

DRAFT REPORT

**of the Zoning Recommendations of the
Mine Reserve Expansion Study Committee,
an Ad Hoc Committee of the
Clayton County Planning and Zoning Commission**

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A. Introduction

Committee Formation. In Dec 2015, a public hearing was held by the Planning and Zoning (P&Z) Commission to consider requests from the Pattison Sand Co. and 5 petitioners for rezoning of 746 acres to M2 (Heavy Industrial) Zoning in Clayton County, IA. The request was tabled by P&Z to address questions and concerns raised by neighbors. Subsequently, the Community Foundation of Greater Dubuque (CFGD) offered Clayton County a grant agreement to support a Mine Reserve Expansion Study Committee to develop recommendations to address these concerns. In Jan 2016, the Board of Supervisors (BoS) voted to accept this grant agreement. The Zoning Administrator then appointed 5 Study Committee members, 2 from P&Z and 3 from the community.

Pattison Mining Expansion. The history of the mine expansion is illustrated in the map on the last page of this report. Pattison-owned property totals **824 acres**. This is made up of land shown on the map as “already mined/active Pattison” (188 acres) plus “Pattison owned” (636 acres). In 2010, private property of 3 nearby landowners was rezoned to M2 Zoning to permit underground mining on that land. This is shown on the map as Mohning 2010 (383 acres), Hoeffler 2010 (365 acres), and Wille 2010 (470 acres), for a subtotal of 1,218 acres rezoned in 2010 for future mining. In addition, on a portion of the acres rezoned in 2010, mining has already been completed; this portion is the 26 acres on the map identified as “already mined/active Wille.” The 2010 rezoning acreages thus total **1,244 acres**. Then, in 2015, 5 nearby private landowners requested that their lands be rezoned to M2 to permit underground mining. Mine expansion to include these **746 acres** is the subject of this report.

In summary, the grand total of the 3 above groups of properties is **2,814 acres**. This represents the total acreage on which Pattison Sand has already mined or wishes to mine silica sand in Clayton County. (Also shown on the map is land owned by the Consolidated Grain Barge Company [CGB], on which some mining has also occurred.)

Committee Meetings. The Committee began meeting on an every-other-week schedule beginning in early Feb 2016. To date, the Committee has held 11 work meetings, for a total of 31+ meeting hours. Agenda and minutes were posted on the P&Z website that is noted on the cover of this report. Attendance averaged 19 visitors/meeting, not including any guest speakers.

During the 7 initial Committee meetings, guest speakers were interviewed. These speakers included (in chronological order): representatives from the Pattison Sand Co., a representative from the Community Foundation of Greater Dubuque, the petitioners who submitted the applications in 2015 for rezoning, the Clayton County Engineer, the Clayton County Attorney and Clayton County Zoning Administrator, representatives from Shawver Well, the DNR State Geologist, and 2 professors from the Univ. of Iowa Dept. of Occupational and Environmental Health.

Beginning with its 4th meeting, the Committee set aside a portion of each meeting for brief, written public comments, which were then read at that meeting. In addition, the grant agreement creating the Committee calls for it to hold a public comments hearing at which time recommendations in the Draft Report will be presented for comment. These comments will be addressed by the Committee at a meeting following the comments hearing, and a Final Report developed.

Committee Purpose. Frac sand mining has been studied by other counties in NE Iowa. Mining-specific ordinances have been written, and in one county (Winneshiek), an environmental impact study was conducted and report written. The Clayton County Mine Reserve Expansion Study Committee was given a different purpose by the CFGD. Its sole mission was to “develop recommendations for zoning.” These recommendations, which are the deliverables for the grant agreement, are presented here.

Committee Recommendations. The process the Committee used to develop its recommendations was first to create a consolidated list of concerns. That list appears in Part C of this Report. Recommendations were then selected beginning at the 8th Committee meeting. For each concern, the Committee voted to either place no condition on that concern, or it selected one or more specific recommendations to address that concern. Following selection, the recommendations were edited by the Allamakee County Zoning Administrator (also a Committee member) to better describe them, then they were reviewed for enforceability by both the Clayton County Attorney and Clayton County Zoning Administrator. The Committee voted a second time on final wording for each recommendation.

These recommendations are conditions or restrictions that the Study Committee recommends be attached to any approval of the 2015 requests. The restrictions (see Part B of this Report) will be considered first by the P&Z, which will make recommendations to the BoS, who will then take final action on the requests for rezoning to M2. If those requests are approved, subsequent applications will be made to the Board of Adjustment (BoA) to request “special exception from the ordinance.” These requests are for the conditional use, which is needed to permit any land rezoned to M2 to be used for underground mining. At that time, the Committee’s restrictions will be reviewed by the BoA.

At its 3 restriction selection meetings, the Committee made 37 motions related to identified concerns, of which 22 created restrictions, and 15 motions placed no restrictions on that concern. At the Committee meeting to approve final wording of recommended restrictions for the Draft Report, voting on these restrictions was unanimous.

B. Restrictions Recommended by the Study Committee

Air Quality

Restriction #1: Vent shaft setback, monitoring porthole, and closure

Vent shafts shall be no closer (setback) than 1,500 ft to any residences, farmsteads, feedlots, confined animal feeding operations (CAFOs), or places of public assembly, unless the owner of said location agrees to a lesser setback distance. Exhaust vent shafts shall have a portal or other means built to Iowa DNR specifications that will allow for monitoring of exhaust air quality. When air vents/vent shafts are no longer needed, they shall be closed by the mine operator or property owner. In the case of a vertical vent shaft, it shall be permanently closed in the same manner as a water well is plugged. The closures shall be done to protect persons or animals on the property; prevent infiltration by ground water, storm water and other possible sources of contaminants into the mine; and shall return the site to its pre-mining condition.

Reason for motion: The reasons for this motion were:

(1) for setback – to protect landowners and farm animals from noise and nuisance, **and** to protect the public and the animals from the exhaust fumes coming out of the vent shafts, especially after blasting. Also, vent setback distance takes into account recommendations from Patrick O’Shaughnessy, Univ. of Iowa Dept. of Occupational and Environmental Health.¹

(2) for monitoring – to protect the health and safety of citizens, to determine if additional measures need to be taken to keep exhaust within government regulations, and to follow recommendations from Stuart Schmitz, Iowa Dept. of Public Health.²

and (3) for vent shaft closure – public safety.

Restriction #2: Truck trailer coverage

To lessen the dispersion of silica sand particles into the atmosphere and along public roads, Pattison Sand/Mine Operator agrees that all truck trailers used for transport of sand must be covered by an appropriate ‘covering system’ that will prevent the loss of any material from the cargo area. This is required whether the trailer is considered to be ‘loaded’ or ‘empty’ and shall apply to owned and contracted trucks or trailers. Pattison Sand/Mine Operator shall refuse to load any truck/trailer that is not compliant with this condition.

Reason for motion: The reason for this motion was to lessen the dispersion of sand, for health and safety.

Water and Soil

Restriction #3: Well damage

Pattison Sand/Mine Operator agrees to be responsible for any well damage that can be attributed to mining activity.

Reason for motion: The reason for the motion was to protect landowners within the mining area from incurring damage to their wells as a result of mining.

Restriction #4: Testing of private wells

Pattison Sand/Mine Operator agrees to provide well water testing for water wells that are within the proposed rezone area and are located on property adjoining the rezoned area. Adjoining property wells shall include all wells located within ¼ mile of the area expected to be mined within a year. Landowners may collect their own water samples and shall utilize Keystone Labs for the water testing supplies and lab testing. The samples shall be analyzed for all ingredients or compounds sampled for in the April 11, 2016 hydrology assessment conducted by Pattison Sand. In addition, the testing shall include acrylamide and any other chemicals used by Pattison Sand/Mine Operator in the mining operation. At least one year prior to any mining occurring in the rezoned area, Pattison Sand/Mine Operator will contact well owners in or within ¼ mile of the area to be mined within 1 year and will invite/allow well owners to complete a baseline test of their well, if desired by well owners. A copy of this notice shall be given to the County. Pattison Sand/Mine Operator shall be provided a copy of the results of said well test and shall be responsible for the costs of said well testing. Pattison Sand/Mine Operator agrees to address and mitigate any well contaminated by mining activities or as a result of mining activity and shall prepare and submit to the County a plan for well contamination mitigation prior to final approval of the zoning change.

Reason for motion: The reason for the motion was to address the health and safety of these neighbors. Also, baseline testing offers a process for such testing to more landowners than those whose wells were originally surveyed/tested in Spring 2016 (as reported in the April 2016 hydrology report). Lastly, acrylamide testing follows a recommendation by Chad Stobbe, Iowa Dept. of Natural Resources.³

Restriction #5: Testing of surface waters for acrylamide

Pattison Sand/Mine Operator agrees to test for acrylamide in any surface water discharge in addition to, and in conjunction with, the testing required as part of the National Pollutant Discharge Elimination (NPDES) permit currently regulated by the Iowa Department of Natural Resources.

Reason for motion: Acrylamide testing follows recommendations by Chad Stobbe, Iowa Dept. of Natural Resources³ and Stuart Schmitz, Iowa Dept. of Public Health.⁴

Noise

Restriction #6: Blasting hours and notification

In the proposed rezone area, Pattison Sand/Mine Operator shall only permit blasting to occur at a time of day that is no earlier than 6:00 AM and no later than 8:00 PM, Central Standard Time. At least three days in advance of blasting, Pattison Sand/Mine Operator shall notify the owners of all property within ¼ mile, of the dates and times that blasting will occur. This notification shall be by regular mail or another method acceptable to the recipient.

Reasons for motion: The reasons for this motion were to limit blasting to daytime hours, not subject neighbors to noise or vibration at night, provide notice as a courtesy to neighboring property owners, and be a good neighbor to these landowners.

Roads and Traffic

Restriction #7: Tunnels under the Great River Road

Pattison Sand/Mine Operator shall hire a licensed and bonded/insured engineering firm that will design the mine tunnel(s) to be located under Clayton County right of way for the Great River Road and will warranty that said tunnels shall not lead to collapse or subsidence of any part of the surface of said right of way. The engineering firm shall inspect and certify that the area has been mined in accordance with the design approved by said engineering firm. Pattison Sand/Mine Operator and engineering firm agree to accept responsibility and indemnify Clayton County for any damages in the right of way caused by or resulting from mining operations.

Reason for motion: The reason for this motion was to make sure that Clayton County taxpayers will not be responsible in the event of any tunnel collapse under the Great River Road.

Land Use

Restriction #8: Land uses permitted under M2 Zoning, and tunnel entrances/exits

Pattison Sand/Mine Operator and Landowners within the proposed rezone area agree that all land use activities in the rezone are shall be limited to sub-surface mining activities only, with the exception of constructing, locating, and maintaining vent shafts. The vent shafts shall not be used as an entrance or exit from/to the underground mining area. No exits or entrances from the surface to the underground mine shall be located in the proposed rezoned area.

Reasons for motion: The reasons for this motion were that it addresses many other concerns such as air quality, aesthetics, etc., and it clarifies that “underground only” includes tunnel exits and entrances. Also, it follows Pattison Sand assurance that all activity will be underground and that nothing other than vent shafts will be above ground and be visible.

Restriction #9: Rezoning application changes

Changes and initialing by petitioners on page 1 of each of the 5 2015 rezone request applications shall be completed, and wording changed at 2 locations on page 3 of the applications (i.e., answers to questions 4 and 6) to match the identical corrected wording on page 1 – namely, “to mine underground. Process, store, and ship silica sand and its by-products, all underground.” These changes shall be completed by the time of the Planning and Zoning Commission meeting at which the rezone requests will be reconsidered.

Reason for motion: The reason for this motion was to follow Clayton County Attorney recommendations that the 2015 rezone request applications be corrected and that wording on pages 1 and 3 regarding use of the proposed rezone area be made consistent. Also, it clarifies what Pattison Sand stated (at the June 8th meeting) that it was in the process of doing. Lastly, it translates repeated assurance from Pattison Sand that all mining in the rezone area will be underground, into legally binding wording in the applications for rezone.

Restriction #10: Tunnel use for storage and disposal

Pattison Sand/Mine Operator shall not store any materials in the underground mining area other than mining supplies and equipment, or sand or minerals removed from the mine as part of the mining process. The only materials that may be disposed of in the underground mining area are sand or minerals removed from the mine as part of the mining process.

Reason for motion: The reason for this motion was to respond to citizen concerns about what has been stored in tunnels in the past.

Restriction #11: Site inspections, non-compliance, and corrective actions by the Zoning Administrator

Pattison Sand/Mine Operator agrees to allow the Clayton County Zoning Administrator, or his/her representative, access to the property to observe operations or conditions of the mining and processing activities on said property. If, upon inspection, the Zoning Administrator determines that any non-compliance with the Clayton County Zoning Ordinance exists, the Zoning Administrator may issue a corrective action order detailing the non-compliance, the action needed to correct the non-compliance, and the timeframe within which it shall be corrected. Failure by the Conditional Use permit holder to comply with any corrective action order may result in a Stop Work Order or a revocation of the Conditional Use Permit and a discontinuation of all mining and processing activities.

Reason for motion: The reason for this motion was that it gives the Zoning Administrator clearer authority to enforce the County's ordinances.

Environment

Restriction #12: Threatened or endangered species, and archeological features

Pattison Sand/Mine Operator shall hire a consulting firm to perform on-site surveys for threatened or endangered species and archeological features when vent shaft locations and access road locations are determined, prior to any construction or pre-construction activities. If said on-site surveys identify any threatened or endangered species or archeological features, they should be photographed, protected by a barrier to prevent damage to the site or species, and the vent shall be moved to another location. The survey and documentation evidence (photos/other) shall be filed with the Iowa Department of Natural Resources (for threatened or endangered species), the IA Office of the State Archeologist (for archeological features), and Clayton County.

Reason for motion: The reason was to protect threatened and endangered species and any archeological features.

Restriction #13: Long-term reclamation of mined areas

The Study Committee is recommending that the Planning and Zoning Commission, the Board of Supervisors, and Board of Adjustment research the County's ability to require reclamation plans for mines and quarries and to require a reclamation bond that will cover the estimated full cost of reclamation.

Reason for motion: The reason for this motion was to protect the County from future liability.

Economics and Values

Restriction #14: Viewshed (aesthetics) of the Great River Road National Scenic Byway

Pattison Sand/Mine Operator agrees that sand mined from the rezoned area shall not be stored in open piles that are visible from the Great River Road.

Reason for motion: The reason for the motion was to address concerns of the Riverway Board and the tourist industry, as well as goals and policies in the County's Comprehensive Plan.

Emergencies and Liabilities

Restriction #15: Emergency plan for mine workers and neighbors of the mine

Pattison Sand/Mine Operator agrees that an emergency plan shall be filed with Clayton County and updated on an annual, or more frequent, basis. This plan will include a map of all tunnels that show their location in relation to land parcels above the tunnels, and it will include a list of all chemicals stored on the property and the storage location.

Reason for motion: The reasons for the motion were to help the County to more effectively deal with emergencies, address the health and safety of residents, and provide protection for the community.

Other Topics

Restriction #16: Appeals for variance

The Committee recommends that the Board of Adjustment be given the authority to approve a variance from the conditions established as part of this zoning district change. An appeal for a variance from these conditions may be sought in the same manner as an ordinary variance from ordinance requirements (Sec 6.15-3), shall be subject to the same requirements and procedures established thereunder, and shall be in compliance with Iowa Code Chapter 335.10.

Reason for motion: The reason for the motion was to provide Pattison Sand/Mine Operator with a process that could be used to appeal for hardship due to unforeseen circumstances that may come up later.

References for several motion reasons:

¹O'Shaughnessy, P (Professor, Univ. of Iowa Dept. of Occupational and Environmental Health) email on setback of vent shafts from property lines, sent 5-11-16. After discussing his recommendations for setback distance of vent shafts to be placed by Pattison Sand, P. O'Shaughnessy concludes: "I would consider ¼ mile [1,320 ft] a safe distance and ½ mile [2,640 ft] to be a very protective distance."

² Schmitz, S (State Toxicologist, IA Dept. of Public Health) email on health consultation for Pattison Sand, sent 5-31--16. After discussing several health topics, S. Schmitz concludes: "It is recommended that periodic monitoring of respirable dust and silica be completed to ensure these levels remain below levels that can impact human health."

³ Stobbe, C (Senior Environmental Specialist, IA Dept. Natural Resources) email on acrylamides sent 5-11-16. After discussing levels in groundwater or surface water, C. Stobbe concludes: "To further address ongoing public concern, the DNR requests Pattison Sand continue periodic testing for acrylamide, in addition to the parameters prescribed within the approved beneficial use determination."

⁴ Schmitz S (State Toxicologist, IA Dept. of Public Health) email on health consultation for Pattison Sand, sent 5-31-16. After discussing several health topics, S. Schmitz concludes: "It is recommended that sampling and analysis of surface water runoff at the site for acrylamide be continued to ensure the levels of acrylamide in surface water at the site remain below levels that could adversely impact human health."

C. Consolidated List of Citizens' Questions & Concerns for Silica Sand Mine Expansion

This list was posted on the P&Z website in early Mar 2016.

Air Quality

- Vent hole size, location, and output contents
- Vent exhaust monitoring
- Open storage of sand becoming airborne
- Impact of sand transportation by truck

Water & Soil

- Neighborhood wells
- Groundwater table reduction and/or contamination
- Surface water reduction and/or contamination
- Soil contamination
- Erosion

Noise

- Allowed times for all operations (incl. equipment & truck hauling)
- Noise from truck brakes, mufflers

Road & Traffic

- Impact on all roads used to facilitate mine operation
- Possible bypass route
- Effect of tunnels under the Great River Road

Land use

- Other permitted uses/activities under M-2 (Heavy Industrial) zoning
- Above-ground mining activity
- Future use of land (agriculture?)

Environment

- Threatened or endangered species
- Wildlife habitat
- Long-term reclamation of affected areas

Economics and Values

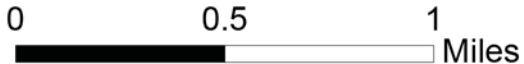
- Economic impact of mining (+ or -)
- Viewshed (aesthetics) of Great River Road National Scenic Byway (sand storage, etc.)
- Viewshed (aesthetics) of the Mississippi River (sand storage, etc.)
- Effect on tourism
- Lowering of values of adjacent properties

Emergencies and Liabilities

- Possibility of sink holes/earthquakes
- Emergency plan for mine workers and neighbors of the mine
- Responsibility for damages to private properties
- Responsibility if a change of ownership occurs

Property Ownership Map Relative to Mining History and 2015 Rezoning Requests Clayton, IA 2016

1,218 acres 2010 Rezoned
 746 acres 2015 Requested
 1,964 acres Total Potential Mining AVERAGE



- 188 Acres Already Mined/Active Pattison
- 636 Acres Pattison Owned
- 86 Acres Inactive Mined CGB
- 161 Acres CGB Owned
- 365 Acres 2010 Hoeffler Rezoned Future Mining
- 383 Acres 2010 Mohning Rezoned Future Mining
- 470 Acres 2010 Wille Rezoned Future Mining
- 746 Acres 2015 Proposed Rezoning Mining Sites
- 26.3 Acres Already Mined/Active Wille

