually 5% or less of the total workers. Animal confinement workers, including dairy, swine, and poultry workers and grain elevator workers are at increased risk. Continued exposure to dusts leads to recurrent and progressive symptoms of wheezing and shortness of breath with exposure to gradually lower levels of occupational or environmental antigen. **PFTs show an obstructive pulmonary pattern of a decreased FEV₁ and FEV₁/FVC ratio.** The Chest x-ray may show hyperinflation with chronic disease but usually is unremarkable. Diagnosis may also be made by a twenty per cent (20%) decrease in the peak flow readings while in the work place compared to baseline readings established away from work or a 20% improvement from an occupational baseline when away from the work exposure from 2-6 weeks. A twelve per cent or greater improvement in the post-bronchodilator FEV₁ also indicates reversible



airway disease that is compatible with a diagnosis of asthma. Methacholine challenge tests are also used as a nonspecific indicator of reactive airways and can be used to diagnose asthma when combined with a suggestive occupational history. Pre-existing asthma can be aggravated by dusty work conditions and workers in hog confinement operations or grain elevators may not tolerate the occupational conditions for very long (Donham, 2000). Treatment follows the step approach for asthma and avoidance of respiratory antigens and dust. Prevention is the use of appropriate personal respirators and decreasing dust levels by engineering controls.

Asthma-like Syndrome

Asthma-like syndrome is a recently described non-IgE mediated reversible airway disease identified in up to 25% of swine confinement workers (Donham, 2000; Von Essen and Donham, 1999). It is identical in clinical presentation to asthma (cough, chest tightness, wheeze, dyspnea) except it may have a lesser decrement in FEV₁ than asthma and more transient. Unlike asthma, eosinophils are not present in BAL fluid. **A hallmark is that symptoms are more pronounced upon return to work after being away for a period of time or even after a weekend off (Monday morning response)** (Donham, 2000). The diagnosis is difficult to make and requires cross-shift testing, which consists of spirometry before work and immediately after work, preferably on site. The FEV₁ is lower after work but generally less than the 12% decrease seen in asthma (American Thoracic Society, 1998). In true asthma, the decreased FEV₁ is greater than 12% and more persistent. Protection requires adequate personal respiratory protection and decreased dust and gas levels in confined animal operations.

Chronic Bronchitis

Chronic bronchitis defined as a daily productive cough for three months a year for at least two years. Chronic bronchitis is estimated to have a prevalence of 25-50% in animal and grain production workers, and grain elevator workers (Schenker, 1988; Melbostad et al, 1997; Von Essen and Donham, 1999; Zjeda et al, 1994). Swine confinement workers have the highest prevalence. Cigarette smoking by itself is a significant risk in developing chronic bronchitis but it also additive and probably synergistic with the agricultural exposures, particularly endotoxin (Dalphin et al, 1998; Melbostad et al, 1997). Prevention involves adequate respiratory protection, decreasing levels of dusts and gases in agricultural operations, and smoking cessation.

Sinus Conditions

Sinusitis is common and occurs in up to 25% of swine confinement workers (Von Essen and Donham, 1999). Rhinitis symptoms are reported to occur in 20-50% of animal confinement workers. A recently reported syndrome, mucous membrane inflammation syndrome consisting of eye, nasal, and throat symptoms, has been recently described (Schenker, 1998). This complex of symptoms is an irritant reaction and not IgE mediated and is the most commonly reported syndrome in animal confinement workers. Differential diagnoses include bacterial sinusitis and allergic rhinitis. Sinusitis secondary to aspergillus is considered if there is associated purulent sinus drainage. Evaluation may include sinus x-rays or CT scan, nasal scrapings for eosinophils, and allergy testing. Treatment is symptomatic and involves decreasing the exposure to dusts and gases. Antibiotics do not play a major role and recognition of the recurrent exposure is the key to reduction of symptoms.



OTHER TOXIC GASES, FUMES, AND CHEMICALS

Nitrogen Oxides

Nitrogen dioxide (NO₂) is a severe respiratory irritant and is associated with **Silo filler's disease (SFD)**. Silos can be hazardous confined spaces during the fall when being filled with grain (generally corn but also oats) silage and haylage. Haylage and oatage are harvested and blown into silos in the summer and corn silage is generally harvested in the early fall. The grain is stored in upright silos, forage bags, or covered bunkers to allow bacterial fermentation which makes for a more palatable food for cattle. Nitrogen oxide gases (NO_x) begin to form within hours of filling the silos and nitrogen dioxide becomes the predominant gas. Corn harvested after drought or if heavy nitrogen fertilization has occurred will result in greater production of NO₂. The concentration rises quickly reaching a peak within 5-7 days with levels ranging from several hundred to several thousand ppm. The recommended safe level for eight hours of exposure is 3 ppm. NO₂ is heavier than air and yellowish-orange in appearance with bleach-like odor at high concentrations. High levels of NO₂ can also be present when opening the white plastic forage bags that are replacing silos for storage of haylage and can also result in SFD (Pavelchuk et al, 1999).

When combined with water in the lungs, nitrous and nitric acid is formed causing inflammation of the lungs. NO₂ can cause rapid loss of consciousness at high concentrations and lead to permanent pulmonary fibrosis (scarring). Lower concentrations of up to 50-100 parts per million (ppm) can lead to milder symptoms of eye irritation, cough, nausea, fatigue, and laryngo/bronchospasm. Continued exposure can lead to worsening of symptoms and progress over a course of 6-12 hours with pleuritic chest pain, dyspnea, and pulmonary edema. High concentrations (over 200 ppm) can cause immediate loss of consciousness and the development of pulmonary edema in 12-24 hours. Delayed symptoms or relapse can occur in 2-6 weeks and consist of fever, chills, and respiratory symptoms. Brief exposure to high concentrations or prolonged exposure to lower concentrations can lead to pulmonary edema and eventually **bronchiolitis obliterans** (irreversible pulmonary fibrosis) which may develop within weeks to months. Another radiographic presentation seen in subacute disease is small opacities that may be mistaken for miliary tuberculosis.

Treatment of lower exposures (50-100 ppm) with associated mild symptoms consists of removal from the exposure, baseline chest x-ray, and prednisone at a dosage of 40-60 mg for 2 weeks. Exposure to higher concentrations (over 200 ppm) with more severe symptoms requires treatment with 100% humidified oxygen, nebulized bronchodilators, and intravenous corticosteroids and monitoring of arterial oxygen saturation (Sullivan et al, 2001). More aggressive respiratory support such as intubation and mechanical ventilation may be required if acute respiratory distress syndrome (ARDS) occurs. Hypoxemia and metabolic acidosis may occur. Methemoglobinemia has been reported and obtaining a methemoglobin in a victim that does not respond to oxygenation is recommended. Methylene blue is administered in the case of severe methemoglobinemia. Pulmonary or toxicology consultation with the Regional Poison Center is recommended for any significant case of SFD.

Anyone who has exposure to NO₂ and has respiratory symptoms of hypoxia and dyspnea (air hunger) and altered loss of consciousness should be hospitalized for 24 hours. The use of steroids prevents the



development of both relapse and bronchiolitis obliterans and may need to be continued for 6-12 months if bronchiolitis obliterans occurs (Douglas et al, 1989). Once the victim is stable, serial pulmonary functions is recommended to monitor progression of pulmonary disease to bronchiolitis obliterans. Follow-up evaluations should occur at 1 week, 1 month, and 3 months and also include chest radiographs (Rasmussen and Bascom, 2002).

Prevention consists of not entering silos for 10-14 days after filling with silage or haylage. If entry is absolutely necessary within that time, the blowers should be run for 30 minutes before entering. Depressions in the silage may still contain NO₂ after running the blowers as the gas is heavier than air and toxic exposures could result. There should be a spotter available and a harness with a rescue line should be attached to the person entering. Ideally the concentration of both oxygen and nitrogen oxides should be continually monitored with a gas monitor when entering during this time period. A person on site equipped and trained in use of a self-contained breathing apparatus (SCBA) should be present on stand-by for rescue purposes. If a person collapses in a silo during this time period, others should not enter without running the blowers for 30 minutes or they may succumb to lethal concentrations of NO₂ also. Emergency response to summon rescuers with proper protective equipment should occur immediately. The movement away from silos to the use of bunkers or forage bags has decreased the exposure risk, but exposure to toxic concentrations can still occur within the 2 week time period when the coverings are opened. The usual 2-strap dust respirators are not adequate protection against NO₂.

Anhydrous Ammonia

Anhydrous ammonia (NH₃) is a commonly used nitrogen fertilizer. It is a liquid under pressure but a gas under atmospheric conditions. It is injected into the soil under pressure. Exposure can occur when an injection port is plugged and the vapor is released into the face of a person unplugging the obstruction or from a leaking hose. The toxic property of concern is the extremely high **hydroscopic** property, or extreme affinity for water. Anhydrous ammonia avidly draws out water from tissues and causes a severe caustic burn, freezing and dehydration of tissue, particularly of mucous membranes, including the eyes, sinuses, nose, and upper respiratory tract. An extremely pungent odor is very noticeable. **Corneal burns and laryngeal edema** can result. A sensation that the air is immediately "sucked out" and it is impossible to breath has been personally reported to the author by those with acute respiratory exposure to anhydrous ammonia. A death of a 78 year old male from anhydrous ammonia inhalation occurred in the upper Midwest in 2000. Intubation may be necessary if acute respiratory distress syndrome (ARDS) develops. Cardiopulmonary arrest may occur. Later development of **bronchiolitis obliterans** or reactive airway dysfunction syndrome (RADS), a non-immunologic asthma-like syndrome can result. A recent rural health issue is also the theft of anhydrous ammonia from farm sites and used in the illegal production of methamphetamine.

First aid consists of immediate flushing of the eyes with water for at least 15 minutes during transport to the health care facility if the person is not in respiratory distress. Further flushing of the eyes at the health care facility for at least another 15 minutes should occur. A baseline chest x-ray, oxygen saturation, and observation for respiratory distress for 12-24 hours are recommended. Eye cups and topical ocular anesthetics are indicated for patient comfort. An ophthalmological consult is indicated. Decontamination by removing contaminated clothing should also occur. Prevention consists



of wearing a full face-shield respirator when filling anhydrous tanks or handling ammonia. The minimum protection should be tight fitting non-vented goggles. It is mandatory that all applicator tanks carry at least five gallons of clean water and changed regularly. A 6-8 ounce squirt bottle should be also available and accessible for immediate use when handling anhydrous ammonia.

Carbon Monoxide

Carbon monoxide (CO) is a **toxic odorless and colorless gas that kills**. CO produced by internal combustion engines. Agricultural exposures can occur from kerosene heaters, gasoline-powered pressure washers in animal confinement operations, and running engines in shops or barns. Extremely toxic concentrations can rapidly accumulate in poorly ventilated buildings, as quickly as within 3-5 minutes (NIOSH, 1993). Fetuses of pregnant women and those with ischemic heart disease and angina are at particular risk for toxic effects at lower levels than healthy adults. Symptoms may initially consist of headache, fatigue, difficulty concentrating and dizziness progressing to chest pain, shortness of breath, visual abnormalities and eventually confusion, weakness, and coma at higher levels or prolonged exposure. Loss of consciousness can rapidly develop without warning signs in environments with high concentrations. Pulmonary edema and respiratory arrest may occur. Delayed neurotoxicity can occur after significant poisoning but cannot be predicted by the initial presentation or carboxyhemoglobin level (Seger and Welch, 2001).

Treatment consists of providing 100% oxygen and cardiopulmonary support. Seizures may occur and should be treated appropriately with anticonvulsants. An **immediate baseline venous or arterial carboxyhemoglobin (COHb)** should be drawn and repeated every 4 hours to monitor response. Arterial blood oxygen will be normal as CO is a chemical asphyxiant but metabolic acidosis may occur. Treatment with hyperbaric oxygen in a compression chamber is recommended if there is neurologic impairment not responding to six hours of 100% O₂, cardiovascular involvement, and pregnant women with significant symptoms and significant COHb levels (Kirk and Holstege, 1998; Seger and Welch, 2001). Consultation with the Regional Poison Center should be obtained immediately. To prevent CO poisoning, internal combustion engines should not be used indoors unless there is very good active mechanical ventilation. Only SCBA respirators would give adequate protection from the toxic effects.

Welding

Many farmers do their own welding repairs and machining. Welding releases metal fumes, particularly zinc oxide fumes from galvanized steel. Clinical symptoms of metal fume fever include a viral like syndrome consisting of chills, fever, myalgias, pleuritic chest pain, shortness of breath and cough occurring several hours after exposure. It is a self-limited condition and resolves in 24-48 hours. No specific treatment is necessary. Prevention of metal fume fever consists of use of a welding respirator and adequate ventilation.

Pesticides

Acute exposure to **organophosphates** or carbamates resulting in poisoning can result in pulmonary symptoms. This can occur in applicators or in field workers entering a field before the safe re-entry interval guidelines. A concern could be in ginseng production due to the canopy covering the plants and reported high use of pesticides. **Excessive bronchial secretions and bronchoconstriction** can



cause acute respiratory distress, wheezing, chest pain, cough and hypoxia. Hemoptysis and pulmonary edema may occur. The treatment consists protecting the airway, adequate oxygenation, and administration of large doses of atropine to reverse the muscarinic effects of the pesticides. Cardiorespiratory arrest is the usual cause of death in acute poisoning (Reigert and Roberts, 1999). The other characteristics of organophosphate poisoning are beyond the scope of this chapter.

Paraquat is a dipyridyl herbicide that causes irreversible **pulmonary fibrosis**. The target organ of the toxic effects is the lung regardless of the mechanism of exposure. Increased oxygen will actually enhance the toxic effects. However, pulmonary effects are generally a result of acute intentional or accidental ingestion and not from low level inhalation. Pulmonary effects occur 7-14 days after ingestion and can result in respiratory failure (Reigert and Roberts, 1999).

Fumigants are gases or liquids under pressure used in interiors to kill pests in stored grain and injected into the soil in potato and other grain production. This class of pesticides is rapidly absorbed across the pulmonary membranes. Some may also penetrate skin and rubber and neoprene personal protective equipment. These include methyl bromide, ethylene oxide, and phosphine. The interior environment that is treated by fumigants is extremely dangerous. Inhalation toxic levels of fumigants are associated with respiratory irritation leading to pulmonary edema and cardiogenic shock. Initial symptoms are nonspecific and include headache, nausea, fatigue, dizziness, and cough.

Disinfectants

Exposure to high concentrations of disinfectants such as **chlorine gas, quaternary ammonium compounds, or mixing bleach with ammonia** in poorly ventilated indoor settings may cause acute pulmonary irritation. If the concentration is high enough to cause acute pleuritic chest pain and significant shortness of breath or dyspnea, **reactive airway dysfunction syndrome (RADS)**, a condition clinically identical similar to asthma, may occur. This condition is characterized by a non-immunologic reactive airways response and may last six months or even cause permanent wheezing. It is provoked by subsequent exposure to lower level respiratory irritants such as chemicals, dust, and smoke and even cold and exercise. It does not respond as well to inhaled bronchodilators or corticosteroids as true asthma. The diagnosis can be made from a history of an acute respiratory exposure causing shortness of breath and wheezing with an associated obstructive lung disease pattern on spirometry or abnormal methacholine challenge test.

Drowning and Suffocation

Suffocation and drowning leading to respiratory arrest are consequences of falling in manure lagoons, engulfment in flowing grain, and collapse of trenches. Dung lung, a polymicrobial pneumonia that may result after aspiration of manure following recovery from near drowning in manure pits. Flowing grain is particularly dangerous for children sitting on the edge of emptying grain bins. Entrapment can occur in several seconds and complete engulfment in ten seconds leading to suffocation. Bridging of moldy or wet grain over air pockets in a grain bin can collapse when a person walks over a seemingly secure surface. The collapsing grain will quickly engulf and suffocate the person. Deaths from grain suffocation occur every fall in every grain producing state.



MICROORGANISM RELATED RESPIRATORY ILLNESSES AND DISEASES

Illnesses Related to Environmental Exposures

Storage Mites

Storage mites, including, *Acarus siro*, *Lepidoglyphus destructor*, and *Gyrocampa domesticus*, are found in barns and grain and are antigenetically different from house mites. If work clothes that are used in the barn are brought into the home, exposures can result from both home and work, and result in continual exposures. This can lead to barn allergy, a Type I allergic reaction (Terho et al, 1985). Symptoms can include asthma as well as allergic rhinitis. Skin testing can be performed to determine if an immunologic sensitivity has developed but it must be passed on to the allergist or dermatologist that storage mite as well as house mite sensitivity should be evaluated.

Hantavirus

Hantaviruses are members of the single stranded RNA bunyavirus family. Sin Nombre Virus (SNV), is the hantavirus that is considered to be causative organism resulting in hantavirus pulmonary syndrome (HPS). The Center for Disease Control (CDC) defines HPS as febrile illness characterized by bilateral interstitial pulmonary infiltrates and respiratory compromise usually requiring supplemental oxygen and resembling acute respiratory disease syndrome (ARDS). Exposure occurs from typical agricultural activities such as cleaning animal sheds and grain bins, and seasonally closed buildings such as lake cabins (Zeitz et al, 1995). The greatest risk occurs in buildings with increased rodent populations. Agricultural occupations at potential risk include grain farmers, and feedlot workers. The primary vectors are rodents, including deer mice, *Peromyscus maniculatus* and white-footed mice, *P. leucopus*, which are found in enclosed structures in Wisconsin. It is most common in the southwest United States but can occur through the continental U.S. Only one case has been isolated in Wisconsin but the rodent host is common in the state.

Initial symptoms include a short febrile 3-5 day prodromal syndrome consisting of fever, headache, and myalgias. On day seven, cough, and later arthralgias and shortness of breath develop. The condition progresses moderately to rapidly and results in a bilateral interstitial infiltrate, leukocytosis, and elevated liver transaminases, ALT and AST. This often progresses to **pulmonary edema, acute respiratory distress syndrome (ARDS), respiratory arrest and death**. Severe cases also involve disseminated intravascular coagulation (DIC) and myocardial depression. A high index of clinical suspicion is necessary for early diagnosis as the initial prodromal symptoms are nonspecific. Diagnosis is suggested by the clinical history of a typical exposure and clinical findings and confirmed by a positive acute hantavirus IgM for SNV and rising titers of SNV IgG of greater than four-fold increase from baseline. Treatment consists of supportive care, including adequate oxygenation. Prevention includes wearing a N-100 personal respirator, personal protective clothing, including coveralls, goggles, headcover, and shoe coverings or rubber boots when cleaning or spending time in buildings that are potentially rodent infested.

An excellent resource is the CDC *All about hantavirus* website at <http://www.cdc.gov/ncidod/diseases/hanta/hps>.



Blastomycosis

Blastomycosis is caused by fungal microorganism, *Blastomyces dermatitidis*. It is endemic in Wisconsin, particularly along the Mississippi River Valley watershed and other areas near moist soil with decomposing vegetation. The disease is acquired by inhaling fungal spores that are found in moist soil. Blastomycosis is not specifically an agricultural disease but it is found in those spending time outdoors digging in moist soil and can include foresters, loggers, farmers, and trappers. Northern and central Wisconsin and Minnesota, Manitoba, and Ontario are among the most heavily endemic areas in the world. Blastomycosis is generally more common in men between 25-50 years of age who either work in or visit outdoor areas. A clinical clue can be a history of a pet dog treated for the illness (Bradsher, 1997). Community outbreaks can also occur and affect women and children. The best data on blastomycosis prevalence comes from Wisconsin information. During the period from 1986-1995, a total of 670 cases were reported in Wisconsin. The case fatality rate was 4.39 (29 fatalities) (CDC, 1996). In those patients that are **immunocompromised, the disease is much more aggressive** with a significantly higher mortality rate reported as high as 30% in one case series (Wheat, 1995). If the practitioner does not have a high clinical index of suspicion, the correct diagnosis will not be made and increased morbidity and even death may result.

Any clinician practicing in Wisconsin should consider this as part of the differential diagnosis in a patient that presents with a **flu-like illness associated with cough, dyspnea and pleuritic chest pain progressing to pneumonia** and an outdoor environmental exposure. Acute illness includes the spectrum of symptoms of self-limited flu-like illnesses to febrile conditions resembling bacterial pneumonia. Subacute and chronic illness may present with presentations similar to tuberculosis and fulminant infections resulting from disseminated disease (Davies and Sarosi, 1997). Myalgias, arthralgias, weight loss, and erythema nodosum can also occur. **Other common non-pulmonary presentations are a result of disseminated blastomycosis (in 50% of patients) and include skin lesions and bone osteolytic lesions.** Less commonly, but often enough to be of clinical concern, is the development of central nervous system (CNS) conditions such as meningitis, brain lesions, and epidural abscesses. The chest x-ray presentation is often similar to community-acquired pneumonia and usually affects the upper lobes. **Common findings include a chest x-ray with an alveolar or mass-like infiltrate, typical in 80-90% of patients (Bradsher, 1997). Upper lung focal opacities that are often nodular in appearance are common.** Cavitation, hilar adenopathy, and pleural effusions are relatively uncommon. The masses and nodules can be mistaken for *Mycobacterium tuberculosis* or bronchoalveolar carcinoma. The disease is less common in children, but in those infected, the lower lobes are more commonly involved.

Diagnosis includes obtaining the proper environmental/occupational exposure history, **fungal cultures and 10% KOH stains of sputum, bronchoscopy specimens, or cerebrospinal (CSF) fluids, as well as skin and subcutaneous aspirates.** Serodiagnosis using complement fixation, immunodiffusion, or enzyme immuno-assay (EIA) for the A antigen are helpful when positive (Areno et al, 1997).

Diagnostics specific for blastomycosis should be considered if a person with a significant environmental exposure is not responding to therapy for community-acquired pneumonia. Treatment of pulmonary disease consists of antifungal medications including oral itraconazole or amphotericin B in serious and disseminated disease or in immunocompromised patients (Chao et al, 1997; Davies and



Sarosi, 1997). An excellent reference, which includes radiographic illustrations, is found at *Blastomycosis, thoracic* on emedicine at: <http://www.emedicine.com/radio/topic82.htm>. (Ahlamheed).

Zoonotic Respiratory Diseases

Besides the bacterial source of inflammatory endotoxins, bacteria are also associated with infectious disease. (See Table 10) According to the World Health Organization (WHO), **zoonoses** are those diseases naturally occurring between vertebrate animals and humans. It is critical for the rural practitioner to know where to obtain information about potential zoonotic diseases in his or her service area. This review is limited to those agricultural zoonotic diseases that have a significant respiratory component. Sources of information include the hospital epidemiologist or infection control practitioner, extension education specialists assigned to the county or at the university level, the State Veterinarian, State public health department, State Department of Agriculture officials, and the Regional Emergency Animal Disease Eradication Organization(See Table 11 for Wisconsin contacts).

Inhalational Anthrax

Inhalational anthrax is a disease that has been rooted in agricultural and occupational exposures but has been transformed into a primary disease of bioterrorism. It is important for rural practitioners to understand how to diagnose this illness. At this time, even one case of inhalational anthrax is considered to be from a bioterrorism source and is considered a Category A bioterrorism agent (See Table 12). Anthrax is caused by the ingestion, inhalation, or cutaneous inoculation of infective spores of the bacterium *Bacillus anthracis*, a Gram + soil organism. The spores vegetate and grow in the host causing illness. Toxins, including lethal factor, protective factor, and edema factor, are produced and are responsible for the pathophysiological manifestations of the three disease forms. Susceptible animals, including cattle, sheep, goats, and horses, contract the illness from grazing in infected areas. Exposures include skin inoculation or inhalation of spores by wool and tannery workers, goat mill workers, and laboratory workers, and ingestion of contaminated meat. Of the three clinical forms of anthrax, cutaneous, inhalational, and gastrointestinal; **inhalational is the most deadly manifestation** but the cutaneous form is the most common. Anthrax is no longer common in the United States due to an aggressive state domestic animal vaccination and quarantine programs. In the United States, there had been only 224 reported cases of cutaneous disease from 1944-1994 and 18 cases of inhalational anthrax from 1900-1976. There were no reported inhalational cases after 1976 until the 11 cases resulting from the post September, 11, 2001 bioterrorism postal exposures(Swartz, 2001).

Inhalational anthrax begins as a nonspecific viral-like prodrome of 3-5 days with symptoms including low-grade fever, chills, headache and myalgias, nausea/vomiting, cough, and pleuritic pain. Progression to a second stage occurs with associated rapid febrile response, dyspnea, diaphoresis, and shock. Hemorrhagic meningitis with delirium, meningismus, and coma was observed in 50% of cases in the Soviet Union. A pathognomonic feature of inhalational anthrax is mediastinal widening from lymphadenopathy. This was found in all eleven cases of the bioterrorism victims in 2001(Jernigan, 2001). Infiltrates and pleural effusions also occur. *B. anthracis* may be identified in the peripheral smears of blood. Blood cultures will be positive later in disease and become positive after 6-24 hours of growth. It is crucial to culture before starting antibiotics as one or two doses of antibiotics will sterilize the blood cultures. Sputum cultures, nasal swabs, or serodiagnostic tests are not helpful or



indicated in acute illnesses but are useful in epidemiological investigations (Henchel et al, 2001).

The average interval between diagnosis and death is three days unless appropriate antibiotics are quickly instituted at the beginning of clinical suspicion and are life-saving. **According to recommendations by the CDC as of July 2002, treatment** consists of intravenous ciprofloxacin or doxycycline until afebrile and clinically stable and the switching to oral ciprofloxacin or doxycycline for 60 days. Post-exposure prophylaxis should be administered to those with close contacts with inhalational anthrax victims and probable aerosol exposure, including health care workers (Inglesby et al, 2002). This includes vaccination with anthrax vaccine adsorbed (AVA) series of six vaccinations and 60 days of oral doxycycline or ciprofloxacin at the same dosage given for treatment of active disease. Person-to-person transmission is not known to occur but standard precautions are recommended. Specimens are handled under biosafety level 2 conditions and the hospital laboratory should be notified of the suspicions of anthrax (Martin and Marty, 2001). Standard disinfectants are satisfactory to clean surfaces. Cremation is recommended for infected humans and animals. The state Public Health Department, However, current CDC recommendations and notification of the State Public Health Department should be followed as recommendations may change in the future.

Ornithosis (Psittacosis)

Infections resulting from *Chlamydia psittacosis* lead to ornithoses, which include psittacosis, and are associated with **poultry production, particularly ducks and turkeys and birds of the psittacidae family**, particularly parrots, parakeets, and canaries, being the most familiar members. Veterinarians, pet shop workers, and zoo workers are at risk as well as poultry workers. The disease is acquired from inhaling organisms from aerosolized dried avian excreta or respiratory secretions from sick birds. The incubation period ranges most frequently from 5-14 days. Approximately 200 cases a year are reported. Symptoms are most commonly a respiratory tract infection with fever, chills, non-productive cough, dyspnea, sore throat and mild pharyngitis, headache and photophobia. Severity ranges from mild viral-like illnesses to severe pneumonia. Central nervous system symptoms are common but associated meningitis, encephalitis, and seizures are rare. The cerebrospinal fluid is usually normal. The clinical presentations that may occur begin with flu-like syndromes without radiographic abnormalities progressing to mild-to-moderate pneumonia, severe pneumonia, and finally acute respiratory failure with associated sepsis and septic shock (Arjomand, 2002). Other complications include hemolytic anemia, disseminated intravascular coagulation, acute glomerulonephritis, rash, and splenomegaly. Chest radiographic findings are typically unilateral with lower lobe infiltration. Another presentation is a bilateral, military, nodular, interstitial pattern. Pleural effusion is rare. Diagnosis is made from occupational or environmental history of typical avian exposure, chest x-ray, and paired acute and convalescent titers with a four-fold rise in *C. psittaci* titers. Cultures are avoided as this can cause disease in laboratory personnel. **Treatment of choice is tetracycline or doxycycline** for 2-3 weeks to prevent relapse. Serious infections require intravenous antibiotics. Mortality with adequate antibiotic therapy is less than 1% but can be as high as 15% without proper treatment. Prevention is the use of personal respiratory protection when handling sick birds and awareness of the correlation between poultry and psittacidae family members and respiratory illness.

Q Fever

Q fever is caused by *Coxiella burnetii*, a member of the Rickettsiaceae family found in soil and water.



Infections are transmitted to humans from infected sheep, goats, and cattle, and cats. It can also be found in pigs, dogs, and poultry as well as the natural reservoirs of small rodents and rabbits. Packing plants, dairies, stockyard facilities, and sheep farmers are at risk. *C. burnetti* can be found in very high numbers in amniotic fluid, placenta, and fetal membranes of sheep and goats (Weber and Rutala, 1999). The organism is very hardy and remains resistant to desiccation and infectious when windblown at distances up to several miles. Serologic evidence of infection in sheep farmers has been found to be higher than expected (Guo et al, 1998). The symptoms of Q fever are primarily a self-limited, mild flu-like syndrome. Those infected can also develop pneumonia, hepatitis, fever of unknown origin, as well as endocarditis in the chronic form. Treatment of choice of the acute form consists of tetracycline or doxycycline within the three days of the onset of symptoms for 14-21 days. Flouroquinolones may also be considered. The chronic form requires treatment for up to three to four years.

Tularemia

The Gram (-) coccobacilli, *Francisella tularensis*, both Types A and B, is the causative organism of tularemia, or "rabbit fever". It is considered to be both under recognized and under reported. Exposure routes include ingestion, inoculation by bites, inhalation, and tick- borne exposures. Occupations and persons at risk include hunters, butchers, farmers, and fur handlers who had contact with infected animals and birds. The disease can occur in all states but is most common in the south central and western United States. **It is very infectious with as few as ten organisms considered potentially infectious** (Acha and Szyres, 2001).

The incubation period generally is from 2-5 days, with a range as wide as 1-21 days. Symptoms are similar to community-acquired pneumonia. There is no person-to-person transmission. Untreated individuals may develop symptoms that last for weeks to months with progressive weakness and debility. Other presentations that can occur include hemoptysis (rare) and skin rash. The various presentations include ulceroglandular (the most common), oculoglandular, glandular, pneumonic, typhoidal, and septic. The skin lesion of the ulceroglandular form can be mistaken for cutaneous anthrax. The typhoidal presentation consists of pneumonia and systemic symptoms without cutaneous, mucosal membrane lesions, or regional lymphadenitis and can be rapidly fatal. Complications may include meningitis, sepsis, and secondary pleuropneumonia. The chest radiograph may demonstrate bilateral patchy pneumonia with hilar adenopathy (Dennis et al, 2001).

Diagnosis is made by Gram stain of secretions, culture of pharyngeal washings, sputum, or fasting gastric isolates. If the lab is not notified of the clinical suspicion so the specimens are plated on the proper culture media, cultures are less likely to isolate the organism (Martin and Marty, 2001). Serologic testing by ELISA with paired acute and convalescent titers to *F. tularensis* is useful for retrospective diagnosis. **Streptomycin is the treatment of choice.** Gentamycin and ciprofloxacin are both considered acceptable alternatives. Prevention consists of using gloves when skinning or butchering animals and personal respirators when handling animal parts.

Influenza

The first human case of Swine influenza was first identified in Wisconsin in 1976. A recent study in Wisconsin identified higher seroprevalence evidence of swine influenza infection was found to be associated with being a farmer or farm family member, or entering the barn greater than four days a



week compared to nonfarmers (Olsen et al, 2002). Swine can be a source of zoonotic transmission of swine influenza (most commonly classic swine virus of the H1N1 strain) to humans. Avian influenza A (strains H5N1 and H9N2) can be transmitted to humans but is rare. The future risk is the potential of poultry being source for reassortment of mammalian viruses and resulting in human pandemics of new and virulent strains not included in routine immunizations (Wilson et al, 2001).

Tuberculosis

Mycobacterium bovis can result in a pulmonary form of tuberculosis in veterinarians, farm workers, abattoir workers, and zookeepers but has become uncommon. Infection occurs through ingestion of contaminated raw milk or milk products and inhalation. It is rare in the United States since the introduction of mandatory milk pasteurization and animal infection control surveillance by the use of tuberculin tests. The animal form of the disease is most common in cattle but is also rarely found in swine. *M. bovis* is more common in deer in zoos and particularly in deer farms, and potentially can both infect humans and be reintroduced to countries free of the disease (Acha and Szyfres, 2001). The pulmonary infection of *M. bovis* in humans is identical to *Mycobacterium tuberculosis* in both symptoms and radiographic findings and is treated identically, with the exception of pyrazinamide (PZA). Infected humans can transmit the disease to cattle.

Mycobacterium tuberculosis, the main cause of tuberculosis in humans, is not a zoonotic disease but should be mentioned as there is an increased prevalence found in migrant and seasonal agricultural workers. The highest rates for both latent tuberculosis infection and tuberculosis disease are found in Mexican and Central American workers in U.S.-Mexican border communities (Lobala and Cegielski, 2001). The migrant agricultural workforce stream does come to Wisconsin, as it does to many other states. Clinical suspicion of symptoms consisting of productive cough of over two weeks, chills and fever, weight loss, anorexia, and hemoptysis in individuals of susceptible populations living in substandard housing with lack of access to health care services should include the possibility of *M. tuberculosis* infection.

TREATMENT AND DIAGNOSIS ISSUES

Diagnosis

The importance of an occupational and environmental history in making an accurate diagnosis cannot be stressed too much. The acronym **WHACS**, developed by the Agromedicine Program of the Medical University of South Carolina Family Practice Department is very helpful for a quick initial screening (See Table 12). This may trigger clinical suspicion of the possibility of a clinical presentation consistent with agricultural respiratory disease and then a more detailed occupational and environmental history will be taken.

Spirometry, chest radiograph, and oxygen saturation are essential diagnostic tools in acute illness. Spirometry is useful in mild to moderate disease to determine if obstructive disease consistent with asthma or restrictive disease that may be seen in FHP is present. In acutely ill and toxic patients, spirometry is generally not performed due to the patient's inability to perform the test. A chest radiograph is recommended to rule out pulmonary infiltrates indicating FHP, pulmonary edema, or zoonotic infectious process. Sinus films or single view sinus CT scan is helpful in chronic rhinitis and



sinus conditions. This may serve as a baseline in nitrogen oxide or hydrogen sulfide exposures. Measuring arterial oxygen levels with oxygen saturation by pulse oximetry or Pa O₂ by arterial blood gases are indicated in acute respiratory distress. Arterial blood gases will also assess the acid-base status in ARDS and severe H₂S, and NO₂ exposures. Carboxyhemoglobin is the test of choice for possible carbon monoxide poisoning and may be done on venous or arterial blood. Blood tests are generally nonspecific and many conditions (ODTS, FHP, zoonotic diseases) have elevated white blood counts (WBC) in the 10,000 to 18,000 range. Higher counts may indicate a more severe infectious process. Serum precipitins or antibodies are useful in diagnosing acute or subacute FHP. Some zoonotic diseases (HPS, Psittacosis, Q fever, Tularemia) are diagnosed in retrospect by a four-fold rise in paired acute/convalescent titers. Bronchoalveolar lavage (BAL) is helpful in distinguishing ODTS from FHP and is indicated if the clinical history and presentation is suggestive of a dust acquired respiratory condition.

Blood cultures are indicated if an infectious microorganism is a consideration without a clear cut occupational history suggesting an acute dust or gas exposure. They are particularly helpful in inhalational anthrax and to a lesser degree in tularemia. Blood cultures should be drawn before antibiotics are started. Sputum cultures and stains are helpful in blastomycosis, tularemia, and bovine tuberculosis. Chest CT, specifically high resolution chest CT (HRCCT) is helpful in assessing restrictive pulmonary disease and possible interstitial disease, particularly chronic FHP. It is more sensitive than chest radiographs and will show early disease such as ground glass pattern in FHP and assessing granulomas. See **Table 13** for an overview of diagnostic features.

Treatment

The first priority of treatment is to remove the person from continued exposure to the toxic agent. The ABCs of airway support is indicated in any person presenting in pulmonary distress or coma. Adequate oxygenation and respiratory support is essential. This is particularly critical in ARDS resulting from H₂S, NO₂, or CO exposures and severe exacerbation of asthma. Intravenous corticosteroids are recommended for acute exposure and respiratory distress from nitrogen oxides in silos, severe FHP, and severe exacerbations of asthma. Milder presentations may be treated by oral prednisone. Steroids are not indicated in ODTS. A tapering course over 4-6 weeks in severe cases and several weeks in milder cases is generally recommended. Inhaled bronchodilators and corticosteroids by nebulization and later metered dose inhalers (MDIs) are generally recommended in obstructive disease such as occupational asthma. Steroids should not be used to substitute for removal of exposure to the causal mechanism of disease but to treat symptoms while determination of how to safely of return to work is considered.

In severe respiratory distress resulting from exposures to high levels of CO, H₂S, and NO₂, intubation and treatment with hyperbaric oxygen should be considered. Consultation with a poison center and experienced pulmonologist is recommended.

Treatment of zoonotic diseases is specific to the organism and is discussed in the chapter. Consultation with an infectious disease specialist and the state public health department is recommended. Many of the organic dust related respiratory conditions, including mucous membrane inflammation syndrome, asthma-like syndrome, FHP and ODTS are often inappropriately treated with antibiotics.

**PREVENTION**

The agricultural workplace is dangerous and dusty. **Confined spaces**, defined as a spaces not designed for continuous occupancy with restricted means of exit or entrance, and potential exposures to toxic hazards or an oxygen deficient environment. These environments are considered to be potentially **immediately dangerous to life and health (IDLH)**. Examples of confined spaces on farms and agricultural operations resulting toxic levels of chemicals or oxygen deficient conditions include: silos, grain storage bins, manure pits and lagoons, deep trenches, and controlled atmosphere fruit storage. Potential hazards include poisoning, drowning, and suffocation. Prevention involves both the use of personal respiratory protection but the best method of prevention is **engineering out the hazardous exposure**.

Engineering Solutions

Engineering includes improving and increasing mechanical ventilation and animal confinement operations and decreasing the production of dusts and gases. Dust reduction includes adding oil to the animal feed, keeping the feed covered except at feeding time, and substituting sand for straw for animal bedding. Adding a quart of water to a bale of straw or hay before chopping it up for bedding reduces the dust level by 90%. The use of a mist containing canola oil to suppress dust in swine confinement operations decreases dust and endotoxin levels and adverse pulmonary effects in agricultural workers (Senthilselvan et al, 1997; Zhang, 1997). The use of forage bags and bunkers in storing silage and haylage decreases exposure to confined space hazards found in upright silos. Measuring gas concentrations of oxygen, hydrogen sulfide, nitrogen dioxide, and ammonia before entering confined spaces will decrease inadvertent exposure to toxic levels of gases. One time use, single gas measuring devices, such as Draeger tubes using colorimetric methods, are inexpensive means to measure gas levels of ammonia or carbon dioxide in animal confinement operations. IDLH confined spaces such as recently filled silos or structures containing manure that are undergoing physical agitation should be continuously monitored with a direct reading electronic gas meter before entering and while in the confined space.

Respirators

If an engineering solution is not feasible or practical and entry into an area with respiratory toxins is necessary, use of a **personal respirator is necessary to either purify the air by filtering (mechanical) or to supply uncontaminated air**. Tables 14 and 15 summarize the common occupational conditions and recommended respirators. NIOSH-approved 2-strap N-95 respirator, which filters out 95% or particles 0.3 micron in size or greater, is adequate for dust and mist conditions. If a person has a beard or moustache, there is not adequate protection due to an inadequate seal between the face and respirator and he should either shave or use a powered air purifying respirator. If there are oil mists, a R or P rating, which indicates oil resistant or oil proof respirator should be used. Welding requires a specific welding respirator to filter out metal fumes. Mechanical filters are used for dusts, mists and fumes, such as ammonia, require a specific color-coded gas cartridge respirator that contains activated charcoal. Higher concentrations of chemical gases or mists require gas masks, air-supplied respirators, or SCBA. **Pesticide mists and vapors will require a chemical cartridge respirator.**



Labels on the chemicals used in agricultural operations will indicate the proper personal respiratory protection and should be followed. Infectious agents such as *B. anthracis* or *Sin Nombre virus* require the use of a N-100 (previously referred to as HEPA) respirator which filter out 99-99.97% of particles 0.3 microns in size or greater. Either the CDC or the State Public Health Department should be contacted for the current U. S. Public Health recommendations. IDLH conditions with high concentrations toxic gases or oxygen deficient require the use of a self-contained breathing apparatus (SCBA). This would include a manure lagoon that is both oxygen deficient and contains high levels of H_2S , a building with potential carbon monoxide, or a newly filled silo with potential high levels of NO_2 . The person should have gone through training in use of a SCBA, be medically cleared, and maintain the SCBA properly. (See Table 16)

Before using the respirator, the person should always perform a fit check to make sure there is no leaking around the edges. Generally, a medium size fits most men and small fits most women. Children generally use a small. Respirators also come in large. Ideally, an individual should be fit tested for the type of respirator they will be using and have a medical evaluation. This is required for industries covered by OSHA mandated respiratory protection programs. A respirator should be stored in a zip lock bag or similar container to keep it free from contamination. Disposable respirators can be used until it is difficult to breath or a chemical can be tasted or smelled. Disposable respirators last about eight hours, less if very dusty conditions. Pre-filters will prolong the life of chemical cartridges. Check valves make it easier to exhale and less likely to fog glasses. Respirators make the work of breathing more difficult. **Those individuals with significant respiratory or cardiac disease, uncontrolled hypertension, claustrophobia, or the possibility of loss of consciousness from diabetes or seizures, facial abnormalities should have a medical evaluation even if they do not fall under OSHA requirements.** Respirators can be obtained from Farm and Fleet stores, feed stores, Agricultural Co-Ops, Agricultural health centers such as the National Farm Medicine Center at Marshfield or the University of Iowa Center for Agriculture Safety and Health (I-CASH), or farm safety and health catalogues such as Gempler's. University extension offices can provide further information about where to obtain respirators.

CONCLUSION

Respiratory disease associated with agricultural exposures will not be correctly identified if not considered as part of the differential diagnosis. If an occupational history is obtained as a standard part of the evaluation, the appropriate diagnosis is more likely to be made and correct treatment can be initiated earlier in the course of the disease. Besides the occupational history, pulmonary function testing, oxygen saturation, and chest x-rays are important components of the evaluation. The presenting symptoms are often vague and nonspecific and can be mistaken for bacterial bronchitis or viral illnesses. The primary care practitioner can play an important role in preventing disability from agricultural respiratory exposures by becoming knowledgeable about the type of exposures that occur in his or her patient population.


Table 1. Agricultural Respiratory Hazards and Diseases

Hazard	Source	Diseases/Illnesses
DUSTS		
Organic Dust Molds, bacterial endotoxin Grain	Animal confinement, silos, grain production/storage	ODTS, FHP, Chronic bronchitis, sinus conditions, asthma,
Inorganic dust	Plowing, tilling, harvest, picking fruit	Aggravation of underlying respiratory conditions, bronchitis
GASES		
Animal confinement gases: Ammonia, hydrogen sulfide	Manure decomposition in hog, cattle, and poultry animal confinement	ODTS, chronic bronchitis, sinus conditions, mucous membrane inflammation, Pulmonary edema respiratory arrest
Nitrogen dioxide	Fermented grains in silos	Silo-filler's disease Bronchiolitis obliterans
Anhydrous ammonia	Liquid fertilizer	Corneal/laryngeal burns Bronchiolitis obliterans
Carbon monoxide	Pressure washers, kerosene heaters, gas engines indoors	Respiratory arrest, coma, neurologic damage pulmonary edema
Zinc oxide, metal fumes	Welding	Metal fume fever
CHEMICALS		
Pesticides (organophosphates, paraquat)	Pesticide application, intentional or accidental ingestion	Bronchospasm, pulmonary secretions, respiratory arrest, pulmonary fibrosis
Disinfectants, chlorine, solvents	Dairy operations	Respiratory irritants, Reactive airway dysfunction syndrome (RADS)
INFECTIOUS MICROORGANISMS		
Anthrax, Q fever, psittacosis, tularemia, blastomycosis, Hantavirus pulmonary syndrome	Infected soil and water, domestic swine, cattle, goats, sheep, rodents	Viral-like illnesses, pneumonia, meningitis, inhalational anthrax

Adapted from: Kirkhorn and Garry; 2000;
Von Essen and Donham, 1999
Schenker, 1997; Schenker, 1996;
Zjeda and Dosman, 1993;



Table 2. Wisconsin Agricultural Production Rankings 2001

Commodity	National Ranking
Corn for silage, snap beans, cranberries, ginseng, cabbage for kraut, milk pelts, cheese(total)	#1
Milk cows, milk production, butter	#2
Oats, potatoes, carrots, sweet corn and green peas for processing	#3
Tart cherries	#4
Cattle, calves (total), honey	#9
Soybeans	#13
Hogs and pigs (total)	#18

Source: Wisconsin Agricultural Statistics Services, Wisconsin Farm Bureau

Table 3. Top 10 Wisconsin Agricultural products by dollar value

(In descending order)

Milk, cattle & calves, corn, potatoes, soybeans, cranberries, greenhouse and nursery, hogs, broilers, hay

Source: Wisconsin Farm Bureau

Table 4. Activities associated with high organic dust levels

Uncapping silos	Pressure washing animal confinement facilities
Chopping bedding	Cleaning up old moldy feed and bedding
Cleaning out old poultry buildings	Caging and handling poultry,
Loading and unloading grain	

Table 5. Significant levels of Hydrogen Sulfide

Concentration	Physiologic effect*	Exposure level guidelines and standards	Agency
0.01-0.03 ppm	Odor threshold	10 ppm: 8 hour TLV ¹	ACGIH ² -guideline NIOSH ³ REL ⁴
3-10 ppm	Strong odor	15 ppm: 15 minute short term exposure limit (STEL) PEL ⁵	OSHA ⁶ mandatory standard
20-30 ppm	Conjunctival irritation	50 ppm-evacuation from agricultural operations/community	OSHA PEL maximum for 10 minutes
50-100 ppm	Respiratory irritation		
100-150 ppm	Olfactory paralysis		
250 ppm	Pulmonary edema		
500 + ppm	"Knockdown"		
500-1000 ppm	Respiratory paralysis		

*Adapted from Guidotti, 1994; Reffenstein 1992

1-Threshold limit value

2-American Council of Government Industrial Hygienists

3-National Institute of Occupational Safety and Health

4-Recommended exposure level

5-Permissible exposure level

6-Occupational Safety and Health Administration


Table 6. Agricultural Respiratory Diseases with initial common flu-like presentations

Respiratory toxin	Source	Disease Entity
Organic Dust, thermophilic organisms	Dairy, animal confinement	Farmer's Hypersensitivity Pneumonitis
Organic dust, grain dust, endotoxin	Silos, grain elevators	Organic Dust Toxic Syndrome
Organophosphates	Dairy, animal confinement	Organophosphate poisoning
Zinc oxides	Crop production, animal pest control	Metal fume fever
Nitrogen dioxide	Welding	Mild silo-filler's disease
Blastomycosis	Silo fermentation	Early blastomycosis infection
Sin Nombre Virus	Moist soil in north central Wisconsin	Early hantavirus pulmonary syndrome
Zoonotic bacteria	Rodent infected buildings	Early forms of inhalational anthrax, psittacosis, tularemia, Q fever
	Infected soil and domestic animals	

Table 7. Comparison of Organic Dust Toxic Syndrome (ODTS) vs. Acute Farmer's Hypersensitivity Pneumonitis (FHP)
ODTS

- *"Mini-epidemics"
- 30-40% involved if high concentrations, no sensitization
- *Symptom delay of 4-8 hours after exposure
- *Flu-like symptoms for 1-3 days
- *Arterial PaO₂ normal
- *Elevated white blood cells PMNs
- *Chest x-ray normal
- *BAL-neutrophils

FHP

- *Fewer affected
- 2-10% affected
- sensitization hallmark of disease
- *Symptom delay of 4-8 hours after exposure
- *Flu-like symptoms for 2-7 days (longer if recurrent)
- *Arterial PaO₂ decreased
- *Elevated white blood cells Mononuclear cells
- *Chest x-ray: Infiltrates lower lobes
- *BAL-mononuclear cells

**Table 8. Diagnostic Criteria for Farmer's Hypersensitivity Pneumonitis (FHP)****Major-4 needed**

1. Symptoms compatible with Hypersensitivity Pneumonitis (HP)
 2. Evidence of exposure to antigen:
 - a. Appropriate occupational or environmental exposure
 - b. Serum antibodies
 - c. Basilar infiltrates
 3. Radiographic findings of HP
 4. Bronchoalveolar lavage (BAL) lymphocytosis
 5. Histologic findings compatible with hypersensitivity pneumonitis
- *HRCCT can substitute for biopsy if 1-3 are met

Minor-2 needed

1. Bibasilar rales
2. Decreased carbon monoxide (DLCO)
3. Arterial hypoxemia

Adapted from Richerson et al, 1989.
Schuyler and Cormier, 1997.

Table 9. Respiratory Diseases Associated with Microorganisms that may be found in Wisconsin

Organism	Environment/host	Disease
<i>Bacillus anthracis</i>	Wet soil, cattle, goats, sheep, hogs	Inhalational anthrax
<i>Blastomyces dermatitidis</i>	Moist soil	Blastomycosis
<i>Chlamydia psittacosis</i>	Poultry production (ducks, turkeys), parrots, parakeets	Psittacosis, pneumonia
<i>Coxiella burnetii</i>	Sheep, goats, cattle Birth products, urine, dust	Q fever
<i>Francisella tularensis</i>	Rabbits, sheep, rodents, rabbits, ticks,	Tularemia, pneumonia
<i>Influenzavirus A (swine and avian)</i>	Swine, poultry	Swine influenza Avian influenza A (AIV)
<i>Mycobacterium bovis</i>	Cattle, swine, deer, sheep	Bovine pulmonary tuberculosis
<i>Mycobacterium tuberculosis</i>	Migrant and seasonal workers	Pulmonary tuberculosis
<i>Sin nombre virus</i>	Rodents, rodent infected buildings	Hantapulmonary syndrome



Table 10. Selected Wisconsin Agencies

Poison Centers:

Children's Hospital of Wisconsin Poison Center
University of Wisconsin Poison Hospital and
Clinics Poison Prevention Education Center

1-800-222-1222

1-608-262-7537

To report infectious animal disease or inquire about zoonotic or agricultural bioterrorism disease

Contact the Wisconsin Department of Agriculture,
Trade and Consumer Protection: Division of Animal Health

State Veterinarian

1-608-837-9108

USDA-APHIS, Area Veterinarian in Charge

1-608-274-6746

District Veterinarian

<http://datcp.state.wi.us/ah/agriculture/animals/disease/reporting-disease/veterinarians.html>

Wisconsin County Extension

<http://www1.uwex.edu/ces/cty>

Wisconsin State Laboratory of Hygiene

Public Health and Environmental Laboratory

<http://www.slh.wisc.edu/index.shtml>

Public Health Department

Contact local County Public Health Department

Table 11. Categories of Bioterrorism Organisms

Category A

Easily transmitted
High mortality rates
High priority

Bacillus anthracis (anthrax)
Francisella tularensis (tularemia)
Yersinia pestis (plague)
Variola majora (smallpox)
Clostridium botulinum (botulism)
Viral hemorrhagic fevers (e.g. ebola virus)

Category B

Moderately easy to transmit
Low morbidity,
Moderate mortality

Brucella spp. (brucellosis)
Coxiella burnetii (Q fever)
Burkholderia mallei (glanders)
Cryptosporidium parvum
Salmonella spp.

Adapted from J. Bender, 2002



Table 12. WHACS Screening Occupational History

W-what do you do?
H-how do you do it?
A-are co-workers or family members affected?
C-are you concerned about the exposure?
S-are you satisfied with your job?

Table 13. Diagnosis of Agricultural Respiratory Conditions

Condition	Presentation	Spirometry	Culture	CXR	PaO2	Serology	Other
FHP	Flu-like basilar crackles	Restrictive	NA	Basilar infiltrates HRCCT-ground glass	Decreased (Dec)	(+) acute	BAL>20% lymphocytes Dec DLCO
ODTS	Flu-like Normal exam	Normal(N)	NA	Negative	N	(-)	BAL-neutrophils
Occupational Asthma	Wheeze cough	Obstructive	NA	Hyper- inflation	N to Dec	(-)	
Silo filler's Disease	Chest pain, rales Laryngo/broncho- spasm, ARDS Coma	Not specific (NS)	NA	Pulmonary edema (PE) Miliary infiltrate	Dec	NA	Bronchiolitis obliterans Methemoglobin
Barn gas (H ₂)	Knock-down Coma	NA	NA	PE	N to Dec	NA	Neurologic
Anhydrous Ammonia	Laryngo/broncho- spasm, eye	Obstructive	NA	PE	N to Dec	NA	
Carbon Monoxide	ARDS Coma	NS	NA	N or PE	N to Dec	NA	Inc COHb Neurologic
Organo- phosphates	Wheeze Bronchial secretions	Obstructive	NA	PE	Dec	NA	Decreased cholinesterase
Psittacosis	Flu-like pneumonia	NS	NA	Patchy infiltrate	NS	+	
Q fever	Flu-like Pneumonia	NS	NA	N to infiltrates Nonspecific infiltrates Granulomas in healed	NS	+	Inc LFTs Endocarditis
Anthrax	Flu-like to ARDS	NA	+ BC +Gram	PE, Widened mediastinum	Dec	NA	Hemorrhagic meningitis
Tularemia	Flu-like FUO Adenopathy,	NS	Usually (-)	Patchy infiltrates Granulomas	N to Dec	+	PCR, ELISA
HPS	Initial flu-like to ARDS, cardio- Respiratory arrest	NA	Neg	PE	Dec	+	DIC
Blastomycosis	Flu-like	NS	Fungal culture of sputum, KOH stain	Upper lobe infiltrates, masses TB-like, cancer	NS	+	Skin, osteolytic lesions Meningitis


Table 14. Respiratory Protection Devices

Respiratory Hazard	Recommended Personal Respirator Device
Organic Dust (barns, uncapping silos, grain elevators) general protection	2 strap NIOSH N-95 dust mist respirator
Organic Dust and FHP or asthma or very high levels or dusts/molds	Powered air purifying respirator (PAPR)
Confined animal operations and lower level for ammonia)	Ammonia chemical cartridge respirator with pre-filter (green ammonia concentration
Pesticide application, mists, sprays, and liquids	Pesticide, organic vapor, R or P chemical cartridge respirator
Welding	2-strap NIOSH Welding, fume respirator
Higher levels of ammonia, gases, fumes, vapors	Gas mask or canister for specific gas
Hydrogen sulfide in manure lagoon or emptying manure pit, rescue operation	Self-contained breathing apparatus (SCBA)
Recently filled silo, emergency entrance	SCBA
Confined space with possible low oxygen or high levels of gases and no air monitoring available	SCBA
Fruit controlled storage (high CO ₂ , low O ₂)	SCBA
Carbon monoxide	SCBA
Hantavirus, anthrax	N-100 filter (HEPA), preferably with PAPR, SCBA
Fumigants soil	Chemical cartridge, organic vapor
Fumigants, grain storage buildings	Air-supplied respirator or SCBA

Adapted from: Legault and Ayers Murphy and LaCross



Table 15. Medical Examinations for Respi

1. OSHA Respirator Medical Evaluation Questionnaire-mandatory for employees
2. Limited examination(HEENT, cardiorespiratory, clubbing, cyanosis) if respiratory, cardiac, neurologic, insulin dependent diabetes medical conditions. Also if a smoker, history of claustrophobia, or difficulty wearing a respirator.
3. Spirometry indicated if abnormal exam, smoker, or cardiorespiratory history, including asthma, cough, shortness of breath, or angina and chest pain, or difficulty using respirator.
4. Chest x-ray indicated only if abnormal examination or significantly abnormal spirometry.
5. FVC, FEV₁, acceptable if over 70% with no significant symptoms and normally able to do physical requirements of job.
6. Contraindications to respirator use:
 - a. Moderate to severe pulmonary disease (asthma, emphysema, chronic bronchitis)
 - b. Angina, recent myocardial infarction, or congestive heart failure
 - c. Periodic loss of consciousness (seizure disorder not controlled, hypoglycemic insulin reactions)
 - d. Significant claustrophobia
 - e. Unable to obtain adequate fit test (facial deformities, dentures, beard)



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Text

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Web-based

1. Farm Safety & Health Information Clearinghouse. Good links and source of information on practices and safety issues <http://www.bae.umn.edu/~fs>.
2. National Ag Safety Database(NASD) Extension and NIOSH based information <http://www.cdc.gov.nasd>.
3. Ready to Respond: Agro- and bioterrorism issues from the University of Minnesota dealing with zoonotic diseases and food safety. Available at: <http://www.extension.umn.edu/administrative/disasterresponse/terror2.html>.

On-line sources of agricultural personal protective equipment

1. Gempler's Inc. Respirators, monitors, safety/health guides, personal protective clothing, safety equipment <http://gemplers.com>.
2. Industrial Safety Company. Personal protective equipment, safety equipment <http://www.indlsafety.com/catalog/default.asp>.
3. Northern Safety. As above <http://www.northernsafety.com>.



Charlotte Nagel

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To: cnelson@ledgeviewwisconsin.com
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Abstract

Large-scale farm animal production facilities, also known as concentrated animal feeding operations (CAFOs), release a significant amount of contaminants into the air and water. Adverse health effects related to exposure to these contaminants among CAFO workers have been well-documented; however, less is known about their impact on the health of residents in nearby communities. Epidemiological research in this area suggests that neighboring residents are at increased risk of developing neurobehavioral symptoms and respiratory illnesses, including asthma. Additional research is needed to better understand community-scale exposures and health outcomes related to the management practices and emissions of CAFOs.

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Subject: Ledgeview farm
Attachments: understanding_cafos_nalboh.pdf; Untitled attachment 00026.txt

Emphasis on page 5- 6 . Air quality . Also data on asthma .

Pls let me know if you need more data . I am also available for explanation of the data .

Pls email and o am happy to talk further by phone / email or letter .

Manar Shahrouri MD FCCP

https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf

Understanding Concentrated Animal Feeding Operations and Their Impact on Communities



ENVIRONMENTAL HEALTH



N A L B O H

National Association of Local Boards of Health

Understanding Concentrated Animal Feeding Operations and Their Impact on Communities

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Foreword

The National Association of Local Boards of Health (NALBOH) is pleased to provide *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities* to assist local boards of health who have concerns about concentrated animal feeding operations (CAFOs) or large industrial animal farms in their communities. The Environmental Health Services Branch of the Centers for Disease Control and Prevention (CDC), National Center for Environmental Health (NCEH) encouraged the development of this product and provided technical oversight and financial support. This publication was supported by Cooperative Agreement Number 5U38HM000512. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.

The mission of NALBOH is to strengthen boards of health, enabling them to promote and protect the health of their communities, through education, technical assistance, and advocacy. Boards of health are responsible for fulfilling three public health core functions: assessment, policy development, and assurance. For a health agency, this includes overseeing and ensuring that there are sufficient resources, effective policies and procedures, partnerships with other organizations and agencies, and regular evaluation of an agency's services.

NALBOH is confident that *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities* will help local board of health members understand their role in developing ways to mitigate potential problems associated with CAFOs. We trust that the information provided in this guide will enable board of health members to develop and sustain monitoring programs, investigate developing policy related to CAFOs, and create partnerships with other local and state agencies and officials to improve the health and well-being of communities everywhere.

A special thanks to Jeffrey Neistadt (NALBOH's Director – Education and Training), NALBOH's Environmental Health subcommittee, and any local board of health members and health department staff who were contacted during the development of this document for their contributions and support.

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Introduction

Livestock farming has undergone a significant transformation in the past few decades. Production has shifted from smaller, family-owned farms to large farms that often have corporate contracts. Most meat and dairy products now are produced on large farms with single species buildings or open-air pens (MacDonald & McBride, 2009). Modern farms have also become much more efficient. Since 1960, milk production has doubled, meat production has tripled, and egg production has quadrupled (Pew Commission on Industrial Animal Farm Production, 2009). Improvements to animal breeding, mechanical innovations, and the introduction of specially formulated feeds and animal pharmaceuticals have all increased the efficiency and productivity of animal agriculture. It also takes much less time to raise a fully grown animal. For example, in 1920, a chicken took approximately 16 weeks to reach 2.2 lbs., whereas now they can reach 5 lbs. in 7 weeks (Pew, 2009).

New technologies have allowed farmers to reduce costs, which mean bigger profits on less land and capital. The current agricultural system rewards larger farms with lower costs, which results in greater profit and more incentive to increase farm size.

AFO vs. CAFO

A CAFO is a specific type of large-scale industrial agricultural facility that raises animals, usually at high-density, for the consumption of meat, eggs, or milk. To be considered a CAFO, a farm must first be categorized as an animal feeding operation (AFO). An AFO is a lot or facility where animals are kept confined and fed or maintained for 45 or more days per year, and crops, vegetation, or forage growth are not sustained over a normal growing period (Environmental Protection Agency [EPA], 2009). CAFOs are classified by the type and number of animals they contain, and the way they discharge waste into the water supply. CAFOs are AFOs that contain at least a certain number of animals, or have a number of animals that fall within a range and have waste materials that come into contact with the water supply. This contact can either be through a pipe that carries manure or wastewater to surface water, or by animal contact with surface water that runs through their confined area. (See Appendix A)

History

AFOs were first identified as potential pollutants in the 1972 Clean Water Act. Section 502 identified "feedlots" as "point sources" for pollution along with other industries, such as fertilizer manufacturing. Consequently, a permit program entitled the National Pollutant Discharge Elimination System (NPDES) was created which set effluent limitation guidelines and standards (ELGs) for CAFOs. CAFOs have since been regulated by NPDES or a state equivalent since the mid-1970s. The definitions of what was considered an AFO or CAFO were created by the EPA for the NPDES process in 1976. These regulations remained in effect for more than 25 years, but increases and changes to farm size and production methods required an update to the permit system.

The regulations guiding CAFO permits and operations were revised in 2003. New inclusions in the 2003 regulations were that all CAFOs had to apply for a NPDES permit even if they only discharged in the event of a large storm. Large poultry operations were included in the regulations, regardless of their waste disposal system, and all CAFOs that held a NPDES permit were required to develop and implement a nutrient management plan. These plans had CAFOs identify ways to treat or process waste in a way that maintained nutrient levels at the appropriate amount.

The 2003 CAFO rule was subsequently challenged in court. A Second Circuit Court of Appeals decision required alteration to the CAFO permitting system. In *Water Keeper et al. vs. the EPA*, the court directed the EPA to remove the requirement for all CAFOs to apply for NPDES. Instead, the court required that nutrient management plans be submitted with the permit application, reviewed by officials and the public, and the terms of the plan be incorporated into the permit.

As a result of this court decision, the CAFO rule was again updated. The current final CAFO rule, which was revised in 2008, requires that only CAFOs which discharge or propose to discharge waste apply for permits. The EPA has also provided clarification in the discussion surrounding the rule on how CAFOs should assess whether they discharge or propose to discharge. There is also the opportunity to receive a no discharge certification for CAFOs that do not discharge or propose to discharge. This certification demonstrates that the CAFO is not required to acquire a permit. And while CAFOs were required to create nutrient management plans under the 2003 rule, these plans were now included with permit applications, and had a built-in time period for public review and comment.

Benefits of CAFOs

When properly managed, located, and monitored, CAFOs can provide a low-cost source of meat, milk, and eggs, due to efficient feeding and housing of animals, increased facility size, and animal specialization. When CAFOs are proposed in a local area, it is usually argued that they will enhance the local economy and increase employment. The effects of using local materials, feed, and livestock are argued to ripple throughout the economy, and increased tax expenditures will lead to increase funds for schools and infrastructure.

Environmental Health Effects

The most pressing public health issue associated with CAFOs stems from the amount of manure they produce. CAFO manure contains a variety of potential contaminants. It can contain plant nutrients such as nitrogen and phosphorus, pathogens such as *E. coli*, growth hormones, antibiotics, chemicals used as additives to the manure or to clean equipment, animal blood, silage leachate from corn feed, or copper sulfate used in footbaths for cows.

Depending on the type and number of animals in the farm, manure production can range between 2,800 tons and 1.6 million tons a year (Government Accountability Office [GAO], 2008). Large farms can produce more waste than some U.S. cities—a feeding operation with 800,000 pigs could produce over 1.6 million tons of waste a year. That amount is one and a half times more than the annual sanitary waste produced by the city of Philadelphia, Pennsylvania (GAO, 2008). Annually, it is estimated that livestock animals in the U.S. produce each year somewhere between 3 and 20 times more manure than people in the U.S. produce, or as much as 1.2–1.37 billion tons of waste (EPA, 2005). Though sewage treatment plants are required for human waste, no such treatment facility exists for livestock waste.

While manure is valuable to the farming industry, in quantities this large it becomes problematic. Many farms no longer grow their own feed, so they cannot use all the manure they produce as fertilizer. CAFOs must find a way to manage the amount of manure produced by their animals. Ground application of untreated manure is one of the most common disposal methods due to its low cost. It has limitations, however, such as the inability to apply manure while the ground is frozen. There are also limits as to how many nutrients from manure a land area can handle. Over application of livestock wastes can overload

soil with macronutrients like nitrogen and phosphorous and micronutrients that have been added to animal feed like heavy metals (Burkholder et al., 2007). Other manure management strategies include pumping liquefied manure onto spray fields, trucking it off-site, or storing it until it can be used or treated. Manure can be stored in deep pits under the buildings that hold animals, in clay or concrete pits, treatment lagoons, or holding ponds.

Animal feeding operations are developing in close proximity in some states, and fields where manure is applied have become clustered. When manure is applied too frequently or in too large a quantity to an area, nutrients overwhelm the absorptive capacity of the soil, and either run off or are leached into the groundwater. Storage units can break or become faulty, or rainwater can cause holding lagoons to overflow. While CAFOs are required to have permits that limit the levels of manure discharge, handling the large amounts of manure inevitably causes accidental releases which have the ability to potentially impact humans.

The increased clustering and growth of CAFOs has led to growing environmental problems in many communities. The excess production of manure and problems with storage or manure management can affect ground and surface water quality. Emissions from degrading manure and livestock digestive processes produce air pollutants that often affect ambient air quality in communities surrounding CAFOs. CAFOs can also be the source of greenhouse gases, which contribute to global climate change.

All of the environmental problems with CAFOs have direct impact on human health and welfare for communities that contain large industrial farms. As the following sections demonstrate, human health can suffer because of contaminated air and degraded water quality, or from diseases spread from farms. Quality of life can suffer because of odors or insect vectors surrounding farms, and property values can drop, affecting the financial stability of a community. One study found that 82.8% of those living near and 89.5% of those living far from CAFOs believed that their property values decreased, and 92.2% of those living near and 78.9% of those living far from CAFOs believed the odor from manure was a problem. The study found that real estate values had not dropped and odor infestations were not validated by local governmental staff in the areas. However, the concerns show that CAFOs remain contentious in communities (Schmalzried and Fallon, 2007). CAFOs are an excellent example of how environmental problems can directly impact human and community well-being.

Groundwater

Groundwater can be contaminated by CAFOs through runoff from land application of manure, leaching from manure that has been improperly spread on land, or through leaks or breaks in storage or containment units. The EPA's 2000 National Water Quality Inventory found that 29 states specifically identified animal feeding operations, not just concentrated animal feeding operations, as contributing to water quality impairment (Congressional Research Service, 2008). A study of private water wells in Idaho detected levels of veterinary antibiotics, as well as elevated levels of nitrates (Batt, Snow, & Alga, 2006). Groundwater is a major source of drinking water in the United States. The EPA estimates that 53% of the population relies on groundwater for drinking water, often at much higher rates in rural areas (EPA, 2004). Unlike surface water, groundwater contamination sources are more difficult to monitor. The extent and source of contamination are often harder to pinpoint in groundwater than surface water contamination. Regular testing of household water wells for total and fecal coliform bacteria is a crucial element in monitoring groundwater quality, and can be the first step in discovering contamination issues related to CAFO discharge. Groundwater contamination can also affect surface water (Spellman &

Whiting, 2007). Contaminated groundwater can move laterally and eventually enter surface water, such as rivers or streams.

When groundwater is contaminated by pathogenic organisms, a serious threat to drinking water can occur. Pathogens survive longer in groundwater than surface water due to lower temperatures and protection from the sun. Even if the contamination appears to be a single episode, viruses could become attached to sediment near groundwater and continue to leach slowly into groundwater. One pollution event by a CAFO could become a lingering source of viral contamination for groundwater (EPA, 2005).

Groundwater can still be at risk for contamination after a CAFO has closed and its lagoons are empty. When given increased air exposure, ammonia in soil transforms into nitrates. Nitrates are highly mobile in soil, and will reach groundwater quicker than ammonia. It can be dangerous to ignore contaminated soil. The amount of pollution found in groundwater after contamination depends on the proximity of the aquifer to the CAFO, the size of the CAFO, whether storage units or pits are lined, the type of subsoil, and the depth of the groundwater.

If a CAFO has contaminated a water system, community members should be concerned about nitrates and nitrate poisoning. Elevated nitrates in drinking water can be especially harmful to infants, leading to blue baby syndrome and possible death. Nitrates oxidize iron in hemoglobin in red blood cells to methemoglobin. Most people convert methemoglobin back to hemoglobin fairly quickly, but infants do not convert back as fast. This hinders the ability of the infant's blood to carry oxygen, leading to a blue or purple appearance in affected infants. However, infants are not the only ones who can be affected by excess nitrates in water. Low blood oxygen in adults can lead to birth defects, miscarriages, and poor general health. Nitrates have also been speculated to be linked to higher rates of stomach and esophageal cancer (Bowman, Mueller, & Smith, 2000). In general, private water wells are at higher risk of nitrate contamination than public water supplies.

Surface Water

The agriculture sector, including CAFOs, is the leading contributor of pollutants to lakes, rivers, and reservoirs. It has been found that states with high concentrations of CAFOs experience on average 20 to 30 serious water quality problems per year as a result of manure management problems (EPA, 2001). This pollution can be caused by surface discharges or other types of discharges. Surface discharges can be caused by heavy storms or floods that cause storage lagoons to overflow, running off into nearby bodies of water. Pollutants can also travel over land or through surface drainage systems to nearby bodies of water, be discharged through manmade ditches or flushing systems found in CAFOs, or come into contact with surface water that passes directly through the farming area. Soil erosion can contribute to water pollution, as some pollutants can bond to eroded soil and travel to watersheds (EPA, 2001). Other types of discharges occur when pollutants travel to surface water through other mediums, such as groundwater or air.

Contamination in surface water can cause nitrates and other nutrients to build up. Ammonia is often found in surface waters surrounding CAFOs. Ammonia causes oxygen depletion from water, which itself can kill aquatic life. Ammonia also converts into nitrates, which can cause nutrient overloads in surface waters (EPA, 1998). Excessive nutrient concentrations, such as nitrogen or phosphorus, can lead to eutrophication and make water inhabitable to fish or indigenous aquatic life (Sierra Club Michigan Chapter, n.d.). Nutrient over-enrichment causes algal blooms, or a rapid increase of algae growth in an aquatic environment (Science Daily, n.d.). Algal blooms can cause a spiral of environmental problems to an aquatic system. Large groups of algae can block sunlight from underwater plant life, which are

habitats for much aquatic life. When algae growth increases in surface water, it can also dominate other resources and cause plants to die. The dead plants provide fuel for bacteria to grow and increased bacteria use more of the water's oxygen supply. Oxygen depletion once again causes indigenous aquatic life to die. Some algal blooms can contain toxic algae and other microorganisms, including *Pfiesteria*, which has caused large fish kills in North Carolina, Maryland, and the Chesapeake Bay area (Spellman & Whiting, 2007). Eutrophication can cause serious problems in surface waters and disrupt the ecological balance.

Water tests have also uncovered hormones in surface waters around CAFOs (Burkholder et al., 2007). Studies show that these hormones alter the reproductive habits of aquatic species living in these waters, including a significant decrease in the fertility of female fish. CAFO runoff can also lead to the presence of fecal bacteria or pathogens in surface water. One study showed that protozoa such as *Cryptosporidium parvum* and *Giardia* were found in over 80% of surface water sites tested (Spellman & Whiting, 2007). Fecal bacteria pollution in water from manure land application is also responsible for many beach closures and shellfish restrictions.

Air Quality

In addition to polluting ground and surface water, CAFOs also contribute to the reduction of air quality in areas surrounding industrial farms. Animal feeding operations produce several types of air emissions, including gaseous and particulate substances, and CAFOs produce even more emissions due to their size. The primary cause of gaseous emissions is the decomposition of animal manure, while particulate substances are caused by the movement of animals. The type, amount, and rate of emissions created depends on what state the manure is in (solid, slurry, or liquid), and how it is treated or contained after it is excreted. Sometimes manure is "stabilized" in anaerobic lagoons, which reduces volatile solids and controls odor before land application.

The most typical pollutants found in air surrounding CAFOs are ammonia, hydrogen sulfide, methane, and particulate matter, all of which have varying human health risks. Table 1 on page 6 provides information on these pollutants.

Most manure produced by CAFOs is applied to land eventually and this land application can result in air emissions (Merkel, 2002). The primary cause of emission through land application is the volatilization of ammonia when the manure is applied to land. However, nitrous oxide is also created when nitrogen that has been applied to land undergoes nitrification and denitrification. Emissions caused by land application occur in two phases: one immediately following land application and one that occurs later and over a longer period as substances in the soil break down. Land application is not the only way CAFOs can emit harmful air emissions—ventilation systems in CAFO buildings can also release dangerous contaminants. A study by Iowa State University, which was a result of a lawsuit settlement between the Sierra Club and Tyson Chicken, found that two chicken houses in western Kentucky emitted over 10 tons of ammonia in the year they were monitored (Burns et al., 2007).

Most studies that examine the health effects of CAFO air emissions focus on farm workers, however some have studied the effect on area schools and children. While all community members are at risk from lowered air quality, children take in 20-50% more air than adults, making them more susceptible to lung disease and health effects (Kleinman, 2000). Researchers in North Carolina found that the closer children live to a CAFO, the greater the risk of asthma symptoms (Barrett, 2006). Of the 226 schools that were included in the study, 26% stated that there were noticeable odors from CAFOs outdoors, while 8% stated

Table 1 Typical pollutants found in air surrounding CAFOs.

CAFO Emissions	Source	Traits	Health Risks
Ammonia	Formed when microbes decompose undigested organic nitrogen compounds in manure	Colorless, sharp pungent odor	Respiratory irritant, chemical burns to the respiratory tract, skin, and eyes, severe cough, chronic lung disease
Hydrogen Sulfide	Anaerobic bacterial decomposition of protein and other sulfur containing organic matter	Odor of rotten eggs	Inflammation of the moist membranes of eye and respiratory tract, olfactory neuron loss, death
Methane	Microbial degradation of organic matter under anaerobic conditions	Colorless, odorless, highly flammable	No health risks. Is a greenhouse gas and contributes to climate change.
Particulate Matter	Feed, bedding materials, dry manure, unpaved soil surfaces, animal dander, poultry feathers	Comprised of fecal matter, feed materials, pollen, bacteria, fungi, skin cells, silicates	Chronic bronchitis, chronic respiratory symptoms, declines in lung function, organic dust toxic syndrome

they experience odors from CAFOs inside the schools. Schools that were closer to CAFOs were often attended by students of lower socioeconomic status (Mirabelli, Wing, Marshall, & Wilcosky, 2006).

There is consistent evidence suggesting that factory farms increase asthma in neighboring communities, as indicated by children having higher rates of asthma (Sigurdarson & Kline, 2006; Mirabelli et al., 2006). CAFOs emit particulate matter and suspended dust, which is linked to asthma and bronchitis. Smaller particles can actually be absorbed by the body and can have systemic effects, including cardiac arrest. If people are exposed to particulate matter over a long time, it can lead to decreased lung function (Michigan Department of Environmental Quality [MDEQ] Toxics Steering Group [TSG], 2006). CAFOs also emit ammonia, which is rapidly absorbed by the upper airways in the body. This can cause severe coughing and mucous build-up, and if severe enough, scarring of the airways. Particulate matter may lead to more severe health consequences for those exposed by their occupation. Farm workers can develop acute and chronic bronchitis, chronic obstructive airways disease, and interstitial lung disease. Repeated exposure to CAFO emissions can increase the likelihood of respiratory diseases. Occupational asthma, acute and chronic bronchitis, and organic dust toxic syndrome can be as high as 30% in factory farm workers

(Horrigan, Lawrence, & Walker, 2002). Other health effects of CAFO air emissions can be headaches, respiratory problems, eye irritation, nausea, weakness, and chest tightness.

There is evidence that CAFOs affect the ambient air quality of a community. There are three laws that potentially govern CAFO air emissions—the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as the Superfund Act), the Emergency Planning & Community Right to Know Act (EPCRA), and the Clean Air Act (CAA). However, the EPA passed a rule that exempts all CAFOs from reporting emissions under CERCLA. Only CAFOs that are classified as large are required to report any emission event of 100 pounds of ammonia or hydrogen sulfide or more during a 24-hour period locally or to the state under EPCRA (Michigan State University Extension, n.d.). The EPA has also instituted a voluntary Air Quality Compliance Agreement in which they will monitor some CAFO air emissions, and will not sue offenders but instead charge a small civil penalty. These changes have attracted criticism from environmental and community leaders who state that the EPA has yielded to influence from the livestock industry. The changes also leave ambiguity as to whether emission standards and air quality near CAFOs are being monitored.

Greenhouse Gas and Climate Change

Aside from the possibility of lowering air quality in the areas around them, CAFOs also emit greenhouse gases, and therefore contribute to climate change. Globally, livestock operations are responsible for approximately 18% of greenhouse gas production and over 7% of U.S. greenhouse gas emissions (Massey & Ulmer, 2008). While carbon dioxide is often considered the primary greenhouse gas of concern, manure emits methane and nitrous oxide which are 23 and 300 times more potent as greenhouse gases than carbon dioxide, respectively. The EPA attributes manure management as the fourth leading source of nitrous oxide emissions and the fifth leading source of methane emissions (EPA, 2009).

The type of manure storage system used contributes to the production of greenhouse gases. Many CAFOs store their excess manure in lagoons or pits, where they break down anaerobically (in the absence of oxygen), which exacerbates methane production. Manure that is applied to land or soil has more exposure to oxygen and therefore does not produce as much methane. Ruminant livestock, such as cows, sheep, or goats, also contribute to methane production through their digestive processes. These livestock have a special stomach called a rumen that allows them to digest tough grains or plants that would otherwise be unusable. It is during this process, called enteric fermentation, that methane is produced. The U.S. cattle industry is one of the primary methane producers. Livestock production and meat and dairy consumption has been increasing in the United States, so it can only be assumed that these greenhouse gas emissions will also rise and continue to contribute to climate change.

Odors

One of the most common complaints associated with CAFOs are the odors produced. The odors that CAFOs emit are a complex mixture of ammonia, hydrogen sulfide, and carbon dioxide, as well as volatile and semi-volatile organic compounds (Heederik et al., 2007). These odors are worse than smells formerly associated with smaller livestock farms. The anaerobic reaction that occurs when manure is stored in pits or lagoons for long amounts of time is the primary cause of the smells. Odors from waste are carried away from farm areas on dust and other air particles. Depending on things like weather conditions and farming techniques, CAFO odors can be smelled from as much as 5 or 6 miles away, although 3 miles is a more common distance (State Environmental Resource Center, 2004).

Because CAFOs typically produce malodors, many communities want to monitor emissions and odors. Quantifying odor from industrial farming can be challenging because it is a mixture of free and particle-bound compounds, which can make it hard to identify what specifically is causing the odor. Collecting data on specific gases, such as hydrogen sulfide, can be used as a proxy for odor levels.

CAFO odors can cause severe lifestyle changes for individuals in the surrounding communities and can alter many daily activities. When odors are severe, people may choose to keep their windows closed, even in high temperatures when there is no air conditioning. People also may choose to not let their children play outside and may even keep them home from school. Mental health deterioration and an increased sensitization to smells can also result from living in close proximity to odors from CAFOs. Odor can cause negative mood states, such as tension, depression, or anger, and possibly neuropsychiatric abnormalities, such as impaired balance or memory. People who live close to factory farms can develop CAFO-related post traumatic stress disorder, including anxiety about declining quality of life (Donham et al., 2007).

Ten states use direct regulations to control odors emitted by CAFOs. They prohibit odor emissions greater than a set standard. States with direct regulations use scentometers, which measure how many times an odor has to be doused with clean air before the smell is undetectable. An additional 34 states have indirect methods to reduce CAFO odors. These include: setbacks, which specify how far CAFO structures have to be from other buildings; permits, which are the most typical way of regulating CAFOs; public comment or involvement periods; and operator or manure placement training.

Insect Vectors

CAFOs and their waste can be breeding grounds for insect vectors. Houseflies, stable flies, and mosquitoes are the most common insects associated with CAFOs. Houseflies breed in manure, while stable and other flies breed in decaying organic material, such as livestock bedding. Mosquitoes breed in standing water, and water on the edges of manure lagoons can cause mosquito infestations to rise. Flies can change from eggs to adults in only 10 days, which means that substances in which flies breed need to be cleaned up regularly.

Flies are typically considered only nuisances, although insects can agitate livestock and decrease animal health. The John Hopkins Bloomberg School of Public Health found evidence that houseflies near poultry operations may contribute to the dispersion of drug-resistant bacteria (Center for Livable Future, 2009). Since flies are attracted to and eat human food, there is a potential for spreading bacteria or pathogens to humans, including microbes that can cause dysentery and diarrhea (Bowman et al., 2000). Mosquitoes spread zoonotic diseases, such as West Nile virus, St. Louis encephalitis, and equine encephalitis.

Residences closest to the feeding operations experience a much higher fly population than average homes. To lower the rates of insects and any accompanying disease threats, standing water should be cleaned or emptied weekly, and manure or decaying organic matter should be removed twice weekly (Purdue Extension, 2007). For more specific insect vector information, please refer to NALBOH's vector guide (*Vector Control Strategies for Local Boards of Health*).

Pathogens

Pathogens are parasites, bacterium, or viruses that are capable of causing disease or infection in animals or humans. The major source of pathogens from CAFOs is in animal manure. There are over 150 pathogens in manure that could impact human health. Many of these pathogens are concerning because

they can cause severe diarrhea. Healthy people who are exposed to pathogens can generally recover quickly, but those who have weakened immune systems are at increased risk for severe illness or death. Those at higher risk include infants or young children, pregnant women, the elderly, and those who are immunosuppressed, HIV positive, or have had chemotherapy. This risk group now roughly comprises 20% of the U.S. population.

Table 2 Select pathogens found in animal manure.

Pathogen	Disease	Symptoms
<i>Bacillus anthracis</i>	Anthrax	Skin sores, headache, fever, chills, nausea, vomiting
<i>Escherichia coli</i>	Colibacillosis, Coliform mastitis-metris	Diarrhea, abdominal gas
<i>Leptospira pomona</i>	Leptospirosis	Abdominal pain, muscle pain, vomiting, fever
<i>Listeria monocytogenes</i>	Listeriosis	Fever, fatigue, nausea, vomiting, diarrhea
<i>Salmonella species</i>	Salmonellosis	Abdominal pain, diarrhea, nausea, chills, fever, headache
<i>Clostridium tetani</i>	Tetanus	Violent muscle spasms, lockjaw, difficulty breathing
<i>Histoplasma capsulatum</i>	Histoplasmosis	Fever, chills, muscle ache, cough rash, joint pain and stiffness
<i>Microsporum</i> and <i>Trichophyton</i>	Ringworm	Itching, rash
<i>Giardia lamblia</i>	Giardiasis	Diarrhea, abdominal pain, abdominal gas, nausea, vomiting, fever
<i>Cryptosporidium species</i>	Cryptosporidiosis	Diarrhea, dehydration, weakness, abdominal cramping

Sources of infection from pathogens include fecal-oral transmission, inhalation, drinking water, or incidental water consumption during recreational water activities. The potential for transfer of pathogens among animals is higher in confinement, as there are more animals in a smaller amount of space. Healthy or asymptomatic animals may carry microbial agents that can infect humans, who can then spread that infection throughout a community, before the infection is discovered among animals.

When water is contaminated by pathogens, it can lead to widespread outbreaks of illness. Salmonellosis, cryptosporidiosis, and giardiasis can cause nausea, vomiting, fever, diarrhea, muscle pain, and death, among other symptoms. *E.coli* is another serious pathogen, and can be life-threatening for the young, elderly, and immunocompromised. It can cause bloody diarrhea and kidney failure. Since many CAFO use sub-therapeutic antibiotics with their animals, there is also the possibility that disease-resistant bacteria can emerge in areas surrounding CAFOs. Bacteria that cannot be treated by antibiotics can have very serious effects on human health, potentially even causing death (Pew Charitable Trusts, n.d.).

There is also the possibility of novel (or new) viruses developing. These viruses generate through mutation or recombinant events that can result in more efficient human-to-human transmission. There has been some speculation that the novel H1N1 virus outbreak in 2009 originated in swine CAFOs in Mexico. However, that claim has never been substantiated. CAFOs are not required to test for novel viruses, since they are not on the list of mandatory reportable illness to the World Organization for Animal Health.

Antibiotics

Antibiotics are commonly administered in animal feed in the United States. Antibiotics are included at low levels in animal feed to reduce the chance for infection and to eliminate the need for animals to expend energy fighting off bacteria, with the assumption that saved energy will be translated into growth. The main purposes of using non-therapeutic doses of antimicrobials in animal feed is so that animals will grow faster, produce more meat, and avoid illnesses. Supporters of antibiotic use say that it allows animals to digest their food more efficiently, get the most benefit from it, and grow into strong and healthy animals.

The trend of using antibiotics in feed has increased with the greater numbers of animals held in confinement. The more animals that are kept in close quarters, the more likely it is that infection or bacteria can spread among the animals. Seventy percent of all antibiotics and related drugs used in the U.S. each year are given to beef cattle, hogs, and chickens as feed additives. Nearly half of the antibiotics used are nearly identical to ones given to humans (Kaufman, 2000).

There is strong evidence that the use of antibiotics in animal feed is contributing to an increase in antibiotic-resistant microbes and causing antibiotics to be less effective for humans (Kaufman, 2000). Resistant strains of pathogenic bacteria in animals, which can be transferred to humans through the handling or eating of meat, have increased recently. This is a serious threat to human health because fewer options exist to help people overcome disease when infected with antibiotic-resistant pathogens. The antibiotics often are not fully metabolized by animals, and can be present in their manure. If manure pollutes a water supply, antibiotics can also leech into groundwater or surface water.

Because of this concern for human health, there is a growing movement to eliminate the non-therapeutic use of antibiotics with animals. In 2001, the American Medical Association approved a resolution to ban all low-level use of antibiotics. The USDA has developed guidelines to limit low-level use, and some major meat buyers (such as McDonald's) have stopped using meat that was given antibiotics that are also used for humans. The World Health Organization is also widely opposed to the use of antibiotics, calling for a cease of their low-level use in 2003. Some U.S. legislators are seeking to ban the routine use of antibiotics with livestock, and there has been legislation proposed to solidify a ban. The Preservation of Antibiotics for Medical Treatment Act (PAMTA), which was introduced in 2009, has the support of over 350 health,

consumer, and environmental groups (H.R. 1549/S. 619). The act, if passed, would ban seven classes of antibiotics important to human health from being used in animals, and would restrict other antibiotics to therapeutic and some preventive uses.

Other Effects – Property Values

Most landowners fear that when CAFOs move into their community their property values will drop significantly. There is evidence that CAFOs do affect property values. The reasons for this are many: the fear of loss of amenities, the risk of air or water pollution, and the increased possibility of nuisances related to odors or insects. CAFOs are typically viewed as a negative externality that can't be solved or cured. There may be stigma that is attached to living by a CAFO.

The most certain fact regarding CAFOs and property values are that the closer a property is to a CAFO, the more likely it will be that the value of the property will drop. The exact impact of CAFOs fluctuates depending on location and local specifics. Studies have found differing results of rates of property value decrease. One study shows that property value declines can range from a decrease of 6.6% within a 3-mile radius of a CAFO to an 88% decrease within 1/10 of a mile from a CAFO (Dakota Rural Action, 2006). Another study found that property value decreases are negligible beyond 2 miles away from a CAFO (Purdue Extension, 2008). A third study found that negative effects are largest for properties that are downwind and closest to livestock (Herriges, Secchi, & Babcock, 2005). The size and type of the feeding operation can affect property value as well. Decreases in property values can also cause property tax rates to drop, which can place stress on local government budgets.

Considerations for Boards of Health

Right-to-Farm Laws

With all of the potential environmental and public health effects from CAFOs, community members and health officials often resort to taking legal action against these industrial animal farms. However, there are some protections for farms in place that can make lawsuits hard to navigate. Right-to-farm laws were created to address conflicts between farmers and non-farming neighbors. They seek to override common laws of nuisance, which forbid people to use their property in ways that are harmful to others, and protect farmers from unreasonable controls on farming.

All 50 states have some form of right-to-farm laws, but most only offer legal protections to farms if they meet certain specifications. Generally, they must be in compliance with all environmental regulations, be properly run, and be present in a region first before suburban developments, often a year before the plaintiff moves to that area. These right-to-farm laws were originally created in the late 1970s and early 1980s to protect family farms from suburban sprawl, at a time when large industrial farms were not the norm. As industrial farms grew in size and number, the agribusiness industry lobbied for and achieved the passage of stricter laws in the 1990s, many of which are now being challenged in court by homeowners and small family farmers. Opponents to these laws argue that they deprive them of their use of property and therefore violate the Fifth Amendment to the Constitution.

Some state courts have overturned their strict right-to-farm laws, such as Iowa, Michigan, Minnesota, and Kansas. Others such as Vermont have rewritten their laws. Vermont's updated right-to-farm bill

protects established farm practices as long as there is not a substantial adverse effect on health, safety, or welfare.

Boards of health need to be aware of what legal protection their state offers farms. Right-to-farm laws can hinder nuisance complaints brought about by community members. State laws can prevent local government or health officials from regulating industrial farms.

Board of Health Involvement with CAFOs

Boards of health are responsible for fulfilling the three public health core functions: assessment, policy development, and assurance. Boards of health can fulfill these functions through addressing problems stemming from CAFOs in their communities. Specific public health services that can be tackled regarding CAFOs include monitoring health status, investigating health problems, developing policies, enforcing regulations, informing and educating people about CAFOs, and mobilizing community partnerships to spread awareness about environmental health issues related to CAFOs.

Assessment: Board of health members should ensure that there is an effective method in place for collecting and tracking public complaints about CAFOs and large animal farms. Since environmental health specialists at local health departments are often responsible for investigating complaints, the board of health must take measures to ensure that they are properly trained and educated about CAFOs. It is possible that the board of health may be responsible or choose to do some investigations itself. Schmalzried and Fallon (2008) advocate that local health districts adopt a proactive approach for addressing public concerns about CAFOs, stating that health districts can offer some services that may help ease public frustration with CAFOs. A fly trapping program can establish a baseline for the average number of flies present prior to the start-up of CAFOs or large animal farms, which can then establish if a fly nuisance exists in the area. Testing for water quality and quantity can provide evidence if CAFOs are suspected of affecting private water supplies. Boards of health can also monitor exposure incidences that occur in emergency rooms to determine if migrant or farm workers are developing any adverse health conditions as a result of their work environments. Establishing these programs benefit both members of the community and provide information to future animal farm operators, and local boards of health should recommend them if they've been receiving complaints about CAFOs.

Policy Development: Boards of health in many states can adopt health-based regulations about CAFOs, however, they may be met with some resistance. Humbolt County, Iowa, adopted four health-based ordinances concerning CAFOs that became models for regulations in other states, but the Iowa Supreme Court ruled the ordinances were irreconcilable with state laws. Boards of health that choose to regulate CAFOs can also be subject to pressure from outside forces, including possible lawsuits or withdrawal of funding. Boards of health should also consider working with other local officials to institute regulations on CAFOs, such as zoning ordinances.

Assurance: Boards of health can execute the assurance function by advocating for or educating about better environmental practices with CAFOs. Board members may receive complaints from the public about CAFOs, and boards can hold public meetings to receive complaints and hear public testimony about farms. If boards of health are not capable of regulating industrial farms in their communities, they can still try to collaborate with other local agencies that have jurisdiction. Board of health members can educate other local agencies and public officials about CAFOs and spread awareness about the environmental and health hazards. They can request a public hearing with the permitting agency of the

CAFO to express their concerns about the potential health effects. They can also work with agricultural and farm representatives to teach better environmental practices and pollution reduction techniques.

In many states, boards of health are empowered to adopt more stringent rules than the state law if it is necessary to protect public health. Board of health members should examine their state laws before they take any action regarding CAFOs to determine the most appropriate course of action. Any process should include an investigative period to gather evidence, public hearings, and a time for public review of draft policies.

Board of Health Case Studies

Tewksbury Board of Health, Massachusetts

Locals have complained about Krochmal Farms, a pig farm, for many years, but complaints have increased recently. The addition of a hog finishing facility to the farm coincided with the time that community member complaints grew. Most complaints are centered on the odor coming from the farm. The complaints were originally just logged when phone calls were received; however, the health department added a data tracking system as the number of complaints increased. After a complaint is received, the sanitarian or health director does a site visit to investigate.

The health director in Tewksbury filed an order of prohibition against the farm, which is allowed under Massachusetts law 111, section 143, for anything that threatens public health. The order of prohibition was appealed and the matter was taken to the board of health for a grievance hearing. The board of health hearing included months of testimony about the pig farm. The board of health is also doing a site assignment, which determines if a location is appropriate for treating, storing, or disposing of waste, including agricultural waste. The site assignment process includes both the Department of Environmental Protection (DEP) and the local board of health. The board of health holds a public hearing process, while the DEP reviews the site assignment application. The board of health grants the site assignment only if it is concurrently approved by the DEP.

The health director in Tewksbury points out that the only laws the board of health is able to regulate the farm under are nuisance laws. There have been efforts by the community to do a home rule petition to address the air quality and pest management complaints. The home rule petition is currently working its way through the Massachusetts state house. The status of the petition is unknown.

The board of health has tried to work directly with the pig farm to manage complaints. The farm contains manure composting facilities and the health district has requested advance notice to warn the community before manure is treated or applied to the soil. The farm has adopted a new manure management system. This system uses Rapp technology to control odors and reduce ammonia and hydrogen sulfide levels. However, questions still remain as to whether this addition will fully solve the odor issue. Typically, systems using Rapp technology include an oil cap that floats on manure holding pools and helps seal odors inside. These techniques have been researched and proven to reduce odors. However, the Tewksbury farm did not install the oil cap, and it is unknown whether the exclusion of the cap will hinder the technology's ability to reduce odors.

The complaints about the farm primarily concern the odor that emanates from the farm. The complaints do include mention of health side effects, including nausea and burning eyes. The health director has also heard concerns about potential environmental effects from the pig manure. Community members are

worried the manure runoff is entering and contaminating Sutton Brook, since there has been flooding in that area. There has been no confirmation of this occurring. The board of health is aware that the farm has a nutrient management plan, but they are not allowed to request and find out what is incorporated in that plan.

The Tewksbury piggery is technically not classified as a CAFO, though it is believed to be the largest pig farm in the commonwealth of Massachusetts. The area around it has become densely populated and the community members state that they just want to live peacefully with the farm. The board of health has submitted multiple grant applications to study the health effects associated with the farm. After the site assignment process is complete, the board of health will decide how it will regulate the farm. At the beginning of 2010, the board of health was still working on drafting regulations for the pig farms.

Wood County Board of Health, Ohio

Wood County, Ohio, contains two existing large dairy farms, both of which were proposed in 2001 to be expanded to over 1500 cows each. It is also the site for three other proposed dairy farms. There is a large community effort that supports restricting the operation and expansion of these farms, mainly represented by the community group Wood County Citizens Opposed to Factory Farms. The Wood County Board of Health became involved in investigating these dairy farms through this community group and other local officials. The Trustees of Liberty Township requested assistance from the Wood County Board of Health in supporting a moratorium on factory farm operations until local regulations were in effect. The trustees believed that manure runoff from the farms could contaminate local waterways, lower the ground water table, increase the presence of insect vectors, and devalue local properties.

The Wood County Health Director, in cooperation with the board of health, contacted nearby counties to determine what actions they had taken against farms in their communities. While the health director and board of health investigated action in the form of a nuisance regulation against the farms, they were advised that nuisance lawsuits filed against farms in Ohio were held to a tough standard, and they would be forced to demonstrate with scientific proof that the farms have a substantial adverse effect on health. They found that no other board of health in Ohio had opted to regulate farming operations and relied on the enforcement of existing state laws.

The board of health held a public forum to hear public opinion regarding the industrial farms. Ultimately, the Wood County Board of Health took actions other than regulations to help protect the health and environment of its community. They helped community members protect the safety of their water wells by offering free and low cost water well testing and inspections. They tested area ditch and water ways for fecal coliform bacteria, phosphorous, and nitrates to monitor the impact of farm runoff. They also purchased fly traps to monitor and count fly types to determine if the farms have caused an increase in insect vectors. Board of health members also met with state officials from the Ohio EPA in an effort to facilitate cooperation regarding the factory farms. While the Wood County Board of Health and Health Department chose not to institute any local regulations, they continue to monitor the situation and respond to community complaints.

Cerro Gordo County Board of Health, Iowa

Officials in Cerro Gordo County, Iowa, began looking into regulating animal feeding operations after the number of hog farms in Iowa started to grow. Floods in North Carolina and new regulations in Colorado meant that many hog farms began relocating to Iowa. Many citizens had concerns over the effects of

CAFOs, and the Iowa State Association of Counties wanted to review air quality issues. Officials in Cerro Gordo County originally began working on a regulation that required inspections and was based on public health concerns, since farms were already exempt from any regulations related to zoning. However, Iowa state senators soon introduced legislation that passed and prevented any animal feeding operations from being regulated from a public health angle as well.

As Iowans were now prevented from regulating animal feeding operations in terms of zoning or public health, officials in Cerro Gordo County decided to place a moratorium on the construction of new animal feeding operations in that county. They wanted to temporarily stop the growth of animal feeding operations until they could get better science about their effects. Cerro Gordo County Ordinance #40, the "Animal Confinement Moratorium Ordinance," went into effect on May 14, 2002. Since the moratorium did not address public health or zoning, officials were able to get around the rules and still have a way to temporarily control animal feeding operation growth in their county. The ordinance placed "a 1-year moratorium on any new construction, expansion, or activity occurring on land used for the production, care, feeding, or housing of animals." The ordinance also afforded "local public health officials adequate time to appropriately assess health and environmental concerns that may be related to confined animal feeding operations and concentration of animals; establish objective measurable standards of enforcement; exercise the Board of Health's responsibility to protect and improve the health of the public; refrain from impacting farm operators unfairly; and provide penalties for violations of the provisions hereof pursuant to Chapter 137, Code of Iowa" (Cerro Gordo County, 2002).

The moratorium was first adopted by the Cerro Gordo County Board of Health. It was then presented to the county board of supervisors by the health director on behalf of the board of health. Before the board of health adopted the moratorium, they held an investigative meeting in which representatives from the Iowa Farm Bureau and other industry spokespeople exchanged opinions on the issue of animal feeding operations. The moratorium was created through a collaboration between local and county officials—health department staff, the board of health, and the board of supervisors. The moratorium did not receive any help or backing from state officials, who were concerned about the political nature of the ordinance. However it did receive backing from a *Globe Gazette* editorial.

The moratorium was immediately met with resistance from state officials. The Cerro Gordo County Board of Supervisors was contacted by a local legislator, and the Iowa Farm Bureau stated they would challenge the county budget. The Iowa Farm Bureau threatened to take the county to court. There were concerns over the cost of a court trial, which was estimated to be as high as \$60,000. The county attorney doubted the legality of the moratorium and ultimately recommended removing it. The moratorium was in effect until June of 2005, when it was repealed by the county board of supervisors.

Since the moratorium was repealed there have been a few hog farms built in Cerro Gordo County, but the decline in pork prices has prevented any large growth of hog farms. Health officials believe that if the county had not implemented the animal confinement moratorium, there would have been many more farms built in their county, since many hog farms were built in counties south of Cerro Gordo County. There is now a process for siting new animal confinement operations in Iowa that uses a Master Matrix scoring system. The Cerro Gordo County Board of Supervisors tracks the Master Matrix system, but so far no animal feeding operations in Iowa who have applied using this system have been denied the right to build.

Conclusion

Concentrated animal feeding operations or large industrial animal farms can cause a myriad of environmental and public health problems. While they can be maintained and operated properly, it is important to ensure that they are routinely monitored to avoid harm to the surrounding community. While states have differing abilities to regulate CAFOs, there are still actions that boards of health can and should take. These actions can be as complex as passing ordinances or regulations directed at CAFOs or can be simply increasing water and air quality testing in the areas surrounding CAFOs. Since CAFOs have such an impact locally, boards of health are an appropriate means for action. Boards of health should take an active role with CAFOs, including collaboration with other state and local agencies, to mitigate the impact that CAFOs or large industrial farms have on the public health of their communities.

Appendix A: Regulatory Definitions of Large CAFOs, Medium CAFOs, and Small CAFOs

Animal Sector	Size Thresholds (number of animals)		
	Large CAFOs	Medium CAFOs ¹	Small CAFOs ²
Cattle or cow/calf pairs	1,000 or more	300-999	Less than 300
Mature dairy cattle	700 or more	200-699	Less than 200
Veal calves	1,000 or more	300-999	Less than 300
Swine (over 55 pounds)	2,500 or more	750-2,500	Less than 750
Swine (under 55 pounds)	10,000 or more	3,000-9,999	Less than 3,000
Horses	500 or more	150-499	Less than 150
Sheep or lambs	10,000 or more	3,000-9,999	Less than 3,000
Turkeys	55,000 or more	16,500-54,999	Less than 16,500
Laying hens or broilers ³	30,000 or more	9,000-29,999	Less than 9,000
Chickens other than laying hens ⁴	125,000 or more	37,500-124,999	Less than 37,500
Laying hens ⁴	82,000 or more	25,000-81,999	Less than 25,000
Ducks ⁴	30,000 or more	10,000-29,999	Less than 10,000
Ducks ³	5,000 or more	1,500-4,999	Less than 1,500

Data: Environmental Protection Agency

¹ Must also meet one of two "method of discharge" criteria to be defined as a CAFO or must be designated.

² Never a CAFO by regulatory definition, but may be designated as a CAFO on a case-by-case basis.

³ Liquid manure handling system

⁴ Other than a liquid manure handling system

Appendix B: Additional Resources

American Public Health Association. *Precautionary moratorium on new concentrated animal feed operations*. <http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1243>

Center for a Livable Future. <http://www.livablefutureblog.com/>

Environmental Health Sciences Research Center. *Iowa concentrated animal feeding operation air quality study*. <http://www.public-health.uiowa.edu/ehsrc/CAFOstudy.htm>

Environmental Protection Agency. *Animal feeding operations*. http://cfpub.epa.gov/npdes/home.cfm?program_id=7

Food and Water Watch. <http://www.foodandwaterwatch.org/>

Impacts of CAFOs on Rural Communities. http://web.missouri.edu/ikerdj/papers/Indiana%20--%20CAFOs%20%20Communities.htm#_ftn1

Land Stewardship Project. <http://www.landstewardshipproject.org/index.html>

Midwest Environmental Advocates. <http://www.midwestadvocates.org/>

National Agriculture Law Center. *Animal feeding operations reading room*. <http://www.nationalaglawcenter.org/readingrooms/afos>

National Association of Local Boards of Health. *Vector control strategies for local boards of health*. <http://www.nalboh.org/publications.htm>

Pew Charitable Trusts. *Human health and industrial farming*. <http://www.saveantibiotics.org/index.html>

Pew Commission on Industrial Animal Farm Production. <http://www.ncifap.org/>

Purdue Extension. *Concentrated animal feeding operations*. <http://www.ansc.purdue.edu/CAFO/>

State Environmental Resource Center. <http://serconline.org>

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From: manar alshahrouri <mshahrouri71@icloud.com>
Sent: Wednesday, May 30, 2018 9:49 PM
To: cnelson@ledgeviewwisconsin.com
Subject: Ledgeview farm
Attachments: WebPage.pdf; Untitled attachment 00020.txt

One more . This one emphasizes again the issue of respiratory and cardiovascular risk to surrounding communities



National Collaborating Centre
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Air Quality and Community Health Impact of Animal Manure Management

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Summary

- Nearly 200 million tonnes of livestock manure are generated in Canada each year.¹ Manure storage and land application tends to produce odour, greenhouse gases, microbes, and particulate matter, which can negatively impact the environment and human health.
- Occupational exposures of manure management have been linked to psychological stress and adverse effects on the respiratory system and heart function.
- Community health risks may result from poor local air quality related to manure management. Limited studies suggest respiratory and psychological health impacts on residents living in proximity to manure management operations.
- There are research gaps on comprehensive assessments of manure management and its effects on air quality and community health.
- These gaps deserve attention since many Canadians live on or near livestock farms.



Introduction

Animal manure is a primary by-product of the livestock industry. In 2006, Canada's livestock farm cash receipts amounted to \$17.7 billion, ranking third in total agriculture receipts.² The corresponding manure generation was 181 million tonnes.¹

Animal manure has complex composition with various nutrient components like nitrogen, phosphorus, and potassium. Manure from different animals varies in density, water content, and nutrient content.³ Livestock farms conventionally store the manure for months and apply it to land as fertilizer.⁴ This practice results in emissions to air and water, caused by microbial decomposition of the organic matter in manure.

This report reviews evidence of air quality and community health risks from animal manure management. Community health tends to focus on people within geographic communities rather than the general public (public health) or people with a common occupation (occupational health).⁵ The review covers up-to-date literature and reports from on-line databases and institutions; see Appendix A for methodology used to conduct the literature review. Key research and policy gaps are presented.

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Manure Management

Manure on farms is usually stored for property stabilization and to meet fertilizable timing. Manure storage systems generally fall into three categories: stockpile, tank, and lagoon. Stockpiles consist of heaps of solid manure above ground, whereas tanks and lagoons contain mainly liquid manure and semi-solid manure. Tanks are built vessels or rooms above ground or underground, and lagoons are natural or artificial underground pits.⁶

Stored manure will eventually be applied on land manually or mechanically. There are basically five ways to apply manure^{7,8}:

- 1) **Broadcasting** is spreading the manure evenly on top of the soil;
- 2) **Incorporating** involves blending the fertilizer with top soil and usually follows broadcasting;
- 3) **Banding** specifically takes place while planting seeds; the fertilizer is placed in a *band* a few inches to the side and below the seed row;
- 4) **Injection**, similar to banding, also injects fertilizer into the soil but not necessarily during the planting process;
- 5) **Fertigation** is the practice of integrating water and fertilizers together so that nutrients are applied when the plants are irrigated.

Broadcasting and injection are most commonly used for land crops and fertigation is usually applied in commercial greenhouses.

Emissions from Manure Management

When manure is stored, microorganisms in manure decompose the organic matter and release a number of pollutants. The greatest proportion of air pollution emissions from manure management takes place during manure storage because it is concentrated and continuous, putting farm workers at high risk. Factors influencing manure storage emissions include animal species, storage system structures, and local environment. Specifically, the original nutrient content, ambient temperature, and aeration conditions directly determine the digestion of the organic matter and thus the final emissions. Similar to manure storage, soil microorganisms along with manure microorganisms

continue the decomposition process after land application. Soil conditions and local weather will additionally influence the micro-environment and therefore the decomposition processes. Emissions from manure application are released gradually for months and will eventually disperse. Hence the impact on community health basically results from manure land application.

O'Neill and Phillips reported nearly 200 compounds emitted from animal manure management,⁹ with volatile organic compounds (VOCs), ammonia (NH_3), hydrogen sulphide (H_2S) and particulate matter (PM) being those most relevant for potential human health impacts. A brief description of these pollutants follows:

- VOCs are formed when the biological macromolecules in manure begin to degrade. Examples are volatile fatty acids, phenols, indoles, and alkane.^{4,9} Some of these VOCs are identified as respiratory tract, skin or eye irritants⁴. If the environment is oxygen deficient, VOCs can be converted to mainly CH_4 . Under aerobic conditions, VOCs can be completely oxidized to CO_2 and water.
- NH_3 emitted from manure can be produced following urea (mammals) or uric acid (poultry) hydrolysis.¹⁰ When manure is stored for long periods of time or applied in the soil, formation of NH_3 will also occur with the microbial breakdown of organic nitrogen under both aerobic and anaerobic conditions.¹¹ NH_3 irritates the eyes at 20-50 ppm and can cause nausea after inhalation.¹²
- H_2S is derived from sulphur-containing organic compounds in manure under anaerobic conditions.¹² It is considered the most dangerous gas in manure handling because a worker can be killed after inhalation at a concentration above 800 ppm.¹² H_2S at low levels (1-5 ppm) can cause nausea and headaches.¹³
- PM or dusts derived from manure handling are mainly aerosolized particles combined with organisms like bacteria, fungi, and moulds.¹⁴ Bioactive substances like endotoxins and glucans originate from the cell wall of the microorganisms and have been identified as toxins and inflammatory mediators in many studies.¹⁵⁻¹⁷ These particulate pollutants are usually generated from solid manure storage and composting; however, livestock feeding operation is an important source of PMs in barns. Eighty percent

of these particles inside swine and poultry barns are less than 5 μm in diameter, which can be inhaled into the lungs.¹⁸

- CH_4 and CO_2 are both final products of organic matter decomposition; the proportions are determined by aeration conditions. CH_4 is generated from incomplete oxidization under anaerobic conditions, while CO_2 is generated from complete oxidization in aerobic conditions. CH_4 does not have immediate health impact potential at a low concentration but it is a greenhouse gas with a global warming potential 25 times that of CO_2 .¹⁹
- N_2O is produced as a by-product from combined nitrification and de-nitrification of nitrogen species as a consequence of changes in the aeration

conditions.^{20,21} The overall emission of N_2O depends on the nitrogen and carbon content of manure and ambient environment parameters.²² N_2O is also a greenhouse gas with no immediate health impact potential in this case, but the global warming potential is 298 times that of CO_2 .¹⁹

Generally speaking, more VOCs, H_2S , and CH_4 are generated under anaerobic conditions and NH_3 , N_2O , and CO_2 production is favoured in aerobic conditions.^{20,23,24} Covered storage of liquid manure tends to create an anaerobic environment while open storage and land application mainly involve aerobic processes.^{25,26} Table 1 shows the national inventory of typical emissions from manure management available from 2005 to 2008.^{27,28} Data were obtained from census and necessary calculations.

Table 1. Emissions inventory of manure management in Canada 2005-2008, reported by Environment Canada

	NH_3 (kt)	VOC (kt)	TPM (kt)	PM_{10} (kt)	$\text{PM}_{2.5}$ (kt)	CH_4 (Mt CO_2eq)	N_2O (Mt CO_2eq)
2005	368.8	300.5	334.2	213.3	32.3	3.1	5.0
2006	326.5	291.1	338.2	215.5	32.0	3.1	4.9
2007	324.1	291.1	338.2	215.5	32.0	3.0	4.8
2008	308.2	312.9	344.8	220.4	33.9	2.8	4.7

kt – kilotonne = 1,000 tonnes; Mt – megatonne = 1,000,000 tonnes

TPM – total particulate matter

CO_2eq – carbon dioxide equivalent value; calculated by multiplying the amount of the gas by its associated 100-year global warming potential (GWP).

Efforts have been made to mitigate emissions from manure management. These include dietary modification, storage control, application of pre-treatment, and other manure utilization technologies, such as anaerobic digestion.²⁹⁻³¹ Nevertheless, the effectiveness of the mitigation approaches is limited and air pollutant emissions from manure management remain a problem.

Community Health Impacts from Manure Management

Air pollution emissions from animal manure may pose a health threat to workers and community residents.¹⁷ Occupational health issues with regard to manure management have been more extensively studied

than community health issues. Workers on intensive livestock farms can be directly exposed to air pollution from animal manure. These exposures have been associated with respiratory and cardiovascular effects, impacts on psychological well-being, and even acute poisoning or death. Common symptoms include nausea, coughing, eye irritation, and headaches, which can happen within hours of exposure.^{32,33} Other impacts include: chronic cough, chest tightness, wheeze, phlegm, increased cardiopulmonary risk (increased sympathetic tone in the cardiovascular system), as well as psychological symptoms, such as frequent depression, tension, and anger.³²⁻³⁵ Aged farm workers, working on livestock farms for years, are more vulnerable to chronic diseases. Moreover, there are fatal asphyxiation accidents of farm workers

from exposure to gaseous emissions from manure lagoons.^{36,37}

Unlike occupational health issues, the overall ambient air quality, rather than primary emissions in confined spaces, is more relevant for community health. However, there are few reports of ambient air quality investigations related to manure management operations. Accordingly, impacts on health of residents living in the vicinity of animal farms are not well studied.³⁸ While manure spreading causes substantial air emissions and therefore complaints

from nearby communities, studies specifically on community health related to manure spreading are quite rare. Among the limited investigations are several epidemiologic studies in areas surrounding Concentrated Animal Feeding Operations (CAFO), in which the dominant sources of air emissions are those from manure management^{38,39}; here the manure storage process is believed to be more involved than manure spreading. These studies are summarized in Table 2.

Table 2. Summary of the peer reviewed literature for community health issues related to manure management

Authors	Study Location and Period	Method	Sample Size	Health Outcomes	Results
Schiffman et al. (1995) ⁴⁰	North Carolina, USA; period n/a	Cross-sectional survey on: 1) residents living an average of 5.3 ± 6.5 years near hog operations; 2) control residents.	44 study and 44 control	Profile of Mood States (POMS) Total Mood Disturbance score (TMD)	More tension, more depression, more anger, less vigor, more fatigue, and more confusion reported among residents near intensive swine operations. The study group had significantly worse scores than the control group for every POMS factor and the TMD score ($p < 0.0001$).
Thu et al. (1997) ⁴¹	N/A	1) Interviews on residents living within a 2-mile radius of a 4,000-sow swine production facility; 2) Data review on a random sample of demographically-comparable rural residents living near minimal livestock production.	18 study and 18 control	Respiratory	Significantly higher rates of four clusters of symptoms known to represent toxic or inflammatory effects on the respiratory tract reported among residents near large-scale swine operations.
Wing et al. (2000) ⁴²	North Carolina, USA; 1999	Cross-sectional interviews on: 1) residents living within a 2-mile radius of a 6,000-head hog operation; 2) living within 2-mile radius of two intensive cattle operations; 3) an agricultural area without livestock operations.	~50 in each area	Respiratory, gastrointestinal, skin/eye irritation, miscellaneous, Quality of life (QoL)	Increased occurrences of headaches, runny nose, sore throat, excessive coughing, diarrhea, and burning eyes among nearby residents. QoL was not significantly influenced in the vicinity of the cattle operation, but greatly reduced among residents near the hog operation.
Radon et al. (2004) ⁴³	Northern Germany; period n/a	Survey on all the residents living in a rural town with intensive animal production.	3112	Quality of Life (QoL)	Odour annoyance is a strong negative predictor of QoL among nearby residents. Sixty-one percent of the respondents complained about unpleasant odours and 91% of these accused livestock as source of these odours.

Table 2 (cont'd)

Authors	Study Location and Period	Method	Sample Size	Health Outcomes	Results
Avery et al. (2004) ⁴⁴	North Carolina, USA; period n/a	Survey and sIgA concentration test on residents living within 2.4 km of at least one hog operation.	15 study that serve as their control	Mucosal immune function	Immunosuppressive effect of malodour on mucosal immunity was observed.
Merchant et al. (2005) ⁴⁵	Iowa, USA; 1994-1998	Cross-sectional survey, clinical assessment, and serum analysis on: 1) residents living in farm; 2) town; 3) rural nonfarm locations.	341 farm households, 202 rural nonfarm households, and 461 town household	Asthma	High prevalence of asthma health outcomes observed among children living on farms.
Bullers. (2005) ⁴⁶	North Carolina, USA; 1998-1999	Cross-sectional interviews on: 1) residents living near industrial hog farms; 2) those in an area that had no industrial hog farm operations.	48 study and 34 control	Respiratory, Sinus, Nausea, Psychological	Increased respiratory, sinus, and nausea problems, increased psychological distress, and decreased perceptions of control were reported among nearby residents
Mirabelli et al. (2006) ⁴⁷	North Carolina, USA; 1999-2000	Data review on adolescents' respiratory health symptoms, school environments, and location of swine CAFOs.	58,169	Asthma	Adolescents' wheezing symptoms were observed; associated with exposure to airborne pollution from confined swine feeding operations. The prevalence of wheezing was 5% higher at schools that were located within 3 miles of an operation, relative to those beyond 3 miles and 24% higher at schools in which livestock odour was noticeable indoors twice per month, or more relative to those with no odour.
Sigurdarson et al. (2006) ⁴⁸	Iowa, USA; 2003	Cross-sectional survey on: 1) a study school located 1.5 mile from a CAFO, 2) a control school distant from any large-scale agricultural operation.	61 study and 248 control	Asthma	19.7% children from the study school and 7.3% children from the control school gave a history of physician-diagnosed asthma (Odds Ratio, 5.60; $p=0.0085$). When analysis included smoking status, pet ownership, age, and residence in a rural area or on a farm, the adjusted Odds Ratio is 5.719 ($p=0.0035$).
Radon et al. (2007) ⁴⁹	Lower Saxony, Germany; 2002-2004	Survey and clinical examinations on residents living in towns with high density of CAFOs.	6937	Respiratory	Adverse effect on respiratory health was shown among nearby residents.

Compared to occupational health, information on community health impacts is much more limited. The studies are restricted to a small group of researchers and locations and are cross-sectional in design, with no controls at the same location at a different time (before a CAFO was built). The methods rely heavily on self-report surveys or interviews. Only three of them include medical assessments, but these are also limited by small sample sizes. Also, although symptoms are supposedly related to poor air quality due to manure management, no study determined the levels of airborne pollutants from manure management. However, despite the limitations of the studies, they suggest that there are respiratory and psychological health impacts on residents living in proximity to manure management operations.

Key Gaps

- There are few analyses of the overall air quality of areas near intensive animal manure management operations. Hence, there is a lack of information for further investigation of community health impacts.

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- Within the limited research on manure management and community health impacts, no study measured exposures and linked them to health outcomes. General epidemiologic studies, focused on proximity to CAFOs, provide some insight but cannot provide an accurate understanding of potential relationships between manure management and community health.
- No studies on community health impacts from manure management in Canada have been published. The gap in research on community exposures deserves attention, since many Canadians live on or near livestock farms.

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Appendix A: Methodology

Databases: Web of Science, ScienceDirect, PubMed, Medline, BIOSIS Previews, LISTA EBSCO, Google Scholar.

Citation tracing was also used to track the published studies on this topic.

Search terms:

Key words: manure, animal, livestock, air, emission*, community, public, health, resident*

Criteria for inclusion: Peer-reviewed literatures, reports, and statistics with topic on or closely associated with animal manure emissions and public health.

	Journal papers	Reports	Statistics
Source	Databases	Databases, Government and institute website	Government website
Preference	High	medium	High
Peer-reviewed	Yes	partial	n/a
Topic	Manure management in agriculture. Emissions from manure management. Occupational health issue associated with manure management. Community health issue associated with manure management.	Manure management in agriculture. Occupational health issue associated with manure management.	Livestock manure generation. Emission inventories
Date	No restrictions, up-to- date ones preferred	Most up to date available	Most up to date available

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From: manar alshahrouri <mshahrouri71@icloud.com>
Sent: Thursday, May 31, 2018 5:54 AM
To: cnelson@ledgeviewwisconsin.com
Subject: Ledgeview farm manure pit / pdf enclosed
Attachments: acp-17-12813-2017.pdf; Untitled attachment 00014.txt

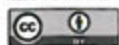
This is a very important paper showing that reducing agricultural emissions decrease significantly the small particulate matter(inhaled into the lungs and into the body) and the potential lives saved by decreasing the emissions . Also showing that this measure is cheaper and more effective than controlling other emissions .

My point ultimately is that the board and frankly the state if not the nation needs to pay attention to this aspect of harm caused by these farming practices (there are clearly better and safer measures than the Ledgeview farm are proposing) . This is an aspect (emissions causing grievous short , intermediate and long term harm) has gone unnoticed by various discussions yet it's well documented in the medical and scientific literature .

Who would have linked manure pits and large scale farming practices and emissions caused by its operations to increased mortality due to strokes , heart attacks and other respiratory ailments . The children and elderly are particularly and disproportionately affected .

I strongly oppose the granting of any permits that would allow this operation to expand . I frankly believe that their current practices are unsafe as it stands today especially given the information revealed recently about their history . So much so that it is quite possible that some of the erstwhile concerns regarding emissions may already be in play . Thank you for the opportunity again and I reaffirm my availability to elaborate on any of those papers Manar Shahrouri MD FCCP

<https://www.atmos-chem-phys.net/17/12813/2017/acp-17-12813-2017.pdf>



Impact of agricultural emission reductions on fine-particulate matter and public health

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Abstract. A global chemistry-climate model has been used to study the impacts of pollutants released by agriculture on fine-particulate matter (PM_{2.5}), with a focus on Europe, North America, East and South Asia. Simulations reveal that a relatively strong reduction in PM_{2.5} levels can be achieved by decreasing agricultural emissions, notably of ammonia (NH₃) released from fertilizer use and animal husbandry. The absolute impact on PM_{2.5} reduction is strongest in East Asia, even for small emission decreases. Conversely, over Europe and North America, aerosol formation is not immediately limited by the availability of ammonia. Nevertheless, reduction of NH₃ can also substantially decrease PM_{2.5} concentrations over the latter regions, especially when emissions are abated systematically. Our results document how reduction of agricultural emissions decreases aerosol pH due to the depletion of aerosol ammonium, which affects particle liquid phase and heterogeneous chemistry. Further, it is shown that a 50 % reduction of agricultural emissions could prevent the mortality attributable to air pollution by ~ 250 000 people yr⁻¹ worldwide, amounting to reductions of 30, 19, 8 and 3 % over North America, Europe, East and South Asia, respectively. A theoretical 100 % reduction could even reduce the number of deaths globally by about 800 000 per year.

1 Introduction

Atmospheric aerosol particles are a major constituent of ambient air and have a large impact on atmospheric chemistry, clouds, radiative transfer and climate and also induce adverse human health effects that contribute to mortality (IPCC, 2013; Lelieveld et al., 2015). Particulate matter (PM) with an aerodynamic diameter smaller than 2.5 µm (PM_{2.5}) contributes to air pollution through intricate interactions between emissions of primary particles and gaseous precursors, photochemical transformation pathways and meteorological processes that control transport and deposition.

As shown by Lelieveld et al. (2015) and Bauer et al. (2016), agricultural emissions play a leading role in the formation of PM_{2.5} in various regions of the world, for example in central and eastern Europe. Agricultural emissions are mostly related to animal husbandry and fertilizer use and to a lesser extent also to the burning of crop residues (Aneja et al., 2008): around 10 % of worldwide biomass burning emissions can be ascribed to agricultural activities (Doering et al., 2009b). The general importance of agricultural emissions for air quality was also previously identified by a number of studies (e.g., Zhang et al., 2008; Tsimpidi et al., 2007; Megaritis et al., 2013) and recognized through environmental policies, (e.g., the establishment of ceilings for national emissions for ammonia by the European Union Clean Air Program).

The dominant trace gas emitted by agricultural activities is ammonia (NH_3). Around 80–90 % of the atmospheric NH_3 emissions in industrialized regions are from the agricultural sector (Sotiropoulou et al., 2004; Lamarque et al., 2011; van Vuuren et al., 2011a, b). NH_3 is formed and released during the decomposition of manure and organic matter, mostly from animal farming and the associated manure storage and field application, with an additional contribution from (synthetic) nitrogen fertilizer use. NH_3 is a toxic gas at very high concentrations, with a pungent smell that irritates the eyes and respiratory system. NH_3 is also a major alkaline gas in the atmosphere and plays an important role in neutralizing acids in the aerosol and cloud liquid phase, forming ammonium sulfate and ammonium nitrate (ammonium salts) (Behra et al., 2013). Therefore NH_3 contributes to secondary aerosol formation and the overall particulate matter burden, and decreases the acidity of the aerosols, which in turn increases the solubility of weak acids (e.g., HCOOH , SO_2). The aerosol pH plays an important role in the reactive uptake and release of gases, which can affect ozone chemistry, particle properties such as hygroscopic growth and scattering efficiency of sunlight and deposition processes (Zhang et al., 2007; Thornton et al., 2010; Pathak et al., 2011).

Tsimpidi et al. (2007) showed that a 50 % reduction of NH_3 emissions would lead to a 4 and 9 % decrease in $\text{PM}_{2.5}$ over the eastern USA in July and January, respectively. The reduction of NH_3 emissions was found to be the most effective $\text{PM}_{2.5}$ control measure for the winter period over the eastern USA compared to similar reductions of SO_2 , NO_x and VOC emissions (Pinder et al., 2008; Tsimpidi et al., 2007, 2008; Karydis et al., 2011). Megaritis et al. (2013) and Bessagnet et al. (2014) found that over Europe the reduction of NH_3 emissions is the most effective control strategy used to mitigate $\text{PM}_{2.5}$ in both summer and winter, mainly due to a significant decrease of ammonium nitrate. Further, De Meij et al. (2009), showed that reducing the NH_3 emissions from agriculture by 50 % could result in a decrease of $\text{PM}_{2.5}$ concentrations up to $2.4 \mu\text{g m}^{-3}$ over the Po Valley region (Italy). This confirms the finding of de Meij et al. (2006), who showed that for short-lived species like NO_x and NH_3 , short-term fluctuations of the emissions play an important role in the formation of nitrate aerosol. According to Wang et al. (2011), NH_3 emissions contribute 8–11 % to $\text{PM}_{2.5}$ concentrations in eastern China, which is comparable to the contributions of SO_2 (9–11 %) and NO_x (5–11 %) emissions. However, the air quality benefits of controlling NH_3 emissions could be offset by the potential enhancement of aerosol acidity. Weber et al. (2016) showed that, despite the large investments in sulfur dioxide emission reductions, the acid/base gas particle system in the southeastern USA is buffered by the partitioning of semivolatile NH_3 , making the pH insensitive to SO_2 controls. Several studies have been performed on the impact of NH_3 on aerosol nitrate (Pye et al., 2009; Heald et al., 2012; Schaap et al., 2004; Pinder et al., 2007; Holt et al., 2015) and sulfate (Redington et al., 2009;

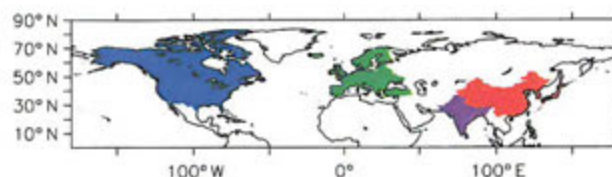


Figure 1. Regions addressed in this study, i.e., North America (blue), Europe (green), South Asia (purple) and East Asia (red).

Paulot et al., 2016; Wang et al., 2011), mostly with a regional rather than a global view.

As $\text{PM}_{2.5}$ has been clearly associated with many health impacts, including acute lower respiratory infections (ALRI), cerebrovascular disease (CEV), ischaemic heart disease (IHD), chronic obstructive pulmonary disease (COPD) and lung cancer (LC) (Burnett et al., 2014). Due to its strong contribution to the $\text{PM}_{2.5}$ mass, control strategies in NH_3 emissions could possibly reduce the mortality attributable to air pollution, and air quality policy in Europe does indeed include ceilings for NH_3 emissions (Kuklinska et al., 2015). Studies on $\text{PM}_{2.5}$ reduction due to NH_3 control have been performed regionally both for Europe (Brandt et al., 2013) and the USA (Paulot and Jacob, 2014; Muller and Mendelsohn, 2007), while a detailed analysis on the global scale was performed by Lee et al. (2015), who showed the importance of ammonia as a contributor to mortality attributable to air pollution. Nevertheless, Lee et al. (2015) assumed an ammonia reduction of 10 %, and the health effects were linearized around the present-day concentrations. As the exposure-response functions, linking $\text{PM}_{2.5}$ to mortality attributable to air pollution, are highly nonlinear at relatively low concentrations, the mortality reduction estimation could change drastically for strong reductions of ammonia emissions. Therefore, in this work, more aggressive reductions are studied (see Sect. 2).

Furthermore, there is a need to not only investigate the impact of NH_3 emission reductions on $\text{PM}_{2.5}$ concentrations, but also account for particle acidity and aerosol composition. The goal of this work is to understand the impact of global agricultural emissions on model-simulated $\text{PM}_{2.5}$ concentrations, the effects on aerosol pH and the potential consequences for human health, with a focus on four continental regions where air quality limits and guidelines for $\text{PM}_{2.5}$ are often exceeded, i.e., North America, Europe, South and East Asia. North America is defined as the region that encompasses the USA and Canada; Europe is represented by the European continent (including Turkey) excluding Russia; South Asia includes India; Sri Lanka, Pakistan, Bangladesh, Nepal and Bhutan; while the East Asia region includes China, North and South Korea and Japan (see Fig. 1).

This work may also support policy actions aimed at controlling ammonia emissions, e.g., formulated in the European

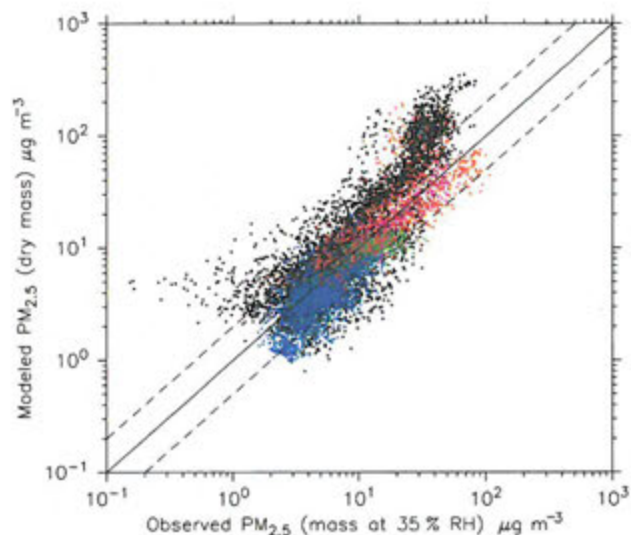


Figure 2. Scatter plot of observed and modeled yearly averaged concentrations of $\text{PM}_{2.5}$ (in $\mu\text{g m}^{-3}$). The colors denote the regions, i.e., blue is North America, green is Europe, purple is South Asia and red is East Asia. Black are locations outside these regions.

Union Clean Air Program (<http://www.consilium.europa.eu/en/policies/clean-air/>), which sets ceilings for national emissions for sulfur dioxide, nitrogen oxides, volatile organic compounds, fine-particulate matter and ammonia.

2 Methodology

In this study the EMAC (ECHAM5/MESSy Atmospheric Chemistry) model version 1.9 was used. EMAC is a combination of the general circulation model ECHAM5 (Roeckner et al., 2006, version 5.3.01) and the Modular Earth Submodel System (Jöckel et al., 2005, MESSy, version 1.9). Extensive evaluation of the model can be found in Jöckel et al. (2006), Pozzer et al. (2007, 2012a), Pringle et al. (2010a) and de Meij et al. (2012a). ECHAM5 has been used at the T106L31 resolution, corresponding to a horizontal resolution of $\sim 1.1 \times 1.1^\circ$ of the quadratic Gaussian grid and with 31 vertical levels up to 10 hPa in the lower stratosphere. The model setup is the same as that presented by Pozzer et al. (2012a, b) and is briefly summarized here. The anthropogenic emissions are for the year 2010 from the EDGAR-CIRCE (Döring et al., 2009a, c, Emission Database for Global Atmospheric Research) database, distributed vertically to account for different injection altitudes (Pozzer et al., 2009). Bulk natural aerosol emissions (i.e., desert dust and sea spray), are treated using offline monthly emissions files based on AEROCOM (Dentener et al., 2006) and hence are independent of the meteorological conditions. The atmospheric chemistry is simulated with the MECCA (Module Efficiently Calculating the Chemistry of the Atmosphere) submodel by Sander et al. (2005, 2011), and the aerosol microphysics and

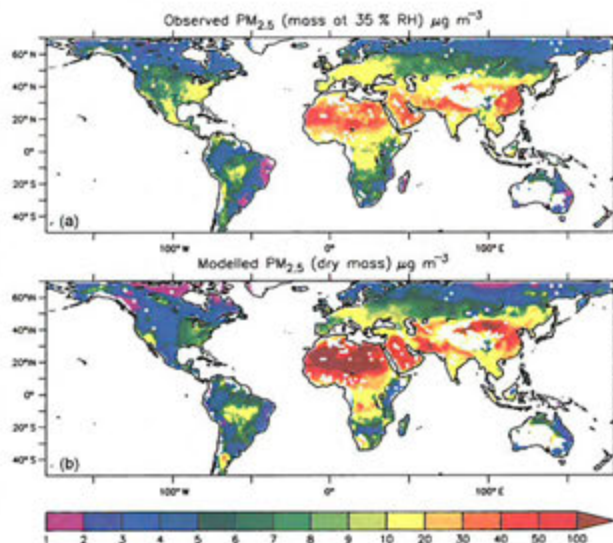


Figure 3. (a) Observed annual mean $\text{PM}_{2.5}$ from (van Donkelaar et al., 2010), (b) simulated annual mean $\text{PM}_{2.5}$ (REF simulation), both in $\mu\text{g m}^{-3}$.

gas-aerosol partitioning are calculated by the Global Modal-aerosol eXtension (GMXe) aerosol module (Pringle et al., 2010a, b). Gas/aerosol partitioning is calculated using the ISORROPIA-II model (Fountoukis and Nenes, 2007; Nenes et al., 1998a, b). Following the approach of Pozzer et al. (2012b), the year 2010 is used as the reference year, the feedback between chemistry and dynamics was switched off, and therefore all simulations described here are based on the same (binary identical) dynamics and consequent transport of tracers.

Although Pozzer et al. (2012a) evaluated the model for the same configuration and emissions database, the emissions referred to the year 2005, while here the emissions for the year 2010 are used. Therefore the model is re-evaluated for the species of interest (i.e., SO_4^{2-} , NO_3^- , NH_4^+ and $\text{PM}_{2.5}$). The model results of this study have been evaluated against satellite based $\text{PM}_{2.5}$ estimates (van Donkelaar et al., 2010); the results are shown in Fig. 2 and are summarized in Table 1, also focusing on the four regions focus of this study (i.e., North America, Europe, South and East Asia). Compared to global satellite-derived $\text{PM}_{2.5}$ concentrations this model version, with prescribed dust emissions, consistently overestimates $\text{PM}_{2.5}$ over desert areas (see Fig. 2). However, the average concentration of $\text{PM}_{2.5}$ at the surface in the regions of interest is within 30 % of the observations. For Europe and South Asia, 95 % of the simulated $\text{PM}_{2.5}$ concentrations are within a factor of 2 of the observations, while for North America and East Asia this is about 80 %.

Further, SO_4^{2-} , NO_3^- and NH_4^+ have been compared with station observations from different databases, such as from EPA (United States Environmental Protection Agency), EMEP (European Monitoring and Evaluation Programme)

Table 1. Summary of the comparison of model data to pseudo-observations of PM_{2.5} concentrations (van Donkelaar et al., 2010). OAM and MAM are the spatial arithmetic mean of the observations and of the model results (REF simulation), respectively (in $\mu\text{g m}^{-3}$), based on the annual averages. The model results were masked in locations where no observations are available. PF2 is the percentage of model results within a factor of 2 of the observations.

Region	MAM	OAM	MAM/OAM	PF2
Europe	9.00	11.96	0.75	0.95
North America	4.31	5.89	0.72	0.80
South Asia	24.49	24.95	0.98	0.95
East Asia	33.60	27.56	1.22	0.81
World	22.58	13.02	1.73	0.75

Table 2. Summary of the comparison of model data to the observations of aerosol component concentrations. OAM and MAM are the spatial arithmetic mean of the observations and the model, respectively (in $\mu\text{g m}^{-3}$). PF2 is the percentage of model results within a factor of 2 in the observations.

Species	Network	MAM	OAM	MAM/OAM	PF2
SO_4^{2-}	EPA	1.22	1.18	1.03	85.5
SO_4^{2-}	EMEP	1.36	1.70	0.79	86.5
SO_4^{2-}	EANET	1.54	3.30	0.46	88.8
NO_3^-	EPA	0.65	0.42	1.54	63.0
NO_3^-	EMEP	2.08	1.15	1.81	32.6
NO_3^-	EANET	1.11	1.37	0.81	68.3
NH_4^+	EPA	0.77	0.79	0.97	88.0
NH_4^+	EMEP	1.11	1.07	1.03	74.6
NH_4^+	EANET	0.77	0.96	0.79	80.6

and EANET (Acid Deposition Monitoring Network in East Asia) for the year 2010. The results are shown in Fig. 4 and summarized in Table 2.

While sulfate is well reproduced, with more than $\sim 85\%$ of the model results within a factor of 2 compared to the observations, nitrate is overestimated in North America and Europe by $\sim 50\%$, although nitric acid is reproduced accurately by the model (based on comparison with observations from Emmons et al., 2000; see Jöckel et al., 2006). As the nitrate concentrations seem to be on the high end of the observations, it must be acknowledged that the effect of reducing ammonia emissions from agriculture could be overestimated. On the other hand, nitrate predictions are in good agreement with the measurements over East Asia. Further, ammonium concentrations are well captured by the model, with more than 75 % of the modeled results being within a factor of 2 compared to the observations. For ammonium, the annual averages estimated from model results compare well with the observations (see Table 2). Further, as shown by Pozzer et al. (2012a), simulated seasonal cycle of ammonium concentrations compares well with the observed one, both for Europe and Asia (with temporal correlations between model results

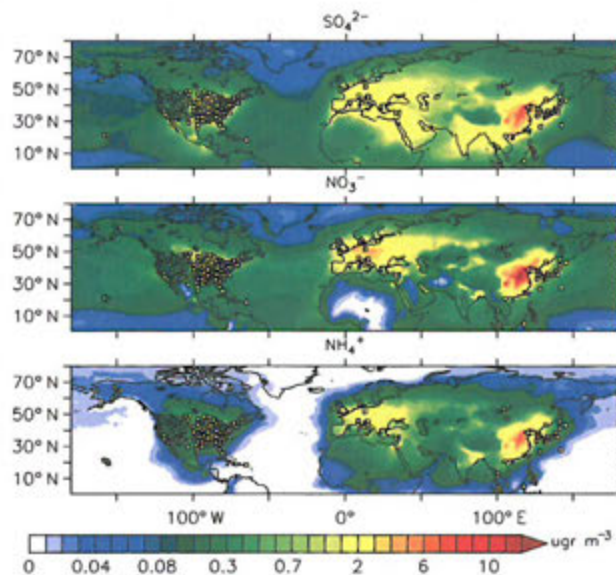


Figure 4. Simulated mean concentrations of PM_{2.5} components (SO_4^{2-} , NO_3^- and NH_4^+) in $\mu\text{g m}^{-3}$ at the surface for the year 2010, with observations from EPA, EMEP and EANET (averaged over the same period) overlaid.

and observations above 0.7 and 0.5, respectively). However, this is not the case on the east coast of the USA, where the correlation is below 0.2. As suggested by Pozzer et al. (2012a), this is due to the wrong seasonality of the ammonia emissions, driven by an underestimation of the livestock emissions, which have a maximum in summer and should account for 80 % of the annual NH_3 emissions in the region (Battye et al., 2003). The agricultural emissions of ammonia in this region in the model reproduce mostly the fertilizer application as described by Goebes et al. (2003) and therefore the real seasonality of the ammonia emissions is missing (Paulot et al., 2014). The seasonal results over the USA should hence be taken with caution. Further evaluation can be found in Pozzer et al. (2012a, b) and de Meij et al. (2012b).

In the current analysis four simulations with the EMAC model have been performed to study the impacts on PM_{2.5} components: the evaluated reference simulation (REF) and three sensitivity calculations in which the agricultural emissions have been reduced by different percentages, 50 % in simulation REF_50, 75 % in simulation REF_75 and 100 % (i.e., removing all agricultural emissions) in simulation REF_100.

The NO_x emissions from agriculture are $0.7 \text{ Tg(N) yr}^{-1}$, i.e., only $\sim 1.7\%$ of the total NO_x emissions. Most importantly, $34.3 \text{ Tg(N) yr}^{-1}$ of NH_3 are emitted by agricultural activities, such as livestock manure and N mineral fertilizers, accounting for $\sim 80\%$ of the anthropogenic and $\sim 67\%$ of the total global ammonia emissions.

Agricultural waste burning is responsible for the emissions of $0.1 \text{ Tg(S) yr}^{-1}$ of SO_2 (less than 1 % of the total SO_2 emissions) and $23.2 \text{ Tg(C) yr}^{-1}$ of CO (~ 5 % of the total CO emissions), as well as 0.4 and $1.9 \text{ Tg(C) yr}^{-1}$ of black carbon (BC) and organic carbon (OC), respectively, representing in both cases ~ 5 % of their total emissions.

Considering these emission magnitudes, the main effects of agricultural emissions on $\text{PM}_{2.5}$ are expected from NH_3 through gas-particle partitioning. Therefore, the ammonia emissions used in this work have been compared to other used databases, such as EDGARv4.3.1 (Emission Database for Global Atmospheric Research, Crippa et al., 2016) and RCP85 (Representative Concentration Pathways van Vuuren et al., 2011b, a). These data sets differ globally by ~ 15 % (40.26 , 47.49 and 40.62 Tg yr^{-1} for EDGAR-CIRCE, EDGARv4.3.1 and RCP85). This reflects the uncertainties in the emission estimates of ammonia, which could be up to 50 % on a local scale (Beusen et al., 2008). The implementation of bidirectional exchange of ammonia between the soil and atmosphere may improve the emissions from livestock, although this approach is still associated with underestimates of emissions (Zhu et al., 2015). Further, ammonia emitted from traffic is included (~ 1 % of total ammonia emissions), although toward the lower end of what has been estimated by Sun et al. (2016).

As shown by Lorenz and Steffens (1997), Webb et al. (2006) and Kai et al. (2008), a sustainable reduction of ammonia emissions between 20 to 90 % could be achieved, depending on the emission process and the methodology applied (e.g., slurry acidification, adjustment in slurry application, under-floor drying of broiler manure in buildings, replacing urea with ammonium nitrate). As the efficiencies of the abatement processes are not well established (Misselbrook et al., 2002), fixed relative reductions have been applied here to all agricultural emissions. Webb et al. (2006) showed that for the United Kingdom a moderate reduction in ammonia emission is easily affordable, while the costs are likely to increase exponentially for reductions above 25 %. The same control measures would be even more difficult to apply in countries in which livestock production is projected to largely increase (such as Asia; Delgado et al., 2001), where they should be adopted on a large scale.

3 Results and discussion

3.1 Impact on $\text{PM}_{2.5}$

In Figure 5 the relative annual average surface $\text{PM}_{2.5}$ concentration changes between simulations REF_50, REF_75, REF_100 and REF are presented. These simulations reflect the impact on $\text{PM}_{2.5}$ of policies imposing an overall decrease in the agricultural emissions of 50, 75 and 100 %, respectively. In Table 3 the predicted $\text{PM}_{2.5}$ concentrations and pH for all simulations are also listed. The largest ef-

fects are found over Europe, North America and China; the latter have a smaller relative intensity. A 50, 75 and 100 % reduction of ammonia emissions would reduce the annual and geographical mean $\text{PM}_{2.5}$ levels over Europe by $\sim 1.0 \mu\text{g m}^{-3}$ (11 %), $1.8 \mu\text{g m}^{-3}$ (19 %) and $3.1 \mu\text{g m}^{-3}$ (34 %) compared to the reference annual surface concentration of $8.9 \mu\text{g m}^{-3}$. The same relative emission decreases in North America lead to $\text{PM}_{2.5}$ concentration reductions of $0.3 \mu\text{g m}^{-3}$ (8 %), $0.5 \mu\text{g m}^{-3}$ (12 %) and $0.69 \mu\text{g m}^{-3}$ (16 %), respectively, compared to a reference annual surface concentration of $4.0 \mu\text{g m}^{-3}$. Over East Asia the absolute decrease in the annual average $\text{PM}_{2.5}$ concentration near the surface is $1.6 \mu\text{g m}^{-3}$ (5 %), $2.7 \mu\text{g m}^{-3}$ (8 %) and $4.08 \mu\text{g m}^{-3}$ (13 %) for the three scenarios. Although the absolute changes in East Asia (relative to a reference value of $31.1 \mu\text{g m}^{-3}$), are larger than the corresponding changes estimated over Europe and North America, the relative changes are smaller. In fact, the fraction of fine-particle mass that is directly ammonia sensitive (i.e., $(\text{NH}_4^+ + \text{NO}_3^-)/\text{PM}_{2.5}$) is relatively smaller in East Asia (~ 13 %) than in Europe (~ 27 %) and North America (~ 17 %), and a reduction of NH_3 emissions would mainly decrease the nitrate and ammonium components rather than the predominant components of $\text{PM}_{2.5}$ in this part of the world. Over South Asia, this effect is even more pronounced. The decreased emissions, in fact, have a negligible impact on annual average $\text{PM}_{2.5}$, reducing it by 0.62 (2 %), 0.76 (3 %) and 1.44 (6 %) $\mu\text{g m}^{-3}$, for reductions of ammonia emissions of 50, 75 and 100 %. The fraction of fine-particle mass sensitive to ammonia in this region is very low (3 %), since more than 90 % of the aerosol mass is not formed by the ammonium-sulfate-nitrate components, but rather by organic carbon (~ 45 % of the total mass) and dust (~ 35 % of the total mass).

In all four regions considered here, the impact of NH_3 emission reduction on $\text{PM}_{2.5}$ concentrations is strongest in winter. This is related to the enhanced NH_4NO_3 partitioning in the gas phase due to the higher temperatures in summer, so that a reduction of NH_3 influences the gas-phase concentrations more strongly than the particulate phase during this season. The opposite happens during the winter season. Additionally, in the REF simulation, the winter total nitrate (gas and aerosol) concentrations are somewhat higher than during the summer over Europe (5.3 vs $4.5 \mu\text{g m}^{-3}$), USA (1.5 vs $1.0 \mu\text{g m}^{-3}$), South Asia (10.0 vs 3.4) and East Asia (8.2 vs $4.5 \mu\text{g m}^{-3}$). This is related to the lower boundary layer height in winter, causing less dilution of the emitted tracers, although in the Northern Hemisphere the ammonia winter emissions are generally lower than in summertime.

The total $\text{PM}_{2.5}$ sulfate (i.e., $\text{SO}_4^{2-} + \text{HSO}_4^-$) is not directly affected by NH_3 emission reductions since it can exist in the aerosol phase in the form of ammonium sulfate or ammonium bisulfate, depending on the ammonium concentration. However, sulfate formation in the aqueous phase is limited by high acidity. As a consequence, the SO_4^{2-} concentration in $\text{PM}_{2.5}$ decreases, annually averaged, by 11, 23 and 75 %

Table 3. Average concentration of PM_{2.5} and PM_{2.5} components (in $\mu\text{g m}^{-3}$). SO₄²⁻ represents total sulfate (i.e., SO₄²⁻ and HSO₄⁻). pH average values are also listed.

Region	REF simulation					REF_50 simulation					REF_75 simulation					REF_100 simulation				
	NH ₄ ⁺	NO ₃ ⁻	SO ₄ ²⁻	PM _{2.5}	pH	NH ₄ ⁺	NO ₃ ⁻	SO ₄ ²⁻	PM _{2.5}	pH	NH ₄ ⁺	NO ₃ ⁻	SO ₄ ²⁻	PM _{2.5}	pH	NH ₄ ⁺	NO ₃ ⁻	SO ₄ ²⁻	PM _{2.5}	pH
All year																				
Europe	0.94	1.80	1.25	8.95	2.04	0.72	1.32	1.20	7.93	1.68	0.53	0.92	1.19	7.22	1.42	0.09	0.27	1.19	5.89	0.98
North America	0.27	0.45	0.56	4.07	1.60	0.20	0.30	0.55	3.73	1.43	0.15	0.21	0.54	3.58	1.31	0.06	0.11	0.54	3.38	1.09
South Asia	0.50	0.39	1.41	23.27	2.87	0.46	0.25	1.41	22.65	2.31	0.42	0.18	1.41	22.51	1.88	0.16	0.12	1.40	21.83	1.15
East Asia	1.56	2.43	2.51	31.12	1.95	1.12	1.47	2.49	29.50	1.59	0.77	0.80	2.49	28.43	1.33	0.14	0.10	2.49	27.04	0.83
World	0.10	0.21	0.32	9.23	1.84	0.08	0.16	0.32	9.05	1.75	0.06	0.13	0.32	8.98	1.68	0.02	0.10	0.32	8.89	1.53
Summer																				
Europe	0.90	1.02	1.89	7.74	2.26	0.74	0.70	1.88	7.07	1.80	0.60	0.45	1.91	6.72	1.50	0.11	0.10	1.87	5.70	1.04
North America	0.22	0.13	0.68	5.51	1.93	0.18	0.08	0.68	5.32	1.73	0.14	0.06	0.66	5.29	1.59	0.06	0.05	0.67	5.23	1.34
South Asia	0.17	0.19	0.75	16.76	2.96	0.16	0.18	0.74	16.49	2.44	0.14	0.17	0.74	16.44	2.07	0.06	0.16	0.73	16.16	1.40
East Asia	1.21	0.98	3.00	19.33	1.87	0.89	0.50	2.98	18.40	1.57	0.61	0.19	2.94	17.69	1.36	0.09	0.02	2.93	17.04	0.95
World	0.09	0.13	0.36	7.39	1.94	0.07	0.11	0.36	7.25	1.85	0.05	0.09	0.36	7.23	1.78	0.01	0.08	0.36	7.20	1.64
Winter																				
Europe	1.08	2.48	0.80	11.12	1.90	0.80	1.96	0.75	9.84	1.59	0.55	1.46	0.74	8.86	1.35	0.06	0.47	0.74	6.94	0.90
North America	0.43	1.01	0.48	3.98	1.39	0.29	0.68	0.45	3.36	1.22	0.20	0.47	0.44	2.98	1.10	0.06	0.19	0.43	2.48	0.87
South Asia	0.71	0.57	1.75	29.63	2.95	0.64	0.33	1.75	28.65	2.40	0.58	0.20	1.75	28.48	1.90	0.24	0.11	1.75	27.54	1.03
East Asia	2.07	4.25	2.00	40.16	2.18	1.53	2.96	1.91	37.96	1.73	1.06	1.84	1.90	36.27	1.39	0.18	0.21	1.93	33.61	0.72
World	0.13	0.33	0.30	11.39	1.78	0.10	0.25	0.29	11.14	1.68	0.07	0.19	0.29	11.02	1.60	0.02	0.12	0.29	10.85	1.43

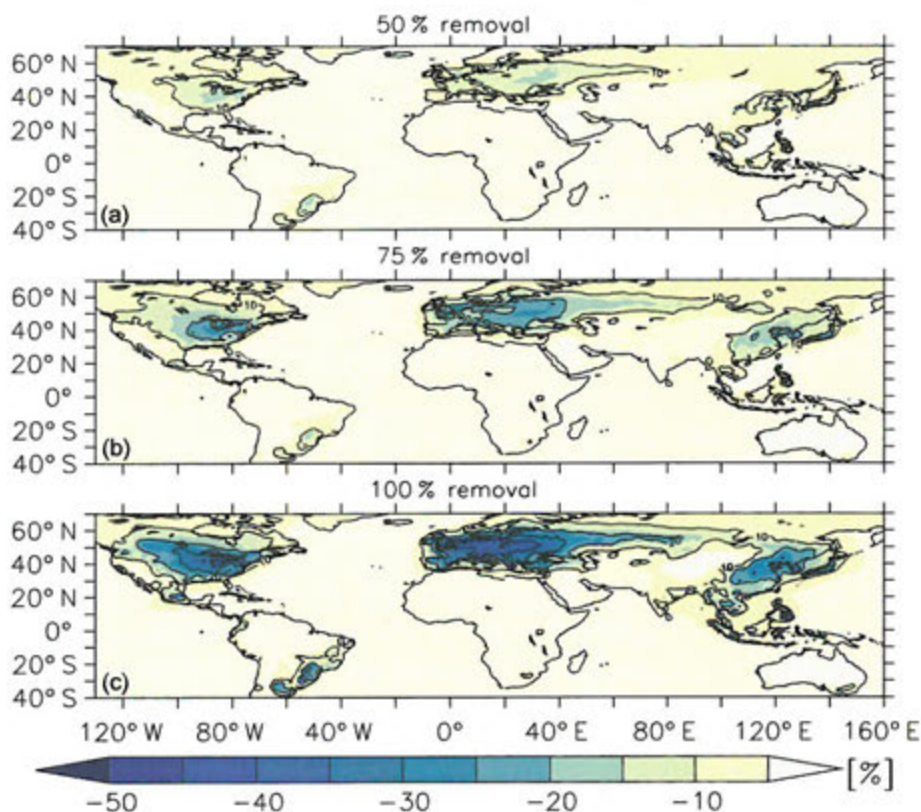


Figure 5. Relative annual average surface $\text{PM}_{2.5}$ concentration changes (in %) from the three scenarios with agricultural emissions reductions of 50, 75 and 100 % (a, b and c, respectively).

over Europe, by 15, 28 and 57 % over North America, by 3, 7 and 50 % over South Asia and by 18, 36 and 74 % over East Asia for a reduction of 50, 75 and 100 % of agricultural emissions. This is counterbalanced by an increase of HSO_4^- concentrations.

For Europe and North America, the simultaneous decrease of nitrate and ammonium makes the reduction of agricultural emissions very effective, especially in winter, in accordance with the findings of Tsimpidi et al. (2007) and Megaritis et al. (2013). Furthermore, the relationship between ammonia and $\text{PM}_{2.5}$ concentrations is not linear and is governed by the sulfate / nitrate ratio (Tsimpidi et al., 2007). Our EMAC simulations reveal that the $\text{PM}_{2.5}$ response to NH_3 emissions is more linear in winter (compared to summer), since the sulfate / nitrate ratio is generally lower.

Following Makar et al. (2009), the particle neutralization ratio (PNR, i.e., $(\text{NH}_4^+)/((2(\text{SO}_4^{2-} + \text{HSO}_4^-) + \text{NO}_3^-))$ calculations indicate that in Europe and East Asia (both with PNR equal to 0.20) ammonia concentrations must be decreased relatively more strongly than in North America and South Asia (PNR equal to 0.13 for both regions) to reach the ammonia-limited regime, i.e., before $\text{PM}_{2.5}$ can be efficiently controlled by decreasing NH_3 emissions.

On the other hand, the absolute reduction in $\text{PM}_{2.5}$ depends on the fraction of fine-particulate mass that is directly ammonia sensitive. As a consequence, Europe has the overall largest potential of reducing annual averaged $\text{PM}_{2.5}$ by strongly controlling NH_3 emissions (up to 34 %), followed by North America (up to 16 %) and East Asia (up to 13 %), while South Asia has very limited potential (up to 6 %). Thus it follows that, although the emission decrease needed in Europe to reach the ammonia-limited regime is larger than in North America, the effective gain of further reduction – once this regime is reached – is considerably larger. In East Asia, where $\text{PM}_{2.5}$ is not ammonia limited, even strong emission decreases would reduce the $\text{PM}_{2.5}$ mass by up to 13 % on the annual average.

3.2 Impact on particle pH

In addition to the significant reductions in $\text{PM}_{2.5}$ from ammonia emission controls, which are considered beneficial to human health, we note that the aerosol pH can change substantially. This has the potential of altering the particle liquid phase and heterogeneous chemistry, including reactive uptake coefficients, the outgassing of relatively weak acids and the pH of cloud droplets that grow on aerosols, which in turn affects aqueous-phase sulfate formation. Ammonia is

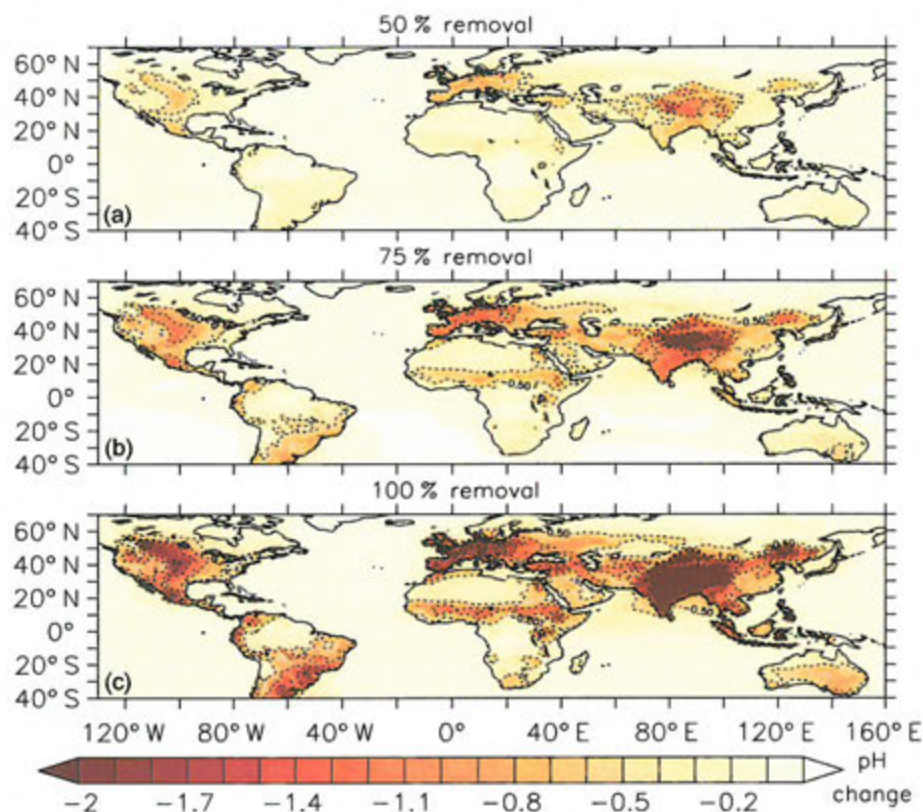


Figure 6. Absolute annual average surface aerosol pH changes (all modes) from three scenarios with agricultural emission reductions of 50, 75 and 100 % (a, b and c, respectively).

in fact the most abundant and efficient base for controlling the aerosol composition over anthropogenically influenced regions and neutralizes sulfuric, nitric and other acids.

In the REF simulation, the particles over the focal regions are highly acidic, consisting mainly of ammonium sulfate and ammonium nitrate, as also shown by Weber et al. (2016). Figure 6 illustrates how the aerosol pH can drop due to NH_3 emission decreases. Over Europe, the calculated mean aerosol pH decreases by 0.35, 0.62 and 1.05 pH units for the REF_50, REF_75 and REF_100 simulations. The calculations indicate similar decreases over East Asia (0.35, 0.62 and 1.11 pH units) and smaller decreases over North America (0.16, 0.29 and 0.51 pH units), while the largest decreases are present over South Asia (0.56, 0.99 and 1.72 pH units). Over South Asia, the impact of ammonia emissions reduction on pH is the largest (see Fig. 6) despite the relatively small impact of the same changes on $\text{PM}_{2.5}$. This is due to the high sulfate concentrations, which are neutralized in decreasing order by the presence of ammonium in the three sensitivity simulations. The pH of $\text{PM}_{2.5}$ is therefore more sensitive to ammonia emissions (and its atmospheric concentrations) than sulfate, as shown by Weber et al. (2016). This increase of acidity for reduced ammonia emissions would

have a strong influence on halogen activation and aerosol-gas equilibrium of weak acids in the atmosphere.

Contrary to what was found for $\text{PM}_{2.5}$, the reduction of pH is larger in summer than in winter. This is due to the lower concentrations of ammonia in the aerosol phase in summer (see Sect. 3.1), i.e., with relatively low neutralization capability in this season. Therefore, any further reduction of ammonia emissions would strongly reduce the neutralization potential and therefore increase even more drastically the acidity of the particles.

It should be mentioned that in the present calculations the chemical impact of alkaline desert dust is not taken into account, which can contribute significantly to $\text{PM}_{2.5}$ over areas downwind of the deserts (Karydis et al., 2016), e.g., over the Indian subcontinent in the dry season and over eastern China in spring (Wang et al., 2013), so that the pH effect described here is probably an upper limit. This topic is subject of a publication in preparation.

3.3 Impact on public health

From the simulated $\text{PM}_{2.5}$ concentrations, the mortality attributable to air pollution has been calculated following the method of Lim et al. (2013) and described in detail in Lelieveld et al. (2015). The exposure-response func-

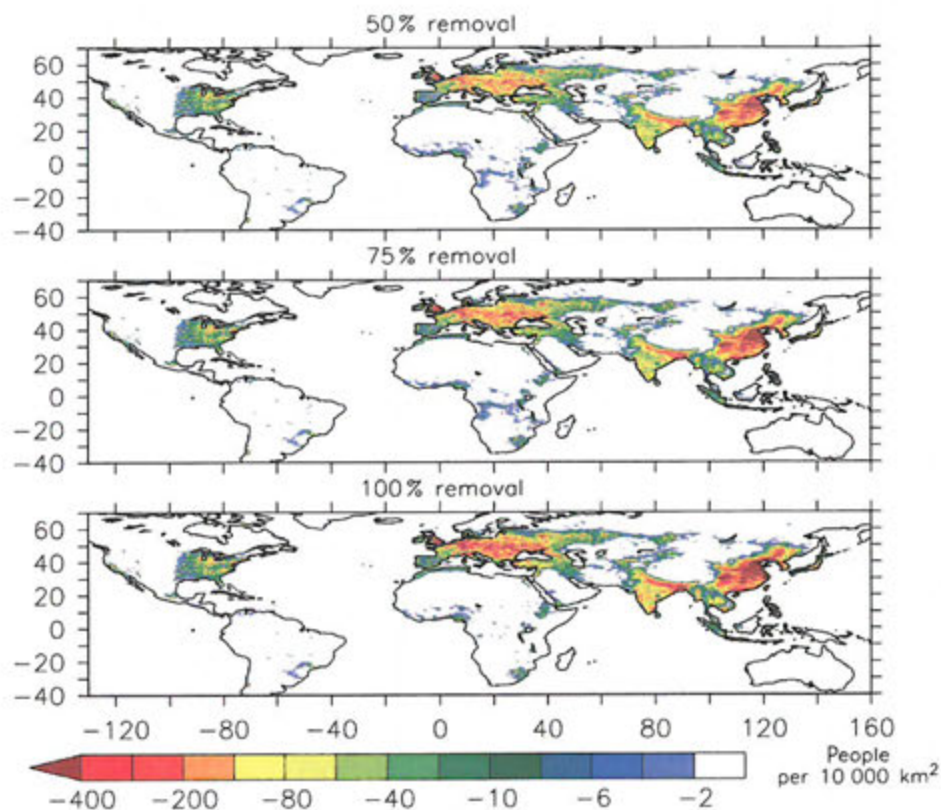


Figure 7. Annual average mortality attributable to $\text{PM}_{2.5}$ concentration changes (in people/10 000 km^2) from the three scenarios with agricultural emissions reductions of 50, 75 and 100 % (a, b and c, respectively).

Table 4. Mortality attributable to air pollution in 1000 people yr^{-1} . In parenthesis the minimum–maximum range.

Region	REF		REF_50		REF_75		REF_100	
	average	range	average	range	average	range	average	range
Europe	277	(148–414)	225	(107–361)	176	(66–313)	55	(9–165)
North America	54	(21–100)	38	(11–81)	26	(6–65)	14	(4–39)
South Asia	778	(410–1140)	753	(396–1107)	750	(395–1102)	696	(365–1030)
East Asia	1381	(607–1929)	1275	(553–1812)	1195	(514–1719)	1037	(447–1527)
World	3155	(1523–4603)	2905	(1375–4313)	2739	(1280–4123)	2353	(1106–3619)

tions of Burnett et al. (2014) are used, which shows how fine-particulate matter is associated with health impacts, through chronic obstructive pulmonary disease (COPD), acute lower respiratory infections (ALRI), cerebrovascular disease (CEV), ischaemic heart disease (IHD) and lung cancer (LC). Here mortality attributable to $\text{PM}_{2.5}$ at 50 % relative humidity has been estimated; thus it does not account for ozone-related mortality through COPD, which is ~ 5 % of the total mortality attributable to air pollution (Lelieveld et al., 2015). The model results were interpolated to the finer grid of the population map (Center for International Earth Science Information Network, CIESIN) and, due to the coarse model resolution used in this study, it is expected to have an underestimation of exposure in urban areas. As

discussed in the supplement of Lelieveld et al. (2015), an uncertainty range of about ± 50 % is estimated for the mortality attributable to air pollution. The results, presented in Table 4 and Fig. 7, show that a reduction of 50 % in agricultural emissions could have a large impact on air-pollution-related mortality, reducing it worldwide by ~ 8 %, i.e., affecting 250 000 people yr^{-1} (95 % confidence interval (CI): 148–290). North America would benefit from a large relative change, reducing the number of deaths by ~ 30 % (16 000 people yr^{-1} ; 95 % CI: 10–19), followed by Europe (~ 19 %, 52 000 people yr^{-1} ; 95 % CI: 41–53) and East Asia (~ 8 %, 105 000 people yr^{-1} ; 95 % CI: 53–116), while almost no effects are found over South Asia (~ 3 %, 25 000 people yr^{-1} ; 95 % CI: 14–33). The relatively large effect in North America

is explained by the shape of the integrated response function (Burnett et al., 2014), which predicts a steep change in the attributable fraction at relatively low $\text{PM}_{2.5}$ concentrations. If it were possible to fully phase out agricultural emissions, the global reduction of $\text{PM}_{2.5}$ -related mortality would reduce by about 801 000 people yr^{-1} (95 % CI: 417–984). In Europe the number would be reduced by about 222 000 (95 % CI: 139–249), in North America by 40 000 (95 % CI: 17–61), in East Asia by about 343 000 per year (95 % CI: 159–401) and in South Asia by 82 000 per year (95 % CI: 45–110) (Table 4).

Ammonia reduction policies should consider the intricate and nonlinear effects through gas-aerosol partitioning and multiphase chemistry (including aerosol pH changes), and therefore a coherent decrease of ammonia, nitrogen and sulfur emissions is recommended. A coupled reduction of NH_3 and acid precursor emissions (e.g., SO_2) cannot only limit the decrease in aerosol pH but can also lead to a more efficient reduction of $\text{PM}_{2.5}$ concentrations than an NH_3 emission control alone, as shown by (Tsimpidi et al., 2007). In the electronic supplement, a table showing the changes in mortality for the top 100 most populated countries is presented. Consistently with the results of Lee et al. (2015), central and eastern European countries would benefit strongly from agricultural emission reductions, drastically decreasing the per capita air-pollution-related mortality. This can be seen also in Fig. 5, as the strongest relative changes in $\text{PM}_{2.5}$ due to agricultural emissions reduction are found in central and eastern Europe, where a 50 % emission reduction would decrease mortality attributable to air pollution by ~ 15 –20 %.

It must be emphasized that, although many epidemiological studies have linked long-term $\text{PM}_{2.5}$ exposure to public health outcome, it is yet unclear whether any particular aerosol components and/or source categories are predominantly responsible for air-pollution-related mortality. The debate is open and firm conclusions of a specific relationship have not been reached (Harrison and Yin, 2000; Reiss et al., 2007), although it is expected that some aerosol components may be more toxic than others (Shiraiwa et al., 2012; Mar et al., 2006; Ito et al., 2006).

4 Conclusions

Pinder et al. (2007) showed that in North America emission controls of SO_2 and NO_x are likely to be very costly and probably less efficient than decreasing agricultural emissions. Therefore, the regulation of ammonia emissions from agricultural activities offers the possibility of relatively cost-effective control policies for $\text{PM}_{2.5}$. Our model simulations indicate that a 50 % decrease of ammonia emissions could reduce the annual, geographical average near-surface $\text{PM}_{2.5}$ concentrations up to ~ 1.0 (11 %), 0.3 (8 %), 1.6 (5 %) and 0.6 (2 %) $\mu\text{g m}^{-3}$ in Europe, North America, East Asia and South Asia, respectively. The reduction can even be larger in winter (up to ~ 1.3 (11 %), 0.6 (15 %), 2.2 (5 %) and 1.0

(3 %) $\mu\text{g m}^{-3}$, respectively) when particulate ammonium nitrate concentrations are typically higher than in summer.

Our model simulations underscore the strong nonlinearity that plays a role in the sulfate-nitrate-ammonia system, which affects the efficiency of $\text{PM}_{2.5}$ controls, especially in summer when the sulfate/nitrate ratio is high. A strong reduction of $\text{PM}_{2.5}$ in response to NH_3 emission regulation is expected once the ammonia-limited regime is reached. As a result, the possible $\text{PM}_{2.5}$ reduction could be as large as ~ 34 and ~ 17 % in Europe and North America, respectively. Our results also suggest that ammonia emission controls could reduce the particle pH up to 1.5 pH units in East Asia in winter and more than 1.7 pH units in South Asia, theoretically assuming complete agricultural emission removal, which could have repercussions for the reactive uptake of gases from the gas phase and the outgassing of relative weak acids.

Furthermore, the global mortality attributable to $\text{PM}_{2.5}$ could be reduced by ~ 250 000 (95 % CI: 148–290) people yr^{-1} worldwide by decreasing agricultural emissions by 50 %, with a gain of 16 000 (30 %), 52 000 (19 %), 25 000 (3 %) and 105 000 (8 %) people yr^{-1} in North America, Europe, South and East Asia, respectively. A total phase-out of agricultural emissions would even reduce the mortality attributable to air pollution worldwide by about 801 000 people yr^{-1} (25 %), in Europe by about 222 000 people yr^{-1} (80 %), in North America by about 40 000 people yr^{-1} (74 %), in South Asia by about 82 000 people yr^{-1} (10 %) and in East Asia by about 343 000 people yr^{-1} (25 %). These strong impacts are related to the nonlinear responses in both the sulfate-nitrate-ammonia system and the exposure-response functions at relatively low $\text{PM}_{2.5}$ concentrations.

Therefore, emission control policies, especially in North America and Europe, should involve strong ammonia emission decreases to optimally reduce $\text{PM}_{2.5}$ concentrations as well as further reductions in sulfur and nitrogen oxides emissions to avoid strong acidification of particles.

Data availability. The data from all model integrations are available from the authors upon request.

The Supplement related to this article is available online at <https://doi.org/10.5194/acp-17-12813-2017-supplement>.

Competing interests. The authors declare that they have no conflict of interest.

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Charlotte Nagel

From: Cullen Peltier <cpeltier@ledgeviewwisconsin.com>
Sent: Wednesday, May 30, 2018 10:51 AM
To: Charlotte Nelson
Subject: Fwd: Follow up from Ledgeview Farms Meeting

Sent from my iPad

Begin forwarded message:

From: Lee Adams <lee.adams82@gmail.com>
Date: May 30, 2018 at 10:25:48 AM CDT
To: pjdanen@ledgeviewwisconsin.com,
rvanrossum@ledgeviewwisconsin.com, kgeurts@ledgeviewwisconsin.com,
cpeltier@ledgeviewwisconsin.com, mdanen@ledgeviewwisconsin.com
Subject: Follow up from Ledgeview Farms Meeting

Dear Chairman Danen and Supervisors Van Rossum, Geurts, Peltier, and Danen -

I attended last night's meeting and thought it was both educational and informative. Although, I previously stood in clear opposition to the proposed manure pit and herd expansion plans the meeting provided even more insight into the reasons for my opposition. I want to express my support of the opinions and facts put forth by Mr. Wolff, Mr. Schneider, Mr. Cheslock, Mrs. Schillinger, and Mr. Shahroui. I want to also express a concern that was not brought up last night - that of the long-term consequences if and when the farm ceases operations. It would seem to me that either the proposed pit would remain in place and increase the likelihood of environmental implications if left unchecked or the taxpayers of Ledgeview would be held responsible for the removal and cleanup of the site. I believe that with the information shared and the expressed beliefs of the vast majority of our citizens you will do what is right for the town and its citizens and have the resolve to stand by that decision regardless of any future opposition to the upcoming vote.

Regards,
Lee Adams
611 Marble Rock Circle

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Lee Adams
920.366.9920
lee.adams82@gmail.com

Charlotte Nagel

From: Cullen Peltier <cpeltier@ledgeviewwisconsin.com>
Sent: Wednesday, May 30, 2018 10:57 AM
To: Charlotte Nelson
Subject: Fwd: Ledgeview Farms Manure Pit

Sent from my iPad

Begin forwarded message:

From: Matthew Karman <mkarman@midwestexpansion.com>
Date: May 21, 2018 at 1:40:25 PM CDT
To: pdanen@ledgeviewwisconsin.com,
rvanrossum@ledgeviewwisconsin.com, kgeurts@ledgeviewwisconsin.com,
cpeltier@ledgeviewwisconsin.com, mdanen@ledgeviewwisconsin.com
Subject: Ledgeview Farms Manure Pit

Town Board Chairman and Members:

I'm sending this email today in hopes that on Tuesday, May 29, 2018 that the five of you will vote against the application for the proposed manure pits by Ledgeview Farms. I normally don't get too involved in voicing my opinions in these public issues as I tend to believe the elected officials were elected for because they should have the municipality's best interests in mind. I do believe that in this case since this issue was dealt with last year, in the best interest of the public. I realize that there are a lot of concerns being raised by both sides of this argument ranging from property values on the homeowners' side to the right to earn a living on the farm's side. What is causing me to reach out today is quite simply the health aspect of such a pit this close to residential neighborhoods. When we built our home in 2015, we considered it our dream home where our twin 4 year old's would be able to grow up while attending a great school district. Those twins are now 7 and love playing outside more than almost anything. I can't imagine having to worry everyday about what gases they would be ingesting with such a large pit right down the street. There are numerous studies about the dangers of such a pit this close to residential neighborhoods. This is something that keeps me up at night as well as many others. I know that state law may not allow your decision to hold should you turn the application down. That situation could make you think it would just be easier to grant the permits since there could be a lawsuit to follow if you turned it down. I urge you to continue to make the right decision and not the easy one. You've shown that you know what the right decision is once before, I'm just asking that you do it again. Ledgeview Farms is trying to make the easy decision. Installing a pit instead of other, safer options is the easy way for them. They've also proven to not really care about the health of others as they've had numerous violations in the past that haven't been remedied. With that documented history, the idea that they could install such a large pit in a residential area that is only self-monitored is maddening. Hopefully that is a fight for a different day at a different level, hopefully the permit application is turned down next week.

Thank you for your time.

Matthew, Kara, Makena and Kane Karman
2456 Copper Lane

Charlotte Nagel

From: Phil Danen <pjdanen@ledgeviewwisconsin.com>
Sent: Wednesday, May 30, 2018 2:07 PM
To: Jeanne McKenna
Cc: cnagel@ledgeviewwisconsin.com
Subject: Re: Ledgeview Farms Manure Pit

Thanks for your input. Your email will be entered into the record and we will have a decision at our next meeting on Monday. We're doing everything we can.

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

On May 30, 2018, at 12:45 PM, Jeanne McKenna <jeannemck@gmail.com> wrote:

Dear Mr. Danen, Ms. Van Rossum, Mr. Geurts, Mr. Peltier, and Mr. Danen:

I am writing to express my extreme opposition to the proposed manure pit by Ledgeview Farms.

My address is 3645 Beachmont Rd. My family and I moved here in June of 2015. For all of the reasons you already know, my #1 concern is health. My husband and I have four children ages 5-14. I will not reiterate all the reasons a manure pit is dangerous to health, but respiratory/airborne issues are a primary concern for us. Our 8-year-old son has Crohn's disease and is on a daily immunosuppressant. Because of this, his immune system is suppressed and can get sick more easily than the average child. We are terrified what the gases and bacteria from a manure pit would do to him.

We bought our home with the purpose of having a safe and healthy neighborhood. Not knowing that the farm has been in compliance with their farming for several years, we thought we were in a great spot. Having a manure pit so close to our neighborhood would severely change that for the worse.

Thank you for your time. I trust that you are working diligently to do what is best for the health and safety for the residents of Ledgeview.

Sincerely,
Jeanne McKenna
317-735-5734

Charlotte Nagel

From: Phil Danen <pjdanen@ledgeviewwisconsin.com>
Sent: Friday, June 01, 2018 8:22 AM
To: Tracy Adams
Cc: cnagel@ledgeviewwisconsin.com; sburdette@ledgeviewwisconsin.com
Subject: Re: Manure pit

Ms Adams,

Thanks for your input. Your email will be entered into the record and we will have a decision at our next meeting on Monday. We're doing everything we can.

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

On May 30, 2018, at 4:11 PM, Tracy Adams <mgwidt1@yahoo.com> wrote:

Please accept the email in opposition to the request by Ledgeview Farms LLC, [3870 Dickinson Rd, De Pere WI 54155](#) for a WPDES permit. I live very near to the proposed area that Ledgeview Farms is requesting to place an open manure pit which happens to be a densely populated residential area. I am 100% supporter of small business ventures expanding their operations for profitability when meeting the restrictions developed by local governments and health agencies. I see the economical benefits as well as the agricultural benefits. I grew up in DePere and have been blessed to have many friends who own and operate farms. My late husband's family farmed their entire lives. I have an appreciation for all their hard work and relentless hours it takes to run a farm. I also have an appreciation for rules and regulations—that is why I am opposed to Ledgeview Farms gaining approval for the manure pits. I believe you will find that Ledgeview Farms has not been a good neighbor which raises a great deal of concern for the health, welfare and safety for those of us living in this area.

If they cannot Abide by the current regulations in place with the permitted size they were approved for (894 cattle) then why are we going to ignore all of their violations and permit them to add to the acreage that is all ready non compliant? Does our justice system state to violate and reward—no it is violate and you will have consequences! I am asking you what you feel is fair consequences for their 9+ years of continuous violations? I have enclosed a few that were shared at the town meeting held 5/29/18.

- In 2008, WDNR staff documented that Ledgeview Farms met the definition of a CAFO but never obtained a WPDES permit.
- On February 19, 2009, the WDNR issues Ledgeview Farms a Notice of Violation for failure to obtain WPDES permit coverage for a large CAFO.
- The USEPA documented unauthorized discharged of manure and process wastewater on April 18, 2013 and again on April 9, 2015 into a nearby tributary. USEPA

cited several violations of the Clean Water Act even if the farm was operating under a WPDES permit.

- In 2013, USEPA cited Ledgeview Farms for again exceeding 1,000 animal units on site and for not applying for, nor receiving WPDES or WDNR permits.

- On September 26, 2013, USEPA issued an administrative Order to Ledgeview Farms for its facilities. As part of this Order, Ledgeview Farms was required to submit to EPA a Permit Compliance Plan by December 27, 2013. On March 13, 2014, USEPA notified Ledgeview Farms by letter that EPA had not received the Permit Compliance Plan.

- Ledgeview Farms constructed a 5M gallon waste storage facility in 2015 without approval of the WDNR or local (Town of Ledgeview) permits. Application for permits were still not submitted as of September 2017.

- On November 29, 2016, USEPA informed Ledgeview Farms of their intent to file a Civil Administrative Complaint for violations of the Clean Water Act.

- On several occasions, Ledgeview Farms knowingly grew their herd size but did not take any steps to ensure compliance with state or federal requirements.

- The 13M gallon manure pit that is proposed in their application would be located 270 feet from the Lime Kiln Road right-of-way. The setback requirement for the Town of Ledgeview is 1,320 feet. In addition, the current setback minimum listed for Siting Rules for ATCP 51 is 350 feet with a proposed recommendation under consideration of a setback of 1,400 feet.

- Ledgeview Farms has not proposed installing a permanent cover for the proposed facility to reduce or eliminate odor impacts to neighborhood residences.

- Ledgeview Farms owns hundreds of acres within one mile of its current location that is in a much less populated area and appears to be able to meet setback requirements.

- In a recent study which focused on ground water quality in Kewaunee County (immediately after several private wells were contaminated with E.coli) by Dr. Mark Borchardt- USDA Agricultural Researcher, his team found an association between animal waste storage facilities (manure lagoons) and the presence of coliform bacteria and nitrates in the drinking water. Furthermore, they concluded there is a significant likelihood- far greater than the state-wide average of high nitrated and coliforms within 2,500 feet of a waste storage facility.

The information above is partial list of the issues I have discovered regarding the request by Ledgeview Farms to install a manure pit in our backyards. I find it very troubling that with the number of violations, non-compliance issues and pure disregard for conducting themselves in a civil manner, that the DNR would even consider a request from Ledgeview Farms for any type of expansion. Please help to protect the health and well-being of the citizens who live nearby to ensure they can always drink clean water and avoid harmful toxic gases such as those experienced in the Kewaunee communities.

What is there plan on spreading the manure held in the pit—how many other residents will be adversely affected by the poor business and ethical decisions of Ledgeview Farms

Sincerely
Tracy Adams

Sent from my iPhone

Charlotte Nagel

From: Phil Danen <pjdanen@ledgeviewwisconsin.com>
Sent: Friday, June 01, 2018 8:23 AM
To: Steve Harty
Cc: kristin.harty@gmail.com; sburdette@ledgeviewwisconsin.com;
cnagel@ledgeviewwisconsin.com
Subject: Re: Ledgeview Farms Permit Request

Mr and Mrs Harty,

Thanks for your input. Your email will be entered into the record and we will have a decision at our next meeting on Monday. We're doing everything we can.

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

On May 30, 2018, at 2:35 PM, Steve Harty <steve.harty@greenbayymca.org> wrote:

Ms. Marquez,

Please accept the email in opposition to the request by Ledgeview Farms LLC, 3870 Dickinson Rd, De Pere WI 54155 for a WPDES permit. My wife and I live very near the proposed area that Ledgeview Farms is requesting to place an open manure pit which happens to be a densely populated residential area. Having grown up on a farm, I understand and appreciate the value that farmers bring to our society. I also believe that Wisconsin farms and urban areas can coexist with mutual benefit and respect. In this case, however, I believe you will find that Ledgeview Farms has not been a good neighbor which raises a great deal of concern for the health, welfare and safety for those of us living in this area.

More specifically,

- In 2008, WDNR staff documented that Ledgeview Farms met the definition of a CAFO but never obtained a WPDES permit.
- On February 19, 2009, the WDNR issues Ledgeview Farms a Notice of Violation for failure to obtain WPDES permit coverage for a large CAFO.
- The USEPA documented unauthorized discharged of manure and process wastewater on April 18, 2013 and again on April 9, 2015 into a nearby tributary. USEPA cited several violations of the Clean Water Act even if the farm was operating under a WPDES permit.
- In 2013, USEPA cited Ledgeview Farms for again exceeding 1,000 animal units on site and for not applying for, nor receiving WPDES or WDNR permits.
- On September 26, 2013, USEPA issued an administrative Order to Ledgeview Farms for its facilities. As part of this Order, Ledgeview Farms was required to submit to EPA a Permit Compliance Plan by December 27, 2013. On March 13, 2014, USEPA notified Ledgeview Farms by letter that EPA had not received the Permit Compliance Plan.

- Ledgeview Farms constructed a 5M gallon waste storage facility in 2015 without approval of the WDNR or local (Town of Ledgeview) permits. Application for permits were still not submitted as of September 2017.
- On November 29, 2016, USEPA informed Ledgeview Farms of their intent to file a Civil Administrative Complaint for violations of the Clean Water Act.
- On several occasions, Ledgeview Farms knowingly grew their herd size but did not take any steps to ensure compliance with state or federal requirements.
- The 13M gallon manure pit that is proposed in their application would be located 270 feet from the Lime Kiln Road right-of-way. The setback requirement for the Town of Ledgeview is 1,320 feet. In addition, the current setback minimum listed for Siting Rules for ATCP 51 is 350 feet with a proposed recommendation under consideration of a setback of 1,400 feet.
- Ledgeview Farms has not proposed installing a permanent cover for the proposed facility to reduce or eliminate odor impacts to neighborhood residences.
- Ledgeview Farms owns hundreds of acres within one mile of its current location that is in a much less populated area and appears to be able to meet setback requirements.
- In a recent study which focused on ground water quality in Kewaunee County (immediately after several private wells were contaminated with E.coli) by Dr. Mark Borchardt- USDA Agricultural Researcher, his team found an association between animal waste storage facilities (manure lagoons) and the presence of coliform bacteria and nitrates in the drinking water. Furthermore, they concluded there is a significant likelihood- far greater than the state-wide average of high nitrated and coliforms within 2,500 feet of a waste storage facility.

The information above is partial list of the issues I have discovered regarding the request by Ledgeview Farms to install a manure pit in our backyards. I find it very troubling that with the number of violations, non-compliance issues and pure disregard for conducting themselves in a civil manor, that the DNR would even consider a request from Ledgeview Farms for any type of expansion. Please help to protect the health and well-being of my children and grandchildren who also live nearby to ensure they can always drink clean water and smell fresh air.

Thank you,

Steve and Kristin Harty
739 Iron Horse Way

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Friday, June 01, 2018 5:11 PM
To: cnagel@ledgeviewwisconsin.com
Cc: VWishart@staffordlaw.com; LKonopacki@staffordlaw.com
Subject: Fwd: Ledgeview Farms Waste Containment System Safety System Recommendations
Attachments: Untitled attachment 00015.pdf; Untitled attachment 00018.htm

Char, please include this correspondence in the record.
Thank you.

Begin forwarded message:

From: Michael Tesar <michaelgtesar@yahoo.com>
Date: June 1, 2018 at 3:46:24 PM CDT
To: Phil Danen <pjdanen@ledgeviewwisconsin.com>, Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Subject: Ledgeview Farms Waste Containment System Safety System Recommendations
Reply-To: Michael Tesar <michaelgtesar@yahoo.com>

Good afternoon Phil and Sarah,

Please find attached a statement of background and functional descriptions of subsequent alarming systems. I present this as a concerned and affected neighbor.

Best regards,

Mike

Ledgeview Farms Lower Farm Waste Impoundment Structure Monitoring System

Background: Ledgeview Farms has a CAFO (Concentrated Animal Feeding Operation) west of County V in Brown County WI and is proposing a waste impoundment structure (pit) about the 3500 block on Lime Kiln Rd (County V). The management of the CAFO resides without visual surveillance, approximately 4100' from the lower farm which is considered largely unmanned and unmonitored except for daily maintenance of the resources on the site. The CAFO is not currently planning on onsite spill remediation equipment, spill containment personal protective equipment (PPE) and machinery based on current Application Emergency Response documentation. No secondary containment area is planned.

Emergency Events:

Pit Overtopping: The ~ 13MM Gal. pit is approximately 300' uphill from a residential neighborhood and is bounded by a navigable waterway, private property boundaries (300'), karst formations, and roadway ditches, which limits the ability of the CAFO staff to re-direct or impound a large (>6') spill event in a timely or effective manner. The pit is designed with some additional reserve capacity but design parametrics are minimally limited to only 25-year precipitation events (by current Code) to which the pit structure is designed. The system is designed to flow gravitationally from the site collection areas without valving to provide isolation of flow in the event of an overtopping situation. The submitted application's emergency response plan for a large overtopping situation is:

- Divert Flow away from the close bounding conditions identified above.
- Call the DNR with a Plan and Schedule for clean-up.
- Contact a qualified HAZMAT contractor to licensed remediation of the site.

In this situation, time of response is of the essence due to close proximity to the subdivision to the North and downhill from the pit. This specific situation is non-typical in that it is not remotely located where the bulleted response plan above may be considered acceptable. A continuous remote and local level monitoring system with audible and visual alarms should be considered to reduce the risk of overtopping of an unmonitored system.

Hazardous Gas Monitoring and Alarming: The retainment of leachate and manure in an anaerobic environment generates gases considered to be lethal to humans and livestock in high concentration levels. Methane, ammonia, and hydrogen sulfide are the 3 main gases present. Methane and ammonia have densities less than air and hydrogen sulfide density is greater than air. Methane and hydrogen sulfide are flammable under the proper conditions. The majority of these gases lie in anaerobic layers below the surface of the pit. As bacterial decomposition continues to take place, emissions of the above gases into ambient air will always be present. The highest ambient concentrations of these gases can be expected during pit basin disturbances typically encountered during agitation of the pit for pumping. They will also be present under an overtopping, high wind, or breaching event with the gravitational direction of flow of both the waste and hydrogen sulfide (density > air) is to the north toward the

residential neighborhood. Numerous deaths have been recorded to both humans and livestock within 75-100' of the pit top of berm under the proper conditions. Hydrogen sulfide cannot be detected through olfactory means above a specific concentration level and death is similar in speed and effectiveness as cyanide poisoning.

To protect CAFO employees, a remote and local monitoring hazardous gas detection system with audible and visual alarming should be employed for safety with proper PPE to enable quick exit from the affected area. From an industrial perspective, location of an open process of this nature being situated in close proximity a residential area would be considered a high-risk situation as the ability to remediate, control, treat, or contain the hazardous gas before it crosses into the public domain is extremely limited due to distance from property lines and the direction of general prevailing winds in the area. Remote visual and audible alarms located offsite in the surrounding community should be considered.

Functional Description of Level Monitoring and Alarming System:

Provide 2oo3 (two out of three voting) analog transmitter measurement for continuous level reading, and high, high-high, and rate of change alarms for surveillance of pit level. Indications shall be available locally and remotely on a continuous display basis from at least one area that is humanly monitored on a 24-hr. basis. Additional exception based alarming and remote monitoring of current conditions shall be provided through personal communications device apps. System shall be designed to fail safe with high logic. Loss of power generates an alarm and triggers corrective action for devices to move to a fail-safe condition. Spring loaded fail to close ball valves should be considered to stop flow into the pit under a fault condition to prevent overtopping. A local PLC type controller with wireless or hard phone line communication to remote PLC is recommended. Loss of communication shuts off flow of waste to the pit and generates an alarm. Level transmitters shall be smart with HART 7 communications to provide CAFO staff current operating condition and fault reporting capabilities to quickly diagnose and provide information of imminent failure of components to allow for scheduled maintenance. Electrical wiring within 50' of pit shall be NFPA Class 1 Div. 2 rated. Conduit shall be PVC coated rigid in construction throughout the site. Intrinsic barriers may be considered as an alternative to Class 1 Div. 2 wiring requirements. Alarm system shall be tested weekly to verify functionality.

Functional Description of Hazardous Gas Monitoring and Alarming System:

Provide multi-point fail safe hydrogen sulfide sensor/transmitters with analog output. Indications shall be available locally and remotely on a continuous display basis from at least one area that is humanly monitored on a 24-hr. basis. Additional exception based alarming and remote monitoring of current conditions shall be provided through personal communications device apps. System shall be designed to fail safe with high logic. Loss of power generates an alarm and triggers corrective action for devices to move to a fail-safe condition. A local PLC type controller with wireless or hard phone line communication to remote PLC is recommended. Loss of communication shuts off flow of waste to the pit and

generates an alarm. Gas sensor/transmitters shall be smart and fail safe to provide CAFO staff current operating condition and fault reporting capabilities to quickly diagnose and provide information of imminent failure of components to allow for timely replacement of sensors and maintenance. Sensors shall be replaced based on manufacturers recommended replacement schedule for the given application. Electrical wiring within 50' of pit shall be NFPA Class 1 Div. 2 rated. Conduit shall be PVC coated rigid in construction throughout the site. Intrinsic barriers may be considered as an alternative to Class 1 Div. 2 wiring requirements. Alarm system shall be tested weekly to verify functionality. A minimum of five sensors shall be used (4) oriented circularly at 90 deg. Increments. (1) Due North, center and top of berm, (1) Due East, center and top of berm, (1) Due South, center and top of berm, and (1) Due West, center and top of berm, all 24" off top of berm. (1) 12" above 100% full level, 50' up on pumping ramp.

Public Domain Notification System: This system should provide both audible and visual alarms at a point 30' above ground level to alert general public of potential danger and should be extended to the perimeter of a minimum 350'. This system shall be included in the weekly alarm system functionality testing. Windsocks shall be affixed to said poles to aid in determining escape routes.

Local residents will need to be notified and trained for proper response to an alarm situation. Warning signs shall be placed on Lime Kiln to alert public of potential for danger when alarms are activated.

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Monday, June 04, 2018 10:51 AM
To: Charlotte Nagel
Subject: FW: Ledgeview Farms

For the record please.

Sarah K. Burdette
Administrator
Town of Ledgeview



3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com



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From: Phil Danen [<mailto:pjdanen@ledgeviewwisconsin.com>]
Sent: Monday, June 04, 2018 10:55 AM
To: Barb Gilling <baabsgilling@gmail.com>
Cc: sburdette@ledgeviewwisconsin.com
Subject: Re: Ledgeview Farms

Thanks for your input. Your email will be entered into the record and we will have a decision at our next meeting on Monday. We're doing everything we can.

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

On Jun 4, 2018, at 10:50 AM, Barb Gilling <baabsgilling@gmail.com> wrote:

In case your emails reject my business email account, I also wanted to forward this from my personal one:

Begin forwarded message:

From: Barb Gilling <barb@pdqcarwash.com>
Date: June 4, 2018 at 10:38:08 AM CDT
To: "'baabsgilling@gmail.com'" <baabsgilling@gmail.com>
Subject: FW: Ledgeview Farms

From: Barb Gilling
Sent: Monday, June 04, 2018 10:09 AM
To: 'pjdanen@ledgeviewwisconsin.com' <pjdanen@ledgeviewwisconsin.com>
Cc: 'rvanrossum@ledgeviewwisconsin.com' <rvanrossum@ledgeviewwisconsin.com>; 'kgeurts@ledgeviewwisconsin.com' <kgeurts@ledgeviewwisconsin.com>; 'cpeltier@ledgeviewwisconsin.com' <cpeltier@ledgeviewwisconsin.com>; 'mdanen@ledgeviewwisconsin.com' <mdanen@ledgeviewwisconsin.com>
Subject: Ledgeview Farms
Importance: High

Dear Mr. Danen,

I will try and keep this short as I know you are a very busy man.

I am a long-time resident of Ledgeview, previously on Hawthorne Heights since 1994 and now at 2273 Fox Den Ct, just down the road from the proposed Manure Pit. We choose to live here because we love being outside the city, enjoying a quieter neighborhood, yet still close enough to everything we need. When we purchased our home on Fox Den Ct in 2016, we fell in love with the neighborhood, never in our wildest dreams would we have looked twice at this area had we known that the farmers field just up the road was soon to be a 13 million gallon animal waste storage.

As I reread Dustin Wolff's summary regarding the history and noncompliant practices and violations I wonder how this has even happened. How does someone construct a waste storage facility without permits or become a CAFO right under our noses (without legally becoming a CAFO) and then construct a 73,000 square foot facility and no one from the Town investigates to see what this farm is up to? I was shocked to also see at the same time the Town has benefited from the growth in residential development -- \$75 million --- all the while this is happening and none of us are aware of these illegal activities???

So health risks aside, which literally scare the hell out of me -- not just health issues, but potential risk of death from poisonous gases, etc. --this comes down to an operation that has no regard for the law nor respect for it, much less their neighbors, never has and never will. To think that one would even consider allowing this farm more power to disobey the law, not comply with DNR regulations, etc., is ridiculous.

The worst thing however is the fact that the residents of this Town (including those that built and are paying taxes on the additional \$75 million in homes constructed during this same time frame) put its trust in all of you and you have a fiduciary responsibility to all of us. And if this permit is approved I feel that you have failed in your responsibility to protect those that elected you to do just that.

I ask that you do the right thing and vote No.

Thank you for your time

Barbara J. Gilling

2273 Fox Den Ct

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Monday, June 04, 2018 11:39 AM
To: Charlotte Nagel
Subject: FW: Ledgeview Farms Manure Pit

For the record.

Sarah K. Burdette
Administrator
Town of Ledgeview



3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com



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From: Phil Danen [<mailto:pjdanen@ledgeviewwisconsin.com>]
Sent: Monday, June 04, 2018 11:04 AM
To: rek <rek@new.rr.com>
Cc: sburdette@ledgeviewwisconsin.com
Subject: Re: Ledgeview Farms Manure Pit

Thanks for your input. Your email will be entered into the record and we will have a decision at our next meeting on Monday. We're doing everything we can.

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

On Jun 4, 2018, at 8:44 AM, rek <rek@new.rr.com> wrote:

Chairman, Supervisors,

We want to share our objection over the location of the proposed Ledgeview Farms Manure Pit project. Our family lives at 2422 Copper Lane, about 600-800 feet from the proposed manure pit on Lime Kiln Road. The proximity brings great concerns over the hazards associated with such a manure pit. During a recent (May 29th, 2018) Ledgeview Town meeting, experts on hydrology and microbiology were brought in to share insight into potential ground water and airborne hazards and contaminants associated with manure storage. The various bacteria, viruses, and protozoa sound pretty scary. The close proximity of the storage facility to residential space also creates a potential for physical dangers as well. During the same town meeting, an engineering expert reported on the history of Ledgeview Farms lack of conforming and abiding by the Wisconsin DNR and Federal EPA rules and regulations associated with being a CAFO sized facility. The violations date back to 2007. The engineer reported that to date, the Farm is still not in compliance with Wisconsin DNR and Federal EPA guidelines. This track record leaves little faith that the farm will be a good neighbor moving forward.

We are unable to attend tonight's meeting, however, we would like to go on record as opposing the issuance of any permits or further farm development on the proposed Lime Kiln road site.

Respectfully,

Robert & Kim Kissel
2422 Copper Lane
Green Bay, WI 54311
920-660-3902



Virus-free. www.avq.com

June 5, 2018

At its June 4, 2018 meeting, the Town of Ledgeview Town Board denied the applications of Ledgeview Farms, LLC, for a Livestock Facility Siting Approval and Conditional Use Permit. The Town Board denied the applications with a unanimous vote of those present. At this meeting, the Town articulated basic findings of fact and conclusions of law supporting its decision and stated it would issue a written decision conforming to this ruling on June 5, 2018. The Town provides the following written findings of fact and decision as required by Wis. Stat. s. 93.90(4)(c), Wis. Admin. Code s. ATCP 51.34(3), and other applicable law.

Town Regulatory Authority

1. The Town Board of the Town of Ledgeview (the "Town") has specific authority, power, and duties pursuant to Wis. Stats. §§ 60.62, 61.35, 62.23, and other statutes specified in chapter 135 of the Town ordinances, and by its adoption of village powers under Wis. Stats. § 60.10, to zone certain areas in the Town, to regulate, prohibit and restrict construction, alteration, erection, and enlargement of certain structures and buildings in the Town, and to regulate and control certain uses, activities, businesses, and operations in the Town. Town Ordinances § 135-2. Pursuant to this authority, the Town requires approval by the Town of new or expanded livestock facilities in the Farmland Preservation District in the Town, subject to the requirements of Wis. Stat. § 93.90 and Wis. Admin. Code ch. 51, and requires approval of a conditional use permit ("CUP") by the Town for certain agricultural and agricultural-related uses. See Town Ordinances ch. 135 Article X., AG-FP.
2. The majority of the requirements imposed by the Town that are applicable to a new or expanded livestock facility are identical to and adopted by reference from the state livestock siting standards promulgated in Wis. Admin. Code ch. 51. The Town has also adopted more stringent standards under Wis. Stat. § 93.90 (3) (a) 6. and (ar), based on reasonable and scientifically-defensible findings of fact that clearly show that these requirements are necessary to protect the public health and safety. To the extent that they are relevant to this decision, these standards are described in more detail below.
3. The Town initially adopted its livestock siting requirements on August 22, 2017. Town Ordinance No. 2017-08. The Town based certain requirements, in part, on a number of scientific reports that the Town Board considered when acting on its ordinance. On November 21, 2017, based on recommendations from the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP), the Town readopted its entire livestock siting ordinance and added specific citations to the previously-referenced supporting documents, along with other modifications.

Application Timeline

4. Ledgeview Farms, LLC, submitted an initial "Livestock Facility Siting Application" to the Town on December 6, 2017, and submitted an amended siting application on February 2, 2018. In these applications, Ledgeview Farms sought, among other things, the Town's approval of the expansion of Ledgeview Farms' operations to a total population of 3,483 animal units. On February 5, 2018, Ledgeview Farms submitted an application for a CUP for "the construction of a waste storage facility and waste transfer systems" as required by Town ordinance § 135-81 B. (9). The Town's ordinances also require Ledgeview Farms to submit a CUP application, on the form prescribed by the Town, for Town approval of the proposed expansion of its operations. Town Ordinance § 135-81 B. (19).¹

5. The Town notified Ledgeview Farms that its applications were complete on April 20, 2018. In this determination, the Town explained that the completeness determination did not "constitute an approval of Ledgeview Farms' proposed facility or constitute a determination that the application is approvable." Within 14 days of issuing that determination, the Town distributed notice of these applications to adjacent landowners as required under Wis. Admin. Code § 51.30 (6). On May 16, 2018, the Town Zoning and Planning Commission held a public meeting to consider the applications from Ledgeview Farms. On May 29, 2018, the Town Board held a public meeting to consider these applications.

Compliance History

6. On September 12, 2007, the Wisconsin Department of Natural Resources ("DNR") sent correspondence to Ledgeview Farms indicating that the farm was illegally operating with more than 1000 animal units. A Wisconsin pollution discharge elimination system (WPDES) permit is required for a livestock facility with an animal population above that threshold, which is considered a "concentrated animal feeding operation" or "CAFO" under state and federal law.² Ledgeview Farms, however, had never applied for a WPDES permit. DNR indicated that Ledgeview Farms was operating illegally and that they were required to submit an application for a WPDES permit at least 12 months prior to operating with 1000 or more animal units. DNR sent multiple letters to Ledgeview Farms in 2007 which apparently went unanswered.

7. DNR continued to attempt to engage Ledgeview Farms through 2008, seeking compliance with the WPDES permitting requirements for a CAFO. On July 15, 2008, DNR demanded that Ledgeview Farms submit an application for a WPDES permit. DNR met with Ledgeview Farms on October 14, 2008 to discuss the permit process and sent a follow-up letter the next day requesting the farm's nutrient management plan and reiterating that Ledgeview Farms was required by law to obtain a WPDES permit. In this October 15, 2008 correspondence, DNR pointed out the following: "[m]anure from the outdoor

¹ To date, a CUP application for Ledgeview Farms' proposed expansion of its operations has not been filed with the Town. Despite this, and in the interest of rendering an expeditious decision for Ledgeview Farms, the Town finds that Ledgeview Farms has provided the Town with sufficient information for the Town to proceed with this decision. However, should this decision of the Town be reconsidered or overturned in any part or for any reason, the Town asks that Ledgeview Farms submit this CUP application on remand, and for the purpose of avoiding any further delay, will consider this application submitted to the Town on the date that the CUP application for the waste facility was submitted.

² A WPDES permit strictly regulates the discharge of pollutants from a facility, such as animal waste and process waste, and imposes monitoring and reporting requirements and compliance schedules appropriate to the facility.

lot area at the heifer (site) is actively discharging into a waterway"; the outdoor lots at the main farm required increased management to prevent runoff that may be discharging to the waterway; and the farm lacked the requisite six-month manure storage. On October 21, 2008, DNR received an incomplete WPDES permit application from Ledgeview Farms documenting that the farm was illegally operating with 1,380 animal units. DNR required that Ledgeview Farms complete and submit an Environmental Analysis Questionnaire. DNR stated that because Ledgeview Farms was already over 1,000 animal units and did not have a WPDES permit, it was operating in violation of state and federal law. There is no record that Ledgeview Farms took any action that was required by the DNR at that time to move toward compliance.

8. On February 19, 2009, DNR issued Ledgeview Farms a Notice of Violation (NOV) for operating as a CAFO without a required WPDES permit. On March 19, 2009, Ledgeview Farms attended a mandated DNR Enforcement Conference regarding the NOV. At this Enforcement Conference, Ledgeview Farms agreed to depopulate its herd to reduce its operation below 1,000 animal units to become compliant with state and federal law. On May 13, 2009, DNR followed up with correspondence to Ledgeview Farms explaining that the farm had failed to address the runoff concerns at its facility. DNR required Ledgeview Farms to immediately install best management practices ("BMPs") to control runoff. DNR continued to follow up with the farm through 2009 regarding the number of animal units on the farm and its noncompliant runoff control measures. It is assumed that Ledgeview Farms depopulated to below 1,000 animal units sometime thereafter, although the Town has no information that confirms that assumption.

9. Sometime after 2009, after all of the interaction with the DNR described above that underscored the illegality of doing so, and in direct defiance of the promise that Ledgeview Farms made to the DNR to keep its herd below 1,000 animal units, Ledgeview Farms again added significant numbers of animals, illegally exceeding the 1,000 animal unit threshold for at least the second time without applying to DNR for a WPDES permit. This second illegal expansion was only documented because of enforcement action taken by the United States Environmental Protection Agency (EPA). The EPA became involved because of a complaint filed in the spring of 2013. The person who contacted the EPA had walked through knee-deep manure while hiking along a tributary to area surface waters that lies adjacent to the Headquarters Site. On April 18, 2013, EPA conducted its first site inspection. EPA identified numerous deficiencies at the farm, which would have been violations of the Clean Water Act even if the farm had been operating under a WPDES permit, including the following:

- At the Home Site (Headquarters Site in the applications submitted to the Town), septic looking waste and process wastewater was leaking out of a hole in the east concrete pit and flowing to the tributary.
- At the Home (Headquarters) Site, manure and process waste water from the feed bunker and the open lot west of the Milk Cow Barn did not have containment and was flowing north through pathways that led to the tributary on the west end of the site.
- At the Home (Headquarters) Site, animals had direct access to the tributary on the east end of the site.
- At the Satellite (Heifer Site on the applications submitted to the Town), manure and process wastewater runoff generated at the open lot and feed bunkers were flowing east to the ditch. The ditch and culverts facilitated the flow of process wastewater to a tributary.

On September 13, 2013, EPA issued Administrative Order V-W-13-AO-22 to Ledgeview Farms for its facilities at 3875 Dickinson Road and 3688 County Road V (Lime Kiln Road). On September 26, 2013,

EPA sent Ledgeview a letter providing a Compliance Schedule as an aid to understand the compliance deadlines of the Order. As part of this Order, Ledgeview Farms was required to submit to EPA a Permit Compliance Plan by December 27, 2013. On March 13, 2014, EPA notified Ledgeview Farms by letter that EPA had not received the Permit Compliance Plan required under the Order. On March 18, 2014, Brown County Land and Water Conservation (BCLWC) staff emailed documents pertaining to a Permit Compliance Plan to EPA at the request of Ledgeview Farms. In correspondence dated July 18, 2014, EPA disapproved of the draft Permit Compliance Plan submitted and required revisions to the draft Permit Compliance Plan.

10. On April 9, 2014, Ledgeview Farms finally, for the first time, submitted an application for a WPDES permit to DNR. Throughout 2014, DNR corresponded with the farm regarding deficiencies in that application. DNR never received the information necessary to complete the application. In March 2015, Ledgeview Farms submitted plans to DNR for a new 5 million gallon manure storage lagoon at the Headquarters Site. DNR determined that the plans were incomplete because they did not provide sufficient overflow protection for the proposed facility. Ledgeview Farms withdrew the plans in May 2015 and never filed a resubmission. In the summer of 2015, despite not obtaining DNR approval, which they clearly knew was required, Ledgeview Farms began construction of the 5 million gallon animal waste storage facility. Town permits that were required for the construction of this facility were never applied for or issued. This manure storage facility was completed in late 2015 or early 2016 and it remains not only unpermitted, but also noncompliant because it still lacks required emergency overflow protections.

11. On November 29, 2016, EPA informed Ledgeview Farms of its intent to file a civil administrative complaint for violations of the Clean Water Act (CWA). In this correspondence, EPA asserted that Ledgeview Farms had violated the CWA by "having seven unauthorized discharges of manure and process wastewater and having one unauthorized discharge of construction sediment to Waters of the United States." EPA indicated that it planned to propose a penalty against Ledgeview Farms of up to \$128,000 for these violations.

12. In February 2017, Ledgeview Farms once again submitted to DNR an application for a WPDES permit. To date, this permit has not been granted. Ledgeview Farms continues to operate as a CAFO without an approved WPDES permit.

13. DNR has also confirmed to the Town that Ledgeview Farms has violated state stormwater laws during the 10 years that the DNR has been trying to bring this operation into compliance. The Town has requested documentation on these violations but has not yet received such documentation.

Requested Approvals under Ledgeview Farms' Applications

14. The application for a CUP and the Livestock Facility Siting Application submitted by Ledgeview Farms to the Town request Town approval of the following activities/structures:

- a. Expansion of the farm livestock operations to 3,483 animal units at the Headquarters and Heifer Sites.
- b. Construction of a new, approximately 13 million gallon animal waste storage facility at the Heifer Site.
- c. Expansion of the feed storage area at the Heifer Site.

- d. Construction of a feed storage and animal lot leachate runoff management system at the Heifer Site.
- e. Construction of a yard runoff transfer system to collect leachate and contaminated runoff and transfer it to the proposed waste storage facility at the Heifer Site.

In addition, Town approval is required for the following existing but noncompliant practices or facilities:³

- a. The existing noncompliant concentrated animal feeding operations of 1,084 milking and dry cows, 770 heifers, and 838 steers (approximately 2,818 animal units) at the Headquarters and Heifer Sites.
- b. The 5 million gallon waste storage facility constructed in 2015 without permits or approvals at the Headquarters Site.

Ledgeview Farms did not obtain the required approvals and permits for these illegal practices and facilities from the DNR prior to the adoption of the Town's livestock siting ordinance. Therefore, Town approval of these is required as part of the livestock siting application process. Ledgeview Farms may not build unapproved facilities and illegally grow its operation and then claim that these activities are "grandfathered" and not subject to Town approval. Similarly, any other facilities, such as livestock housing barns and feed storage facilities, which were built to allow Ledgeview Farms to expand to and operate illegally above the 1,000 animal unit threshold, are also subject to this application process.

Town Decision – Livestock Siting Application

Based on the facts and findings in sections 1-14 above and the reasoning described below, **the Town hereby denies Ledgeview Farms' Livestock Facility Siting Application.** The Town finds that all of its reasons for denial stand alone as sufficient, separate support for its decision.

15. Under Wis. Stat. § 93.90 (3) (a) 5., the Town finds that the proposed expanded livestock facility violates multiple state standards promulgated by DATCP under Wis. Admin. Code ch. 51, including for all of the following reasons:

- a. The existing, illegally-constructed 5 million gallon waste storage facility at the Headquarters Site does not include the emergency overflow protections required under Wis. Admin. Code § ATCP 51.18 (3), as documented by the DNR.
- b. There exist numerous instances of manure and process waste discharges from manmade conveyances into waters of the state, in violation of the CWA "no discharge" requirements for permitted facilities and in violation of Wis. Admin. Code § ATCP 51.20, according to information documented by the EPA.
- c. Existing storage facilities show clear signs of structural failure and/or structural leakage in violation of Wis. Admin. Code § ATCP 51.18 (2), as documented by the EPA and the DNR.
- d. The Town has received no information verifying that livestock no longer have unrestricted access to streams in violation of ATCP 51.20 (7), as documented by the EPA and the DNR.

³ Pursuant to correspondence from the Attorney for Ledgeview Farms on June 1, 2018, the Town understands that Ledgeview Farms no longer proposes to construct a new freestall barn at the Heifer Site and, thus, no approval is required for that facility at this time.

- e. In addition to not meeting the Town's setback requirement as described below, the proposed new manure storage facility does not meet the 350-foot setback requirement from the road right-of-way ("ROW") under Wis. Admin. Code § ATP 51.12 (2). Ledgeview Farms asserts that it will modify its plans to move the facility further from the ROW to satisfy this requirement. However, the Town finds that it has insufficient information at this time to determine whether this facility can be properly sited in this new location, including with respect to required soil sampling and odor score impacts.

Some of the grounds for denial listed above apply to *new* facilities or *new* practices proposed by Ledgeview Farms. With respect to these matters, the application is denied under Wis. Stat. § 93.90 (3) (a) 5. because the applicant's proposal does not demonstrate compliance with state standards.

For the *current* violations listed above, Ledgeview Farms is making a unique request of the Town under the livestock siting law. This law contemplates a request from a livestock operator for approval to expand an operation that is compliant with state and federal pollution laws and that has a herd size that is either under the 1,000 animal unit threshold or is over that threshold but operating under and in compliance with a valid, approved WPDES permit. In such a case, the livestock siting law requires the Town to approve a facility's application as long as it contains sufficient credible information to show, in the absence of clear and convincing information to the contrary, that the "proposed" livestock facility meets the standards in ATP ch. 51. See Wis. Admin. Code § ATP 51.34 (1) (b). In other words, a local government must generally approve a livestock facility siting application based on *proposed* practices and construction, because there is nothing else upon which to base its decision.

In this case, however, Ledgeview Farms is asking the Town to approve an expansion *while currently operating in significant noncompliance with standards to which it is already subject*. The Town has more than *proposed* practices on which to base this decision. Without question, if the Town approves this application, Ledgeview Farms will be in noncompliance with state siting standards on day one.

Pursuant to Wis. Admin. Code § ATP 51.34 (4), the Town has clear and express authority to withdraw a livestock facility siting approval from an operation for failure to comply with applicable state standards. In this case, the Town would have the authority to *immediately* withdraw its approval of Ledgeview Farms' livestock facility siting application due to the current instances of noncompliance with state standards. It would be absurd to read Wis. Stat. § 93.90 and ATP ch. 51 to require the Town in the instant case to approve the expansion of a livestock facility, under the livestock siting law, when the Town has the authority to immediately revoke such approval *under the very same law*.⁴

16. The Town has specific statutory authority to adopt by ordinance and enforce requirements that are more stringent than state standards. Wis. Stat. § 93.90 (3) (a) 6. and (ar). Pursuant to this statutory authority, and as described above, the Town has adopted more stringent setback requirements for livestock housing structures, manure storage facilities, and contaminated runoff storage facilities, including a requirement that any new manure storage facility serving a livestock facility of the size proposed must be set back at least 1,320 feet from the property line. Town Ord. § 135-85 D. (1). The

⁴ In *Adams v. State of Wisconsin Livestock Facility Siting Board*, 2012 WI 85, ¶51, the Wisconsin Supreme Court noted that other sources of local regulatory authority over livestock facility operations do not limit the applicability of the state siting law when it comes to siting decisions. Here, however, it is the siting law itself that authorizes the Town to revoke a siting approval when state standards are not met, not another, separate source of local authority.

proposed manure storage facility proposed by Ledgeview Farms does not meet this setback requirement and, therefore, is denied.

The Town adopted these requirements prior to Ledgeview Farms' submittal of its applications. The Town's decision to impose these more stringent setback requirements in its ordinance was based on reasonable and scientifically defensible findings of fact, including numerous studies and particular excerpts from those studies adopted as findings of fact under § 135-79 D. of the Town's ordinances. These studies clearly demonstrate that the more stringent setback requirements are necessary to protect public health and safety.

A few sections of these studies are particularly relevant. The Town adopted the Report of the Livestock Facility Siting Technical Expert Committee Recommendations, dated December 21, 2010, which includes a recommendation that "[a]mong other options for managing the offsite impacts of larger livestock operations, DATCP should evaluate augmenting the current road and property line setbacks by requiring separation distance between livestock structures and neighboring occupied residences and high use buildings." The Town ordinance also adopts as a factual finding a two-year study by DATCP and DNR entitled "Final Report On Wisconsin's Dairy And Livestock Odor And Air Emission Project, dated September 2009, which includes a recommendation that "[s]eparation distance is a simple, yet effective, tool you can use to reduce impacts on [a facility's] neighbors. When planning for new facilities, and especially manure storage lagoons, site them as far from neighbors as possible"

In addition, less than a year ago DATCP proposed extending required setback distances for new manure storage facilities from the 350-foot requirement applicable under current law to a full *1,400 feet from the property line*. Even with any applicable setback reductions under that proposal for implementing the kind of odor management practices proposed by Ledgeview Farms, the setback requirement for this facility would be a minimum of 1,100 feet from the property line. The Town relied in part on the expertise of DATCP and its statutorily-required Technical Expert Committee in making these recommendations for changes to state law when it adopted its setback ordinance.

The factual findings in the Town ordinance are clearly applicable to the Ledgeview Farms applications. Ledgeview Farms is currently surrounded by numerous residences, particularly to the north and west. In its applications, Ledgeview Farms is proposing to not only expand its operations, but construct a new 13 million gallon waste storage facility at the Heifer Site. This facility would be located a mere 400 feet from the nearest resident to the north. During the Town Board public hearing, a number of Town citizens residing adjacent to the farm testified and submitted substantial documentation regarding health impacts from livestock operations that supports the Town's factual findings in its ordinance.

During the public hearing, the Town Board also heard testimony from UW-Oshkosh Geology Professor Dr. Maureen Muldoon and USDA Agricultural Researcher Dr. Mark Borchardt. Dr. Muldoon has researched groundwater flow in fractured carbonate aquifers for decades, and recent projects focused on groundwater quality in Kewaunee County and the role of groundwater in various wetlands in Door County. Dr. Borchardt is a research microbiologist for the USDA Agricultural Research Service and program leader for the Laboratory for Infectious Disease and the Environment, US Geological Survey, and Wisconsin Water Science Center. His expertise is on the measurement, fate, transport and health effects of human and agricultural zoonotic pathogens in the environment.

Research conducted by Dr. Muldoon and Dr. Borchardt focuses on the Eastern Dolomite/Silurian Aquifer. This area is characterized by a dense and universal fracture network, shallow soil surface, and little surface runoff, allowing water to easily infiltrate to the subsurface. Recharge is exceedingly rapid, and carries surface contaminants to the water table. Flow within the aquifer occurs primarily along bedding plane fractures with little to no reduction of contaminants within the aquifer. This type of a geologic setting makes an area extremely vulnerable to groundwater contamination. Dr. Muldoon concluded that some of the shallower private wells in the area around Ledgeview Farms may be particularly susceptible to contamination.

As part of their research, Dr. Muldoon and Dr. Borchardt found an association between the proximity of animal waste storage facilities such as manure lagoons and the presence of coliform bacteria (i.e. – E.coli) and nitrates in drinking water. There is a significant likelihood—far greater than the state-wide average—of high nitrates and coliforms within 2,500-feet of a waste storage facility. The chance that a well will be contaminated does not fall below the state-wide average until the distance from a waste storage facility exceeds 5,000-feet. There are a significant number of residences on private wells, many of which are especially vulnerable to contamination, within 5,000 feet of the proposed location of the new manure storage facility. Given the proximity of residences to the proposed manure storage facility, these findings clearly support a setback of at least 1,320 feet from the property line for new manure storage facilities, for the preservation of public health and safety.

Moreover, EPA has documented seven instances in which Ledgeview Farms has allowed manure and process wastewater to runoff the Headquarters and Heifer Sites. This includes an instance in which septic looking waste and process wastewater was leaking out of a manmade hole in the east concrete pit and flowing to the unnamed tributary. It is clear on its face that the discharge of manure and process wastewater into waters of the state is both a significant regulatory violation and a public health risk to persons recreating in and around area lakes and streams and consuming groundwater recharging from such surface waters.

Some of the reasons outlined above that support the decision of the Town to deny this application relate to site-specific concerns that may not apply in other areas of the state. Others reflect an improved and evolving understanding of the impacts of large livestock operations on neighboring properties generally, especially those used for residential purposes. Ledgeview Farms has incorrectly asserted that local standards adopted under Wis. Stat. § 93.90 (3) (a) 6. and (ar) *must be entirely local in character* and not generally applicable to livestock agriculture. Nothing in this statute or in Wis. Admin. Code ch. ATP 51 restricts the types of local restrictions that can be imposed in this way. To read this into the law by implication severely limits the value of the safety net that this express local authority provides to protect public health and safety as more is learned about the impacts that can arise from large-scale animal agriculture.

17. Under § 135-232 of the Town's ordinances, the Town requires that anyone who seeks approval to construct a "man-made body of water," including an animal waste storage facility or a contaminated runoff storage facility, must obtain a performance bond. The amount of the required bond is not excessive and is based on the acreage of the proposed storage facility. Ledgeview Farms has failed to provide such a bond either for the proposed manure storage facility at the Heifer Site or for the existing, unpermitted facility at the Headquarters site, and therefore the application must be denied.

Ledgeview Farms has called into question the authority of the Town to impose this requirement. The Town has two, stand-alone sources of authority to require that a bond be required by an applicant seeking to construct a manure storage facility:

- a. First, the Town has authority to adopt this requirement under its general zoning authority under Wis. Stat. §§ 60.10, 60.62, 61.35, and 62.23, and other sources of regulatory authority relating to agricultural practices, such as Wis. Stat. § 92.11. Nothing in the state's livestock siting statutes addresses performance bonds, fee restrictions, or financial requirements. Therefore, the Town's performance bond requirement is not "more stringent" than any applicable state statutory standards. To the extent that Wis. Admin. Code § ATCP 51.30 (4) purports to restrict or prohibit the Town's authority to impose this type of a requirement, that administrative rule provision is void and unenforceable. There is nothing in the livestock siting statute that authorizes or directs DATCP to prohibit bonding like that required by the Town here. In fact, DATCP's authority with respect to the conditions it can impose on applications for approval is limited to only prescribing the "information and documentation" that must be provided by an applicant. Wis. Stat. § 93.90 (2) e 1. 2011 Wisconsin Act 21 expressly restricted the ability of administrative agencies to adopt requirements that are more restrictive than statutory requirements. See Wis. Stat. § 227.11. The Attorney General has recently and repeatedly affirmed that Act 21 prohibits agencies from imposing more stringent requirements than those provided in underlying statutes, and that the Act's restrictions even apply to rules that were in existence before its enactment. See OAG-04-17 and OAG-01-16.
- b. Second, if DATCP considers its bonding restriction under ATCP 51.30 (4) (b) to be a "rule specifying standards" for livestock siting adopted under Wis. Stat. § 93.90 (2), then this standard is also necessarily subject to the specific authority of the Town to adopt a more stringent requirement by ordinance. Wis. Stat. § 93.90 (3) (a) 6. and (ar). The Town's decision to impose this requirement was based on reasonable and scientifically defensible findings of fact, including those contained in the study adopted under § 135-79 D. (7) of the Town's ordinances, which recommended bonding for manure storage facilities to ensure performance and remediation. This requirement is necessary to protect the public health and safety.

18. The Town acknowledges that the state livestock siting law was created in an attempt to bring a measure of uniformity to local approval processes for large livestock farms. However, Wis. Admin. Code § ATCP 51.34 (1) (b) does provide some authority for a local government to assess more than just the technical specifications of a proposed new or expanded livestock facility. Specifically, this provision allows a municipality to deny an application if the application does not contain "sufficient credible information to show, in the absence of clear and convincing information to the contrary, that the proposed livestock facility meets or is exempt from the standards in subch. II." In this case, given Ledgeview Farms' extensive history of disregard for federal, state, and local laws as described in detail above, its willingness to ignore its own promises made to avoid prosecution when caught in violation of the law, along with material, false statements⁵ that it has made, Ledgeview Farms has failed to present the necessary credible evidence that it meets and will meet the applicable state standards. Ledgeview

⁵ For example, in the first paragraph of its siting application, Ledgeview Farms claimed that the farm is currently "operating under a Wisconsin Pollution Discharge Elimination System (WPDES) Permit" even though the WPDES permit had not yet been issued. The DNR verified that this claim by Ledgeview Farms is not true. This appears to be a deliberate attempt by the applicant to mislead the Town, and underscores the lack of trust that the Town has in the applicant's willingness, ability, and intent to meet the requirements in its application and adhere to applicable laws.

Farms' longstanding and consistent disregard for statutory and regulatory compliance provides clear and convincing evidence that the farm will not, in fact, comply with the applicable state standards moving forward.

Therefore, the Town denies the Livestock Facility Siting Application under Wis. Admin. Code § ATCP 51.34 (1) (b) because the farm has failed to present the relevant *credible* information. To read the state livestock siting law to require approval of this application in the face of the weight of the evidence that this farm will continue to ignore laws that are in place to protect the people in this community would seriously undermine the sustainability of the siting law moving forward.

Town Decision – Conditional Use Permit

Based on the facts and findings in sections 1-18 above and the reasoning described below, **the Town hereby denies Ledgeview Farms' application for a conditional use permit for the construction of a waste storage facility and waste transfer systems and expansion of its livestock operation.**

The Town has two, separate lines of reasoning that support its denial of the CUP application. First, the facts and reasoning outlined in the previous sections of this decision support denial of the CUP application even when applying the restrictions on local control in the state livestock siting law. *See also*, Town Ord. § 135-81 B. (9). Second, because the Livestock Facility Siting Application has been denied as described above, the Town may consider whether to approve or deny the CUP for additional reasons not subject to the constraints of that law; the Town does so in the sections of this decision that follow. The Town finds that all of its reasons for denial of the CUP application stand alone as sufficient, separate support for its decision.

19. As explained above, Section 135-85D. of the Town ordinances requires that "[a] new or expanded animal waste storage facility or structure may not be located within 1,320 feet of any property line, if the livestock facility will have more than 500 animal units." Ledgeview Farms is currently operating with well over 500 animal units and, therefore, is subject to this requirement. The proposed 13 million gallon waste storage facility does not comply with this setback requirement. If it is determined by a reviewing board or judicial body that the Livestock Facility Siting Application is not deniable based on this requirement, but is deniable for one of the other reasons outlined above, then the restrictions of the livestock siting law do not apply to the decision of the Town on the CUP application. In that case, this setback would clearly have full force and effect and, therefore, the CUP is denied.

20. The purpose of the Town's Farmland Preservation District is to preserve and enhance land for agricultural uses and to incorporate and apply the livestock facility siting law requirements. As explained in detail above, Ledgeview Farms has an extensive history of noncompliance including discharge of manure and process wastewater into waters of the state. Such actions do not preserve or enhance land for agricultural uses, but, rather, degrade agricultural lands. Based on the factual findings herein, the Town denies the CUP because the proposed use by Ledgeview Farms is not consistent with the purposes of the Farmland Zoning Preservation Zoning District. *See* Town Ord. § 135-81 A. (1).

21. The proposed use and its location in the Farmland Preservation Zoning District is not reasonable and appropriate and does not consider alternative locations as required under Section 135-81 A. (2) of the Town ordinances and, therefore, is denied.

Ledgeview Farms is proposing expansion and construction of a very large new manure storage facility in close proximity to a significant number of residential properties. This location is not reasonable and appropriate for such use.

Furthermore, despite the inappropriateness of this location for the use Ledgeview Farms is proposing, Ledgeview Farms did not provide information to the Town about alternative locations for a manure storage facility or alternatives to constructing this type of manure storage facility. On behalf of the Town, Mead & Hunt consulted with Resource Engineering Associates, Inc. ("REA") in the evaluation of the design plans proposed by Ledgeview Farms and to identify potential alternatives. REA has more than 20 years of experience in providing agricultural, civil, and environmental engineering services and REA staff served on DATCP's Livestock Siting Technical Expert Committee. REA recommended that Ledgeview Farms explore alternatives to their proposal, including the following, which could be used in combination or as separate elements to comply with WDNR CAFO requirements.

- a. Ledgeview Farms owns hundreds of acres approximately one mile south of the Heifer and Headquarters sites. However, the farm has not offered any alternative sites to meet its waste storage needs. The farm's other lands to the south are located in a much less populated area and appear to be able to meet the Town setback requirements referenced above.
- b. If the proposed manure storage facility at the Heifer Site is not feasible based on the Town's Livestock Siting Ordinance limitations and other factors, the use of an alternative liquid manure storage site south of the Headquarters Site may be an appropriate option. This could involve a pipeline to/from the Heifer Site and Headquarters Site. The feasibility for this pipeline would depend on topography, bedrock, pumping losses, Town approval, DNR approval, route conflicts, and cost. Concepts for potential areas could be prepared by the Farm for consideration by the Town's consultants to promote discussion of sites consistent with the Town's Livestock Siting Ordinance objectives.
- c. Frequently, liquid manure storage locations are planned in areas where significant cropland is close by for land application so hauling can occur as time allows instead of during the busy manure application season. The objective would be to locate the storage so manure application can be by a hose drag system to limit further hauling cost and application can occur in a more time efficient manner. Multiple storage sites are also safer and reduce spill/overflow issues.
- d. The Town understands that bedpack manure is planned to be comingled with feed lot runoff and feed storage runoff. Mixing the solid and liquid wastes creates a larger liquid manure volume. Bedpack manure could be handled separately as solid manure, reducing the required volume of liquid manure storage. The odor score of the facility would have to be recalculated to determine if this is a feasible alternative.
- e. Runoff from uncovered, outdoor cattle lots creates liquid manure which, in accordance with DNR CAFO requirements, would need to be handled and stored as liquid manure. Construction of a roof over such lots and the use of absorbent bedding could further reduce the need for liquid manure storage.
- f. Heifers generating outdoor lot manure runoff or liquid manure inside housing structures may, alternatively, be relocated for contract raising at an alternative site.

- g. Feed storage leachate and runoff could be stored separately, and not combined with manure, reducing the needed capacity for liquid manure storage. Feed storage runoff can be managed differently than manure, potentially allowing for more handling options.
- h. Construction of a roof over the feed storage area at the Heifer Site that is proposed for expansion could reduce odors and protect feed quality, and reduce the need for liquid manure storage.

22. Ledgeview Farms has not presented information demonstrating that any construction taking place at the livestock facility will minimize damage to land or be repaired to the extent feasible, as required under Section 135-81 A. (5) of the Town ordinances. It therefore has failed to present any evidence to fulfill this standard and the Town denies the application for this reason.

23. There has been substantial evidence presented that Ledgeview Farms' proposed livestock facility expansion and new manure storage lagoon would have a detrimental impact on public health and safety, comfort, convenience and general welfare and would harm the aesthetic appearances and scenic values of the Town, in violation of the purposes of the Town's zoning ordinance, and for that reason the CUP application is denied. Town Ord. § 135-5. Some of the ways in which the proposal by Ledgeview Farms fails to meet this requirement are as follows:

- a. The construction of a new manure storage facility will have an impact on odor to the surrounding residential community. Numerous studies that are part of the record underlying this decision establish that odor from manure storage facilities harms public comfort and can result in serious health consequences.

There are a number of steps a livestock facility such as Ledgeview Farms could take to ameliorate odor concerns. For example, DATCP's 2009 Final Report on the Dairy and Livestock Odor and Air Emission Project concluded that installing an impermeable cover would significantly reduce near lagoon ambient concentrations of ammonia and hydrogen sulfide. Installing an impermeable cover on the manure storage lagoon effectively controlled all ambient odors that had been emitted prior to the installation of the cover (100% reduction).

- b. Information provided to the Town by Dr. Muldoon and Dr. Borchardt, described in more detail above, indicated that there is significant risk that Ledgeview Farms' livestock facility will result in groundwater and surface water contamination, to the detriment of the public health, safety, and welfare.
- c. A recent Wisconsin Department of Revenue (WDOR) property sales study found that the value of property located within 0.3-miles of a large CAFO may be reduced by 13% and the value of property located between 0.3 miles and 1 mile of a large CAFO may be reduced by 8%. There are multiple homes within 1 mile of the Ledgeview Farms site that may be impacted by this proposal.

24. The proposed use does not foster a more rational pattern of relationship among agricultural, residential, business, commercial and manufacturing uses for the mutual benefit of all, as required under the Town zoning ordinance and, therefore, the CUP application must be denied. Town Ord. § 135-5.

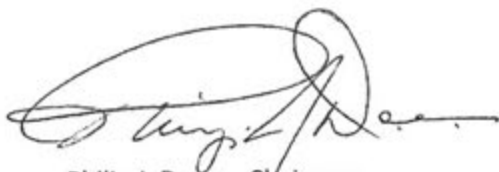
Ledgeview Farms is proposing expansion of its farming operations and construction of a new manure storage facility in close proximity to a significant number of residential properties. As explained extensively above, this would result in potential public health risks and devaluation of property, and would likely preclude additional development of residential properties. Indeed, Mead and Hunt concluded that it is likely that developers may not have invested in the nearby lands for residential development if it was known that Ledgeview Farms was operating as an unpermitted CAFO. Property owners have expressed to the Town—verbally and in writing—that they would not have purchased their homes had they known that the farm was operating at that size, much less that it was planning to get larger. Furthermore, had the Town known the long-range plans of the farm, it could have helped protect the farm from incompatible neighboring land uses. Expansion and construction of a new storage facility at this location, particularly when other locations may be available, will not foster a rational relationship between uses.

Conclusions

25. For the reasons stated above, the Town denies Ledgeview Farms' Livestock Facility Siting Application and its application for a conditional use permit. Pursuant to that decision, the Town demands that Ledgeview Farms depopulate its herd to below 1,000 animal units and bring its operation into full compliance with state and federal law prior to seeking approval to expand. Any animal units currently present at the farm above this threshold were added illegally, in direct violation of the DNR's orders, and must be depopulated.

26. Should a reviewing board or judicial body overturn this decision of the Town, it must remand this matter to the Town for further action consistent with such a ruling. To fail to do so would deny the Town the opportunity to impose appropriate conditions on the proposed activities and may impair the due process rights of Town citizens who may wish to challenge a subsequent Town decision.

27. If this Town decision is appealed to the Livestock Facility Siting Review Board, the limited scope of the review that may be undertaken by that Board and pursuant to judicial review of a Board decision under Wis. Stat. § 93.90 (5) will not encompass the range of potential legal challenges that may be filed, and will not include all potential parties who may want to bring such challenges, should the Town be directed to approve these applications. A request for the review of a livestock siting application decision by the Board is only one of a number of available challenges that may be brought following a local siting decision; potential challengers must be afforded the opportunity to choose other challenge options if a different Town decision is directed, which requires remand to the Town for subsequent action consistent with any direction provided by the reviewing body.



Philip J. Dahlen, Chairman
Town of Ledgeview



June 20, 2018

Wisconsin Department of
Agriculture, Trade, & Consumer Protection
Agricultural Resource Management Division
Bureau of Land & Water Resources
PO Box 8911
Madison, WI 53708-8911

RE: Ledgeview Farms, LLC Livestock Facility Siting Application

Greetings,

Pursuant to ATCP 51.34(5)(a) Notice to Department, please find enclosed the following:

- Ledgeview Farms, LLC Livestock Facility Siting Application of 12/06/2017, including drawings and 2017 Waste Storage Facility & Runoff Management Systems dated December 6, 2017
- Ledgeview Farms, LLC Livestock Facility Siting Amended Application of 02/02/2018
- Ledgeview Farms, LLC Nutrient Management Plan dated 2017
- Town of Ledgeview findings of fact and decision letter dated June 5, 2018
- Green Flash Drive containing an electronic version of the records listed above.

Please feel free to contact us with any questions at 920-336-3360 ext. 104 or cnagel@ledgeviewwisconsin.com.

Sincerely,

A handwritten signature in blue ink that reads "Charlotte Nagel".

Charlotte K. Nagel
Clerk

Cc: File

Enclosure

*Town of Ledgeview, WI
Thursday, August 9, 2018*

Chapter 135. Zoning

[HISTORY: Adopted by the Town Board of the Town of Ledgeview 1-4-1999. Amendments noted where applicable.]

GENERAL REFERENCES

Erosion control — See Ch. **36**.

Nuisances — See Ch. **68**.

Stormwater management — See Ch. **90**.

Uniform Dwelling Code — See Ch. 112.

Junked vehicles — See Ch. **121**.

135a Table 1 

135b Table 2 

135c Table 3 

135d Table 4 

Article I. Title, Authority and Adoption

§ 135-1. Title.

This chapter shall be known, cited and referred to as the “Town of Ledgeview Zoning Ordinance, Brown County, Wisconsin.”

§ 135-2. Authority.

[Amended 11-14-2000; 6-20-2006 by Ord. No. 2006-011]

The Town Board of the Town of Ledgeview has the specific authority, power and duties pursuant to Wis. Stats. §§ 60.62, 61.35 and 62.23 pursuant to the specific statutory sections noted in this chapter, and by its adoption of village powers under Wis. Stats. § 60.10, to zone certain areas in the Town of Ledgeview and to regulate, prohibit and restrict construction, alteration, erection and enlargement of certain structures and buildings in the Town of Ledgeview, and to regulate and control certain uses, activities, businesses and operations in the Town of Ledgeview.

§ 135-3. Adoption of chapter.

The Town Board of the Town of Ledgeview has, by adoption of this chapter, confirmed the specific statutory authority, powers and duties noted in the specific sections of this chapter and has established, by these sections and this chapter, the specific areas and the regulations and controlling of certain uses, activities, businesses and operations in the Town of Ledgeview.

Article II. Intent, Purpose and Severability

§ 135-4. Intent.

This chapter is intended to promote the orderly development of the community in accordance with the Official Town Comprehensive Plan or any of the component parts thereof.

§ 135-5. Purpose.

The Zoning Ordinance of the Town of Ledgeview, Brown County, Wisconsin, is adopted for the following purposes: to lessen congestion in the streets; to secure safety from fire, panic and other dangers; to promote and to protect the public health, safety, comfort, convenience and general welfare; to provide adequate standards of light, air and open space; to maintain the aesthetic appearances and scenic values of the Town; to prevent the overcrowding of land; to avoid undue concentration of population; to facilitate the adequate provision of transportation, water, sewerage, schools, parks and other public requirements; and to foster a more rational pattern of relationship among agricultural, residential, business, commercial and manufacturing uses for the mutual benefit of all.

§ 135-6. Severability.

If any application of this chapter to a particular structure, land or water is adjudged unconstitutional or invalid by a court of competent jurisdiction, such judgment shall not be applicable to any other structure, land or water not specifically included in said judgment.

Article III. Definitions and Word Usage

§ 135-7. Word usage.

- A. For the purpose of this chapter, words used in the present tense shall include the future; words used in the singular shall include the plural number and the plural the singular.
- B. The word "shall" is mandatory and not discretionary.
- C. The word "may" is permissive.
- D. The word "lot" shall include the words "piece," "parcel" and "plats"; the word "building" includes all other structures of every kind, regardless of similarity to buildings; and the phrase "used for" shall include the phrases "arranged for," "designed for," "intended for," "maintained for" and "occupied for."
- E. Any words not herein defined shall be construed as defined in other respective state, county and Town codes.

§ 135-8. Definitions.

Certain words and terms in this chapter are to be interpreted as defined herein:

ACCESSORY USE

A building or use which is:
[Amended 11-14-2000]

- A. Constructed or located on the same zoning lot as the principal building or use served, except as may be specifically provided elsewhere in this chapter.
- B. Clearly incidental to, subordinate in purpose to, and serves the principal use.

ADULT FAMILY HOME

A place where adults who are not related to the operator reside and receive care, treatment or services that are above the level of room and board and that may include up to seven hours per week of nursing care per resident. Adult family homes can admit and provide services to people of advanced age, persons with dementia, developmental disabilities, mental health problems, physical disabilities, traumatic brain injury, AIDS, alcohol and other drug abuse, correctional clients, pregnant women needing counseling and/or the terminally ill. Adult family homes are licensed under Ch. DHS 88, Wis. Admin. Code.
[Added 5-19-2015 by Ord. No. 2015-004]

AGRICULTURALLY RELATED RESIDENCE

A second farm residence or dwelling unit which is occupied by a person who, or a family at least one member of which, earns a majority of his or her livelihood from the farm operation. No lot split shall be required for a second farm residence located anywhere on any operating farm subject to setback, height, and other dimensional requirements.
[Added 9-6-2016 by Ord. No. 2016-017]

AGRICULTURAL LEACHATE

Any liquid material from the production area directly or indirectly used in the operation of animal feeding operation that results from any or all of the following:
[Amended 11-21-2017 by Ord. No. 2017-13]

- A. Spillage or overflow from animal or poultry watering systems.
- B. Washing, cleaning, or flushing pens, barns, manure pits, or other animal feeding operation facilities.
- C. Direct contact swimming, washing, or spray cooling of animals or dust control.
- D. Water that comes into contact with any raw materials or animal byproducts including manure, feed, milk, eggs or bedding.

AGRICULTURE

Beekeeping; commercial feedlots; dairying; egg production; floriculture; fish or fur farming; forest and game management; grazing; livestock raising; orchards; plant greenhouses and nurseries; poultry raising; raising of grain, grass, mint and seed crops; raising of fruits, nuts and berries; sod farming; placing land in federal programs in return for payments in kind; owning land, at least 35 acres of which is enrolled in the conservation reserve program under 16 U.S.C. §§ 3831 to 3836; participating in the milk production termination program under 7 U.S.C. § 1446 (d); and vegetable raising.

AGRICULTURE-RELATED USE

A facility located on a farm or farmstead that has at least one of the following as a primary and not merely incidental purpose:
[Added 4-6-2015 by Ord. No. 2014-007]

- A.

Providing agricultural supplies, agricultural equipment, agricultural inputs or agricultural services directly to farms.

- B. Storing, processing or handling raw agricultural commodities obtained directly from farms.
- C. Slaughtering livestock from farms.
- D. Marketing livestock to or from farms.
- E. Processing agricultural by-products or wastes received directly from farms.

AIRPORT

Any area of land or water which is used or intended for use for the landing and taking off of aircraft, and any appurtenant areas which are used or intended for use for airport buildings or other airport facilities or rights-of-way, including all necessary taxiways, aircraft storage and tie-down areas, hangars and other necessary buildings and open spaces.

ALLEY

A public or private right-of-way primarily designed to serve as secondary access to abutting properties.

ANIMAL SHELTER

A public or nonprofit operation in which unwanted animals are temporarily housed.

APARTMENT HOTEL

An apartment house which furnishes services for the use of its tenants which are ordinarily furnished by hotels.

APARTMENT HOUSE

Buildings or portions thereof used or intended to be used by three or more families living independently in separate apartment units. Also referred to as a "multiple-family dwelling."
[Amended 11-14-2000]

ARTIFICIAL LAKE

A man-made body of water utilized for recreational or conservational purposes.

ASSISTED LIVING FACILITY

A personal care home which offers a range of accommodations that range from independent residential housing options to housing options with personal services. Personal services include but are not limited to individual assistance with or supervision of self-administered medication and essential activities of daily living such as bathing, feeding, grooming, dressing and toileting. A residential use, which could otherwise be classified as multifamily, is to be considered to be an Assisted Living Facility if it registered with or licensed by the State of Wisconsin as an assisted living home. Community-based residential facilities (CBRFs) and adult day cares are types of assisted living facilities.
[Added 5-19-2015 by Ord. No. 2015-004]

AUTO WRECKING YARD

Any premises on which more than one automotive vehicle not in running or operating condition is stored in the open.

BASEMENT

That portion of any structure located partly underground and having more than 1/2 of its height below the finished lot grade.

BED-AND-BREAKFAST ESTABLISHMENT

Any place of lodging that provides two or fewer rooms for rent for more than 10 nights in a twelve-month period, is the owner's personal residence, is occupied by the owner at the time of rental and in which the only meal served to guests is breakfast. The maximum stay of any one guest shall not exceed seven days per stay.

BLOCK

A tract of land bounded by streets or by a combination of streets and public parks, cemeteries, railroad right-of-way, shorelines of waterways or municipal boundary lines.

BOARDINGHOUSE (LODGING HOUSE)

A building or premises, other than a hotel, containing lodging rooms accommodating for compensation four or more persons not of the keeper's family. Lodging may be provided with or without meals.

BUILDING

Any structure built, used, designed or intended for the support, shelter, protection or enclosure of persons, animals, chattels or property of any kind and which is permanently affixed to the land. When a building is divided into separate parts by unpierced fire or party walls extending continuously from the ground through all stories to and above the roof, each part shall be deemed a separate building.

BUILDING, ACCESSORY

A subordinate building or portion of a principal building, the use of which is incidental and customary to that of the principal building, where an accessory building shall comply in all respects with the requirements of this chapter applicable to the principal building.

BUILDING AREA

The maximum horizontal projected area within the perimeter of the outside surface of walls or supports of the building or structure. Exterior cantilever open balconies are not included.

BUILDING, ATTACHED

One which is joined to another dwelling at one or more sides by a party wall or walls.

BUILDING, DETACHED

One which is entirely surrounded by open space on the same lot.

BUILDING FRONTAGE

The horizontal linear dimension designated as the primary facade of that portion of a building occupied by a single use or occupancy. A corner tenant will be permitted to use the secondary facade to determine the building frontage.

[Added 12-19-2006 by Ord. No. 2006-016]

BUILDING HEIGHT

The vertical distance measured from the average elevation of the finished lot grade at the front of the building to the highest point of a ceiling in the case of a flat roof, to the decline of a mansard roof and to the average height between the eaves and the ridge of a gable, hip or gambrel roof.

BUILDING, RESIDENTIAL ACCESSORY

A detached storage building on a residential property measuring more than 100 square feet in area. A residential accessory building is located on the same parcel as the principal residential structure and is clearly incidental to the principal residential structure. See § 135-11G for regulations.

[Added 4-19-2016 by Ord. No. 2016-008]

BUILDING SETBACK LINE

A line located a stated distance from and parallel with a lot line or street right-of-way for the purpose of defining limits within which buildings and structures may not be constructed.

BUILDING, TEMPORARY

Any building not designed to be permanently located in the place where it is, or where it is intended to be placed or affixed. Manufactured homes used as residences shall not be classified as temporary buildings. (They are further defined in the definition of "manufactured home.")

[Amended 11-14-2000]

CAMPGROUND

A tract or parcel of land on which space is provided for camping; includes day and overnight camping.

CANOPY (MARQUEE)

A roof-like structure projecting from a wall and supported in whole or in part by vertical supports from the ground and erected primarily to provide shelter from the weather.

CAPACITY, IN PERSONS, OF AN ESTABLISHMENT OR USE

The maximum number of persons that can avail themselves of the services (or goods) of such establishment at any one time, with reasonable safety and comfort, as determined by the Building Code or as may be determined by the Zoning Administrator or designee.

CHARITABLE ORGANIZATION

Any person that is or holds itself out to be established for any benevolent, philanthropic, patriotic, educational, humane, scientific, public health, environmental conservation, civic, or other eleemosynary purpose or for the benefit of law enforcement personnel, firefighters, or other persons who protect the public safety.

[Added 5-19-2015 by Ord. No. 2015-004]

CLINIC, MEDICAL OR DENTAL

An organization of specializing physicians or dentists, or both, who have their offices in a common building. A clinic shall not include inpatient care.

CLUB

An association of persons for some common purpose, but not including groups organized primarily to render a service which is customarily carried on as a business.

COMMERCIAL FEEDLOTS

An agriculture enterprise where livestock is purchased and raised and then sold to a buyer, feedlot or slaughterhouse.

COMMON OWNERSHIP

For purposes of the Farmland Preservation Ordinance, ownership by the same person or persons. "Common ownership" includes land owned by the same individual, married couple, joint tenants, tenants in common, corporation, LLC, partnership, estate or trust. Solely for purposes of this definition, a parcel owned by one member of a married couple is deemed to be owned by the married couple.

[Added 4-6-2015 by Ord. No. 2014-007]

COMMUNITY-BASED RESIDENTIAL FACILITY (CBRF)

A place where three or more unrelated adults reside, in which care, treatment or services above the level of room and board, but not including nursing care, are provided to persons residing in the facility as a primary function of the facility and licensed by the Department of Health and Family Services under 50.01, Wis. Stats.

COMMUNITY CENTER

A building to be used as a place of meeting, recreation or social activity and not operated for profit.

[Added 4-1-2013 by Ord. No. 2013-003]

COMMUNITY LIVING ARRANGEMENT

A community living arrangement, commonly referred to as a "community-based residential facility" (CBRF), is a place where adults who are not related to the operator or administrator reside and receive care, treatment or services that are above the level of room and board and that may include up to three hours per week of nursing care per resident. Adults residing in a CBRF should not require care above intermediate-level nursing care. CBRFs can admit and provide services to people of advanced age, persons with dementia, developmental disabilities, mental health problems, physical disabilities, traumatic brain injury, AIDS, alcohol and other drug abuse, correctional clients, pregnant women needing counseling and/or the terminally ill (hospice). A CBRF is a type of assisted living facility, and is licensed under Ch. DHS 83, Wis. Admin. Code.

[Amended 5-19-2015 by Ord. No. 2015-004]

CONDITIONAL USE

See the definition of "use, conditional."

CONTAMINATED RUNOFF

The drainage that has come through or across a feed storage or manure storage area. Contaminated runoff includes the liquid and any sediment, manure, feed, or other material carried in the liquid. Contaminated runoff contains lower concentrations of contaminants than agricultural leachate from feed or manure.

[Added 11-21-2017 by Ord. No. 2017-13]

CONTIGUOUS

Adjacent to or sharing a common boundary. Contiguous land includes land that is separated only by a river, stream, section line, public road, private road, railroad, pipeline, transmission line, or transportation or transmission right-of-way. Parcels are not contiguous if they meet only at a single point.

[Added 4-6-2015 by Ord. No. 2014-007]

CORNER SIDE YARD

A yard extending along a side lot line from front yard to rear yard when said side lot line is parallel with a street right-of-way line.

[Amended 11-14-2000]

DAY-CARE FACILITY, CHILD

A facility providing care and supervision for four or more children under the age of seven for less than 24 hours a day as licensed as a child-care center from the Wisconsin Department of Children and Families, § 48.65, Wis. Stats. Does not apply to anyone caring for one to three children in the provider's own home.

DAY-CARE FACILITY, ADULT

A day program that provides the elderly and other adults with services when their caregivers are at work or need relief. An adult day-care center provides services for part of a day in a group

setting to adults who need assistance with activities of daily living (ADLs), supervision and/or protection. Services may include personal care and supervision, provision of meals, medical care, medication administration, transportation, and activities designed to meet physical, social, and leisure time needs. Adult day care may be provided in family homes, freestanding centers, and multi-use facilities such as churches, schools and senior centers. Adult day-care centers generally operate programs during normal business hours five days a week. Some programs offer services in the evenings and on weekends. Adult day care is a type of assisted living. In Wisconsin, adult day-care centers are not licensed but may be certified.

[Added 5-19-2015 by Ord. No. 2015-004]

DRIVE-IN BUSINESS

An establishment with street access which provides no interior seating or service; or an establishment which allows for interior seating or service, but the majority of its business is conducted in the following manner:

- A. By means of a service window;
- B. In-car service; and
- C. Restaurant or confectioneries with carry-out counter.

DWELLING

A building or portion of a building designed exclusively for residential occupancy, including single-family dwellings, two-family dwellings and multiple-family dwellings with individual sleeping, toilet and cooking facilities, but not including buildings intended for use by transients. Dwellings shall include manufactured homes.

DWELLING, MULTIPLE-FAMILY

A building or portion thereof containing three or more dwelling units.

DWELLING, SINGLE-FAMILY

A building designed for and occupied exclusively by one family.

DWELLING, TWO-FAMILY

A building designed for and occupied exclusively by two families.

DWELLING UNIT

One or more rooms which are arranged, designed or used as living quarters for one family only. Individual bathrooms and complete kitchen facilities, permanently installed, shall always be included for each dwelling unit.

EARTHEN BERM

A mound of earth graded, shaped and improved with landscaping in such a fashion as to provide a visual and/or audible screen and transition between uses or activities of differing intensity. Rock or concrete rubble may be included in a berm if completely covered with topsoil.

[Amended 2-22-2017 by Ord. No. 2017-01]

EASEMENT

Any area of land reserved for public utilities, drainage, sanitation or other specific uses having limitations, the title to which shall remain in the property owner's name subject to the right of use designated in the reservation of servitude.

ELEEMOSYNARY INSTITUTION

An institution or corporation created for or devoted to charitable purposes. Private corporations, incorporated for the administration of the public charity which is endowed by private benefactions from such persons as bestow them.

[Added 5-19-2015 by Ord. No. 2015-004]

ESTABLISHMENT BUSINESS

A place of business carrying out operations, the ownership and management of which are separate and distinct from those of any other place of business located on the same zoning lot.

FACADE

The portion of any exterior elevation on the building extending from grade to top of parapet, wall, or eaves and the entire width of the building elevation.

[Added 12-19-2006 by Ord. No. 2006-016]

FAMILY

One or more persons living together in one dwelling unit as a single housekeeping entity.

[Amended 11-14-2000]

FAMILY DAY-CARE HOME (NONRESIDENTIAL)

An establishment licensed as a day-care center by the Department of Health and Family Services under W.S.A. s. 48.65, where care is provided for not more than eight children and the establishment is not the principal residence of the provider.

FARM

All land under common ownership that is primarily devoted to agricultural use. For purposes of this definition, land is deemed to be primarily devoted to agricultural use if any of the following apply:

[Amended 4-6-2015 by Ord. No. 2014-007]

- A. The land produces at least \$6,000 in annual gross farm revenues to its owner or renter, regardless of whether a majority of the land area is in agricultural use.
- B. A majority of the land area is in agricultural use.

FARM CONSOLIDATION

The sale of farm acreage to another adjacent farm or owner of a farm located within a close proximity or the acquisition of farm acreage from an adjacent farm owner or from a farm within close proximity.

FARMERS MARKET

An occasional or periodic market held in an open area or in a structure where groups of individual sellers offer for sale to the public such items as fresh produce, seasonal fruits, fresh flowers, arts and crafts items, and food and beverages (but not to include secondhand goods) dispensed from booths located on-site.

[Added 12-19-2006 by Ord. No. 2006-016]

FARM POND

A man-made body of water utilized for farm purposes.

FARM RESIDENCE

A single-family residence structure on the farm.

[Added 4-6-2015 by Ord. No. 2014-007]

FARMSTEAD

The nonfarmed area of a farm which typically contains the original farm dwelling and other buildings which are used for farming operations or activity. In some instances, minor amounts of tilled acreage or pastureland would be contained within the farmstead, but tilled land and pastureland is generally separate from the farmstead itself.

[Added 4-6-2015 by Ord. No. 2014-007]

FEEDLOT

A lot or building or combination of lots and buildings intended for the confined feeding, breeding, raising or holding of animals and specifically designed as a confinement area where the concentration of animals is such that a vegetative cover cannot be maintained within the enclosure. Pastures shall not be considered animal feedlots under these rules.

[Added 9-6-2016 by Ord. No. 2016-017]

FEED STORAGE RUNOFF CONTROL SYSTEM

A system of facilities or practices to contain, divert, retard, treat, or otherwise control the discharge of leachate and contaminated runoff from livestock feed storage areas.

[Amended 11-21-2017 by Ord. No. 2017-13]

FENCE

Any artificially constructed barrier of any material or combination of materials erected to enclose or screen areas of land.

FENCE, SOLID

Any artificially constructed barrier of any material or combination of materials erected to enclose or screen areas of land which does not allow any item situated inside the barrier to be seen from the outside.

FLOOR AREA

The sum of the gross horizontal areas of the several floors of the building or portion thereof, devoted to such use, including accessory storage areas, located within selling or working space, such as counters, racks or closets, and any basement floor area devoted to retailing activities, to the production or processing of goods or to business or professional offices. However, floor area for the purposes of measurement for off-street parking spaces shall not include floor area devoted primarily to storage purposes (except as otherwise noted herein); floor area devoted to off-street parking or loading facilities, including aisles, ramps and maneuvering space; or basement floor area other than area devoted to retailing activities, to the production or processing of goods or to business or professional offices.

FRONTAGE

The length of the property line of a lot, lots or tract of land abutting a public street. On a curved street, such length may be measured along the cord length at the building setback line.

FRONTAGE, ZONING LOT

The length of all the property of such zoning lot fronting on a street, measured between side lot lines.

FUR FARM

Agricultural operation, where the major income is derived from the selling or sale of fur bearing animals and/or pelts.

GARAGE, PRIVATE

An accessory to the main building, which provides for the storage of motor vehicles and in which no occupation, business or service for profit is carried on.

GARAGE, PUBLIC AND STORAGE

Any building or premises, other than a private garage, where motor-driven vehicles are equipped, repaired, serviced, hired, sold or stored.

GRADE

The average level of the finished surface of the ground adjacent to the exterior walls of the building or structure.

GROSS FARM REVENUE

Gross receipts from agricultural uses, less the cost or other basis of livestock or other agricultural items purchased for resale which are sold or otherwise disposed of during the taxable year. "Gross farm revenue" includes receipts accruing to a renter but does not include rent paid to the landowner.

[Added 4-6-2015 by Ord. No. 2014-007]

GROSS FLOOR AREA

The sum of the gross horizontal areas of the several floors of a building or buildings measured from the exterior faces of exterior walls or from the center line of party walls separating two buildings.

GROUP DAY-CARE CENTER

A dwelling or establishment licensed as a day-care center by the Department of Health and Family Services under § 48.65, Wis. Stats., where care and supervision are provided for nine or more children.

GROUP HOME FOR CHILDREN

Any facility operated by a person required to be licensed by the Department of Health and Family Services under § 48.625, Wis. Stats., for care and maintenance of five to eight children, with or without transfer of legal custody.

HARD-SURFACED

A driveway or parking lot surfaced with concrete, paving brick or bituminous paving.

HEALTH AND MEDICAL INSTITUTIONS

Institutions or organizations which provide specialized inpatient or outpatient medical and dental care.

HEDGE

A dense row of shrubs, etc., forming a boundary, fence or barrier.

HOME OCCUPATION, PERMITTED

Any business or commercial activity that is conducted from property that is zoned for residential or agricultural use.

[Amended 6-17-2014 by Ord. No. 2014-011^[1]]

HOSPITAL

An institution providing primary health services and medical or surgical care to persons, primarily inpatients, suffering from illness, disease, injury, deformity and other abnormal physical or mental conditions and including, as an integral part of the institution, related facilities, such as laboratories, outpatient facilities, training facilities, medical offices and staff residences.

HOTEL

A building in which lodging, with or without meals, is offered to transient guests for compensation and in which there are more than five sleeping rooms, with or without cooking facilities in any individual room or apartment.

INDUSTRIAL PARK

A special or exclusive type of planned industrial area designed and equipped to accommodate a community of industries, providing them with all necessary facilities and services in attractive surroundings among compatible neighbors. Industrial parks may be promoted or sponsored by private developers, community organizations or government organizations.

JUNK (OR SALVAGE) YARD

An area where waste or scrap materials are bought, sold, exchanged, stored, baled, packed, disassembled or handled, including but not limited to scrap iron and other metals, rubber tires and recyclable materials. A junk or salvage yard includes an auto wrecking yard, but does not include uses established entirely within enclosed buildings.

KENNELS

A lot or building in which three or more dogs or four or more cats or other animals at least two months of age are kept commercially for board and/or propagation, training or sales, or other uses, all of which are conducted on the property itself.

LANDSCAPING MATERIALS

Materials used to make a plot of ground more attractive and/or stable. These materials may include but are not limited to trees, grasses, ground cover, vines, flowers, earthen berms, earth stabilization materials, rocks and stones and wood chips.

LIVESTOCK

Bovine animals, equine animals, goats, poultry, sheep, swine, farm-raised deer, farm-raised game birds, camelids, ratites and farm-raised fish.

[Added 4-6-2015 by Ord. No. 2014-007]

LIVESTOCK FACILITY

A feedlot, dairy farm or other operation where livestock are or will be fed, confined, maintained or stabled for a total of 45 days or more in any twelve-month period. A "livestock facility" includes all of the tax parcels of land on which the facility is located, but does not include a pasture or winter grazing area. Related livestock facilities are collectively treated as a single livestock facility for purposes of this chapter.

[Amended 11-21-2017 by Ord. No. 2017-13]

LOT

A parcel of land having a width and depth sufficient to provide the space necessary for one principal building and its accessory building, together with the open spaces required by this chapter, and abutting on a public street.

LOT AREA, GROSS

The area of a horizontal plane bounded by the front, side and rear lot lines, but not including any area occupied by the waters of a duly recorded lake or river and/or public right-of-way.

LOT, CORNER

A lot located at the intersection of two streets, the interior angle of such intersection not exceeding 135°.

LOT, DEPTH OF

The mean horizontal distance between the front lot line and the rear lot line of a lot measured within the lot boundaries.

LOT GRADE

The average of the finished lot elevation upon completion of construction and landscaping between the street right-of-way line and a perpendicular point on the front yard setback line.

LOT, INTERIOR

A lot other than a corner or reversed corner lot.

LOT LINE, FRONT

That boundary of a lot which is along an existing or dedicated public street, or where no public street exists along a public way.

LOT LINE, REAR

That boundary of a lot which is most distant from and is, or is most nearly, parallel to the front lot line.

LOT LINE, SIDE

Any boundary of a lot which is not a front lot line or a rear lot line.

LOT OF RECORD

A lot which is part of a subdivision, the plat of which has been recorded in the office of the Register of Deeds of Brown County; or a parcel of land, the deed to which was recorded in the office of said Register of Deeds prior to the adoption of this chapter, and certified survey maps approved and recorded in the Register of Deeds office of Brown County.

LOT, REVERSED CORNER

A corner lot, the street side lot line of which is substantially a continuation of the front lot line of the first lot to its rear.

LOT, THROUGH

A lot having a pair of opposite lot lines along two more or less parallel public streets and which is not a corner lot. On a through lot, both street lines shall be deemed front lot lines.

LOT WIDTH

The horizontal distance between the side lot lines of a lot, measured at the narrowest width within the first 30 feet of lot depth immediately in back of the front yard setback line.

MAN-MADE BODY OF WATER

See Article XXIV, § 135-222A.
[Amended 11-14-2000]

MANUFACTURED HOME

A structure certified and labeled as a manufactured home under 42 U.S.C. §§ 5401 to 5426, which, when placed on the site:

- A. Is set on an enclosed foundation in accordance with § 70.043(1), Wis. Stats., and Subchapters III, IV and VIII of ILHR 21^[2] of the Wisconsin Administrative Code, or is set on a comparable enclosed foundation system approved by the Zoning Administrator or designee. The Zoning Administrator or designee may require a plan to be certified by a registered architect or engineer to ensure proper support for the home.
- B. Is installed in accordance with the manufacturer's instructions.

- C. Is properly connected to utilities.

MANUFACTURED HOME COMMUNITY

A contiguous parcel of land containing two or more manufactured homes.

MOTEL

Establishment consisting of a group of attached or detached living or sleeping accommodations with bathroom and closet space, located on a single zoning lot and designed for use by transient guests; and where there is no permanent occupancy of any unit, except by the owner, his/her agent or his/her employees.

MOTOR VEHICLES

A self-propelled device used or intended to be used for the transportation of freight or passengers upon a street or highway.

NONCONFORMING BUILDING

A building lawfully erected at the time of the enactment of this chapter which does not conform to the height, setback, yard, parking or other bulk requirements of this chapter or any amendment thereto governing the zoning district in which such building is located.

[Amended 11-14-2000]

NONCONFORMING USE

Any use of land, buildings or structures lawful at the time of the enactment of this chapter which does not comply with all of the regulations of this chapter or of any amendment hereto governing use for the zoning district in which such use is located.

NURSING HOME

A facility for which arrangements have been made for continuous medical supervision and which maintains the services and facilities for skilled nursing care, rehabilitative nursing care, and has a satisfactory agreement with a physician and dentist who will be available for any medical and/or dental emergency and who will be responsible for the general medical and dental supervision of the home. No personal care home, assisted living facility, rehabilitation center or any other type of facility may be permitted under this part as a nursing home unless it meets the definition of "nursing home" set forth in the Wisconsin Administrative Code and is licensed by the State of Wisconsin under Ch. DHS 132, Wis. Admin. Code.

[Added 5-19-2015 by Ord. No. 2015-004]

OPEN SPACE

Land and water areas retained for use as active or passive recreation areas or for resource protection in an essentially undeveloped state. Open space is exclusive of buildings, roads, and parking areas.

[Added 12-19-2006 by Ord. No. 2006-016]

OPEN SPACE PARCEL

A parcel on which no buildings, other than hunting blinds or small sheds, have been constructed or approved for construction.

[Added 4-6-2015 by Ord. No. 2014-007]

ORDINARY MAINTENANCE AND REPAIR

Ordinary and routine actions necessary to continue or restore the safe and healthy use of a structure, which has been damaged or has deteriorated through natural aging and wear, and which do not result in substantial structural improvements or a significant increase in value. Such actions may include, but are not limited to, painting, staining, and the repair of the following: exterior windows, skylights, doors, vents, siding, installation, shutters, gutters,

flooring, shingles, roofing materials, walls or the foundation, internal improvements within the structural envelope without doing a structural alteration.

[Added 8-20-2013 by Ord. No. 2013-007]

PARKING SPACE

A graded and surfaced area of not less than 200 square feet in area, either enclosed or open, for the parking of a motor vehicle, having adequate ingress and egress to a public street or alley, exclusive of passageways, driveways or other means of circulation or access.

[Amended 11-14-2000]

PARTY WALL

A wall constructed between two attached units or rooms which may or may not be separately owned.

PERMITTED USE

See the definition of "use, permitted."

PERSON

An individual, corporation, partnership, limited liability company (LLC), trust, estate or other legal entity.

[Added 4-6-2015 by Ord. No. 2014-007]

PERSONAL CARE HOMES

See "day-care facility, adult" for definition.

[Added 5-19-2015 by Ord. No. 2015-004]

PLANNED UNIT DEVELOPMENT

A tract of land which contains or will contain two or more principal buildings, developed under single ownership or control; the development of which is unique and intended to permit diversification and variation in the relationship of uses and structures and open space for developments conceived and implemented as comprehensive and unified projects.

PLAT or PLATTED LAND

Land division created by the recording of a subdivision plat or certified survey map as per the requirements of the Brown County Subdivision and Platting Regulations, Brown County Code of Ordinances.

PRIME FARMLAND

All of the following:

[Added 4-6-2015 by Ord. No. 2014-007]

- A. An area with a class I or class II land capability classification as identified by the Natural Resources Conservation Service of the United States Department of Agriculture.
- B. Land, other than land described in Subsection A, which is identified as prime farmland in the county's certified farmland preservation plan.

PROFESSIONAL OFFICE

The office of a member of a recognized health care profession licensed by Chs. 441 and 446 to 449, Wis. Stats. Administrative duties only; no manufacturing, shipping or receiving.

[Amended 11-14-2000]

PROTECTED FARMLAND

Land that is any of the following:

[Added 4-6-2015 by Ord. No. 2014-007]

- A. Located in a Farmland Preservation Zoning District certified under Ch. 91, Wis. Stats.
- B. Covered by a farmland preservation agreement under Ch. 91, Wis. Stats.
- C. Covered by an agricultural conservation easement under § 93.73, Wis. Stats.
- D. Otherwise legally protected from nonagricultural development.

RECREATIONAL SPORT SHOOTING FACILITY

Any place designed or operated for the use and discharge of firearms, bow and arrow, or other weapons regulated under Chapter 129 of the Code of the Town of Ledgeview.

[Added 4-22-2008 by Ord. No. 2008-006]

RECREATIONAL VEHICLE

A vehicle primarily used for leisure activities, including but not limited to trailers, boats with or without trailers, all-terrain vehicles and snowmobiles. For the purpose of this code, recreational vehicles do not include four-wheel-drive cars or trucks and motorcycles.

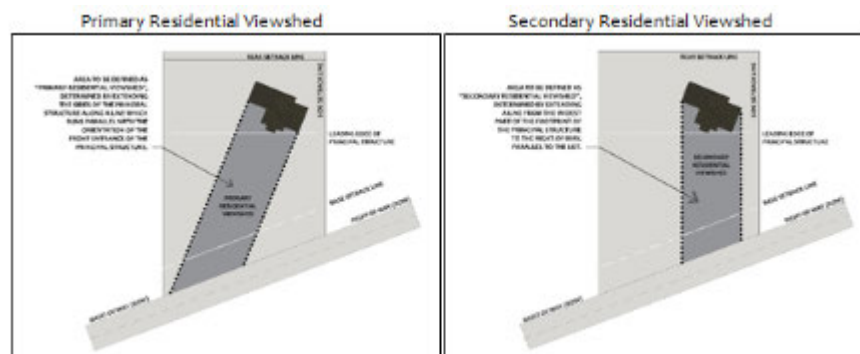
REHABILITATION CENTERS

A facility providing on-site rehabilitative services, whether operated for profit or not-for-profit. On-site rehabilitative services include counseling services and/or therapeutic services offered as a part of any organized program for the mental, psychological, substance abuse recovery, and occupational or physical rehabilitation of any person.

[Added 5-19-2015 by Ord. No. 2015-004]

RESIDENTIAL VIEWSHED, PRIMARY AND SECONDARY

A viewshed is the geographical area that is visible from a location. A residential viewshed is the viewable area generally located between the residence and the public right-of-way (street), necessary to maintain an unobstructed view of the residence from the street. The primary residential viewshed is defined as the line parallel to the front entrance extending from the sides of the residence to the public right-of-way. The secondary residential viewshed is determined by extending a line from the widest part of the footprint of the residence to the right-of-way, parallel to the parcel. Accessory structures are prohibited from being located in either the primary or secondary residential viewshed.



RETAIL

Sale of commodities and services directly to customers when such commodities and services are used or consumed by the customer and not purchased primarily for purpose of resale.

RETAIL, HIGHWAY-ORIENTED

Retail dependent on both a large flow of traffic and convenient access. It includes such uses as motels, fast-food restaurants, and automobile service stations.

[Added 12-19-2006 by Ord. No. 2006-016]

RETAIL, PEDESTRIAN-ORIENTED

Retail that is designed with a primary emphasis on the street sidewalk or connecting walkway access to the site and building, rather than on auto access and parking lots.

[Added 12-19-2006 by Ord. No. 2006-016]

RIGHT-OF-WAY

- A. A strip of land occupied or intended to be occupied for a special use. Rights-of-way intended for streets, crosswalks, water mains, sanitary sewers, storm drains or any other use involving maintenance by a public agency shall be dedicated to public use by the maker of the plat on which such right-of-way is established.
- B. The usage of the term "right-of-way" for land platting purposes shall mean that every right-of-way hereafter established and shown on a final plat is to be separate and distinct from the lot or parcels adjoining such right-of-way and not included within the dimension or areas of such lots or parcels.

ROADSIDE STAND

A structure not permanently fixed to the ground that is readily removable in its entirety, covered or uncovered and not wholly enclosed, and used solely for the sale of farm products produced on the premises. No such roadside stand shall be more than 300 square feet in ground area and limited to 10 feet maximum height.

SATELLITE DISH ANTENNA

A device incorporating a reflective surface that is solid, open mesh or bar configured and is in the shape of a shallow dish, cone, horn or cornucopia. Such device shall be used to transmit and/or receive radio or electromagnetic waves between terrestrially and/or orbitally based uses. This definition is meant to include but not be limited to what are commonly referred to as "satellite earth stations," "TVROs" and "satellite microwave antennas."

SETBACK AREA

The minimum horizontal distance between the building or use and the lot line.

SETBACK, CORNER SIDE YARD

The minimum horizontal distance between the side line of the building or use that runs perpendicular to a fronting street and the side right-of-way line perpendicular to the fronting street.

SETBACK, FRONT YARD

The minimum horizontal distance between the front line of the building or use and the street right-of-way line.

SETBACK LINES

Lines established adjacent to lot lines or street right-of-way lines for the purpose of defining limits within which any or certain buildings, structures or uses may not be constructed, maintained or carried on, except as shown herein.

SETBACK, REAR YARD

The minimum horizontal distance between the back line of the building or use and the rear lot lines.

SETBACK, SIDE YARD

The minimum horizontal distance between the side line of the building or use and the side lot lines, unless the side line of the building or use is parallel to a street, whereas it shall be a corner side yard setback.

SHED, GARDEN OR TOOL

A structure equal to or less than 100 square feet in area, which is accessory to the residential use of the property and used for incidental storage. Sheds shall not exceed 10 feet in overall height to the highest point of the roof. Such sheds must be located to the rear of the front line of the principal structure and set back a minimum of three feet from side and rear property lines.

[Added 4-19-2016 by Ord. No. 2016-008]

SIDEWALK SALE

A promotional sales event conducted outside the confines of the commercial or manufacturing structure in which such business is normally conducted and which occurs on a paved or concrete area on the same lot as the structure.

[Added 12-19-2006 by Ord. No. 2006-016]

SIGN

A name, identification, description, display or illustration which is affixed to, or represented directly or indirectly upon, a building, structure or piece of land, and which directs attention to an object, product, place, activity, person, institution, organization or business. (See Article XX for additional sign definitions.)

SIGN, ADVERTISING

A sign which directs attention to a business, commodity, service or entertainment not exclusively related to the premises where such sign is located or to which it is affixed.

SIGN, BUSINESS

A sign which directs attention to a business or profession conducted, or to a commodity, service or entertainment sold or offered, upon the premises where such sign is located or to which it is affixed.

STOCK FARM

An agricultural operation, usually nondairying in nature, where livestock is raised to the required age or weight for slaughterhouse purposes or for sale to commercial feedlots.

STORY

That part of a building between any floor and the floor next above and, if there be no floor above, then the ceiling above. A basement is a story if its ceiling is five feet or more above the level from which the height of the building is measured, or if it is used for business purposes, or if it contains any dwelling units other than one dwelling unit for the caretaker of the premises.

STREET

A public or private right-of-way which affords a primary means of vehicular access to abutting property, whether designated as a street, avenue, highway, road, boulevard, lane, throughway or however otherwise designated, but does not include driveways to buildings.

STREETSCAPE

An area that may either abut or be contained within the public or private street right-of-way or accessway that may contain sidewalks, street furniture, landscaping or trees, and similar features.

[Added 12-19-2006 by Ord. No. 2006-016]

STRUCTURAL ALTERATION

Any activity not considered ordinary maintenance and repair which results in a change to the integral framework or exterior silhouette or footprint of a structure.

[Amended 8-20-2013 by Ord. No. 2013-007]

STRUCTURALLY ATTACHED

With respect to additions, "structurally attached" means:

- A. At least 50% of the surface area of the adjoining wall of the addition and the principal structure is common to both structures.
- B. The foundation of the addition is similar to that of the principal structure.
- C. The height of the addition does not exceed the height of the principal structure.
- D. The type of construction and materials used in the addition are substantially similar to those used in the principal structure with respect to texture, color and general appearance.

STRUCTURE

Anything constructed or erected, the use of which requires a permanent location on the ground or attachment to something having permanent location on the ground.^[3]

TOWN

The Town of Ledgeview.

TOWN BOARD

The governing body of the Town of Ledgeview.^[4]

TRUCK FARMING

Horticultural practice of growing one or more vegetable crops on a large scale for shipment to distant markets. Crops are typically harvested directly to a truck for immediate shipment.

[Added 9-6-2016 by Ord. No. 2016-017]

UNNECESSARY HARDSHIP

Where special conditions affecting a particular property, which were not self-created and nonfinancial in nature, have made strict conformity with restrictions governing areas, setbacks, frontage, height or density unnecessarily burdensome or unreasonable in light of the purposes of this chapter.

USE, CONDITIONAL

A use, either public or private, which, because of its unique characteristics, cannot be properly classified as a permitted use in a particular district or districts. After due consideration in each case of the impact of such use upon neighboring land, and of the public need for the particular use of the particular location, such conditional use may or may not be granted, subject to the terms of this chapter and any conditions attached by the Town Board to the use.

USE, PERMITTED

A use which may be lawfully established in a particular district or districts, provided that it conforms with all requirements, regulations and standards of such district.

USE, PRINCIPAL

The main use of land or buildings as distinguished from a subordinate or accessory use. A principal use may be permitted, conditional or nonconforming.

VARIANCE

A departure from the terms of this chapter as applied to a specific building, structure or parcel of land which the Board of Appeals may permit when the Board finds that a literal enforcement of the provisions of this section will result in practical difficulty or unnecessary hardship, owing to circumstances unique to the individual property on which the variance is sought, or a literal application of such regulation will effect a limitation on the use of the property which does not generally apply to other properties in the same district. In no case shall a variance be granted to permit any use not permitted in a particular zone.

VETERINARY HOSPITAL, LARGE-ANIMAL

A place where animals, other than household pets, such as horses, cows, pigs, sheep, etc., are given medical care and the boarding of animals is limited to short-term care incidental to the hospital use.

VETERINARY HOSPITAL, SMALL-ANIMAL

A place where household pets are given medical care and the boarding of animals is limited to short-term care incidental to the hospital use. (If veterinary hospital is for small and large animals, large animal zoning applies.)

YARD

An open space on the same lot with a building or structure, unoccupied and unobstructed from the ground upward, except for vegetation. A yard extends along a lot line, and to a depth or width specified in the yard requirements for the zone the lot is located in.^[5]

YARD, FRONT

A yard extending along the full length of the front lot line between the side lot lines.

YARD, INTERIOR SIDE

A yard extending along a side lot line from the front yard to the rear yard.

YARD, REAR

A space, unoccupied except by an accessory building or accessory use as herein permitted, extending for the full width of the lot between the principal building and the rear lot line. A rear yard adjoining a public street is considered a corner side yard, except in a through lot.

ZERO-LOT-LINE DUPLEX

A two-family dwelling situated so that a common wall is located on a side lot line.

ZONING ADMINISTRATOR

The Town official(s) charged with administration and enforcement of this chapter.

ZONING AND PLANNING COMMITTEE

The Zoning and Planning Committee of the Town of Ledgeview.^[6]

ZONING BOARD OF APPEALS

The Town of Ledgeview Zoning Board of Appeals.

ZONING DISTRICT

Divisions of the Town, each area being accurately defined to boundaries and locations on the Official Zoning Map and in this chapter, for which the regulations and requirements governing use, lot and bulk of buildings and premises are uniform.

ZONING LOT

An area within a single tract of land, under single ownership, having a specific zoning district. A zoning lot may, therefore, not coincide with the lot of record and may be located on a parcel of land with two or more zoning districts.

- [1] *Editor's Note: See also § 135-11W, Home occupation.*
- [2] *Editor's Note: See now Ch. SPS 321, Wis. Admin. Code.*
- [3] *Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I).*
- [4] *Editor's Note: The former definition of "Town Zoning Administrator," which immediately followed this definition, was repealed at time of adoption of Code (see Ch. 1, General Provisions, Art. I).*
- [5] *Editor's Note: The former definition of "yard, corner side," which immediately followed this definition, was repealed 11-14-2000.*
- [6] *Editor's Note: Throughout this chapter, references to the "Plan Committee," "Planning Commission," "Zoning and Planning Board" and "Planning and Zoning Department" were amended to read "Zoning and Planning Committee" 11-14-2000.*

Article IV. General Provisions

§ 135-9. Jurisdiction.

The jurisdiction of this chapter shall include all lands and waters within the Town of Ledgewood.

§ 135-10. Existing ordinances.

- A. Restrictions or requirements with respect to buildings or land, or both, which appear in other ordinances of the Town of Ledgewood or are established by federal, state or county laws and which are greater than those set forth herein shall take precedence over those herein. Otherwise, the provisions shall apply.
- B. All uses, permitted, conditional and accessory, found within the respective zoning districts contained within this chapter may be further restricted by Chapter 126, Water, Article I, Wellhead Protection, of the Code of the Town of Ledgewood.

§ 135-11. Building and use restrictions.

- A. The use of buildings hereafter erected, enlarged, converted, structurally altered, rebuilt or moved, and existing land shall be used only for purposes as specified in this chapter. Furthermore, land and building uses shall be in compliance with the regulations as established herein for each district.
- B. All principal structures shall be located on a lot; and only one principal structure shall be located, erected or moved onto a lot within the R-1 and R-2 Zones, with the exception of approved planned unit developments.
- C. Principal structures, and anything attached to them, located in R-1, R-2, or RR Zone shall not contain standard plain concrete or cinder block as an exterior facade material. Exterior facades shall be materials that are compatible with surrounding principal residential structures. Acceptable materials include vinyl, aluminum or wood siding, brick, sandstone, or other natural stone materials. Materials such as corrugated metal siding/roofing, decorative split-faced block and other materials not mentioned must be approved by the Zoning Administrator or designee. Decisions can be appealed and approved by the Zoning and Planning Committee.

[Added 8-3-2009 by Ord. No. 2009-022^[1]]

[1] *Editor's Note: This ordinance also provided for the redesignation of former Subsections C through Q as Subsections F through T.*

- D. All residential roofs must have a minimum pitch of 6:12. Roof pitch shall be compatible with surrounding principal residential structures. A roof pitch less than 6:12 must be approved by the Zoning Administrator or designee. Decisions can be appealed and approved by the Zoning and Planning Committee.
[Added 8-3-2009 by Ord. No. 2009-022]
- E. The square footage of garages that are attached to principal structures located in R-1, R-2, or RR Zone shall not exceed the square footage of the first-floor footprint of the living area of the principal structure. The roof height of the garage shall not exceed the roof height over the living area of the principal area.
[Added 8-3-2009 by Ord. No. 2009-022]
- F. Permitted uses, permitted accessory uses and conditional uses are limited to the uses indicated for the respective zone district.
- G. Accessory buildings shall not occupy more than 30% of the rear yard. These restrictions shall apply in all districts, except as provided for in Subsection **G(1)** through **(5)** below:
[Amended 11-14-2000; 7-1-2002; 7-3-2003; 6-4-2007 by Ord. No. 2007-010; 9-18-2007 by Ord. No. 2007-016; 4-19-2016 by Ord. No. 2016-008]
- (1) Farm structures. The above regulations shall not apply to accessory buildings located in the AG-FP Farmland Preservation District, A-2 Agriculture District or R-R Rural Residential District if said accessory building is used as a part of a legitimate agricultural operation located on a minimum farm site of 10 acres.
[Amended 8-22-2017 by Ord. No. 2017-08; 11-21-2017 by Ord. No. 2017-13]
- (2) R-1, R-2 and R-R Rural Residential Districts. The maximum size and number of residential accessory buildings permitted on parcels shall vary depending on parcel size, as follows:

Parcel Size (acres)	Maximum Total Square Feet Allowed per Parcel	Number of Accessory Structures Permitted per Parcel¹
0.99 or less	900	1
1.00 to 1.49	1,200	1
1.50 or more	2.0% of the total parcel area to a maximum of 4,000 square feet	2

NOTE:

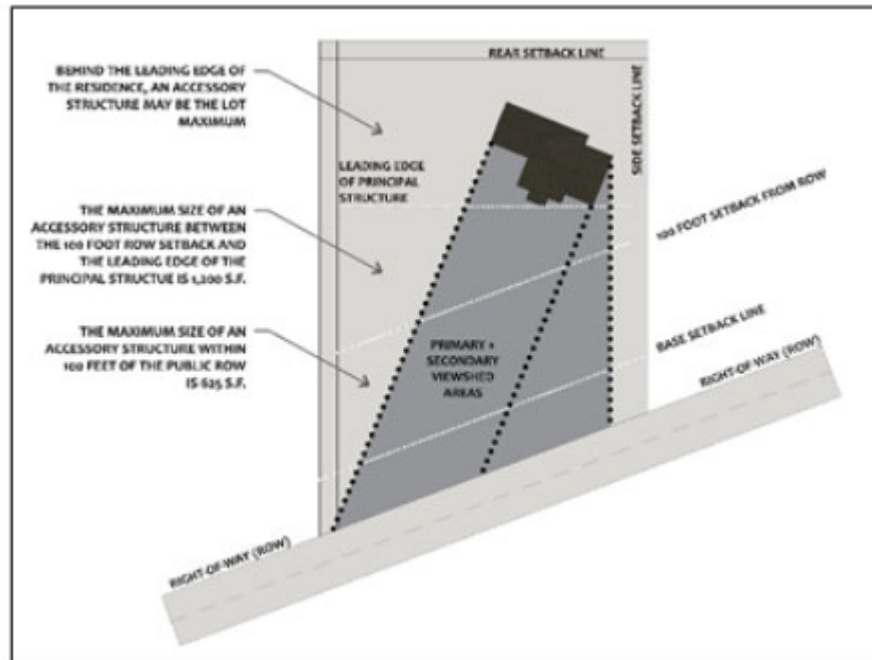
¹ In addition to a garden or tool shed not to exceed 100 square feet.

- (a) Location. All residential accessory buildings shall comply with the setbacks of the zoning district in which the property is located. In addition:

[1] Residential viewshed established. Residential accessory structures shall not be located in the primary residential viewshed or secondary residential viewshed as defined in § 135-8.

[2] Size restriction based on setback distance. Residential accessory structures with a setback of less than 100 feet from the public right-of-way shall not exceed 625

square feet in size. Such structures with a setback more than 100 feet from the public right-of-way but located in front of the leading edge of the residence shall not exceed 1,200 square feet in size.



(b) Materials.

- [1] The accessory building shall be constructed of materials which are substantially similar to those used in the principal structure with respect to texture, color and general appearance.

(c) Height.

- [1] Overall height of a residential accessory structure shall not exceed the height of the principal structure.
- [2] Side walls may not exceed 14 feet in height.

(3) (Reserved)

- (4) LI Light Industrial District. The above regulations shall not apply to accessory buildings located in LI Districts. Regulations governing height, size, lot coverage and number of accessory buildings allowed in the LI District are found in Article **XVII** of this chapter.
- (5) HI Heavy Industrial District. The above regulations shall not apply to accessory buildings located in HI Districts. Regulations governing height, size, lot coverage and number of accessory buildings allowed in the HI District are found in Article **XVIII** of this chapter.

- H. Detached accessory buildings or structures shall be located no closer than 10 feet to any other accessory or principal structure.
- I. No lot area shall be reduced so that the yards and open spaces shall be smaller than is required by this chapter. If the lot area is less than the minimum number of square feet required for the district in which it is located and was of record as such at the time of the passage of this

chapter, such lot may be occupied if it meets the other district requirements of this chapter and any other applicable state or local regulations.

- J. The existing lawful use of a building or premises at the time of the enactment of this chapter or any amendment thereto may be continued, although such use does not conform with the provisions of this chapter for the district in which it is located, but such nonconforming use shall not be extended nor shall such building or structure be altered or enlarged, except as provided for in Subsection **M**.
- K. If no structural alterations are made, a nonconforming use of a building may be changed to another nonconforming use of the same or a more restricted classification. Whenever a nonconforming use has been changed to a more restricted nonconforming use or a conforming use, such use shall not thereafter be changed to a less restricted use.
- L. If a nonconforming use of a building or premises is discontinued for a period of 12 months, any future use of the building or premises shall conform to the regulations for the district in which it is located. Existing farming operations shall be exempt from these restrictions.
- M. Present uses of principal or accessory buildings, signs and premises may be continued even though they do not conform to the regulations of this chapter. The ordinary maintenance, repair, renovation, or remodeling of a nonconforming structure is allowed with the issuance of an appropriate permit. However, structural repairs or alterations of such buildings, signs or premises which require the issuance of a permit shall not exceed 33% of the structural members of the existing roof, walls or foundation. The expansion of a nonconforming structure may not exceed 50% of the enclosed building area and may not increase the nonconformity without the approval of a variance by the Board, unless a building, sign or premises conforming to these regulations of this chapter result. Nonconforming buildings and structures that are damaged or destroyed by a natural event, including but not limited to violent wind, vandalism, fire, flood, ice, snow, mold, or infestation, may be reconstructed, provided that:
[Amended 11-14-2000; 8-20-2013 by Ord. No. 2013-007]
 - (1) The use of the building or structure which is nonconforming as to this chapter was not discontinued for a period of 12 months or more;
 - (2) The repair and reconstruction are limited to that part of the structure and its specific improvements which are actually damaged or destroyed by a natural event and similar building materials shall be utilized;
 - (3) The owner has the burden to establish that the damage or destruction was to a nonconforming structure or a part thereof was actually caused by a natural event and to establish the specific extent to which the damage or reconstruction occurred for the structural or part thereof that has actually been damaged or destroyed shall be reconstructed to the size, including the footprint and total square footage, location, and use, that it had immediately before the damage or destruction occurred subject to Subsection **M(6)**;
 - (4) The owner shall bear the burden as to the size, location, and use of a damaged or destroyed nonconforming, structure or part thereof immediately before the damage or the destruction;
 - (5) The size of the nonconforming structure can be larger than the size it was immediately before the damage or destruction is necessary to comply with applicable local, state or federal requirement.

- (6) Repair and reconstruction shall be in compliance with all other provisions of applicable ordinances; and
 - (7) Damage was not due to an intentional act of the owner or his or her agent.
- N. Radio and television transmitting and receiving antennas, as well as dish antennas, shall be allowed within the lot area not required for the building setback area in all zones and on the roof of a building in all business and industrial zones.
- O. Satellite dish antennas larger than three feet in diameter are not allowed on the roof of a building in any residential or agricultural zone. However, radio and television transmitting and receiving antennas are allowed on roofs in these zones.
- P. Site plan/development and design standards.
[Added 2-18-2004 by Ord. No. 2004-004; amended 12-19-2006 by Ord. No. 2006-016; 9-18-2007 by Ord. No. 2007-016; 11-22-2011 by Ord. No. 2011-014; 2-20-2018 by Ord. No. 2018-03]
- (1) Introduction. This subsection is designed to provide for the future growth and development of those multifamily residences, businesses and industries that seek an aesthetically attractive working environment. The intent and purpose of this subsection is to promote and maintain desirable economic development within the Town PDD, PDD-BP, I-1 Institutional District, B-1 Business District, B-2 Business District, LI Light Industrial District, HI Heavy Industrial District, and R-3 Multiple-Family District that is practical, feasible and an asset to owners, neighbors and the Town of Ledgeview while maintaining an attractive environment.
 - (2) Objectives. The purpose of this subsection is to establish rules, regulations, standards and procedures for approval of all new development proposals and the expansion of existing businesses and industries in order to:
 - (a) Provide for safe, efficient vehicular and pedestrian circulation.
 - (b) Provide for screening, landscaping, signage, lighting and green space.
 - (c) Ensure efficient, safe and attractive land development.
 - (d) Provide for compliance with appropriate design standards to ensure adequate light and air, proper building arrangements and minimal adverse effect on adjacent properties.
 - (e) Develop proper safeguards to minimize the impact on the environment.
 - (f) Ensure the provision of adequate water supply, drainage and stormwater management, sanitary facilities and other utilities and surveys.
 - (g) Encourage modern and unique innovative design, construction, technology and planning methods.
 - (h) Advance and promote sound growth and continuous development within the Town.
 - (3) Land use/zoning. This subsection applies to the following zoning districts: PDD, PDD-BP, I-1 Institutional District, B-1 Business District, B-2 Business District, LI Light Industrial District, HI Heavy Industrial District and R-3 Multiple-Family District.
 - (4)

Standard requirements. The interpretation and application of this subsection shall be held as minimum requirements for the promotion of the public health, safety and welfare.

- (a) No structure shall be erected, converted, enlarged, reconstructed or altered, and no structure or land shall be used for any purpose nor in any manner which is not in conformity with the provisions of this subsection.
 - (b) Where permitted and prohibited uses, site and landscape regulations, building design criteria, off-street parking and loading requirements and other regulations contained herein are either more or less restrictive than comparable conditions imposed by provisions of any other law, ordinance, rule, resolution or regulation, the requirements that are more restrictive or which impose a higher standard shall govern.
 - (c) Vision corners are required in all districts. The vision corner will be defined as follows: beginning at the corner property line and proceeding 35 feet along both property lines, thence connecting these two points diagonally.
- (5) Administration. The administration of this subsection shall be vested in the following: Town Board.
- (a) It shall be the duty of the Town Board or designated individual to be in charge of the day-to-day administration and interpretation of the development and design standards. Enforcement of these standards is charged to the Ledgeview Building Inspector in accordance with § 62.23(7), Wis Stats.
 - (b) All proposed site plans shall be forwarded to the following Town departments: Town Clerk, Building Inspector, Fire Department, Public Works and Site Review/Zoning and Planning Committee. Each department shall review each plan and make recommendations to approve, approve with conditions or reject said plan to the Site Review/Zoning and Planning Committee within 45 days of submittal. These departments shall be responsive to applicants and their possible time constraints and shall expedite the review process to the extent possible and forward to the Town Board for final approval.
 - (c) From time to time the design criteria may be amended, changed or deleted. Such action shall originate before the Site Review/Zoning and Planning Committee and be reviewed and approved by the Town Board in accordance with § 62.23(7), Wis Stats.
 - (d) Change of use or occupancy of building or structure must be reviewed and approved by the Site Review/Zoning and Planning Committee and Town Board.
 - (e) Appeals. Unless otherwise provided herein, appeals to the requirements contained in these standards shall be heard by the Board of Appeals.
- (6) General building and performance standards.
- (a) Purpose. The purpose of this subsection is to establish general development performance standards in accordance with the Town of Ledgeview Zoning Ordinance. These standards are intended and designed to assure compatibility of uses; to prevent urban blight, deterioration and decay; and to enhance the health, safety and general welfare of the residents of the community.
 - (b) Building. The Town of Ledgeview's overall approach encourages a variety of architectural styles. However, basic harmony is intended to prevail so that no one structure detracts from the attractiveness of the overall environment. The Site

Review/Zoning and Planning Committee and the Town Board shall review building design in order to insure architectural compatibility and integrity.

- (c) Building exterior. PDD, PDD-BP, I-1 Institutional District, B-1 Business District, B-2 Business District, LI Light Industrial District, HI Heavy Industrial District and R-3 Multiple-Family District. Colors, materials, finishes and building form shall be coordinated in a consistent manner on the front, side and rear exterior walls. Materials shall be one of the following (color and texture to be approved):

- [1] Hard burned clay brick.
- [2] Concrete masonry. Units shall be those generally described by the National Concrete Masonry Association as "customized architectural concrete masonry units" or shall be broken faced brick-type units with marble aggregate or split face or broke off concrete block. There shall be no exposed concrete block on the exterior of any building facing any public road. Any concrete units that have a gray cement color shall be color coated.
- [3] Concrete may be poured in place, tilt-up or precast. Poured in place and tilt-up walls shall have a finish of stone, a texture or a coating. Textured finishes shall be coated. Precast units which are not uniform in color shall be color coated. Coating shall be an approved cementations or epoxy type with a ten-year minimum life expectancy.
- [4] Natural stone.
- [5] Glass curtain walls.
- [6] Metal siding may be used only in combination with one of the approved materials and with approval of the Site Review/Zoning and Planning Committee. Metal siding may be utilized only on the side and rear building walls that do not face an adjacent street. Any metal siding proposed for use shall be entirely coated with a colorfast, abrasion- and corrosion-resistant, long-life (minimum of 20 years) finish that is resistant to chemicals, withstands temperature extremes and has a low permeability. Any material utilized to attach the metal siding to the building shall be concealed or the utilization of shadow panels or semiconcealed fastener panels with fasteners painted to match required. Color and texture to be approved. Samples shall be provided upon request.
- [7] The following districts require materials listed in Subsection **P(6)(c)[1]** through **[5]** above, in minimum percentages listed below:

District	Percentage
PDD-Planned Development District	75%
PDD-BP Planned Development District-Business Park	80%
I-1 Institutional District	75%
B-1 Business District	75%
B-2 Business District	60%
LI Light Industrial District	50%
HI Heavy Industrial District	50%
R-3 Multiple-Family District	80%

District**Percentage**

NOTES:

1. All districts listed above shall require footings and foundations to support a structural wall above.
2. A lock box shall be located on the exterior of the structure in the most accessible site for Fire Department personnel.^[2]

[2] *Editor's Note: See Ch. 49, Fire Department, Art. I, Access to Multifamily Dwellings.*

- [8] More or less stringent building exterior requirements than outlined in Subsection P(16)(c)[7] may be imposed by the Zoning and Planning Committee or the Town Board, taking into consideration public interests such as coordinating a consistent appearance and quality of construction with adjacent structures, alternative building materials, the use and size of the proposed structure, the topography of the site and the proximity of the structure to public rights-of-way and visibility from adjacent properties.

(d) Front building wall and building walls facing an adjacent street.

- [1] Any exterior building wall (front, side or rear) facing an adjacent street in all the districts in which design review is required shall be constructed of not less than 50% of one of the materials listed under Subsection P(6)(c)[1] through [5], unless otherwise approved by the Zoning and Planning Committee under Subsection P(6)(c)[8]. All alterations are subject to prior approval of the Site Review/Zoning and Planning Committee/Town Board.
- [2] The colors, materials and finishes shall be coordinated in a consistent manner with other buildings within the district.
- [3] Mechanical equipment. All mechanical equipment shall be enclosed or screened. Roof mounted equipment shall be integrated into the design of the structure, enclosed or screened to the extent possible.
- [4] Construction. Construction shall commence within one year of plan approval or in accordance with a development agreement with the Town. No site plan approval by the Site Review/Zoning and Planning Committee shall be valid for more than 12 months from the date of such approval unless a building permit is obtained and development in accordance with such site plan is commenced within such period. The provisions of this subsection shall apply unless otherwise agreed to by the Site Review/Zoning and Planning Committee.
- [5] Maintenance. The exterior walls and roof of buildings shall be maintained in a clean, orderly and attractive condition; free of cracks, dents, punctures, breakage and other forms of visible marring. Materials that become excessively faded, chalked, cracked, chipped, damaged or otherwise deteriorated shall be replaced, refinished, repaired or repainted in accordance with the reasonable determination and order of the Building Inspector within 60 days' notice of such defect. Violations are subject to fines in accordance with Town of Ledgeview Code § 135-233A, § 778.11, Wis. Stats., or through issuance of a citation and prosecution in the Municipal Court.

[6]

No right to divide property. After a site has been purchased, it shall not be further divided without the review and consent of the Site Review/Zoning and Planning Committee with final approval by the Town Board.

- (7) Fences shall be erected in accordance with § 135-15.
- (8) Lighting standards: in all districts requiring site plan review. To provide for the basic needs of safety and security, appropriate lighting shall be provided in order to delineate roads, drives, parking areas, pedestrian ways, buildings and other organizational points. Lighting shall be an integral part of the overall architectural design; therefore, proposed lighting, whether freestanding or building-mounted, shall complement the architectural character of the principal use. Lighting design shall correlate energy conservation with aesthetic, architectural and safety factors.
 - (a) Any lighting used to illuminate off-street parking, loading and service areas shall be shaded, diffused or arranged to reflect light away from adjacent parcels and public streets. Glare, whether direct or reflected, as differentiated from general illuminated, shall not be visible beyond the limits of the site from which it originates. Parking lot lights may be used in either a single or multi-format. Characteristics, 27,000 lumen high pressure sodium/metal halide, spaced approximately 100 feet to 120 feet off center, consisting of sharp, cutoff-type luminaries. Maximum height for pole not to exceed 30 feet; to be an approved metal pole. The use of wooden poles is prohibited.
 - (b) Walkway lighting should be of the same family as mentioned above, height to be 10 feet to 14 feet above grade. Bollard lighting can be used as low-level walkway illumination on private property.
 - (c) Building lighting should occur as part of the overall design concept using recessed lighting in overhangs and at the entrance. Well-designed soft lighting of the building exterior is allowed, provided it does not impact on the surrounding properties, complements the architecture and the light source is concealed.
 - (d) The use of floodlights, building-mounted or otherwise, and tall freeway-type fixtures is prohibited unless approved by the Site Review/Zoning and Planning Committee.
 - (e) Flag directional lighting is permitted with approval of Site Review/Zoning and Planning Committee.
- (9) Site plan.
 - (a) Procedure. The following procedure shall be followed for the submittal of site plans. Where procedures and requirements imposed by this section of this chapter are either more restrictive or less restrictive than comparable procedures and requirements imposed by any other provision of this chapter or any other law, ordinance, resolution, rule or regulation of any kind, the regulations which are more restrictive or impose higher standards or requirements shall govern.
 - [1] Preliminary consultation. Prior to the submittal of a site plan, it is recommended that the developer meet with the Town Clerk, Zoning Administrator, Building Inspector and/or other appropriate Town staff to discuss zoning district, site plan and landscaping plan requirements. Such meeting should occur prior to any extensive outlay of funds on the part of the developer since it is intended to identify potential problems and methods to alleviate them and to encourage a cooperative effort between the developer/owner and the Town.

- [2] Plan submittal. Twelve copies of all site plans requiring approval by the Site Review/Zoning and Planning Committee shall be submitted to the Town Clerk 10 working days prior to the first Monday of the month. Landscaping plans may be submitted separately or included in the site plan. All plans shall be drawn to an engineering scale no greater than one inch equals 100 feet, plus one complete set of such plans reduced in size to 11 inches by 17 inches and contain the following information:
- [a] Name of project/development.
 - [b] Location of project/development by street address or CSM.
 - [c] Name and mailing address of developer/owner.
 - [d] Name and mailing address of engineer/architect.
 - [e] North point indicator.
 - [f] Scale.
 - [g] Boundary lines of property, with dimensions.
 - [h] Location identification and dimensions of existing and proposed:
 - [i] Topographic contours at a minimum interval of two feet and key spot elevations.
 - [ii] Adjacent street elevations, street rights-of-way and proposed elevation of ground floor.
 - [iii] Locations and dimensions of fire lanes.
 - [iv] Utilities and any other easements, including but not limited to the following types.
 - [A] Electric.
 - [B] Natural gas.
 - [C] Telephone.
 - [D] Water.
 - [E] Sewer (sanitary and storm).
 - [F] Fiber optic lines.
 - [G] Other transmission lines.
 - [H] Ingress-egress easements.
 - [v] All buildings and structures, existing and proposed, to consider maximum development of the parcel if more than one structure could be located on the parcel.

- [vi] Parking facilities.
- [vii] Water bodies and wetlands.
- [viii] Surface water holding ponds, drainage ditches and drainage patterns; location and size of culverts.
- [ix] Sidewalks, walkways and driveways.
- [x] Off-street loading areas and docks.
- [xi] Fences and retaining walls.
- [xii] All exterior signs.
- [xiii] Exterior refuse collection areas must be enclosed a minimum of three sides; open side cannot face road or must be gated and must be located in rear of structure. R-3 Multiple-Family Districts exterior refuse collection areas must be approved by the Site Review/Zoning and Planning Committee.
- [xiv] Exterior lighting.
- [xv] Traffic flow on and off site.
- [i] Location of open space/green space.
- [j] Site statistics, including:
 - [i] Site square footage.
 - [ii] Percent site coverage.
 - [iii] Percent open space and green space.
 - [iv] Floor area ratio.
- [k] Location and dimensions of proposed outdoor display areas.
- [l] Architectural rendering of the proposed structures and buildings, including:
 - [i] All dimensions;
 - [ii] Gross square footage of existing and proposed buildings and structures; and
 - [iii] Description of all exterior finish materials.
- [m] Erosion control plans.
- [n] A staging plan of any project involving more than one phase of construction season which sets forth the chronological order of construction and relates to the proposed uses and structures of various service facilities and estimated completion dates.

[o] Other information considered pertinent by Site Review/Zoning and Planning Committee and/or the developers/owners.

[3] Review.

[a] Site Review/Zoning and Planning Committee. Site plans shall be forwarded to the Town Clerk 10 working days prior to the first Monday of the month. The Site Review/Zoning and Planning Committee shall review and either approve, conditionally approve or deny approval of the site plan based upon the appropriate zoning district requirements and the criteria set forth in Subsection **P(9)(a)[2]** above.

[4] Appeals.

[a] Appeals of a Site Review/Zoning and Planning Committee decision may be made to the Board of Appeals.

(10) Landscaping.

(a) General statement. The Town of Ledgeview finds that is in the public interest for all developments to provide landscape improvements for the purposes of complementing the natural environment; improving the general appearance of the Town and enhancing its aesthetic appeal; preserving the economic base; improving quality of life; delineating and separating use areas; increasing the safety, efficiency and aesthetics of use areas and open space; screening and enhancing privacy; mitigating the diverse impact of climate; conserving energy; abating erosion and stabilizing slopes; deadening sound; and preserving the quality of our air and water.

(b) Landscape plan. All applicants for building permits for PDD, PDD-BP, I-1 Institutional District, B-1 Business District, B-2 Business District, LI Light Industrial District, HI Heavy Industrial District and R-3 Multiple-Family District shall submit a landscape plan, prepared pursuant to Subsection **P(10)(c)** below, for review and approval as required herein prior to the request for a building permit. Where procedures and requirements imposed by this section of this chapter are either more restrictive or less restrictive than comparable procedures and requirements imposed by any other provision of this chapter or any other law, ordinance, resolution, rule or regulation of any kind, the regulations which are more restrictive or impose higher standards or requirements shall govern.

(c) Procedure. The following procedure shall be followed for the submittal of landscape plans:

[1] Preliminary consultation. Prior to the submittal of a landscape plan, it is recommended that the developer/owner meet with the Town Clerk, Building Inspector and/or other appropriate Town staff to discuss zoning district, site plan and landscaping plan requirements. Such meeting should occur prior to any extensive outlay of funds on the part of the developer since it is intended to identify potential problems and methods to alleviate them and to encourage a cooperative effort between the developer/owner and the Town.

[2] Plan submittal. Twelve copies of all landscape plans requiring approval by the Site Review/Zoning and Planning Committee shall be submitted to the Town Clerk 10 working days prior to the first Monday of the month. Landscaping plans may be submitted separately or included in the site plan. All plans shall be drawn to an engineering scale no greater than one inch equals 100 feet, plus one complete set

of such plans reduced in size to 11 inches by 17 inches and contain the following information:

[a] The location and dimensions of all proposed open space/green space areas.

[b] Identification of all proposed vegetation.

[i] Symbols, quantities, common names and size of all plant materials.

[ii] Show all species to scale of mature crown diameter or spread.

[c] Existing vegetation to be saved if possible or deemed feasible.

[d] Typical sections of berms, fences, retaining walls, planter boxes, etc.

[3] Reviews. Review of landscape plans shall be conducted concurrently and follow the same procedure as site plan review.

[4] Appeals.

[a] Appeals of Site Review/Zoning and Planning Committee decisions may be made to the Board of Appeals.

(d) Specific requirements.

[1] Ground cover. Open space areas shall, at a minimum, be seeded six months after completion of building. The following exceptions may be granted by Town Staff during the review process:

[a] The use of mulch material for shrubs and foundation plantings;

[b] The seeding of future expansion areas delineated on site plan;

[c] Areas maintained in a natural state that are undisturbed during construction; or

[d] Other landscape elements such as decks, patios, stepping stones or landscape stones may be incorporated therein.

[2] Minimum size of plantings. Required vegetation shall be of the following minimum planting size. Plantings must be 17 feet from the property line equally spaced one tree every 50 feet of road frontage (minimum of two trees).

[a] Deciduous trees: one per every 50 feet of road frontage is required. Required size: one-and-one-half-inch diameter as measured six inches above ground. Choice of maple, ash or a species approved by the Site Review/Zoning and Planning Committee.

[b] Evergreen shrubs used for screening purposes, including those used in conjunction with berms, shall be a minimum of 24 inches in height.

[3] Species.

[a] All trees used in site development shall be indigenous to the appropriate hardiness zone and physical characteristics of the site.

- [b] All plant material shall conform to American Standards for Nursery Stock, latest edition, sponsored by the American Association of Nurserymen, Inc. All vegetation shall be planted in accordance with accepted planting procedures.
 - [c] All proposed vegetation included in the landscape plan shall be reviewed by the Site Review/Zoning and Planning Committee to assure compliance with the requirements contained herein.
- [4] Implementation/replacement.
 - [a] All approved landscaping is to be installed in accordance with compliance timetable.
 - [b] Any vegetation included on an approved landscape plan that dies shall be replaced by the owner/developer within one planting season. Vegetation replaced shall conform to the approved landscape plan and the requirements contained herein.
- [5] Maintenance. It shall be the joint responsibility of the owner and/or lessee of the principal use, uses or building to maintain in a neat and adequate manner all landscaping materials, vegetation, screening and fences contained in the approved landscape and site plans.
- [6] Compliance timetable. All landscape plans shall include a timetable for construction, installation or planting within a period not to exceed two years from the date of commencement of construction. Any person who is, or has been, required to landscape any part of a zoning lot and who has not complied with that requirement shall, within 60 days of receipt of written notice from the Zoning Administrator/Building Inspector that a violation of this chapter exists, comply with all requirements.
- (e) District requirements. Development within the Town shall meet the following minimum requirements:
 - [1] R-3 Multiple-Family shall contain at a minimum:
 - [a] One tree per 50 feet of road frontage; minimum of two trees.
 - [b] Forty percent of total lot area shall remain green space.
 - [2] PDD, PDD-BP, I-1 Institutional District, B-1 Business District, B-2 Business District, LI Light Industrial District and HI Heavy Industrial District shall contain at a minimum:
 - [a] One tree per 50 feet of road frontage; minimum of two trees.
 - [b] Twenty-five percent of total lot area shall remain green space.
 - [3] Buffers. That portion of any business, industrial or multiple-family district (other than duplex construction) that is abutting property zoned for single-family residential development shall have a landscaped area of at least six feet wide extending the full length of the business, industrial or multiple-family district and meeting the following minimum requirements.

- [a] One tree per 35 lineal feet, or fraction thereof, of lot line bordering single-family districts.
- [b] A shrub, border, hedge, wall, fence, earthen berm or other durable landscape barrier, or combination thereof, at least four feet high, but not exceeding eight feet high, which is 90% percent impervious to sight placed along the perimeter of such landscaped strip except in the front yard setback.
- [c] When a berm or plantings, or a combination thereof, is used as a buffer, it may exceed eight feet in height only upon approval of the Site Review/Zoning and Planning Committee.
- [d] If a berm or buffer is erected, provisions shall be made for stormwater runoff. A detail plan is required with submittal.

Q. Off-street parking requirements: PDD, PDD-BP, I-1 Institutional District, B-1 Business District, B-2 Business District, LI Light Industrial District, HI Heavy Industrial District and R-3 Multiple-Family District.

[Added 2-18-2004 by Ord. No. 2004-004; amended 12-19-2006 by Ord. No. 2006-016; 9-18-2007 by Ord. No. 2007-016]

- (1) Location. All parking spaces required to serve employees and visitors of buildings erected or established after the effective date of this plan shall be located on the same zoning lot as the building or use served. Off-street parking areas may be located in the front of the buildings in any district, with a minimum of 25 feet green space from the property line.
- (2) Floor area. The term "floor area" for the purpose of calculating the number of off-street parking spaces required shall be determined on the basis of the exterior floor area dimensions of the building, structure or use times the number of floors, minus 10%, except as may hereinafter be provided or modified.
- (3) Nonconforming structures. Should a nonconforming structure or use be damaged or destroyed (defined as 50% or more of the structure being damaged) by accidental destruction, acts of God, or otherwise, it may be reestablished if elsewhere permitted in these regulations, except that in doing so, any off-street parking or loading space which existed before shall be retained and expanded as necessary to comply with the standards herein.
- (4) Change of use or occupancy of buildings. Any change of use or occupancy of any building or buildings, including additions thereto, requiring more parking shall not be permitted until there is furnished such additional parking spaces as required by these regulations.
- (5) Parking dimensions and requirements. Parking dimensions and requirements shall conform to the requirements as set forth in Article **XXI**, Off-Street Parking Requirements.
- (6) Signs. Signing shall be regulated as set forth in Article **XX**, Regulation of Signs.

NOTE: At least 80% of the total required parking shall be for full-sized vehicles and 4%, or not less than two spaces, shall be for handicap spaces.

- (7) Within structures. The off-street parking requirements may be furnished by providing spaces so designed within the principal building or structure attached thereto; however, unless provisions are made, no building permit shall be used to convert said parking

structure into another activity until other adequate provisions are made to comply with the required off-street parking provisions of this chapter.

- (8) Circulation between bays. Parking areas shall be designed so that circulation between parking bays or aisles occurs within the designated parking lot and does not depend upon a public street. Parking area design which requires backing into the public street is prohibited.
- (9) Driveway requirements. Notwithstanding other provisions of this chapter concerning appeals and review of plans submitted hereunder, permits for and review of driveway approaches shall be as provided:
 - (a) All off-street parking spaces shall have access from driveways and not directly from the public street.
 - (b) Driveway access curb opening on a public street shall not be located less than 12 feet from each other, and maximum 40 feet width.
 - (c) The number and locations of curb cuts shall be as determined by the Building Inspector upon consultation with the Site Review/Zoning and Planning Committee, taking into consideration traffic flow, safety concerns and the needs of the business.
 - (d) Joint driveways are encouraged and require appropriate Town staff approval, maximum 50 feet width.
- (10) Drainage. All sites must have stormwater management plans, including adequate parking and drainage.
- (11) Surfacing.
 - (a) PDD, PDD-BP, I-1 Institutional District, B-1 Business District and B-2 Business District. All areas intended to be utilized for parking space and driveways shall be surfaced with bituminous asphalt or concrete and are to be installed within one year of completion of construction. Plans for surfacing and drainage of driveways and parking areas for five or more vehicles shall be submitted.
 - (b) LI Light Industrial District and HI Heavy Industrial District industrial districts. In areas intended to be utilized for parking space and driveways, up to 20 feet beyond the rear of the buildings are to be surfaced with bituminous asphalt or concrete. Non-hard-surfaced areas are to be approved by the Site Review/Zoning and Planning Committee.
 - (c) Fire lanes. In all districts, fire lanes must be 25 feet in width and shall be surfaced with bituminous asphalt or concrete.
- (12) Striping. All parking stalls shall be marked with painted lines not less than four inches wide.
- (13) Lighting. Any lighting used to illuminate an off-street parking area shall be so arranged as to reflect the light away from adjoining property and directed downward, abutting residential uses and public rights-of-way.
- (14) Signs. No sign shall be so located as to restrict the sight lines and orderly operation and traffic movement within any parking lot.
- (15)

Curbing. All off-street parking shall have a perimeter concrete curb and gutter around the entire parking lot unless the site plan shows that runoff from the parking lots will not cause erosion or adversely affect adjacent properties.

- (16) Parking lot landscaping. To avoid the undesirable monotony, heat and wind associated with large parking lots, such lots shall have a minimum of one internal landscaped island delineator in addition to any required traffic safety island for each 21,780 square feet (1/2 acre) or fraction thereof of off-street parking space; such islands shall be a minimum of 360 square feet (two parking spaces) and shall be bounded by concrete curbing. Trees may be installed in approved traffic safety islands used to delineate parking spaces from driving aisles and in other areas. The internal landscaped island(s) required above may be deleted if the aggregate area and trees of individual traffic islands meets or exceeds the above requirement.
 - (17) Parking lot screening. The parking or storage of licensed motor vehicles, if not within an enclosed building structure, shall be effectively screened as defined.
 - (18) Planting standards. All plant material shall conform to the specifications and procedures stated in the landscape plan requirements section of these standards. Landscaping, except required grass or ground cover, shall not be located closer than six feet from the edge of any driveway pavement or within the established right-of-way and must maintain a ten-foot clearance at curbside.
 - (19) Maintenance. It shall be the joint and severable responsibility of the lessee and owner of the principal use, uses or building to maintain in a neat and adequate manner the parking space, accessways, striping, landscaping, screening and required fences.
 - (20) Use of required area. Required accessory off-street parking spaces in any district shall not be utilized for open storage, sale or rental of goods or storage of inoperable vehicles without approval of the Site Review/Zoning and Planning Commission."
- R. Off-street loading requirements: PDD, PDD-BP, I-1 Institutional District, B-1 Business District, B-2 Business District, LI Light Industrial District and HI Heavy Industrial District.
[Added 2-18-2004 by Ord. No. 2004-004; amended 12-19-2006 by Ord. No. 2006-016; 9-18-2007 by Ord. No. 2007-016]
- (1) Minimum facilities. All warehousing, manufacturing plants or any other building where large amounts of goods are received or shipped shall provide adequate loading and unloading berths as determined by the Site Review/Zoning and Planning Committee.
 - (2) Location.
 - (a) All required loading berths shall be off street and located on the same lot as the building or use to be served.
 - (b) Loading berths shall not occupy the front yard.
 - (c) Loading berths located at the side of buildings on a corner lot shall observe the following requirements.
 - [1] Loading berths shall not conflict with pedestrian movement.
 - [2] Loading berths shall not obstruct the view of the public right-of-way from off-street parking access.

- [3] Loading berths shall comply with all other requirements of this plan.
- (d) Each loading berth shall be located with appropriate means of vehicular access to a street in a manner which will cause the least interference with traffic.
- (3) Size. A required off-street loading berth shall be at least 55 feet in length, exclusive of aisle and maneuvering space, and shall have a vertical clearance of at least 15 feet.
- (4) Surfacing. All areas intended to be utilized for off-street loading shall be surfaced with bituminous asphalt or concrete. Any non-hard-surfaced areas are to be reviewed and approved by the Site Review/Zoning and Planning Committee.
- (5) Utilization. Space allocated to any off-street loading shall not, while so allocated, be used to satisfy the space requirements for any off-street parking facilities.
- (6) Change of use. Where a change of use in off-street loading facilities is made necessary due to damage, destruction, increased use or any other change of use, such change shall be approved by the Site Review/Zoning and Planning Committee.
- S. Outdoor storage. Outdoor storage of any material other than licensed motor vehicles is prohibited. Storage of materials, equipment, parts, inventory, etc., shall take place in enclosed structures that meet the general building and performance requirements contained herein. Upon approval by the Site Review/Zoning and Planning Committee, a ninety-percent impervious fence may be used under certain circumstances. Outdoor storage of licensed motor vehicles condition is allowed, provided such outdoor parking (storage) areas are screened pursuant to the definition of (screening) contained in the definitions section.
[Added 2-18-2004 by Ord. No. 2004-004]
- T. Utilities. Any new development requiring Town approval under this chapter, including but not limited to rezoning or conditional use permit approval and which includes installation of any new utility service to the property on which the new development is located, shall install all utilities underground. Exceptions may be granted by variance under § 135-248.
[Added 9-16-2008 by Ord. No. 2008-016]
- U. Animal unit calculations.
[Added 10-20-2009 by Ord. No. 2009-038]
- (1) General provisions.
[Amended 4-7-2014 by Ord. No. 2014-006; 8-22-2017 by Ord. No. 2017-08; 11-21-2017 by Ord. No. 2017-13]
- (a) No livestock will be allowed on lots or parcels of less than 1.99 acres in the Town of Ledgeview, except chickens as outlined in Subsection V.
- (b) These provisions shall apply to all parcels of land zoned RR and AG2 in the Town of Ledgeview. The keeping of livestock within other zoning districts except AG-FP or A-2 is hereby prohibited. Parcels of land zoned AG-FP are exempt from this subsection and shall be regulated as outlined in Article X: AG-FP Farmland Preservation District.
- (c) Parcels or lots within districts zoned RR or AG2 having a larger number of livestock at the time of adoption of this subsection may continue to maintain that number of animal units, provided that no expansion of the facility shall be permitted without an approved conditional use permit from the Town of Ledgeview.

(2) Calculation.

- (a) To determine the number of permitted animal units per lot or parcel, property owners shall multiply the total number of acres owned less 1.99 acres times the appropriate livestock multiplier to determine the total number of allowable animal units.
- (b) For young livestock after one year of age, livestock must be in strict compliance with the equivalency calculations.
- (c) All lands under identical ownership which are contiguous, as defined in the Town of Ledgeview Code of Ordinances, may be included in the total acreage calculation for the purposes of this section.
- (d) The total number of livestock permitted is cumulative regardless of the species of the livestock.

(3) Examples.

- (a) Owner of residence located on four acres would like horses:

$$\begin{array}{rcl}
 4.00 & \text{acres} & \\
 - 1.99 & \text{acres} & \\
 \hline
 = 2.01 & \text{acres} & \\
 \\
 2.01 & \text{acres} & \\
 \times 1.000 & \text{horse multiplier} & \\
 \hline
 = 2 & \text{horses} &
 \end{array}$$

- (b) Residence located on four acres would like alpacas:

$$\begin{array}{rcl}
 4.00 & \text{acres} & \\
 - 1.99 & \text{acres} & \\
 \hline
 = 2.01 & \text{acres} & \\
 \\
 2.01 & \text{acres} & \\
 \times 10.00 & \text{alpaca multiplier} & \\
 \hline
 = 20 & \text{alpacas} &
 \end{array}$$

- (c) Residence located on four acres would like both horses and alpacas:

$$\begin{array}{rcl}
 4.00 & \text{acres} & \\
 - 1.99 & \text{acres} & \\
 \hline
 = 2.01 & \text{acres} & \\
 \\
 1 & \text{acre for horse (1 acre} \times 1.000 \text{ horse multiplier} = 1 \text{ horse)} & \\
 1.01 & \text{acres remaining for alpacas (1.01 acres} \times 10.000 \text{ sheep multiplier} = 10 & \\
 & \text{alpacas)} &
 \end{array}$$

(4)

For the purposes of this calculation, less than 0.50 livestock shall be rounded down to the next nearest whole number and 0.50 or greater shall be rounded up the next whole number.

- (5) A conditional use permit shall be required for any excess livestock as calculated herein.
- (6) Livestock multiplier table.

Type of Livestock	Multiplier	Equivalency (units)
Dairy Cattle		
Milking and dry cows	0.714	1.400
Heifers (800 to 1,200 pounds)	0.909	1.100
Heifers (400 to 800 pounds)	1.667	0.600
Calves (under 400 pounds)	5.000	0.200
Beef Cattle		
Steers or cows (600 pounds to market)	1.000	1.000
Calves (under 600 pounds)	2.000	0.500
Bulls	0.714	1.400
Swine		
Pigs (55 pounds to market)	2.500	0.400
Pigs (up to 55 pounds)	10.000	0.100
Sows	2.500	0.400
Boars	2.000	0.500
Sheep (llama, alpaca, goat)		
Per animal	10.000	0.100
Horses		
Per animal	1.000	1.000
Ducks		
Per bird (wet lot)	5.000	0.200
Per bird (dry lot)	100.000	0.010
Chickens		
Layers	100.000	0.010
Broilers	200.000	0.005
Broilers (continuous overflow watering)	100.000	0.010
Layers or broilers (liquid manure system)	30.000	0.033
Turkeys		
Per bird	56.000	0.018

- V. Keeping of chickens on residential property.
[Added 4-7-2014 by Ord. No. 2014-006]

- (1) Applicability. Properties less than 1.99 acres in total land area shall be permitted to keep chickens on their property in accordance with this subsection and the following:

- (a) The property is zoned R-1 Residential District or R-R Rural Residential District.
 - (b) The property upon which the fowl are kept shall have established a principal single-family use conforming to the zoning district.
 - (c) The word "keep" shall mean either the owning, keeping, possessing or harboring of a chicken.
- (2) Permit required.
- (a) Any person who keeps chickens on land in the Town which the person owns, occupies, or controls shall obtain a permit issued by the Clerk-Administrator. The permit is valid for a calendar year (January 1 through December 31). Only one permit per zoned parcel is allowed.
 - (b) Permit applications submitted by a person other than a record title owner of the property upon which chickens will be kept shall provide written consent of the property owner with the permit application.
 - (c) All permit applications shall be accompanied by satisfactory evidence that the applicant has registered the proposed location with the Wisconsin Department of Agricultural Trade and Consumer Protection (DATCP) pursuant to § 95.51, Wis. Stats., and Ch. ATPC 47, Wis. Admin. Code.
 - (d) The Town shall provide written notification to all adjacent property owner of the permit to keep chickens.
- (3) Number. The keeping of up to four hens (female Gallus gallus domesticus) is allowed. The keeping of roosters of all types and guinea hens is prohibited.
- (4) Coop. A covered coop or shelter shall be provided for the keeping of all chickens. Coops may be mobile to be relocated on the property. The coop shall comply with the regulations outlined in § 7-5, Keeping of fowl, and the location requirement outlined in Subsection V(6) below. A building permit for the coop shall be required.
- (5) Enclosure or chicken run. Chickens shall not be allowed to free range. All chickens shall be contained within a fenced enclosure area or chicken run that is contiguous with the coop.
- (6) Location. The required covered coop and the fenced enclosure area shall comply with the setback requirements for a principal structure as prescribed for the zoning district in which it is located. No coop shall be located between the principal structure and the public right-of-way.
- (7) Public health requirements.
- (a) Chickens shall be kept and handled in a sanitary manner to prevent the spread of communicable diseases among birds or to humans.
 - (b) Any person keeping chickens shall immediately report any unusual illness or death of chickens to the Health Department.
 - (c) The Health Officer may order testing, quarantine, isolation, vaccination or humane euthanasia of ill chickens or chickens believed to be a carrier of a communicable disease. The owner of the chicken shall be responsible for all costs associated with the procedures ordered hereunder.

- (8) Slaughtering. No chickens may be slaughtered on properties zoned or within the boundaries of the Town unless such slaughtering activity occurs on property zoned agricultural.
- (9) Sale of eggs and baby chicks. No person may offer to sell eggs or chicks accumulated from the activities permitted by this subsection.
- (10) Fee. The Town Board may by ordinance or resolution establish reasonable fees for the administration costs associated with monitoring and enforcing these regulations or for licensing for the keeping of hens.
- (11) Violations. Violations of the requirements in this subsection may result in nuisance enforcement by the Town Zoning Inspector. Revocation of the permit may occur if there are three or more violations within a calendar year period. Enforcement related to the keeping of chickens using the following process:
 - (a) The Town received and records a written complaint.
 - (b) The Code Enforcement Officer investigates the complaint.
 - (c) If there is determined to be a violation, the Zoning Inspector contacts the permit owner of the violation, outlines his or her responsibility to correct the violations, and specifies the date to complete the corrections. If the Zoning Inspector cannot contact the owner, the Zoning Inspector will send the permit owner a written "notice of violation" with information regarding the violation, his or her responsibility to correct the violations, and a date to complete.
 - (d) The Zoning Inspector revisits the site to check on compliance.
 - (e) If the violation is not corrected or it is the third recorded violation in a calendar year, the Zoning Inspector forwards the violation to the Town Board for revocation of the permit.

W. Home occupation.

- (1) Regulations for home occupation:
 - (a) The use shall be conducted entirely within a dwelling and carried on by the inhabitants hereof and no others.
 - (b) The use shall be clearly incidental and secondary to the use of the residence for dwelling purposes, and the appearance of the structure shall not be altered or the occupation within the residence be conducted in a manner that would cause the premises to differ from its residential character either by the use of colors, materials, construction, lighting, signs or the emission of sounds or vibrations that carry beyond the premises.
 - [1] There shall be no display of products visible in any manner from the outside of the dwelling.
 - [2] No advertising display signs shall be permitted.
 - [3]

No equipment or process shall be used in a home occupation which creates noise, vibration, glare, fumes or odor detectable to the normal senses off the property.

- (c) No storage of goods, materials or products connected with a home occupation shall be allowed in accessory buildings, detached garages or outside of the dwelling.
 - (d) The area set aside for home occupations shall not exceed 20% of the total floor area of such residence.
 - (e) A home occupation shall not create greater vehicle or pedestrian traffic than normal for the district in which it is located, and there shall be no deliveries to or from a home occupation with a vehicle larger than a 26,000 GVW truck.
 - (f) The use shall not require additional off-street parking spaces for clients or customers of the home occupation.
 - (g) No home occupation shall cause an increase in the use of any one or more public utilities (water, sewer, electricity and garbage collection) so that the combined total use for dwelling and home occupation purposes exceeds the average for residences in the neighborhood.
 - (h) Direct sales of products on display shelves or racks are not allowed, but a person may pick up an order placed earlier, although delivery of that item to the buyer should occur off the premises whenever possible.
 - (i) No motor power other than electrically operated motors shall be used in connection with a home occupation.
- (2) Sale of personal property. Notwithstanding any provision contained herein to the contrary, garage, basement, yard, consignment, or other similar sales shall not be allowed more than four times each year, one per quarter, and each sale shall not last more than 72 consecutive hours.

§ 135-12. Lot size and street abutment.

- A. Lot size shall comply with the required regulations of the established district.
- B. No building permit shall be issued for a lot that abuts on half a street. Said permit shall be issued only after the entire street right-of-way has been dedicated.

§ 135-13. Height regulations.

- A. Except as otherwise provided in this chapter, the height of any building hereafter erected, converted, enlarged or structurally altered shall be in compliance with the regulations established herein for the district in which such building is located.
- B. Accessory farm buildings, belfries, chimneys, cooling towers, elevator bulkheads, fire towers, monuments, silos, scenery lofts, tanks, water towers, ornamental towers, spires, wireless television or broadcasting towers, masts or aerials, telephone, telegraph and power transmission poles and lines, microwave radio relay structures and necessary mechanical appurtenances are hereby exempted from the height regulations of this chapter.

- C. Churches, schools and other public and quasi-public buildings may be erected to a height not exceeding 60 feet nor five stories, provided that the front, side and rear yards required in the district in which such a building or structure is to be located are each increased at least one foot for each foot of additional height above the height limit otherwise established for the district in which such building or structure is to be located.

§ 135-14. Front, side and rear yards.

- A. No front yard shall be used for open storage of boats, vehicles or any other equipment.
- B. Where a residential lot has an area less than the minimum number of square feet per family as required for the district in which it is located and was of record as such at the time of the passage of this chapter, such lot may be occupied by one family, subject to the setback, rear yard and side yard regulations for the district in which it is located.
- C. No part of a yard or other open space provided about any building for the purpose of complying with the provisions of this chapter shall be included as part of a yard or any other open space required for another building.
- D. Attached garages, decks or other structures which are part of the main building or are substantially attached thereto shall meet the side yard and rear yard setback requirements within each zoning district for the principal structure.
- E. Every part of a required setback shall be open to the sky unobstructed, except for the ordinary projections including, but not limited to, sills, overhangs, cornices and ornamental features projecting not more than two feet. Setbacks are established from the property line to the closest foundation or structural surface including, but not limited to, decks, fireplaces, windows or steps. If a larger overhang is required, the setback area must be recalculated to accommodate the additional width of the overhang.
[Amended 2-22-2005 by Ord. No. 2005-09]

§ 135-15. Fences.

[Amended 4-22-2008 by Ord. No. 2008-009; 11-22-2011 by Ord. No. 2011-014; 11-4-2013 by Ord. No. 2013-008; 1-5-2015 by Ord. No. 2014-024; 7-5-2016 by Ord. No. 2016-012]

- A. Purpose. The purpose of this section is to regulate the materials, location, height and maintenance of fencing, landscaping walls, visual screening and decorative posts, herein referred to as "fence," and to impose fencing requirements in order to protect the public health, safety and welfare by preventing the creation of nuisances and safety hazards and to protect property values and aesthetics in the Town of Ledgeview.
- B. Applicability. The permit requirements of this section apply to all fences, which shall include any physical barrier enclosing or partially enclosing any property or portion thereof constructed of wood, stone, plastic, brick, metal, or other similar materials or any combination thereof. This section does not apply to underground pet containment systems.
[Amended 2-22-2017 by Ord. No. 2017-01]
- C. Permit required. No person shall construct, erect, extend, modify or otherwise install any fence within the Town of Ledgeview without first obtaining a permit from the Building Inspector. No permit shall be required for minor maintenance activities such as painting or repair work unless

any elements anchoring the fence to the ground are being moved, removed or replaced or there is a change in materials, construction or appearance of the fence.

D. Permit application.

- (1) Applications for a permit shall contain the following information:
 - (a) A site plan of the property depicting the current improvements, any public or private right-of-way or easements, utilities, including but not limited to fire hydrants, stormwater or drainage management facilities and easements and the proposed fence locations with dimensions from property boundaries. A survey may be required if the existing survey, property markers or natural monuments do not sufficiently identify property boundaries for the Building Inspector.
 - (b) A pictorial representation of a typical fence section and any substantially dissimilar sections or access points.
 - (c) The maximum height above original grade and length of the proposed fence.
 - (d) Any additional information requested by the Building Inspector reasonably necessary to further the purposes of this section.
 - (e) If encroaching on adjoining property, any agreement(s) from the property owner(s) requested by the Building Inspector.
- (2) Applications shall be reviewed and permits issued by the Building Inspector; security fences, as defined under Subsection G, require Town Board approval first.

E. General requirements.

- (1) Materials.
[Amended 4-2-2018 by Ord. No. 2017-10]
 - (a) Walls and fences shall be constructed of high-quality materials and of good appearance, such as decorative blocks, brick, stone, treated wood, redwood, cedar, vinyl, wrought iron or similar materials.
 - (b) Galvanized steel chain-link fencing or vinyl-coated chain-link fencing may be used. This type of fencing shall not be used in the front yard or past the front setback of the home.
 - (c) Agricultural mesh fencing and poles may be used for the protection of gardens, trees, shrubs and other plants that may be endangered by animals.
 - (d) No person shall use rope, string, wire products, including but not limited to chicken wire, hog wire, wire fabric, barbed wire (except as allowed in other sections of this Code), razor ribbon wire, field wire, barbless wire, agricultural mesh, and similar welded or woven wire fabrics, chain, netting, cut or broken glass, paper, metal panels, plywood, fiberglass panels or plastic panels in any fence or any other materials that are not manufactured specifically as fencing materials. The Building Inspector may require the applicant to provide the manufacturer's standards to establish the intended use of a proposed fencing material.
 - (e) No person shall construct a fence of wood, metal or plastic products that are designed specifically for uses other than fence construction.

- (f) No person shall construct a fence of used, damaged or unsafe materials.
 - (g) No person in residential zones shall weave or use slats of any material, including but not limited to metal, fiberglass, or bamboo, through a chain-link fence to create a blind fence, screening fence or any other type of fence addressed in this chapter.
 - (h) Used materials, equipment and devices shall not be reused unless it can be determined by the Building Inspector that they meet the requirements of the Building Code for new materials.
 - (i) No person shall place, erect, install, build, construct, add as a repair item, use and/or maintain any fence or barrier consisting of, or made of what is commonly known as, railroad ties, blocking lumber, pallets, or similar materials.
 - (j) No agricultural-style metal fence posts shall be exposed to view, except in an agricultural district; no snow fence materials shall be used for permanent fencing and no single or double strands of wire shall be used for a temporary or permanent fence.
 - (k) No fence shall be erected, permitted or maintained with excluded materials or which shall not comply with any other applicable ordinance of the Town, or for which a permit has not been obtained as required under § 135-15D.
- (2) Rapid entry/Knox Box. A Knox Box may be required by the Building Inspector and/or Fire Department at access points as outlined in Chapter 49.
- (3) Location.
- (a) All fences shall be located completely upon the owner's property, which shall not be construed to include unimproved areas of public rights-of-way or easements. Encroachment on adjoining property may be permitted with written approval from the property owner.
 - (b) No fence located in a front yard or yard abutting any street shall be located closer than two feet from the property line.
 - (c) Fences shall not be constructed in any way that could impair ingress or egress from any building, including emergency egress from window openings.
 - (d) Fences may be located on the property line on any side or rear yard not abutting a street, provided that all maintenance, including staining or painting, can be performed without trespassing on adjoining property either as a function of fence design or through a maintenance easement agreement with the neighboring property owner, which shall be recorded with the County Register of Deeds.
 - (e) Fences shall not be erected within drainage easements without written approval from the Utility Department.
 - (f) Fences shall not be erected in a location or manner that could constitute a traffic hazard, including, but not limited to, the area established by drawing a line across the corner of the property at a public road intersection from the two points along the adjacent public road right-of-way boundaries 25 feet from the corner of said boundaries.
- (4) Height.

- (a) The fence height shall be measured from the grade surface directly vertical to the top of the fence at any location along the fencing. If a fence is placed atop an earthen berm, the height of the fence shall be measured from the original grade or the berm as determined by § 135-15.1(A)(5).
[Amended 2-22-2017 by Ord. No. 2017-01]
 - (b) Fences erected in front yards shall not exceed three feet in height and fences erected in side yards adjacent to any public street shall not exceed four feet in height unless either fence is approved as a security fence as outlined under Subsection G.
 - (c) All other fences shall not exceed six feet in height, unless approved as a security fence or erected in the Light Industrial or Heavy Industrial Districts. Fences not adjacent to public rights-of-ways in the Light Industrial or Heavy Industrial Districts shall not exceed eight feet.
- (5) Construction and maintenance.
 - (a) All fences shall be erected and maintained such that materials are in sufficiently good condition to maintain the structural integrity and visual appearance of the fence. Painted or stained surfaces shall be retouched or refinished to prevent an uneven or worn appearance.
 - (b) Structural and support components shall face away from adjacent properties.
- F. Required fencing.
 - (1) Swimming pools, hot tubs and spas. All required fencing shall comply with § 135-16.
 - (2) Man-made bodies of water. All required fencing for man-made bodies of water as defined in § 135-222, shall comply with Article XXIV.
 - (3) Mechanical equipment screening. Except for residential and agricultural uses, all outdoor mechanical equipment, whether ground-mounted or roof-mounted, including, but not limited to, air-conditioning and ventilation equipment, shall be screened from public view. Screening shall be of sufficient height and opacity to screen such equipment from public view. Materials shall be consistent with or complementary to the surrounding facade and overall building appearance.
 - (4) Salvage yards. Salvage yards shall be completely enclosed by a solid opaque wall or fence and solid access gates at a height not greater than eight feet.
 - (5) Outdoor storage, dumpster and garbage screening.
 - (a) All premises or areas, except residential and agricultural uses within the R-1, R-2, RR, A-1 and A-2 Districts, used for outdoor storage of materials, including, but not limited to, bulk storage, inoperable vehicles, automobile parts, scrap metal, lumber, and building materials and any garbage cans, dumpsters or other permitted outdoor refuse collection and storage shall be completely enclosed by a fence not less than six feet nor more than eight feet in height to screen such areas from ordinary public view. Such fence shall be 90% opaque.
 - (b) No materials or refuse stored may protrude above the top of the fence.
 - (c) All screening required under this subsection, except those located in the Heavy Industrial District, shall be required to be constructed of materials of a similar or

complementary texture, color and style as any principal structure located on the premises.

- (d) Visual screening for outdoor storage, not including incidental garbage collection storage, may be accomplished through the use of earth berms, plantings or combination thereof. Fencing may be required, however, if the nature of the storage suggests fencing is necessary for public safety.

(6) Outdoor alcohol-licensed premises.

- (a) All outdoor areas included in the liquor license for a premises under Chapter 5 of the Town of Ledgeview Code shall be enclosed by a fence or wall constructed a minimum of five feet from the property line with a minimum height of four feet and a maximum height of six feet or the area may be enclosed by two fences not less than four feet in height spaced six feet apart and located a minimum of five feet from the property line or a combination of the two designs.
- (b) Areas subject to temporary alcohol licenses or temporary expansions of licensed premises shall install temporary fencing 48 inches or greater to surround the entire outdoor licensed area. All openings for ingress and egress shall be monitored to ensure underage persons are not permitted to enter except as authorized by § 125.07, Wis. Stats.

G. Security fences.

- (1) All fences erected as security fences and which are to exceed height requirements set forth in Subsection E(4) require the approval of the Town Board. The Town Board may disapprove a permit for security fencing if the proposed fence fails to comply with any applicable provision of this section or any other applicable ordinance, statute, rule or regulation. The Town Board may also disapprove a permit for security fencing if the proposed design or materials are inconsistent with the character of the property or surrounding area.
- (2) Security fences shall not exceed eight feet in height.

H. Prohibited fences:

- (1) Electric fences, unless erected for agricultural use where the agricultural use is allowed.
- (2) Barbed or razor wire fences, unless erected for agricultural use where the agricultural use is allowed or for industrial use in an industrial district. Barbed or razor wire for industrial use shall be permitted only above six feet above the grade and shall not extend beyond the outer face of the fence.
- (3) Fences with dangerous protrusions, including, but not limited to, spikes, nails, or broken glass, attached or embedded in any part of the fence.
- (4) Fences constructed contrary to this section.

I. Fences exempt from permit requirement. The following fences, under the conditions set forth herein, may be erected without issuance of a permit. All fences shall comply with all other requirements of this chapter. A permit may still be required under other ordinances.

- (1) Temporary snow fences erected to restrict windblown snow. Such fences shall not be erected prior to November 15 and must be removed by April 15.

- (2) Temporary construction fences for erosion control, site protection or protection of plantings. Such fences shall be maintained for no longer than 180 days or, if for erosion control, until the soil is stabilized.
- (3) Seasonal garden fences made of wire or wood.
 - (a) Garden fences shall be located in side or rear yards only.
 - (b) Garden fences shall be no taller than six feet.
 - (c) Garden fences shall be removed at the end of the growing season and shall not be erected more than two weeks prior to planting.
- (4) Fencing required for the keeping of chickens on residential property under **§ 135-11V**, provided that the height does not exceed four feet and the total ground area does not exceed 100 square feet.
- (5) Agricultural fences used to provide enclosure for agricultural animals or fields located in districts where agricultural uses are allowed and not greater than forty-percent opaque.
- (6) Underground pet containment systems.
- (7) Earth mounds and berms, no higher than 12 inches above original grade level, used for decorative purposes only and not part to a fence design.
- (8) Decorative fences not exceeding two feet in height.

§ 135-15.1. Earthen berms.

[Added 2-22-2017 by Ord. No. 2017-01]

A. General.

- (1) Permit required. A permit, to be issued by the Building Inspector, shall be required for all berms or changes in topography regardless of zoning district, uses, or application.
- (2) Review and approval.
 - (a) Completeness. Within 10 business days of the receipt of a permit application, the Building Inspector shall inform the applicant of its completeness or the need for additional information.
 - (b) Evaluation. All permits for an earthen berm shall be reviewed by the Building Inspector, Public Works Director, and Town Engineer. Written findings shall be provided to indicate compliance or noncompliance of the application with the requirements outlined herein.
 - (c) Decision. Within 30 business days of the receipt of a complete permit application, unless action by the Zoning and Planning Commission and/or Town Board is required, the Building Inspector shall inform the applicant in writing whether the permit is approved or disapproved.
- (3) Plans and attachments.

- (a) Name, address and telephone number of the applicant, and location of building, structure, or lot where the berm is to be constructed.
 - (b) Name of person, firm, corporation, or business that is constructing or altering the berm.
 - (c) Written consent of the owner or lessee of the land upon which the berm is proposed to be located.
 - (d) Site plan depicting berm location, property lines, setbacks, proposed and existing grade contours, any related drainage facilities, and any existing easements on the subject property.
 - (e) Proposed type of fill material and cover material.
 - (f) Landscaping plan including grasses or ground cover, shrubbery, and tree types specifying the spacing and size of all plantings.
 - (g) Proposed schedule for all phases of work.
 - (h) Additional information that may be unique to the property, as required by the Building Inspector or Town Engineer.
- (4) Design.
- (a) Berms shall be designed and landscaped to minimize erosion with a rounded crown at the highest point of the berm, extending the length of the berm.
 - (b) Berm slopes shall be protected with sod, seed, shrubs or other form of natural ground cover. Berms adjacent to public rights-of-way shall be a slope no greater than 3:1, unless approved by the Town Engineer.
 - (c) Trees should not be planted at the very top of a berm. Rather, they should be planted on the slope side of a berm.
 - (d) Berms should be designed carefully to blend in with the surrounding environment. The gradient on berms should fluctuate in order to repeat characteristics found in nature.
- (5) Height.
- (a) Maximum allowed. The height of a berm shall not exceed six feet unless otherwise specified in this section.
 - (b) How measured. The vertical height shall be measured from an average of the existing ground grade along both sides of the berm to the top or crown of the proposed berm.
 - (c) Fencing atop a berm. Fencing shall not be placed on a berm unless approved by the Zoning and Planning Commission. Where a berm is constructed and/or grading is done solely to increase the effective height of a fence, the fence's height shall be measured from the ground elevation prior to the change in topography.
- (6) Location.
- (a)

Berms shall not be located within any existing or future public road right-of-way, utility easements or drainage easements.

- (b) A berm may straddle a lot line if a landscape easement is recorded and attached as a deed restriction to the properties, including an owner's agreement and easement to be provided to the Town prior to issuance of any permit.
 - (c) The Building Inspector or Town Engineer may require a specific setback to ensure proper drainage in accordance with Subsection A(7) below.
- (7) Grading and drainage.
- (a) Berms shall not be permitted to adversely alter stormwater drainage patterns to neighboring property owners. The Building Inspector and/or Town Engineer may require engineering reports, including information required under Chapter 36 of the Ledgeview Code of Ordinances, in order to assess runoff and stormwater impacts.
- (8) Inspection.
- (a) Berms shall be inspected by the Building Inspector and/or Town Engineer. If berm development or berm activities are being carried out without a permit, Town personnel shall enter the land pursuant to the provisions of §§ 66.122 and 66.123, Wis. Stats.^[1]
- [1] Editor's Note: Section 66.122 was renumbered as § 66.0119 and amended by 1999 Act 150, §§ 287 to 290, effective 1-1-2001; § 66.123 was renumbered in part and repealed in part by 1999 Act 150, §§ 291, 292, effective 1-1-2001.*
- (b) It is the responsibility of the property owner to exhibit that the berm has been constructed in accordance with the approved permit, which may necessitate documentation from a registered land surveyor or professional engineer.
- (9) Fees. A fee, established by the Town Board, may be required for permits and review by Town personnel and/or the Zoning and Planning Commission.

B. Screening for single- and two-family residential properties.

- (1) Applicability. This subsection shall apply to properties with a single- or two-family use or zoning.
- (2) Height. A height up to eight feet may be approved by the Zoning and Planning Commission and Town Board.

C. Screening for nonresidential, multifamily residential, and institutional/conservancy properties.

- (1) Applicability. This subsection shall apply to properties with a commercial, industrial, multifamily residential, and institutional/conservancy use or zoning, except where they abut a property zoned or used for single- or two-family residential.
- (2) Height. A maximum height of eight feet is permitted by right. A height up to 10 feet may be permitted if approved by the Zoning and Planning Commission and Town Board.

D. Screening between residential and nonresidential land uses.

- (1)

Applicability. That portion of any business, industrial, institutional, conservancy or multiple-family district (other than duplex construction) that is abutting property zoned or used for single-family residential development.

- (2) Height. Earthen berms used as screening in transitional yards shall have a minimum height of four feet. Such berm shall not exceed 10 feet in height unless approved by the Zoning and Planning Commission and Town Board.

E. Screening along Interstate 43 or railroad right-of-way.

- (1) Applicability. This section shall apply to any property, regardless of zoning district, which directly abuts the right-of-way for Interstate 43 or a railroad.
- (2) Location. A berm constructed to buffer noise, light and related impacts associated with the interstate or railroad must be located adjacent and parallel to the right-of-way.
- (3) Height. Earthen berms used as screening in transitional yards shall have a maximum height of 12 feet unless otherwise approved by the Zoning and Planning Commission and Town Board.

§ 135-16. Swimming pools, hot tubs and spas.

[Amended 4-22-2008 by Ord. No. 2008-009; 8-20-2013 by Ord. No. 2013-006; 1-5-2015 by Ord. No. 2014-022; 7-5-2016 by Ord. No. 2016-012]

- A. Every outdoor swimming pool, hot tub or spa, herein referred to as "pool," having a depth of 18 inches or more, shall be surrounded by a barrier no less than 48 inches in height above grade to restrict unauthorized access. No barrier shall be required if the pool is equipped with a safety cover complying with ASTM F1346 which is closed when not in use.
- B. Permit required. No person shall construct, erect, extend, modify or otherwise install any pool and its required barrier within the Town of Ledgeview without first obtaining a permit from the Building Inspector. Any pool in existence on the date this chapter becomes effective shall, within 30 days from the effective date, enclose the pool with a barrier meeting the requirements of this chapter.
- C. Pools and decks shall be considered accessory structures and meet all related requirements in the district in which it is located.
- D. Any structure installed related to a pool, including but not limited to decks and stairs, shall meet the relevant Wisconsin codes and not obstruct the minimum barrier requirements.
- E. The required barrier height may be accomplished by including the sidewall height above grade of an aboveground pool and properly installed pool manufacturer-approved enclosure extensions as needed. Pool access shall meet the requirements of § 135-16H.
- F. The required barrier surrounding a pool is permitted to include permanent fences and permanent structures meeting the minimum requirements, including but not limited to dwellings, garages and accessory buildings.
- G. The required barrier surrounding the pool shall be so constructed as not to have openings, holes or gaps that allow a four-inch-diameter object to pass through.

- H. All entry points into the barrier shall have gates or doors equipped with self-closing and self-latching devices placed a minimum of 50 inches above the finished grade unless otherwise constructed to be automatically inaccessible to small children. Doorways leading from a dwelling or accessory building to the enclosed area are exempt from this requirement.
- I. No pool or the associated equipment, including but not limited to motors, pumps and lighting, shall be located, designed, operated or maintained so as to interfere unduly with adjoining property owner's enjoyment of their property or the neighborhood. All pool motors and pumps shall be located to minimize noise disturbance.
- J. Lights used to illuminate any pool shall be so arranged and shaded as to reflect light away from adjoining premises. Lights shall not create illuminations brighter than 0.5 footcandle on adjoining properties measured at ground level.
- K. It shall be unlawful for any person to make, continue or cause to be made or continued at any pool any loud, unnecessary or unusual noise or any noise which annoys, disturbs, injures or endangers the comfort, repose, health, peace or safety of others. In the operation of a pool, the use, or permitting the use or operation, of any radio, receiving set, musical instrument, phonograph or other machine or device for the producing or reproducing of sound in such manner as to disturb the peace, quiet and comfort of the neighboring inhabitants, or at any time with louder volume than is necessary for convenient hearing of the person or persons who are in the pool premises, shall be unlawful.

§ 135-17. Storage of semitrailers and truck bodies.

[Amended 3-6-2017 by Ord. No. 2017-03]

Semitrailers and truck bodies shall only be allowed to be stored in the open in a Heavy Industrial District or in an A-1 District on parcels 35 acres or greater, then only as a conditional use.

§ 135-18. Sexually oriented adult entertainment establishments.

- A. Definitions. For the purpose of this section, the following terms shall have the meanings indicated:

SEXUALLY ORIENTED ADULT ENTERTAINMENT ESTABLISHMENTS

Includes bookstores, motion-picture theaters, mini motion-picture theaters, bath houses, motel, modeling studios, body painting studios, cabarets and novelty shops; and are more specifically defined as:

(1) ADULT BOOKSTORE

An establishment having as a substantial or significant portion of its stock and trade in books, magazines and other periodicals which are distinguished or characterized by their emphasis on matter depicting, describing or relating to specified sexual activities or specified anatomical areas, as defined herein.

(2) ADULT MOTION-PICTURE THEATER

An enclosed building with a capacity of 50 or more persons at which a significant or substantial portion of the material presented is distinguished or characterized by an emphasis on matter depicting, describing or relating to specified sexual activities or specified anatomical areas, as defined herein, for observation by patrons therein.

(3) **ADULT MOTION-PICTURE THEATER (OUTDOOR)**

A parcel of land from which individuals may view a motion picture presented out of doors which presents material distinguishably characterized by an emphasis on matter depicting, describing or relating to specified sexual activities or specified anatomical areas.

(4) **ADULT MINI MOTION-PICTURE THEATER**

An enclosed building with a capacity for less than 50 persons used for presenting material distinguished or characterized by an emphasis on matter depicting, describing or relating to specified sexual activities or specified anatomical areas, as defined herein, for observation by patrons therein.

(5) **ADULT BATH HOUSE**

An establishment or business which provides the service of baths of all kinds, including all forms and methods of hydrotherapy, that is not operated by a medical practitioner or a professional physical therapist licensed by the State of Wisconsin, and which establishment provides to its patrons an opportunity for engaging in specified sexual activities, as defined in this chapter.

(6) **ADULT MOTEL**

A hotel, motel or similar commercial establishment which:

- (a) Offers accommodations to the public for any form of consideration; provides patrons with closed-circuit television transmission, films, motion pictures, video cassettes, slides or other photographic reproductions which are characterized by the depiction or description of specified sexual activities or specified anatomical areas; and has a sign visible from the public right-of-way which advertises the availability of this adult type of photographic reproductions;
- (b) Offers a sleeping room for rent for a period of time that is less than 10 hours; or
- (c) Allows a tenant or occupant of a sleeping room to subrent the room for a period of time that is less than 10 hours.

(7) **ADULT MODELING STUDIO**

An establishment or business which provides the services of modeling for the purpose of reproducing the human body wholly or partially in the nude by means of photography, painting, sketching, drawing or otherwise.

(8) **ADULT BODY PAINTING STUDIO**

An establishment or business wherein patrons are afforded an opportunity to paint images on a body which is wholly or partially nude. For purposes of this chapter, the adult body painting studio shall not be deemed to include a tattoo parlor.

(9) **ADULT CABARET:**

- (a) An establishment or business which features male and/or female topless and/or bottomless dancers, go-go dancers, exotic dancers, strippers or similar entertainers.
- (b) Any adult cabaret, as defined above, which features such entertainment on a periodic and infrequent basis is considered an adult entertainment establishment only during those times when the adult entertainment is being presented or the entertainers are on the premises; and all provisions of this chapter shall apply

during those presentations. The establishment shall notify the Brown County Sheriff's Department at least 24 hours prior to the date on which such adult entertainment is to take place.

- (c) Any periodic adult establishment, as defined above, shall be licensed yearly in accordance with the licensing provision hereinafter set forth.

(10) **ADULT NOVELTY SHOP**

An establishment or business having as a substantial or significant portion of its stock and trade in novelty or other items which are distinguished or characterized by their emphasis on, or designed for, specified sexual activities, as defined herein, or stimulating such activity.

SPECIFIED ANATOMICAL AREAS

- (1) Less than completely and opaquely covered:
 - (a) Human genitals and/or pubic region.
 - (b) Buttock.
 - (c) Female breasts below a point immediately above the top of the areola.
- (2) Human male genitals in a discernible turgid state, even if completely and opaquely covered.

SPECIFIED SEXUAL ACTIVITIES:

- (1) Human genitals in a state of sexual stimulation or arousal.
- (2) Acts of human masturbation, sexual intercourse or sodomy.
- (3) Fondling or other erotic touching of human genitals, pubic region, buttock or female breasts.

- B. General standards. Sexually oriented adult entertainment establishments (hereinafter "adult establishments") shall locate only in areas zoned Heavy Industrial (HI), and then only as a conditional use. Such application for conditional use may only be granted if the following requirements are met:

[Amended 9-18-2007 by Ord. No. 2007-016; 12-4-2017 by Ord. No. 2017-16]

- (1) No more than one adult establishment shall be located on any one parcel, and such adult establishment shall be at least 1,500 feet from any other adult establishment. Further, no adult establishment shall be permitted within 1,000 feet of the following:
 - (a) Any land zoned residential (R-1, R-1-2A, R-2, R-3, R-R).
 - (b) A historic site identified on the National Register, or as an adopted historic district by this chapter.
 - (c) Any public or private elementary or secondary school or licensed nursery school or day-care center.
 - (d) A church or established place of worship.

- (e) A public park or parkway.
- (2) Signs advertising any of the aforementioned adult uses shall be in accordance with Article **XX**, Regulation of Signs, with the exception, however, that no tower or portable signs or billboards shall be permitted on the premises, and with the further exception that signs will inform only of the establishment name and address and will not depict specified sexual activities and/or specified anatomical areas as defined in this chapter, and provided further that there shall be no flashing or traveling lights located outside the building. The location and wording of such sign shall be shown on the site plan required by this chapter and submitted contemporaneously with the request for conditional use.
- (3) Adequate parking shall be provided in a lighted area in accordance with Article **XXI**, Off-Street Parking Requirements. Such parking provisions shall be shown on the site plan required by Town ordinance and submitted contemporaneously with the request for conditional use.
- (4) There shall be no display windows on the premises.
- (5) In the case of adult cabarets, the hours of operation shall be limited to the same hours of operation for bars and taverns within that community within which the district is located.
- (6) Outdoor adult motion-picture theaters are prohibited.
- (7) Prior to the granting of a conditional use permit, an inventory of the surrounding area and population shall be made by the Town Zoning and Planning Committee along with a study of the proposed development and plans for the area.
- (8) All adult establishments shall be licensed in accordance with this section pertaining to the licensing of sexually oriented adult entertainment establishments.

§ 135-18.1. Exterior lighting.

[Added 8-16-2011 by Ord. No. 2011-008]

- A. Purpose. The purpose of this section is to establish lighting levels for various permitted uses that promote visual surveillance, reduce the potential for criminal activity and prevent the unnecessary glare of light on adjacent properties.
- B. Definitions. The following terms, whenever used in this section, shall have the meanings set forth below:

FOOTCANDLE

The luminance on a one-square-foot surface of which there is a uniformly distributed flux of one lumen. One footcandle is equal to one lumen per square foot. Unless otherwise expressly provided, footcandle measurements in this section shall refer to ground-level measurements of luminance at fully maintained output as used rather than initial luminance.

LIGHT TRESPASS

Light from an artificial light source that is intruding across property boundaries.

LUMENS

A unit of illumination, being the amount of illumination of a unit area of spherical surface due to a light of unit intensity placed at the center of the sphere.

OUTDOOR LIGHTING

Includes, but is not limited to, floodlighting, security lighting, event lighting, landscape lighting or the lighting of off-street parking and loading areas, but does not include public streetlights or traffic signals.

SECURITY LIGHTING

Any light source used to illuminate a building, structure or property during the evening hours that seeks to deter criminal activity.

- C. Light trespass prohibited. All areas containing outdoor lighting shall limit light trespass onto adjacent property, when measured at any point along a property line, to the requirements set forth below. Compliance shall be achieved utilizing fixtures shielding, directional control designed into fixtures, fixture locations, height, or aim or a combination of these or other factors.

District Adjoining Subject Property	Maximum Light Spillage to Adjoining Lots Measured (footcandles)
A-1, A-2, R-1, R-2, R-3, R-R	0.20
NCD, B-1, B-2, LI, HI, I-1, C-1, PDD-BP	0.50

- D. Neon lighting. Light sources consisting of glass tubes filled with neon, argon, krypton, or other similar gas, hereafter referred to as "neon lighting," are excluded from shielding and line-of-sight requirements. Such lighting shall, however, be subject to the light trespass requirements of § 136-18.1C.

Article V. R-1 Residential District

§ 135-19. Applicability of regulations.

The following regulations shall apply in R-1 Districts.

§ 135-20. Permitted uses.

Permitted uses shall be as follows:

- A. Parks, trails and playgrounds.
[Amended 6-4-2007 by Ord. No. 2007-010]
- B. Single-family dwellings.
- C. Town structures.
[Added 6-4-2007 by Ord. No. 2007-010]

§ 135-21. Permitted accessory uses.

Permitted accessory uses shall be as follows:

- A. Home occupations, as defined in § 135-8, Definitions.
- B. Private garages, carports and driveways.
- C. Family swimming pools, gazebos, fences, decks and hot tubs.
[Amended 6-4-2007 by Ord. No. 2007-010]
- D. Satellite dish antennas up to 38 inches.
[Amended 6-4-2007 by Ord. No. 2007-010]
- E. Toolhouses, sheds and other similar buildings used for the storage of common personal supplies.
[Amended 6-4-2007 by Ord. No. 2007-010]
- F. Distribution lines, telephone and cable television lines and public utility installations, public streets, street rights-of-way and street improvements to service the area.
[Amended 6-4-2007 by Ord. No. 2007-010]
- G. Temporary buildings, trailers, equipment and signs necessary for construction purposes and the temporary storage of building materials and equipment for a period not to exceed the duration of such construction.

§ 135-22. Conditional uses.

[Amended 6-4-2007 by Ord. No. 2007-010]

Conditional uses shall be as follows:

- A. Bed-and-breakfast establishments.
- B. Cemeteries.
- C. Athletic fields.
- D. Public recreational and community center buildings and grounds related to parks.
- E. Other governmental facilities.
- F. Religious institutions in the form of convents, seminaries, monasteries, churches, chapels, temples, synagogues, rectories, parsonages and parish houses.
- G. Man-made bodies of water.
- H. Transmission lines, substations and pipelines.
- I. Condominiums and two-family dwellings.
- J. Community living arrangements having a capacity for eight or fewer persons being serviced by the program, licensed and operated under the authority of the Wisconsin Department of Health and Family Services in accordance with W.S.A. s. 62.23(7)(i).

§ 135-23. Lot requirements with public sewer.

Lot requirements with public sewer shall be as follows:

- A. Single-family area: 12,000 square feet minimum lot size; 2,000 contiguous buildable square feet.
[Amended 6-4-2007 by Ord. No. 2007-010]
- B. Zoning lot frontage: 90 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a street such as a cul-de-sac. In no case shall lot frontage measured at the right-of-way line of a cul-de-sac or curved street be less than 65 feet.^[1]

[1] *Editor's Note: Former Subsection C, establishing lot width requirements, as amended, was repealed 6-4-2007 by Ord. No. 2007-010.*

§ 135-24. Height regulations.

Height regulations shall be as follows:

- A. Principal structure: 35 feet maximum, except as provided in § 135-13, Height regulations.
[Amended 6-4-2007 by Ord. No. 2007-010]
- B. Accessory structures shall not exceed the height of the principal structure or 25 feet, whichever is the least, except as provided in § 135-13, Height regulations.

[1] *Editor's Note: Former § 135-24, Lot requirements without public sewer, as amended, was repealed 6-4-2007 by Ord. No. 2007-010.*

§ 135-25. Building setbacks.

[Amended 6-4-2007 by Ord. No. 2007-010]

Building setbacks shall be as follows:

- A. With curb and gutter:

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Front yard	30 minimum from right-of-way	30 minimum from right-of-way
Side yard	10 minimum each side	10 minimum
Rear yard	25 minimum	10 minimum
Corner side	30 minimum from right-of-way	30 minimum from right-of-way

- B. Without curb and gutter:

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Front yard	35 minimum from right-of-way	35 minimum from right-of-way
Corner side	35 minimum from right-of-way	35 minimum from right-of-way

§ 135-26. Building size and floor area.

[Amended 7-1-2002; 2-21-2007 by Ord. No. 2007-004; 6-4-2007 by Ord. No. 2007-010]

- A. Principal structure. The principal structure shall contain the following minimum floor area:

Number of Bedrooms	Minimum Floor Area (square feet)
1	1,200
2	1,200
3	1,500
4 or more	2,000

- B. In addition to such principal structure, the premises must include a one-car or more enclosed garage with a maximum of four stalls with overhead doors facing the street, either attached to or detached from such principal structure. A required detached garage shall not exceed 1,200 square feet and cannot occupy more than 30% of the contiguous buildable rear yard.
- C. An accessory building shall not exceed 900 square feet in size and cannot occupy more than 30% of the contiguous buildable rear yard, and must be of similar and complementary construction to the principal structure except as provided for in § 135-11D(2). The accessory building shall have no more than four single overhead doors or two double overhead doors on any exterior wall of a building.

§ 135-27. Number of structures.

[Amended 6-4-2007 by Ord. No. 2007-010]

- A. Only one principal structure shall be located on a lot/parcel.
- B. Only one accessory building or structure shall be located on a lot, except that a swimming pool, hot tub, gazebo or deck not attached to the principal structure by use of deck shall not be considered in the count, except as provided in § 135-16.
- C. Accessory buildings shall not be established or constructed prior to the establishment of the principal structure.

§ 135-28. Parking.

[Amended 6-4-2007 by Ord. No. 2007-010]

Parking shall conform to the requirements as set forth in Article **XXI**, Parking Requirements.

§ 135-29. Other requirements.

[Added 6-4-2007 by Ord. No. 2007-010]

Buildings shall be maintained structurally and kept in good repair. Outside appearance shall be maintained in accordance with originally approved appearance and design.

- [1] *Editor's Note: Former § 135-29, Signs, was repealed 7-19-2005 by Ord. No. 2005-014. See now Chapter 79, Signs.*

Article VI. (Reserved)

[1] *Editor's Note: Former Art. VI, R-1-2A District, as amended, was repealed 6-4-2007 by Ord. No. 2007-010.*

§ 135-30. (Reserved)

§ 135-31. (Reserved)

§ 135-32. (Reserved)

§ 135-33. (Reserved)

§ 135-34. (Reserved)

§ 135-35. (Reserved)

§ 135-36. (Reserved)

§ 135-37. (Reserved)

§ 135-38. (Reserved)

§ 135-39. (Reserved)

§ 135-40. (Reserved)

§ 135-41. (Reserved)

§ 135-42. (Reserved)

§ 135-43. (Reserved)

Article VII. R-2 Residential District

§ 135-44. Applicability of regulations.

The following regulations shall apply in R-2 Districts.

§ 135-45. Permitted uses.

Permitted uses shall be as follows:

- A. Parks, trails and playgrounds.
[Amended 6-4-2007 by Ord. No. 2007-010]
- B. (Reserved)^[1]
[1] *Editor's Note: Former § 135-45B, Single-family dwellings, was repealed 3-6-2017 by Ord. No. 2017-02. See now § 135-47L.*
- C. Two-family dwellings existing as of the date of adoption of Ordinance No. 2007-010.^[2]
[Amended 6-4-2007 by Ord. No. 2007-010]
[2] *Editor's Note: Ord. No. 2007-010 was adopted 6-4-2007.*
- D. Town structures.
[Added 6-4-2007 by Ord. No. 2007-010]

§ 135-46. Permitted accessory uses.

Permitted accessory uses shall be as follows:

- A. Home occupations, as defined in § 135-8, Definitions.
- B. Private garages, carports and driveways.
- C. Family swimming pools, gazebos, fences, decks and hot tubs.
[Amended 6-4-2007 by Ord. No. 2007-010]
- D. Satellite dish antennas up to 38 inches.
[Amended 6-4-2007 by Ord. No. 2007-010]
- E. Toolhouses, sheds and other similar buildings used for the storage of common personal supplies.
[Amended 6-4-2007 by Ord. No. 2007-010]
- F. Distribution lines, telephone and cable television lines and public utility installations, public streets, street rights-of-way and street improvements to service the area.
[Amended 6-4-2007 by Ord. No. 2007-010]
- G. Temporary buildings, trailers, equipment and signs necessary for construction purposes and the temporary storage of building materials and equipment for a period not to exceed the duration of such construction.

§ 135-47. Conditional uses.

[Amended 6-4-2007 by Ord. No. 2007-010]

Conditional uses shall be as follows:

- A. Bed-and-breakfast establishments.

- B. Cemeteries.
- C. Condominiums and two-family dwellings.
- D. Athletic fields.
- E. Public recreational and community center buildings and grounds.
- F. Community living arrangements having a capacity for eight or fewer persons being served by the program, licensed and operated under the authority of the Department of Health and Family Services in accordance with W.S.A. s. 62.23(7)(i).
- G. Other governmental facilities.
- H. Religious institutions in the form of convents, seminaries, monasteries, churches, chapels, temples, synagogues, rectories, parsonages and parish houses.
- I. Man-made bodies of water.
- J. Transmission lines, substations and pipelines.
- K. Two-family homes on lots approved for future condominium construction by the Town Board at the time of plat or certified survey map approval. Lots shall be identified as potential condominium lots on the final recorded subdivision plat. Petition for condominium lots within a proposed subdivision and conformance with the condominium lot standards does not assure the applicant of such lot approval. Approval will be dependent upon each individual subdivision or certified survey map's site characteristics, adjacent lands and other factors determined by the Site Review/Planning and Zoning Committee and the Town Board.
- L. Single-family dwellings.
[Added 3-6-2017 by Ord. No. 2017-02]

§ 135-48. Lot requirements with public sewer.

[Amended 11-14-2000; 6-4-2007 by Ord. No. 2007-010]

Lot requirements shall be as follows:

- A. Area: 15,000 square feet minimum lot size; each unit 2,000 contiguous buildable square feet.
- B. Zoning lot frontage: 100 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a street such as a cul-de-sac. In no case shall lot frontage measured at the right-of-way line of a cul-de-sac or curved street be less than 85 feet.

§ 135-49. Height regulations.

[Amended 6-4-2007 by Ord. No. 2007-010]

Height regulations shall be as follows:

- A. Principal structure: 35 feet maximum, except as provided in § 135-13, Height regulations.
- B. Accessory structures shall not exceed the height of the principal structure or 25 feet, whichever is the least.

§ 135-50. Building setbacks.

[Amended 6-4-2007 by Ord. No. 2007-010]

Building setbacks shall be as follows:

- A. With curb and gutter:

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Front yard	30 minimum from right-of-way	30 minimum from right-of-way
Side yard	10 minimum each side	10 minimum
Rear yard	25 minimum	10 minimum
Corner side	30 minimum from right-of-way	30 minimum from right-of-way

- B. Without curb and gutter:

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Front yard	35 minimum from right-of-way	35 minimum from right-of-way
Corner side	35 minimum from right-of-way	35 minimum from right-of-way

§ 135-51. Building size.

[Amended 7-1-2002; 2-21-2007 by Ord. No. 2007-004; 6-4-2007 by Ord. No. 2007-010]

- A. Principal structure. Such building must contain the following minimum floor area:

Number of Bedrooms	Minimum Floor Area (square feet)
1	1,200
2	1,200
3	1,500
4 or more	2,000
Condominiums	2,000; 1,000 each unit

- B. In addition to such principal structure, the premises shall include a one-car or more enclosed garage with a maximum of four overhead stalls facing the street, either attached to or detached from such principal structure for each unit. A required detached garage shall not exceed 1,200 square feet and cannot occupy more than 30% of the contiguous buildable rear yard.
- C. An accessory building shall not exceed 900 square feet in size and cannot occupy more than 30% of the contiguous buildable rear yard, and must be of similar and complementary construction to the principal structure except as provided for in § 135-11D(2). The accessory building shall have no more than four overhead single doors or two overhead double doors on any exterior wall of a building.

§ 135-52. Number of structures.

[Amended 6-4-2007 by Ord. No. 2007-010]

- A. Only one principal structure shall be located on a lot or parcel.
- B. Only one accessory building or structure shall be located on a lot, except that a swimming pool, hot tub, gazebo or deck not attached to the main structure by use of a deck shall not be considered in the count, except as provided in § 135-16.
- C. Accessory buildings shall not be established or constructed prior to the establishment of the principal structure.

§ 135-53. Other requirements.

[Added 6-4-2007 by Ord. No. 2007-010]

Buildings shall be maintained structurally and kept in good repair. Outside appearance shall be maintained in accordance with originally approved appearance and design.

[1] *Editor's Note: Former § 135-53, Signs, was repealed 7-19-2005 by Ord. No. 2005-014. See now Chapter 79, Signs.*

§ 135-54. Parking.

[Amended 6-4-2007 by Ord. No. 2007-010]

Parking shall conform to the requirements as set forth in Article XXI, Parking Requirements.

Article VIII. R-3 Multiple-Family District

§ 135-55. Applicability of regulations.

The following regulations shall apply in R-3 Districts.

§ 135-56. Permitted uses.

[Amended 6-4-2007 by Ord. No. 2007-010; 2-20-2008 by Ord. No. 2008-004]

Permitted uses shall be as follows:

- A. Multiple-family dwellings.
- B. Parks, trails and playgrounds.
- C. Dwellings existing as of the date of adoption of Ordinance No. 2007-010.^[1]

[1] *Editor's Note: Ord. No. 2007-010 was adopted 6-4-2007.*

§ 135-57. Permitted accessory uses.

[Amended 2-20-2008 by Ord. No. 2008-004]

Permitted accessory uses shall be as follows:

- A. Town structures.
- B. Home occupations, as defined in § 135-8, Definitions.
- C. Private garages, carports and driveways.
- D. Satellite dish antennas not to exceed 38 inches in diameter.
- E. Transmission lines, telephone and cable lines and public utility installations to service the area.
- F. Temporary buildings, trailers, equipment and signs necessary for construction purposes and the temporary storage of building materials and equipment for a period not to exceed the duration of such construction.

§ 135-58. Conditional uses.

[Amended 2-20-2008 by Ord. No. 2008-004]

Conditional uses shall be as follows:

- A. Bed-and-breakfast establishments.
- B. Cemeteries.
- C. Tool houses, sheds and other similar buildings used for the storage of common personal supplies.
- D. Public recreational and community center buildings and grounds.
- E. Community living arrangements having a capacity for eight or fewer persons being served by the program, licensed and operated under the authority of the Department of Health and Family Services in accordance with W.S.A. § 62.23(7)(i).
- F. Community living arrangements having a capacity for nine to 15 persons being served by the program, licensed and operated under the authority of the Department of Health and Family Services, are permitted as a conditional use in accordance with W.S.A. § 62.23(7)(i).
- G. Community living arrangements having a capacity for 16 or more persons served by the program, licensed and operated under the authority of the Department of Health and Family Services in accordance with W.S.A. § 62.23(7)(i).
- H. Post offices and other governmental facilities.
- I. Man-made bodies of water.
- J. Swimming pools.

§ 135-59. Lot requirements.

Lot requirements are as follows:

- A. Multiple-family dwelling, area:

[Amended 2-20-2008 by Ord. No. 2008-004]

- (1) Three-family: 16,000 square feet.
 - (2) Four-family: 18,000 square feet.
 - (3) Five-family: 22,400 square feet and 4,400 additional square feet per dwelling unit beyond the initial four units.
- B. Zoning lot frontage: 100 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a street, such as a cul-de-sac. In no case shall the lot frontage measured at the right-of-way line of a cul-de-sac or curved street be less than 85 feet.
- C. Lot width: 100 feet minimum.
[Amended 11-14-2000]
- D. Greenspace requirement. Buildings, accessory buildings (including garages) and parking areas shall cover no more than 50% of the total lot area.
[Amended 2-20-2008 by Ord. No. 2008-004]

§ 135-60. Height regulations.

Height regulations shall be as follows:

- A. All structures: 35 feet maximum, except as provided § 135-13, Height regulations.

§ 135-61. Building setbacks.

[Amended 2-20-2008 by Ord. No. 2008-004]

Building setbacks shall be as follows:

- A. Lots with curb and gutter.

	Building Setback (in feet)*	
	Principal Structure	Accessory Building
Front yard	30 minimum from right-of-way	30 minimum from right-of-way
Side yard	10 minimum each side	10 minimum
Rear yard	25 minimum	10 minimum
Corner side	30 minimum from right-of-way	30 minimum from right-of-way

NOTES:

*Exception: In the case of a corner lot, the rear lot line building setback for open (nonroofed) decks and swimming pools shall be reduced from 25 feet to 15 feet.

- B. Lots without curb and gutter.

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Front yard	35 minimum from right-of-way	35 minimum from right-of-way

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Corner side	35 minimum from right-of-way	35 minimum from right-of-way

§ 135-62. Building size.

- A. A multifamily building must contain the following minimum floor area:
[Amended 2-20-2008 by Ord. No. 2008-004]

Number of Bedrooms	Minimum Floor Area (square feet)
1	750
2	850
3 or more	1,000, plus 200 for each additional bedroom over 3

- B. In addition to such main building, the premises must include a one-car or more enclosed garage, either attached or detached to such main building for each unit.

§ 135-63. Accessory buildings.

- A. Accessory uses shall conform to district requirements and those set forth in § 135-11, Building and use restrictions.
- B. Accessory building, not including detached garages, shall not exceed 900 square feet in size or 30% of buildable rear yard.
[Amended 7-1-2002; 2-20-2008 by Ord. No. 2008-004]

§ 135-64. (Reserved)

- [1] *Editor's Note: Former § 135-64, Signs, was repealed 7-19-2005 by Ord. No. 2005-014. See now Chapter 79, Signs.*

§ 135-65. Parking.

[Amended 2-20-2008 by Ord. No. 2008-004]

Parking shall conform to the requirements as set forth in Article XXI, Parking Requirements.

§ 135-66. Number of structures.

- A. Only one principal structure shall be located on a lot.
- B. Only one accessory building or structure shall be located on a lot, except that a swimming pool or deck not attached to the main structure by use of a deck shall not be considered in the count.
- C. Accessory buildings shall not be established, nor shall construction begin on any accessory building, prior to the establishment of the principal structure.
[Amended 2-20-2008 by Ord. No. 2008-004]

- D. Buildings shall be kept in good repair and structurally sound. Outside appearance shall be maintained in accordance with originally approved appearance and design.
[Added 2-20-2008 by Ord. No. 2008-004]

Article IX. R-R Rural Residential District

§ 135-67. General provisions.

[Amended 6-4-2007 by Ord. No. 2007-010; 10-20-2009 by Ord. No. 2009-038]

Lawful uses, which are pursuant to the preservation of prime agricultural land for continual farming and which are performed in a manner consistent with the requirements of this chapter, shall be permitted in all R-R Districts. Animals may be raised for personal use or consumption or sale. Permitted animal units shall be calculated in accordance with § **135-11U** of the Ledgeview Code of Ordinances. The following shall apply in R-R Districts.

§ 135-68. Permitted uses.

Permitted uses shall be as follows:

- A. Single-family dwellings.
- B. Town structures.
[Added 6-4-2007 by Ord. No. 2007-010]
- C. Parks, trails and playgrounds.
[Added 6-4-2007 by Ord. No. 2007-010]

§ 135-69. Permitted accessory uses.

Permitted accessory uses shall be as follows:

- A. Family swimming pools, gazebos, fences, decks and hot tubs.
[Amended 6-4-2007 by Ord. No. 2007-010]
- B. Home occupations, as defined in § **135-8**, Definitions.
- C. Private garages, carports and driveways as provided in § **135-11**.
[Amended 6-4-2007 by Ord. No. 2007-010]
- D. Roadside stands, provided that the structure does not cover more than 300 square feet in ground area and does not exceed 10 feet in height.
- E. Satellite dish antennas up to 38 inches.
[Amended 6-4-2007 by Ord. No. 2007-010]
- F. Toolhouses, sheds and other similar buildings used for the storage of common personal supplies.
[Amended 6-4-2007 by Ord. No. 2007-010]
- G. Distribution lines, telephone and cable television lines, public utility installation, public streets, street rights-of-way and street improvements to service the area.

[Amended 6-4-2007 by Ord. No. 2007-010]

- H. Temporary buildings, trailers, equipment and signs necessary for construction purposes and the temporary storage of building materials and equipment for a period of time not to exceed the duration of such construction.

[Added 6-4-2007 by Ord. No. 2007-010]

§ 135-70. Conditional uses.

[Amended 6-4-2007 by Ord. No. 2007-010]

Conditional uses shall be as follows:

- A. Recreation sites and golf courses.
- B. Bed-and-breakfast establishments.
- C. Cemeteries.
- D. Man-made bodies of water.
- E. Religious institutions in the form of convents, seminaries, monasteries, churches, chapels, temples, synagogues, rectories, parsonages and parish houses.
- F. Transmission lines, substations and pipelines.
- G. Two-family structures, limited to condominiums, with a minimum of 1,000 square feet per unit.
- H. Other governmental facilities.

§ 135-71. Lot requirements.

[Amended 11-14-2000; 6-4-2007 by Ord. No. 2007-010]

Lot requirements shall be as follows:

- A. Area: 60,000 square feet minimum lot size; 2,000 contiguous buildable square feet within setbacks.
- B. Zoning lot frontage: 150 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a street such as a cul-de-sac. In no case shall the lot frontage measured at the right-of-way line of a cul-de-sac or curved street be less than 85 feet.

§ 135-72. Height regulations.

Height regulations shall be as follows (NOTE: Except as provided by § 135-13, Height regulations.):

- A. Residential dwelling: 35 feet maximum.
 - B. Accessory structure shall not exceed the height of the principal structure.
- [Added 7-1-2002]

§ 135-73. Building setbacks.

[Amended 7-1-2002; 6-4-2007 by Ord. No. 2007-010]

Building setbacks shall be as follows:

A. With curb and gutter:

	Building Setback (feet)	
	Principal Structure	Accessory Building
Front yard	30 minimum from right-of-way	30 minimum from right-of-way
Side yard	25 minimum	10 minimum*
Rear yard	25 minimum	25 minimum*
Corner side	30 minimum from right-of-way	30 minimum from right-of-way

B. Without curb and gutter:

[Amended 1-19-2016 by Ord. No. 2015-015]

	Building Setback (feet)	
	Principal Structure	Accessory Building
Front yard	35 minimum from right-of-way	35 minimum from right-of-way
Side yard	25 minimum	10 minimum*
Rear yard	25 minimum	25 minimum*
Corner side	35 minimum from right of way	35 minimum from right-of-way

NOTES:

*Exceptions: The side and rear lot line setbacks for accessory buildings 900 square feet or less in size shall be reduced to 10 feet.

§ 135-74. Building size.

A. Such principal structure shall contain the following minimum floor area:

Number of Bedrooms	Minimum Floor Area (square feet)
2	1,200
3	1,500
4	2,000
5 or more	2,400

B. In addition to such principal structure, the premises must include a one-car or more enclosed garage with a maximum of four stalls with overhead doors facing the street, either attached to or detached from such principal structure. A required detached garage shall not exceed 1,200 square feet and cannot occupy more than 30% of the contiguous buildable rear yard.

- C. An accessory building shall not exceed 900 square feet in size and cannot occupy more than 30% of the contiguous buildable rear yard and must be of similar and complementary construction to the principal structure except as provided for in § 135-11D(2). The accessory building shall have no more than four single overhead doors or two double overhead doors on any exterior wall of a building.

§ 135-75. Number of structures.

[Amended 6-4-2007 by Ord. No. 2007-010]

- A. Only one principal structure shall be located on a lot or parcel.
- B. Only one accessory building or structure shall be located on a lot, except that a swimming pool or deck not attached to the principal structure by use of a deck shall not be considered in the count except as provided in § 135-16.
- C. Accessory buildings shall not be established or constructed prior to the establishment of the principal structure.
- D. Accessory uses shall conform to district requirements and those set forth in § 135-11.

§ 135-76. Parking.

[Amended 6-4-2007 by Ord. No. 2007-010]

Parking shall conform to the requirements as set forth in Article **XXI**, Parking Requirements.

§ 135-77. (Reserved)

[1] *Editor's Note: Former § 135-77, Signs, was repealed 7-19-2005 by Ord. No. 2005-014. See now Chapter 79, Signs.*

§ 135-78. Other requirements.

[Amended 11-14-2000; 6-4-2007 by Ord. No. 2007-010]

- A. Other structures or buildings allowed within the R-R District shall meet the requirements of the district and remaining articles of this chapter as determined by the Town Building Inspector.
- B. Buildings shall be maintained structurally and kept in good repair. Outside appearance shall be maintained in accordance with originally approved appearance and design.

Article X. AG-FP Farmland Preservation District

[Amended 11-14-2000; 7-19-2005 by Ord. No. 2005-014; 8-21-2007 by Ord. No. 2007-014; 2-20-2008 by Ord. No. 2008-005; 4-22-2008 by Ord. No. 2008-006; 4-6-2015 by Ord. No. 2014-007; 8-22-2017 by Ord. No. 2017-08; 11-21-2017 by Ord. No. 2017-13]

§ 135-79. Introduction.

- A. Purpose. The purpose of this district is to preserve and enhance land for agricultural uses, and to incorporate and apply the livestock facility siting law requirements found in §§ 92.16 and 93.90, Wis. Stats., and ATP 51 of the Wisconsin Administrative Code and to regulate the siting of new livestock facilities (with an excess of 500 animal units) and the expansion of existing livestock facilities by more than 20% (and over 500 animal units) in any other zoning district other than the Farmland Preservation Zoning District within the Town of Ledgeview.
- B. Authority. This article is adopted pursuant to the Town's zoning powers found in §§ 60.62, 62.23 (7), 92.16 and 93.90, Wis. Stats., together with the administrative provisions set forth in ATP 51 of the Wisconsin Administrative Code, inclusive of all future amendments to any provisions of these statutes and administrative rules. The livestock facility siting standards established in Wis. Admin. Code Ch. ATP 51, including all appendixes, worksheets, and any future amendments to that chapter, are incorporated by reference and adopted.
- C. Incorporation of state law. Pursuant to the provisions of §§ 93.90, Wis. Stats., the Town of Ledgeview does hereby adopt and incorporate into its existing Zoning Ordinance the provisions of §§ 92.16 and 93.90, Wis. Stats., and ATP 51 of the Wisconsin Administrative Code, inclusive of all future amendments to any provisions of § 93.90, Wis. Stats. and ATP 51 of the Wisconsin Administrative Code. The Town of Ledgeview's Zoning Ordinance hereby reflects the provisions of §§ 92.16 and 93.90, Wis. Stats., and ATP 51 of the Wisconsin Administrative Code as if said statutory and administrative provisions were set forth in their entirety within the text of the Town's Zoning Ordinance.
- D. Findings. The livestock siting, animal waste storage, and contaminated runoff storage facilities regulations and standards created by the Town are based upon the following reasonable and scientifically defensible findings of fact which are adopted and incorporated herein by reference:
- (1) The Report of the Livestock Facility Siting Technical Expert Committee Recommendations, dated December 21, 2010, including a recommendation on "Setbacks" that states: "Among other options for managing the offsite impacts of larger livestock operations, DATCP should evaluate augmenting the current road and property line setbacks by requiring separation distance between livestock structures and neighboring occupied residences and high use buildings."
 - (2) A two-year study by the Wisconsin Department of Agriculture, Trade and Consumer Protection and the Wisconsin Department of Natural Resources entitled "Final Report On Wisconsin's Dairy And Livestock Odor And Air Emission Project," dated September 2009, including a recommendation found at Page 5 that states: "Separation distance is a simple, yet effective, tool you can use to reduce impacts on your neighbors. When planning for new facilities, and especially manure storage lagoons, site them as far from neighbors as possible, and with consideration for prevailing winds. Odors are far less noticeable at 800 feet than they are at 200 or even 400 feet. If adjacent properties go up for sale, consider buying them as a buffer against future encroachment by development."
 - (3) An article in the July 1, 2001, Appraisal Journal, pages 301 through 306, titled, "Concentrated Animal Feeding Operations and Proximate Property Values" by John A. Kilpatrick, a partner and senior analyst with Mundy Associates, LLC, an economic, market, and valuation firm specializing in complex real estate matters. The study found that property located near a concentrated animal feeding operation (CAFO) will be negatively impacted by this externality. The degree of impairment depends on proximity and property type and use. Properties with higher unimpaired values are probably impacted more than otherwise lower valued properties.

- (4) A University of Minnesota Extension publication written by Larry Jacobson, David Schmidt, and Susan Wood, Offset Odor From Feedlots Setback Estimation Tool, www.extension.umn.edu/distribution/llivestocksystems/D1768o.html.
- (5) A Purdue University project, presented by the Purdue Agricultural Air Quality Laboratory, Odor Based Setbacks, <http://engineering.purdue.edu/~odor/setback.htm>, that developed setback guidelines for swine production operations. The guidelines considered facility size, orientation and shape, wind frequency, land use, topography, building design and management, manure handling characteristics, and odor design effectiveness.
- (6) A research article by Susan S. Schiffman, Clare E. Studwell, Lawrence R. Landerman, Katherine Berman, and John S. Sundy, Symptomatic Effects of Exposure to Diluted Air Sampled from a Swine Confinement Atmosphere on Healthy Human Subjects, Volume 113, Number 5, Environmental Health Perspectives, pages 567 through 576, (2005). The study concludes at page 574 as follows: "In this study that evaluated healthy volunteers, no statistical differences on objective physical measures, mood, or attention were found from a 1-hr exposure in an environmental chamber to air emissions from a swine house when compared with clean air. However, self-reported symptoms of headache, eye irritation, and nausea were significantly higher in the swine air (experimental) condition than the clean air (condition)."
- (7) A research mini-monograph by Kelley J. Donham, Steven Wing, David Osterberg, Jan L. Flora, Carol Hodne, Kendall M. Thu, and Peter S. Thorne, Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations, Volume 115, Number 2, Environmental Health Perspectives, pages 317-320 (2007). A brief summary of this research project provides: "This workshop evaluated impacts of the proliferation of concentrated animal feeding operations (CAFOs) on sustaining the health of rural communities. Recommended policy changes include a more stringent process for issuing permits for CAFOs, considering bonding for manure storage basins, limiting animal density per watershed, and enhancing local control, and mandating environmental impacts statements."
- (8) A study by Steven J. Taff, Douglas Tiffany, and Sanford Weisberg, "Measured Effects of Feedlots on Residential Property Values in Minnesota: A Report to the Legislature," University of Minnesota Staff Paper Series (July, 1996). The study found a statistically significant pricing impact related both to the existence of a CAFO as well as the distance from the CAFO. In other words, not only does a CAFO have a significant impact on property value, but the nearer the CAFO, the greater the impact.

§ 135-79.5. Permitted uses.

The following activities are permitted by right in the Farmland Preservation Zoning District as specified in § 91.44, Wis. Stats.:

- A. The following agricultural uses on farms conducted for the purpose of producing an income or livelihood:
 - (1) Crop or forage production.
 - (2) The keeping of less than 500 animal units (<500 AU) of cattle, swine, poultry, sheep, or goats.
 - (3) Beekeeping.

- (4) Nursery, sod, or Christmas tree production.
 - (5) Floriculture.
 - (6) Aquaculture.
 - (7) Fur farming.
 - (8) Forest management.
 - (9) Enrolling land in a federal agricultural commodity payment program or a federal or state agricultural land conservation payment program.
- B. Farm residences.
 - C. Accessory uses as outlined in § 135-80.
 - D. Agriculture-related uses.
 - E. Undeveloped natural resource and open space areas.
 - F. Transportation, utility, communication, or other uses that are required under state or federal law to be located in a specific place or that are authorized to be located in a specific place under a state or federal law that preempts the requirement of a conditional use permit for that use.
 - G. Other uses identified by DATCP by rule.

§ 135-80. Accessory uses.

The following land uses shall be permitted accessory uses in the Farmland Preservation Zoning District:

- A. A building, structure, or improvement that is an integral part of, or is incidental to, an agricultural use, including:
 - (1) A facility to store or process raw agricultural commodities, all of which are produced on the farm.
 - (2) A facility used to keep or house livestock on the farm if the proposed livestock housing structure meets the standards prescribed in § 93.90, Wis Stats., and Ch. ATCP 51, Wis. Adm. Code.
 - (3) A facility used to store or process inputs primarily for agricultural uses on the farm.
 - (4) A facility used to keep or service vehicles or equipment primarily employed in agricultural uses on the farm.
- B. An activity or business operation that is an integral part of or incidental to an agricultural use.
- C. A farm residence, including normal residential appurtenances such as a pool, deck, or patio.
- D. A home business, activity, or enterprise, whether or not associated with an agricultural use, which meets all of the following requirements:

- (1) It is conducted on a farm by an owner or operator of that farm.
 - (2) It requires no buildings, structures, or improvements other than those described in Subsection **A** or **C** of this section.
 - (3) It employs no more than four full-time employees annually.
 - (4) It does not impair or limit the current or future agricultural use of the farm or other protected farmland.
- E. Roadside stands for the sale of agricultural products only, provided that the structure does not cover more than 300 square feet in ground area and does not exceed 10 feet in height.
- F. Any other use that DATCP, by rule, identifies as an accessory use.

§ 135-81. Conditional uses.

- A. Finding. The Town may issue a conditional use permit for the certain agricultural and agriculture-related uses for the farmstead under § **135-251** if all of the following findings of fact apply:
- (1) The use and its location in the Farmland Preservation Zoning District are consistent with the purposes of the Farmland Preservation Zoning District.
 - (2) The use and its location in the Farmland Preservation Zoning District are reasonable and appropriate, consider alternative locations, or are specifically approved under state or federal law.
 - (3) The use is reasonably designed to minimize conversion of land, at and around the use site, from agricultural use or open space use.
 - (4) The use does not substantially impair or limit the current or future agricultural use of other protected farmland.
 - (5) Construction damage to land remaining in agricultural use is minimized and repaired to the extent feasible.
- B. The Town may issue a conditional use permit for any of the following uses if that use meets applicable provisions under Subsection **A** and § **135-251**:
- (1) Additional second farm residence.
 - (2) Riding stables and/or equine boarding facilities in accordance with § 91.01(1), Wis. Stats.
 - (3) Farmstead food processing facilities in accordance with § 91.01(1), Wis. Stats.
 - (4) Farmstead retail outlets in accordance with § 91.01(1), Wis. Stats.
 - (5) Farmstead fuel or agrichemical storage facilities in accordance with § 91.01(1), Wis. Stats.
 - (6) Farmstead manure digester, pelletizing plant or other facility that processes raw agricultural commodities, agricultural by-products or agricultural wastes to produce bulk fuel or other bulk products for use on the farmstead.

- (7) A wind turbine or solar energy facility that collects wind or solar energy on the farm and uses or transforms it to provide energy for use only on the farmstead.
- (8) A manure digester, biofuel facility, or other facility that produces energy primarily from materials grown or produced on the farm for use only on the farmstead.
- (9) A waste storage facility used to store or process animal waste produced solely from livestock kept on the farmstead if the proposed facility meets the standards prescribed in Ch. ATCP 51, Wis. Adm. Code.
- (10) Agronomic or veterinary services to agriculture operations.
- (11) Transportation uses, including rail facilities, and agricultural aeronautic facilities.
- (12) Communication uses, including cell towers, antennas and broadcast towers in accordance with Chapter **135**, Article **XXV**.
- (13) Man-made bodies of water in accordance with Article **XXIV**.
- (14) Public utility installation on Town property or right-of-way.
- (15) Government and nonprofit community conditional uses include:
 - (a) Fire stations, police stations, post offices, and other government administration buildings.
 - (b) Schools, colleges, and universities.
 - (c) Religious institutions, including cemeteries and mausoleums.
 - (d) Public parks and recreation areas.
- (16) Distribution lines, telephone and cable television lines and public utility installations, public streets, street rights-of-way and street improvements to the service area unless otherwise regulated by § 91.44(1)(f), Wis. Stats.
- (17) Nonfarm residences that qualify under § 91.46(1)(d), Wis. Stats.
- (18) Nonfarm residences constructed in a rural residential cluster in accordance with an approval of the cluster as a conditional use under § 91.46(1)(e), Wis. Stats.
- (19) A new or expanded facility that will be used to keep cattle, swine, poultry, sheep or goats, and that will have more than 500 animal units, if the proposed facility meets the standards prescribed in §§ 92.16 and 93.90, Wis. Stats., Ch. ATCP 51, Wis. Adm. Code, and § **135-85** of the Town of Ledgeview Zoning Code.

§ 135-82. Rezoning land out of Farmland Preservation Zoning District.

- A. Except as provided in Subsection **B** below, the Town may not rezone land out of a Farmland Preservation Zoning District unless the Town finds all of the following in writing, after public hearing, as part of the official record of the rezoning, before granting the rezone:
 -

- (1) The rezoned land is better suited for a use not allowed in the Farmland Preservation Zoning District.
- (2) The rezoning is consistent with any Comprehensive Plan, adopted by the Town, which is in effect at the time of the rezoning.
- (3) The rezoning is substantially consistent with the Brown County Farmland Preservation Plan, certified under Ch. 91, Wis. Stats., which is in effect at the time of the rezoning.
- (4) The rezoning will not substantially impair or limit current or future agricultural use of other protected farmland.

B. Subsection A does not apply to any of the following:

- (1) A rezoning that is affirmatively certified by the Wisconsin Department of Agriculture, Trade and Consumer Protection under Ch. 91, Wis. Stats.
- (2) A rezoning that makes the Farmland Preservation Zoning Ordinance Map more consistent with the Brown County Farmland Preservation Plan Map, certified under Ch. 91, Wis. Stats., which is in effect at the time of the rezoning.

§ 135-83. Parcel requirements.

Parcel requirements shall be as follows:

- A. Area: minimum 35 aggregate acres controlled by the property owner, family, or trust.
- B. Zoning lot frontage: 150 feet minimum.
- C. Lot width: 150 feet minimum.

§ 135-84. Height regulations.

Height regulations shall be as follows, except as provided by § 135-13, Height regulations:

- A. Farm structures: 40 feet maximum.
- B. Farm silos: 90 feet maximum.
- C. Residential dwellings: 35 feet maximum.

§ 135-85. Required setbacks.

The following setbacks shall be applied to improvements:

- A. Principal structure.
 - (1) Setback from property lines. The principal structure must be located a minimum of 25 feet from side and rear property lines.
 - (2)

Setback from public right-of-way. The front setback for a principal structure must be a minimum of 35 feet from the public right-of-way. On a corner lot, the side setback must be a minimum of 50 feet from the public right-of-way.

B. Accessory structures.

- (1) Setback from property lines. All accessory structures must be located a minimum of 25 feet from side and rear property lines.
- (2) Setback from public right-of-way. The front setback for all accessory structures must be a minimum of 35 feet from the public right-of-way. On a corner lot, the side setback must be a minimum of 50 feet from the public right-of-way.

C. Livestock housing structures.

- (1) Setback from property lines. Livestock housing structures may not be located within:
 - (a) Four hundred feet of any property line, if the livestock facility will have fewer than 1,000 animal units (<1,000 AU).
 - (b) Seven hundred feet of any property line if the livestock facility will have 1,000 to 2,500 animal units (1,000 - 2,500 AU).
 - (c) One thousand feet of any property line, if the livestock facility will have 2,500 to 4,000 animal units (2,500 - 4,000 AU).
 - (d) One thousand two hundred feet of any property line, if the livestock facility will have more than 4,000 animal units (>4,000 AU).

D. Manure or animal waste storage facilities.

- (1) A new or expanded animal waste storage facility or structure may not be located within 1,320 feet of any property line, if the livestock facility will have more than 500 animal units (>500 AU). The animal waste storage structure setback requirement does not prevent the continued use of an animal waste storage structure that was located within the setback area prior to the effective date of the setback requirement.

E. Contaminated runoff storage facilities

- (1) A new or expanded facility, structure, or container designed to store contaminated runoff, including leachate, may not be located within 1,320 feet of any property line, if the livestock facility will have more than 500 animal units (>500 AU).

§ 135-86. Building size.

The minimum size of a residential dwelling shall be 1,200 square feet ground floor area for a one-story dwelling and 875 square feet minimum ground floor area with a total minimum 1,400 square feet for dwellings having more than one story.

§ 135-87. Accessory buildings.

Accessory uses shall conform to district requirements and those set forth in § 135-11, Building and use restrictions.

§ 135-88. Parking.

Parking shall conform to the requirements as set forth in Article **XXI**, Off-Street Parking Requirements.

§ 135-89. Reporting requirements.

- A. The Town shall, by March 1 of each year, provide a report to DATCP of the number of acres that have been rezoned out of the Farmland Preservation Zoning District under § 135-82 during the previous year and a map that clearly shows the location of those acres.
- B. The Town shall, by March 1 of each year, submit a copy of the information that it reports to DATCP under Subsection A to Brown County.

§ 135-90. Other requirements.

- A. Existing nonconforming residences located in the Agricultural-Farmland Preservation District at the time of passage of this chapter may be continued in residential use and may be exempted from any limitations imposed or authorized under § 59.69(10), Wis. Stats.
- B. Other structures or buildings allowed within the AG-FP District shall meet the requirements of the district and remaining articles of this chapter as determined by the Town Building Inspector or designee. Buildings shall be maintained structurally and kept in good repair. Outside appearance shall be maintained in accordance with originally approved appearance and design.
- C. The livestock facility siting standards established in Wis. Admin. Code Ch. ATCP 51, including all appendixes, worksheets, and any future amendments to that chapter, are incorporated by reference and adopted. A new or expanded facility that will be used to keep cattle, swine, poultry, sheep or goats, and that will have more than 500 animal units must complete the application form and worksheets prescribed by Ch. ATCP 51, Wis. Admin. Code. A nonrefundable application fee of \$1,000 must accompany the application.

Article XI. A-2 Agriculture District

[Amended 7-19-2005 by Ord. No. 2005-014; 4-22-2008 by Ord. No. 2008-006; 4-22-2008 by Ord. No. 2008-008; 9-6-2016 by Ord. No. 2016-017]

§ 135-91. Applicability of regulations.

Purpose. The purpose of the A-2 Agricultural District is to limit rural residential development on lands in predominantly agricultural areas that are suited for agricultural production. Lots are limited in number, size and location to minimize the impacts associated with rural residential development. Residents of this district may experience conditions associated with farming that are not necessarily compatible with rural residential use. The number of newly platted A-2 lots created from a parcel of record shall be limited in number and sited accordingly to preserve prime agricultural lands.

§ 135-92. Permitted uses.

Permitted uses shall be as follows:

- A. Agriculture, forestry, general farming and livestock raising.
- B. Single-family dwellings.
- C. Beekeeping.
- D. Nursery, sod, or Christmas tree production.
- E. Floriculture.
- F. Distribution lines, telephone and cable television lines and public utility installations, public streets, street rights-of-way and street improvements to the service area.

§ 135-93. Permitted accessory uses.

Permitted accessory uses shall be as follows:

- A. A building, structure, or improvement that is an integral part of, or is incidental to, an agricultural use, including:
 - (1) A facility to store or process raw agricultural commodities, all of which are produced on the farm.
 - (2) A facility used to keep livestock on the farm.
 - (3) A facility used to store or process inputs primarily for agricultural uses on the farm.
 - (4) A facility used to keep or service vehicles or equipment primarily employed in agricultural uses on the farm.
- B. An activity or business operation that is an integral part of or incidental to an agricultural use.
 - (1) Farmstead food processing facilities.
 - (2) A waste storage or processing facility used to store or process animal waste produced solely from livestock kept on the farmstead.
- C. A home business, activity, or enterprise, whether or not associated with an agricultural use, which meets all of the following requirements:
 - (1) It is conducted on a farm by an owner or operator of that farm.
 - (2) It requires no buildings, structures, or improvements other than those described in § 135-93A(1) or (3).
 - (3) It employs no more than four full-time employees annually.
 - (4) It does not impair or limit the current or future agricultural use of the farm or other protected farmland.
- D. Roadside stands for the sale of agricultural products only, provided that the structure does not cover more than 300 square feet in ground area and does not exceed 10 feet in height.

§ 135-94. Conditional uses.

Conditional uses shall be as follows:

- A. Greenhouses, hatcheries, riding academies, stables, truck farming, game farms, wildlife sanctuaries, game preserves and exotic animals.
- B. Large-animal veterinary hospitals.
- C. Cemeteries.
- D. Commercial feedlots and stock farms.
- E. Airfields, airports and heliports.
- F. Gravel pits, sand pits and stone quarries.
- G. Transmission lines, substations and pipelines.
- H. Recreational sport shooting facility (outdoor facilities only).
- I. Agriculturally related residence or dwelling unit.

§ 135-95. Parcel requirements.

Parcel requirements shall be as follows:

- A. Area: 10 acres, with the following exceptions and qualifiers:
 - (1) Parcels of less than 10 acres which existed prior to September 6, 2016, with such parcels instead having a minimum lot area equal to their lot area on September 6, 2016.
- B. Zoning lot frontage: 150 feet minimum. Minimum lot width may be measured at the building setback line if said lot is located on the outer radius of a curved street, such as a cul-de-sac. In no case shall the lot width measured at the right-of-way line of a curved street be less than 85 feet.

§ 135-95.5. Maximum number of lots.

Three R-R Rural Residential lots with clustering recommended. The number of possible agricultural land lots is based on the amount and configuration of land owned (see the lot chart below). The minimum amount of prime agricultural land shall be utilized when approving the lot option. A-2 or R-R lots created since the adoption of the A-2 Zoning District shall also be taken into account when determining how many lots may be available. All parcels of record may propose the maximum number of lots described in this section unless the number of lots has been reduced due to lots being created from the parent parcel predating the parcel of record. Each parcel of record would have the possibility of at least one lot upon Zoning and Planning Commission review and Board approval. Existing A-2 lots less than 10 acres in area created since the adoption of the A-2 District shall not be further redivided so as to create additional lots. Environmentally sensitive areas as described in the Brown County Environmental Sensitive Area Plan may also impact the maximum number of possible future lots available as outlined in the following lot chart.

A-2 Agricultural Lot Chart

Parcel of Record Size at Time of Ordinance Amendment (acres)	Prior Lot Splits from Parent Parcel	Lots Splits Available as R-R
<40	3	0
<40	2	1
<40	1	2
<40	0	3
>40	3	1
>40	2	1
>40	1	2
>40	0	3

§ 135-96. Height regulations.

Height regulations shall be as follows (NOTE: Except as provided by § 135-13, Height regulations.):

- A. Farm structures: 40 feet maximum.
- B. Farm silos: 90 feet maximum.
- C. Residential dwellings: 35 feet maximum.

§ 135-97. Building setbacks.

Building setbacks shall be as follows:

	Building Setback (feet)		Accessory Building Housing Animals per § 135-11U
	Principal Structure	Accessory Building	
Front yard	35 minimum from right-of-way	35 minimum from right-of-way	35 minimum from right-of-way
Side yard	25 minimum	25 minimum	40 minimum
Rear yard	25 minimum	25 minimum	40 minimum
Corner side	50 minimum from right-of-way	50 minimum from right-of-way	50 minimum from right-of-way

§ 135-98. Building size.

Minimum size of a residential dwelling shall be 1,200 square feet ground floor area for a one-story dwelling and 875 square feet minimum ground floor area with a total minimum 1,400 square feet for dwellings having more than one story.

§ 135-99. Accessory uses.

Accessory uses shall conform to district requirements and those set forth in § 135-11, Building and use restrictions.

§ 135-100. Parking.

Parking shall conform to the requirements as set forth in Article XXI, Off-Street Parking Requirements.

§ 135-101. (Reserved)

§ 135-102. Other requirements.

- A. All future residential dwellings connected with the farming operation shall be located on a separate lot containing a minimum of 60,000 square feet and 150 feet of lot frontage.
- B. Other structures or buildings allowed within the A-2 District shall meet the requirements of the district and remaining articles of this chapter as determined by the Town Building Inspector or designee. Buildings shall be maintained structurally and kept in good repair. Outside appearance shall be maintained in accordance with originally approved appearance and design.

Article XII. Planned Development District Overlay (PDD)

[Amended 6-20-2006 by Ord. No. 2006-011; 2-16-2008 by Ord. No. 2008-022]

§ 135-103. Purpose.

- A. The purpose of the Planned Development District Overlay (PDD) is to encourage and provide a means for creating desirable and quality development by permitting greater flexibility and design freedom than permitted under the basic zoning district regulations. These regulations are established to permit latitude in the development of the building sites if such development is found to be in accordance with the purpose, spirit and intent of this article and the Comprehensive Plan of the Town and is found not to be hazardous, harmful, offensive or otherwise adverse to the environment, property values or the character of the neighborhood or the health, safety and welfare of the Town.
- B. It is intended to permit and encourage diversification, variation and imagination in the relationship of uses, landscaping, structures, open spaces, lot sizes, and heights of structures for developments conceived and implemented as comprehensive and cohesive unified projects. It is further intended to encourage more rational and economic development with relationship to public services and to encourage and facilitate the preservation of open space and other natural features, such as the Niagara escarpment, woodlands, floodplains and wetlands, by incorporating these features into the overall development.

§ 135-104. Application to existing zoning districts.

- A. This article shall serve as an option to the permitted uses and regulations applicable to all zoning districts in the Town and shall be applicable only to those lands which are hereby and may hereafter be zoned Planned Development District Overlay by the Town Board. Existing zoning shall continue in full force and effect and shall be solely applicable until such time as the Town Board grants final approval for the Planned Development District Overlay Zone.
- B. In areas of the Town outside of the A-2 Agriculture District, only conservation subdivisions meeting the requirements of §§ **135-106** and **135-108** of this article shall be considered for PDD Overlay Zoning. Conservation subdivisions in this area shall meet the overall density required under the A-1 Exclusive Agriculture District and shall provide for the conservation of the Niagara escarpment ledge, wetlands, floodplains, and/or other environmentally significant areas.
- C. All required improvements, construction standards, design standards, and all other engineering standards contained within the Ledgeview Code of Ordinances shall be complied with, except where specifically varied through the provisions of this section of the Code.

§ 135-105. Definitions.

As used in this article, the following terms shall have the meanings indicated:

BASIC ZONING REGULATIONS

Such zoning regulations as are applicable to the use district other than the regulations set forth in this article.

BUILDING SITE

A tract of land not divided by public streets or into lots, excepting for single-family dwelling purposes and which will not be subdivided, or where the tract of land, if so divided, is in single ownership or is owned by a condominium group. (The site must be located on a public street or highway.)

COMPREHENSIVE PLAN

The document adopted by ordinance by the Ledgeview Board that meets the requirements of § 66.1001, Wis. Stats. which is now or may hereafter be in effect.

DENSITY

The number of dwelling units permitted per square foot of land area or number of dwelling units permitted per acre of land area.

FINAL PLAN

The proposal for development of a planned unit development, including a plat of subdivision (if any), all covenants, easements and other conditions relating to use, location and bulk of buildings, density of development, common open space and public facilities. The plan shall include such information as required by § **135-113** herein.

IMPROVED OPEN SPACE

The above parcels and any structure or improvements which are placed upon such parcels (i.e., rest rooms, tennis courts, ball diamonds, etc.).

OPEN SPACE

A parcel or parcels of land or an area of water, or a combination thereof, with the site designated and intended for the use or enjoyment of residents of the planned development and/or the public at large.

PARTIES OF INTEREST

When used in reference to providing any notices or granting of any affirmative rights under this chapter shall mean the owners of lands immediately adjacent to the land subject to any action under this chapter extending 200 feet therefrom or owners of land on the opposite side of a public road from the subject land extending 200 feet from the street frontage of such opposite land. This definition shall not prevent the Town from providing notices in its discretion to any other person.

[Added 6-20-2006 by Ord. No. 2006-011]

PLANNED DEVELOPMENT DISTRICT

An area of land controlled by a single owner, corporation or other legal entity which is to be developed as a single unit and is referred to herein as a "PUD."

PRELIMINARY PLAN

The preliminary drawings described in § 135-111 herein, indicating the proposed manner and/or layout of the Planned Development District to be submitted to the Zoning and Planning Committee for approval.

UNIMPROVED OPEN SPACE

Open space kept free of structures or improvements, except for hiking, horseback riding, bicycle trails, ponds, picnic areas and nature parks.

§ 135-106. Uses permitted; building restrictions; district size.

- A. Basic zoning uses. The following uses are permitted in a Planned Development District upon obtaining all necessary approvals required under this article.
 - (1) Conservation subdivision plats having a minimum of fifty-percent open space, of which at least 25% must be outside of environmentally sensitive areas, as described in the Ledgeview Subdivision Ordinance.^[1] Stormwater management facilities, group on-site private wastewater treatment system absorption fields, and other public facilities may be located within the 25% of land outside of environmentally sensitive areas.
 [1] *Editor's Note: See now Ch. 96, Subdivision and Platting Regulations.*
 - (2) A mixture of residential types and recreational, commercial, and institutional uses may be developed to serve the residents of the PDD and/or residents of the surrounding area, provided such uses can be supported by the residents as indicated by an appropriate market study provided by the developer. Also, parking, signage, and any additional use restrictions for the uses shall be addressed in the ordinance adopted that authorizes and establishes the proposed PDD development.
- B. Building restrictions. Requirements for building height, size and floor area, lot size, setbacks (front, side, rear and corner side), density and open space shall be delineated in the preliminary and final development plans and the ordinance adopted that authorizes and establishes the proposed POD. Minimum setbacks shall conform to those listed in the General Provisions of the Ledgeview Zoning Ordinance.^[2] In no case shall these requirements be less than stated in other sections of the PDD article and shall be found not to be hazardous, harmful, offensive or otherwise adverse to the environment, property values, or the character of the proposed

development, surrounding neighborhood or community or adverse to the health, safety, and welfare of the residents of the PDD and/or community as a whole. Notwithstanding the foregoing, if the final development plan does not address a specific zoning requirement (the "nonaddressed requirement"), the provisions of the Ledgeview Zoning Ordinance shall apply to the development plan to the extent of the nonaddressed requirements.

[2] *See Art. IV, General Provisions, of this chapter.*

- C. Minimum size of PDD Overlay District. No district shall be established unless it contains the minimum area specified in this section and has at least 200 feet of frontage or Town-approved private road access. The minimum gross area required for a PDD Overlay District is as follows:
 - (1) Two acres where the overlay is placed upon base residential districts.
 - (2) One acre where the overlay is placed upon base commercial or industrial districts.

§ 135-107. General provisions.

- A. Engineering design standards. The width of rights-of-way, width and location of street, sidewalks, or other paving requirements, outdoor lighting types and locations, public sanitary sewer or private on-site wastewater treatment systems, storm sewer, and water lines, provision for stormwater retention and drainage, and other similar environmental engineering considerations shall be based upon a determination as to the appropriate standards necessary to perform the specific function in the specific situation; provided, however, that in no case shall construction standards be less than necessary to insure the public safety and welfare. The Town reserves the right to have an engineer of the Town's choosing review all engineering aspects of the development at cost to the developer.
- B. Approvals. The applicant shall develop the site in accordance with the terms and conditions of the development presented to and approved by the Town Board. Any changes or additions to the original approved development site, structures or plans of operation shall require resubmittal and recommendation by the Zoning and Planning Committee and approval by the Town Board.
- C. Rescinding approval. Failure to comply with the conditions, commitments, guaranties or recommendations established in the approval of such development project shall be cause for rescinding the approval of the same. Upon notice given by the Town Clerk, the applicant or agent then shall be required to appear before the Town Board at its next public meeting, to explain any such failure to comply. The Town Board at such meeting shall determine whether or not the developer shall have failed to comply and, if there has been such a failure, may either:
 - (1) Rescind its approval, whereupon such rescission and cessation of all rights and privileges of the developer and owner, including the right to complete construction or to construct any building or other structure or improvement, shall become effective on the 31st day following a written notice of such decision sent by certified mail to the developer at his or her last known address; or
 - (2) Adjourn such hearing for a period not to exceed 65 days to enable the developer to comply; whereupon, if the developer is then in substantial compliance and has then established to the reasonable satisfaction of the Board that there will be compliance in the future, the rights and privileges of the developer and owner shall continue for such period of time that there shall be such compliance. If the developer has not established to the reasonable satisfaction of the Board that there will be compliance in the future, the Board will proceed in accordance with Subsection C(1).

§ 135-108. Criteria for approval.

As a basis for determining the acceptability of a PDD proposal, the following criteria shall be applied to the development proposal, with specific considerations as to whether or not it is consistent with the spirit and intent of this article and the Town of Ledgeview Comprehensive Plan.

- A. Character and intensity of land use. The uses proposed and their intensity and arrangement on the site shall be a visual, aesthetic, and operational character which:
 - (1) Is compatible to the physical nature of the site, with particular concern for preservation of the Niagara escarpment, woodlands open space or other environmentally sensitive areas.
 - (2) Would produce an attractive environment of sustained aesthetic and ecologic desirability, economic stability and functional practicality compatible with the general development plans for the area as established by the community.
 - (3) Would not adversely affect the anticipated provision for school, sewer, water, snow removal, garbage pickup, fire protection, or other municipal services.
 - (4) Would provide sufficient and accessible off-street parking and loading facilities. Creativity in addressing the provision of parking is encouraged. Alternate parking arrangements may be used (such as exterior or interior satellite parking lots, provision of mass transportation, etc.) to provide adequate parking within the requirements of this PDD article.
 - (5) Would be developed in a manner that encourages alternative means of transportation through the provision of sidewalks and/or off-street trails and a well-connected street pattern.
 - (6) Is consistent with the Ledgeview Comprehensive Plan.
- B. Landscaping of parking areas. The parking site shall be planned to provide a desirable transition from the streetscape and to provide for adequate landscaping, pedestrian movement and parking areas. In keeping with this purpose, the following design standards shall be set forth:
 - (1) Where natural or existing topographic features contributed to the beauty and utility of a development, consideration shall be given to this preservation. Modification to topographic features should not only occur where it contributes to good appearance.
 - (2) Plant material shall be selected for interest in its structure, texture, color and for its ultimate growth. Further, it is recommended that native materials be employed for their ability to tolerate the prevailing adverse conditions.
 - (3) In locations where plant materials will be susceptible to injury by pedestrians and/or motor vehicles, appropriate curbs, tree guards or other protective devices shall be employed.
 - (4) Parking areas shall be arranged so as to prevent through traffic to other parking areas.
 - (5) Parking areas shall be screened from adjacent structures, roads and traffic arteries with hedges, dense planting, earth berms, changes in grade or walls, except where parking areas are designed as an intricate part of the street.
 - (6) No more than 15 parking spaces shall be permitted in a continuous row without being interrupted by landscaping.

- (7) All parking areas shall be adequately lighted. All such lighting shall be so arranged as to direct the light away from adjoining residences.
 - (8) All off-street loading and unloading areas shall be paved, and the design thereof approved by the Zoning and Planning Committee.
 - (9) All parking areas and off-street loading and unloading areas shall be graded and drained so as to dispose of all surface water without erosion, flooding and other inconveniences.
- C. Engineering design standards. The width of rights-of-way, width and location of street or other paving, requirements for outdoor lighting, location of sanitary and storm sewer and water lines and provision for drainage and other similar environmental engineering considerations shall be based upon a determination as to the appropriate standards necessary to ensure the public safety and welfare.
- D. Preservation and maintenance of open space. Adequate provisions shall be made for the permanent preservation and maintenance of common open space and rights-of-way either by private reservation or dedication to the public.
- (1) In the case of private reservation, the open area to be reserved shall be protected against building development by conveying to the Town, as part of the conditions for project approval, an open space easement over such open areas restricting the areas from any further building or use, except as specifically authorized as part of the development plan, or subsequently with the express approval of the Town Board following the recommendation of building site and operational plans by the Zoning and Planning Committee.
 - (2) In the case of roadways, other rights-of-way and stormwater management facilities, which are not dedicated to the public, as part of the conditions for project approval, there shall be granted to the Town such easements over the same as may be necessary to enable the Town to provide suitable and adequate fire protection, sanitary and storm sewer, water, maintenance, recreational trail connections and other required municipal services to the project area.
 - (3) The construction, care and maintenance of such open space reservations, stormwater management facilities and rights-of-way shall be assured, either by establishment of appropriate management organization for the project, acceptance of dedication to the Town, or by agreement with the Town for establishment of a special service district for the project area and levy the cost thereof as a special charge on the tax bills of properties within the project area pursuant to § 66.0627, Wis. Stats. In any case, the Town shall have the right to carry out and levy special charge for the cost of any maintenance that it feels necessary if it is not otherwise taken care of to the satisfaction of the Town. The manner of assuring maintenance and charging such cost to individual properties shall be determined prior to the approval of the final project plans and shall be included in the title to each property. The developer shall submit a landscape maintenance schedule and stormwater management plan with the final plan for approval by the Town that satisfies the above requirements.
 - (4) Ownership, maintenance, construction (if necessary), and tax liability of private open space reservations and rights-of-way shall be established in a manner acceptable to the Town and made a part of the conditions of the plan approval.
 - (5) Any identified reserved open space within a planned development shall first be offered to the Town for conveyance and dedication for public open space.

- (6) in the event that the designated open space is to remain in agricultural use, the following uses shall be permitted only in the designated open space areas:
 - (a) General farming activities, such as dairying, cropping, apiculture, floriculture, forestry, horticulture, tree and shrub nurseries, pasturage, orchards, and similar nonintensive agricultural activities.
 - (b) Existing farmstead, barns, and associated outbuildings.
 - (c) Proposed new construction or additions outside of the existing footprint of agricultural-related buildings shall require obtaining an amendment to the PDD as identified in § 135-113E. Agricultural-related buildings shall not be interpreted to mean new residential, commercial, or industrial buildings.
- E. Implementation schedule. The petitioners for a PDD Overlay shall submit a reasonable schedule for the implementation of the development to the satisfaction of the Zoning and Planning Committee and the Town Board, including suitable provisions (and the Town may require the furnishing of a suitable and sufficient performance bond for construction) for assurance that each phase could and should be brought to completion in a manner which shall not result in adverse effect upon the community as a result of termination at the end of any phase.
- F. Additional factors that may be considered by the Zoning and Planning Committee and Town Board:
 - (1) Heights of structures.
 - (2) Screening and fencing.
 - (3) Landscaping barriers and berms.
 - (4) Setbacks.
 - (5) The site itself as it relates to neighborhood environment, compatibility to existing neighborhood use and general neighborhood characteristics.
 - (6) Nature and use of the proposed structures and design, architecture and materials to be used.
 - (7) Highway access to the site, number of openings, and width.
 - (8) Traffic generation, number of vehicles parked, rate of turnover per hour and parking requirements.
 - (9) Stormwater management.
 - (10) Capacities required for sewer, water and other necessary utilities.
 - (11) Educational capacity capabilities (number of families and school load).
 - (12) Economic impact on the Town, its inducements, attractions and detractions.
 - (13) Lighting.
 - (14) Proposed hours of operation.

- (15) Comparison of open space as required by the underlying basic zones with that of the proposed project.
- (16) Operational control.
- (17) Commencement and completion dates.
- (18) Highway dedication/street dedication.
- (19) Signage.
- (20) Deed restrictions and sureties deemed necessary to protect the health, safety and welfare of the community.
- (21) Such other limitations, conditions, special requirements or characteristics to the use as may be deemed necessary to protect the health, safety and welfare of the Town.
- (22) Impact on groundwater resources.
- (23) Method of sanitary waste disposal.
- (24) If development is not proposing to have public sewer and water, the development's ability to be efficiently and cost effectively connected to public sewer and water, when available.
- (25) Multiuse zoning in a structure throughout the development.

§ 135-109. Procedures.

No development shall be permitted within this district unless it is submitted, reviewed, and approved subject to the procedures identified in §§ 135-111 through 135-113 below.

§ 135-110. Preapplication conference.

Prior to filing of an application for PDD, the applicant of the proposed PDD shall contact the Town Clerk to arrange a conference with Town representatives and/or staff. The primary purpose of the conference shall be to provide the applicant with an opportunity to gather information and obtain guidance as to the general suitability of the proposal for the area for which it is proposed and its conformity to the provisions of this chapter before incurring substantial expense in the preparation of plans, surveys and other data.

§ 135-111. Preliminary approval.

- A. Notice and fee. A person desiring to develop a particular site as a planned development project shall apply to the Town Clerk on such forms as shall be provided by the Town and shall pay a fee equal to the cost to the Town for reviewing the plans and specifications. All PDD fees shall be reviewed and set annually at the time of adoption of the budget. The fee shall accompany such written application. Such application shall contain the names, mailing addresses and telephone numbers of the owners and developers, a contact name, address and telephone number, if different, and a description of the development site. Appropriate supporting documents and maps, as required in Subsection **D** herein, shall be filed with the application.

- B. Notice to Zoning and Planning Committee. The Town Clerk shall inform the Zoning and Planning Committee of such desire and shall secure a date for a preliminary discussion between the developer and the Zoning and Planning Committee and shall notify such developer of such date.
- C. Preliminary PDD Planning Committee recommendations. The Zoning and Planning Committee, after such preliminary discussions and such further discussions as may be required with the applicant, shall report, in writing, such proposed project development to the Town Board, together with its recommendation for either approval, approval with modifications, or denial of the same. Such report and recommendation of the Committee shall be made to the Town Board no later than three months from the date of the filing of the application with the Town Clerk, unless agreed upon in writing, by the Town and the applicant. A recommendation of approval by the Committee shall in no way be binding on the Town Board.
- D. Information required. The following information shall be provided by the applicant in adequate detail to satisfy the Zoning and Planning Committee for its recommendation regarding preliminary approval:
 - (1) A statement describing the general character of the intended development.
 - (2) An accurate map of the project area drawn at a scale no less than one inch equals 100 feet, showing the nature, use and character of abutting properties, prepared by a registered surveyor.
 - (3) Twelve copies of a general development plan of the proposed project drawn at a scale no less than one inch equals 100 feet, showing the following information in sufficient detail to make possible the evaluation of the criteria for approval as set forth in Subsections **A, B, C, D** and **F** of § **135-108** of this article:
 - (a) Tract boundaries and a statement of the total acreage of the tract.
 - (b) Significant physical features within the tract and outside the tract to a distance of 500 feet from the outside boundary of the tract, including existing two-foot contours, watercourses, drainage, ponds, lakes, wetlands, floodplains, floodways and other potential environmentally sensitive areas.
 - (c) Existing zoning district(s) on the property and within 500 feet adjacent to the proposed project.
 - (d) Property lines (if any) within the proposed project.
 - (e) All contemplated land uses within the tract.
 - (f) An indicator of the contemplated intensity of use, i.e., gross density in residential development, number of prospective tenants in office, commercial and industrial development or recreational development.
 - (g) Number and type of dwelling units.
 - (h) Existing buildings that may affect future development and proposed location of all principal structures and associated parking areas.
 - (i) Proposed lot coverage of buildings and structures.
 - (j) Proposed circulation systems (pedestrian, bicycle, auto, mass transit) by type, how they relate to the existing network outside this site.

- (k) Existing rights-of-way and easements which may affect the project.
 - (l) In the case of plans which call for development in stages, a map at an appropriate scale showing the successive stages.
 - (m) The location of sanitary and storm sewer lines, water mains, fire hydrants and lighting.
 - (n) The location of recreational and open space areas and areas reserved or dedicated for public uses, such as schools, park, etc.
 - (o) Description and proposed location of proposed stormwater management facilities.
 - (p) General landscape treatment, including parking and refuse areas.
- (4) Appropriate statistical data on the size of the development, residential density, ratio of various land uses, economic analysis of the development and any other data pertinent to the evaluation under the criteria of Subsections **A, B, C, D** and **F** of § **135-108** above.
- (5) Architectural drawings and sketches illustrating the design and character of proposed structures, and may require color renderings.
- (6) General outline of intended organization structure related to the property owners' association, deed restrictions and private provision of common services, if any.
- (7) Economic feasibility and impact report may be required by the Zoning and Planning Committee to provide satisfactory evidence of the project's economic feasibility, of available adequate financing and of its not adversely affecting the economic prosperity of the Town or the values of surrounding properties.
- E. Preliminary PDD public hearing. The Town Board shall hold a public hearing on the Preliminary PDD within 45 days of receipt of the Zoning and Planning Committee recommendation, unless the applicant and the Town agree to an extension in writing. A Class 2 notice pursuant to Ch. 985, Wis. Stats., shall be published specifying the time, place, and purpose of the hearing. Such notification appearing in the Town's official newspaper shall appear once during each of the two weeks prior to the scheduled date of such hearing, the last of which shall be at least one week before the hearing. The Town shall also mail notice of the hearing to all parties of interest who have requested notification and property owners within 100 feet of the outer boundaries of the proposed PDD overlay.
- F. Preliminary PDD Town Board action.
- (1) The Town Board shall approve, approve with modifications, deny, or refer the proposed development back to the Zoning and Planning Committee. The Town Clerk shall provide a written summary of the Town Board action and any modifications to the preliminary plan and mail them to the applicant.
 - (2) Approval of the preliminary development plan shall entitle the developer to final approval if the final development plan is submitted within one year of the date of approval of the preliminary plan, conforms to such layout and conditions of the approved preliminary plan and required final approval information, and the applicant and the Town have executed a developer's agreement.
 - (3)

No building permits may be issued on land within the planned development until the final plan is approved and all public improvements are in place, including first lift of asphalt, and accepted by the Town.

§ 135-112. Amendment of preliminary plan approval.

- A. The recommendation of the Zoning and Planning Committee and the preliminary approval of the Town Board shall be based on and include as conditions thereto the building, site and operational plans for the development as approved, as well as all other commitments offered or required with regard to project value, character or other factors pertinent to an assurance that the proposed development will be carried out basically as presented in the approved plans.
- B. Detailed construction time and the approval of such preliminary plan shall be conditioned upon the subsequent submittal and approval of more specific and detailed plans. Any subsequent change or addition to the plans or use shall first be submitted to the Zoning and Planning Committee, and if, in the opinion of the Zoning and Planning Committee, such change or addition constitutes a substantial alteration of the original plan, it shall, within 45 days, make an appropriate recommendation to the Town Board relating to an amendment of the preliminary approval.
- C. An applicant desiring to amend an approved preliminary PDD shall apply to the Town Clerk on such forms as shall be provided by the Town and shall pay a fee equal to cover the cost to the Town of Ledgeview for reviewing the plans and specifications. The fee must accompany said forms. Such application shall contain the names, mailing addresses and telephone numbers of the owners and developers; a contact, address, name and telephone number, if different; and a description of the development site. Appropriate supporting documents and maps, as required in § 135-111D, shall be filed with the application.
- D. The Town Board shall hold a public hearing on the preliminary PDD amendment within 45 days, following the Zoning and Planning Committee recommendation, unless the applicant and the Town agree to an extension in writing. A Class 2 notice pursuant to Ch. 985, Wis. Stats., shall publish the time, place, and purpose of the hearing. Such notification appearing in the Town's official newspaper shall appear once during each of the weeks prior to the scheduled date of such hearing, the last of which shall be at least one week before the hearing. The Town shall also mail notice of the hearing to all adjoining property owners of the proposed PDD overlay and parties of interest who have requested notification.

§ 135-113. Final approval.

- A. Petition for final approval. When the Town Board has issued its preliminary approval of the proposed plan, then the applicant may file with the Town Clerk a petition executed by the owner, or the owner's agent, of the property to be developed, for the final approval, stating that such person seeks to develop such property under the provisions of this section. Such petition shall include (unless previously submitted and unchanged from preliminary plans):
 - (1) The names, mailing addresses and telephone numbers of any additional owners and developers of the development site, and the names of owners and developers listed on the application who no longer have an interest in the project, in the event that there has been a change in owners or developers since the date of the application.
 - (2) An accurate topographical map showing topographical data at two-foot intervals and extending within 200 feet beyond the exterior boundaries of the site, showing all public

rights-of-way and all buildings accurately located within 200 feet of the exterior boundaries of such site. Such map shall contain all available utilities, including drainage and the capacities thereof and high-water elevations along rivers.

- (3) A conceptual plan showing the location, type and size of every proposed structure and its proposed use; also driveways, driveway access roads, refuse areas, parking facilities, lighting appliances, recreation areas, loading docks, open spaces, screening, fencing and landscaped areas and utility easements.
 - (4) A statement showing the starting and estimated completion dates of the project.
 - (5) Any other pertinent data, statements, drawings or plans which may be required by the Zoning and Planning Committee or the Town Board.
 - (6) The following additional information for commercial and industrial developments may be required:
 - (a) Square footage of buildings.
 - (b) Square footage of offices, production areas and the proposed number of employees in each such area.
 - (c) Detailed signage sketch elevations.
 - (d) Details of proposed use or uses and manner of operation.
 - (e) The municipal services that may be required to serve the area.
- B. Final PDD Zoning and Planning Committee recommendation. The Zoning and Planning Committee shall make a formal recommendation to the Town Board and provide written findings of fact upon which its recommendation is based in the official minutes of the Zoning and Planning Committee meeting. The Zoning and Planning Committee shall make a recommendation to the Town Board within 45 days of the submittal of a final plan to the Town Clerk, based upon the criteria in § **135-107** and the information provided by the applicant.
- C. Final PDD Town Board action.
- (1) The Town Board shall have an additional 45 days after the public hearing in which to approve, approve with modifications, refer back to the Zoning and Planning Committee, or deny the application, unless an extension is granted through written agreement between the Town and the applicant. The Town Board shall base its decision on the criteria in § **135-108**, information provided by the applicant, and official testimony at the public hearing.
 - (2) The Town Board shall provide written findings of fact regarding its action and direct the Town Clerk to provide written notification to the applicant of the Town Board action and the findings of fact.
 - (3) The applicant is responsible for any county or state filings and fees.
 - (4) A developer's agreement shall be negotiated and executed by the applicant and Town prior to final approval.
- D. Failure to begin construction or establish use. If no construction has begun or no use has been established in the PDD within six months from the approval of the final plan, the final plan and related restrictions and conditions shall lapse and be of no further effect. In its discretion and

for good cause, the Town Board may extend for not more than six months the period for the beginning of construction or the establishment of a use.

E. Amendments.

- (1) The Town Board must approve any amendment to regulations, restrictions, or conditions for an approved final PDD. Such regulations, restrictions, or conditions may include but are not limited to changes or alterations to landscaping, architectural design, type of construction, sureties, lighting, fencing, planting screens, operational control, hour of operations, signs, improved traffic circulation, deed restriction, highway access restrictions, minor alterations or minor additions, building height or area of existing structures, off-street parking or loading requirement changes.
- (2) The applicant shall pay a fee for the cost of review and processing of an amendment.

F. Interpretation.

- (1) In their interpretation and application, the provisions of this article shall be held to be minimum requirements and shall be liberally construed in favor of the Town and shall not be deemed in a limitation or repeal of any other power granted by the Wisconsin Statutes.
- (2) Further, development shall be planned, reviewed and carried out in conformance with all municipal, state and other laws and regulations. However, in interpreting and applying the provisions of this subsection or any PDD adopted under this subsection, they shall take precedence and be controlling when there is conflict between their provision and those of the zoning provisions of this Code.

Article XIII. Institutional Overlay (IO) District

[Amended 11-14-2000; 7-19-2005 by Ord. No. 2005-14; 4-22-2008 by Ord. No. 2008-006; 4-1-2013 by Ord. No. 2013-003; 5-19-2015 by Ord. No. 2015-004]

§ 135-114. Intent; applicability of regulations.

The purpose of the Institutional Overlay (IO) District is to regulate the development of larger public and semipublic uses in a manner harmonious with surrounding uses. The IO District designation is intended to provide an area for activities relating to necessary important public services, provide for continued operation and facilitate managed growth of existing institutions, and provide and protect the park and open space assets of the community.

§ 135-115. Permitted uses.

Permitted uses shall be as follows:

- A. Small-scale indoor institutional. Small-scale indoor institutional uses of 10,000 gross square feet or less, including indoor public and not-for-profit recreational facilities (such as gyms, swimming pools, libraries, museums, lodges and assembly halls, and community centers), municipal facilities, clinics, pre-K through high schools, college or trade schools, religious institutions, nonprofit clubs, nonprofit fraternal organizations, funeral homes, and similar land uses. Does not include boarding facilities, dormitories, parsonage, rectory, or similar associated with a small-scale indoor institutional use.

- B. Outdoor open space institutional. Cemeteries, privately held permanently protected green space areas, open grassed areas not associated with any particular active recreational land use, and similar land uses.
- C. Passive outdoor recreation. Recreational land uses which involve passive recreational activities, such as arboretums, natural areas, wildlife areas, hiking trails, bike trails, cross-country ski trails, horse trails, picnic areas, picnic shelters, botanical gardens, fishing areas, and similar land uses.
- D. Active outdoor recreation. Recreational land uses which involve active recreational activities. Such land uses include tennis courts, basketball courts, ball diamonds, football fields, soccer fields, neighborhood parks, playgrounds, tot lots, outdoor swimming pools, fitness courses, golf courses, and similar land uses.
- E. Small-scale public services and utilities. Small-scale city, county, state, and federally owned facilities, such as light stations, pump houses, water towers, public and/or private utility substations, utility and public service related distribution facilities, and similar land uses. This does not include uses listed under large-scale public services and utilities.^[1]
^[1] *Editor's Note: See § 315-117E.*
- F. Institutional residential. Residential development of 10,000 gross square feet or less designed to accommodate institutional residential land uses, such as senior housing, retirement homes, assisted living facilities, nursing homes, hospices, convents, monasteries, nursing homes or convalescent homes, personal care facilities, rehabilitation centers, transitional housing for the homeless, and similar land uses not considered to be community living arrangements (see separate listings).
- G. Community living arrangement (one to eight residents). Facilities including community living arrangements for adults, community living arrangements for children, and community-based residential facilities per Wisconsin Statutes.
- H. Communications tower. Any structure that is designed and constructed for the purpose of supporting one or more antennas for communication purposes, such as cellular telephones or similar, including self-supporting lattice towers, guyed towers, or monopole towers.
- I. Parking facilities. Parking lots or parking structures.

§ 135-116. Permitted accessory uses.

Permitted accessory uses shall be as follows:

- A. Playgrounds, athletic fields, swimming pools, stadiums, gymnasiums and field houses accessory to educational facilities or religious institutions.
- B. Ramps or other accessibility accommodations in compliance with the Americans With Disabilities Act (ADA).
- C. Garden, public or community (flowers, vegetables, or related).
- D. Garages and service buildings for storage and maintenance of vehicles used in conjunction with the operation of a permitted use.
- E. Satellite dish antennas less than 12 feet in diameter.

- F. Water storage tanks and water towers.

§ 135-117. Conditional uses.

Conditional uses shall be as follows:

- A. Man-made bodies of water.
- B. Recreational sport shooting facility (indoor facilities only).
- C. Caregiver support center.
- D. Large-scale indoor institutional. Large-Scale indoor institutional uses with greater than 10,000 gross square feet, including indoor public and not-for-profit recreational facilities (such as gyms, swimming pools, libraries, museums, and community centers), municipal facilities, hospitals, large-scale clinics, pre-K through high schools, college or trade schools, religious institutions nonprofit clubs, nonprofit fraternal organizations, convention centers, funeral homes, and similar land uses, and outdoor facilities ancillary to such uses (such as sports fields and outdoor gathering spaces).
- E. Large-scale public services and utilities. Large-scale city, county, state, and federally owned facilities such as public works facilities and garages, wastewater treatment plants, potable water treatment plants, public and/or private utility substations, utility and public service related distribution facilities, and similar land uses. This does not include uses listed under small-scale public services and utilities.^[1]
- [1] *Editor's Note: See § 135-115E.*
- F. Correctional institutional. A facility for the detention, confinement, treatment, or rehabilitation of persons arrested or convicted for the violation of the law, including adult detention centers, juvenile delinquency centers, jails, prisons, and similar land uses.
- G. Institutional residential. Residential development of 10,000 gross square feet or more designed to accommodate institutional residential land uses, such as senior housing, retirement homes, assisted living facilities, nursing homes, hospices, convents, monasteries, dormitories, nursing homes, or convalescent homes, limited personal care facilities, physical rehabilitation centers, transitional housing for the homeless, and similar land uses not considered to be community living arrangements.
- H. Community living arrangement (nine to 15 residents). Facilities including community living arrangements for adults, community living arrangements for children, and community-based residential facilities per Wisconsin Statutes.
- I. Boarding facilities, dormitories, parsonage, rectory, or similar in association with a permitted small- or large-scale indoor institutional use.
- J. Day-care facilities, adult.
- K. Day-care facilities, child.
- L. Military installations.
- M. Parking lots and parking structures in excess of the required number of parking spaces.

§ 135-118. Lot requirements.

Lot requirements shall be as follows:

- A. Area: 10,000 square feet minimum.
- B. Zoning lot frontage: 80 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a street, such as a cul-de-sac. In no case shall frontage measured at the right-of-way line of a cul-de-sac or curved street be less than 60 feet.
- C. Lot width: 80 feet minimum.

§ 135-119. Height regulations.

Height regulations shall conform to requirements as set forth § 135-13, Height regulations.

§ 135-120. Building setbacks.

- A. Building setbacks shall be as follows:

	Building Setback (feet)	
	Principal Structure	Accessory Building
Front yard	30 minimum from right-of-way	30 minimum from right-of-way
Side yard	10 minimum each side	10 minimum
Rear yard	20 minimum	10 minimum
Corner side	30 minimum from right-of-way	30 minimum from right-of-way

NOTES:

Exceptions: Bases for light standards (i.e., parking lot lights) may be located at the lot line, provided that no part of the base or light extends into the public right-of-way.

- B. Transitional yards.
 - (1) If the lot abuts an R-1, R-2, or R-3 District at any point along the rear lot line, it must maintain the same rear yard setback of the principal building as required in that abutting zone.
 - (2) Where a side or rear lot line in an IO District coincides with a side or rear lot line in any adjacent residential district, a yard shall be provided along such side or rear lot line not less than 15 feet in depth and shall contain landscaping and planting to provide an effective screen.

§ 135-121. (Reserved)

§ 135-122. Maximum lot coverage.

Forty-five percent of the total lot area may contain building coverage.

§ 135-123. (Reserved)

§ 135-124. Parking.

Parking shall conform to requirements as set forth in Article **XXI**, Off-Street Parking Requirements.

Article XIV. B-1 Business District

§ 135-125. Intent.

[Amended 9-18-2007 by Ord. No. 2007-016]

The B-1 Business District is intended to serve the retail and service needs of nearby residential areas with a range of products and services for both daily and occasional shopping.

§ 135-126. Permitted uses.

[Amended 9-18-2007 by Ord. No. 2007-016]

A. The following uses shall be permitted in the B-1 Business Districts:

- (1) Abstractors and title insurance companies.
- (2) Accounting, auditing and bookkeeping services.
- (3) Appraisers.
- (4) Architects.
- (5) Art gallery; studio.
- (6) Banks.
- (7) Barbershops.
- (8) Beauty shops.
- (9) Bonding companies.
- (10) Book publishing offices.
- (11) Brokerage houses.
- (12) Camera shops.
- (13) Chiropractors.

- (14) Coin dealers.
- (15) Consumer credit reporting agencies, mercantile reporting agencies and adjustment agencies.
- (16) Credit reporting bureaus.
- (17) Credit unions.
- (18) Detective agencies.
- (19) Dressmakers, custom.
- (20) Dry-cleaning establishment (depot only).
- (21) Finance companies, loan offices.
- (22) Florists (not greenhouse).
- (23) Governmental structures other than fire stations, police stations and post offices.
- (24) Ice cream shops, without drive-through.
- (25) Insurance agents, brokers and service.
- (26) Lawyers and legal services.
- (27) Management; consulting and public relations services.
- (28) News dealers and stands.
- (29) Philatelists (stamp) dealers.
- (30) Public relations consultants.
- (31) Publishers' offices.
- (32) Savings and loan associations.
- (33) Shoe repair shops.
- (34) Tailors, custom.

B. The following uses may be permitted as conditional uses in B-1 Business Districts:

- (1) Bookstores.
- (2) Bridal stores.
- (3) Coffee shops.
- (4) Community living arrangements having a capacity for eight or fewer persons being served by the program, licensed and operated under the authority of the Department of Health and Family Services in accordance with W.S.A. s. 62.23(7)(i).

- (5) Consulates.
- (6) Costume rental shops.
- (7) Convenience stores.
- (8) Delicatessens.
- (9) Libraries.
- (10) Parks, playgrounds, public recreational and community center buildings and grounds, public, fire stations, police stations, post offices and other governmental facilities.
- (11) Pharmacies.
- (12) Residence of the owner or operator of the business on the premises.
- (13) Stenographers, public.
- (14) Tax consultants.
- (15) Trust companies.
- (16) Other uses determined by the Zoning Administrator and/or Town Board to be of similar nature to the above-listed uses.

§ 135-127. Lot requirements with public sewer.

Lot requirements with public sewer shall be as follows:

- A. Area: 12,000 square feet minimum.
- B. Zoning lot frontage: 90 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a street, such as a cul-de-sac. In no case shall lot width measured at the right-of-way line of a cul-de-sac or curved street be less than 65 feet.^[1]

[1] *Editor's Note: Former Subsection C, Lot width, as amended 11-14-2000, which immediately followed this subsection, was repealed 9-18-2007 by Ord. No. 2007-016.*

- C. Lot width: 90 feet minimum.

§ 135-128. Lot requirements without public sewer.

Lot requirements without public sewer shall be as follows:

- A. Area: 60,000 square feet minimum.
- B. Zoning lot frontage: 150 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a curved street or a cul-de-sac. In no case shall the lot frontage measured at the right-of-way line of a cul-de-sac or curved street be less than 85 feet.^[1]

[1]

Editor's Note: Former Subsection C, Lot width, as amended 11-14-2000, which immediately followed this subsection, was repealed 9-18-2007 by Ord. No. 2007-016.

§ 135-129. Height regulations.

Height regulations shall be as follows:

- A. Principal structure: 35 feet maximum, except as provided in Article IV, § 135-13, Height regulations.
[Amended 9-18-2007 by Ord. No. 2007-016]
- B. Accessory structures shall not exceed the height of the principal structure.

§ 135-130. Building setbacks.

[Amended 9-18-2007 by Ord. No. 2007-016]

- A. Building setbacks shall be as follows:

- (1) With curb and gutter:

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Front yard	30 minimum from right-of-way	30 minimum from right-of-way
Side yard	10 minimum each side	10 minimum
Rear yard	25 minimum	10 minimum
Corner side	30 minimum from right-of-way	30 minimum from right-of-way

- B. Without curb and gutter:

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Front yard	35 minimum from right-of-way	35 minimum from right-of-way
Corner side	35 minimum from right-of-way	35 minimum from right-of-way

- C. Transitional yards. If the lot abuts an R-1, R-2, R-3 or RR Zone at any point along the rear lot line, it must maintain the same rear yard as required in that abutting zone.

§ 135-131. Building size.

[Amended 9-18-2007 by Ord. No. 2007-016]

Building size shall be as follows:

- A. Principal structure: Such principal structure must not exceed 1,500 square feet in floor area. Areas of the structure used principally as the residence of the owner or operator of the business shall not be included in the square footage calculation.

§ 135-132. Number of structures.

- A. Only one principal structure shall be located on a lot.^[1]

[1] *[Editor's Note: Former Subsection B, which immediately followed this subsection and limited the number of accessory structures permitted, was repealed 9-18-2007 by Ord. No. 2007-016.]*

§ 135-133. Parking requirements.

[Amended 9-18-2007 by Ord. No. 2007-016]

Parking shall conform to requirements as set forth in Article **XXI**, Parking Requirements.

§ 135-134. (Reserved)

[1] *Editor's Note: Former § 135-134, Signs, was repealed 7-19-2005 by Ord. No. 2005-014. See now Chapter 79, Signs.*

§ 135-135. Other requirements.

[Amended 9-18-2007 by Ord. No. 2007-016]

Additional structures and building allowed in the B-1 Business District shall meet the requirements of this district and other articles of this chapter as determined by the Town Building Inspector and/or the Town Board.

- A. All business, service repair, storage or merchandise display shall be conducted wholly within an enclosed building, except for automobile parking and off-street loading.
- B. Outside trash bins shall be screened from view by use of solid screening or fencing material with gates on rollers or wheels and shall be kept in good repair.
- C. Building appearance shall be complementary to a neighboring district, i.e., no post-frame-construction type building.
- D. Buildings shall be maintained structurally and kept in good repair. Outside appearance shall be maintained in accordance with originally approved appearance and design.

Article XV. B-2 Business District

§ 135-136. Intent.

[Amended 9-18-2007 by Ord. No. 2007-016]

The B-2 Business District is designed primarily to accommodate commercial activities and service needs of area residents, with the service area not confined to any one neighborhood. Businesses may range from small-scale to large in size.

§ 135-137. Permitted uses.

[Amended 9-18-2007 by Ord. No. 2007-016]

A. The following uses shall be permitted in B-2 Business Districts:

- (1) All uses permitted in B-1 Business Districts, except residences only allowed as a conditional use.
- (2) Adjusters.
- (3) Architects' materials and supplies.
- (4) Army and navy goods sales.
- (5) Art gallery, commercial sales.
- (6) Artificial limbs sales and service.
- (7) Artists' materials and supplies.
- (8) Barbers' supplies, distributors and dealers.
- (9) Bathroom accessories display and sales.
- (10) Beauty shop equipment sales.
- (11) Bicycle sales and repair.
- (12) Blood banks.
- (13) Blueprinting.
- (14) Bookstores.
- (15) Braces, orthopedic sales.
- (16) Brushes, sales.
- (17) Business machines, distribution and sales.
- (18) Butchers' supplies, sales.
- (19) Candy shops (retail).
- (20) Canvas goods, sales.
- (21) Caskets, retail sales.
- (22) Caterers.
- (23) Chairs, physiotherapy sales.
- (24) Civic, school and fraternal organizations.
- (25) Clinic (e.g., medical, dental).
- (26) Clothing, retail.

- (27) Computer data processing services.
- (28) Conservatory.
- (29) (Reserved)
- (30) Dance instruction.
- (31) Desks, sales.
- (32) (Reserved)
- (33) Draperies, sales.
- (34) Drawing materials, sales.
- (35) Dry cleaning.
- (36) Electrical appliances, wholesale.
- (37) Electronic store.
- (38) Employment agencies.
- (39) Engineering, architectural and surveying services.
- (40) Entertainment bureaus.
- (41) Floor covering retail sales and installation service.
- (42) Food stores.
- (43) Funeral homes.
- (44) Fruit stores and vegetable markets.
- (45) Furriers and fur shops.
- (46) Gift shops.
- (47) Golf, miniature.
- (48) Greenhouses.
- (49) Grocery stores.
- (50) Guns, sales and repair.
- (51) Gymnasiums.
- (52) Hardware, retail sales, new and used.
- (53) Health food products, sales.
- (54) Ice skating rinks (indoor commercial).

- (55) Interior decorators, display and sales.
- (56) Jewelers and clocks, retail sales/custom manufacturing and repair.
- (57) Key shops.
- (58) Labs (e.g., medical, dental).
- (59) Landscape consulting and planning.
- (60) Lawn furniture, sales.
- (61) Leather goods, sales.
- (62) Liquor stores.
- (63) Meat and fish markets.
- (64) Merchandise general stores.
- (65) Messenger service.
- (66) Monuments, sales and displays.
- (67) Multigraphing, commercial.
- (68) Music instruction, commercial.
- (69) Musical instruments, repairing and sales.
- (70) (Reserved)
- (71) Notions and novelties, retail.
- (72) Nurseries, lawn and garden supply stores, retail.
- (73) Nut shops.
- (74) Office equipment sales.
- (75) Optical care sales and service center.
- (76) Orthopedic appliances, sales.
- (77) Oxygen equipment, rental and distribution.
- (78) Paint products, glass and wallpaper/retail sales.
- (79) Pet shops and groomers.
- (80) Pharmacy.
- (81) Recordings, sales.
- (82) Photo-finishing laboratories.

- (83) Photographers, commercial studios.
- (84) Photographic equipment and supplies, retail sales.
- (85) Photo printers, retail.
- (86) Piano sales.
- (87) Picture framing, custom.
- (88) Poster illustration, studio.
- (89) Protection service.
- (90) Pumps, retail sales and display.
- (91) Radio, television and music stores.
- (92) Radio and television repair shops.
- (93) Real estate office.
- (94) Religious organizations.
- (95) Restaurant equipment and supplies, sales.
- (96) Reupholstery and furniture repair shops.
- (97) Roller-skating and skateboard rinks, commercial.
- (98) Salvation Army.
- (99) Sewing machines, sales and repairing.
- (100) Shoe stores.
- (101) Sound systems and equipment sales.
- (102) Sportswear, retail sales.
- (103) Stationers retail sales.
- (104) Surveyors.
- (105) Tattoo parlors.
- (106) Tennis courts, commercial.
- (107) Tents and awnings sales.
- (108) Theaters, indoor.
- (109) Theatrical agencies.
- (110) Toys, retail sales.

- (111) Uniforms, rental.
- (112) Upholsterer's supplies, sales.
- (113) Used merchandise stores.
- (114) Vacuum cleaners, sales and repairing.
- (115) Weaving, handicraft.
- (116) Wheelchairs, rentals and service.
- (117) Women's accessory and specialty stores.

B. The following uses may be permitted as conditional uses:

- (1) Any size community living arrangements, licensed and operated under the authority of the Department of Health and Family Services, are permitted as a conditional use in accordance with W.S.A. s. 62.23(7)(i).
- (2) Amphitheaters.
- (3) Amusement arcades.
- (4) Antique sales.
- (5) Apparel and accessory stores, miscellaneous.
- (6) Appliance sales and repair.
- (7) Art schools, commercial.
- (8) Artists, commercial and display.
- (9) Asbestos products, sale.
- (10) Assembly halls.
- (11) Auditoriums.
- (12) Auto and home supply stores.
- (13) Automobiles and light trucks.
 - (a) Outdoor sales lots.
 - (b) Parking.
 - (c) Rentals (garage).
 - (d) Sales from outdoor lots.
 - (e) Storage, operable.
- (14) Automotive dealers, not elsewhere classified.

- (15) Automobiles, parts and supplies (new).
- (16) Ballrooms.
- (17) Baseball parks, private.
- (18) Beauty culture schools.
- (19) Boardwalk, amusement, commercial.
- (20) Boat dealers.
- (21) Boilers sales.
- (22) Bowling alleys and billiard and pool establishments.
- (23) Broadcasting studios.
- (24) Bus depots.
- (25) Cafes (restaurants only).
- (26) Car washes.
- (27) Cigars, manufacturing, custom hand-rolled.
- (28) Civic, school and fraternal organizations.
- (29) Clothing, wholesale and distribution.
- (30) Clubs, supper and amusement.
- (31) Clubs, private, social or fraternal.
- (32) Coin-operated amusement devices.
- (33) Community centers.
- (34) Convenience stores.
- (35) Day-care center.
- (36) Department stores.
- (37) Driving schools, auto.
- (38) Electric equipment sales.
- (39) Exhibition buildings.
- (40) Freezer and locker meat provisioners.
- (41) Funeral service and crematories.
- (42) Furniture, home furnishings and equipment display and sales.

- (43) Grocery stores.
- (44) Halls, commercial.
- (45) Hardware, commercial.
- (46) Hardware, retail sales, new and used.
- (47) Heating and ventilating apparatus, sales and showroom.
- (48) Hobby shops.
- (49) Hotels, motels.
- (50) Hotel equipment, supplies and sales.
- (51) Imported goods, retail sales.
- (52) Labor unions and similar labor organizations.
- (53) Lawn mower sales, repair and shops.
- (54) Membership organizations not elsewhere classified.
- (55) Motion-picture and allied services.
- (56) Motion-picture equipment, sales and display.
- (57) Motion-picture theaters, including drive-ins.
- (58) Museums.
- (59) News services.
- (60) Nightclubs.
- (61) Noncommercial educational scientific and research organizations.
- (62) Nursing homes.
- (63) Office buildings.
- (64) Office service (stenographic service, letter preparation, addressing and mailing, duplicating, multigraphing, mimeographing, machine tabulation, research and statistical).
- (65) Opera houses.
- (66) Painting equipment and supplies, retail sales.
- (67) Parks, amusement, private.
- (68) Plastic and plastic products, sales and demonstrations.
- (69) Plumbing fixtures and supplies, display and sales.

- (70) Political organizations.
- (71) Radio studios.
- (72) Residence of the owner or operator of the business on the premises.
- (73) Restaurants, including drive-ins.
- (74) Retail stores and shops (not otherwise listed).
- (75) Riding equipment sales.
- (76) Saddle shops, custom handmade.
- (77) Schools.
 - (a) Art, commercial.
 - (b) Art, (HB) institute.
 - (c) Beauty.
 - (d) Business and commercial.
 - (e) Private.
 - (f) Correspondence and stenographic.
 - (g) Music institutes.
 - (h) Trade and vocational.
- (78) Service stations (fueling stations).
- (79) Sign sales, banner and poster.
- (80) Social services, not elsewhere classified.
- (81) Soil testing lab.
- (82) Sporting goods, retail sales.
- (83) Studios and offices for uses regarding communication.
- (84) Tavern/nightclub.
- (85) Tool sales.
- (86) Variety stores, retail.
- (87) Wharf, amusement piers.
- (88) Yacht clubs.
- (89) Any of the above-noted uses in a nonsewered area.

(90) Other uses determined by the Town Zoning Administrator or designee to be of a similar nature to the above-listed uses.

(91) Recreational sport shooting facility (indoor facilities only).
[Added 4-22-2008 by Ord. No. 2008-006]

§ 135-138. Lot requirements with public sewer.

Lot requirements with public sewer shall be as follows:

- A. Area: 20,000 square feet minimum.
- B. Zoning lot frontage: 150 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a street, such as a cul-de-sac. In no case shall lot frontage measured at the right-of-way line of a cul-de-sac or curved street be less than 85 feet.^[1]

^[1] *Editor's Note: Former Subsection C, Lot width, as amended 11-14-2000, which immediately followed this subsection, was repealed 9-18-2007 by Ord. No. 2007-016.*

§ 135-139. Lot requirements without public sewer.

Lot requirements without public sewer shall be as follows:

- A. Area: 60,000 square feet minimum.
- B. Zoning lot frontage: 150 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a curved street or a cul-de-sac. In no case shall the lot frontage measured at the right-of-way line of a cul-de-sac or curved street be less than 85 feet.^[1]

^[1] *Editor's Note: Former Subsection C, Lot width, as amended 11-14-2000, which immediately followed this subsection, was repealed 9-18-2007 by Ord. No. 2007-016.*

§ 135-140. Height regulations.

Height regulations shall be as follows:

- A. Principal structure: 35 feet maximum, except as provided in § 135-13, Height regulations.
[Amended 9-18-2007 by Ord. No. 2007-016]
- B. Accessory structures shall not exceed the height of the principal structure.

§ 135-141. Building setbacks.

- A. Building setbacks shall be as follows:
[Amended 9-18-2007 by Ord. No. 2007-016]
- (1) With curb and gutter:

Building Setback (in feet)	
Principal Structure	Accessory Building

Building Setback (in feet)

	Principal Structure	Accessory Building
Front yard	30 minimum from right-of-way	30 minimum from right-of-way
Side yard	10 minimum each side	10 minimum
Rear yard	25 minimum	10 minimum
Corner side	30 minimum from right-of-way	30 minimum from right-of-way

- (2) Without curb and gutter:

Building Setback (in feet)

	Principal Structure	Accessory Building
Front yard	35 minimum from right-of-way	35 minimum from right-of-way
Corner side	35 minimum from right-of-way	35 minimum from right-of-way

NOTES:

Exceptions: (1) Bases for light standards (i.e., parking lot lights) may be located at the lot line, provided that no part of the base or light extends into the public right-of-way or across property lines; (2) The setback for vacuum islands accessory to a car wash is six feet from any lot line.

B. Transitional yards.

- (1) If the lot abuts an R-1, R-2, R-3 or RR zone at any point along the rear lot line, it must maintain the same rear yard as required in that abutting zone.
[Amended 9-18-2007 by Ord. No. 2007-016]
- (2) Where a side or rear lot line in a B-2 District coincides with a side or rear lot line in any adjacent residential district, a yard shall be provided along such side or rear lot line not less than 15 feet in depth and shall contain landscaping and planting to provide an effective screen. Such screening shall consist of a landscaped area at least six feet wide, planted with a mixture of deciduous and evergreen trees and shrubs, and shall be an effective barrier. All trees shall be a minimum of 1 1/2 inch caliper when planted.

§ 135-142. Number of structures; size.

- A. Only one principal structure shall be located on a lot.
- B. Only one accessory building per each principal structure shall be located on a lot.
[Amended 9-18-2007 by Ord. No. 2007-016]

§ 135-143. Maximum lot coverage.

Forty-five percent of total lot area may contain building coverage.

§ 135-144. Parking.

[Amended 9-18-2007 by Ord. No. 2007-016]

Parking shall conform to requirements as set forth in Article **XXI**, Parking Requirements.

§ 135-145. (Reserved)

[1] *Editor's Note: Former § 135-145, Signs, was repealed 7-19-2005 by Ord. No. 2005-014. See now Chapter 79, Signs.*

§ 135-146. Other requirements.

[Amended 9-18-2007 by Ord. No. 2007-016]

Additional structures and buildings allowed in the B-2 Business District shall meet the requirements of this district and other articles of this chapter as determined by the Town Building Inspector and/or Town Board.

- A. All business, service repair, storage or merchandise display shall be conducted wholly within an enclosed building, except for automobile parking and loading.
- B. Outside trash bins shall be screened from view by use of solid screening or fencing material with gates on rollers or wheels and must be kept in good repair.
- C. Building appearance shall be complementary to a neighboring district, i.e., no post-frame-construction type building.
- D. Buildings shall be maintained structurally and kept in good repair. Outside appearance shall be maintained in accordance with originally approved appearance and design.
- E. Parking or storage of commercial vehicles shall not be permitted in the front of the principal structure.
- F. Open storage.
 - (1) Open storage of commodities and materials shall be permitted as an accessory use, provided that such open storage shall:
 - (a) Be located behind the required building line.
 - (b) Observe all yard requirements.
 - (c) Have a maximum height not to exceed the height of the main building.
 - (d) Not exceed twenty-percent coverage of the lot area which lies behind the building line.
 - (e) Be screened from view from any street or any adjacent residentially zoned lot, with solid screening.
 - (f) All storage areas must be paved (asphalt or concrete).

Article XVI. (Reserved)

[1] *Editor's Note: Former Article XVI, B-3 Intensive Business District, as amended, was repealed 9-18-2007 by Ord. No. 2007-016.*

§ 135-147. (Reserved)

§ 135-148. (Reserved)

§ 135-149. (Reserved)

§ 135-150. (Reserved)

§ 135-151. (Reserved)

§ 135-152. (Reserved)

§ 135-153. (Reserved)

§ 135-154. (Reserved)

§ 135-155. (Reserved)

§ 135-156. (Reserved)

§ 135-157. (Reserved)

Article XVII. LI Light Industrial District

§ 135-158. Intent.

The LI Light Industrial District is designed to provide an environment suitable for industrial activities that do not create appreciable nuisances or hazards, or that require a pleasant, hazard- and nuisance-free environment. Uses may include some retail and wholesale business, as well as warehousing, storage and limited, low intensive manufacturing uses.

§ 135-159. Permitted uses.

- A. The following uses shall be permitted in Light Industrial Districts:
[Amended 11-14-2000; 9-18-2007 by Ord. No. 2007-015]

- (1) All uses permitted in the Business Districts, except residential, day-care centers, nursing homes, religious institutions and community-based living arrangements.
- (2) Acoustical material storage, except material containing asbestos.

- (3) Agriculture implements, sales and service.
- (4) Air-conditioning equipment, custom fabrication and installation.
- (5) Airplane, repair and storage.
- (6) Ambulance service garage.
- (7) (Reserved)
- (8) Amusement and recreation services, not elsewhere classified.
- (9) Animal boarding.
- (10) Animal breeding (pets).
- (11) Animal hospitals.
- (12) Armored car service garage.
- (13) Armory.
- (14) Artificial flower manufacturing.
- (15) Artificial limbs manufacturing.
- (16) Automobiles and light trucks, repair and service.
- (17) Bakers and baked goods, manufacturing.
- (18) Battery service.
- (19) Beer and ale distributors, wholesale and storage.
- (20) Belting, repairing.
- (21) Beverages, bottling.
- (22) Beverages, wholesale and storage.
- (23) Blacksmiths.
- (24) Bookbinders.
- (25) Book publishing, printing.
- (26) Bottles, wholesale.
- (27) Braces, orthopedic, manufacturing.
- (28) Burglar alarm system, installation.
- (29) Bus lines stops, garages, repair.
- (30) Business machines, repair and service, storage and wholesale.

- (31) Cabinet makers.
- (32) Candy, wholesale distribution.
- (33) Canvas goods (fabrication).
- (34) Carpentering.
- (35) Carpet and upholstery cleaning.
- (36) Car wash.
- (37) Caskets manufacturing.
- (38) Cigars, wholesale and storage.
- (39) Cleaning and maintenance services to dwellings and other buildings, not elsewhere classified.
- (40) Clock factory.
- (41) Coffee, wholesale and storage.
- (42) Coin machines, rental and service.
- (43) Cold storage.
- (44) Commercial testing laboratories.
- (45) Confectioners, wholesale.
- (46) Corsets and brassieres, manufacturing.
- (47) Cotton seed products, storage.
- (48) Department store warehouse.
- (49) Desks manufacturing.
- (50) Diaper service.
- (51) Distillers, distribution, warehouse.
- (52) Dog and cat hospitals.
- (53) Doors, sash and trim, manufacturing.
- (54) Draperies, manufacturing.
- (55) Drugs, wholesale storage.
- (56) Dry-cleaning establishment, bulk processing.
- (57) Dry goods, wholesale or storage.

- (58) Eggs, storage and processing.
- (59) Electric contractors' shops.
- (60) Electric refrigeration lockers.
- (61) Engravers.
- (62) Express companies, warehouses.
- (63) Filters, fabrication.
- (64) Flags and banners, manufacturing.
- (65) Floor covering wholesale sales.
- (66) Food products, warehouse.
- (67) Freight forwarders, warehouse.
- (68) Freight forwarding.
- (69) Frozen foods, wholesale storage and distribution.
- (70) Funeral service and crematories.
- (71) Fur warehouse.
- (72) Furniture, cleaners.
- (73) Furniture, repairing and refinishing.
- (74) Furniture, wholesale and storage.
- (75) Garage repair.
- (76) Gas station.
- (77) Gas station with mini-mart.
- (78) Garment factory.
- (79) Grocers, warehouse.
- (80) Grocers, wholesale.
- (81) Hat manufacturing, cloth.
- (82) Hosiery manufacturing.
- (83) Ice cream manufacturing.
- (84) Ice storage, retail distributor.
- (85) Industrial launderers.

- (86) Interior decorator, workshops.
- (87) Janitors' supplies, storage and warehouse.
- (88) Jewelers, bulk manufacturing.
- (89) Knit goods, manufacturing.
- (90) Laboratories.
- (91) Ladies' wear manufacturing.
- (92) Laundry equipment and supplies storage.
- (93) Leather goods, fabrication.
- (94) Limb (artificial) manufacturing.
- (95) Linen supply laundry service.
- (96) Linen supply, laundry and garment services, not elsewhere classified.
- (97) Linoleum storage.
- (98) Liquor, storage and wholesale.
- (99) Lithographers.
- (100) Lockers, food storage.
- (101) Lumber, cabinet working.
- (102) Machine tools, storage.
- (103) Meat, storage and wholesale.
- (104) Men's clothing manufacturing.
- (105) Meters, manufacturing.
- (106) Milliners, wholesale and manufacturing.
- (107) Millinery and artificial flower making.
- (108) Milling equipment, showrooms, sales.
- (109) Mineral water distillation and bottling.
- (110) Mining machinery, wholesale storage.
- (111) Mirrors, resilvering, custom work.
- (112) Mobile home and manufactured home dealers.
- (113) Motion-picture studios.

- (114) Motorcycle dealers, and repairs.
- (115) Motor freight company.
- (116) Motor vehicle dealers, new and used.
- (117) Newspaper printing.
- (118) Notions, manufacturing and wholesale.
- (119) Office equipment manufacturing (see also business machines).
- (120) Office furniture, storage and warehouse.
- (121) Optical goods, manufacturing.
- (122) Photo-engraving company.
- (123) Pies, bulk, commercial bakery.
- (124) Plaster, wholesale and storage.
- (125) Printers, equipment and supplies, wholesale.
- (126) Product (garden) wholesale.
- (127) Produce warehouse.
- (128) Professional sports club and promoters.
- (129) Public warehousing (interior storage; any exterior storage requires a screening fence).
- (130) Quilt manufacturing.
- (131) Radio equipment assembling.
- (132) Recreational, utility, ATVs and trailer dealers.
- (133) Refrigeration equipment, custom installation.
- (134) Rubber stamps manufacturing.
- (135) Rug cleaners.
- (136) Saddle factory.
- (137) Safes, opening and repairing.
- (138) Sail loft, fabrication.
- (139) School equipment and supplies, wholesale.
- (140) Screens, doors and windows manufacturing.
- (141) Seed, wholesale and retail garden supplies.

- (142) Sexually oriented adult entertainment establishment.
- (143) Shirt factory.
- (144) Shoe repairing equipment and supplies, wholesale.
- (145) Slip covers, custom manufacturing.
- (146) Soda water manufacturing.
- (147) Sound system, rental and service.
- (148) Spices, wholesale and storage.
- (149) Sporting goods, manufacturing.
- (150) Store and office fixtures, contractors' shops.
- (151) Stove and ranges, wholesale storage.
- (152) Surgical supplies, wholesale distributors.
- (153) Taxicab garages, storage and repair.
- (154) Taxidermists.
- (155) Tents and awnings manufacturing.
- (156) Tire repairing, equipment and supplies.
- (157) Tobacco, cigarette, manufacturing.
- (158) Tobacco, wholesale, storage.
- (159) Tool grinding and sharpening.
- (160) Tools, wholesale and storage.
- (161) Towels, supply service.
- (162) Trading stamp services.
- (163) Vegetable market, wholesale.
- (164) Venetian blinds, custom manufacturing, installation.
- (165) Wagon shop, repairs.
- (166) Wall board, wholesale and storage.
- (167) Wallpaper, manufacturing.
- (168) Watches, manufacturing.
- (169) Water, distilled, processing.

- (170) Water coolers (drinking fountains), repairs and service.
- (171) Water softening equipment, service and repairs.
- (172) Window display installations, studio and shops.
- (173) Window glass installation shop.
- (174) Wines, storage, bottling and wholesale.
- (175) Woodworking, cabinet and custom millwork.
- (176) Woodworking, equipment, wholesale.
- (177) Woven goods, fabrication and assembly.

§ 135-160. Conditional uses.

[Amended 9-18-2007 by Ord. No. 2007-015]

A. The following uses may be permitted as conditional uses:

- (1) Asbestos and asbestos products, storage and sale.
- (2) Advertising display manufacturing signs.
- (3) Agriculture implements, sales and service.
- (4) Airplane, repair and storage.
- (5) Amphitheater.
- (6) Amusement parks.
- (7) Asphalt siding, shingles, roofing, storage.
- (8) Boat, pleasure, storage.
- (9) Building contractors, equipment and material storage.
- (10) Building material, wholesale and storage.
- (11) Business services, not elsewhere classified.
- (12) Cigars, manufacturing, custom hand-rolled.
- (13) Construction and installation facilities for the use of communications.
- (14) Diesel engines service, equipment and supplies (not manufacturing).
- (15) Display designers and builders' shops.
- (16) Drive-in motion-picture theaters.

- (17) Electric equipment, assembly.
- (18) Electric plating.
- (19) Electrical appliances, manufacturing.
- (20) Electrical and electronic repair shops, not elsewhere classified.
- (21) Electrical work.
- (22) Enameling and painting, custom.
- (23) Equipment rental and leasing services.
- (24) Farm implements and machinery sales.
- (25) Feed stores.
- (26) Fences, metal, wholesale and storage.
- (27) Fixed facilities and services related to air transportation.
- (28) Furnaces, cleaning and repairing shops.
- (29) Glass and glazing work.
- (30) Golf driving range.
- (31) Heating and ventilating, apparatus assembly and storage.
- (32) Heavy machinery sales and service.
- (33) Hoists, equipment storage.
- (34) Hotel equipment, assembly and custom fabrication.
- (35) Hydraulic equipment sales and service.
- (36) Imported goods, warehouse.
- (37) Insecticides, storage and distribution.
- (38) Insulation materials, storage and distribution.
- (39) Iron, custom decorative wrought iron shops.
- (40) Irrigation companies and equipment.
- (41) Lubricating compounds, storage.
- (42) Lumber and other building materials dealer.
- (43) Lumber storage yard.
- (44) Machine shops.

- (45) Millwork, sales and storage.
- (46) Miscellaneous repair shops and related services.
- (47) Miscellaneous services incidental to transportation.
- (48) Model construction supplies, manufacturing.
- (49) Motion-picture equipment, storage and manufacturing.
- (50) Motor freight company.
- (51) Movers, warehouses and garage.
- (52) Oil burners, installation and repair.
- (53) Operative builders.
- (54) Ornamental metal work, custom hand fabrication.
- (55) Orthopedic appliances, manufacturing.
- (56) Outdoor advertising services.
- (57) Packing and crating service, fabrication.
- (58) Painters' equipment and supplies, shops, wholesale and storage.
- (59) Paper products, wholesale, and storage.
- (60) Pattern shop.
- (61) Pipe, metal, storage and sales.
- (62) Plating works, precious metals.
- (63) Plumbers' shops.
- (64) Plumbing fixtures and supplies, wholesale and storage.
- (65) Plumbing, heating (except electrical) and air conditioning.
- (66) Pumps, repairing and rental.
- (67) Recreational vehicles, including ATVs, sales and repair.
- (68) Refrigeration and air-conditioning service and repair shops.
- (69) Refrigerators, wholesale storage.
- (70) Repair brakes, electrical painting, radiators, upholstering, etc.
- (71) Restaurant equipment installation, repair shop.
- (72) Road building equipment sales.

- (73) Roofing materials, storage and sales.
- (74) Roofing work.
- (75) Scaffolds, equipment storage.
- (76) Scales, commercial weighing.
- (77) Service station equipment, wholesale.
- (78) Sewer pipe storage.
- (79) Sheet metal work, custom fabrication.
- (80) Sign erectors, contractors, shop.
- (81) Sign painters, shops.
- (82) Snowmobiles, ATVs, sales and repair.
- (83) Special trade contractor, not elsewhere classified.
- (84) Spraying supplies equipment yard.
- (85) Steel awnings, custom manufacturing.
- (86) Storage warehouse.
- (87) Terminal/joint terminal maintenance facilities for motor freight transportation.
- (88) Terminal and service facilities for motor vehicle passenger transportation.
- (89) Terrazzo and tile contractors, shops and storage.
- (90) Thermometers manufacturing.
- (91) Tin shop, fabrication.
- (92) Tours, garages.
- (93) Tractors, rental.
- (94) Trailers, repairing.
- (95) Transfer business.
- (96) Truck freight movers.
- (97) Trucking, local and long distance.
- (98) Truck sales and repair.
- (99) Used merchandise stores.
- (100) Veterinarians, clinic.

- (101) Warehouses,
- (102) Water, mineral, drinking or curative, bottling and distribution.
- (103) Water heaters, service and repairing.
- (104) Water well drilling.
- (105) Waterproofing materials, storage.
- (106) Weighers, commercial.
- (107) Welding, equipment and supplies, storage.
- (108) Welding shop.
- (109) Wholesale produce storage or market, commercial.
- (110) Wholesale trade, durable goods.
- (111) Wholesale trade, nondurable goods.
- (112) Window cleaning services.
- (113) Other uses determined by the Town Zoning Administrator or designee to be similar in nature to the above-listed uses."
- (114) Recreational sport shooting facility (indoor facilities only).
[Added 4-22-2008 by Ord. No. 2008-006]

§ 135-161. Lot requirements with public sewer.

Lot requirements with public sewer shall be as follows:

- A. Area: 20,000 square feet minimum.
- B. Zoning lot frontage: 150 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a street, such as a cul-de-sac. In no case shall lot frontage measured at the right-of-way line of a cul-de-sac or curved street be less than 85 feet.
- C. Lot depth: 150 feet minimum.
[Amended 11-14-2000; 9-18-2007 by Ord. No. 2007-015]

§ 135-162. Lot requirements without public sewer.

Lot requirements without public sewer shall be as follows:

- A. Area: 60,000 square feet minimum.
- B. Zoning lot frontage: 150 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a curved street or a cul-de-sac. In

no case shall the lot frontage measured at the right-of-way line of a cul-de-sac or curved street be less than 85 feet.

- C. Lot depth: 150 feet minimum.
[Amended 11-14-2000; 9-18-2007 by Ord. No. 2007-015]

§ 135-163. Height regulations.

Height regulations shall be as follows:

- A. Primary structure: 45 feet maximum, except as provided in § 135-13, Height regulations.

§ 135-164. Number of buildings.

There shall be no limitations as to the number of buildings located on a lot.

§ 135-165. Building setbacks.

[Amended 9-18-2007 by Ord. No. 2007-015]

- A. Building setbacks shall be as follows:

- (1) With curb and gutter:

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Front yard	30 minimum from right-of way	30 minimum from right-of-way
Side yard	10 minimum each side	10 minimum
Rear yard	25 minimum	20 minimum
Corner side	30 minimum from right-of-way	30 minimum from right-of-way

- (2) Without curb and gutter:

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Front yard	35 minimum from right-of-way	35 minimum from right-of-way
Corner side	35 minimum from right-of-way	30 minimum from right-of-way

NOTES:

Exceptions: (1) Bases for light standards (i.e., parking lot lights) may be located at the lot line, provided that no part of the base or light extends into the public right-of-way; (2) The setback for vacuum islands accessory to a car wash is six feet from any lot line.

- B. Transitional yards.

- (1) If the lot abuts an R-1, R-2, R-3 or RR Zone at any point along the rear lot line, it must maintain the same rear yard setback of the principal building as required in that abutting zone.

- (2) Where a side or rear lot line in an LI District coincides with a side or rear lot line in an adjacent residence district, a berm or barrier shall be provided along such side or rear lot line not less than 15 feet in depth and a solid fence no less than six feet in height shall be required.

§ 135-166. Maximum lot coverage.

[Amended 9-18-2007 by Ord. No. 2007-015]

Seventy-five percent of total lot area may contain building coverage and/or hard surface. Twenty-five percent of the total lot area shall remain green space.

§ 135-167. Parking.

[Amended 9-18-2007 by Ord. No. 2007-015]

Parking shall conform to requirements as set forth in Article **XXI**, Parking Requirements.

§ 135-168. (Reserved)

[1] *Editor's Note: Former § 135-168, Signs, was repealed 7-19-2005 by Ord. No. 2005-014. See now Chapter 79, Signs.*

§ 135-169. Other requirements.

- A. No use shall be established, maintained or conducted in any LI District that causes any of the following:
 - (1) Dissemination of excessive noise, vibration, odor, dust, smoke, observation gas or fumes or other atmospheric pollutants beyond the boundaries of the immediate side of the building in which such use is conducted.
 - (2) Hazard of fire or explosion or other physical hazard to any person, building or vegetation.
 - (3) A harmful discharge of waste material.
 - (4) Radiation or interference with radio and television reception beyond the immediate boundaries of the immediate site of the building in which such use is conducted.
 - (5) Outside trash bins shall be screened in accordance with § 135-15F(4).
[Amended 11-22-2011 by Ord. No. 2011-014]
- B. Buildings shall be maintained structurally and kept in good repair. In addition, outside appearance shall be maintained in accordance with originally approved appearance and design. Standards set forth in the Town Nuisance Ordinance^[1] and other Town ordinances, as well as applicable federal and state requirements, shall be used as measurements of compliance.
[Amended 9-18-2007 by Ord. No. 2007-015]
[1] *Editor's Note: See Ch. 68, Nuisances.*

§ 135-170. Open storage.

- A. Open storage of commodities and materials offered for sale shall be permitted as an accessory use, provided that such open storage shall:
[Amended 9-18-2007 by Ord. No. 2007-015]
- (1) Observe all setback requirements.
 - (2) Have a maximum height not to exceed the height of the main building.
 - (3) Not exceed twenty-percent coverage of the lot area which lies behind the principal structure.
 - (4) Be screened from view from any street or any adjacent zoned lot, with screening surface which is ninety-five-percent impervious.
 - (5) All storage areas must be paved (asphalt or concrete).
- B. The standards referred to in Subsection **A** except Subsection **A(5)** above shall not apply to new or used automobile dealer facilities which have outdoor display of vehicles for sale. Such display of vehicles shall be permitted as an accessory use to a dealer facility which shall be approved as part of the overall approval of a site plan for an automobile facility. Parking or storage of commercial vehicles shall not be permitted in the front of the principal structure.
[Amended 9-18-2007 by Ord. No. 2007-015]
- C. The standards referred to in Subsection **A** above shall not apply to a nursery or greenhouse.
- D. Nothing in this section shall be deemed to prohibit temporary open storage of merchandise for display and sale during a sidewalk sale.

Article XVIII. HI Heavy Industrial District

§ 135-171. Intent; applicability of regulations.

The HI Heavy Industrial District is designed to accommodate those heavy industrial activities which by their character should be relatively remote from residential and business development. The uses may require large parcels of land and may include the manufacture of raw materials or component parts into a more finished product or material. The following regulations shall apply to all Heavy Industrial Districts.

§ 135-172. Permitted uses.

[Amended 11-14-2000; 9-18-2007 by Ord. No. 2007-015]

The following uses shall be permitted in Heavy Industrial Districts: See permitted uses in LI Light Industrial District. All uses allowed in the LI Light Industrial District are allowed in the Heavy Industrial District. Any other uses shall be conditional uses.

§ 135-173. Lot requirements with public sewer.

Lot requirements with public sewer shall be as follows:

- A. Area: 20,000 square feet minimum.

- B. Zoning lot frontage: 100 feet minimum. Such minimum lot frontage may be measured at the building setback line if said lot is located on the outer radius of a street, such as a cul-de-sac. In no case shall lot width measured at the right-of-way line of a cul-de-sac or curved street be less than 85 feet.
- C. Lot width: 150 feet minimum.
[Amended 11-14-2000]

[1] *Editor's Note: Former § 135-173, Conditional uses, as amended, was repealed 9-18-2007 by Ord. No. 2007-015. Said ordinance also provided for the renumbering of former §§ 135-174 through 135-180 as §§ 135-173 through 135-179.*

§ 135-174. Lot requirements without public sewer.

Lot requirements without public sewer shall be as follows:

- A. Area: 60,000 square feet minimum.
 - B. Zoning lot frontage: 150 feet minimum. Such minimum lot width may be measured at the building setback line if said lot is located on the outer radius of a curved street or a cul-de-sac. In no case shall the lot width measured at the right-of-way line of a cul-de-sac or curved street be less than 85 feet.^[1]
- [1] *Editor's Note: Former Subsection C, Lot width, as amended 11-14-2000, which immediately followed this subsection, was repealed 9-18-2007 by Ord. No. 2007-015.*

§ 135-175. Height regulations.

Height regulations shall be as follows:

- A. Primary structure: 60 feet maximum, except as provided in § 135-13, Height regulations.

§ 135-176. Number of buildings.

[Amended 9-18-2007 by Ord. No. 2007-015]

There shall be no buildings located on a lot without approval.

§ 135-177. Building setbacks.

[Amended 9-18-2007 by Ord. No. 2007-015]

- A. Building setbacks shall be as follows:

- (1) With curb and gutter:

	Building Setback (in feet)	
	Principal Structure	Accessory Building
Front yard	30 minimum from right-of-way	30 minimum from right-of-way
Side yard	10 minimum each side	10 minimum
Rear yard	25 minimum	25 minimum

Building Setback (in feet)

	Principal Structure	Accessory Building
Corner side	30 minimum from right-of-way	30 minimum from right-of-way

- (2) Without curb and gutter:

Building Setback (in feet)

	Principal Structure	Accessory Building
Front yard	35 minimum from right-of-way	35 minimum from right-of-way
Corner side	35 minimum from right-of-way	35 minimum from right-of-way

- B. Transitional yards. Where a side or rear lot line in an HI District coincides with a side or rear lot line in an adjacent residence district, a yard shall be provided along such side or rear lot line not less than 30 feet in depth and shall contain a solid fence no less than six feet in height.

§ 135-178. Maximum lot coverage.

[Amended 9-18-2007 by Ord. No. 2007-015]

Seventy-five percent of the total lot area may contain building coverage. Twenty-five percent of the total area shall remain green space.

§ 135-179. Parking.

[Amended 9-18-2007 by Ord. No. 2007-015]

Parking shall conform to requirements as set forth in Article **XXI**, Parking Requirements.

§ 135-180. Open storage.

- A. All storage shall be within completely enclosed buildings or effectively screened in accordance with § 135-15F(4).

[Amended 9-18-2007 by Ord. No. 2007-015; 11-22-2011 by Ord. No. 2011-014]

- B. Open storage of commodities and materials offered for sale shall be permitted as an accessory use, provided that such open storage shall:

[Amended 9-18-2007 by Ord. No. 2007-015]

- (1) Be located behind the required building line.
- (2) Observe all setback requirements.
- (3) Be screened from view from any street or any adjacent zoned lot, with screening which is 95% impervious in each one square foot of screening surface.
- (4) All storage areas must be paved (asphalt or concrete).

- C. The standards referred to in Subsections **A** and **B** above shall not apply to new or used automobile dealer facilities which have outdoor display of vehicles for sale. Such display of vehicles shall be permitted as an accessory use to a dealer facility which shall be approved as part of the overall approval of a site plan for an automobile dealer facility.

- D. The standards referred to in Subsections **A** and **B** above shall not apply to a nursery or greenhouse.
- E. Nothing in this section shall be deemed to prohibit temporary open storage of merchandise for display and sale during a sidewalk sale.

§ 135-181. (Reserved)

[1] *Editor's Note: Former § 135-181, Signs was repealed 7-19-2005 by Ord. No. 2005-014. See now Ch. 79, Signs.*

§ 135-182. (Reserved)

[1] *Editor's Note: Former § 135-182, Open storage, was renumbered as § 135-180 9-18-2007 by Ord. No. 2007-5-015.*

§ 135-183. Other requirements.

- A. No use shall be established, maintained or conducted in any HI District that causes any of the following:
 - (1) Dissemination of excessive noise, vibration, odor, dust, smoke, observation gas or fumes or other atmospheric pollutants beyond the boundaries of the immediate side of the building in which such use is conducted.
 - (2) Hazard of fire or explosion or other physical hazard to any person, building or vegetation.
 - (3) A harmful discharge of waste material.
 - (4) Radiation or interference with radio and television reception beyond the immediate boundaries of the immediate site of the building in which such use is conducted.
- B. Standards set forth in the Town nuisance ordinance^[1] or other Town ordinances, as well as applicable state and federal requirements, shall be used as measurements for compliance.

[1] *Editor's Note: See Ch. 68, Nuisances.*
- C. Buildings shall be maintained structurally and kept in good repair. Outside appearance shall be maintained in accordance with originally approved appearance and design.

[Added 9-18-2007 by Ord. No. 2007-015]
- D. Parking or storage of commercial vehicles shall not be permitted in the front of the principal structure.

[Added 9-18-2007 by Ord. No. 2007-015]

Article XIX. C-1 Conservancy District

[Amended 11-20-2007 by Ord. No. 2007-017]

§ 135-184. Purpose; applicability of regulations.

The purpose of the Conservancy District is to provide adequate natural areas for the drainage of surface and stormwaters, and to protect and promote the general health, safety and welfare of the community and to protect natural resource areas containing swamp, wildlife habitat and natural water or drainage courses. The following regulations shall apply in C-1 Districts. All structures and setbacks in the Conservancy District shall be approved by the Town Board.

§ 135-185. Permitted uses.

Permitted uses shall be as follows:

- A. Stream bank protection.
- B. Public water measurement and water control facilities.
- C. Retention/detention ponds.
- D. ESAs (environmentally sensitive areas).
- E. Distribution lines, telephone and cable televisions lines and public utility installations, public streets, street rights-of-way and street improvements to service the area.
- F. Public trail systems.
- G. Town owned public parks.
- H. Other uses which would not impair the natural fauna, flora and water regimen.

§ 135-186. Conditional uses.

Conditional uses shall be as follows:

- A. Private trail systems.
- B. Hunting, trapping and fishing where not otherwise prohibited.
- C. Wildlife preserves.
- D. Wild crop harvesting.
- E. Sustained yield forestry.
- F. Fish hatcheries.
- G. Fences.
- H. Grazing.
- I. Utilities.
- J. Municipal property.

- K. Parks.
- L. Private retention/detention ponds.
- M. Outdoor archery, rifle or trap or skeet-shooting ranges.
- N. Golf courses and golf driving ranges.
- O. Irrigation.
- P. Sod farming.
- Q. Truck farming.
- R. Roads.
- S. Transmission lines, substations and pipelines.
- T. Communication devices; satellite dish antennas less than 12 feet in diameter.

§ 135-187. Other requirements.

Any use allowed in the C-1 District shall meet the regulations of this district and the other articles of this chapter as determined by the Town of Ledgeview Building Inspector. Other permits may be required by local or state agencies.

§ 135-188. Warning and disclaimer of liability.

The degrees of flood protection intended to be provided by this chapter is considered reasonable for normal water or flooding levels. This chapter does not imply that areas adjacent to district boundaries or uses permitted within such a district will always be free from flooding or water damage. Nor shall this chapter create a liability on the part of the Town or any official or employee thereof for any flood or water damages that may result from reliance or compliance with this chapter.

Article XX. NCD Neighborhood Center District

[Added 2-20-2006 by Ord. No. 2006-004]

§ 135-189. Purpose and intent.

The principal purpose of the Neighborhood Center District is to provide for a variety of pedestrian-oriented retail, office, lodging, residential, and civic land uses in the Town center area. The intent of the district is to encourage the development and sustainability of a vibrant mixed-use area where residents and visitors can live, work, shop, dine, be entertained, enjoy community and cultural events, and contribute to the economic viability of the Neighborhood Center District and the Town of Ledgeview as a whole. The Neighborhood Center District designation may be applied to land that meets the following primary characteristics:

- A. This district will be appropriate in areas identified as Future Neighborhood Center on the future land use map of the Town of Ledgeview Comprehensive Plan. Areas include the CTH G and CTH

GV, CTH GV and CTH X, CTH G and Lime Kiln Road, Ledgeview Business Park, and CTH MM and Elmview Road intersections.

[Amended 3-20-2007 by Ord. No. 2007-006]

- B. This district will be appropriate in areas of the Town of Ledgeview where commercial, lodging, residential, and civic activities are desirable for the benefit of the residents and the Town in general.
- C. This district will be appropriate where its permitted uses and performance standards serve to widen the Town of Ledgeview's economic base and further the development of the neighborhood center as recommended in the Neighborhood Center District Model and the Town of Ledgeview Comprehensive Plan.
- D. All new construction or changes of use within the Neighborhood Center Zoning District shall conform to the general provisions as specified in § 135-192 and any other relevant regulations of this article unless noted in this chapter, in which case the regulations in this chapter shall prevail.

§ 135-190. Application requirements.

Each application shall include the following components in addition to any other documents and information required to be submitted under § 135-196. Where certain factors such as the size of the proposed district its relationship to an adjacent neighborhood, land use, or other similar factors may render certain components irrelevant and to that extent such components need not be addressed.

- A. A statement describing how the proposed NCD satisfies the intent of this section and is consistent with the applicable goals and objectives of the Town of Ledgeview Comprehensive Plan and any existing general development plan for the applicable development area. If one or more characteristics of the NCD delineated in § 135-192 are missing from an application, the applicant shall justify why all of the characteristics cannot or should not be provided.
- B. A parking and loading needs study that demonstrates parking needs and requirements and includes strategies for dealing with these needs and requirements, including phasing plans, parking alternatives and requirements as provided in Article XXI (Off-Street Parking Requirements), as well as transportation demand management strategies.
- C. A stormwater management plan addressing shared stormwater management facilities, off-site stormwater management facilities, and the proposed phasing of the construction of stormwater management facilities.
- D. A general development plan, as provided in § 135-191, including all information required by § 135-196 to support any element of the plan.
- E. A code of development, as provided in § 135-192, including all information required by § 135-196 to support any element of the code.

§ 135-191. General development plans.

A general development plan shall serve as the application plan required by § 135-196B(8). In addition to the application plan requirements, the following are required elements of the general development plan:

- A.

The general allocation of uses to each block in terms of residential, commercial, industrial, institutional, amenities, parks, recreational facilities open to the public, and any other use category proposed by the applicant and which complies with the requirements of § 135-194.

- B. The location of proposed greenspaces, amenities, conservation areas or preservation areas, as provided in § 135-195.
- C. Building footprints or graphic representations of central features or major elements essential to the design of the development, shown at the block level.

§ 135-192. Codes of development.

A code of development shall establish the unifying design guidelines, the specific regulations for the district, and the use characteristics of each block; shall provide for certainty in the location of and appearance of central features and the permitted uses in the district; and shall provide a flexible range of a mix of uses and densities. To satisfy these requirements, each code of development shall establish:

- A. The uses permitted in the district by right and by conditional use permit, as provided in § 135-193.
- B. The amount of developed square footage proposed delineated for the entire NCD and by block by use, amenity, streets and lot coverage. The developed square footage may be expressed as a proposed range of square footage.
- C. The amount of land area devoted to greenspace and amenities, as provided in § 135-195.
- D. All requirements and restrictions associated with each use delineated in Subsection A.
- E. All uses expressly prohibited in the district, so that they may not be considered to be uses accessory to a permitted use.
- F. Architectural and landscape standards which shall address the following:
 - (1) The form, massing, and proportions of structures.
 - (a) Identify the structure form to determine the mix of uses within the constraint of building type established in the NCD. The look and layout of the building form shall reflect neighborhood scale, parking standards, and pedestrian accessibility.
 - (b) Identify the structural size or mass and elements used to break up the mass of monolithic or large buildings.
 - (c) Identify how the form and mass of the proposed structures are proportionate in scale to the NCD.
 - (2) Architectural styles.
 - (a) Development of one structure or multiple attached structures exceeding maximum square footage shall be prohibited, with the exception of certain special use permits.
 - (b) Eclectic mix of modern and historic styles is recommended.
 - (c)

All sides of structures shall have finished appearance with windows and doors that appear to function as part of public structure (no blank walls).

- (d) Rooftop equipment shall be screened from view from any street, public right-of way, or surrounding property and shall be architecturally integrated into the building design.
 - (e) All utility lines shall be buried.
 - (f) Trash enclosures, utilities, or other ground-mounted equipment shall be screened from the general public by a six-foot high masonry wall or landscape feature to match building design, and to specifications as identified by local utilities.
 - (g) Trash enclosures and loading docks shall be gated with fully screened gates painted to match adjacent walls.
 - (h) Wall-mounted utilities shall be screened with materials architecturally integrated into the building design or painted to match the exterior wall color in that location, and to specifications as identified by local utilities.
 - (i) Ground-mounted utilities shall be screened with materials architecturally integrated into the building design and/or screened with landscaping if the ground-mounted utilities cannot be enclosed, and to specifications as identified by local utilities.
 - (j) Building and signage design shall comply with overall NCD design.
- (3) Materials, colors, and textures.
- (a) Appropriate combinations of materials, colors, and textures shall be used in a theme consistent with the design of the overall NCD and reflect the Neighborhood Center District concepts for development.
 - (b) Materials, such as stone, brick, painted metal, and wood, or imitations thereof substantially imitating the appearance and quality of such materials shall be used.
 - (c) Flat-faced concrete or cinder block is prohibited.
 - (d) EIFS is limited to dormers, gables, and soffits only.
 - (e) Themed color combinations for the site are required.
 - (f) Vinyl and or aluminum siding is permitted by conditional use permit only.
- (4) Roof form and pitch.
- (a) Gable and hip roofs shall be used except as provided in Subsection **F(4)(b)**.
 - [1] Main roof range 8:12 - 12:12.
 - [2] Entry roof range 4:12 - 6:12.
 - [3] Roof forms must be continuous and wrap around corners/building planes.
 - [4] Rooflines shall be articulated.

- (b) Flat roofs are allowed provided the architectural theme of the NCD justifies flat roof structures.
- (5) Architectural ornamentation. Finials, scalloping, weather vanes, wood shingle roof, columns, cupolas, outdoor dining patios, ornamental fences, etc., shall be considered in a theme consistent with the design of the overall NCD and reflect the Neighborhood Center District concepts for development.
- (6) Facade treatments, including window and door openings.
 - (a) Shutters, awnings, wall and awning signage, entry coverage, etc. shall be considered in a theme consistent with the design of the overall NCD and reflect the Neighborhood Center District concepts for development.
 - (b) Elevations shall use any combination of the following: masonry, natural stone, rusted steel, painted steel, and exposed wooden beams and columns consistent with the theme of the site.
 - (c) Buildings may utilize sills, windows, leaders, and ornamental features to visually articulate elevations.
 - (d) Elevations shall utilize more than one material in the face of the elevations, excluding windows.
 - (e) Flat-faced concrete or cinder block is prohibited.
- G. The preservation of historic structures, sites, and archeological sites identified by the National Register of Historic Places, Wisconsin Historical Society or as recognized by the Town of Ledgeview.
 - (1) An exemption shall be allowed from certain design criteria to maintain the integrity of existing historic structures and sites.
 - (2) Historic structures shall be utilized as an architectural model for new structures within the NCD.
 - (3) Historic structures shall be utilized as site focus features.
- H. For each block and lot:
 - (1) The following chart specifies minimum lot size, maximum building height, maximum building footprint, setback lines, required greenspace, and the minimum distance between buildings.

Town of Ledgeview Neighborhood Center District								
Setback Lines								
Lot Size	Maximum Building Height	Maximum Building Footprint	Maximum Right-Of-Way	Front	Side or Corner	Rear	Required Greenspace	Distance Between Buildings
6,000 to 10,000	36 feet or as approved	40,000 square feet ^[1]	25 feet	0 feet	0 feet	15 feet	15% minimum to 25% maximum	0 feet, total combined buildings

**Town of Ledgeview
Neighborhood Center District**

Setback Lines

Lot Size	Maximum Building Height	Maximum Building Footprint	From Right-Of-Way	Front	Side or Corner Side	Rear	Required Greenspace	Distance Between Buildings
square feet	by Town Board							greater than 40,000 square feet

[1] See § 135-193B.

(2) The range of uses permitted on the block by right and by conditional use permit:

- (a) Minimum two uses required per block.
- (b) Specific uses allowed on each lot shall be designated.
- (c) Placement of buildings shall be clustered.
- (d) Focus shall include pedestrian access within clustered buildings and between clusters,
- (e) Front yard shall face or be visible to street.

I. Sidewalk and pedestrian path locations

- (1) Hardscape areas, sidewalks, plazas, parkways, street crossings, etc. shall use integral colors, which are compatible with the proposed development. The use of exposed aggregate as an accent within sidewalks and plazas is encouraged.
- (2) Sidewalks are required on front/main entry of all buildings.
- (3) Materials can include stamped concrete, cobblestone simulation, and colored concrete.
- (4) Sidewalks should be designed at six to 10 feet wide to encourage walking rather than driving.
- (5) At least one pedestrian/bicycle path connecting to adjacent/future residential neighborhoods and/or a parallel trail shall be included.

J. Streets. Street right-of-way width and design as identified in the following table:

Figure 3-6: Street and Right-of-Way Width Standards Summary

Street Type	Right-of-Way Width* (feet)	Pavement Width (curb face to curb face) (feet)	Driving Lane Width	On-Street Parking	Parking Areas Defined by Curbs?
Collectors	60	34	9 to 10 feet	Both sides	Yes
Local streets					

Figure 3-6: Street and Right-of-Way Width Standards Summary

Street Type	Right-of-Way Width* (feet)	Pavement Width (curb face to curb face) (feet)	Driving Lane Width	On-Street Parking	Parking Areas Defined by Curbs?
No parking allowed	40	18	9	None	No
Parking on one side	46 to 48	22 to 24	14 to 16 feet travel lane	One side	If needed
Parking both sides	50 to 52	26 to 28	10 to 12 feet travel lane	Both side	If needed
Alleys	---	20	---	---	---

*The right-of-way width includes the widths of the driving area, parking area, curbs, terraces (between the sidewalk and street), and sidewalks.

K. Lighting.

- (1) All private street and sidewalk lighting shall be pedestrian level, not including county highways.
- (2) Light bulb elements shall match throughout the lighting scheme. Direct white light shall not be allowed.
- (3) All street and sidewalk lighting shall be of the same style and color scheme throughout the NCD, including the use of uniform light bulb elements and features.
- (4) Light pole color compliant with NCD for buildings and sidewalks.
- (5) Light pole design compliant with building architecture.
- (6) Exterior illumination of landscape and buildings shall be by ground-mounted fixtures, which shall be indirect, focused, and hooded and shall be arranged so that the source of light is not visible from any street or adjoining property.
- (7) Illumination of pedestrian walkways shall be by any combination of the following: lighted bollard, recessed light fixtures, or wall-mounted fixtures. Freestanding light standards are discouraged in non-parking lot areas. Light standards located within parking areas shall be a maximum of 35 feet in height above grade.

L. Greenspace and amenities; see § 135-195.

M. Conservation areas and preservation areas, if applicable; see § 135-195.

N. Parking areas.

Angle	Width (feet)	Depth (feet)	Aisle (feet)	Stall Width (at curb) (feet)	Overall Width (2 parking lines)
90°	9	18.5	25	10	62

Angle	Width (feet)	Depth (feet)	Aisle (feet)	Stall Width (at curb) (feet)	Overall Width (2 parking lines)
60°	9	19	15	11.44	53
45°	9	17.5	15	13.97	50
30°	9	17.3	15	19.8	49.6
Parallel	n/a	10	n/a	20	n/a

- (1) All parking areas shall be shared spaces for the entire NCD.
- (2) All parking areas shall include parking accommodations for bicycles at a point conveniently close to the pedestrian/sidewalk areas and main entry of buildings. At least one bicycle stall per 10 automobile parking stalls shall be required.
- (3) Off-street parking areas shall be on the side and rear of buildings, partially or completely screened from public right-of-ways. Off-street parking in front of buildings shall only be considered when no other design option is available or possible due to topography, natural features, or other such features.
- (4) The primary entry to buildings shall have limited parking to encourage pedestrian activity.
- (5) Developments shall have a designated maximum number of parking spaces. The developer shall consult with the Town of Ledgeview staff regarding the maximum number of necessary parking spaces who shall make a recommendation to the Zoning and Planning Committee and Town Board. Parking lots may be allowed to include reserve-parking areas that allow for future expansion if additional parking is necessary.
 - (a) The maximum number of parking spaces for each use shall be no greater than the minimum number of spaces for each use identified in § 135-204 of the code of the Town of Ledgeview. The exact number of spaces shall be determined by the Town Board.
 - (b) A reserve parking area shall have future drive lanes and interconnectivity identified.
 - (c) A reserve parking area shall be held as open greenspace. The greenspace may exceed 25% until such time that the parking lot is needed and developed or determined unnecessary and developed for another use that is approved by the Town of Ledgeview.
- (6) Parking areas shall have at least 10% landscaped greenspace within the parking area to include a variety of grass, plants, vegetation, and the required one tree for every 250 square feet of landscaped surface.
- (7) Sixty-degree angled parking with one-way drive lanes shall be used for parking lots wherever practicable.
- (8) Parking lots adjacent to other developments or streets shall be screened by a minimum three-foot-high wall, fence, and/or mounding.
 - (a) Landscaped berms, fences, walls, or the combination thereof shall not to exceed 42 inches in height and shall be designed to allow pedestrian passage.
 - (b)

Parking lot landscape islands shall be a minimum of eight-feet wide (inside dimension) and contain one tree.

- (9) Civic spaces and public areas for community or civic activities (e.g., libraries and their associated yards, schools, and places of worship). Civic spaces are encouraged to allow for a regular flow of public entering the NCD.

§ 135-193. Permitted uses.

- A. The following uses shall be permitted in a NCD, subject to the regulations in this article and Article XII (Planned Development District), the approved general development plan and code of development, and the accepted proffers:

- (1) The following uses are permitted by right and recommended in the designated districts:

- (a) Commercial uses.

- [1] Antique shops.
- [2] Apparel and accessory stores.
- [3] Appliance dealers.
- [4] Art shops and galleries.
- [5] Art supply stores.
- [6] Bakery goods stores.
- [7] Barber shops.
- [8] Beauty shops.
- [9] Bicycle sales, rental, and repair stores.
- [10] Bookstores.
- [11] Business machine sales and service centers.
- [12] Camera and photographic supply stores.
- [13] Candy and confectionary stores.
- [14] Carpet, rug, and drapery stores.
- [15] Catering establishments.
- [16] China and glassware stores.
- [17] Clinics, doctors, and dentists offices.
- [18] Clock sales and repair shops.
- [19] Clothing and costume rental stores.

- [20] Clothing repair shops.
- [21] Coin and philatelic stores.
- [22] Computer and data processing services and dealers.
- [23] Copy and duplicating services.
- [24] Craft shops, including jewelry, metal, and leather.
- [25] Dairy product stores.
- [26] Delicatessens.
- [27] Department stores.
- [28] Dry cleaners (depot only).
- [29] Dry goods stores.
- [30] Electrical showrooms and shops.
- [31] Employment agencies.
- [32] Film processing establishments.
- [33] Florist shops.
- [34] Fruit and produce stands/farmers market.
- [35] Funeral homes.
- [36] Furniture stores.
- [37] Furrier shops.
- [38] Gift shops.
- [39] Grocery and food shops.
- [40] Hardware stores.
- [41] Hobby supply stores.
- [42] Ice cream stores.
- [43] Insurance agencies.
- [44] Interior decorating shops.
- [45] Jewelry stores and repair shops.
- [46] Laboratories (medical, dental, research, and testing).
- [47] Laundries (self service).

- [48] Lawn and garden supply, seed and plant stores.
- [49] Lawn equipment sales and service centers.
- [50] Leather goods stores.
- [51] Lighting shops and showrooms.
- [52] Locksmith shops.
- [53] Luggage stores.
- [54] Meat markets.
- [55] Miniature golf courses.
- [56] Motor vehicle parts, supplies and accessory stores, not to include used auto salvage yards.
- [57] Musical instrument sales and repair shops.
- [58] Novelty shops.
- [59] Office machine sales and service shops.
- [60] Offices (business and professional).
- [61] Office supply and equipment stores and service centers.
- [62] Optical goods stores.
- [63] Orthopedic and medical appliance stores.
- [64] Paint stores.
- [65] Pharmacies.
- [66] Photography studios.
- [67] Picture framing shops.
- [68] Plumbing showrooms and shops.
- [69] Radio sales and service stores.
- [70] Radio and television stations.
- [71] Real estate offices.
- [72] Recording studios.
- [73] Record, tape, compact disc, and sheet music stores.
- [74] Rental service stores.

[75] Residential uses (condo above first floor and where use allows), live-work.

[76] School supply stores.

[77] Sewing machine sales and service stores.

[78] Shoe sales and repair shops.

[79] Sporting goods stores.

[80] Stationary stores.

[81] Stock brokers.

[82] Tailor shops.

[83] Taxidermists.

[84] Television sales and service stores.

[85] Ticket agencies (amusement).

[86] Tobacco shops.

[87] Toy stores.

[88] Transportation ticket offices.

[89] Travel agencies.

[90] Used merchandise stores.

[91] Variety, miscellaneous, and specialty stores.

[92] Wallpaper shops.

(b) Entertainment uses.

[1] Restaurants (not including drive-through^[1]).

[1] See § 135-193B(2).

[2] Temporary outdoor dining/seating.

[3] Theatres (indoor).

[4] Tourist lodgings.

(c) Industrial uses.

[1] Boat and marina supply dealers.

(d) Civic uses.

[1] Banks and financial institutions, without drive-through.^[2]

[2] See § 135-193B(2).

- [2] Churches.
- [3] Meeting halls.
- [4] Post offices.
- [5] Schools (dance, music, and business).
- [6] Town government offices.

(2) The following uses are permitted only by conditional use permit:

(a) Residential uses.

- [1] Community-based residential facilities.
- [2] Condominiums homes.
- [3] Day-care centers.
- [4] Nursing homes and personal care facilities.

(b) Drive-through uses.

(c) Accessory uses and buildings, including storage buildings.

(d) Outdoor storage, display, and/or sales serving or associated with a permitted use if any portion of the use would be visible from a public or private street or alley.

(e) Structures with a footprint exceeding 40,000 square feet. Any structure exceeding 40,000 square feet that is granted a conditional use shall establish a plan for building, parking lot, utility removal, and site restoration if the structure remains vacant for a period longer than 12 months.

(f) Allowance for vinyl and/or aluminum siding.

(3) Any item not listed above is prohibited.

§ 135-194. Mixture of uses.

There shall be a mixture of uses within each NCD as follows:

- A. Each district shall have at least two uses provided that the Town Board may waive this requirement if the district is an infill project or at least two uses are already present within one-quarter mile of the proposed district. For purposes of this section, an "infill project" is a project in which a parcel is developed or redeveloped, where abutting or nearby parcels are already developed, and where the project area is relatively small compared to the developed abutting or nearby parcels.
- B. Each district shall have at least two different general use classifications (i.e., residential, commercial, industrial, institutional, parks, or recreational facilities open to the public) provided that this requirement may be waived by the Town Board if a different use is already present within one-quarter mile of the proposed district and accomplishes the mixture of uses within the neighborhood sought to be achieved by this section to an equivalent degree.

- C. The mixture of uses shall be based upon the uses recommended in the land use element of the Comprehensive Plan. The required mixture of uses may be obtained with different uses in different buildings or a mixture of uses within the same building.

§ 135-195. Greenspaces, amenities, conservation areas, and procedure for approval.

Each NCD shall include the following:

- A. Greenspace. Greenspace is the total undeveloped, open area used for landscaping, recreation and landscaping. The minimum area devoted to greenspace is as follows:
 - (1) For areas shown in the land use element of the Comprehensive Plan as Neighborhood Center, the area devoted to greenspace shall be at least 15% but not more than 25% of the gross acreage of the site.
 - (2) For areas having a land use designation not addressed in Subsection **A(1)**, the recommendations of the applicable provisions of the Comprehensive Plan shall guide the minimum area devoted to greenspace.
 - (3) The Town Board at the request of the applicant may reduce the minimum area devoted to greenspace. In acting on a request, the Board shall consider the relationship of the site to adjoining or nearby properties containing public greenspace, such as parks or natural areas; the known future uses of the adjoining properties; and whether a reduction would better achieve the goals of the Comprehensive Plan.
- B. Amenities. Amenities are greenspaces with landscaping, pathways, benches, gazebos or other similar aesthetic enhancements. The minimum area devoted to amenities is as follows:
 - (1) For areas shown in the land use element of the Comprehensive Plan as Neighborhood Center, the area devoted to amenities shall be at least 15% of the gross acreage of the site. If at least 15% is not provided, a fee in lieu of dedication shall be paid in an amount equal to the percentage of the value of the project, if approved by the Town of Ledgeview. [EXAMPLE: If a project valuing \$500,000 is submitted with only 10% amenities, then 5% of the value of the project is due as a fee in lieu of dedication (\$25,000).]
 - (2) Amenities preserving existing natural areas and future environmental areas in the Comprehensive Plan are encouraged.
 - (3) For areas having a land use designation not addressed in Subsection **B(1)**, the recommendations of the applicable provisions of the Comprehensive Plan shall be guidance on the minimum area devoted to amenities.
 - (4) The Town Board at the request of the applicant may reduce the minimum area devoted to amenities. In acting on a request, the Board shall consider these factors: the relationship of the site to adjoining or nearby properties containing amenities; the proportion of residential uses to nonresidential uses proposed; the known future uses of the adjoining properties; and whether or not a reduction would better achieve the neighborhood model goals of the Comprehensive Plan.
- C. Additional requirements for amenities. Amenities shall also be subject to the following:
 - (1)

At least 90% of the residential units in the NCD shall be within a one-quarter-mile walk of an amenity.

- (2) The size, location, shape, slope, and condition of the land shall be suitable for the proposed amenity.
 - (3) The amenity shall be suitable for the specific population to be served.
 - (4) The design of any recreational facilities shall meet the minimum design requirements from recognized sources of engineering and recreational standards.
 - (5) In nonresidential areas of the development, amenities shall be located so that they are easily accessible to patrons and employees of the development.
- D. Greenspace within parks and recreational amenities. Any portion of an amenity, including a trail, which is covered in grass or other vegetation, may be counted as both greenspace and an amenity.
- E. Conservation areas within greenspace. A conservation area is any area that is preserved in its natural state. Conservation areas that maintain required environmental features such as wetlands shall not be included as greenspace area.

§ 135-196. Procedure for approval.

A. Review and approval.

- (1) Application and fee. Completed application, picture book, and required fees shall be submitted to the Zoning Administrator or designee with a written request for review. The application shall contain names, mailing addresses, and telephone numbers of all owners and developers and a description of the development site. Appropriate supporting documents, including a picture book and maps, shall be filed at the time of application.
- (2) Notice to committee. The Zoning Administrator or designee shall inform the Zoning and Planning Committee of the application and establish a date for a mandatory preliminary discussion between the staff and the developer. At the time of mandatory preliminary discussion with staff, a date for a meeting shall be established for the developer and the Zoning and Planning Committee.
- (3) Public hearing. The Zoning and Planning Committee shall hold a public hearing on the NCD application and notice shall be provided as required by law for all zoning code amendments.
- (4) Committee recommendations. The Zoning and Planning Committee, after such discussions and such further discussions as may be required with the developer and input from the public hearings, shall report, in writing, such proposed project development to the Town Board, together with its recommendation for either approval or disapproval of the same. Such report and recommendation of the committee shall be made to the Town Board no later than four months from the date of the filing of the application with the Zoning Administrator or designee and receipt of any required supportive information. A recommendation of approval by the committee shall in no way be binding on the Town Board. The Town Board shall either approve or disapprove the proposed NCD within 60 days receipt of the Zoning and Planning Committee recommendation.
- (5)

Validity of NCD. A NCD project approved by the Town Board shall be valid for a period of six months. If a developer does not begin construction a project proposed within an NCD within the approved time frame, the Town of Ledgeview shall exercise the following options:

- (a) Extend the existing NCD approval for another six months;
- (b) Extend the existing NCD approval for another six months with amendments; or
- (c) Terminate any granted approvals and conditions.

B. Information required.

- (1) A statement describing the general character of the intended development.
- (2) A statement showing the starting and completion dates of the project.
- (3) The names, mailing addresses, and telephone numbers of all owners and developers of the development site. In the event of a change in owners or developers during the consideration of the application or during the project construction period, notice shall be provided to the Town as soon as practicable of the information required herein for the new owner or developer.
- (4) An accurate map of the project area drawn at a scale no less than one inch equals 100 feet and showing the nature, use, and character of abutting properties, prepared by a registered surveyor.
- (5) A plot plan at a scale of one inch equals 200 feet showing the location, type, and size of every proposed structure and its proposed use, including driveways, driveway access roads, parking facilities, lighting appliances and fixtures, recreation areas, loading docks, open spaces, screening, fencing, and landscaped areas and utility easements.
- (6) An accurate topographical map showing topographical data at two-foot intervals and extending within 100 feet beyond the exterior boundaries of such site. Such map shall contain all available utilities, including drainage and the capacities thereof, and high-water elevations along rivers and waterways.
- (7) A picture book of the development laid out in a format similar to the concepts for development document that correlates with this article. At a minimum, the picture book shall include the following information:
 - (a) Development concept. Provide a brief summary and graphic renditions identifying how the project addresses pedestrian orientation, neighborhood-friendly streets, sidewalks, paths and utilities, interconnected streets and transportation networks, buildings and spaces of human scale, relegated and shared parking, a mixture of uses and use types, redevelopment, site planning that respects terrain, and clear boundaries with rural areas.
 - (b) Mixed uses section.
 - [1] A scaled site plan layout of locations displaying all uses, including identification of each classification within the development.
 - [2] Identify location of new structure in relationship to other existing or proposed new structures.

(c) Architectural styles section.

- [1] A scaled, colored elevation of the front, side, and rear facade of each structure.
- [2] Identify all roof-, wall-, and ground-mounted equipment and landscaping/screening.

(d) Materials, colors, and textures section.

- [1] Identify building materials and colors on all sides and roof of structure.
- [2] Provide color details and description for each material and material combination.
- [3] Provide samples for complex or new materials.

(e) Roof form and pitch section.

- [1] Identify roof pitch.
- [2] Identify roof materials and colors.
- [3] Provide samples for complex or new materials.

(f) Architectural ornamentation section.

- [1] Identify location of individual architectural ornamentations, including size, colors, and types.
- [2] Provide scaled color rendition of architectural ornamentation.
- [3] Identify signage locations and size in relationship to ornamentation.

(g) Facade treatments section.

- [1] Identify materials used for specific facade treatments.
- [2] Provide a sketch, rendition, or photo of each specific treatment.

(h) Preservation of historic structures section.

- [1] Provide a photograph of historic structures/elements to be preserved.
- [2] Identify location and size on a site plan.
- [3] Identify where the structure/element will exist in relationship to other development within the NCD.
- [4] Provide renditions and scaled plans of proposed changes or rehabilitation to historic structure.

NOTE: Historic structures anticipated to be exempt from NCD requirements in order to retain historic integrity must be approved by the Town of Ledgeview.

(i) Blocks and lots section.

- [1] Provide a site plan identifying block and lot layout in relationship to existing and proposed buildings.
 - [2] Identify the uses on each lot and placement of buildings.
 - [3] A rendition of the layout is recommended.
- (j) Sidewalks and pedestrian paths section:
- [1] Identify the interconnected layout of all sidewalks and pedestrian paths on a site plan.
 - [2] Provide rendition-identifying relationship between sidewalks, parking areas, streets, buildings, and existing developments.
 - [3] Provide a scaled drawing identifying dimensions of sidewalks.
 - [4] Identify materials, textures, and colors used in surface.
- (k) Streets section.
- [1] Identify the interconnected layout of all streets on a site plan.
 - [2] Provide rendition-identifying relationship between sidewalks, parking areas, streets, buildings, and existing developments.
 - [3] Provide a scaled drawing identifying dimensions of sidewalks.
 - [4] Identify materials, textures, and colors used in surface.
- (l) Signage section.
- [1] Provide scaled details of all signage.
 - [2] Signage should identify color, type, lighting source, materials, and size.
 - [3] Identify how signage color, size, and style are compatible with adjacent signage and buildings.
 - [4] Identify if signage is temporary or permanent.
- (m) Lighting section.
- [1] Identify that lighting is pedestrian level.
 - [2] Identify lighting source.
 - [3] Identify pole and light style, color, and material.
 - [4] Provide graphic detail of lighting style and its relationship with the buildings, street, and sidewalk.
- (n) Greenspace and amenities section.
- [1] Identify location.

- [2] Identify the interconnectivity and access to sidewalks, streets, and building in a site plan and color renditions.
 - (o) Parking areas section.
 - [1] Identify if development includes areas for shared parking.
 - [2] Provide a scaled site plan identifying drive lanes, parking stalls, and connections to streets and sidewalks.
 - [3] Provide dimensions for parking stalls and drive lanes.
 - [4] Identify reserve-parking areas.
 - [5] Identify required landscaping.
 - [6] The site plan must include a chart identifying the maximum allowed number of parking spaces and the existing number of parking spaces and proposed number of parking spaces if reserve-parking areas are built.
 - [7] Label landscaping areas and identify landscaping materials used (tree types and grass flower species).
 - (p) Civic spaces section.
 - [1] Identify location public plus, water features, flower beds, etc.
 - [2] Identify the interconnectivity and access to sidewalks, streets, and building in a site plan and color renditions.
- (8) A general development plan of the proposed project drawn at a scale no less than one inch equals 100 feet and showing the following information in sufficient detail to make possible the evaluation of the criteria as identified in § 135-192.
- (a) Tract boundaries and a statement of the total acreage of the tract.
 - (b) Significant physical features within the tract, including existing two-foot contours, watercourses, drainage, ponds, lakes, wetlands, floodplains, floodways, and proposed major changes in those features.
 - (c) Zoning district(s) on and within 400 feet adjacent to the proposed project.
 - (d) Property lines, if any, within the proposed project.
 - (e) All contemplated land uses within the tract.
 - (f) Details of proposed use or uses and manner of operation.
 - (g) An indicator of the contemplated intensity of use, i.e., gross density in residential development; number of prospective tenants in office, commercial and industrial development; or recreational development.
 - (h) Existing buildings that may affect future development and proposed location of all principal structures and associated parking areas.

- (i) Proposed lot coverage of buildings and structures.
 - (j) Square footage of buildings.
 - (k) Square footage of offices, production areas, and the proposed number of employees in each such area.
 - (l) Proposed circulation systems (pedestrian, bicycle, auto, mass transit) by type and how they relate to the existing network outside this site.
 - (m) Existing rights-of-way and easements that may affect the NCD.
 - (n) In the case of plans that call for development in stages, a map at an appropriate scale showing the successive stages.
 - (o) The location of sanitary storm sewer lines, water mains, fire hydrants, and lighting.
 - (p) The location of recreational and open space areas and areas reserved or dedicated for public uses, such as schools, parks, etc.
 - (q) A description of the proposed system for drainage.
 - (r) General landscape treatment.
- (9) Appropriate statistical data on the size of the development, ratio of various land uses, economic analysis of the development, and any other data pertinent to the above-required information.
 - (10) A statistical table showing the size of the site in square feet, the acreage (exclusive of public rights-of-way), proposed population densities, and open area (both in square feet and as a percentage of the project area).
 - (11) Architectural drawings of all buildings and structures and sketches illustrating the design characteristics and treatment of exterior elevations and typical floor plans of proposed structures.
 - (12) General outline of intended organization structure related to the property owner's association, deed restrictions, and private provision on common services, if any.
 - (13) An economic feasibility and impact report may be required by the Zoning and Planning Committee to provide satisfactory evidence of the project's economic feasibility, of available adequate financing, and of its not adversely affecting the economic prosperity of the Town or the values of surrounding properties.
 - (14) Municipal services that may be required to serve the site.
 - (15) Any additional pertinent data, statements, drawings, or plans that may be required by the Zoning and Planning Committee or the Town Board.
- C. Special use review and approval process. The review and approval process for a specific special use shall follow the same procedure for review approval that is identified in § 135-196.
 - D. Amendments.
 - (1)

The Zoning and Planning Committee may authorize minor changes in the location, setting, and heights of buildings and structures without additional hearing if required by engineering or other circumstances not foreseen at the time the final plan was approved. No minor change authorized by this subsection may cause any of the following:

- (a) A change in the use or character of the development.
 - (b) An increase in overall coverage of structures.
 - (c) An increase in the intensity of use.
 - (d) An increase in the problems of traffic circulation and public utilities.
 - (e) A reduction in approved open space.
 - (f) A reduction of off-street parking and loading spaces.
 - (g) A reduction in required pavement widths.
 - (h) All other changes in use, rearrangement of lots, blocks, and building's tracts, every change in the provision of common open space, and changes other than listed above must be reviewed and approved by the Zoning and Planning Committee and Town Board.
- (2) Amendments may be made only if they are shown to be required by changes in community policy.

§ 135-197. (Reserved)

§ 135-198. (Reserved)

§ 135-199. (Reserved)

Article XXI. Off-Street Parking Requirements

[Amended 11-14-2000; 2-18-2004 by Ord. No. 2004-004; 6-22-2004 by Ord. No. 2004-009; 12-19-2006 by Ord. No. 2006-016; 6-4-2007 by Ord. No. 2007-010; 9-18-2007 by Ord. No. 2007-016; 10-20-2009 by Ord. No. 2009-036]

§ 135-200. Parking ratios.

- A. Applicability of regulations. This article imposes minimum and maximum parking ratio standards for all zoning districts within the Town of Ledgeview.
- B. General provisions.
 - (1) Purpose. Parking and loading regulations are established to alleviate or prevent congestion of the public right-of-way, to provide for the parking and loading needs of uses and structures, to enhance the compatibility between parking and loading areas and their

surroundings, and to regulate the number, design, maintenance, and location of required off-street parking and loading spaces and access driveways and aisles.

- (2) Single-family and two-family uses. Off-street parking for single-family and two-family residential uses are not subject to site plan approval.
- (3) Existing facilities. Existing parking and loading facilities shall not be reduced below the requirements for a similar new use, or if less than the requirements for a similar new use, they shall not be reduced further.
- (4) Change of use. When the use of a building or site is changed or the intensity of use is increased through the addition of dwelling units, gross floor area, capacity, or other unit of measurement used for determining parking and loading requirements, parking and loading facilities shall be provided for such change or intensification of use as specified in Appendix Table 1.^[1]

[1] *Editor's Note: Table 1 is included at the end of this chapter.*

- (5) Uses not identified. The Zoning and Planning Commission shall determine the minimum and maximum parking requirement for any uses that are not specified in Appendix Table 1.
- (6) Multiple uses. When a structure or structures have multiple uses, the minimum standards shall apply to each use.
- (7) Fractional measurements. When calculations determining the number of spaces result in a fractional space, the fractional space may be eliminated from the required spaces.
- (8) Gross floor area. Gross floor area shall be determined by calculating the sum of the gross horizontal areas of all floors within the inside perimeter of the exterior walls of the structure and roofed areas reserved for the display, storage, or sale of merchandise. The gross area of any parking area within a building shall not be included within the gross floor area of the building.
- (9) On-street parking. The minimum number of required off-street parking spaces shall be reduced by the number of on-street parking spaces abutting the property lines of the parcel(s).
- (10) Limitations. Required parking spaces, loading areas and access driveways shall not be used for storage, display, sales, rental, or repair of motor vehicles or other goods or for the storage of inoperable vehicles or snow.

C. Minimum parking ratios.

[Amended 2-20-2018 by Ord. No. 2018-02]

- (1) The second column of Appendix Table 1,^[2] establishes the minimum number of parking spaces required for the identified uses. Parking requirements may be met by one or more of the following methods:
 - (a) On-site parking spaces. Only spaces that are designed consistent with the standards of this article shall be counted toward the minimum parking required. Spaces at or in queuing lines, gasoline pumps, bay doors, and loading spaces shall not be counted.
 - (b) Payments in lieu of parking. Payment in lieu of parking spaces may be considered if such an account is established to provide public parking within 300 feet of the exterior boundaries of the proposed development. The amount of payment for each space

shall be based on the estimated cost to provide and maintain such spaces multiplied by the number of spaces required under this article. Complete payment shall be made to the Town of Ledgeview before any final site plan approval shall be issued. Payments in lieu shall not be accepted where such payments are insufficient to provide required parking at the time of occupancy.

- (c) Off-site parking within a cooperative parking facility. Cooperative parking facilities must conform to § 135-201 of this article.

[2] *Editor's Note: Table 1 is included as an attachment to this chapter.*

- (2) Parking for physically disabled persons. The owner or lessee of any public place or place of employment shall provide parking spaces for use by motor vehicles used by physically disabled persons as follows:

- (a) Number of accessible stalls.

Total Number of Stalls	Accessible	Van Accessible
1 to 25	1	1
26 to 50	2	1
51 to 75	3	1
76 to 100	4	1
101 to 150	5	1
151 to 200	6	1
201 to 300	7	2
301 to 400	8	2
401 to 500	9	2
500 +	2% of total	20% of total

- (b) Size of accessible stall. Parking stalls reserved for physically disabled persons shall be at least 12 feet wide.
- (c) Location. Such stalls shall be located as close as possible to an entrance of the parking facility and to the building entrance.

D. Maximum parking ratios.

- (1) The third column of Appendix Table 1^[3] establishes the maximum number of parking spaces required for the identified uses. If a maximum parking space ratio applies, the number of parking spaces shall not exceed the maximum number permitted.

[3] *Editor's Note: Table 1 is included as an attachment to this chapter.*

- (2) Special accessible spaces required by state or local building codes shall not be counted toward the maximum allowed spaces.

§ 135-201. Cooperative parking.

- A. Off-site cooperative parking. Off-site, off-street shared parking spaces, where one or more of the users of the parking spaces operates on a different lot than where the use exists or operates,

may be provided for two or more properties or uses in a development or for two or more individual developments, subject to the following:

- (1) The off-site, off-street cooperative parking facility(s) is within 300 feet of the property.
 - (2) The parking demands of the individual uses, as determined by the Zoning Administrator based upon off-street parking requirements, are such that the total parking demand of all the uses at any one time is less than the total parking stalls required.
 - (3) A Cooperative parking agreement in a form acceptable to the Town Attorney is executed and recorded in with the Brown County Register of Deeds securing the required amount of parking for each parcel or use. A copy of the recorded document shall be submitted with the project to be kept on file with the Town of Ledgeview. Failure to maintain required parking shall be a violation of this article and shall be subject to enforcement proceedings, including but not limited to an order to discontinue the use for which parking is required to be provided.
 - (4) An application for approval of a cooperative parking plan shall be filed with the Zoning Administrator by all of the owners of the entire land area to be included within the relegated parking plan, the owner or owners of all structures then existing on such land area, and all parties having a legal interest in such land area and structures. Sufficient evidence to establish the status of applicants as owners or parties in interest shall be provided. The application shall include plans showing the location of uses or structures for which off-street parking facilities are required, the location of the off-street parking facilities, and the schedule of times used by those sharing spaces in common.
 - (5) Any such plan may be amended or withdrawn if all land and structures remaining under such plan comply with all the conditions and limitations of the plan and all land and structures withdrawn from such plan comply with the regulations of this section.
 - (6) Any amendment, revision, termination, or withdrawal shall be submitted to the Town of Ledgeview for review and approval.
- B. On-site cooperative parking. On-site, off-street shared parking spaces, may be provided for developments that contain a mix of uses on the same lot in order to reduce the amount of parking using Appendix Table 2,^[1] subject to the following:
- (1) The minimum parking requirements shall be determined for each land use in the first column of Appendix Table 2 as if each were a different use.
 - (2) Each amount is multiplied by the corresponding percentages of each of the five time periods in the second, third, fourth, fifth, and sixth columns of Appendix Table 2.
 - (3) Calculate the total for each time period.
 - (4) The total with the highest value is the required minimum number of parking spaces.

^[1] *Editor's Note: Table 2 is included at the end of this chapter.*

§ 135-202. Parking dimensions.

- A. In general.

- (1) Off-street parking spaces shall have stall width, depth, size, angle, and drive lane dimensions as identified in Appendix **Table 3**.^[1]
 [1] *Editor's Note: Table 3 is included at the end of this chapter.*
 - (2) Access or maneuvering areas, ramps, and other appurtenances shall not be considered as contributing toward required off-street parking space.
- B. Compact vehicles. Compact vehicle parking is not required. Minimum parking dimensions for all stalls are identified Appendix **Table 3**.

§ 135-203. Parking location.

- A. In general. Except as provided in § **135-201A**, off-street parking facilities shall be located on the same lot that the use exists.
- B. Rear parking areas.
 - (1) "Rear parking" is defined as parking areas that are located between the principal building and the rear lot line, or alley, or interior to a block.
 - (2) Rear parking is required in the following zoning districts:
 - (a) Multiple-Family District (R-3).
 - (b) Neighborhood Center District (NCD).
 - (c) Business District (B-1).
 - (d) Business District (B-2).
 - (e) Institutional District (I-1).
 - (f) Light Industrial District (LI).
 - (g) Heavy Industrial District (HI).
 - (h) Any district with a Planned Development District Overlay (PDD).

§ 135-204. Parking construction and maintenance.

- A. In general. Off-street parking facilities shall be constructed, maintained and operated in accordance with § **135-204B** through **G**, as well as any other requirements of the Town of Ledgeview.
- B. Pavement.
 - (1) All parking and loading areas shall be paved with asphalt, bituminous, or concrete material to minimize nuisance from dust.
 - (2) Parking and loading areas shall be graded and drained in order to properly dispose of all surface water and stormwater.
 - (3)

All driveways, drive lanes, and parking areas for vehicles shall be constructed with rock, concrete, brick, asphalt, turf block, or other surfaces of comparable durability.

- (4) All driveway, drive lane, and parking area pavement shall be at least five feet from any side yard lot line.
- (5) Driveway, drive lane, and parking area pavement is permitted in the rear yard of all zoning districts, except where landscaped screening is required.
- (6) When rear area and side area parking is not possible, driveway, drive lane, and parking area pavement may be located in front yard space within the Business District B-1, Business District B-2, Light Industrial District (LI), and Heavy Industrial District (HI). Design and location are subject to review and approval by the Zoning and Planning Commission.
- (7) Driveways that connect drive lanes and parking areas to streets shall not be considered part of the parking area.

C. Wheel guards.

- (1) Parking area perimeters shall be provided with wheel guards, bumper guards, or continuous curbing so located that no part of parked vehicles will extend beyond the property line of the parking area.
- (2) Separate wheel stops shall be provided for each parking space.

D. Landscaping.

- (1) Parking lots containing 10 or more spaces shall be planted with at least one tree per 10 spaces, no smaller than 1 1/2 inches caliper (trunk diameter one inch above base of tree), with each tree being surrounded by no less than 100 square feet of continuous permeable unpaved area.
- (2) Required parking lot landscaping shall be located within the designated parking area in a fashion that defines rows of parking with landscaped islands and landscaped peninsulas.
- (3) Landscaping vegetation and trees shall be properly maintained. If required plantings die, the plantings shall be replaced within 45 days.

E. Protective screen fencing and berm.

- (1) Areas shall be provided with protective screen fencing or a berm so that occupants of adjacent residential structures are not unreasonably disturbed by the movement of vehicles either during the day or at night.
- (2) The protective screen, berm, or any combination shall be at least ninety-percent opaque when adjacent to residential uses.
- (3) In no case shall the protective screen, berm, or any combination exceed eight feet in height above the natural grade.

F. Lighting.

- (1) Lighting shall be fully cut off and shielded so that the source of light is concealed from public view and concealed from adjacent residential uses at the lot line.

- (2) Lighting shall be arranged so that the source of light does not interfere with traffic on adjacent rights-of-way.
- G. Pervious pavement. Vehicle parking spaces may exceed the maximum number of parking spaces if the additional spaces are surfaced with pervious pavement permitting infiltration, subject to the following:
 - (1) Pervious pavement shall be located only on soils having a permeability rating of moderate rapid to very rapid.
 - (2) Pervious pavement shall not be located in soils with a high-water table or a depth of bedrock of less than 10 feet, as identified in the Brown County, Wisconsin, soil survey.
 - (a) Pervious pavement shall not be located on any slope of 5% or greater (4.5°, assuming 0° is perfectly horizontal and flat).
 - (b) The pervious pavement area shall be vacuum swept and washed with a high-pressure hose at least two times per year.
 - (c) Pervious pavement parking area design is subject to review by the Town of Ledgeview in order to verify compliance with existing municipal separate storm sewer permits, stormwater runoff requirements, and illicit discharge requirements.

§ 135-205. Bicycle parking.

- A. In general. Bicycle parking spaces shall be required. The minimum number of required parking spaces for each use, structure, and facility shall meet or exceed the minimum bicycle spaces identified in Appendix Table 1.^[1]

[1] *Editor's Note: Table 1 is included at the end of this chapter.*
- B. Design.
 - (1) Bicycle spaces may be provided through parking spaces or bicycle storage racks.
 - (2) Bicycle parking spaces shall be at least 2.5 feet in width and six feet in length, with a minimum overhead clearance of seven feet.
 - (3) Racks and other fixtures used to provide for bicycle parking must be securely affixed to the ground and allow for bicycles to be locked and chained.
 - (4) The design of bicycle racks and fixtures shall be included in final site plans and approved by the Zoning and Planning Commission.
 - (5) Bicycle parking areas shall be clearly marked on site plans.
- C. Location.
 - (1) Bicycle spaces may be located indoors or outdoors.
 - (2) Bicycle spaces shall be located within 50 feet of the primary entrance.
 - (3) Bicycle spaces shall not be located behind any wall, shrubbery, or visual obstruction lying between the principal building and the bicycle spaces.

- (4) Signage shall be posted indicating the location of bicycle spaces if the bicycle spaces are not visible from the right-of-way.
- (5) Areas used for required bicycle parking shall be paved, drained, well lit, and maintained.
- (6) Spaces used within offices and on balconies that are not accessible to all users shall not be counted toward required parking.

§ 135-206. Off-street loading requirements.

A. In general.

- (1) Truck loading facilities are required for structures containing uses devoted to businesses, industry, manufacturing, storage, warehousing, processing, offices, professional buildings, hotels, multiple-family dwellings, hospitals, airports, railroad terminals, and any building of a commercial nature.
- (2) If a structure is enlarged, expanded, or changed, the structure shall not be used, occupied, or operated unless the structure has at least the amount of off-street truck loading facilities that would apply if the increments were a separate structure.

B. Sizes.

- (1) There shall be two sizes of off-street loading spaces: "large" and "small."
- (2) Large spaces shall have an overhead clearance of at least 14 feet, shall be at least 12 feet wide, and shall be at least 50 feet long.
- (3) Small spaces shall have an overhead clearance of at least 10 feet, shall be at least nine feet wide, and shall be at least 20 feet long.
- (4) Access areas, maneuvering areas, platforms, and other appurtenances are excluded from these measurements.

C. Location.

- (1) Off-street loading facilities shall be located on the same lot that the structure requiring the loading area is located.
- (2) Loading facilities that are available in a cooperative arrangement may be located on another site not more than 300 feet from where the structure requiring the loading area is located.
- (3) Service entrances and service yards shall be located only in the rear or side yard.

D. Construction and maintenance. Off-street truck loading facilities shall be constructed, maintained, and operated utilizing the following standards:

- (1) Drainage and surfacing. Areas shall be properly graded for drainage; surfaced with concrete or asphalt; and maintained free of weeds, dust trash, and debris.
- (2) Protective screen fencing. Areas shall be provided with protective screen fencing or a berm so that occupants of adjacent residential structures are not unreasonably disturbed by the

movement of vehicles either during the day or at night. Loading facilities and service yards shall be screened from adjacent property, using standards identified in § 135-204D and E.

- (3) Lighting. Lighting shall be arranged so that the source of light is concealed from public view and adjacent residential uses at the lot line and will not disturb traffic on adjacent rights-of-way.
- (4) Entrances and exits. Areas shall be provided with entrances and exits so located as to minimize traffic congestion.
- (5) Combined truck loading facilities. Off-street truck loading facilities for two or more structures may be satisfied by the permanent allocation of the required number of spaces for each use in a combined truck loading facility.
 - (a) The total number of spaces in a combined truck loading facility shall be at least the sum of the individual requirements unless the Zoning and Planning Commission determines that a lesser number of spaces will be adequate.
 - (b) In determining the number of revised spaces, the Zoning and Planning Commission shall consider the respective times of usage of the truck loading facilities by the individual users and the character of the merchandise.
- E. Minimum requirements. The minimum truck loading spaces shall be provided for in all districts as set in Appendix Table 4.^[1]

[1] *Editor's Note: Table 4 is included at the end of this chapter.*
- F. Waiver. The Zoning and Planning Commission is authorized to waive off-street loading requirements for structures that are required to provide and maintain fewer than five off-street parking spaces, or any other structure if the design and proposed use of the structure demonstrates no need of off-street loading.

§ 135-207. Off-street parking requirements for commercial vehicles, recreational vehicles, boats, and motor homes.

- A. Commercial vehicles.
 - (1) Parking or storage of commercial vehicles with a gross vehicle weight rating exceeding 10,000 pounds is prohibited in the R-1, R-2 and R-3 Districts. Parking of no more than one commercial vehicle with a gross vehicle weight rating exceeding 10,000 pounds may be permitted in the R-R, A-1 and A-2 Districts.
 - (2) Parking of commercial vehicles with a gross vehicle weight rating of 10,000 pounds or less is permitted in the R-1, R-2, R-3, R-R, A-1 and A-2 Districts as follows:
 - (a) One commercial vehicle may be parked outdoors subject to all other provisions of this article. Outdoor storage of commercial vehicles is prohibited.
 - (b) Commercial vehicles may be parked or stored within an enclosed garage.
- B. Recreational vehicles, boats and motor homes.
 - (1) The parking of boats, utility trailers, recreational vehicles and motor homes shall only be allowed:

- (a) Within the front yard on a driveway, only for the time period of April 1 to November 1.
 - (b) Within a garage for the entire year.
 - (c) In the rear yard for the entire year.
 - (d) In the side yard not closer than five feet to the side yard lot line for the period April 1 to November 1.
 - (e) In the front yard on a driveway and in the side yard no closer than five feet to the side yard lot line for the time period of November 1 to April 1, not to exceed 30 cumulative days during this period.
- (2) Use of a recreational vehicle for living or sleeping purposes is permitted on a temporary basis in any residential or agricultural zoning district under the following conditions:
- (a) Use of the recreational vehicle shall only be permitted on premises with an existing house and not on a vacant parcel of land.
 - (b) No monetary gain shall be realized by the property owner.
 - (c) The vehicle must be parked on a gravel or hard-surface driveway no closer than 10 feet from any lot line.
 - (d) The use of the recreational vehicle for temporary purposes may not exceed 10 days within any calendar year.
 - (e) The use of internal combustion engines is not permitted for generation of electricity.

Article XXII. (Reserved)

[1] *Editor's Note: Former Art. XXII, Nonmetallic Mining and Nonmetallic Mining Reclamation Operations, as amended, was repealed 10-20-2009 by Ord. No. 2009-035. See now Ch. 131, Mining, Art. I, Regulations of Nonmetallic Mining.*

§ 135-208. through § 135-219. (Reserved)

Article XXIII. (Reserved)

[1] *Editor's Note: Former Art. XXIII, Blasting, as amended 11-14-2000, which consisted of § 135-220, Adoption of regulations by reference, was repealed 10-20-2009 by Ord. No. 2009-034. See now Ch. 130, Explosives and Blasting.*

§ 135-220. (Reserved)

Article XXIV. Man-Made Bodies of Water

[Amended 11-14-2000; 8-22-2017 by Ord. No. 2017-08; 11-21-2017 by Ord. No. 2017-13]

§ 135-221. Purpose.

The following is an article defining the term "man-made body of water;" regulating the design, maintenance and the use thereof; and providing a penalty for the violation thereof.

§ 135-222. Term defined.

- A. The term "man-made body of water" as used herein shall mean any excavation or mounding of earth or other material which would create a reservoir or artificial body of water in which water can collect or travel and which is created after the effective date of this chapter.
- B. Man-made bodies or artificial bodies of water will be referred to, from here on, as a "pond." This shall not limit the scope of this chapter but shall be for ease of use only. Facilities or structures designed to contain or manage animal waste or manure shall be referred to, from here on, as "animal waste storage facilities." Facilities or structures designed to contain drainage that has come through or across a feed storage or manure storage area, including leachate, shall be referred to, from here on, as "contaminated runoff storage facilities."

§ 135-223. Conditional use required.

- A. Ponds shall be a conditional use in all zoning districts.
- B. New or expanded waste storage facilities shall require a conditional use.

§ 135-224. Exemptions.

Exemptions shall be as follows:

- A. Family swimming pools as defined in § 135-16.
- B. Stormwater management facilities as regulated by Chapter 90 of the municipal code.

§ 135-225. Approvals and submittals.

- A. A permit is required from the Town of Ledgeview for all excavations or mounding which will result in a man-made body of water as defined herein. To obtain such a permit, an application shall be made to the Town of Ledgeview Building Inspector on the proper forms provided by the Town. Applications shall include a site plan scaled to at least one inch equaling 200 feet, with the following:
 - (1) A map showing the location of the premises and the adjoining properties within 500 feet.
 - (2) Any existing or future buildings, easements, property lines and setbacks.
 - (3) Any existing waterways or floodway.
 - (4) A scaled section view of the pond with slopes, depths and high and low water levels.
 - (5) Outflow design with calculations.

- (6) Fencing.
 - (7) Methods of maintaining low water levels.
 - (8) Proposed truck and machinery access to the site.
 - (9) Approximate amount of earth material to be excavated or removed at the site.
 - (10) Proposed regrading and revegetation of the site after completion of the excavating.
 - (11) Designated hours of operation.
 - (12) Contour intervals of the proposed site at intervals of 20 feet, when available.
- B. If the excavation site shall fall within a county floodplain, shoreland or conservancy zone district, the regulations as set forth in the Shoreland-Floodplain Protection Ordinances for Brown County shall apply. Brown County and Department of Natural Resource permits must accompany the application, if required.
- C. Applications shall be approved or denied within 60 days from the date all information is received in order. No application shall be processed or approved without adequate information.

§ 135-226. Design standards.

- A. Ponds.
- (1) All ponds shall be designed within the scope of this chapter. Where no minimum water level is to be maintained, the slope of the pond bottom may not exceed three to one. In all cases where a portion of the pond will have a slope of greater than three to one, a slope of no greater than three to one shall be maintained around the entire perimeter of said pond to a minimum water depth of 48 inches before the greater slope may occur.
 - (2) All ponds shall have an outflow to maintain the maximum normal water level; the size of this outflow shall be determined by design and shall be capable of removing one inch of water from the surface of the entire pond every 12 hours. The minimum size of outflow pipe shall not be less than eight inches in diameter. Calculations shall be provided with the permit application. Outflows shall not flow directly onto adjacent parcels of property. Outflow discharge may cross adjacent parcels through a natural existing waterway only, but in no case shall this discharge create a waterway or a nuisance. A safety buffer area with a slope of three to one or less shall be established and maintained from the normal high-water level; this area shall be no less than three feet measured from the water's edge.
 - (3) All ponds which shall have minimum water levels established as a result of slope angles greater than three to one shall seal the bottom and sides to prevent excess seepage. This seal shall be provided in one or more of the following ways:
 - (a) Existing clay soils.
 - (b) Clay blanket.
 - (c) Compaction.
 - (d) Waterproof liners.

- (4) The minimum side and rear setback shall be 25 feet; front setbacks and corner side setbacks shall be 50 feet.
- B. Animal waste storage facilities.
 - (1) All animal waste storage facilities shall be designed in accordance with §§ 92.16 and 93.90, Wis. Stats., and ATCP 51.18, Wis. Adm. Code.
 - (2) The required setbacks for animal waste storage facilities shall comply with the regulations outlined in Article X, AG-FP Farmland Preservation District.
- C. Contaminated runoff storage facilities.
 - (1) Facilities designed or intended to store contaminated runoff, including leachate, shall be designed in accordance with §§ 92.16 and 93.90, Wis. Stats., and ATCP 51.20, Wis. Adm. Code.
 - (2) The required setbacks for contaminated runoff storage facilities shall comply with the regulations outlined in Article X, AG-FP Farmland Preservation District.

§ 135-227. Other requirements.

- A. The Town of Ledgeview Zoning and Planning Committee may, at its discretion, require fencing. Where such fencing is required, the following criteria shall be used:
 - (1) A structural fence no less than four feet in height and no less than four feet from the water's edge at the high-water line shall be provided. It shall be constructed as not to have openings, holes or gaps larger than four inches in any dimension except for doors or gates. If a picket fence is erected or maintained, the horizontal dimension shall not exceed four inches. All gates or doors 48 inches or less in width opening through such enclosure shall be equipped with a self-closing and self-latching device for keeping the gate or door securely closed at all times when not in actual use. All gates or doors over 48 inches in width opening through such enclosure shall be kept securely latched at all times when unsupervised.
- B. The groundwater table in the surrounding area and adjacent to the pond or animal waste storage facilities shall be protected.
- C. Town and state permits shall be required if high-capacity wells are drilled on the site. Location of all wells shall be provided on the site plans; well logs shall be provided to the Town after completion of the well.
- D. The Division of Environmental Health requirements shall be met to ensure proper safety of swimmers.
- E. Temporary fencing shall be provided as soon as slopes of greater than three to one are developed during construction and shall be maintained until minimum water level is obtained.
- F. No screening, sifting, washing, crushing or other forms of processing shall be conducted upon the premises unless it is located more than 500 feet from a residential dwelling.
- G. At all stages of operations, proper drainage shall be provided to prevent the collection and stagnation of water and to prevent harmful effects upon surrounding properties.

- H. The premises shall be excavated and graded in conformity with the plan as approved. Any deviation from the plan shall be cause for the Town to revoke the permit.
- I. Trucks and machinery. No fixed machinery shall be erected or maintained within 200 feet of any property or street line. Truck access to the excavation shall be so arranged as to minimize danger to traffic and nuisance to surrounding property.
- J. The perimeter of the pond/lake/body of water shall be landscaped and seeded with a perennial ground cover within three months after completion of the excavation.
- K. The Town of Ledgeview retains the right to require any other and/or future restrictions as deemed necessary to protect the health, safety and welfare of the community.

§ 135-228. Inspections.

- A. The owner/agent shall call for the following required inspections 24 hours in advance. Other periodic inspections shall be granted to the Town of Ledgeview Building Inspector, Town Board and Zoning and Planning Committee during normal working hours.
- B. A site inspection shall be made prior to any excavation. Property lines adjacent to the excavation, proposed excavation boundaries and outflow termination point shall be marked clearly for site approval.
- C. An excavation inspection shall be made after all slopes are established.
- D. Final inspection shall be made when all fencing is in place and the pond has reached its minimum water level.

§ 135-229. Maintenance.

The owner of any land on which a man-made body of water shall exist is required to maintain that land and body of water within the limits of this chapter.

§ 135-230. Permit fees.

Permit fees shall be established and charged as per the fee schedule.

§ 135-231. Construction deposit.

A construction deposit shall be required.

§ 135-232. Performance bond required; exception.

- A. A performance bond shall be required. The following schedule shall be used:

Surface Area	Amount
0 to 1,000 square feet	\$500
1,001 to 2,500 square feet	\$1,000

Surface Area	Amount
2,501 square feet to one acre	\$5,000
One acre and up	\$5,000/acre or fraction thereof

§ 135-233. Violations and penalties.

- A. Any person, firm, company or corporation who violates, disobeys, omits, neglects or refuses to comply with or who resists the enforcement of any of the provisions of this article shall, upon conviction thereof, forfeit an amount as determined by the Town Board in Chapter 1, General Provisions, Article II, Fees and Penalties, together with the costs of the prosecution; and in default of payment of such forfeiture and costs, shall be imprisoned in the county jail of Brown County, Wisconsin, for a period of not more than 30 days for each violation or until such forfeiture and costs of prosecution have been paid. Each day that a violation is permitted to exist shall constitute a separate offense and may be punishable as such.
- B. This section shall not preclude the Town of Ledgeview from maintaining any appropriate action to prevent or remove a violation of this article.

Article XXV. Telecommunications Antennas and Towers

[Amended 9-18-2007 by Ord. No. 2007-016; 4-7-2014 by Ord. No. 2014-005]

§ 135-234. Definitions.

- A. General definitions. For the purpose of §§ 135-235 and 135-236 of this Code, words used in the present tense shall include the future; words used in the singular shall include the plural number, and the plural the singular.
 - (1) The word "herein" refers to the provisions of §§ 135-235 and 135-236.
 - (2) All measured distances or heights shall be to the nearest "integral foot." If a fraction is 1/2 foot or less, the next integral foot below shall be taken.
- B. Specific terms. The following terms and phrases shall have the following described meanings:

ANTENNA

Communications equipment that transmits and receives electromagnetic radio signals and is used in the provision of mobile services.

APPLICANT

The entity applying to the Town for the location of a mobile service support structure or mobile service facility in the Town.

APPLICATION

An application for a permit under this article to engage in either:

- (1) The siting and construction of a new mobile service support structure and facilities.
- (2)

With regard to a Class 1 Co-location, the substantial modification of an existing support structure and mobile service facilities, or a Class 2 Co-location.

BUILDING PERMIT

A permit issued by Town that authorizes an applicant to conduct construction activity that is consistent with Town Building Code.

CLASS 1 CO-LOCATION

The placement of a new mobile service facility on an existing support structure such that the owner of the facility does not need to construct a freestanding support structure for the facility but does need to engage in substantial modification.

CLASS 2 CO-LOCATION

The placement on an existing support structure such that the owner of the facility does not need to construct a freestanding support structure for the facility or engage in substantial modification.

CO-LOCATION

Either a Class 1 Co-location or a Class 2 Co-location, or both.

DISTRIBUTED ANTENNA SYSTEM

A network of spatially separated antenna nodes that is connected to a common source via a transport medium and that provides mobile service within a geographic area or structure.

EQUIPMENT COMPOUND

An area surrounding or adjacent to the base of an existing support structure within which is located mobile service facilities.

EXISTING STRUCTURE

A support structure that exists at the time a request for permission to place mobile service facilities on a support structure is filed with Town.

FALL ZONE

The area over which a mobile support structure is designed to collapse.

MOBILE SERVICE

A radio communication service carried on between mobile stations or receivers and land stations, and by mobile stations communicating among themselves, as more specifically provided in 47 U.S.C. § 153(33), and includes:

- (1) Both one-way and two-way radio communications services;
- (2) A mobile service which provides a regularly interacting group of base, mobile, portable, and associated control and relay stations (whether licensed on an individual, cooperative, or multiple basis) for private one-way or two-way land mobile radio communications by eligible users over designated areas of operation; and
- (3) Any service for which a license is required in a personal communications service.

MOBILE SERVICE FACILITY

The set of equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and associated equipment, that is necessary to provide mobile service to a discrete geographic area, but does not include the underlying support structure.

MOBILE SERVICE PROVIDER

A person who provides mobile service.

MOBILE SERVICE SUPPORT STRUCTURE

A freestanding structure that is designed to support a mobile service facility.

PERMIT

A permit, other than a building permit, or approval issued by the Town which authorizes any of the following activities by an applicant:

- (1) A Class 1 Co-location.
- (2) A Class 2 Co-location.
- (3) The construction of a mobile service support structure.

RADIO BROADCAST SERVICE FACILITIES

Commercial or noncommercial facilities, including antennas and antenna support structures, intended for the provision of radio broadcast services as allowed under § 66.0406, Wis. Stats.

RADIO BROADCAST SERVICES

The regular provision of a commercial or noncommercial service involving the transmission, emission, or reception of radio waves for the transmission of sound or images in which the transmissions are intended for direct reception by the general public.

RESPONSIBLE PARTY

The person associated with the applicant who is filing an application under this chapter and who has responsibility over the placement of the applicant's proposed mobile service support structure.

SEARCH RING

A shape drawn on a map to indicate the general area within which a mobile service support structure should be located to meet radio frequency engineering requirements, taking into account other factors, including topography and the demographics of the service area.

SUBSTANTIAL MODIFICATION

The modification of a mobile service support structure, including the mounting of an antenna on such a structure, that does any of the following:

- (1) For structures with an overall height of 200 feet or less, increases the overall height of the structure by more than 20 feet.
- (2) For structures with an overall height of more than 200 feet, increases the overall height of the structure by 10% or more.
- (3) Measured at the level of the appurtenance added to the structure as a result of the modification, increases the width of the support structure by 20 feet or more, unless a larger area is necessary for co-location.
- (4) Increases the square footage of an existing equipment compound to a total area of more than 2,500 square feet.

SUPPORT STRUCTURE

An existing or new structure that supports or can support a mobile service facility, including a mobile service support structure, utility pole, water tower, building, or other structure.

UTILITY POLE

A structure owned or operated by an alternative telecommunications utility, as defined in Wisconsin Statutes; public utility, as defined in Wisconsin Statutes; telecommunications utility, as defined in Wisconsin Statutes; political subdivision; or cooperative association organized under Wisconsin Statutes; and that is designed specifically for and used to carry lines, cables, or wires for telecommunications service, as defined in Wisconsin Statutes; for video service, as defined in Wisconsin Statutes; for electricity; or to provide light.

ZONING ADMINISTRATOR

The Town Zoning Administrator.

ZONING AND PLANNING COMMISSION

The Town of Ledgeview Zoning and Planning Commission.

§ 135-235. New construction.

- A. New construction. The siting and construction of a new mobile service support structure and mobile service facility shall be subject to the following requirements:
- (1) Application. The applicant shall submit a written application on forms provided by the Town which shall include all of the following information:
 - (a) The name and business address of, and the contact individual for, the applicant.
 - (b) The location of the proposed mobile service support structure.
 - (c) The location of the proposed mobile service facility to be connected to the proposed mobile service support structure.
 - (d) A construction plan which describes the mobile service support structure, equipment, network components, antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment to be placed on or around the new tower.
 - (e) An explanation as to why the applicant chose the proposed location, and why the applicant did not choose co-location, including a sworn statement from the responsible party attesting that co-location within the applicant's service area would not result in the same mobile service functionality, coverage, and capacity; is technically infeasible; or is economically burdensome.
 - (f) The application hereunder shall be accompanied by a fee of \$3,000. Costs incurred by the Town for publishing the public hearing notice and obtaining legal, planning, engineering and other technical and professional advice in connection with the review and implementation of the conditional use shall be charged separately and in addition to the application fee.
 - (2) Determination of completeness.
 - (a) The Town Zoning Administrator shall review the new construction application and determine whether the application is complete. If the application includes all of

information required under Subsection **A(1)** above, the application shall be found to be complete.

- (b) The Zoning Administrator shall notify the applicant in writing within 10 days of receiving the application if it is found not to be complete, and such notice shall specify in detail the required information that was incomplete. Applicants are allowed to resubmit their applications as often as necessary until the application is determined to be complete.
 - (c) When the new construction application is found to be complete, the Town Zoning Administrator shall refer the application to the Town Board and Town Zoning and Planning Commission for review in the manner provided herein.
- (3) Conditional use permit. All tower structures proposed to be located within the Town are a conditional use and are subject to review pursuant to the following procedures:
- (a) Zoning and Planning Commission review. Within 45 days after a complete application and all required information has been filed, the Zoning and Planning Commission shall review the application and make a recommendation to the Town Board based upon the requirements of this chapter and § 66.0404, Wis. Stats.
 - (b) Public hearing. Following the Zoning and Planning Commission recommendation, proper posting and notification, a public hearing shall be held by the Town Board regarding the application pursuant to this chapter.
 - (c) Requirements.
 - [1] Conditional use status shall not be granted for the construction of a new mobile service support structure unless that structure's fall zone contains a sufficient radius of clear land around the structure so that its collapse shall be completely contained on the property, provided that if the applicant provides the Town with an engineering certification showing that the mobile service support structure is designed to collapse within a smaller area than the radius equal to the height of the structure, the smaller area shall be used unless the Town has and provides the applicant with substantial evidence that the applicant's engineering certification is flawed.
 - [2] All facilities shall meet all state and federal codes.
 - (d) Determination. Within 90 days after receipt of an application determined to be complete, the Town Board shall complete the following reviews or the applicant may consider the application approved, except that the applicant and Town may agree in writing to an extension of the ninety-day period.
 - [1] Review the application to determine whether the application complies with all applicable aspects of the Town's Building Code and, subject to the limitations of § 66.0404, Wis. Stats., and the Town Zoning Ordinance.
 - [2] Make a final decision whether to approve or disapprove the application.
 - [3] Notify the applicant, in writing, of the Town's final decision.
 - [4] If the decision is to disapprove the application, include with the written notification substantial evidence which supports the decision.

- (e) Disapproval. The Town may disapprove an application if an applicant refuses to evaluate the feasibility of co-location within the applicant's search ring and provide the sworn statement described in Subsection **A(1)(e)** above.
- B. Limitations upon authority. The review of an application under this section shall be subject to the limitations imposed by § 66.0404(4), Wis. Stats.

§ 135-236. Co-location; modification.

A. Co-location.

(1) Class 1 co-location.

- (a) Application. The applicant shall submit a written application for a Class 1 Co-location on forms provided by the Town which shall include all of the information required under the provisions of § **135-235A(1)** above together with the following additional information:

[1] The location of the proposed support structure.

[2] The location of the proposed equipment compound.

- (b) Determination of completeness. The Town Zoning Administrator shall review the Class 1 Co-location application for completeness in the manner provided in § **135-235A(2)(a)** and **(b)** above. An applicant may resubmit an application as often as necessary until it is complete.
- (c) Fee. The Class 1 Co-location application fee shall be \$3,000.
- (d) Conditional use permit. If the Zoning Administrator determines that the nature and scope of the proposed Class 1 Co-location exceeds the then current conditional use permit for the mobile service support structure on which the Class 1 Co-location is proposed, the completed application shall be referred to the Zoning and Planning Commission for review under, pursuant and subject to the provisions of § **135-235A(3)**.

(2) Class 2 co-location.

- (a) Application. The applicant shall submit a written application for a Class 2 Co-location on forms provided by the Town which shall include all of the information required under the provisions of § **135-235A(1)** above.
- (b) Determination of completeness. The Town Zoning Administrator shall review the Class 2 Co-location application for completeness. If any of the required information is not in the application, the political subdivision shall notify the applicant in writing, within five days of receiving the application, that the application is not complete. The written notification shall specify in detail the required information that was incomplete. An applicant may resubmit an application as often as necessary until it is complete.
- (c) Determination. Within 45 days of its receipt of a complete application, the Town shall complete the following reviews of the Class 2 Co-location application or the applicant may consider the application approved, except that the applicant and the Town may agree in writing to an extension of the forty-five-day review period:

- [1] Make a final decision whether to approve or disapprove the Class 2 Co-location application.
 - [2] Notify the applicant, in writing, of its final decision.
 - [3] If the application is approved, issue the applicant the relevant permit.
 - [4] If the decision is to disapprove the application, include with the written notification substantial evidence which supports the decision.
- (d) Fee. The Class 2 Co-location application fee shall be based on the Town's current building permit fee schedule.

B. Modification.

(1) Nonsubstantial modification.

- (a) Application. The applicant that proposes a nonsubstantial modification of a mobile service support structure, including the mounting of an antenna on such a structure, shall submit a written application for such modification on forms provided by the Town which shall include all of the information required under the provisions of § **135-235A(1)** above together with the following additional information:

- [1] The location of the proposed support structure.
- [2] The location of the proposed equipment compound.
- [3] A construction plan which describes the proposed modifications to the support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment associated with the proposed modifications that demonstrates that the proposed modification is not a substantial modification.

- (b) Fee. The fee for a nonsubstantial modification shall be based on the Town's current building permit fee structure.

(c) Determination of completeness.

- [1] The Town Zoning Administrator shall review the nonsubstantial modification application for completeness. If any of the required information is not in the application, the political subdivision shall notify the applicant in writing, within five days of receiving the application, that the application is not complete. The written notification shall specify in detail the required information that was incomplete. An applicant may resubmit a modification application as often as necessary until it is complete.
- [2] When the nonsubstantial modification application is found to be complete, the Town Zoning Administrator shall refer the application to the Town Building Inspector for issuance of the appropriate building permit.

(2) Substantial modification.

- (a) Application. The applicant that proposes the substantial modification of a mobile service support structure, including the mounting of an antenna on such a structure, shall submit a written application for such modification on forms provided by the

Town which shall include all of the information required under the provisions of § **135-235A(1)** above together with a construction plan which describes the proposed modifications to the support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment associated with the proposed modifications.

- (b) Fee. The substantial modification application hereunder shall be accompanied by a fee of \$3,000.
- (c) Determination of completeness.
 - [1] The Town Zoning Administrator shall review the substantial modification application for completeness. If any of the required information is not in the application, the political subdivision shall notify the applicant in writing, within 10 days of receiving the application, that the application is not complete. The written notification shall specify in detail the required information that was incomplete. An applicant may resubmit a substantial modification application as often as necessary until it is complete.
 - [2] When the substantial modification application is found to be complete, the Town Zoning Administrator shall refer the application to the Town Board and Town Zoning and Planning Commission for review in the manner provided in § **135-235A(3)** hereof.
- (d) Determination. Within 90 days after receipt of a substantial modification application determined to be complete, the Town Board shall complete the following reviews or the applicant may consider the application approved, except that the applicant and Town may agree in writing to an extension of the ninety-day period.
 - [1] Review the application to determine whether the application complies with all applicable aspects of the Town's Building Code and, subject to the limitations of § 66.0404, Wis. Stats., and the Town Zoning Ordinance.
 - [2] Make a final decision whether to approve or disapprove the application.
 - [3] Notify the applicant, in writing, of the Town's final decision.
 - [4] If the decision is to disapprove the application, include with the written notification substantial evidence which supports the decision.

- C. Limitations upon authority. The review of an application under this section shall be subject to the limitations imposed by § 66.0404(4), Wis. Stats.

§ 135-237. Permitted uses.

- A. General. The uses listed in this section are deemed to be permitted uses and shall not require a conditional use permit. Nevertheless, all such uses shall comply with § **135-236** of this article and all other applicable articles.
- B. Class 1 co-location. A zoning permit is required for the siting, construction, or substantial modification of any new mobile service facility on an existing tower or alternative tower structure.
 - (1)

"New mobile service facility" means a freestanding structure that is designed to support a mobile service facility and the set of equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and associated equipment, that is necessary to provide mobile service to a discrete geographic area.

- (2) "Substantial modification of an existing support structure and mobile service facility" means the modification of a tower or alternative tower structure, including the mounting of an antenna on a structure that does any of the following:
 - (a) For structures with an overall height of 200 feet or less, increases the overall height of the structure by more than 20 feet.
 - (b) For structures with an overall height of more than 200 feet, increases the overall height of the structure by 10% or more. If a greater height is necessary to avoid interference with an existing antenna, the activity is not considered a substantial modification.
 - (c) Measured at the level of the appurtenance added to the structure as a result of the modification, increases the width of the support structure by 20 feet or more, unless a larger area is necessary for co-location. If a greater protrusion is necessary to shelter the antenna from inclement weather or to connect the antenna to the existing structure by cable, the activity is not considered a substantial modification.
 - (d) Increases the square footage of an existing equipment compound to a total area of more than 2,500 square feet.
- (3) A zoning permit application must be completed by any applicant and submitted to the department. The application must contain the following information, if applicable:
 - (a) Scaled site plan, scaled elevation view, and other supporting drawings, calculations and other documentation, signed and sealed by appropriate licensed professionals, showing the location and dimensions of all improvements, including information concerning topography frequency coverage, antenna height, setbacks, drives, parking, fencing, landscaping, adjacent uses and other information deemed by the governing authority to be necessary to assess compliance with this article.

C. Class 2 co-location. A zoning permit is required for a Class 2 co-location.

- (1) A zoning permit application must be completed by the applicant and submitted to the department. The application must contain the following information:
 - (a) The name, business address, phone number, e-mail address, facsimile, etc., of the applicant and the contact individual.
 - (b) The location of the proposed or affected structure.
 - (c) The location of the proposed mobile service facility.

D. Factors considered in granting zoning permits. The governing authority shall consider the following factors in determining whether to issue a permit, although the governing authority may waive or reduce the burden on the applicant of one or more of these criteria if the governing authority concludes that the goals of this article are better served thereby:

- (1) Capacity of the tower structure for additional antenna equipment to accommodate expansions or to allow for co-location of another provider's equipment.

- (2) Nature of uses on adjacent and nearby properties.
 - (3) Surrounding topography.
 - (4) Design of the tower, with particular reference to design characteristics that have the effect of reducing or eliminating visual obtrusiveness.
 - (5) Proposed ingress and egress.
 - (6) Availability of suitable existing towers and other structures as discussed in Subsection **E** of this section.
- E. Availability of suitable existing towers or other structures. No new tower shall be permitted unless the applicant demonstrates to the reasonable satisfaction of the governing authority that no existing tower or structure can accommodate the applicant's proposed antenna. Evidence submitted to demonstrate that no existing antenna or structure can accommodate the applicant's proposed antenna may consist of any of the following:
- (1) No existing towers or structures are located within the geographic area required to meet the applicant's engineering requirements.
 - (2) Existing towers or structures are not of sufficient height to meet the applicant's engineering requirements.
 - (3) Existing towers or structures do not have sufficient structural strength to support the applicant's proposed antenna and related equipment.
 - (4) The applicant's proposed antenna would cause electromagnetic interference with the antenna on the existing towers or alternative tower structures, or the antenna on the existing towers or alternative tower structures would cause interference with the applicant's proposed antenna.
 - (5) The fees, costs or contractual provisions required by the owner to share an existing tower or alternative tower structure or to adapt an existing tower or alternative tower structure for sharing are unreasonable. Costs exceeding new tower development are presumed to be unreasonable.
 - (6) The applicant demonstrates that there are other limiting factors that render existing towers and alternative tower structures unsuitable.
- F. Setbacks and separation. The following setbacks and separation requirements shall apply to all towers and alternative tower structures; provided, however, that the governing authority may reduce the standard setbacks and separation requirements if the goals of this article would be better served thereby:
- (1) Towers must be set back a distance equal to the height of the tower from any off-site residential structure or any parcel of land zoned residential.
 - (2) Towers, guys, and mobile service facilities must satisfy the minimum zoning district setback requirements.
- G. Landscaping. The following requirements shall govern the landscaping surrounding towers and alternative tower structures; provided, however, that the governing authority may waive such requirements if the goals of this article would be better served thereby;

- (1) Equipment compounds shall be landscaped with a mixture of deciduous and evergreen trees and shrubs that effectively screen the view of the equipment compound from adjacent property. The standard buffer shall consist of a landscaped strip at least four feet wide outside the perimeter of the compound.
 - (2) In locations where the visual impact of the tower or alternative tower structure would be minimal, the landscaping requirement may be revised.
- H. Existing mature tree growth and natural land forms on the site shall be preserved to the maximum extent possible. In some cases, such as towers and alternative tower structures sited on large wooded lots, natural growth around the property perimeter may be a sufficient buffer.

§ 135-238. (Reserved)

§ 135-239. Removal of abandoned antennas and towers.

Any antenna or tower that is not operated for a continuous period of 12 months shall be considered abandoned, and the owner of such antenna or tower shall remove the same within 90 days of receipt of notice from the governing authority notifying the owner of such abandonment. If such antenna or tower is not removed within said 90 days, the governing authority may remove such antenna or tower at the expense of the tower or antenna owner or at the expense of the property owner in the case where the owner of the tower or antenna is leasing the property upon which the tower or antenna is installed. If there are two or more users of a single tower, then this provision shall not become effective until all users cease using the tower.

Article XXVI. Administration and Enforcement

§ 135-240. Intent.

This article of this chapter shall set forth the requirements to adequately provide and develop the proper administration and enforcement of this chapter.

§ 135-241. General provisions.

This article shall provide for the establishment of the positions of Zoning Administrator, Zoning Board of Appeals and Town Zoning and Planning Committee.

§ 135-242. Appointment of Zoning Administrator; powers and duties.

The Town of Ledgeview shall appoint a Zoning Administrator. It will be the primary responsibility of the Zoning Administrator to administer and enforce this chapter with the assistance of such other persons as the Town Board may direct. The Zoning Administrator or designee shall have the following responsibilities and duties, in addition to those other responsibilities and duties which are assigned from time to time to the Zoning Administrator or designee by the Town Board:

- A. Issue all building, zoning use and occupancy permits, exclusive of conditional use permits and excavation permits, and make and maintain records thereof.

- B. Conduct inspection of buildings, structures and use of land to determine compliance with the terms of this chapter.
- C. Disseminate information to those individuals and entities having questions concerning this chapter.
- D. Forward to the Zoning and Planning Committee or the designated representative of the Zoning and Planning Committee all applications for conditional uses and all applications for amendments to this chapter.
- E. Forward to the Zoning Board of Appeals or the designated representative of the Zoning Board of Appeals all appeals concerning any action taken by the Zoning Administrator or designee or any other administrative official in the enforcement of this chapter or any ordinance adopted pursuant to this chapter and all applications for variances to this chapter.
- F. Maintain permanent and current records of this chapter, including but not limited to all maps, amendments, conditional uses, variances, appeals and applications thereof.
- G. Initiate, direct and review, from time to time, a study of the provisions of this chapter and make reports of its recommendations to the Town Zoning and Planning Committee.
- H. If the Zoning Administrator or designee shall find that any of the provisions of this chapter are being violated, he shall notify, in writing, the person responsible for such violation and order the action necessary to correct it. The Zoning Administrator or designee shall be solely responsible for the administrative enforcement of Article **XXVI** of this chapter.
- I. Comply with all open meeting, public hearing and notice requirements concerning the enforcement of this chapter.

§ 135-243. Establishment of Zoning Board of Appeals.

The Zoning Board of Appeals is hereby established as authorized under the provisions of W.S.A. ch. 62.23.

- A. Jurisdiction. The Zoning Board of Appeals is hereby entrusted with the jurisdiction and authority to:
 - (1) Hear and decide appeals where it is alleged there is an error in any order, requirement, decision or determination made by the Zoning Administrator or any administrative official acting on behalf of the Zoning Administrator with respect to the enforcement of this chapter or any ordinance adopted pursuant to this chapter.
 - (2) Hear and decide special exceptions to the terms of this chapter upon which this Zoning Board of Appeals is required to determine under said chapter.
 - (3) Authorize upon appeal in specific cases such variance from the terms of this chapter as will not be contrary to the public interest, where owing to special conditions, a literal enforcement of the provisions of the chapter will result in practical difficulty or unnecessary hardship so that the spirit of the chapter shall be observed, public safety and welfare secured and substantial justice done.
 - (4) In exercising the above-mentioned powers in Subsection **A(1)** through **(3)** hereinabove, such Board may, in conformance with the provisions of this chapter, reverse or affirm,

wholly or partly, any order, requirement, decision or determination appealed from, and said Zoning Board of Appeals shall further have the power to make any such order, requirement, decision or determination as ought to have been made by the Zoning Administrator or any official acting on behalf of the Zoning Administrator. The Zoning Board of Appeals may therefore issue or direct the issuance of any permit which the Zoning Administrator or designee could have issued.

B. Board membership.

- (1) The Zoning Board of Appeals shall consist of five members plus alternates appointed by the Town Chairperson and subject to confirmation by the Town Board.
- (2) The term shall be for three years and all members shall reside in the Town.
- (3) The members shall be removable by the Town Chairperson for cause upon written charges.
- (4) The Town Chairperson shall designate one of the members Chairperson of the Zoning Board of Appeals.
- (5) The Town Chairperson shall appoint an alternate member for a term of three years who shall act with full power only when a member of Zoning Board of Appeals is absent or refuses to vote because of conflict of interest.
- (6) Vacancies shall be filled for the unexpired term of members. The Town Chairperson shall appoint personnel to fill the vacancies, subject to approval by the Town Board.

C. Meetings and rules.

- (1) All meetings of the Zoning Board of Appeals shall be held at the call of the Chairperson of the Board and at such times as the Zoning Board of Appeals may determine.
- (2) All hearings conducted shall be open to the public. Any person may appear and testify at a hearing either in person or by a duly authorized agent or attorney.
- (3) Notice of the time and place of such public hearing shall be published as provided by the state law on planning and zoning and applicable to the Town of Ledgeview.
- (4) The Chairperson or, in his/her absence, the Acting Chairperson may administer oaths and compel the attendance of witnesses.
- (5) The Zoning Board of Appeals shall keep minutes of its proceedings, showing the vote of each member upon each question or, if absent or failing to vote, indicating such fact, and shall keep records of its examinations and other official actions, all of which shall be immediately filed in the office of the Zoning Board of Appeals and shall be a public record.
- (6) Statements of the facts found by the Zoning Board of Appeals shall be included in the minutes of each case heard or considered by it. The reason for approving or denying a variance or appeal as provided in the chapter shall also appear in the minutes. In every instance, a statement of the facts upon which such recommendations are based shall appear in the minutes.
- (7) The Zoning Board of Appeals shall adopt its own rules and procedures not in conflict with this chapter or with applicable Wisconsin state statutes, and select or appoint such officers as it deems necessary.

- (8) The concurring vote of the majority of the members present of the Zoning Board of Appeals shall be necessary to reverse any order, requirement, decision or determination appealed from or to decide in favor of the applicant in any matter on which it is required to pass or effect any variation in the requirements of this chapter. If a decision is not rendered by the Zoning Board of Appeals within 60 days from the date the appeal was filed with the Zoning Administrator or designee, then said appeal shall be deemed denied by the Zoning Board of Appeals.

[Amended 10-18-2005 by Ord. No. 2005-020]

- (9) No variance granted by the Board of Appeals shall be valid for a period longer than six months from the date granted unless construction or development has commenced or the use has been established within such period.

§ 135-244. Establishment of Zoning and Planning Commission.

[Amended 10-20-2009 by Ord. No. 2009-037]

- A. Title. This section is entitled the "Town of Ledgeview Zoning and Planning Commission Ordinance."
- B. Purpose. The purpose of this section is to establish a Town of Ledgeview Plan Commission and set forth its organization, powers and duties, to further the health, safety, welfare and wise use of resources for the benefit of current and future residents of the Town and affected neighboring jurisdictions, through the adoption and implementation of comprehensive planning with significant citizen involvement.
- C. Authority; establishment. The Town Board of the Town of Ledgeview has been authorized to exercise village powers pursuant to §§ 60.10(2)(c) and 60.22(3), Wis. Stats. The Town Board hereby establishes a seven member and two-alternate Zoning and Planning Commission pursuant to §§ 60.62(4), 61.35 and 62.23, Wis. Stats. The Zoning and Planning Commission shall be considered the "Town Planning Agency" under §§ 236.02(13) and 236.45, Wis. Stats., which authorize, but do not require, Town adoption of a subdivision or other land division ordinance.
- D. Membership. The Zoning and Planning Commission consists of a maximum one member of the Town Board, who may be the Town Board Chairperson, and a minimum of six citizen members, who are not otherwise Town officials, and who shall be persons of recognized experience and qualifications, and a minimum of two citizen or Town official alternates who may serve in the absence of a Commission member.
- E. Appointments. The Town Board Chairperson shall appoint the members of the Zoning and Planning Commission and designate a Zoning and Planning Commission Chairperson during the month of June to fill any expiring term. The Town Board Chairperson shall select the presiding officer. (All appointments are subject to the advisory approval of the Town Board.) In a year in which any Town Board member is elected at the spring election, any appointment or designation by the Town Board Chairperson shall be made after the election and qualification of the Town Board members elected. Any citizen appointed to the Zoning and Planning Commission shall take and file the oath of office within five days of notice of appointment, as provided under §§ 19.01 and 60.31, Wis. Stats.
- F. Terms of office. The term of office for the Zoning and Planning Commission Chairperson and each Commission member shall be for a period of two years, ending on June 2, or until a successor is appointed and qualified, except:

- (1) Initial terms. The citizen members and alternates initially appointed to the Zoning and Planning Commission shall be appointed for staggered terms.
 - (2) Town Board member or Chairperson. A Zoning and Planning Commission member who is a Town Board member, shall serve for a period of two years, as allowed under § 66.0501(2), Wis. Stats., concurrent with his or her term on the Town Board, except an initial appointment made after June 2 shall be for a term that expires two years from the previous June 2.
- G. Vacancies. A person who is appointed to fill a vacancy on the Plan Commission shall serve for the remainder of the term.
- H. Compensation: expenses. The Town Board of the Town of Ledgeview hereby sets a per diem allowance of up to \$15 per meeting for citizen members of the Zoning and Planning Commission, as allowed under § 66.0501(2), Wis. Stats. In addition, the Town Board may reimburse reasonable costs and expenses, as allowed under § 60.321, Wis. Stats.
- I. Experts and staff. The Zoning and Planning Commission may, pursuant to § 62.23(1), Wis. Stats., recommend to the Town Board the employment of experts and staff and may review and recommend to the Town Board proposed payments under any contract with an expert.
- J. Rules; records. The Zoning and Planning Commission, under § 62.23(2), Wis. Stats., may adopt rules for the transaction of its business, subject to Town ordinances, and shall keep a record of its resolutions, transactions, findings and determinations, which shall be a public record under §§ 19.21 to 19.39, Wis. Stats.
- K. Chairperson and officers.
- (1) Chairperson. The Zoning and Planning Commission Chairperson shall be appointed and serve a term as provided in Subsections **E** and **F** of this section. The Chairperson shall, subject to Town ordinances and Commission rules:
 - (a) Set Commission meeting and hearing dates;
 - (b) Provide notice of Commission meetings and hearings and set their agendas, personally or by his or her designee; and
 - (c) Preside at Commission meetings and hearings.
 - (2) Vice Chairperson. The Zoning and Planning Commission shall elect, by open vote or secret ballot pursuant to § 19.88(1), Wis. Stats., at its discretion, a Vice Chairperson to act in the place of the Chairperson when the Chairperson is absent or incapacitated for any reason.
 - (3) Secretary. The Zoning and Planning Commission shall elect, by open vote or secret ballot pursuant to § 19.88(1), Wis. Stats., one of its members to serve as Secretary or, with the approval of the Town Board, designate the Town Clerk/Administrator or other Town officer or employee as Secretary.
- L. Zoning and Planning Commission members as local public officials. All members of the Zoning and Planning Commission shall faithfully discharge their official duties to the best of their abilities, as provided in the oath of office, § 19.01, Wis. Stats., in accordance with, but not limited to, the provisions of the Wisconsin Statutes on:
- (1) Public records, §§ 19.21 to 19.39;

- (2) Code of Ethics for Local Government Officials, §§ 19.42, 19.58 and 19.59;
 - (3) Open Meetings, §§ 19.81 to 19.89; Misconduct in Office, § 946.12; and
 - (4) Private Interests in Public Contracts, § 946.13.
- M. General and miscellaneous powers and duties. The Zoning and Planning Commission, under § 62.23(4), Wis. Stats., shall have the following powers and duties necessary to enable it to perform its functions and promote Town planning:
- (1) To make reports and recommendations relating to the planning and development of the Town Board; other public bodies, citizens; public utilities and organizations.
 - (2) To recommend to the Town Board programs for public improvements and the financing of such improvements.
 - (3) To receive from public officials, within a reasonable time, requested available information required for the Commission to do its work.
 - (4) The authority for its members and employees, in the performance of their duties, to enter upon land, make examinations and surveys, and place and maintain necessary monuments and marks thereon. However, entry shall not be made upon private land without the permission of the landowner or tenant, except to the extent that the private land is held open to the general public. If such permission has been refused, entry shall only be made under the authority of an inspection warrant issued for cause under § 66.0119, Wis. Stats., or other court-issued warrant.
- N. Town planning and comprehensive planning: general authority and requirements.
- (1) The Zoning and Planning Commission, under § 62.23(2), Wis. Stats., shall make, update, and adopt the Town Comprehensive Plan, with accompanying maps, plats, charts and descriptive and explanatory matter, which shall include the nine elements specified under the comprehensive planning law, § 66.1001(2), Wis. Stats. Adoption shall follow the procedures in § 66.1001(4), Wis. Stats.
 - (2) In this section the requirement to "make" the plan means that the Zoning and Planning Commission shall oversee and coordinate the preparation of the plan, whether the work is performed for the Town by the Zoning and Planning Commission, Town staff; another unit of government, the regional planning commission, a consultant, citizens, an advisory committee, or any other person, group or organization.
- O. Procedure for Plan Commission adoption and recommendation of Town Comprehensive Plan or amendment. The Plan Commission shall work with the Town Board to ensure that the requirements of § 66.1001(4), Wis. Stats. are met and shall proceed as follows:
- (1) Public participation verification. Prior to beginning work on a Comprehensive Plan, the Zoning and Planning Commission shall verify that the Town Board has adopted written procedures designed to foster public participation in every stage of preparation of the Comprehensive Plan. These written procedures shall include open discussion, communication programs, information services, and noticed public meetings. These written procedures shall further provide for wide distribution of proposed, alternative or amended elements of a Comprehensive Plan and shall provide an opportunity for written comments to be submitted by members of the public to the Town Board and for the Town Board to respond to such written comments.

- (2) Resolution. The Zoning and Planning Commission, under § 66.1001(4)(b), Wis. Stats., shall recommend its proposed Comprehensive Plan or amendment to the Town Board by adopting a resolution by a majority vote of the entire Zoning and Planning Commission. The vote shall be recorded in the minutes of the Zoning and Planning Commission. The resolution shall refer to maps and other descriptive materials that relate to one or more elements of the Comprehensive Plan. The resolution adopting a Comprehensive Plan shall further recite that the requirements of the comprehensive planning law have been met, under § 66.1001, Wis. Stats., namely that:
 - (a) The Town Board adopted written procedures to foster public participation and that such procedures allowed public participation at each stage of preparing the Comprehensive Plan;
 - (b) The plan contains the nine specified elements and meets the requirements of those elements;
 - (c) The (specified) maps and (specified) other descriptive materials relate to the plan;
 - (d) The plan has been adopted by a majority vote of the entire Plan Commission, which the Secretary is directed to record in the minutes; and
 - (e) The Plan Commission Secretary is directed to send a copy of the Comprehensive Plan adopted by the Commission to the governmental units specified in § 66.1001(4), Wis. Stats., and Subsection **O(3)** of this section.
 - (3) Transmittal. One copy of the Comprehensive Plan or amendment adopted by the Plan Commission for recommendation to the Town Board shall be sent to:
 - (a) Every governmental body that is located in whole or in part within the boundaries of the Town, including any school district, Town sanitary district, public inland lake protection and rehabilitation district or other special district.
 - (b) The clerk of every city, village, town, county and regional planning commission that is adjacent to the Town.
 - (c) The Wisconsin Land Council.
 - (d) The Department of Administration.
 - (e) The regional planning commission in which the Town is located.
 - (f) The public library that serves the area in which the Town is located.
- P. Plan implementation and administration.
- (1) Ordinance development. If directed by resolution or motion of the Town Board, the Plan Commission shall prepare the following:
 - (a) Zoning. A proposed Town zoning ordinance under village powers, §§ 60.22(3), 61.35 and 62.23(7), Wis. Stats., a Town construction site erosion control and stormwater management zoning ordinance under § 60.627(6), Wis. Stats., a Town exclusive agricultural zoning ordinance under Subchapter V of Chapter **91**, Wis. Stats., and any other zoning ordinance within the Town's authority.
 - (b) Official Map. A proposed Official Map ordinance under § 62.23(6), Wis. Stats.

- (c) Subdivisions. A proposed Town subdivision or other land division ordinance under § 236.45, Wis. Stats.
 - (d) Other. Any other ordinance specified by the Town Board (Note: e.g., historic preservation, design review, site plan review).
- (2) Ordinance amendment. The Zoning and Planning Commission, on its own motion, or at the direction of the Town Board by its resolution or motion, may prepare proposed amendments to the Town's ordinances relating to comprehensive planning and land use.
 - (3) Nonregulatory programs. The Zoning and Planning Commission, on its own motion, or at the direction of the Town Board by resolution or motion, may propose nonregulatory programs to implement the Comprehensive Plan, including programs relating to topics such as education, economic development and tourism promotion, preservation of natural resources through the acquisition of land or conservation easements, and capital improvement planning.
 - (4) Program administration. The Zoning and Planning Commission shall, pursuant to Town ordinances, have the following powers.
 - (a) Zoning conditional use permits. The Zoning Administrator shall refer applications for conditional use permits under Town zoning to the Zoning and Planning Commission for review and recommendation to the Town Board as provided under §§ **135-250** and **135-251** of the Town zoning ordinances.
 - (b) Subdivision review. Proposed plats under Ch. 236, Wis. Stats, and proposed subdivisions or other land divisions under the Town subdivision ordinance under § 236.45, Wis. Stats, and Chapter **96** of the Town ordinances shall be referred to the Zoning and Planning Commission for review and recommendation to the Town Board.
 - (5) Consistency. Any ordinance, amendment or program proposed by the Zoning and Planning Commission, and any Zoning and Planning Commission approval, recommendation for approval or other action under Town ordinances or programs that implement the Town's Comprehensive Plan under §§ 62.23 and 66.1001, Wis. Stats, shall be consistent with that plan as of January 1, 2010. If any such Plan Commission action would not be consistent with the Comprehensive Plan, the Plan Commission shall use this as information to consider in updating the Comprehensive Plan.

Q. Referrals to Plan Commission.

- (1) Required referrals under § 62.23(5), Wis. Stats. The following shall be referred to the Plan Commission for report:
 - (a) The location and architectural design of any public building.
 - (b) The location of any statue or other public memorial.
 - (c) The location, acceptance, extension, alteration, vacation, abandonment, change of use, sale, acquisition of public land for or lease of public land for any of the following reasons:
 - [1] Street, alley or other public way;
 - [2] Park or playground;

- [3] Airport;
 - [4] Area for parking vehicles; or
 - [5] Other memorial or public grounds.
- (d) The location, extension, abandonment or authorization for any publicly or privately owned public utility.
- (e) All plats under the Town's jurisdiction under Ch. 236, Wis. Stats., including divisions under a Town subdivision or other land division ordinance adopted under § 236.45, Wis. Stats.
- (f) The location, character and extent or acquisition, leasing or sale of lands for:
- [1] Public or semipublic housing;
 - [2] Relief of congestion; or
 - [3] Vacation camps for children.
- (g) The amendment or repeal of any ordinance adopted under § 62.23, Wis. Stats., including ordinances relating to the Town Zoning and Planning Commission; or the Town Comprehensive Plan under § 66.1001, Wis. Stats.; a Town Official Map; and Town zoning under village powers.
- (2) Required referrals under sections of the Wisconsin Statutes other than § 62.23(5), Wis. Stats. The following shall be referred to the Zoning and Planning Commission for report:
- (a) An application for initial licensure of a child welfare agency or group home under § 48.68(3), Wis. Stats.
 - (b) An application for initial licensure of a community-based residential facility under § 50.03(4), Wis. Stats.
 - (c) Proposed designation of a street, road or public way, or any part thereof, wholly within the jurisdiction of the Town, as a pedestrian mall under § 66.0905, Wis. Stats.
 - (d) Matters relating to the establishment or termination of an architectural conservancy district under § 66.1007, Wis. Stats.
 - (e) Matters relating to the establishment of a reinvestment neighborhood required to be referred under § 66.1107, Wis. Stats.
 - (f) Matters relating to the establishment or termination of a business improvement district required to be referred under § 66.1109, Wis. Stats.
 - (g) A proposed housing project under § 66.1211(3), Wis. Stats.
 - (h) Matters relating to urban redevelopment and renewal in the Town required to be referred under Subchapter XIII of Chapter 66, Wis. Stats.
 - (i) The adoption or amendment of a Town subdivision or other land division ordinance under § 236.45(4), Wis. Stats.

- (j) Any other matter required by the Wisconsin Statutes to be referred to the Zoning and Planning Commission.
- (3) Required referrals under this section. In addition to referrals required by the Wisconsin Statutes, the following matters shall be referred to the Zoning and Planning Commission for report:
 - (a) Any proposal, under § 59.69, Wis. Stats., for the Town to approve general county zoning so that it takes effect in the Town or to remain under general county zoning.
 - (b) Proposed regulations or amendments relating to historic preservation under § 60.64, Wis. Stats.
 - (c) A proposed driveway access ordinance or amendment.
 - (d) A proposed Town Official Map ordinance under § 62.23(6), Wis. Stats., or any other proposed Town ordinance under § 62.23, Wis. Stats., not specifically required by the Wisconsin Statutes to be referred to the Commission.
 - (e) A proposed Town zoning ordinance or amendment adopted under authority separate from or supplemental to § 62.23, Wis. Stats., including a Town construction site erosion control and stormwater management zoning ordinance under § 60.627(6), Wis. Stats., and a Town exclusive agricultural zoning ordinance under Subchapter V of Chapter 91, Wis. Stats.
 - (f) An application for a conditional use permit under the Town zoning ordinance.
 - (g) A proposed site plan.
 - (h) A proposed extraterritorial zoning ordinance or a proposed amendment to an existing ordinance under § 62.23(7a), Wis. Stats.
 - (i) A proposed boundary change pursuant to an approved cooperative plan agreement under § 66.0307, Wis. Stats., or a proposed boundary agreement under § 66.0225, Wis. Stats., or other authority.
 - (j) A proposed zoning ordinance or amendment pursuant to an agreement in an approved cooperative plan under § 66.0307(7m), Wis. Stats.
 - (k) Any proposed plan, element of a plan or amendment to such plan or element developed by the regional planning commission and sent to the Town for review or adoption.
 - (l) Any proposed contract, for the provision of information, or the preparation of a Comprehensive Plan, an element of a plan or an implementation measure, between the Town and the regional planning commission, under § 66.0309, Wis. Stats., another unit of government, a consultant or any other person or organization.
 - (m) A proposed ordinance, regulation or plan, or amendment to the foregoing, relating to a mobile home park under § 66.0435, Wis. Stats.
 - (n) A proposed agreement, or proposed modification to such agreement, to establish an airport affected area, under § 66.1009, Wis. Stats.

- (o) A proposed Town airport zoning ordinance under § 114.136(2), Wis. Stats.
 - (p) A proposal to create environmental remediation tax incremental financing in the Town under § 66.1106, Wis. Stats.
 - (q) A proposed county agricultural preservation plan or amendment, under Subchapter IV of Chapter 91, Wis. Stats., referred by the county to the Town, or proposed Town agricultural preservation plan or amendment.
 - (r) Any other matter required by any Town ordinance or Town Board resolution or motion to be referred to the Zoning and Planning Commission.
- (4) Discretionary referrals. The Town Board, or other Town officer or body with final approval authority or referral authorization under the Town ordinances, may refer any of the following to the Zoning and Planning Commission for report:
- (a) A proposed county development plan or Comprehensive Plan, proposed element of such a plan, or proposed amendment to such plan.
 - (b) A proposed county zoning ordinance or amendment.
 - (c) A proposed county subdivision or other land division ordinance under § 236.45, Wis. Stats., or amendment.
 - (d) An appeal or permit application under the county zoning ordinance to the county Zoning Board of Adjustment, county planning body or other county body.
 - (e) A proposed intergovernmental cooperation agreement, under § 66.0301, Wis Stats., or other statute, affecting land use, or a municipal revenue sharing agreement under § 66.0305, Wis. Stats.
 - (f) A proposed plat or other land division under the county subdivision or other land division ordinance under § 236.45, Wis. Stats.
 - (g) A proposed county plan, under § 236.46, Wis. Stats., or the proposed amendment or repeal of the ordinance adopting such plan, for a system of Town arterial thoroughfares and minor streets, and the platting of lots surrounded by them.
 - (h) Any other matter deemed advisable for referral to the Zoning and Planning Commission for report.
- (5) Referral period. No final action may be taken by the Town Board or any other officer or body with final authority on a matter referred to the Zoning and Planning Commission until the Commission has made its report, or 30 days, or such longer period as stipulated by the Town Board, has passed since referral. The thirty-day period for referrals required by the Wisconsin Statutes may be shortened only if so authorized by statute. The thirty-day referral period, for matters subject to required or discretionary referral under the Town's ordinances, but not required to be referred under the Wisconsin Statutes, may be made subject by the Town Board to a referral period shorter or longer than the thirty-day referral period if deemed advisable.
- R. Effective date. Following passage by the Town Board, this section shall take effect the day after the date of publication or posting as provided by § 60.80, Wis. Stats.

§ 135-245. Building permits.

- A. No person shall erect or construct any building or structure, or shall add to, enlarge, move, improve, alter, convert, extend or demolish any building or structure or cause the same to be done, or shall commence any work covered by this chapter on any structure without first obtaining a building permit therefor from the Ledgeview Zoning Administrator or designee; however, the Ledgeview Zoning Administrator or designee may authorize minor repairs not involving structural alterations without requiring a building permit to be issued.
- B. Application for said building permit shall be made, in writing, to the Town of Ledgeview Zoning Administrator or designee by the landowner or his/her authorized agent on a form furnished for that purpose.
- C. Application for a building permit shall be deemed to be an application for an occupancy permit as well.
- D. Each building permit application shall be accompanied by a site plan in accordance with requirements as specified in § 135-246, Site plans.
- E. The Zoning Administrator or designee shall issue the building permit if the proposed building complies with all the provisions of this chapter and any other applicable Town or state requirements. Said building permit shall remain in full force and effect for a period of one year from the date of issuance. After said one-year period has expired, no further building can take place without the reissuance of another building permit.
- F. Each building permit applied for shall be granted or denied within a ten-day period from the date of application. Reason for denial of a building permit will be forwarded, in writing, by the Town Zoning Administrator or designee to the applicant.

§ 135-246. Site plans.

- A. Each application for a building permit shall be accompanied by two copies of the site plan, drawn to scale, not less than one inch to 100 feet, showing the actual dimensions of the lot to be built upon. Such site plan shall indicate the detailed legal description of the property as it appears of record. In the case of unplatted land or parcels conveyed by metes and bounds, the site plan, together with sufficient measurements to permit proper determination, shall be submitted to the Zoning Administrator or designee, who shall determine as to whether the proposal is in conflict with the Official Map. No building permit shall be issued for the above development unless a site plan is first submitted to and approved by the Zoning and Planning Committee or its designee.
- B. Exemptions and exceptions. The Zoning Administrator or designee may, at the request of the applicant, waive any of the various requirements of maps and submissions hereinafter set forth.
- C. Other data required. The site plan shall contain sufficient information relative to site design considerations, including but not limited to the following:
 - (1) Size and location of the building or buildings to be erected.
 - (2) Relationship of the building or buildings to the exterior lines of proposed streets shown on the Official Map.

- (a) The location of streets, alleys, lot lines and any other buildings on the same lot or property.
 - (b) The name of the owner.
 - (c) The intended use.
 - (d) Computations and other data necessary to show the correctness of the plans shall accompany the plans and specifications when required by the Building Inspector.
 - [1] On-site and off-site circulation.
 - [2] Parking.
 - [3] Grading.
 - [4] Landscaping.
 - [5] Placement of utilities.
 - [6] Screening.
 - [7] Engineering for streets and utilities.
 - [8] Signage.
- D. Supplemental requirements. The Zoning Administrator or designee may require other information and data for specific site plans. This data may include but is not limited to geologic information, water yields, flood data, environmental information, traffic analysis, road capacities, market information, economic data for the proposed development, hours of operation, elevations and perspective drawings, lighting and similar information. Conditional approval of a site plan may establish conditions for construction based on such information.
- E. Principles and standards for site plan review.
- (1) The following criteria have been set forth as a guide for evaluating the adequacy of proposed development. The Zoning Administrator or designee shall review the site plan for compliance with all applicable ordinances and the Comprehensive Plan; for harmony with surrounding uses and the overall plan for development of the Town; for the promotion of the health, safety, order, efficiency and economy of the Town; and for the maintenance of property values and the general welfare.
 - (2) Based upon his review, the Zoning Administrator or designee may approve, conditionally approve, request modifications or deny approval of the site plan based on evaluation of the site plan details with respect to:
 - (a) The site plan's compliance with all provisions of this chapter and other ordinances of the Town of Ledgeview, including but not limited to off-street parking and loading, lighting, open space and the generation of objectionable smoke, fumes, noise, odors, dust, glare, vibration or heat.
 - (b) The environmental impact of the development relating to the preservation of existing natural resources on the site and the impact on the natural resources of the surrounding properties and neighborhood.

- (c) The relationship of the development to adjacent uses in terms of harmonious design, setbacks, maintenance of property values and negative impacts.
- (d) The provision of a safe and efficient vehicular and pedestrian circulation system.
- (e) The design and location of off-street parking and loading facilities to ensure that all such spaces are usable and are safely and conveniently arranged.^[1]
- [1] *Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I).*
- (f) The sufficient width and suitable grade and location of streets designed to accommodate prospective traffic and to provide access for fire-fighting and emergency equipment to buildings.
- (g) The coordination of streets so as to compose a convenient system consistent with the Town's official street map.
- (h) The use of landscaping and screening to provide adequate buffers to shield lights, noise, movement or activities from adjacent properties when necessary, and to complement the design and location of buildings and be integrated into the overall site design. Screening is to consist of a landscaped area at least six feet wide, planted with a mixture of deciduous and evergreen trees and shrubs, and shall create an effective barrier. All trees shall be a minimum of two-inch caliper when planted.
- (i) Exterior lighting to ensure safe movement and for security purposes, which shall be arranged so as to minimize glare and reflection on adjacent properties.
- (j) The location, size and configuration of open space areas to ensure that such areas are suitable for intended recreation and conservation uses.
- (k) Protection and conservation of soils from erosion by wind or water or from excavation or grading.
- (l) Protection and conservation of watercourses and areas subject to flooding.
- (m) The adequacy of water, drainage, sewerage facilities, garbage disposal and other utilities necessary for essential services to residents and occupants.

[1] The decision of the Zoning Administrator or designee to approve or deny a site plan shall be final and binding, unless an appeal of said decision is made to the Zoning and Planning Committee. The appeal shall be filed, in writing, with the Town Zoning Administrator or designee not more than seven days after the date of the action taken by the Zoning Administrator or designee. The appeal shall state all reasons for dissatisfaction with the action of the Zoning Administrator or designee. If the Zoning and Planning Committee, by majority vote, deems the appeal to be without merit, it may refuse to accept the appeal, and the action of the Zoning Administrator or designee shall stand. If the Zoning and Planning Committee, by majority vote, accepts the appeal, the decision by the Zoning and Planning Committee to approve, conditionally approve, request modifications or deny a site plan shall be final and binding.

F. Effect of site plan approval.

(1)

If development of a lot with an approved site plan has not commenced within two years of the date of final approval of the site plan, the site plan shall be deemed to have expired, and a review and reapproval of the approved site plan by the Zoning Administrator or designee shall be required before a building permit may be issued. Said review and approval shall be evaluated according to the standards of Subsection E, taking into account all changes to applicable ordinances which have occurred subsequent to the prior approval of the site plan.

- (2) It is recognized that final architectural and engineering design may necessitate minor changes in the approved site plan. In such cases, the Zoning Administrator or designee shall have the authority to approve minor modifications of an approved site plan, provided that such modifications do not materially change the circulation and building location on the site.

§ 135-247. Occupancy permit.

- A. No building or addition thereto constructed after the effective date of this chapter, and no addition to a previously existing building, shall be occupied until an occupancy permit has been issued by the Town Zoning Administrator or designee. No change in the use of a building shall be made until a permit has been issued by the Town Zoning Administrator or designee for such change of use.
- B. No occupancy permit shall be issued until construction has been completed and the premises inspected and certified by the Zoning Administrator or designee to be in conformity with the plans and specifications upon which the building permit was based.
- C. The occupancy permit shall be issued, or notice shall be given to the applicant stating the reasons why a certificate cannot be issued, not later than seven days after the Zoning Administrator or designee is notified, in writing, by the applicant that the premises or building is ready for occupancy.
- D. All occupancy permits shall be issued by the Ledgeview Zoning Administrator or designee.

§ 135-248. Variances.

- A. Application. An application for a variance shall be filed with the Zoning Administrator or designated agent. The application shall contain such information as requested in the application provided by the Zoning Administrator or designee, as well as such other further information as the Zoning Administrator or designee may deem reasonably necessary to evaluate such request for a variance. The Zoning Board of Appeals shall hold a public hearing on each request for variance. Time, place and purpose of the hearing shall be published as provided in the state law on planning and zoning and applicable to the Town of Ledgeview. Due notice of the hearing shall be given to the appellant, as well as parties of interest and any other individual who has filed a request with the Zoning Administrator or designee for a written notice of the time and place of the appeal.
- B. Standards of variances. The Zoning Board of Appeals shall not vary the regulations, unless it shall make findings based upon the evidence presented to it in each specific case. Variances shall be granted in accordance with the following standards:
 - (1)

Because of the particular physical surrounding, shape or topographical condition of the specific property involved, a particular hardship to the owner would result, as distinguished from a mere inconvenience if the strict letter of the regulations were to be carried out.

- (2) Conditions upon which a petition for a variance is based are unique to the property for which the variance is sought, and are not applicable, generally, to other property within the same zoning classification.
- (3) Alleged difficulty or hardship is caused by this chapter and has not been created by any person presently having an interest in the property.
- (4) Granting of the variance shall not be detrimental to the public welfare or injurious to other property or improvements in the neighborhood in which the property is located.
- (5) Proposed variation shall not impair an adequate supply of light and air to adjacent property, or substantially increase the congestion of the public streets, or increase the danger of fire, or endanger the public safety, or substantially diminish or impair property values within the neighborhood.

C. Authorized variances.

- (1) Except as specifically provided, no action of the Zoning Board of Appeals shall have the effect of permitting in any district uses prohibited in such district.
- (2) In every case where a variance from these regulations has been granted by the Zoning Board of Appeals, the minutes of the Board shall affirmatively show in what particular and specific respects an "unnecessary hardship" or "practical difficulty" would have been created by the literal enforcement of the terms of this chapter.

§ 135-249. Appeals.

A. Scope of appeals.

- (1) Appeals to the Zoning Board of Appeals may be taken by any person alleging there is an error in any order, requirement, decision or determination made by the Zoning Administrator or any administrative official acting on behalf of the Zoning Administrator in the enforcement of this chapter or of any other ordinance adopted pursuant to this chapter.
- (2) Such an appeal shall be made within 30 days after the decision or the action complained of, by filing with the Zoning Administrator or designee a notice of appeal specifying the grounds thereof.
- (3) The Zoning Administrator or his/her designated representative shall forthwith transmit to the Zoning Board of Appeals all the papers constituting the record upon which the action appealed from was taken.

B. Findings on appeals.

- (1) An appeal shall stay all legal proceedings in furtherance of the action appealed from, unless the officer from whom the appeal is taken certifies to the Board of Appeals after the notice of appeal shall have been filed with him/her that, by reason of facts stated in the certificate, a stay would, in his/her opinion, cause imminent peril to life or property. In such case, proceedings shall not be stayed otherwise than by a restraining order which may be

granted by the Board of Appeals or by a court of record on application, on notice to the officer from whom the appeal is taken and on due cause shown.

- (2) The Zoning Board of Appeals shall hold a public hearing on each appeal. Time, place and purpose of the appeal shall be published as provided in the state law on planning and zoning and applicable to the Town of Ledgeview.
- (3) Due notice of the hearing shall be given to the appellant, as well as parties of interest and any other individual who has filed a request with the Zoning Administrator or designee for a written notice of the time and place of the appeal.
- (4) The Zoning Board of Appeals shall thereafter reach its decision within 60 days from the filing of the appeal.
- (5) The Zoning Board of Appeals may affirm or reverse, wholly or in part, or may modify the order, requirement, decision or determination appealed from and may make such order, requirement, decision or determination as, in its opinion, ought to be made, and to that end shall have all the powers of the officer from whom the appeal is taken.^[1]

[1] *Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I).*

§ 135-250. Zoning amendments.

- A. **Authority.** The Town Board may, from time to time, in the manner hereafter set forth, amend the regulations imposed in the districts and amend district boundary lines, provided that in all amendatory ordinances adopted under the authority of this section, due allowance shall be made for the intent and purposes of said changes as per Article II of this chapter.
- B. **Initiation.** Amendments may be proposed by a governmental body, interested person or organization.
- C. **Application.** An application for an amendment shall be filed with the Zoning Administrator or designated agent, and shall be in such form and accompanied by such information as required by the Zoning Administrator or designee. The Zoning Administrator or designee shall then immediately forward a copy of said application to the Chairperson of the Zoning and Planning Committee.
- D. **Finding and recommendation.**
 - (1) The Zoning and Planning Committee shall make written findings of fact and shall submit them, together with its recommendations, to the Town Board prior to the public hearing. Said written findings shall be submitted to the Town Board within 60 days from the date the application was received by the Zoning Administrator or designee. A failure of the Zoning and Planning Committee to submit written findings to the Town Board within the sixty-day period shall constitute a denial of the application by the Zoning and Planning Committee. The Zoning and Planning Committee shall have complied with this subsection concerning the submission of written findings to the Town Board upon receipt of the written findings by the Town Clerk for the Town of Ledgeview.
 - (2) Where the purpose and effect of the proposed amendment is to change the zoning classification of particular property, the Zoning and Planning Committee shall make findings based upon the evidence presented to it in each specific case with respect to the following matters:

- (a) Existing uses of property within the general area of property in question.
 - (b) Zoning classification of property within the general area of the property in question.
 - (c) Suitability of property in question to the uses permitted under the existing zoning classification.
 - (d) Trend of development, if any, in the general area of the property in question, including changes, if any, which have taken place in its present zoning classification.
 - (e) The Zoning and Planning Committee may recommend the adoption of an amendment changing the zoning classification of the property in question to any higher classification than that requested by the applicant.
 - (f) The Zoning and Planning Committee shall not recommend the adoption of a proposed amendment unless it finds that the adoption of such amendment is in the public interest and is not solely for the interest of the applicant.
- E. Hearing notice. The Town Board shall hold a public hearing on each application for an amendment. Time, place and purpose of the hearing shall be published as a class 2 notice under Ch. 985, Wis. Stats. Written notice mailed no later than 10 days in advance of the hearing shall be given to the applicant, as well as parties of interest.
[Amended 6-20-2006 by Ord. No. 2006-011]
- F. Town Board action.
- (1) The Town Board shall not act upon a proposed amendment to this chapter until it shall have received a written report and recommendation from the Zoning and Planning Committee on the proposed amendment or until the sixty-day period set forth in Subsection **D(1)** has expired, whichever occurs first. Receipt of the recommendation by the Town Clerk shall constitute a formal receipt of the written recommendation from the Zoning and Planning Committee with respect to the proposed amendment.
 - (2) The Town Board may grant or deny any application for an amendment; provided, however, that in the event of a written protest against any proposed amendment to this chapter, duly signed and acknowledged by the owners of 20% or more of the areas of the land included in such proposed change, or by the owners of 20% or more of the land immediately adjacent, extending 100 feet therefrom, or by the owners of 20% or more of the land directly opposite thereto extending 100 feet from the street frontage of such opposite land, such changes or amendments shall not become effective, except by a three-fourths vote of the full Town Board membership. Any protest petition filed hereunder must be filed within the office of the Town Clerk by noon on the Friday before the scheduled vote on the proposed zoning amendment.
[Amended 2-17-2015 by Ord. No. 2015-001]
 - (3) The Town Board shall make a decision on the amendment within 60 days from the receipt of the Zoning and Planning Committee recommendation by the Town Clerk.
 - (4) If an application for a proposed amendment is not acted upon finally by the Town Board within 90 days of the date upon which such application is received by the Town Clerk, it shall be deemed to have been denied.

§ 135-251. Conditional uses.

- A. Purpose. The purpose is to place unique land use characteristics within favorable zoning districts to ease conflicts on neighboring lands and public need.
- B. Initiation. Any person having a freehold interest in land, or a possessory interest entitled to exclusive possession, or a contractual interest which may become a freehold interest or an exclusive possessory interest, and which is specifically enforceable, may file an application to use such land for one or more of the conditional uses provided for in this chapter in the zoning district in which the land is located.
- C. Application. The application for conditional use permit shall be filed with the Zoning Administrator or his/her designated agent on a form so prescribed by the Town of Ledgeview. The application shall be accompanied by such plans and/or data prescribed by the Zoning Administrator or designee and shall include a statement, in writing, by the applicant and adequate evidence showing that the proposed conditional use will conform to the standards set forth in the respective zone districts.
- D. Zoning and Planning Committee action.
 - (1) After the application for the conditional use has been reviewed by the Zoning and Planning Committee, a written recommendation shall be submitted by the Zoning and Planning Committee to the Town Board. For purposes of this section, said written recommendation shall be filed with the Town Clerk and such filing shall be deemed a filing with the Town Board.
 - (2) In its written recommendations, the Zoning and Planning Committee may recommend such conditions and restrictions upon the establishment, location, construction, maintenance, appearance and operation of the conditional use as the Zoning and Planning Committee deems necessary for the protection of the public interest and to secure compliance with the standards and requirements specified in this chapter. No conditional use shall be recommended by the Zoning and Planning Committee, unless said Zoning and Planning Committee shall find that the proposed use complies with Article II, Intent, Purpose and Severability.
 - (3) A failure of the Zoning and Planning Committee to serve upon the Town Clerk a written recommendation regarding said application for a conditional use permit within 60 days from the date said application was filed with the Zoning Administrator or his/her designated agent shall be deemed a denial of the conditional use permit by the Zoning and Planning Committee.
- E. Hearing notice. The Town Board shall hold a public hearing on each application for a conditional use permit. Time, place and purpose of the hearing shall be published as provided in the state law on planning and zoning and applicable to the Town of Ledgeview. Due notice of the hearing shall be given to the appellant, as well as parties of interest.^[1]

[1] *Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I).*
- F. Town Board action.
 - (1) Decision of Town Board. Conditional use permits shall only be granted by the Town Board. Within 60 days of the date on which the Town Clerk receives the written recommendation from the Zoning and Planning Committee, the Town Board shall make a determination concerning the issuance of the conditional use permit. If the Zoning and Planning

Committee fails to render a written recommendation to the Town Clerk within 60 days from its receipt of the conditional use application as set forth in the previous subsection, then the Town Board shall have 120 days from the date in which the application for the conditional use permit was filed with the Zoning Administrator or his/her designated agent in which to make a determination regarding the application for the conditional use permit. It is the responsibility of the applicant to notify the Town Board, by means of notification to the Town Clerk, that the Zoning and Planning Committee has failed to take the necessary action as required in Subsection **D** hereinabove.

- G. Conditions and guaranties. When issuing a conditional use permit, the Town Board shall require such conditions and restrictions upon the establishment, location, construction, maintenance, appearance and operation of the conditional use as is deemed necessary for the protection of the public interest and to secure compliance with the standards and requirements as specified in this chapter. In all cases in which conditional uses are granted, the Town Board may require such evidence and guaranties as it may deem necessary as proof that the conditions required in connection therewith are being fulfilled.

§ 135-252. Fees.

Any application for a conditional use permit, an appeal, zoning amendment or variance shall be accompanied by a fee as established by the Town. This fee shall not apply to any changes proposed by the Town itself.

§ 135-253. Violations and penalties.

- A. Any building or structure hereinafter erected, moved or structurally altered or any use hereafter established in violation of the provisions of this chapter by any person, firm, association, corporation (including building contractors) or his/her/their agent shall be deemed an unlawful structure or use.
- B. Any person, firm or corporation who or which violates, disobeys, neglects, omits or refuses to comply with or who resists the enforcement of any of the provisions of this chapter may also be required, upon conviction, to forfeit a fee set by the Town Board for each offense, together with the costs of prosecution, and shall be imprisoned in the county jail of Brown County until said forfeiture and costs are paid, but not to exceed 30 days for each violation. Each day that a violation continues to exist shall constitute a separate offense.
- C. This section shall not preclude the Town of Ledgeview from maintaining any appropriate action to prevent or remove a violation of this chapter.

Article XXVII. Official Zoning Map

[Adopted 6-22-2004 by Ord. No. 2004-006]

§ 135-254. Official Zoning Map adopted; on file.

- A. The Town of Ledgeview is hereby divided into Zoning Districts as shown upon a map designated as the Official Zoning Map of the Town of Ledgeview and made part of this chapter. The Official Zoning Map, and all the notations, references and other information found thereon, are a part of this chapter and shall have the same force and effect as if the matters and information set forth

on said Map were fully described herein. The Official Zoning Map shall be properly attested and kept on file along with the text of the Town Zoning Ordinances in the office of the Town Clerk-Treasurer.

- B. The District boundaries shall be determined by measurement from and as shown on the Official Zoning Map; in case of any question as to the interpretation of such boundary lines, the Plan Commission shall interpret the map according to the reasonable intent of this chapter. Unless otherwise specifically indicated or dimensioned on the Map, the District boundaries are normally lot lines; section, quarter-section or quarter-quarter section lines; or the center lines of streets, highways, railways or alleys.
- C. The Official Zoning Map, dated December 16, 2014, is hereby adopted as the Official Zoning Map of the Town. All further zoning changes shall be made by reference to the Map.^[1]
[Amended 1-4-2010 by Ord. No. 2010-001; 3-17-2015 by Ord. No. 2015-003]

[1] *Editor's Note: Amendments to the Zoning Map are kept on file in the Office of the Town Clerk-Treasurer.*

Article XXVIII. PDD-BP Planned Development District - Business Park

[Added 12-19-2006 by Ord. No. 2006-016]

§ 135-255. Purpose and intent.

The intent of this article is to guide the future development of a business park that meets the goals, objectives, and policies of the Town's Comprehensive Plan and Ledgeview Business Park Master Plan by:

- A. Creating a signature entrance into the Town of Ledgeview and the Green Bay region.
- B. Providing a variety of high-quality office, highway-oriented commercial, pedestrian-oriented commercial, and light industrial uses positioned to address major roads and open spaces.
- C. Preserving natural areas such as ravines and streams and providing access to them with public open spaces.
- D. Organizing an interconnected network of trails to improve pedestrian and bike access within the business park.
- E. Providing natural landscaping, quality on-site signage, sufficient parking, and adequate stormwater management.
- F. Encouraging growth in generated property taxes for the Town.

§ 135-256. Applicability.

The PDD-BP District may apply to areas designated as Future Business Park in the Town of Ledgeview's Comprehensive Plan. This includes, at a minimum, the area around the Interstate 43/CTH MM interchange.

§ 135-257. Criteria for approval.

- A. As a basis for determining the acceptability of a PDD-BP development proposal, the following criteria shall be applied to the development plan with specific consideration as to whether or not it is consistent with the spirit and intent of the Comprehensive Plan, the Ledgeview Business Park Master Plan, and this chapter, has been prepared with competent professional advice and guidance, and produces significant benefits in terms of environmental design.
- B. The criteria for approval within this chapter establish standards for each character area as identified in Figure 3 of the Ledgeview Business Park Master Plan. The criteria for approval contain the design parameters for buildings and streetscape, specifications for location and appearance of open spaces, requirements for landscape, and mix of uses and densities allowed per land use.
- C. Specific criteria:
 - (1) Structures shall be designed with a theme similar to that depicted in the Ledgeview Business Park Master Plan in terms of use of materials, architectural elements, building massing, and landscaping in and around the site. In all character areas throughout the PDD-BP, the PDD-BP development design shall achieve the following standards in addition to requirements contained within § 135-11 of the Code of the Town of Ledgeview:
 - (a) Building types.
 - [1] Architectural standards.
 - [a] Building facades facing major roads, such as Interstate 43 and county arterials, shall be designed with materials and details similar to that found on the front facade of the building. At a minimum, the facades shall be subdivided and proportioned using features such as windows, frames, sills and lintels, shading devices, and modulations of walls.
 - [b] All architectural elevations of buildings shall consist of a base, body, and cap. The base and the cap shall be clearly distinguishable from the body through changes in color, material, profile, or texture.
 - [c] Changes in massing shall relate to entrances, the integral structure and/or the organization or architecture of interior spaces and not exist solely for cosmetic effect.
 - [d] Every public structure shall have clearly defined, highly visible public entrances featuring architectural elements such as canopies or porticos, overhangs, arcades, raised parapets, arches or roof forms.
 - [e] Materials, colors, and textures. In addition to the requirements of § 135-11M (6)(c), all structures shall meet the following standards:
 - [i] Appropriate combinations of materials, colors, and textures shall be used in a theme consistent with the design of the overall PDD-BP and reflect the Ledgeview Business Park Design Guidelines.
 - [ii] Materials, such as stone, brick, painted metal, and wood, or imitations thereof substantially imitating the appearance and quality of such materials, shall be used.

- [iii] Flat-faced concrete or cinder block is prohibited.
- [iv] EIFS is limited to dormers, gables, and soffits only.
- [v] Vinyl and or aluminum siding is permitted by conditional use permit only.
- [f] Themed color combinations for the site are required. The predominant colors on facades shall be subtle, neutral, or earth tone colors, and the material shall be low-reflectance.
- [g] Building design character shall not signify a particular brand or product, but rather be easily utilized for a wide variety of businesses.
- [h] Horizontal massing shall not exceed a height:width ratio of 1:3 without substantial variation in massing that includes a change in the height and building setback.
- [i] Facades of buildings occupying more than 25,000 square feet and/or 60 feet or more of street frontage shall:
 - [i] Be designed with recess and projections, material changes, and other articulations every 30 to 60 feet, in order to break up large building masses and create the appearance of smaller buildings.
 - [ii] Avoid monolithic appearance on building frontages and rooflines. The larger box-type massing of such structures must be offset by breaking up building sections, or by the use of elements such as variable planes, projections, setbacks, and changes in rooflines.
 - [iii] Be subdivided and proportioned using features such as windows, frames, sills and lintels, shading devices, and modulations of the wall.
 - [iv] Have roofs that are visually interesting, with variations in the roofline and treatments such extended eaves and parapet walls with cornice treatments.
- [2] Exterior building lighting.
 - [a] Exterior architectural lighting for buildings and landscaping shall be ground-mounted.
 - [b] Lighting shall be directed away from residential properties. Exterior lighting shall not exceed 0.50 footcandles measured at noncommercial lot lines.
 - [c] All exterior lighting shall be a part of the architectural and landscape design concept in color, location, and type of lighting.
 - [d] Lighting fixtures shall complement the character of the public streetlighting, as depicted in the Ledgeview Business Park Design Guidelines.
- (b) Signage. All signs shall meet the requirements of Chapter 79, Signs. All signage shall complement the theme of the business park, as depicted in the Ledgeview Business Park Master Plan.

(c) Lot layout.

- [1] Where buildings are within 200 feet of public streets, buildings shall be parallel to the street.
- [2] The site design for projects located at street corners shall provide special landscape treatment at street intersections to emphasize the corner.
- [3] Where appropriate, the site design shall address and/or incorporate existing natural features, such as forested areas, streams, and topography.
- [4] The clustering of smaller, visually compatible structures is desired over singular large structures.
- [5] Parking areas shall be located behind principal buildings wherever possible. Where it is necessary to locate parking at the side of building, there shall be a landscape buffer not to exceed four feet in height between the parking area and all public streets. Off-street parking in front of buildings shall only be considered when no other design option is possible.
- [6] On sites with multiple structures, all building entrances shall be connected through sidewalks and/or paths.

(d) Buffers, fences, and walls.

- [1] Landscape buffers and screens shall have diverse elements, including, but not limited to, a combination of trees, shrubs, fences, ornamental masonry, and landscape berms.
- [2] A shrub, border, hedge, wall, fence, earthen berm or other durable landscape barrier, or combination thereof, shall be at least four feet high, but not exceeding eight feet high, and shall be 90% impervious to sight placed along the perimeter of such landscaped strip except in the front yard setback. When a berm or plantings, or a combination thereof, is used as a buffer, it may exceed eight feet in height only upon approval of the Site Review/Zoning and Planning Committee.

(e) Loading and service areas.

- [1] Service areas and refuse containers shall be located at the rear end of the site and screened from public view.
- [2] Ground-mounted or wall-mounted equipment shall be screened and architecturally integrated into the building design.
- [3] Plant materials used for screening must be of a suitable size and density to accomplish screening within five growing seasons.

(f) Landscape and open space.

- [1] Street trees.
 - [a] Street trees shall be located at a maximum distance of 50 feet from one another along interior roads.
 - [b]

Landscaped buffers shall be provided between all public streets and buildings/structures or parking.

[c] All public streets shall incorporate streetscape elements, such as trees, streetlighting, plantings, and signage.

[d] All streets shall incorporate street tree plantings, at minimum.

[2] Amount required.

[a] The landscape plan shall show plants that provide interest in structure, texture, and color located along all public streets and in larger open spaces.

[b] Where appropriate, private site design shall integrate landscaping and open space with the adjacent landscaping, open space, natural feature such as wetlands and forested areas.

[c] In cases where buildings are set back from the street edge, dense landscaping shall be located along the street edge to assist in defining the edge.

[d] Pedestrian trails shall be created along the ravine edge for recreational purposes.

[e] At the request of the applicant, the Town Board may reduce the minimum area devoted to open space. In acting on a request, the Board shall consider these factors: the relationship of the site to adjoining or nearby properties containing publicly owned open space; the known future uses of the adjoining properties; and whether or not a reduction would better achieve the goals of the Comprehensive Plan and the Ledgeview Business Park Master Plan.

[3] Stormwater. In addition to the requirements of Chapter 90, Stormwater Management, the proposed development shall meet the following criteria:

[a] Stormwater management treatment systems shall preserve natural topography, protect natural features, and provide natural landscaping to increase infiltration and reduce runoff.

[b] Shared stormwater systems are encouraged.

[c] Detention basins shall be incorporated into the site design in the form of a landscape element.

[d] Stormwater shall be conveyed to on-site infiltration areas, and these areas shall be designed as site amenities.

[4] Maintenance.

[a] Landscaped elements shall be replaced and maintained in a timely manner.

[b] The property owner or lessee of the building shall be responsible for maintenance of the parking area, accessways, striping, landscaping, screening, and required fences.

- [5] Site plans shall include pedestrian/bike trails through open space areas and along the wetland and ravine edges, with allowances for future connections to trails in adjacent areas.

(g) Off-street parking.

- [1] Off-street parking spaces shall not be used for open storage, sale, or rental of goods, or storage of inoperable vehicles without specific approval by the Planning Commission and Town Board within the PDD-BP approval.
- [2] Parking access.
- [a] The number of entrances and curb cuts shall be minimized. Wherever possible, vehicular access to internal circulation routes and off-street parking shall be through an internal drive.
- [b] Adjacent parking lots shall be linked to provide internal traffic circulation.
- [c] Pedestrian access shall be provided both within the site and between adjacent sites.
- [d] Within the site, clear and safe pedestrian access shall be provided from the parking lot to primary building entrances through raised sidewalks, colored walkways, or a similar treatment.
- [e] Pedestrian circulation shall be coordinated and promoted between adjacent lots.
- [3] Landscaping. Landscape berms, walls, fences, and other landscape forms in parking areas shall be designed to allow pedestrian passage.
- [4] Lighting. All off-street parking lighting shall feature total cut-off luminaries with angles of less than 90°.

(h) Street design.

- [1] Right-of-way standards. Street right-of-way and design shall follow the approximate location of streets as designated in the Ledgeview Business Park Master Plan and shall conform to the following standards:

Street Type	Right-of-Way'	Curb to Curb	Driving			On-Street Parking	Terrace Width	Sidewalk Width
	Width (feet)	Width (feet)	Landscaped Median (feet)	lane Width (feet)	Bike Lane			
Eastern arterial	106	76	14	12	Yes	No	8	6
Regional arterial-two-lane	96	40	None	11	No	No	21	6
Regional arterial-	96	66	14	11	No	Yes	8	6

Street Type	Right-of-Way ¹	Curb to Curb	Driving			On-Street Parking	Terrace Width	Sidewalk Width
	Width (feet)	Width (feet)	Landscaped Median (feet)	lane Width (feet)	Bike Lane			
four-lane								
Light industrial/ big box commercial	60	28	None	12	No	No	8	6
Corporate campus	80	50	14	11	Yes	No	9	6
Village Center Type 1	78	38	None	11	No	Yes	8	13
Village Center Type 2	90	48	None	11	Yes	Yes	8	13

NOTES:

¹ Right-of-way includes the widths of the driving area, parking area, curbs, terraces (between sidewalk and street), and sidewalks.

[2] Public space of street.

[a] Pathways shall connect all public building entrances and adjacent sidewalks.

[b] Street and sidewalk lighting shall be of a complementary style and color scheme, complementing the theme of the business park, as depicted in the Ledgeview Business Park Design Guidelines.

- (2) Within the Highway Commercial District, the PDD-BP development design shall achieve the following additional standards:
 - (a) Wherever possible, fueling pumps shall be located behind or to the side the principal structure, with the intent of locating the principal building close to public streets.
 - (b) The design of fueling pump islands shall be architecturally integrated with other on-site structures using similar colors, materials, and details.
 - (c) Drive-through elements shall be architecturally integrated into the building rather than appearing to be applied or stuck on to the building.
 - (d) The minimum area devoted to open space shall be 15% of the district.
- (3) Within the Light Industrial District, the PDD-BP development design shall achieve the following additional standards:
 - (a) Whenever practicable, industrial buildings shall have an office component fronting county arterials. This office facade shall be subdivided and proportioned using

architectural features such as windows, entrance features, arcades, porches, or treillage with vines along no less than 50% of the facade.

- (b) No single establishment shall exceed a building footprint of 150,000 square feet as defined by the exterior walls. Any office component shall not count towards the 150,000 square feet.
 - (c) The minimum area devoted to open space shall be 25% of the district.
- (4) Within the Corporate/Support District, the PDD-BP development design shall achieve the following additional standards:
- (a) Structures shall include high-quality architecture, establishing an attractive impression for the gateway viewshed into the Town of Ledgeview. The structures shall exhibit high-quality style, construction, materials, and landscaping. High-quality building materials, such as brick, native stone or similar materials shall be used.
 - (b) The minimum area devoted to open space shall be 40% of the district.
- (5) Within the Big Box District, the PDD-BP development design shall achieve the following additional standards:
- (a) Parking areas.
 - [1] All parking areas shall be shared spaces for the entire Big Box District.
 - [2] All parking areas shall include parking accommodations for bicycles at a point conveniently close to the pedestrian/sidewalk areas and main entry of buildings. At least one bicycle stall per 10 automobile parking stalls shall be required.
 - [3] Off-street parking areas shall be on the side and rear of buildings, partially or completely screened from public rights-of-way. Off-street parking in front of buildings shall only be considered when no other design option is available or possible due to topography, natural features, or other such features.
 - [4] The primary entry to buildings shall have limited adjacent parking to encourage pedestrian activity.
 - [5] Developments shall have a designated maximum number of parking spaces.
 - [6] The maximum number of parking spaces for each use shall be no greater than the minimum number of spaces for each use identified in § ~~135-204~~ of the Code of the Town of Ledgeview. The exact number of spaces shall be determined by the Town Board.
 - [7] Parking lots may be allowed to include reserve parking areas that allow for future expansion if additional parking is necessary. A reserve parking area shall have future drive lanes and interconnectivity identified.
 - [8] A reserve parking area shall be held as open green space. The green space may exceed 25% until such time that the parking lot is needed and developed or determined unnecessary and developed for another use that is approved by the Town of Ledgeview.

[9]

Parking areas shall have at least 10% landscaped green space within the parking area to include a variety of grass, plants, vegetation, and the required one tree for every 250 square feet of landscaped surface. Parking lot landscape islands shall be a minimum of eight feet wide (inside dimension) and each shall contain one tree.

[10] Parking lots adjacent to other developments or streets shall be screened by wall, fence, and/or mounding. Landscaped berms, fences, walls, or the combination thereof shall not exceed 42 inches in height and shall be designed to allow pedestrian passage.

(b) The minimum area devoted to open space shall be 15% of the district.

(6) In case of multi-phase development, each phase of the development, whether standing independently or in conjunction with existing developed or proposed future contiguous phases, shall meet all the requirements of this article.

§ 135-258. Conditional uses.

- A. All uses that meet the intents of the district in which it is located may be conditionally permitted upon obtaining all necessary approvals under this article. These uses are subject to the regulations of this article and the approved application, and shall meet the spirit and intent of the Ledgeview Business Park Master Plan.
- B. Each use within the PDD-BP has unique characteristics and the interactions of mixed uses with existing adjacent uses shall be assessed during the approval process. Each use shall be allowed by issuance of a conditional use permit pursuant to the requirements of § 135-251 of the Code of the Town of Ledgeview. In addition to any applicable standards set forth in § 135-251, the following issues shall be addressed:
 - (1) Location of stockpiles, processing areas, storage.
 - (2) Fencing of processing, storage, and shipping areas.
 - (3) Exterior lighting.
 - (4) Noise, vibration, and odor.
 - (5) Hours of operation.
 - (6) Traffic impacts.
 - (7) Litter, dust, and emission control.
 - (8) Water/sewer requirements.
- C. Mix of uses. A mix of different types of uses are encouraged in each of the districts. Each use shall meet the intents of the district in which it is located, and each use shall support the operation of uses within the district.
- D. Prohibited uses. The following categories of uses are not appropriate for any district within the PDD-BP.
 - (1) Residential uses.

- (2) Agricultural uses.
- (3) Uses that may be permitted within the Heavy Industrial District.
- (4) Privately owned commercial uses that may be permitted within the Conservancy District.
- (5) Cemeteries and similar uses.
- (6) Sexually oriented adult entertainment establishments.
- (7) Off-site signage.

E. District intents.

- (1) Light Industrial. This district is a collection of employment-focused uses that do not negatively affect adjacent environmentally sensitive and residential areas. The uses are within buildings that shall be designed to create an attractive frontage to Interstate 43 and county arterials. Stockpiles, processing areas, and open storage shall not be visible from Interstate 43 and county arterials. Uses may be regularly served by large trucks. Uses that are sensitive to truck traffic and the noise and operation of light industrial uses are not appropriate for this district. Only educational, government, or social service uses directly connected to light industrial, distribution, or warehousing uses are appropriate.
- (2) Highway Commercial. This district is a collection of convenience uses for vehicular traffic along Interstate 43 and county arterials. The uses are within buildings that shall be oriented to the street, designed to create an attractive frontage to Interstate 43 and county arterials, and create a positive gateway impression for the Town of Ledgeview and the Green Bay region. The uses service both passenger vehicles and trucks. Auto-oriented retail service uses, such as fueling stations, convenience stores, drive-in restaurants, fast-food restaurants, and hotel/motel, would be appropriate uses. Only limited outdoor storage not visible from Interstate 43 and county arterials shall be allowed.
- (3) Corporate/Support. This district is a collection of regional employment uses, primarily located in office buildings, supported by very light industrial, distribution, or warehousing uses. The uses are within buildings that are designed to create visual appeal and landscaped setbacks with no outdoor storage. Uses and building design create an attractive frontage to Interstate 43 and county arterials and create a positive gateway impression for the Town of Ledgeview and the Green Bay region. Retail uses that support office and very light industrial uses, such as cafes, bookstores, banks and office equipment, would be appropriate uses. Medical facilities, government facilities, and adult educational facilities such as college, vocational, or trade schools, are appropriate uses. Appropriate uses are typically associated with larger structures surrounded by extensive open space and landscaping.
- (4) Big Box Commercial. This district is a collection of primarily retail uses that support the needs of nearby residential areas and employment centers, and that capture a portion of regional retail needs. High-traffic, regional uses are appropriate further from county arterial roadways. All indoor commercial uses and indoor public and civic uses are appropriate. Only limited outdoor storage not visible from Interstate 43 and county arterials shall be allowed.

F. Use standards. All uses are subject to the following standards.

- (1)

Nuisance. No use shall be established, maintained, or conducted in any PDD-BP District that causes any of the following conditions.

- (a) Dissemination of excessive noise, vibration, odor, dust, smoke, observation of gas or fumes or other atmospheric pollutants beyond the boundaries of the immediate site of the building in which such use is conducted.
 - (b) Hazard of fire or explosion or other physical hazard to any person, building, or vegetation.
 - (c) A harmful discharge of waste material.
 - (d) Radiation or interference with radio and television reception beyond the immediate boundaries of the immediate site of the building in which such use is conducted.
 - (e) Glare or heat that adversely affects adjoining properties.
- (2) Outdoor uses.
- (a) Outside trash bins shall be screened from view by use of solid screening or fencing material.
 - (b) Outdoor machinery shall not be located within 75 feet of any noncommercially zoned property. Outdoor machinery shall be located a minimum of 75 feet from the adjoining major road.
 - (c) Entertainment outside of a completely enclosed building shall require an outdoor entertainment permit.
- (3) Open storage.
- (a) Open storage of commodities and materials shall be conditionally permitted as an accessory use, provided that such open storage shall:
 - [1] Be screened from view from any street or any adjacent residentially zoned lot with solid screening (including solid entrance and exit gates) not less than six feet nor more than eight feet in height except for motor vehicles in operable condition;
 - [2] Be located behind the required building setback lines;
 - [3] Be located further from the front building setback line than the principal building;
 - [4] Observe all yard requirements;
 - [5] Have a maximum height not to exceed the height of the main building;
 - [6] Not exceed twenty-percent coverage of the lot area that lies behind the building setback lines;
 - (b) The standards referred to in Subsection A above shall not apply to new or used automobile dealer facilities that have outdoor display of vehicles for sale. Such display of vehicles shall be only by conditional use permit as an accessory use to a dealer facility which shall be approved as part of the overall approval of a site plan for an automobile dealer facility.

- (c) The standards referred to in Subsection A above shall not apply to a nursery or greenhouse.
- (d) Nothing in this section shall be deemed to prohibit temporary open storage of merchandise for display and sale during a sidewalk sale or farmers market.
- (e) Sale of fruit, vegetables, and other food products is permitted, provided all display of products shall be inside a completely enclosed building and such uses are carried on in connection with another use permitted in the district.

§ 135-259. Procedure for approval.

The procedure for approval of a PDD-BP development project shall consist of two phases:

- A. Preapplication conference. Prior to filing an application for PDD-BP, the applicant of the proposed PDD-BP shall arrange a conference with Town staff. The primary purpose of the conference shall be to provide the applicant with an opportunity to gather information and obtain guidance as to the general suitability of the proposal for the area for which it is proposed and its conformity the provisions of this chapter before incurring substantial expense in the preparation of plans, surveys, and other data.
 - (1) Preapplication submittal. The applicant shall submit the information described in § 135-260, Preapplication conference submittals.
 - (2) Public information meeting. At the conclusion of the preapplication conference(s) with Town staff, the Zoning and Planning Committee may hold a public information meeting on the proposed PDD-BP development and, if the meeting occurs, notice shall be provided as required by law for all zoning code amendments.
- B. Application for approval.
 - (1) Application submittal. The applicant shall submit an application, as described in § 135-261, Application for approval submittal, within 12 months of the date of the preapplication conference. The Zoning Administrator or designee shall inform the Zoning and Planning Committee of the application and establish a date for a meeting for the applicant and the Zoning and Planning Committee.
 - (2) Public hearing. The Zoning and Planning Committee shall hold a public hearing on the PDD-BP application, and notice shall be provided as required by law for all zoning code amendments.
 - (3) Committee recommendations. The Zoning and Planning Committee, after such discussions as may be required with the applicant and input from the public hearing, shall report, in writing, such proposed development to the Town Board, together with its recommendation for either approval or disapproval of the same. Such report and recommendation of the committee shall be made to the Town Board no later than four months from the date of the filing of the application with the Zoning Administrator or designee and receipt of any required supportive information. A recommendation of approval by the committee shall in no way be binding on the Town Board.
 - (4) Public hearing. The Town Board then shall have 60 days after receipt of the Zoning and Planning Committee recommendation to hold a public hearing. Notice shall be provided as required by law for all zoning code amendments.

- (5) Town Board approval. The Town Board shall have 60 days post-hearing in which to make a decision regarding approval.
- C. Validity of PDD-BP. A PDD-BP project approved by the Town Board shall be valid for a period of six months. If a developer does not begin a project proposed within a PDD-BP within the approved time frame, the Town of Ledgeview shall exercise the following options:
 - (1) Extend the existing PDD-BP approval for another six months;
 - (2) Extend the existing PDD-BP approval for another six months with amendments; or
 - (3) Terminate any granted approvals and conditions.
- D. Amendments.
 - (1) The Zoning and Planning Committee may authorize minor changes in the location, setting, and heights of buildings and structures without additional hearing if required by engineering or other circumstances not foreseen at the time the final plan was approved. No minor change authorized by this subsection may cause any of the following:
 - (a) A change in the use or character of the development.
 - (b) An increase in overall coverage of structures.
 - (c) An increase in the intensity of use.
 - (d) An increase in the problems of traffic circulation and public utilities.
 - (e) A reduction in approved open space.
 - (f) A reduction of off-street parking and loading spaces.
 - (g) A reduction in required pavement widths.
 - (2) All other changes in use, rearrangement of lots, blocks, and building's tracts, every change in the provision of open space, and changes other than listed above must be reviewed and approved by the Zoning and Planning Committee and Town Board.
 - (3) Amendments may be made if they are shown to be required by changes in Town policy.

§ 135-260. Preapplication conference submittal.

- A. Information and fee. Proposed project information and development plans shall be submitted to the Zoning Administrator or designee with a written request for Town staff conference and review. The project information shall contain names, mailing addresses, and telephone numbers of all owners and developers and a description of the development site. The fee prescribed in the Town of Ledgeview fee schedule shall accompany the preapplication.
- B. Information required. The following documents and information shall be provided by the applicant in adequate detail to satisfy Town staff. Where certain factors such as the size of the proposed district, its relationship to an adjacent neighborhood, land use, or other similar factors may render certain components irrelevant and to that extent such components need not be addressed.

- (1) A statement describing how the proposed PDD-BP satisfies the intent of the Zoning Ordinance and is consistent with the applicable goals and objectives of the Town's Comprehensive Plan, Ledgeview Business Park Master Plan, and the Code of the Town of Ledgeview. If one or more characteristics of the PDD-BP delineated in § 135-257, Criteria for approval, are missing, the applicant shall justify why all of the characteristics cannot or should not be provided.
- (2) An accurate map of the project area drawn at a scale of no less than one inch equals 200 feet, showing the nature, use, and character of abutting properties, prepared by a registered surveyor.
- (3) Proposed project information drawn at a scale of no less than one inch equals 200 feet, showing the following information in sufficient detail to make possible the evaluation of the criteria as set forth in § 135-257, Criteria for approval:
 - (a) Tract boundaries and a statement of the total acreage of the tract.
 - (b) Significant physical features within the tract, including existing two-foot contours, watercourses, drainage, ponds, lakes, wetlands, floodplains, floodways, environmentally sensitive areas, and proposed major changes in those features.
 - (c) Zoning district(s) on and within 400 feet adjacent to the proposed project.
 - (d) Property lines, if any, within the proposed project.
 - (e) The general allocation of uses to each parcel in terms of office, retail, light industrial, open spaces, parks, recreation, and any other use category proposed by the applicant.
 - (f) Location, lot coverage, square footage, and height of existing buildings.
 - (g) Proposed location, lot coverage, square footage, and height of all structures and associated parking areas.
 - (h) Existing rights-of-way and easements that may affect development patterns.
 - (i) Proposed circulation systems (pedestrian, bicycle, auto, mass transit), designated by Streetscape Classification of the Ledgeview Business Park Design Guidelines and how they relate to the existing network outside this site.
 - (j) Location of on-street and off-street parking, driveways, driveway access roads, loading facilities, waste collection areas, aboveground utilities, screening, and fencing.
 - (k) The location of existing and proposed sanitary sewer and storm lines, water mains, fire hydrants, and lighting.
 - (l) Location of signage.
 - (m) The location of recreational and open space areas and areas reserved or dedicated for public uses, such as gateways, public plazas, water features, parks, etc.
 - (n) A description of the proposed system for drainage.
 - (o) General landscape treatment.

- (4) Appropriate statistical data on the size of the development, ratio of various land uses, economic analysis of the development and any other data pertinent to the evaluation under the criteria of § 135-257, Criteria for approval.
- (5) A statement describing the types and contemplated intensity of use, i.e., number of prospective tenants in office, commercial, and industrial development. The preapplication shall show how each proposed land use satisfies the intents of the districts in which each is located and how each complies with the requirements of § 135-258, Conditional uses.
- (6) Architectural drawings and sketches illustrating the design and character of proposed structures.
- (7) General outline of intended organization structure related to the property owner's association, deed restrictions, and private provision of common services, if any.
- (8) In the case of plans that call for development in stages, a map at an appropriate scale showing the successive stages.
- (9) An economic feasibility and impact report may be required by the Town Board to provide satisfactory evidence of the project's economic feasibility, of available adequate financing and of its not adversely affecting the economic prosperity of the Town or the values of surrounding properties.

§ 135-261. Application for approval submittal.

Petition for approval. The applicant shall file with the Zoning Administrator a petition executed by the owner of the property to be developed, or his/her agent, for approval, stating that he seeks to develop such property under the provisions of this article. Appropriate supporting documents and maps, as required in Subsection B, Information required, herein, shall be filed with the petition.

- A. The fee prescribed in the Town of Ledgeview fee schedule shall accompany the petition for approval.
- B. Information required:
 - (1) A statement describing how the proposed PDD-BP satisfies the intent of the Zoning Ordinance and is consistent with the applicable goals and objectives of the Town's Comprehensive Plan, Ledgeview Business Park Master Plan, and the Code of the Town of Ledgeview. If one or more characteristics of the PDD-BP delineated in § 135-257, Criteria for approval, are missing from an application, the applicant shall justify why all of the characteristics cannot or should not be provided.
 - (2) A statement showing the starting and completion dates of the project.
 - (3) The names, mailing addresses, and telephone numbers of all owners and developers of the development site. In the event of a change in owners or developers during the consideration of the application or during the project construction period, notice shall be provided to the Town as soon as practicable of the information required herein for the new owner or developer.
 - (4) An accurate map of the project area drawn at a scale no less than one inch equals 100 feet and showing the nature, use, and character of abutting properties, prepared by a registered surveyor.

- (5) An accurate topographical map showing topographical data at two-foot intervals and extending within 100 feet beyond the exterior boundaries of such site. Such map shall contain all available utilities, including drainage and the capacities thereof, and high-water elevations along rivers and waterways.
- (6) A statement describing the types and contemplated intensity of use, i.e., number of prospective tenants in office, commercial, and industrial development. The application for approval shall show how each proposed land use satisfies the intents of the districts in which each is located and how each complies with the requirements of § 135-258, Conditional uses.
- (7) A statistical table showing the size of the site in square feet, size of proposed development in square feet, ratio of various land uses, the acreage (exclusive of public streets) of all proposed land uses and open areas (both in square feet and as a percentage of the project area), total amount of paved area in square feet, and proposed development intensities.
- (8) A statement describing the development intensity and operation, including the following information:
 - (a) Development intensity, e.g., number of prospective tenants in office, commercial and industrial development.
 - (b) Square footage of buildings.
 - (c) Square footage of offices, production areas, and the proposed number of employees in each such area.
 - (d) Details of proposed use or uses and manner of operation.
 - (e) Approximate costs of structures.
 - (f) Such other design data as may be needed to evaluate the project.
- (9) A statement describing the open space intensity and operation, including the following information:
 - (a) Amount of required and provided landscaped open space in square feet and as a percentage of the site.
 - (b) Total trees required and provided, indicating on-site and off-site contribution.
- (10) General outline of intended organization structure related to the property owner's association, deed restrictions, and private provision on common services, if any.
- (11) Municipal services that may be required to serve the site.
- (12) A parking and loading needs study that demonstrates parking needs and requirements and includes strategies for dealing with these needs and requirements, including phasing plans, parking requirements and alternatives as provided in Article XXI, Off-Street Parking Requirements, as well as transportation demand management strategies.
- (13) Strategies for establishing shared stormwater management facilities, off-site stormwater management facilities, and the proposed phasing of the establishment of stormwater management facilities.

- (14) In the case of plans that call for development in stages, a map at an appropriate scale showing the successive stages.
- (15) A development plan of the proposed project drawn at a scale of no less than one inch equals 100 feet and showing the following information in sufficient detail to make possible the evaluation of the criteria as identified in § 135-257, Criteria for approval.
- (a) Tract boundaries and a statement of the total acreage of the tract.
 - (b) Significant physical features within the tract, including existing two-foot contours, watercourses, drainage, ponds, lakes, wetlands, floodplains, floodways, environmentally sensitive areas, and proposed major changes in those features.
 - (c) Zoning district(s) on and within 400 feet adjacent to the proposed project.
 - (d) Property lines, if any, within the proposed project.
 - (e) All contemplated land uses within the tract.
 - (f) Location, lot coverage, square footage, and height of existing buildings.
 - (g) Proposed location, lot coverage, square footage, and height of all structures and associated parking areas. For commercial and light industrial structures, square footage of offices, production areas, and the proposed number of employees in each such area.
 - (h) Existing rights-of-way and easements that may affect development patterns.
 - (i) Proposed circulation systems (pedestrian, bicycle, auto, mass transit), designated by Streetscape Classification of the Ledgeview Business Park Design Guidelines and how they relate to the existing network outside this site.
 - (j) Location of on-street and off-street parking, driveways, driveway access roads, loading facilities, waste collection areas, aboveground utilities, screening, and fencing.
 - (k) The location of existing and proposed sanitary sewer and storm lines, water mains, fire hydrants, and lighting.
 - (l) Location of signage.
 - (m) The location of recreational and open space areas and areas reserved or dedicated for public uses, such as gateways, public plazas, water features, parks, etc.
 - (n) A description of the proposed system for drainage.
 - (o) General landscape treatment, including a statement regarding snow removal methods that will not harm or kill landscaping.
 - (p) Indication of any site or building design methods used to conserve energy.
- (16) A picture book of the development laid out in a format similar to the Ledgeview Business Park Design Guidelines. At a minimum, the picture book shall include the following information:
- (a)

Development concept. Provide a brief summary and graphic renditions identifying how the project addresses a unified character, preserved open spaces, gateway features, attractive appearance from Interstate 43 and county arterials, utilities, interconnected streets and transportation and path networks, a mixture of uses and use types, redevelopment, site planning that respects terrain, and clear boundaries with rural areas.

(b) Architectural styles section.

- [1] Architectural drawings of all buildings and structures and sketches showing typical floor plans of proposed structures.
- [2] A scaled, colored elevation of the front, side, and rear facade of each structure. Identify specifically the elevations that face Interstate 43 and county arterials, as appropriate.
- [3] Identify all roof-, wall-, and ground-mounted equipment and landscaping/screening.

(c) Materials, colors, and textures section.

- [1] Identify building materials and colors on all sides and roof of structure.
- [2] Provide color details and description for each material and material combination.
- [3] Provide samples for complex or new materials.

(d) Roof form and pitch section.

- [1] Identify roof pitch.
- [2] Identify roof materials and colors.
- [3] Provide samples for complex or new materials.

(e) Architectural ornamentation section.

- [1] Identify location of individual architectural ornamentations, including size, colors, and types.
- [2] Provide scaled color rendition of architectural ornamentation.
- [3] Identify signage locations and size in relationship to ornamentation.

(f) Facade treatments section.

- [1] Identify materials used for specific facade treatments.
- [2] Provide a sketch, rendition, or photo of each specific treatment.

(g) Blocks and lots section.

- [1] Provide a site plan identifying block and lot layout in relationship to existing and proposed buildings.
- [2] Identify the uses on each lot and placement of buildings.

[3] A rendition of the layout is recommended.

(h) Sidewalks and pedestrian paths section:

[1] Identify the interconnected layout of all sidewalks and pedestrian paths on a site plan.

[2] Provide rendition-identifying relationship between sidewalks, parking areas, streets, buildings, and existing developments.

[3] Provide a scaled drawing identifying dimensions of sidewalks.

[4] Identify materials, textures, and colors used in surface.

(i) Streets section.

[1] Identify the interconnected layout of all streets on a site plan.

[2] Provide rendition-identifying relationship between sidewalks, parking areas, streets, buildings, and existing developments.

[3] Provide a scaled drawing identifying dimensions of sidewalks.

[4] Identify materials, textures, and colors used in surface.

(j) Landscape section.

[1] Provide landscape plan(s) including specification of plant material, location, and size.

[2] Identify the interconnection of private open space and landscaping, public open space and landscaping, and site and regional environmental features.

(k) Signage section.

[1] Provide scaled details of all signage.

[2] Identify color, type, lighting source, materials, and size.

[3] Identify how signage color, size, and style are compatible with building, sidewalk, street, and adjacent signage and buildings.

[4] Identify if signage is temporary or permanent.

(l) Lighting section.

[1] Identify lighting source.

[2] Identify pole and light style, color, and material.

[3] Provide graphic detail of lighting style and its relationship with the buildings, street, and sidewalk.

(m) Open space section.

[1] Identify location.

- [2] Identify the interconnectivity and access to sidewalks, streets, and building in a site plan and color renditions.

(n) Parking areas section.

- [1] Identify if development includes areas for shared parking.
- [2] Provide a scaled site plan identifying drive lanes, parking stalls, and connections to streets and sidewalks.
- [3] Provide dimensions for parking stalls and drive lanes.
- [4] Identify reserve-parking areas.
- [5] Identify required landscaping.
- [6] The site plan must include a chart identifying the maximum allowed number of parking spaces and the existing number of parking spaces and proposed number of parking spaces if reserve-parking areas are built.
- [7] Label landscaping areas and identify landscaping materials used (tree types and grass flower species).

- (17) An economic feasibility and impact report may be required by the Town Board to provide satisfactory evidence of the project's economic feasibility, of available adequate financing, and of its not adversely affecting the economic prosperity of the Town or the values of surrounding properties.

- (18) Any additional pertinent data, statements, drawings, or plans that may be required by the Zoning and Planning Committee or the Town Board.

§ 135-262. through § 135-269. (Reserved)

Article XXIX. Wind-Energy Facility Regulation

[Added 8-21-2007 by Ord. No. 2007-014; amended 12-5-2016 by Ord. No. 2016-021]

§ 135-270. Purpose.

The purpose of this article is to provide standards for the issuance of conditional use permits for wind-energy facilities in the Town of Ledgeview. The State of Wisconsin encourages the proliferation of clean, renewable energy resources; however, despite the potential benefits of wind-energy facilities and their capacity for producing clean, renewable energy, large wind-energy facilities present serious potential health and safety hazards due to the nature of their size, motion and noise. This article is designed to protect public health and safety as well as impose other reasonable regulations for the general public welfare that do not significantly increase the cost of wind-energy facilities, do not decrease the efficiency of wind-energy facilities or will allow for alternative systems of comparable cost and efficiency in conformity with § 66.0401, Wis. Stats.

§ 135-271. Definitions.

As used in this article, the following terms shall have the meanings indicated:

DECOMMISSIONING

Removal of all of the following:

- A. The aboveground portion of a wind-energy system, including wind turbines and related facilities, except for access roads if removal has been waived by the property owner.
- B. All belowground facilities, except the following:
 - (1) Underground collector circuit facilities.
 - (2) Those portions of concrete structures four feet or more below grade.

KARST FEATURE

An area or surficial geologic feature subject to bedrock dissolution so that it is likely to provide a conduit to groundwater and may include areas with soils less than 60 inches thick over bedrock, caves, enlarged fractures, mine features, exposed bedrock surfaces, sinkholes, springs, seeps, swallets, and depressional areas with no surface drainage.

MAXIMUM BLADE TIP HEIGHT

The nominal hub height plus the nominal blade length of a wind turbine, as listed in the wind turbine specifications provided by the wind turbine manufacturer. If not listed in the wind turbine specifications, "maximum blade tip height" shall mean the actual hub height plus the blade length.

NONPARTICIPATING PROPERTY

Real property that is not a participating property.

NONPARTICIPATING RESIDENCE

A residence located on nonparticipating property.

OCCUPIED COMMUNITY BUILDING

A school, church or similar place of worship, day-care facility or public library.

OWNER

- A. A person with a direct ownership interest in the wind-energy system, regardless of whether the person was involved in acquiring the necessary rights, permits and approvals or otherwise planning for the construction and operation of a wind-energy system.
- B. At the time a wind-energy system is being developed, a person who is acting as a wind-energy system developer by acquiring the necessary rights, permits and approvals or otherwise planning for the construction and operation of a wind-energy system, regardless of whether the person will own or operate the wind-energy system.

RESIDENCE

An occupied primary or secondary personal residence, including a manufactured home as defined in § 101.91(2), Wis. Stats., a hospital, a community-based residential facility, a residential care apartment complex or similar facility, or a nursing home, a temporarily unoccupied primary or secondary personal residence.

SHADOW FLICKER

A pattern of moving shadows cast on a residence or an occupied community building caused by sunlight shining through moving wind turbine blades resulting in alternating changes in light intensity.

TOTAL HEIGHT

When referring to a wind turbine, the distance measured from ground level to the blade extended at its highest point.

WIND TURBINE

A wind-energy conversion system which converts wind energy into electricity through the use of a wind turbine generator, and includes the turbine, blade, tower, base and pad transformer, if any, provided that such a system shall only be a wind turbine for purposes of this article if it both has a total height greater than 170 feet and nameplate capacity of greater than 100 kilowatts.

WIND-ENERGY FACILITY, LARGE

An electricity-generating facility consisting of one or more wind turbines under common ownership or operating control, and includes substations, meteorological towers, cables/wires and other buildings accessory to such facility, whose main purpose is to supply electricity to off-site customers. It includes substations, meteorological towers, cables and wires and other buildings accessory to such facility.

WIND-ENERGY SYSTEM

The meaning given in § 66.0403(1)(m), Wis. Stats., and is used to convert wind energy to electrical energy.

WIND-ENERGY SYSTEM, SMALL

A wind-energy system that is used to generate electricity with a total height of 170 feet or less and that has a total installed nameplate capacity of 300 kilowatts or less and that consists of individual wind turbines that have an installed nameplate capacity of not more than 100 kilowatts.

§ 135-272. Applicability.

This article is adopted and made applicable within the Town pursuant to the provisions of § PSC 128.10, Wis. Adm. Code. This article shall apply to all large wind-energy facilities. Large wind-energy facilities for which a required permit has been properly issued prior to the effective date of this article shall not be required to meet the requirements of this article; provided, however, that any such preexisting large wind-energy facility which does not provide energy for a continuous period of 12 months shall meet the requirements of this article prior to recommencing production of energy. No substantial modification or alteration to an existing large wind-energy facility shall be allowed without full compliance with this article.

§ 135-273. Permit application.

Applicants for a conditional use permit for a wind-energy facility, in addition to any other information generally required for conditional use permits, shall submit the following:

- A. The name, address, legal corporate status and telephone number of the applicant responsible for the accuracy of the application and site plan.
- B.

The name, address, legal corporate status and telephone number of the owner of the proposed large wind-energy facility. Should a permit be issued, this information shall be immediately updated with the Town Clerk upon any change during the life of the permit, and failure to do so shall be considered a violation of the conditional use permit.

- C. A signed statement indicating that the applicant has legal authority to construct, operate, and develop the wind-energy system(s) under state, federal and local laws and regulations, including Federal Aviation Administration (FAA), state and local building codes.
- D. The applicant shall also provide copies of the certificate of authority from the Public Service Commission of Wisconsin and the Public Service Commission of Wisconsin Environmental Assessment, if applicable.
- E. A description of the number and kind of wind-energy facilities to be installed.
- F. A description of the height and design of the facility, including a cross section, elevation, and diagram of how the wind-energy facility will be anchored to the ground.
- G. A site plan, drawn to a scale of not less than one inch to 50 feet, showing the parcel boundaries and a legal description, two-foot contours for the subject site and 100 feet beyond the subject site, Karst features, support facilities, access, proposed landscaping and fencing.
- H. A detailed overview map, including parcel lines, of the precise location for all large wind turbine towers as part of the proposed project in the Town of Ledgeview.
- I. Photo exhibits visualizing the proposed wind-energy facility.
- J. A statement from the applicant that all wind-energy facilities will be installed in compliance with manufacturer's specifications, and a copy of those manufacturer's specifications.
- K. A copy of the lease with the landowner if the applicant does not own the land upon which the proposed large wind-energy facility(ies) is proposed to be located. A statement from the landowner of the leased site that he/she will abide by all applicable terms and conditions of the conditional use permit, if approved.
- L. A statement indicating what hazardous materials will be used and stored on the site and how those materials will be stored.
- M. A statement describing all lighting for the large wind-energy facility, including an explanation demonstrating that lighting is the minimum necessary for safety or security purposes as well as a description of all techniques used to minimize glare. A signed copy of the Federal Aviation Administration (FAA) approval shall be supplied to the Town.
- N. Any other information requested by the Town Board deemed reasonably necessary to evaluate the conditional use application, including, but not limited to, an avian risk study.

§ 135-274. Preapplication proceedings.

- A. Preapplication notice.
 - (1) Preapplication notice. At least 90 days before an owner files an application to construct either a large wind-energy facility or a small wind-energy system, the applicant shall use

commercially reasonable methods to provide written notice of the planned wind-energy system to all of the following and shall provide the Town with confirmation of such notice:

- (a) All landowners within one mile of a planned wind turbine host property.
 - (b) The Town of Ledgeview.
 - (c) Emergency first responders and air ambulance service providers serving the Town.
 - (d) All state and federal regulatory agencies identified in § PSC 128.105(1), Wis. Adm. Code.
- (2) Preapplication notice requirements. The owner shall include all of the following information in the preapplication notice provided in Subsection A(1) hereof:
- (a) A complete description of the proposed wind-energy system, including the number and size of the planned wind turbines.
 - (b) A map showing the planned location of all wind-energy system facilities.
 - (c) Contact information for the owner.
 - (d) A list of all potential permits or approvals the owner anticipates will be necessary for the construction of the proposed wind-energy system.
 - (e) Whether the owner is requesting a joint application review process with the Commission and the Town under § PSC 128.30(7), Wis. Adm. Code.
- B. Preapplication public meeting. An applicant for a large wind-energy facility may request, at the applicant's expense, a preapplication public meeting with the Town Board and Planning Commission, at which no official Town action shall be taken. A preapplication public meeting may be held in order for the applicant to:
- (1) Inform Town residents of the project.
 - (2) Provide informational displays of the areas of the Town that meet the requirements of the Town ordinance and are likely locations for a wind turbine tower.
 - (3) Provide answers to Town residents' questions.
 - (4) Solicit input from Town residents regarding locations for wind turbine towers within the areas of the Town that meet the requirements of the Town ordinance, so that exact locations of wind turbine towers may be identified on the conditional use application by the applicant when submitted to the Town.
- C. Town residents not able to attend the meeting shall have the option to provide written comments or questions to the applicant.
- D. In no instance shall this meeting take the place of a formal public hearing for the conditional use permit.

§ 135-275. General conditions.

The following conditions shall be attached to all conditional use permits under this section:

- A. A building permit shall be obtained from the Town Building Inspector prior to construction. Separate permits shall be required for each wind turbine.
- B. Building permit issuance shall be conditioned upon submittal and approval of a site grading, erosion control and stormwater drainage plan by the Town Engineer.
- C. Any other required permits to construct and operate a wind-energy facility must be obtained.
- D. Offices, vehicle storage, or other outdoor storage shall not be permitted. One accessory storage building may be permitted per wind turbine if specifically authorized by the Town Board. All accessory structures shall be constructed with a precast concrete roof to withstand ice that may fall off the towers. The size and location of any proposed accessory building shall be shown on the site plan. No other structure or building is permitted unless used for the express purpose of the generation of electricity.
- E. A certificate of insurance with a liability coverage of a minimum of \$2,000,000 per incidence, per occurrence, shall be filed with the Town Clerk prior to construction, naming the Town of Ledgeview as additional insured. Each renewal period will require a copy of the certificate of insurance be provided to the Town of Ledgeview. An expired insurance certificate or an unacceptable liability coverage amount is grounds for revocation of the conditional use permit.
- F. An irrevocable letter of credit, bond, or cash escrow, held in trust in favor of the Town of Ledgeview, to recover the costs associated with removal of a use terminated wind generator and appurtenant facilities shall be filed with the Town Clerk prior to construction. The amount of the irrevocable letter of credit, bond, or cash escrow shall be set by the Town Board prior to conditional use permit approval and shall remain in effect until released by the Town or the wind-energy facility is completely dismantled and removed from the site.
- G. Construction shall commence within 12 months of conditional use permit issuance and be completed within 36 months of conditional use permit issuance, unless an alternate timeline is approved by the Town Board. Upon request of an applicant, and for good cause, the Town Board may grant an extension of time.
- H. Copies of all as-built plans, including structural engineering and electrical plans for all towers following construction, to the Town to use for removal of the large wind-energy facility, if the large wind-energy facility owner or its assigns fail to meet the requirements of this article.
- I. The owner of a large wind-energy facility shall defend, indemnify, and hold harmless the Town of Ledgeview and its officials from and against any and all claims, demands, losses, suits, causes of action, damages, injuries, costs, expenses, and liabilities whatsoever, including attorney fees arising out of the acts or omissions of the operator concerning the operation of the large wind-energy facility without limitation, whether said liability is premised on contract or tort.
- J. Any other conditions to ensure safety and a proper land use fit to the surrounding area.

§ 135-276. Design, siting and installation conditions and criteria.

The following design, siting and installation conditions and criteria shall be conditions of the conditional use permit:

- A. Design conditions and criteria.

- (1) Wind turbines shall be painted a nonreflective, nonobtrusive color, such as gray, white, or off-white.
- (2) The blade tip of any wind turbine shall have a minimum ground clearance of 75 feet at its lowest point.
- (3) The design of the buildings and related structures shall, to the extent possible, use materials, colors, textures, screening, and landscaping that will blend the large wind-energy facility to the natural setting and existing environment.
- (4) All landscaping shall be properly maintained, including grass cutting.
- (5) Wind-energy facilities shall not be artificially lighted, except to the extent required by the Federal Aviation Administration.
- (6) No form of advertising visible from any public right-of-way or neighboring property shall be allowed on the pole, turbine, blades, or accessory buildings or facilities associated with the use of the large wind-energy facility.
- (7) All wind-energy facilities shall be equipped with a redundant braking system. This includes both aerodynamic overspeed controls (including variable pitch, tip, and other similar systems) and mechanical brakes. Mechanical brakes shall be operated in a fail-safe mode. Stall regulation shall not be considered a sufficient braking system for overspeed protection.
- (8) Large wind-energy facilities shall comply with all applicable building, electrical and other codes and standards.
- (9) Electrical controls, control wiring, and power lines shall be wireless or not above the ground except where wind farm collector wiring is brought together for connection to the transmission or distribution network, adjacent to that network.

B. Siting conditions and criteria.

- (1) The owner shall design and construct the wind-energy system using the wind turbine setback distances prescribed in TABLE 1 of § PSC 128.13(1)(a), Wis. Adm. Code, and the provisions of § ~~135-277~~ of this Code.
- (2) The owner shall measure the wind turbine setback distances as a straight line from the vertical center line of the wind turbine tower to the nearest point on the permanent foundation of a building or residence or to the nearest point on the property line or feature, as applicable.
- (3) The owner shall work with the Town and the owners of participating and nonparticipating properties to site wind turbines to minimize individual hardships.
- (4) The owner of a nonparticipating residence or occupied building may waive the applicable wind turbine setback distances prescribed in TABLE 1 of § PSC 128.13(1)(a), Wis. Adm. Code, for those structures to a minimum setback distance of 1.1 times the maximum blade tip height. The owner of a nonparticipating property may waive the applicable wind turbine setback distances prescribed in TABLE 1 of § PSC 128.13(1)(a), Wis. Adm. Code, from a nonparticipating property line.

C. Installation conditions and criteria.

- (1) The applicant shall reimburse the relevant governmental entity (e.g., the Town for Town roads and Brown County for county highways) for any and all repairs and reconstruction to the public roads, culverts, and natural drainageways resulting from the construction of the large wind-energy facility. A qualified independent third party, agreed to by the relevant governmental entity and permittee, and paid for by the permittee, shall be hired to inspect the roadways to be used during construction. This third party shall be hired to evaluate, document, videotape, and rate road conditions prior to the construction of the large wind-energy facility and again within 30 days after the large wind-energy facility project is completed. Any road damage done by the applicant or subcontractors shall be repaired or reconstructed at the applicant's expense.
- (2) Where large wind-energy facility construction cuts through a private or public drain tile field, the drain tile shall be repaired and reconnected to properly drain the site to the satisfaction of the landowner.
- (3) Any recorded access easement across private lands to a large wind-energy facility shall in addition to naming the large wind-energy facility owner as having access to the easement shall also name the Town of Ledgeview as having access to the easement for purposes of inspection or decommissioning with twenty-four-hour advance notice to the property owners and large wind-energy facility owner.
- (4) The owner of a large wind-energy facility shall reimburse the Town of Ledgeview for any and all legal notices, meeting fees, and reasonable fees for consulting, legal advice, and engineering. The Town shall submit copies of all related Town-paid invoices to the large wind-energy facility owner for repayment to the Town.

§ 135-277. Setback requirements for wind turbines.

In addition to the siting conditions and criteria set out in § 135-276B, the following setback requirements shall be conditions of the conditional use permit applicable to each wind turbine:

- A. Inhabited structures. Each wind turbine shall be set back from the nearest inhabited building a distance as prescribed in TABLE 1 of § PSC 128.13(1)(a), Wis. Adm. Code. The Town Board may modify this requirement upon the consent of the owner of the relevant building to decrease the setback. In no instance shall the setback be decreased to less than 1.1 times the total height of the wind turbine. A consent to such modification shall be signed by the impacted property owner(s) and recorded with the property with the Brown County Register of Deeds.
- B. Property lines. Each wind turbine shall be set back from the nearest property line a distance as prescribed in TABLE 1 of § PSC 128.13(1)(a), Wis. Adm. Code. The Board may modify this provision where strict enforcement would not serve the public interest and upon consent of the neighboring property owner impacted by the waiver. A consent to such modification shall be signed by the impacted property owner(s) and recorded with the Brown County Register of Deeds.
- C. Public roads. Each wind turbine shall be set back from the nearest public road right-of-way a distance of no less than 1.1 times the maximum blade tip height. The Town Board may modify this provision where the public interest in erecting the wind turbine is outweighed by the public interest in strict enforcement of this setback.
- D. Communication and utility lines. The large wind-energy facility must meet all utility company setbacks and/or easements as well as the setback provisions prescribed in TABLE 1 of § PSC 128.13(1)(a), Wis. Adm. Code. The owner of the large wind-energy facility is responsible for

contacting the appropriate utility to determine the location of all above the ground and underground utility lines, including, but not limited to, electricity, natural gas, petroleum, propane, cable television, and fiber optic. Utility line and/or easement locations shall be provided to the Town of Ledgeview for verification.

- E. Niagara escarpment ledge face. Due to the significance of the Niagara escarpment ledge face to the character of the Town, the karst features, including, but not limited to, sinkholes and fractured bedrock associated with the Niagara escarpment, the potential for groundwater contamination and impact on nearby wells from blasting, and the potential impact on endangered plants and animals, each wind turbine shall be set back a minimum of 1,500 feet from the Niagara escarpment ledge face. A map depicting this setback from the ledge face is on file with the Town of Ledgeview. This setback may be modified by the Town Board where such modification does not adversely impact the public health or safety and if such modification is necessary to avoid significant increases in the cost of the proposed system or significant decreases in system efficiency, or no alternative system of comparable cost or efficiency can be installed without modification of this setback.

§ 135-278. Noise and vibration requirements.

The following noise and vibration requirements shall be conditions of the conditional use permit:

- A. An owner shall operate the wind-energy system so that the noise attributable to the wind-energy system does not exceed 50 dBA during daytime hours and 45 dBA during nighttime hours unless a waiver is obtained from the affected property owners in accordance with Subsection F hereof. If an owner uses sound level measurements to evaluate compliance with this section at a nonparticipating residence or occupied community building, those measurements shall be made as near as possible to the outside wall nearest to the closest wind turbine, or at an alternate wall as specified by the owner of the nonparticipating residence or occupied community building. The owner may take additional measurements to evaluate compliance in addition to those specified by this section.
- B. Wind-energy facilities shall not create a steady, pure tone, such as a whine, screech, hum, or vibration audible from any residence, school, hospital, church or public library existing on the date of issuance of any building permit for a wind turbine. In the event audible noise due to wind-energy system operations contains a steady pure tone, such as a whine, whistle, screech, or hum, the owner shall promptly take corrective action to permanently eliminate the noise. This provision does not apply to sound the wind-energy system produces under normal operating conditions. A pure tone exists if the 1/3 octave band sound pressure level in the band, including the tone, exceeds the arithmetic average of the sound pressure levels of the two contiguous 1/3 octave bands by 5 dBA for center frequencies of 500 Hz and above, by 8 dBA for center frequencies between 160 Hz and 400 Hz, or by 15 dBA for center frequencies less than or equal to 125 Hz.
- C. In the event the ambient noise level (exclusive of the wind-energy facility) exceeds the applicable standard given herein, the applicable standard shall be adjusted so as to equal the ambient noise level. The ambient noise level shall be expressed in terms of the highest whole number sound pressure level in dBA, which is exceeded for more than five minutes per hour. Ambient noise levels shall be measured at the exterior of potentially affected existing residences, schools, hospitals, churches, and public libraries. Ambient noise level measurement techniques shall employ all practical means of reducing the effect of wind-generated noise at the microphone. Ambient noise level measurements may be performed when wind velocities at the proposed project site are sufficient to allow wind turbine operation, provided that the wind velocity does not exceed 30 mph at the ambient noise level measurement location.

- D. Any noise level measurement falling between two whole decibels shall be rounded up.
- E. Any noise monitoring or measurements deemed necessary in the reasonable discretion of the Town Board to determine compliance with the conditional use permit shall be considered a service to the property and shall be paid for by the applicant or wind turbine facility owner, and if not paid within 30 days, written notice, a copy of which shall be mailed to the owner of the property if different from the applicant or wind facility owner, may be placed on the tax roll as a special charge pursuant to § 66.0627, Wis. Stats.
- F. In the event the noise levels resulting from the wind-energy facility exceed the criteria listed above, a modification to such levels may be granted by the Town Board, provided that the following has been accomplished:
 - (1) Written waiver from the affected property owner(s) has been obtained stating that they are aware of the large wind-energy facility and noise limitations imposed by this article and that consent is granted to allow noise levels to exceed the maximum limits otherwise allowed; and
 - (2) A noise impact easement has been recorded in the Brown County Register of Deeds which describes the benefited and burdened properties and which advises all subsequent owners of the burdened property that noise levels in excess of those permitted by this article may exist on or at the burdened property.
- G. Upon receipt of a complaint regarding a violation of the noise standards in this section, an owner shall test for compliance with the noise limits in Subsection **A** hereof. The Town Board may require additional testing to show compliance with the noise limits in Subsection **A** hereof if the owner has not provided the results of an accurate test conducted within two years of the date of the complaint showing that the wind-energy system is in compliance with the noise limits set out in Subsection **A** hereof at the location relating to the complaint.
- H. Notification.
 - (1) Before entering into a waiver agreement under Subsection **F** hereof, an owner of a wind-energy system shall provide written notice of the requirements of this section to the owner of an affected nonparticipating residence or occupied community building.
 - (2) Before the initial operation of the wind-energy system, an owner of a wind-energy system shall provide notice of the requirements of this section to an owner of a nonparticipating residence or occupied community building within 0.5 mile of a constructed wind turbine that has not entered into a waiver agreement under Subsection **F** hereof.
 - (3) All notices required hereunder shall comply with the provisions of § PSC 128.30, Wis. Adm. Code.

§ 135-279. Signal interference.

The following signal interference requirements shall be conditions of the conditional use permit.

- A. An owner shall use reasonable efforts to avoid causing interference with commercial communications and personal communications to the extent practicable. An owner may not construct wind-energy system facilities within existing line-of-sight communication paths that are used by government or military entities to provide services essential to protect public safety.

The Town may require an owner to provide information showing that wind turbines and other wind-energy system facilities will be in compliance with this subsection.

- B. As a further condition of the conditional use permit, all interference with electromagnetic communications, such as radio, telephone, computers or television signals, including any public agency radio systems, shall be substantially mitigated. Public utilities shall comply with Ch. PSC 113, Subch. VII, Wis. Adm. Code.
- C. All signal interference mitigation undertaken by an owner hereunder shall comply with the provisions of § PSC 128.16, Wis. Adm. Code.

§ 135-280. Shadow flicker.

Conditions shall be imposed to minimize or mitigate shadow flicker to any occupied building on the property of nonconsenting landowners. The following shadow flicker limitations and requirements shall be conditions of the conditional use permit:

- A. The shadow flicker requirements in this section apply to a nonparticipating residence or occupied community building that exists when the owner gives notice under § PSC 128.15(5), Wis. Adm. Code, or for which complete publicly available plans for construction are on file with a political subdivision within 30 days of the date on which the owner gives notice under § PSC 128.15(5), Wis. Adm. Code.
- B. An owner shall design the proposed wind-energy system to minimize shadow flicker at a residence or occupied community building to the extent reasonably practicable. An owner shall use shadow flicker computer modeling to estimate the amount of shadow flicker anticipated to be caused by a wind-energy system and shall design the wind-energy system so that computer modeling indicates that no nonparticipating residence or occupied community building will experience more than 30 hours per year of shadow flicker under planned operating conditions.
- C. An owner shall operate the wind-energy system in a manner that does not cause more than 30 hours per year of shadow flicker at a nonparticipating residence or occupied community building. If a nonparticipating residence or occupied community building experiences more than 30 hours per year of shadow flicker under the wind-energy system's normal operating conditions, the owner shall use operational curtailment to comply with this subsection.
- D. An owner of a wind-energy system shall:
 - (1) Work with an owner of a nonparticipating residence or occupied community building to mitigate the effects of shadow flicker to the extent reasonably practicable. An owner shall provide reasonable shadow flicker mitigation at the owner's expense for a nonparticipating residence or occupied community building experiencing 20 hours or more per year of shadow flicker.
 - (2) Shall model shadow flicker and a nonparticipating residence or occupied community building is eligible for mitigation if computer modeling shows that shadow flicker at the nonparticipating residence or occupied community building will be 20 hours or more per year. An owner of a nonparticipating residence or occupied community building is not required to document the actual hours per year of shadow flicker if modeling indicates the nonparticipating residence or occupied community building is eligible for mitigation. A nonparticipating residence or occupied community building that experiences 20 hours or more per year of shadow flicker based on records kept by the resident of a

nonparticipating residence or the occupant of an occupied community building shall also be eligible for mitigation.

- E. An owner may provide shadow flicker mitigation for any residence or occupied community building in addition to the mitigation required hereunder and under the provisions of § PSC 128.15, Wis. Adm. Code. The requirement to mitigate shadow flicker applies when the owner receives a complaint or request for mitigation regarding shadow flicker for an eligible nonparticipating residence or occupied community building. If shadow flicker mitigation is required, the owner of the wind-energy system shall allow the owner of the nonparticipating residence or occupied community building to choose a preferred reasonable mitigation technique, including installation of blinds or plantings at the wind-energy system owner's expense.
- F. An owner of a wind-energy system and an owner of an affected nonparticipating residence or occupied community building may enter into an agreement relieving the wind-energy system owner of shadow flicker requirements hereunder at the affected nonparticipating residence or occupied community building. Unless otherwise provided in a contract signed by an owner of an affected nonparticipating residence or occupied community building, a waiver by an owner of an affected nonparticipating residence or occupied community building shall be an encumbrance on the real property and runs with the land until the wind-energy system is decommissioned and shall be recorded under Ch. 706, Wis. Stats., as provided under § PSC 128.15(4), Wis. Adm. Code.
- G. Notification.
 - (1) Before entering into a waiver agreement under Subsection F hereof, a wind-energy system owner shall provide notice of the requirements of this section to individual owners of an affected nonparticipating residence or occupied community building.
 - (2) Before the initial operation of the wind-energy system, a wind-energy system owner shall provide notice of the requirements of this section to an owner of a nonparticipating residence or occupied community building within 0.5 mile of a constructed wind turbine that has not entered into a waiver agreement under Subsection F hereof.
 - (3) All notices required hereunder shall comply with the provisions of § PSC 128.30, Wis. Adm. Code.

§ 135-281. Construction and operation requirements and conditions.

- A. Physical characteristics.
 - (1) No advertising material or signage other than warnings, equipment information, or indicia of ownership on a wind turbine may be displayed on any wind turbine. No flag, decorative sign, streamers, pennants, ribbons, spinners, fluttering, or revolving devices to a wind turbine may be attached to any wind turbine. An owner may attach a safety feature or wind-monitoring device to a wind turbine.
 - (2) The owner shall ensure that each wind turbine has a conventional or unobtrusive finish.
 - (3) The owner shall install lighting at a wind-energy system that complies with standards established by the Federal Aviation Administration. The Town may require use of shielding or control systems approved by the Federal Aviation Administration to reduce visibility of lighting to individuals on the ground.

- (4) The owner shall take appropriate measures to ensure that a wind turbine is not readily climbable except by authorized personnel.
- (5) The owner shall ensure that all wind turbine access doors and electrical equipment are locked when authorized personnel are not present.
- (6) The owner shall place appropriate warning signage on or at the base of each wind turbine.
- (7) The owner shall post and maintain up-to-date signs containing a twenty-four-hour emergency contact telephone number, information identifying the owner, and sufficient information to identify the location of the sign within the wind-energy system. The owner shall post and maintain these signs at every intersection of a wind-energy system access road with a public road and at each wind turbine location.
- (8) The owner shall clearly mark guy wires and supports for a wind-energy system, meteorological tower or other device for measuring wind speeds so that the wires and supports are visible to low-flying aircraft under fair weather conditions.

B. Electrical standards.

- (1) The owner shall construct, maintain, and operate collector circuit facilities in a manner that complies with the National Electrical Safety Code and Ch. PSC 114, Wis. Adm. Code, and shall construct, maintain, and operate all wind-energy system facilities in a manner that complies with the National Electrical Code.
- (2) The owner shall construct collector circuit facilities for a wind-energy system underground to the extent practicable.
- (3) The owner shall establish an inspection schedule for all overhead collector circuits to ensure that third-party facilities, including cable television and telecommunications cables, are not attached or bonded to overhead collector circuit grounding. If third-party facilities are found attached to the overhead collector facilities, the owner shall ensure that the third-party facilities are promptly removed.
- (4) The owner shall work with the local electric distribution company to test for stray voltage at all dairy and confined animal operations within 0.5 mile of a wind-energy system facility pursuant to the stray voltage protocol established by the PSC before any wind-energy system construction activity that may interfere with testing commences and again after construction of the wind-energy system is completed, except as otherwise specified by the PSC. In compliance herewith, the owner shall:
 - (a) Before any testing hereunder, work with the PSC and the Town to determine the manner in which stray voltage testing will be conducted and on which properties. The electric distribution company serving a dairy or confined animal operation where testing is required shall conduct or arrange to conduct all required testing at the expense of the owner.
 - (b) Provide the PSC and the Town, in writing, with the results of all stray voltage testing.
 - (c) Work with the electric distribution company and farmowner to rectify any stray voltage problems attributable to the construction and operation of the wind-energy system, in compliance with the Commission's stray voltage protocol.

C. Construction, operation, and maintenance standards.

- (1) An owner shall construct, operate, repair, maintain and replace wind-energy system facilities as needed to keep the wind-energy system in good repair and operating condition and in a manner that protects individuals from injury.
- (2) An owner shall minimize soil compaction, topsoil mixing and damage to drainage systems on agricultural land during the construction or decommissioning of the wind-energy system. A political subdivision may establish reasonable requirements designed to minimize soil compaction, topsoil mixing and damage to drainage systems on agricultural land.
- (3) Except for the area physically occupied by the wind-energy system facilities, an owner shall restore the topography, soils and vegetation of the project area to original condition after construction is complete, unless otherwise provided in a contract signed by an affected landowner, considering any modifications needed to comply with DNR requirements.
- (4) An owner shall carry and maintain in place general liability insurance relating to claims for property damage or bodily injury arising from the construction, operation or decommissioning of the wind-energy system and shall include turbine host property owners as additional insured persons on the policy.

D. Emergency procedures.

- (1) An owner shall notify the Town of the occurrence and nature of a wind-energy system emergency within 24 hours of the wind-energy system emergency.
- (2) An owner shall work with the Town and with local fire, police, and other appropriate first responders serving the wind-energy system to create effective emergency plans that include all of the following:
 - (a) A list of the types of wind-energy system emergencies that require notification under Subsection **D(1)** above.
 - (b) Current emergency contact information for first responders and for the wind-energy system owner, including names and phone numbers.
 - (c) Procedures for handling different types of wind-energy system emergencies, including written procedures that provide for shutting down the wind-energy system or a portion of the system as appropriate.
 - (d) Duties and responsibilities of the owner and of first responders in the event of a wind-energy system emergency.
 - (e) An emergency evacuation plan for the area within 0.5 mile of any wind-energy system facility, including the location of alternate landing zones for emergency services aircraft.
- (3) The owner shall review the emergency plan at least annually in collaboration with fire, police and other appropriate first responders to update and improve the emergency plan as needed.
- (4) The owner shall provide current copies of the emergency plan to the Town and local fire, police and other appropriate first responders as identified by the political subdivision.

E.

The Town may require the owner to provide annual training for fire, police and other appropriate first responders regarding responding to a wind-energy system emergency until the wind-energy system has been decommissioned.

- F. An owner of a wind-energy system shall do all of the following:
- (1) Furnish its operator, supervisors and employees who are responsible for emergency action a copy of the current edition of the emergency procedures established under this section to ensure compliance with those procedures.
 - (2) Train the appropriate operating personnel to ensure they have knowledge of the emergency procedures and verify that the training is effective.
 - (3) As soon as possible after the end of a wind-energy system emergency, review employee activities to determine whether the procedures were effectively followed.

§ 135-282. Additional safety conditions.

- A. All wiring between wind turbines and the large wind-energy facility substation shall be underground.
- B. Wind turbine towers shall not be climbable up to 15 feet above ground level and must be located inside of the tower.
- C. All access doors to wind turbine towers and electrical equipment shall be locked at all times when not being serviced or attended to by authorized personnel.
- D. Appropriate warning signage shall be placed on wind turbine towers, electrical equipment, and large wind-energy facility entrances.
- E. The large wind-energy facility site and all structures shall provide an annual inspection of structural stability, paid by the large wind-energy facility owner, with a report filed with the Town Clerk.
- F. The owner/operator of the large wind-energy facility shall coordinate with the Wisconsin Public Service Commission (PSC) to test for stray voltage before, during, and after construction upon request by the Ledgeview Zoning Administrator.
- G. All substations shall be fenced to prevent public access. Chain-link fencing shall include vinyl or aluminum slats or other landscaping to create an opaque visual barrier of at least 75%.
- H. The owner/operator of the large wind-energy facility shall clearly post and maintain at each facility a twenty-four-hour-per-day manned telephone number in case of an emergency.
- I. The owner or operator of the large wind-energy facility shall provide qualified personnel to conduct training sessions to emergency responders whenever requested.
- J. The owner/operator of the large wind-energy facility shall provide a company representative to accompany the local Fire Department Fire Inspector during site visits. The owner/operator of the large wind-energy facility shall comply with all applicable laws regarding those inspections.
- K. All reasonable precautions shall be taken to prevent health and safety risks due to ice shedding.

§ 135-283. Decommissioning.

- A. The owner of any wind-energy facility shall immediately notify the Town when the facility is to discontinue operation. Decommissioning and removal of the wind-energy facility shall occur pursuant to and in compliance with the provisions of § PSC 128.19, Wis. Adm. Code, and subject to the time limits made and provided therein.
- B. Within 210 days of notice of discontinuation, all wind-energy facilities shall be removed from the site and all easements appurtenant to such facilities shall be released at the expense of the owner of the wind-energy facility. The Town Board may grant reasonable extensions of time for good cause upon request.
- C. The site shall be stabilized, graded, and cleared of any debris by the owner of the facility or its assigns. Unless the site is to be used for agricultural purposes, the site shall be seeded to prevent soil erosion.
- D. Any foundation shall be removed to a minimum depth of 10 feet below grade, or to the level of the bedrock if less than 10 feet below grade, by the owner of the facility or its assigns. Following removal, the location of any remaining wind turbine foundation shall be identified on a map as such and recorded with the deed to the property with the Brown County Register of Deeds.
- E. Any wind turbine or energy facility that does not produce energy for a continuous period of 12 months, excluding time spent on repairs or improvements, shall be considered abandoned and shall be removed consistent with this section. Abandonment of any wind-energy facility shall result in revocation of the conditional use permit and render such facilities as unlawful structures.
- F. Notification.
 - (1) An owner shall file a notice of decommissioning completion with the political subdivision and the Commission when a wind-energy system approved by the Town has been decommissioned and removed.
 - (2) Within 360 days of receiving a notice of decommissioning, the Town shall determine whether the owner has satisfied the requirements of § PSC 128.19, Wis. Adm. Code.

§ 135-284. Fees.

The application fee for a conditional use permit under this article shall be as established in § 1-19 of the Code of the Town of Ledgeview plus the actual cost of all required legal notices and fees for required Town consultants, including, but not limited to, legal and engineering review.

§ 135-285. Enforcement; violations and penalties.

No person shall erect, move or structurally alter a wind-energy facility or component thereof in violation of the provisions of this article.

- A. Any wind-energy facility that does not meet the requirements of this article, including, but not limited to, those dealing with noise or visual appearance, or does not meet the conditions attached to an approved conditional use permit shall provide grounds for revocation of the conditional use permit, thereby deeming the facility an unlawful structure.

- B. The Zoning Administrator shall report all such violations to the Town Board, which may then refer the matter to the Town Attorney to bring action to enjoin the erection, moving or structural alteration of such facility or to cause such facility to be vacated or removed.
- C. Any person, firm or corporation, or agent, employee, or contractor of such, who violates, destroys, omits, neglects, or refuses to comply with, or who resists enforcement of any provision of this article; shall upon conviction thereof forfeit no less than \$1,000 nor more than \$10,000 per offense together with the costs of prosecution. Each violation and each day of violation shall constitute a separate offense.
- D. This section shall not preclude the Town of Ledgeview from maintaining any appropriate action to prevent or remove a violation of this article.

§ 135-286. Severability.

Any provision of this article shall be considered severable from any other portion or any other language in this Code of Ordinances. If any provision is found to be unconstitutional, invalid or unenforceable, such finding shall not affect the remaining provisions of this article.