Winona Frac Sand Moratorium:
Final Report
January 2013

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Summary

On March 13, 2012, the City of Winona enacted a one-year moratorium on new or expanded frac sand operations. During the period of the moratorium, City staff was to "*conduct a study; such study to help determine regulatory controls which may need to be adopted or revised to protect the public's health, safety and welfare…In addition, the City staff shall study the comprehensive plan to determine whether an amendment to the comprehensive plan is necessary or appropriate*." The moratorium study was guided by the Planning Commission. The results of the study are the summarized below:

Comprehensive Plan Analysis

The Comprehensive Plan indicates support for commodity processing and transportation activities (such as frac sand). However, such activities should have sufficient regulations to protect the environment and adjacent properties. An analysis of the plan indicates that future frac sand uses should be on property designated as "General Industrial" or "Industrial Riverfont." This is consistent with existing regulations which permit sand processing and transportation facilities only in the M-2 General Manufacturing zoning district (see Attachment A). Two existing sand transportation facilities currently in the M-2 zoning district are not designated "General Industrial" or "Industrial Riverfront." Given the individual circumstances of each property, re-designation to an industrial future land use should be considered upon Comprehensive Plan revision (circa 2017).

The Comprehensive Plan does not directly address future mining activities. However, an analysis of existing regulations and future expansion areas indicates that mining should continue to occur only in the A-G Agricultural zoning district (see Attachment A).

City Code Analysis

An analysis of existing regulations by the Planning Commission resulted in the following recommendations for amendments to City Code:

1. **Additions and modifications to the City's extraction ordinance -** Changes include:
    a. A 1000' setback from any residential district to any part of a mining operation
    b. A requirement for water quality monitoring if a mine is adjacent to residential plats or suburban development, springs, sinkholes and/or wellhead protection areas or community wells
    c. Detailed requirements for reclamation plans
    d. Guidance to help the City determine if a discretionary EAW is appropriate
    e. A required transportation impact analysis for mines which generate 200 or more truck trips per day

2. **An addition to the performance standards section of the zoning code:**

   Moisture testing of sand or other materials with the potential to produce Particulate Matter emissions may be required to ensure that moisture levels are above 1.5%. A substitute for moisture testing is air quality monitoring completed in correspondence with the MPCA and according to applicable state regulations.

3. **An addition to the existing Conditional Use Permit ordinance for sand processing and transportation facilities:**

   All structures housing processing equipment and stockpiles shall be located a minimum of 200' from a residential property.

4. **New requirements for traffic impact analyses and road use agreements -** Requirements entail:
   a. Required traffic analyses for any development subject to a site plan or CUP generating 200+ truck trips per day
   b. Analysis of haul routes from an operation to the nearest truck route
   c. A required road use agreement to address deficiencies in road infrastructure (e.g. intersection signals, curb radii, etc.) or necessary improvements to the road bed
   d. The ability of City Engineer to waive requirements as appropriate

These recommendations are assembled in action items one through four (pages 21 to 39). These recommendations build on existing frac sand regulations already in the City Code (see Attachment B). In developing the recommendations, the Planning Commission relied on expert presentations and information from other jurisdictions (municipalities and counties) throughout southeastern Minnesota and western Wisconsin. Details on the background of the industry, the specifications of the product, and the history of the geologic formations which contain "frac" sand are available in studies previously produced by numerous other sources.[1] Given the base of information already available, this report focuses mainly on the action items proposed for the City of Winona.

Existing Regulations

In spring 2011, regulations for sand processing and transportation facilities were added to the City Code (see Attachment B). The regulations require a Conditional Use Permit for a new facility. New sand transportation and processing operations are only allowed in M-2 (General Manufacturing) zoning districts.

[1]See: http://www.cityofwinona-mn.com/page/3334/article/10414; or http://www.co.goodhue.mn.us/countygovernment/committees/MiningCommittee/StudiesandReports.aspx; or http://www.red-wing.org/silicasandmining.html

Sand *mining* is also subject to a CUP. Mining is only allowed in an A-G (Agricultural) zoning district. Processing facilities may only be established as accessory uses to mining operations.

An important clause in the existing regulations is the ability for the Board of Adjustment or City Council to add additional conditions to a Conditional Use Permit. The additional conditions can be used to address unique impacts of a proposed conditional use. For example, in the two sand facility applications already brought forward, the Board of Adjustment and City Council have added conditions limiting truck/barge traffic for both applications and required moisture testing for one.

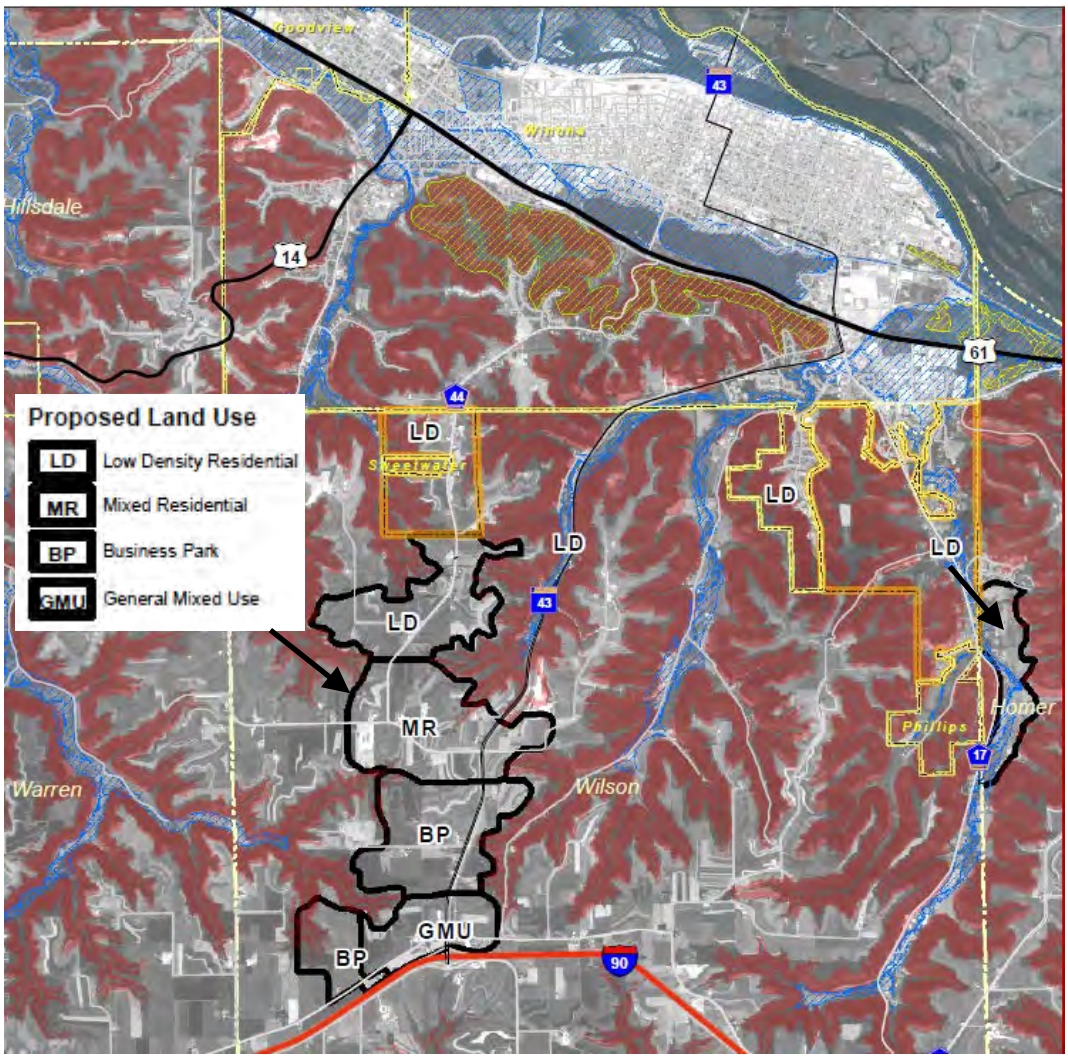
Comprehensive Plan Analysis

Winona's 2007 Comprehensive Plan is intended to guide the City's growth through the year 2027. The plan does not directly discuss frac sand, but a few sections of the document can be applied to characteristics of the industry:

Future Land Use Plan

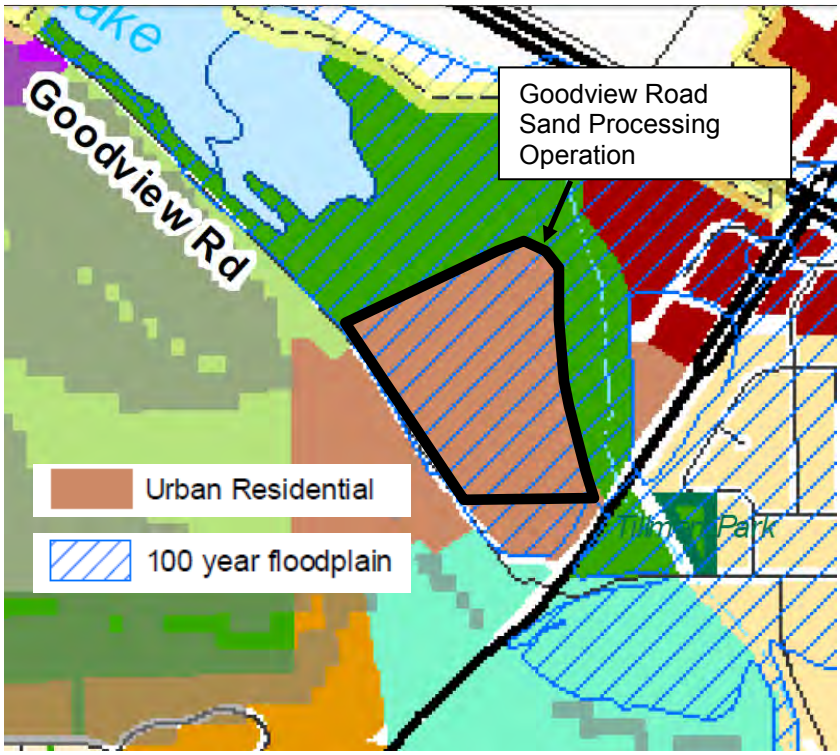
The "Future Land Use Plan" section is intended to represent Winona's long-range intentions for the use of land. In general, where the future land use plan does not match existing zoning classifications, the classifications should be changed to be consistent with the plan. However, the plan may also be modified by the City Council as appropriate.

The Future Land Use Plan designates two areas to the south of the City as potential areas for Winona's future expansion. Given code requirements which relegate mining to the A-G (Agricultural) zoning district, setback requirements (1000' from residential districts), and bluffland regulations, there are very few potential locations for mining within the existing City limits (see Attachment C). Further, it's unlikely these areas will be used for frac sand mining because of the cost involved in reaching the product. Mining for other materials may occur, but *any* new operations would be subject to a CUP. Outside of current City boundaries, future mining activities could occur in the two potential expansion areas to the south of Winona:



These two areas have future land use designations ranging from low density residential, to mixed use (commercial and residential), to business park. If the City did expand into these areas, it is most likely that the newly annexed land would be given a residential, business, or industrial zoning classification in response to a proposed development project. Annexed land would likely only be zoned A-G as a "holding" district for portions of existing farmland until rezoning is sought. In this case, a mining use - though unlikely - "could" be established through a CUP. To address this, it is recommended that the City's existing mining ordinance be amended as reflected in Action Item 1. These amendments include a number of new conditions designed to protect other land uses. The amendments also include requirements for a mine to complete a thorough reclamation plan. This plan would ensure that the landscape is restored when mining is complete and the property can be used for future residential or business land uses in accordance with the Comprehensive Plan.

The existing sand processing site on Goodview Road[2] is an example of the A-G zoning district serving as a "holding" zone. In this case, the Comprehensive Plan designates the property as urban residential:



The existing sand processing use may continue, but not expand because it is a non-conformity. The A-G district strongly limits other types of development until the property is rezoned – likely to residential. Although there are significant environmental considerations for this property (e.g. floodway/floodplains and wetlands), the Comprehensive Plan conceptually supports this future residential use. As such, this property's current A-G zoning and future land use designation as "urban residential" are appropriate and no changes are recommended.

In terms of sand processing and transportation operations, two future land use categories in the Comprehensive Plan are appropriate:

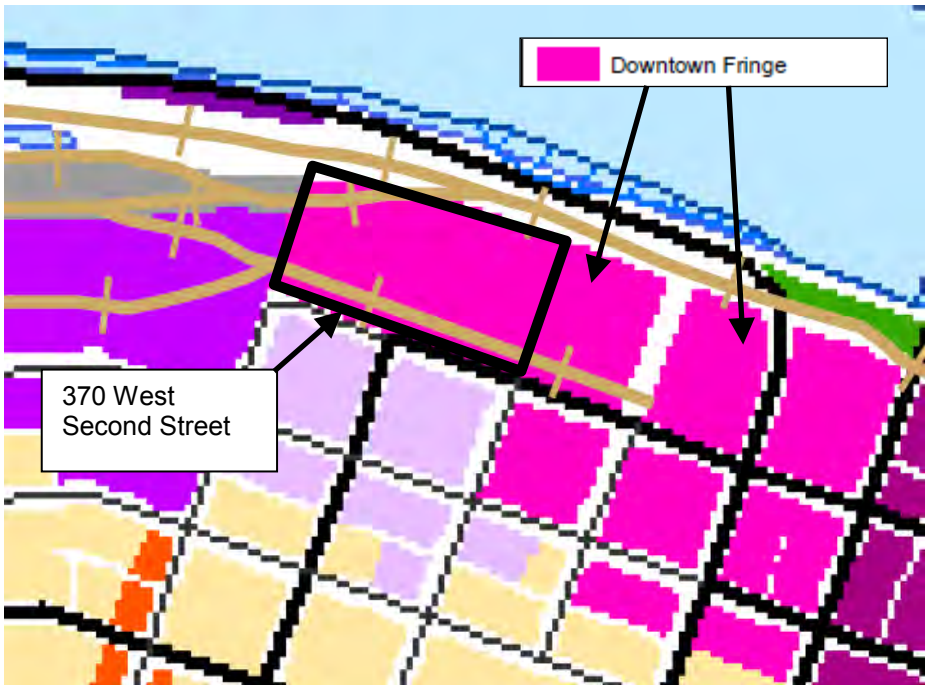
GI - General Industrial		
Areas for manufacturing, processing and other activities that may have impacts off-site, and are generally isolated from other uses or buffered from them. Often contiguous to industrial riverfront, but less river-dependent. Sites should have direct access to major regional transportation facilities.	• Performance standards for environmental effects and nuisance mitigation • Screen outdoor storage where practical	

[2] See Attachment D for a map of existing and proposed frac sand operations in Winona.

IR - Industrial Riverfront		
River, port and rail dependent industrial uses. May co-exist in proximity to other waterfront-related uses and general industrial uses. Should have good access to high-capacity roads or rail.	• Maintain or establish riverfront trail • Preserve or establish riverfront access where feasible	

These categories generally align with land currently zoned as M-2, thus lending support for *existing* regulations which only permit sand processing and transportation operations in the M-2 zoning district.

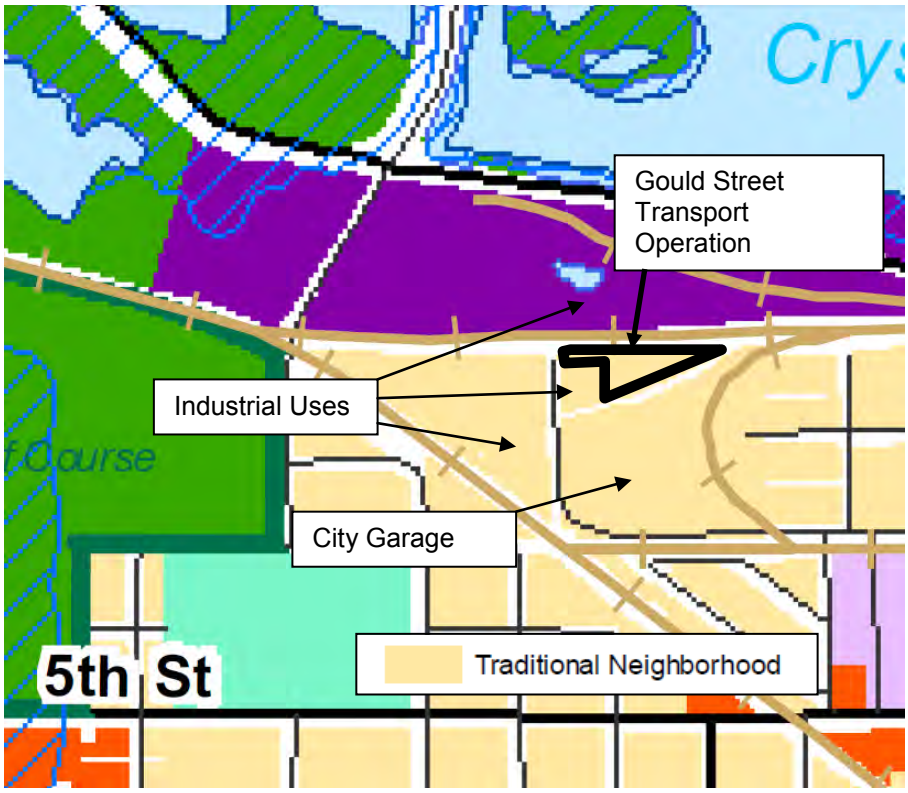
In two instances, existing frac sand transportation operations are located on land zoned M-2, but have conflicting land use designations (i.e. not General Industrial or Industrial Riverfront). The first is the transportation operation at 370 West Second Street:



The 1995 Comprehensive Plan designated 370 West Second Street for “industrial” use in its 2010 future land use plan. The updated 2007 Comprehensive Plan changed the designation to Downtown Fringe. Downtown Fringe is defined as “Area supporting the central downtown core, with a similar mix of uses but a lower intensity. Includes “arts district,” medium density residential, mixed neighborhood retail and offices, employment centers, public spaces, and satellite parking facilities.” This designation is the “vision” for property 20 years into the future (year 2027). Such a designation would be considered in a rezoning request and would indicate the Comprehensive Plan’s support for a down-zoning from an industrial zone to a business zone. However, the site

characteristics which have made the location undesirable for building (i.e. underlying property conditions such as deposits of sawdust) indicate re-designation to an industrial future land use should be considered upon Comprehensive Plan revision (circa 2017).

The second site is the Gould Street transport operation:



The 1995 Comprehensive Plan designated the Gould Street transport operation property for "industrial" use in its 2010 future land use plan. The updated 2007 Comprehensive Plan changed the designation to "Traditional Neighborhood." Traditional Neighborhood is defined as "Characterized by grid or connected street pattern, houses oriented with shorter dimension to the street and detached garages, some with alleys. Interspersed with neighborhood parks, schools, churches, and home-businesses; neighborhood commercial withing walking distance. Includes many of the City's older neighborhoods and a few newer ones that employ this pattern." This designation is the "vision" for property 20 years into the future (year 2027). Such a designation would be considered in a rezoning request and would indicate the Comprehensive Plan's support for down-zoning from an industrial zone to a residential zone. However, considering the industrial character of the surrounding land uses, re-designation back to an industrial future land use should be considered when the Comprehensive Plan is updated (circa 2017).

Environment and Energy Plan

The four goals in the Environment and Energy Plan are to:

1. *Protect Key Resources* – Protect the visual aesthetic and ecological integrity of the river corridor, bluffland areas and steep slopes, and other valued resources.

2. *Maintain and Enhance Open Space Connections* – Protect and enhance the visual and aesthetic integrity and continuity of public open space, greenways, and recreational corridors.

3. *Project Water Quality and Aquatic Resources* – Such as streams, rivers, lakes, springs, seeps and wetlands to maintain the integrity of the natural environment.

4. *Foster Stewardship* – Promote a community environmental vision through the establishment of education, preservation and energy conservation programs.

Goals one and three above directly relate to frac sand operations. These goals will be maintained through existing regulations and the Conditional Use Permitting process for sand mining, processing, and transportation operations. The City's existing regulations for shoreland, stormwater, floodplains, and blufflands are designed to minimize and even eliminate impacts on key environmental resources. In addition, the CUP process requires applicants to obtain all applicable permits from the state before starting operations. Applicants must contact state agencies such as the Department of Health (for potential wells), the MPCA (for air and water quality), and the DNR (for water withdrawals). Under the proposed mining ordinance amendments (Action Item 1), future extraction operations would have additional requirements for water quality monitoring, potential environmental review, and reclamation plans. These proposed amendments are in-line with Comprehensive Plan's guidance on the environment.

Economic Development Plan

The two goals of the Economic Development Plan are:

1. *Quality of Life* – Use the assurance of a continued high quality of live in the area through the responsible stewardship of our resources and heritage, to attract and retain employers and employees to Winona.

2. *Business Development* – Retain and grow existing businesses and attract new businesses.
    a. Support and enhance the City's intermodal transportation facilities to support the domestic and foreign trading activities of industries.

These goals are fulfilled by permitting frac sand activities in Winona *and* establishing reasonable regulations for the industry (as discussed throughout this document). The two opposing sides of the frac sand debate tout jobs on one side and

environmental/health impacts on the other. When considering these positions, it's important to reference Winona's history as a port city. Central to Winona's establishment and historic growth has been its position in receiving, occasionally processing, and distributing goods via transportation connections to water, rails, and roads. These same connections are mentioned multiple times in the Comprehensive Plan for Winona's *future*. Thus, while the product may be new, Winona's place in the distribution/supply chain is not, and the Comprehensive Plan supports the continuance of Winona as a hub for receiving and distributing goods to national and international markets.

Topics Examined

Habitat, Wetlands and Quality of Life

The Planning Commission's examination of these topics focused on two areas:

1) Existing and future sand *processing* and *transportation* sites
2) Existing and conceptual *mining* sites

<u>Existing and Potential Sand Processing and Transportation Sites</u>

Existing sand processing and transportation sites are shown on Attachment D. In accordance with City Code (Attachment B), existing facilities cannot expand (without applying for a CUP), and new facilities require a CUP to begin operations. The CUP requires all new processing or transportation facilities to be in an M-2 zoning district. This is Winona's most liberal zoning district and is meant to accommodate the most heavy/intense industrial uses in the City. In addition to sand processing and transportation facilities, the M-2 zoning district requires a CUP for uses such as acid manufacturing, foundries, liquor distillation, and brick manufacturing.

M-2 parcels of land have already been platted and zoned (signaling their intent for industrial use), and in most cases have historically been used for heavy manufacturing. If habitat or wetland issues arise, they would be addressed in the project review process. In the instance of wetlands, if there is a potential for hydric soils (signaling a potential wetland), a wetland delineation study is required. The applicant would then modify the project before construction depending on the results of the delineation. If there are habitat issues, they would also be addressed prior to construction.

In terms of quality of life, where M-2 zoned land was previously used for industry (whether recently or a number of years ago), many of the existing sand operations represent a significant increase in activity. In addition to increased on-site activity, truck traffic between sites and traffic from sand trucks entering Winona have highlighted concerns about the impact on quality of life. To address these concerns, the CUP for sand processing and transportation facilities was introduced. The CUP requires conformance with performance standards and specific conditions for sand processing and transportation facilities meant to reduce the potential impacts of each operation.

Related to these topics, the Commission recommended that the following be added to existing requirements:

d. Setback. All structures housing processing equipment and stockpiles shall be located a minimum of 200' from a residential property.

This additional condition provides an additional buffer between sand operations and residential properties, thus helping to protect the public's welfare.

Existing and Conceptual Mining Sites

The single existing mining site in Winona is the Biesanz Quarry. The recently adopted (December 2012) Biesanz "Nonconformity Agreement" places limits on the quarry's future expansion and requires that a reclamation plan be produced to address the use of the quarry after excavation is complete.

Conceptual future mining sites are shown on Attachment C. These locations are in the A-G zoning district and lie outside a 1,000 foot buffer from residential districts and the Bluffland Overlay district. It should be emphasized that these locations are only conceptual and only based on three factors:

1) Inclusion in the A-G zoning district
2) Location outside of a 1,000 foot residential buffer
3) Location outside the Bluff Impact Overlay

Sand mining in these areas is unlikely to occur primarily because of the costs involved to reach the product. Other mining may occur, but these operations also would be subject to a CUP. As discussed previously, potential future mining areas exist in the Comprehensive Plan's "expansion" areas to the south of the City. In order to address potential impacts from *any* future mining, the Planning Commission recommended that amendments be made to the City's existing extraction ordinance (Action Item 1). The amendments are based on Winona County's recent ordinance amendments for silica sand mining operations.

Air Quality

The Planning Commission studied air quality because of concerns about crystalline silica dust potentially produced by frac sand operations. The fears and questions about silica dust originated from documented hazards in occupational (workplace) settings. These hazards relate to the impact on human lungs from inhaling dust at a size fraction less then PM10 ($1/7^{th}$ the size of a human hair). This size fraction of silica dust is typically associated with activities that break down individual sand grains – e.g. sandblasting, jack hammering, rock and well drilling, and concrete mixing. The fear is that handling of silica sand (mining, processing, and transportation) will create silica dust at levels that are hazardous to human health. However, the silica sand process is

different than occupations where health hazards have been documented because individual sand grains are *not* broken down, and the sand is processed wet – thus dramatically reducing the potential for dust.[3]

This doesn't mean that the handling silica sand does not create dust. In fact, there is the *potential* for silica sand dust (emissions) in every step of the silica sand process (except for the washing). However, the *potential* for hazardous emissions is drastically reduced if the sand has a moisture content greater than 1.5%. This percentage comes from the MPCA – which has the same standard in most of the agency's permits. As a result, the Commission recommended that the following be added to the performance standards section of the City Code:

> *Moisture testing of sand or other materials with the potential to produce Particulate Matter emissions may be required to ensure that moisture levels are above 1.5%. A substitute for moisture testing is air quality monitoring completed in correspondence with the MPCA and according to applicable state regulations.*

This provision allows the City to require existing and new silica sand (and other) operations to demonstrate that the sand they are handling is damp and thus unlikely to produce significant emissions. The procedure for moisture testing is detailed below:

> *City of Winona Moisture Testing Procedure*
> *The intent of moisture testing is to ensure that particulates (specifically crystalline silica) are not being emitted into the ambient air in hazardous quantities. Moisture testing is meant to be a low-cost, proactive alternative to air quality monitoring. Air-quality monitoring may be substituted for moisture testing. Such monitoring should be completed in correspondence with the MPCA and according to applicable state regulations. Moisture testing is not required for fully enclosed processing, stockpiling, or transportation facilities or equipment. If testing already occurs, results sent to the City of Winona may be used fulfill the requirement for moisture testing. The general moisture testing procedure is below:*
>
> *1) Test once weekly when operating. Test sand in each uncovered stockpile and in one uncovered railcar (if present). Test mid-day (11 a.m. -1 p.m.) and mid-train (after sand has been disturbed). Moisture content must be greater than or equal to 1.5%.*
>
> *2) Use American Society for Testing and Materials (ASTM) method numbers D 2216-92 or D 4643-93 (or equivalent).*

[3] US EPA. Emission Factor Documentation for AP-42 Section 11.19.1 Sand and Gravel Processing. Final report. 1995. Pg. 2-11. Available at: http://www.epa.gov/ttn/chief/ap42/ch11/bgdocs/b11s19-1.pdf

3) If three consecutive weekly tests at a single location show moisture contents greater than or equal to 1.5%, weekly testing is no longer required until the source of sand changes. The City may still conduct random tests of moisture content.

4) If a single test shows a moisture percentage less than 1.5%, re-test the next day between 11 a.m. and 1 p.m. If the re-test is greater than or equal to 1.5% continue with weekly tests. If the re-test shows a moisture percentage less than 1.5%, re-test again the next day. If three consecutive tests at a single location show moisture contents less than 1.5%, a moisture addition device must be utilized to wet sand prior to processing or loading.

5) The operator shall keep records of each moisture test used to satisfy the requirements above. The records must summarize the method used, results, date, time, initials of person performing test, and the source of sand. If appropriate, provide a map of sampling locations. Submit all information to the City of Winona monthly or upon completion of testing (number three above).

An important aspect of the procedure is that operations can choose to conduct air quality monitoring instead of moisture testing. Air quality monitoring has been required by other jurisdictions in Minnesota and Wisconsin to address air quality concerns. However, if moisture testing is conducted (and the sand is shown to have a moisture content greater than 1.5%), the potential for silica emissions is often negligible - largely *eliminating* the need for air quality monitoring. Nonetheless, air quality monitoring is a valuable source of information. The expertise for such monitoring lies with the MPCA – the state agency responsible for enforcing air quality regulations. As such, if air quality monitoring is selected, it should be done according to specifications determined by the MPCA. These specifications will likely include requiring an operation to demonstrate compliance with existing regulations for air quality (e.g. PM 2.5, PM 10, and/or Total Suspended Particulates – TSP). Compliance with these regulations ensures that hazardous levels of dust are not present in the ambient air outside frac sand operations.

By far the largest potential sources of dust emissions at frac sand operations are unpaved roads and “waste” material (i.e. small sand grains not used in fracking, and clay and silt particles). To address emissions from these sources, a requirement for a fugitive dust control plan was added to the City Code in spring 2012. The fugitive dust control plan addresses potential dust emissions from sources such as site roadways, stockpiles, and conveyors.

The combination of moisture testing and a fugitive dust control plan addresses all of the potential sources of dust at a silica sand operation. Conformance with these regulations helps ensure that public health (related to air quality) is maintained.

Environmental Review

Potential issues with silica sand mining and processing have prompted questions about environmental review. Environmental review through an EAW (Environmental Assessment Worksheet) is either mandatory, exempt, or up to the discretion of the local government. In terms of silica sand, environmental review is only mandatory for new mines that are 40 acres or more and have an average depth of at least 10 feet. An EIS (Environmental Impact Statement) is mandatory if the mine will be 160 acres or more with an average depth of 10 feet. Mining associated activities exempt from environmental review are those that don't result in a permanent alteration of the environment (e.g. mapping, aerial surveying, etc.). Beyond these requirements, it is up to the discretion of the local government to complete environmental review. To provide guidance on discretionary EAWs for future mining applications, the Commission recommended that the following be added to proposed ordinance amendments:

> ***An EAW or EIS May be Required.*** *Discretionary environmental review can be initiated by the Planning Commission and City Council upon review of a discretionary EAW checklist on file in the office of the City Planner. If ordered, the Owner/applicant shall provide an Environmental Assessment Worksheet for the proposed site in accordance with standards determined by the City of Winona.*

The checklist (Attachment E) is based on another checklist developed by Winona County. Once an application is received, the checklist and application will be forwarded to the Planning Commission and the City Council to determine if a discretionary EAW is appropriate. If the City Council determines that the project will have a significant environmental impacts, it can order an EAW. Results from the EAW would be forwarded to the Board of Adjustment for their information during review of the mining Conditional Use Permit or used to declare the need for an EIS (Environmental Impact Statement).

The Commission did not recommend a checklist be adopted for sand processing and transportation facilities because there is minimal disturbance to land cover relative to mining activities (i.e. there is no resource "extraction" involved), and the existing CUP and site plan review process already addresses the items involved in an EAW (see below:

EAW Topic		**Review Process and/or Regulatory Agency**
1-5	Title, Proposer, RGU, Reason, Location	CUP
6	Description	CUP
7	Project Magnitude	CUP
8	Permits and Approvals Required	CUP
9	Land Use	CUP, Site Plan
10	Land Cover Types	Site Plan
11	Fish, Wildlife, Ecological Sensitive	Site Plan, DNR, or N/A

	Areas	
12	Physical Impacts on Water Resources	CUP, MPCA, DNR, Dept. of Health
13	Water Use	CUP, Site Plan, Dept. of Health, DNR
14	Water-related Land Use Management Districts (e.g. Shoreland zoning district)	Site Plan
15	Water Surface Use (i.e. watercraft use)	N/A
16	Erosion and Sedimentation	Site Plan, MPCA
17	Water Quality: Surface Water Runoff	Site Plan, MPCA
18	Water Quality: Wastewater	CUP,MPCA
19	Geologic Hazards (e.g. Soils)	Site Plan or N/A
20	Solid waste, Hazardous waste, storage tanks	CUP, MPCA or N/A
21	Traffic	CUP
22	Vehicle-Related Air Emissions	CUP, MPCA
23	Stationary Source Air Emissions (e.g. from boilers, dryers, etc.)	CUP, MPCA
24	Odors, Noise and Dust	CUP
25	Nearby Resources (e.g. archaeological, historical resources, prime farmland, etc.)	CUP, Site Plan, or N/A
26	Visual Impacts	CUP, Site Plan
27	Compatibility with Plans and Land Use Regulations	CUP, Site Plan
28	Infrastructure and Public Services	Site Plan
29	Cumulative Impacts	CUP
30	Other Impacts	CUP or N/A
31	Summary	N/A

Traffic Impacts and Road Wear

The movement of frac sand typically generates significant amounts of truck traffic. The potential off-site impacts of truck traffic are one of the reasons a CUP was enacted for new sand processing and transportation operations in Winona. Attachment F is a map of approximate truck traffic generated at the sand facilities in Winona based on information from approved CUP applications and discussions with operators. The numbers are approximate and based on the assumption that each operation is running. The level of activity at each site varies widely and depends on a number of factors including:

1) Market prices for frac sand
2) Season

2) Rail car storage capacity
3) Availability of rail cars and barges

Discussion with operators has also indicated that Winona is at or near capacity for rail car storage. Additionally, the main rail line used to move the sand out of Winona is very busy and significant amounts of train traffic cannot be added without disrupting the transport of other commodities. The numbers on the attached map are representative of these limitations. Thus, without increases in rail storage capacity or room on the main line, the truck traffic numbers on the map (related to rail) are unlikely to increase significantly. There is room for expansion in barge traffic, but this is limited by the CUP requirement for transportation facilities. Additional truck traffic from any other new facility in Winona is also limited by the CUP requirement (which would presumably set a maximum number of trucks per day).

In addition to limiting the number of trucks and delineating specific truck routes, many jurisdictions have addressed frac sand related traffic impacts through a combination of Traffic Impact Analyses and Road Use Agreements. This approach requires project applicants to complete a study of traffic generation and assess whether or not haul routes can accommodate the increase in trucks. If there are deficiencies, required improvements are addressed through a road use agreement. After reviewing how other jurisdictions structure traffic analyses and road use agreements, the Commission recommended adding this approach to City Code. The proposed amendments are located in Action Item 4. In summary, the amendments state the following:

1. A Transportation Impact Analysis and Road Use Agreement are required for <u>any</u> development subject to a site plan or CUP which will generate 200 or more heavy vehicle (33,000+ lbs.) trips[4] per day at maximum daily operating capacity. In addition, the City Engineer may require analyses for projects where heavy commercial vehicles from the operation would contribute more than 20% of the traffic on any local street for which residential property makes up more than 50% of the street frontage.

2. The requirement for a Transportation Impact Analyses and Road Use Agreement applies only to roads leading from an operation to a truck route.

3. The road use agreement is based on the findings of the Transportation Impact Analysis and assigns responsibility for necessary improvements to impacted roads.

4. The City Engineer may waive the requirement for a Transportation Impact Analyses and/or Road Use Agreement.

These amendments are meant to apply to operations with significant truck traffic (100+ trucks per day) which will likely impact local roads and adjacent properties. The number

[4] A trip is a vehicle movement into or out of a site. Thus, one (1) truck making a delivery to a store is counted as two (2) trips.

of projects (silica sand and others) which will generate this amount of heavy truck traffic is limited, but the amendments give the City greater ability to assess traffic/road impacts and thus protect public safety and welfare.

Water Quality

Potential impacts to water resources from frac sand operations are covered by a number of state and local regulations. According to the MPCA: "Based on our current understanding of frac sand mining operations, we do not anticipate specific or unique environmental or health risks that are not already addressed though the current water permitting processes."[5] Depending on the type of sand operation, the regulations/permit requirements which may apply are listed below. Given the extensive permitting process for water, the Planning Commission did not recommend any related code amendments.

Water Permits

1. Wells - The Department of Health requires permits for new wells. The permit considers the amount of water used and nearby wells to ensure that adjacent water supplies are not impacted.

2. Water Withdrawal – In addition to a well permit issued by the Department of Health, a water appropriation permit is required by the Department of Natural Resources for water withdrawals greater than 10,000 gallons per day or 1 million gallons per year. None of the frac sand operations in Winona have reached this level.

3. Wetlands – If a mine will impact a wetland, permitting would be handled by a combination of the Board of Soil and Water Resources, the City of Winona, and potentially the US Army Corps of Engineers.

4. Construction – Any land change that impacts soil erosion may require an erosion control or stormwater management permit from the City's Engineering Department. If the construction area is greater than one acre, an additional (NPDES) permit is required from the MPCA.

5. Stormwater/Water Runoff - The MPCA issues a MNG490000 general water permit to eligible sand and gravel operations. If an operation cannot obtain coverage under the general permit, an individual (more specialized) permit is required. If an operation has more than sand and gravel moving through the site (e.g. CD Corp), a multi-sector industrial stormwater permit may be required. If an operation has wastewater (non-stormwater) discharges that flow off-site, the operation may need an individual permit that specifically addresses such discharges.

[5]See: http://www.pca.state.mn.us/index.php/air/air-quality-and-pollutants/air-pollutants/frac-sand-mining.html

6. Dewatering – The MNG490000 permit generally covers dewatering activities (required to mine sand from below the water table) unless there are special circumstances (e.g. discharge to trout streams). The only mine in the City (the Biesanz quarry) does not use dewatering techniques.

7. Flocculants/Polyacrylamides – If an operation is planning to use flocculants to remove unwanted minerals and fines from sand, it must obtain authorization from the MPCA. None of the frac sand operations in Winona use flocculants.

Existing Operations

In addition to studying regulations to apply to new frac sand operations, the Commission studied existing operations. A map of these operations is provided in Attachment D. The Commission made the following recommendations based on staff analysis:

Sand Processing Plant – Hwy 14/Goodview Road (Number 1 on Attachment D)

1. Moisture testing of sand at the site is recommended. Testing should follow City protocols.

2. A fugitive dust control plan for access roads entering/exiting the site, should be prepared and followed.

3. Secure an Industrial Stormwater permit, if applicable/required, from MPCA. Whether required, or not, provide written certification to City.

4. Field identify northerly limit of former flood control dike through the use of stakes/signs.

5. Consult with City Public Works Department, and applicable State/Federal agencies, to determine the effect of sand storage on the regional flood. If necessary, correct problems through operational changes.

25 McConnon Drive (Number 2 on Attachment D)

1. Completion of a Fugitive Dust Control Plan – A fugitive dust control plan for 25 McConnon is recommended to be filed with the City. The plan should detail what activities on-site could create dust, identify dust control strategies, and specify an inspection schedule.

2. Continued Conformance with Performance Standards – Conformance with performance standards (particularly related to noise and dust) is especially important for this operation because of adjacent residential properties. As such, it is recommended that staff monitors conformance with performance standards after construction is complete and works with the operator at 25 McConnon Drive to address any violations.

3. Moisture Testing – Moisture testing of sand stockpiled outdoors is recommended. Such testing should follow protocol as defined by the City.

370 West Second Street (Number 3 on Attachment D)

1. Moisture Testing – Moisture testing of sand at the site is recommended. Such testing should follow protocol as defined by the City.

2. Obtain Industrial Stormwater Permit – If applicable, such permit is recommended to be obtained from MPCA. Whether required or not, provide written certification to City.

Gould Street Transport Facility (Number 4 on Attachment D)

1. Completion of a Fugitive Dust Plan – A fugitive dust control plan for the facility is recommended to be filed with the City. The plan should detail what activities on-site could create dust, identify dust control strategies, and specify an inspection schedule.

2. Moisture Testing – Moisture testing of sand at the site is recommended. Such testing should follow protocol as defined by the City.

3. Obtain Industrial Stormwater Permit – If applicable, such permit is recommended to be obtained from MPCA. Whether required or not, provide written certification to City.

Four other existing or proposed operations on Attachment D (Numbers 5-8) were not studied by the Planning Commission because they are either outside of the City, already addressed through a CUP, or addressed through a nonconformity agreement.

The final facility (Number 9 on Attachment D) is located at 780/850 E. Front Street. Sand represents a small portion of the facility's overall activity (the operation mainly handles agricultural products and fertilizer). Frac sand was shipped from this location via rail and barge in 2010 and 2011. As a result, the facility is grandfathered-in, but it is a non-conformity and is thus limited to existing operations. The facility was not identified until after the scope of the sand moratorium study was established. As a result, the operation was not part of a site-by-site analysis. However, it is similar to others described above and thus the following is recommended:

1. Completion of a Fugitive Dust Plan – A fugitive dust control plan for the facility is recommended to be filed with the City. The plan should detail what activities on-site could create dust, identify dust control strategies, and specify an inspection schedule.

2. Moisture Testing – Moisture testing of sand at the site is recommended. Such testing should follow protocol as defined by the City.

3. Obtain Industrial Stormwater Permit – If applicable, such permit is recommended to be obtained from MPCA. Whether required or not, provide written certification to City.

Action Item #1

AN ORDINANCE TO AMEND
THE CODE OF THE CITY OF
WINONA, MINNESOTA
1979

The City of Winona does ordain:

Section 1. That Paragraph C of Section 43.65.1 of the City Code of Winona, Minnesota, 1979, be amended as follows:

2. Extraction Pits: provided that ~~any power driven or power producing machinery or equipment shall not be operated within 1,000 feet of an R-District~~ no part of an extraction operation be located within 1,000 feet of a residential district and subject to the provisions of Section 43.48.

Section 2. That Article XII of the City Code of Winona, Minnesota, 1979, which Article addresses “Extraction Pits” be amended as follows:

43.48 EXTRACTION PITS.

(a) General Requirements. Unless otherwise provided, the Board of Adjustment shall grant a conditional use permit for all such uses in accordance with Section 22.21, Section 43.30, the underlying zoning district, and the following conditions:

(1) No part of an extraction operation shall be ~~carried on~~ conducted closer than 500 feet to any residential or commercial structure. No extraction operation or any stock pile shall be placed closer than 50 feet to any property line, unless a greater distance is specified by the Board where such is deemed necessary for the protection of adjacent property; provided that this distance requirement may be reduced to 25 feet by written consent of the owner of the abutting property.

(2) No excavation shall occur within 200 feet of a top of bluff as defined in ArticleXVII Bluffland Protection.

(3) In the event that the site of the extraction operation is adjacent to the right-of-way of any public street or road, no part of such operation shall take place closer than 30 feet to the nearest line of such right-of-way.

(4) Fencing shall be erected and maintained around the entire site or portions thereof where, in the opinion of the Board, such fencing is necessary for the protection of the public safety, and shall be of a type and height specified by the Board.

(5) All equipment and machinery shall be operated and maintained in such manner as to minimize dust, noise, and vibration. Access roads shall be maintained in dust-free condition by surfacing or other treatment, as may be specified by the Board, following consultation with the City Engineer.

(6) ~~The crushing, w~~Washing, ~~and~~ refining or other similar processing may be authorized by the Board as an accessory use; provided that such accessory processing shall not be in conflict with the land use regulations of the district in which the operation is located.

(7) ~~Unless otherwise permitted by the Board, all operations which are located within 500 feet of any residential district shall be conducted between the hours of 6:00 a.m. and 9:00 p.m.~~ Hours of operation for all mines shall be 6:00 a.m. to 10:00 p.m.

(8) All local, state or federal laws applicable to the specific extraction activity and subsequent rehabilitation must be met.

(9) **Water Quality Monitoring**. The mine operator/owner shall install groundwater monitoring wells adjacent to the proposed mine site where the site is adjacent to residential plats or suburban development, springs, sinkholes and/or wellhead protection areas or community wells and shall provide the City with groundwater testing by an independent environmental engineer, approved by the City, at the time of commencement of disturbance activities and twice per year until 1 year after the mine has been completely reclaimed.

(10) **Phase 1 Archeological Study**. Any land disturbance activity (e.g. excavation, construction, alteration of existing vegetation) within 1000 feet of a top of bluff as defined in Article XVII shall complete a Phase 1 Archaeological Study. The study shall be prepared by a qualified professional, as defined by MS 138.31, subd. 10, or who is listed on the Minnesota State Historic Preservation Office Archaeological Contractors list, and in accordance with protocols of the State Historic Preservation Office document entitled “SHPO Manual for Archaeological Projects in Minnesota”, July, 2005, or as amended. The scope of the study shall include all land located within 150 feet from the limits of any proposed land disturbance

activity, or at the applicant's property line, whichever is less. The study shall follow the process detailed in Article XVII.

(11) **Prohibited Activities**. Blasting and crushing shall not be permitted at the mine site, **except** by specific Board of Adjustment approval with specified time limits, mitigation of airborne particulate, and in compliance with Chapter 63. Applicants intending on blasting must submit detailed information as to the frequency, duration, schedule and vibration standard/thresholds for review and approval by the Board of Adjustment.

(12) **Project Manager/ Contact Person Required.** Owner/applicant shall at all times have an agent whose name, fax number, telephone number/cellular number and email address are on file with the City in order to respond promptly to concerns. The agent's name and contact information shall be available on site on a 2' x 3' placard or sign at the site entrance.

(13) **Contact with Other Jurisdictions.** Mines with property and/or entrances/exits in other jurisdictions shall obtain appropriate permits from such jurisdictions and provide the permits to the City of Winona.

(14) **Access Permit.** Owner/applicant shall obtain an access permit from the road jurisdiction where mine traffic enters or exits. Such permit shall be placed on file with the City.

(15) **Tracking Pad Required**. The owner/applicant shall be responsible for asphalt paving the approach to adjacent roads for a minimum distance of 40 feet.

(16) **Reporting Vehicle Weights**. Owner/Applicant shall be required to identify a method of positive controls regarding the weight of vehicles leaving the mine and method to insure vehicles do not exceed the weight limits of the roads and bridges upon which they will travel, and obtain approval by the City Engineer on the methods and frequency of inspection used. Controls such as scales and regular reporting on vehicle weights shall be implemented with weekly reporting to the City Engineer.

(17) **Street Maintenance and Sweeping Required**. Owner/applicant shall be responsible for monitoring roadways and roadway sweeping as necessary to maintain safe conditions. All transportation routes used by the mine shall not have any accumulation of visible debris or sand from the mine site. The

owner/applicant shall take all necessary precautions to avoid spillage on roadways.

(18) **Requirement for Secure Loads**. No vehicle shall be driven or moved on any roadway unless such vehicle has the load securely covered as to prevent any of its load from dropping, sifting, leaking, blowing, or otherwise escaping from vehicles.

(19) **Transportation Impact Analysis**. Owner/applicant shall be responsible for the preparation of a traffic study in accordance with Article XVIII "Transportation Impact Analyses and Road Use Agreements" for operations generating 200 or more heavy commercial vehicle (over 33,000 lbs.) trips per day at maximum operating capacity. This threshold shall not prevent the City Engineer from requiring analyses for projects where heavy commercial vehicles from the operation would contribute more than 20% of the traffic on any road used to reach a truck route for which residential property makes up more than 50% of the street frontage.

(20) **Road Use Agreement**. A road use agreement shall be required in accordance with Section 43.91 for projects subject to a Transportation Impact Analysis.

(21) **Reclamation Plan Required**. A complete and detailed reclamation plan shall accompany all applications which meets or exceeds the requirements of paragraph (e) of this section.

(22) **Subterranean Engineering Analysis Required.** Owner/applicant shall submit an analysis prepared by a qualified independent engineering firm of the existing geologic conditions both in the extraction area and sub-extraction area and the impacts of the mining operations, including the applicability of the reclamation plan including any potential adverse effect on area hydrology, springs or Karst formations. The City reserves the right to have this data reviewed by state geologists/hydrologists and/or SWCD staff.

(23) **Performance Guarantees Required**. Performance bonds shall be required for the following:

- 110% of the estimated cost of reclamation for a period equal to the life of the quarry plus 2 years. Performance bonds for reclamation may only cover the areas of disturbance for the duration of mining activity and may 'roll' with disturbance activity accordingly in order to minimize financial burden on the applicant.
- A performance surety shall be provided in the amount of $1,000 per acre for the total proposed site disturbance. The

surety shall be used to reimburse the City for any monies, labor, or material expended to bring the operation into compliance with the conditions of the permit.

(24) **An EAW or EIS May be Required.** Discretionary environmental review can be initiated by the Planning Commission and City Council upon review of a discretionary EAW checklist on file in the office of the City Planner. If ordered, the owner/applicant shall provide an Environmental Assessment Worksheet for the proposed site in accordance with standards determined by the City of Winona.

(b) Performance Standards. Extraction uses shall also comply with the following performance standards:

(1) Water Resources: The extraction pit or land alteration operation shall not be allowed to interfere with surface water drainage beyond the boundaries of the operation. The work done shall not adversely affect the quality of surface or subsurface water resources. Surface water originating outside and passing through the mining district shall, at its point of departure from the site, be of equal quality to the water at the point where it enters the site.

(2) Access Roads: The location of the intersection of access roads with any public roads shall be selected such that traffic on the access roads will have a sufficient distance or public road in view so that any turns onto the public road can be completed with a margin of safety.

(3) Appearance: All buildings, structures and plants used for the production of processing of sand and gravel shall be maintained in such a manner as is practical and according to acceptable industrial practice as to assure that such buildings, structures and plants will not become dangerously dilapidated.

(4) Topsoil Management:

i. Removal: Removal of on-site topsoil and topsoil substitute material removal, when specified in the reclamation plan, shall be performed, prior to any mining activity associated with any specific phase of the mining operation.

ii. Volume: The operator shall obtain the volume of soil required to perform final reclamation by removal of on-site topsoil or topsoil substitute material or by obtaining topsoil or substitute material

as needed to make up the volume of topsoil as specified in the reclamation plan approved pursuant to this chapter.

iii. Storage: Once removed, topsoil or topsoil substitute material shall, as required by the reclamation plan approved pursuant to this chapter, either be used in contemporaneous reclamation or stored in an environmentally acceptable manner. The location of stockpiled topsoil or topsoil substitute material shall be chosen to protect the material from erosion or further disturbance or contamination. Runoff water shall be diverted around all locations in which topsoil or topsoil substitute material is stockpiled.

(5) Driveway/Access to the commercial/industrial site shall not be located within twenty-five (25) feet of adjacent property boundaries.

~~(b)~~(c) Financial Ability of Applicant. In accepting such plan for review, the Board must be satisfied that the proponents are financially able to carry out the proposed extraction and rehabilitation operation in accordance with the plans and specifications submitted.

~~(c)~~(d) Application. An application for such operation shall set forth the following information:

(1) The name of the owner of the land from which removal is to be made.

(2) The name of the applicant making request for such a permit.

(3) The name of the person or corporation conducting the actual removal operation.

(4) A legal property description and acreage of the area to be mined.

~~(4)~~(5) ~~A map showing contours at two foot intervals, the location, and the size of the area from which the removal is to be made. Existing land use/zoning within 300 feet of the removal site and the location of any buildings and processing equipment to be used in the activity.~~ Maps of the entire site and all areas within one thousand (1,000) feet of the site. Such maps shall show land use, zoning, bluffland, and shoreland information. In addition, the maps described below shall be provided for the entire site. All maps shall be drawn at a scale of one (1) inch to one hundred (100) feet unless otherwise stated below.

Map/Document A - Existing conditions to include:

i. Contour lines at five (5) foot intervals.
ii. Existing vegetation.
iii. Existing drainage & permanent water areas.
iv. Existing structures.
v. Existing wells.

Map/Document B – Proposed operations to include:

i. Structures to be erected.
ii. Location of sites to be excavated showing depth of proposed excavation.
iii. Location of excavated deposits showing maximum height of deposits.
iv. Location of storage of excavated materials, showing the height of storage deposits.
v. Location of vehicle parking.
vi. Location of storage of explosives.
vii. Erosion and sediment control structures.

Map/Document C – Reclamation Plan to include:

i. Final grade of proposed site showing elevations and contour lines at five (5) foot intervals.
ii. Location and non-invasive species of vegetation to be replanted.
iii. Location and nature of any structures to be erected in relation the end use plan.
iv. Stipulations and standards of paragraph (e) below.

~~(5)~~(6) The type of resources or materials to be removed.

~~(6)~~(7) The proposed method of removal and whether or not the use of explosives will be required.

~~(7)~~(8) A description of all equipment to be used.

~~(8) A plan showing the method and timing of rehabilitation and reclamation of the extraction site.~~

(9) Hours of operation.

(10) A soil erosion and sediment control plan.

(11) A plan for dust and noise control.

(12) A full and adequate description of all phases of the proposed operation to include an estimate of duration of the mining operation.

(13) Responses to stipulations of paragraphs (a), (b), and (e) of this section.

(14) Any other information requested by the Board of Adjustment.

~~(d)~~(e) ~~Rehabilitation~~ Reclamation. ~~To guarantee the restoration, rehabilitation, and reclamation of extraction sites, every applicant granted a permit shall furnish a performance bond running to the City in an amount of $25,000, as a guarantee that such applicant, in restoring, reclaiming, and rehabilitating such land, shall, within a reasonable time and to the satisfaction of the Board, meet the following minimum requirements:~~ Reclamation shall be complete within one (I) calendar year after the operation ceases. A performance bond shall be required for 110% of the estimated cost of reclamation for a period equal to the life of the quarry plus 2 years. Performance bonds for reclamation may only cover the areas of disturbance for the duration of mining activity and may 'roll' with disturbance activity accordingly in order to minimize financial burden on the applicant. The plan shall specify a systematic approach to land reclamation for the mining site, including phases and schedule for reclamation. The City reserves the right to review the conditional use permit annually to enforce compliance.

Reclamation plans for sand mining sites shall include a land use/cover plan equal to the actual land use/cover types previous to mining operations. Areas intended for post-mining agricultural uses must include approval by SWCD for best management practices.

Inactivity at the mine site shall require reclamation in accordance with the terms of an NPDES permit. The NPDES permit shall be placed on file with the City of Winona before extraction/mining operations commence. Inactivity shall be defined as when an operator of a surface mining operation has curtailed production at the site/operation with the intent to resume at a date more than one year in the future.

Within a period of three (3) months after the termination of an operation, or within three (3) months after abandonment of such operation for a period of six (6) months, or within three (3) months after expiration of a permit, all buildings, structures and plans incidental to such operation shall be dismantled and removed by, and at the expense of, the mining operator last operating such buildings, structures and plants.

The following standards shall apply to the reclamation plan:

(1) ~~All excavation shall be made either to a water producing depth~~ When the post-mining land use includes a body of water, ~~such~~ all excavation shall be made to a water producing depth ~~depth to be~~ not less than 5 feet below the bow watermark~~,~~. A slope no steeper than 3:1 shall be created to allow for a safe exit. ~~or shall be~~

Excavation may also be graded or backfilled with non-noxious, noninflammable and noncombustible solids, to secure (a) that the excavated area shall not collect and permit to remain therein stagnant water or (b) that the surface of such area which is not permanently submerged is graded or backfilled as necessary so as to reduce the peaks and depressions thereof, so as to produce a gently running surface that will minimize erosion due to rainfall and which will be in substantial conformity to the adjoining land area. Final reclaimed slopes covered by topsoil or topsoil substitute material may not be steeper than a 4:1 horizontal to vertical incline, unless demonstrated based on site-specific engineering analysis performed by a registered professional engineer. All areas in the extraction pit site where topsoil or topsoil substitute material is to be reapplied shall be graded or otherwise prepared prior to topsoil or topsoil substitute material redistribution to provide the optimum adherence between the topsoil or topsoil substitute material and the underlying material.

(2) Topsoil Redistribution for Reclamation: Topsoil or topsoil substitute material shall be redistributed in a manner which minimizes compacting and prevents erosion. Topsoil or topsoil substitute material shall be uniformly redistributed except where uniform redistribution is undesirable or impractical. Topsoil or topsoil substitute material redistribution may not be performed during or immediately after a precipitation event until the soils have sufficiently dried.

~~(2)~~(3) Vegetation shall be restored by appropriate seeding of grasses or planting of shrubs or trees in all parts of such extraction area where such area is not to be submerged under water.

~~(3) The banks of all excavations not backfilled shall be sloped to the water line at a slope which shall not be less than three feet horizontal to one foot vertical and such bank shall be seeded.~~

(4) Assessing Completion of Successful Reclamation:

i. The criteria for assessing when reclamation is complete shall be specified in the reclamation plan. Criteria to evaluate reclamation success shall be quantifiable.

ii. Compliance with the re-vegetation success standards in the approved reclamation plan shall be determined by:
   a. On-site inspections by the City of Winona or its agent;
   b. Reports presenting results obtained during reclamation evaluations including summarized data on re-vegetation, photo documentation or other evidence that the criteria in the reclamation plan have been met; or
   c. A combination of inspections and reports. In those cases where the post mining land use specified in the reclamation plan requires a return of the mining site to a pre- mining condition, the operator shall obtain baseline data on the existing plant community for use in the evaluation of reclamation success pursuant to this section.

iii. Re-vegetation success may be determined by:
   a. Comparison to an appropriate reference area;
   b. Comparison to baseline data acquired at the mining site prior to its being affected by mining; or
   c. Comparison to an approved alternate technical standard.

iv. Re-vegetation using a variety of plants indigenous to the area is encouraged.

(5) Maintenance: During the period of the site reclamation the operator shall perform any maintenance necessary to prevent erosion, sedimentation or environmental pollution.

~~(4)~~(6) In addition to the foregoing, the Board may impose such other conditions, requirements, or limitations concerning the nature, extent of the use, and operation of the extraction pit as the Board may deem necessary for the protection of adjacent properties and the public interest. The conditions shall be determined by the Board prior to issuance of the conditional use permit.

Section 2. That this ordinance shall take effect upon its publication.

Dated this _____ day of _____, 2013.

_____
Mayor

Attested By:

_____
City Clerk

Action Item #2

AN ORDINANCE TO AMEND
THE CODE OF THE CITY OF
WINONA, MINNESOTA
1979

The City of Winona does ordain:

Section 1. That Section 43.33 (e) of Article IV of the City Code of Winona, Minnesota, 1979, which article is entitled “Performance Standards” be amended as follows:

(7) Fly ash, dust, fumes, vapors, gases, and other forms of air pollution. No emission shall be permitted which can cause any damage to health, to animals, vegetation or other forms of property, or which can cause any excessive soiling, at any point; and in no event any emission, from any chimney or otherwise, of any solid or liquid particles in concentrations exceeding 3/10 grains per cubic foot of the conveying gas at any point. For measurement of the amount of particles in gases resulting from combustion, standard corrections shall be applied to a stack temperature of 500 degrees Fahrenheit and 50 percent excess air. All activities shall comply with applicable state law, rules and local ordinances for dust and Particulate Matter generation, and any stockpiles (including sand and dirt) which product windblown dust shall be covered. A fugitive dust control plan may be required detailing dust control measures both on-site and off-site. <u>Moisture testing of sand or other materials with the potential to produce Particulate Matter emissions may be required to ensure that moisture levels are above 1.5%. A substitute for moisture testing is air quality monitoring completed in correspondence with the MPCA and according to applicable state regulations.</u>

Section 2. That this ordinance shall take effect upon its publication.

Dated this _____ day of _____, 2013.

_____
Mayor

Attested By:

_____

City Clerk

Action Item #3

AN ORDINANCE TO AMEND
THE CODE OF THE CITY OF
WINONA, MINNESOTA
1979

The City of Winona does ordain:

Section 1. That Section 43.63 (b)(39) of Article XIV of the City Code of Winona, Minnesota, 1979, which is entitled “M-2 General Manufacturing District” be amended as follows and re-lettered accordingly:

e. Setback. All structures housing processing equipment and stockpiles shall be located a minimum of 200’ from a residential property.

Section 2. That this ordinance shall take effect upon its publication.

Dated this _____ day of _____, 2013.

_____
Mayor

Attested By:

_____
City Clerk

Action Item #4

AN ORDINANCE TO AMEND
THE CODE OF THE CITY OF
WINONA, MINNESOTA
1979

The City of Winona does ordain:

Section 1. That Section 43.01 of Chapter 43 of the City Code of Winona, Minnesota, 1979, which Section sets forth “Definitions” of the Zoning Chapter, be amended as follows:

43.01 DEFINITIONS. For the purposes of this chapter, the following words and phrases shall have the meanings respectively ascribed to them by this section:

Heavy Commercial Vehicle: Any vehicle with a gross vehicle weight rating over 33,000 pounds.

Road Use Agreement: An agreement between a developer or property owner and a road authority identifying the road improvements, road impacts, and impact mitigation and remediation measures necessary to preserve the condition of road infrastructure and to make such improvements as may be necessary to handle the volume, weight, size, turning radius, and other attributes of the truck traffic generated by a land use.

Section 2. That Chapter 43 of said Code, which Chapter is entitled “Zoning”, be amended by adding thereto the following Article:

ARTICLE IX. TRANSPORTATION IMPACT ANALYSES AND ROAD USE AGREEMENTS

43.88 PURPOSE.

(a) Purpose and Intent: The intent of this article is to provide the information necessary to allow decision-makers to assess the transportation implications of traffic associated with a proposed development in relation to safety, the existing and proposed capacity and condition of the street system, congestion, and the quality of life of neighboring residents. This article establishes requirements for the analysis and evaluation of

transportation impacts associated with proposed developments. Traffic studies should identify what improvements, if any, are needed to:

(1) Ensure safe ingress to and egress from a site;
(2) Maintain adequate street capacity on public streets serving the development;
(3) Ensure safe and reasonable traffic operating conditions on streets and at intersections;
(4) Avoid creation of or mitigate existing hazardous traffic conditions;
(5) Minimize the impact of non-residential traffic on residential uses in the vicinity; and
(6) Protect the public investment in the existing street system.

43.89 GENERAL PROVISIONS

(a) When Required: A Transportation Impact Analysis and Road Use Agreement shall be required for any development subject to a site plan or CUP after 1/1/2013 which will generate 200 or more heavy commercial vehicle trips per day at maximum daily operating capacity. This threshold shall not prevent the City Engineer from requiring analyses for projects where heavy commercial vehicles from the operation would contribute more than 20% of the traffic on any local street for which residential property makes up more than 50% of the street frontage.

(b) Jurisdiction: The City Engineer shall have the final authority for determining the need and adequacy of Transportation Impact Analyses and Road Use Agreements. The City Engineer may waive the requirement for a Transportation Impact Analysis and/or Road Use Agreement.

(c) Applicability: A Transportation Impact Analysis shall apply to roads used for transporting materials in heavy commercial vehicles, extending from the site access to a truck route unless waived by the City Engineer.

(d) Application: No development application subject to a Transportation Impact Analysis or Road Use Agreement shall be considered complete unless accompanied by an appropriate traffic study except if a waiver has been granted.

(e) Findings: A Transportation Impact Analysis shall find the following:

(1) The traffic generated by the proposed use can be safely accommodated on proposed haul routes and will not need to be upgraded or improved in order to handle the additional traffic generated by the use; or

(2) A Road Use Agreement is recommended specifying responsibility for improving and maintaining roads including remediation of damaged roads and specification of designated haul routes.

43.90 TRANSPORTATION IMPACT ANALYSES

(a) Contents: A Transportation Impact Analysis shall contain the following information at a minimum:

(1) An analysis of existing traffic on road segments and intersections from site access to a truck route.

(2) Traffic forecasts for road segments and intersections from site access to a truck route. Such forecasts shall be based on the maximum trips per day.

(3) An analysis of the impact of the proposed development on residential streets in the vicinity of the site to identify any potential adverse effects of the proposed development and mitigation measures to address any impacts. Examples of possible effects include, but are not limited to, non-residential traffic impacts on residential neighborhoods, schools, pedestrian and bicyclist safety hazards (especially at points where haul routes intersect with facilities having high levels of pedestrian or bicycle traffic), traffic noise, or turning movement conflicts with other driveways or local access roads.

(4) An analysis of level of service for intersections from site access to a truck route.

(5) An analysis of intersection sight distances.

(6) An analysis of the road's structural ability to handle trucks extending from site access to a truck route. Such analysis shall include an analysis of existing and projected cumulative equivalent single axle loads (ESALs) using the Minnesota Local Road Research Board (LRRB) Pavement Impacts of Large Traffic Generators methodology. A structural analysis shall also be completed for any bridge or culvert along a public road used for a haul or access route if identified as at risk for structural failure due to increased ESAL loadings from the proposed use.

(7) A finding that traffic impacts can either be handled by the roads studied or:

i. A list of infrastructure improvements needed to bring the route up to commonly accepted engineering design standards and access management criteria, and/or

ii. A list of roadbed, ride surface, or drainage improvements that are needed to increase the structural stability of roads and any substructure, superstructure or deck improvements needed to increase the structural stability of bridges and culverts.

43.91 ROAD USE AGREEMENTS

(a) A Road Use Agreement shall be prepared for developments subject to a Transportation Impact Analysis at the discretion of the City Engineer. Such agreement shall be developed in response to the findings of a Transportation Impact Analysis. The agreement may address, but is not limited to, any of the following road infrastructure matters:

(1) Responsibility for upgrading
   a. Pavement sections, bridges, and culverts structural condition
   b. Intersection signals and signage
   c. Geometric design, including entrances, intersections, railroad and pedestrian/bicycle facility crossings, geometric design of bridges and culverts, and typical road cross-sections;

(2) Responsibility for exceptional maintenance attributable to the use, estimated based on Minnesota Local Road Research Board (LRRB) Pavement Impacts of Large Traffic Generators methodology;

(3) Responsibility for clean-up of spillage and public road dust control along haul routes;

(4) Establishment of financial accounts to address costs associated with upgrading and exceptional maintenance costs;

(5) Delineation of a haul route between site access and a truck route;

(6) Schedules of operation and hauling, including construction operations;

(7) Methods to verify and report type, number, and weight of truck loads;

(8) Emergency conditions creating a need for immediate road repairs or road closing;

(9) Required insurance; and

(10) Remedies and enforcement measures.

Section 3. That this ordinance shall take effect upon its publication.

Dated this _____ day of _____, 2013.

_____
Mayor

Attested By:

_____
City Clerk

A

Zoning Districts

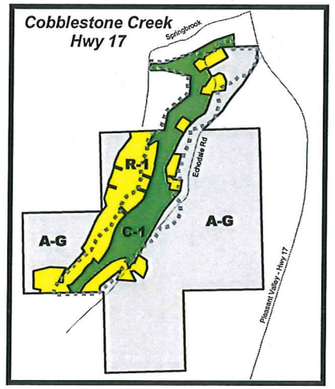
February 2010

For furthur zoning ordinance information see city website: www.cityofwinona-mn.com or call the Dept. of Community Development at (507) 457-8250

Shoreland Overlay Zone
Urban Shoreland Zone
Zoning District Boundary
A-G
B-1
B-2
B-2.5
B-3
C-1
M-1
M-2
R-1
R-1.5
R-2
R-3
R-R
R-S

District	Designation	Principal Uses
R-R	Rural Residential District	Residence - 1 family residence, limited agricultural
R-S	Residential Suburban District	Residence - 1 family residence, churches, schools
R-1	One-Family Residence District	Residence - 1 family homes, home occupations, professional offices, institutional uses, 2 family dwelling in certain locations, etc.
R-1.5	One to Four-Family, Medium Density	Residence - 1 to 4 family dwellings
R-2	One to Four-Family Residence District	Residence - 1 to 4 family dwellings, community development projects, fraternities, etc.
R-3	Multiple-Family Residence District	Residence - multi-family dwellings, apartments, hotels, clinics, motels, trailer parks, etc.
B-1	Neighborhood Business District	Neighborhood Business - neighborhood retail stores, auto services, advertising, etc.
B-2	Central Business District	Central Business District - major retail stores, department stores, bars, studios, hotels, restaurants, etc.
B-2.5	Mixed Use Business District	Mixed Use Business - wholesale business, drive-ins, trades, contractors, etc.
B-3	General Business District	General Business - wholesale business, drive-ins, trades, contractors, etc.
M-1	Light Manufacturing District	Light Manufacturing - light industrial plants, laboratories, etc. - no dwellings
M-2	General Manufacturing District	General Manufacturing - heavy industries subject to performance standards and distance requirements.
C-1	Conservancy District	Conservancy Districts - use by conditional permit only
A-G	Agricultural District	Agricultural, parks, wildlife areas, 1 family residence

Cobblestone Creek
Hwy 17



0 1,000 2,000 4,000 Feet

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See inset, for parcel south of this point, Cobblestone Creek

43.63 M-2 GENERAL MANUFACTURING DISTRICT.

(b) Conditional Uses. The following manufacturing uses shall be permitted in the M-2 district only if specifically authorized by the board in accordance with the provisions of Section 43.30; provided, that such uses can control the generation of any dangerous or offensive elements in their operation, so as to comply with the performance standards in Section 43.33 and subject to review in accordance with the performance standards procedure in Section 43.30 in all instances.

(39) Sand processing facilities, including sand washing and drying facilities. In addition to the general performance standards set forth in Section 43.33, sand processing facilities shall also comply with the following specific conditions:

a. Hard Surfacing. Asphalt or concrete surfacing shall be required in any truck or equipment maneuvering area.
b. Truck Washing Equipment and/or Tracking Pads. Truck washing equipment or tracking pads, or a combination of both, shall be required at each facility.
c. Truck Route Designation. All trucks entering and leaving such facilities shall enter and exit Winona on designated truck routes. Such routes shall avoid residentially zoned property to the greatest extent possible.
d. Enclosure and Covering of Processing Equipment and Stockpiles. Processing equipment (including dryers, washers, and screeners) and stockpiles within 500 feet of any R or B district shall be enclosed by a structure. Stockpiles greater than 500 feet from an R or B district and undisturbed for more than one week shall be covered.
e. Stockpile Watering. Uncovered stockpiles shall be watered regularly to prevent surface areas from drying out and becoming susceptible to wind erosion.
f. Hours of Operation. Hours of operation for truck traffic and equipment/machinery with back-up alarms shall be limited to 7 a.m. – 7 p.m.
g. Landscaping and Screening. Sufficient landscaping and screening, including but not limited to fences, walls and/or vegetative screens, as approved by the City of Winona, shall be provided to mitigate visual impacts of operation on adjacent properties.
h. Contact Information. Facility operators shall provide current contact information to the City of Winona to facilitate response to concerns.
i. Permits and Reports Obtained and Placed on File. Any applicable state or federal permits shall be obtained and placed on file with the City of Winona. Any reports generated to fulfill permit requirements shall be submitted to the City of Winona.

(40) Transportation facilities used to ship sand, except for dredged material (e.g. river sand) from the Mississippi River. In addition to the general performance standards set forth in Section 43.33, transportation facilities used to ship sand shall also comply with the specific conditions set forth under 43.63 (b) (39) above.

43.33 PERFORMANCE STANDARDS

(a) Compliance with Regulations. No land or building in any district shall be used or occupied in any manner so as to create any dangerous, injurious, noxious, or otherwise objectionable fire, explosive or other hazard, noise or vibration, smoke, dust, odor or other form of air pollution, heat, cold, dampness, electrical or other

substance, condition or element in such a manner or in such amount as to adversely affect the surrounding area or adjoining premises (referred to herein as "dangerous or objectionable elements"); provided, that any use permitted or not expressly prohibited by this chapter may be undertaken and maintained if it conforms to the regulations of this section limiting dangerous and objectionable elements at the point of the determination of their existence. (08-17-59)

(b) Enforcement Provisions Applicable to Other Uses. Even though compliance with performance standards procedure in obtaining a zoning certificate is not required for a particular use, initial and continued compliance with performance standards is required of every use and provisions for enforcement of continued compliance with performance standards shall be invoked by the zoning administrator or board as the case may be, against any use, if there are reasonable grounds to believe that performance standards are being violated by such use. (08-17-59)

(c) Nonconforming Uses. Certain uses established before the original effective date of the regulations of this chapter and nonconforming as to performance standards shall be given a reasonable time in which to conform therewith, as provided in Section 43.32(e). (08-17-59)

(d) Locations where Determinations are to be Made for Enforcement of Performance Standards. The determination of the existence of any dangerous and objectionable elements shall be made at the location of the use creating the same and at any points where the existence of such elements may be more apparent (herein referred to as “at any point"); provided, however, that the measurements necessary for enforcement of performance standards set forth in this section shall be taken at different points in different districts in relation to the establishment or use creating the element being measured (herein referred to as "point of measurement") as follows:

(1) In any R District and B-1 and B-2 Districts. Twenty-five feet from the establishment or use or at the lot line of the use, if closer to the establishment or use.

(2) In B-2.5, B-3 and M Districts. At the boundary of the district or at any point within an adjacent R district.

(e) Performance Standards, Regulations. The following provisions, standards and specifications shall apply:

(1) Fire and explosion hazard. All activities involving and all storage of inflammable and explosive materials shall be provided at any point with adequate safety devices against the hazard of fire and explosion and adequate firefighting and fire suppression equipment and devices standards in the industry. Burning of waste materials in open fire shall be prohibited at any point. The relevant provisions of state and local laws and regulations shall also apply.

(2) Radioactivity or electric disturbance. No activities shall be permitted which emit dangerous radioactivity at any point or electrical disturbance adversely affecting the operation at any point of any equipment other than that of the creator of such disturbance.

(3) Noise. In accordance with measured at locations stated in Chapter 39.

(4) Vibration. No vibration shall be permitted which is discernible without instruments at the points of measurement specified in subsection (d) above.

(5) Smoke. No emission shall be permitted at any point, from any chimney or otherwise, of visible gray smoke of a shade equal to or darker than No. 2 of the Power's Micro-Ringlemann Chart, published by McGraw-Hill Publishing Company, Inc., and copyright 1954 (being a direct facsimile reduction of the standard Ringlemann Chart as issued by the United States Bureau of Mines), except that visible gray smoke of a shade equal to No. 2 on said Chart may be emitted for 4 minutes in any 30 minutes. These provisions applicable to visible gray smoke shall also apply to visible smoke of different color but with an apparently equivalent capacity.

(6) Odors. No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be offensive at the points of measurement specified in subsection (d) above. Any process which may involve the creation or emission of any odors shall be provided with a secondary safeguard system, so that control will be maintained if the primary safeguard system should fail. There is hereby established as a guide in determining such quantities of offensive odors Table III, "Odor Thresholds," in Chapter 5 "Air Pollution Abatement Manual," copyright 1951 by Manufacturing Chemists' Assn., Inc., Washington, D.C.

(1) Fly ash, dust, fumes, vapors, gases, and other forms of air pollution. No emission shall be permitted which can cause any damage to health, to animals, vegetation or other forms of property, or which can cause any excessive soiling, at any point; and in no event any emission, from any chimney or otherwise, of any solid or liquid particles in concentrations exceeding 3/10 grains per cubic foot of the conveying gas at any point. For measurement of the amount of particles in gases resulting from combustion, standard corrections shall be applied to a stack temperature of 500 degrees Fahrenheit and 50 percent excess air. All activities shall comply with applicable state law, rules and local ordinances for dust and Particulate Matter generation, and any stockpiles (including sand and dirt) which product windblown dust shall be covered. A fugitive dust control plan may be required detailing dust control measures both on-site and off-site.

(2) Glare. No direct or sky-reflected glare, whether from floodlights or from high-temperature processes, such as combustion, welding or otherwise, so as to be visible at the points of measurement specified in subsection (d) above. This restriction shall not apply to signs otherwise permitted by the provisions of this chapter.

(3) Liquid or solid wastes. No discharge at any point into any public sewer, private sewage disposal system or stream or into the ground, except in accord with standards approved by the department of health of the state or standards equivalent to those approved by such department for similar uses of any materials of such nature or temperature as can contaminate

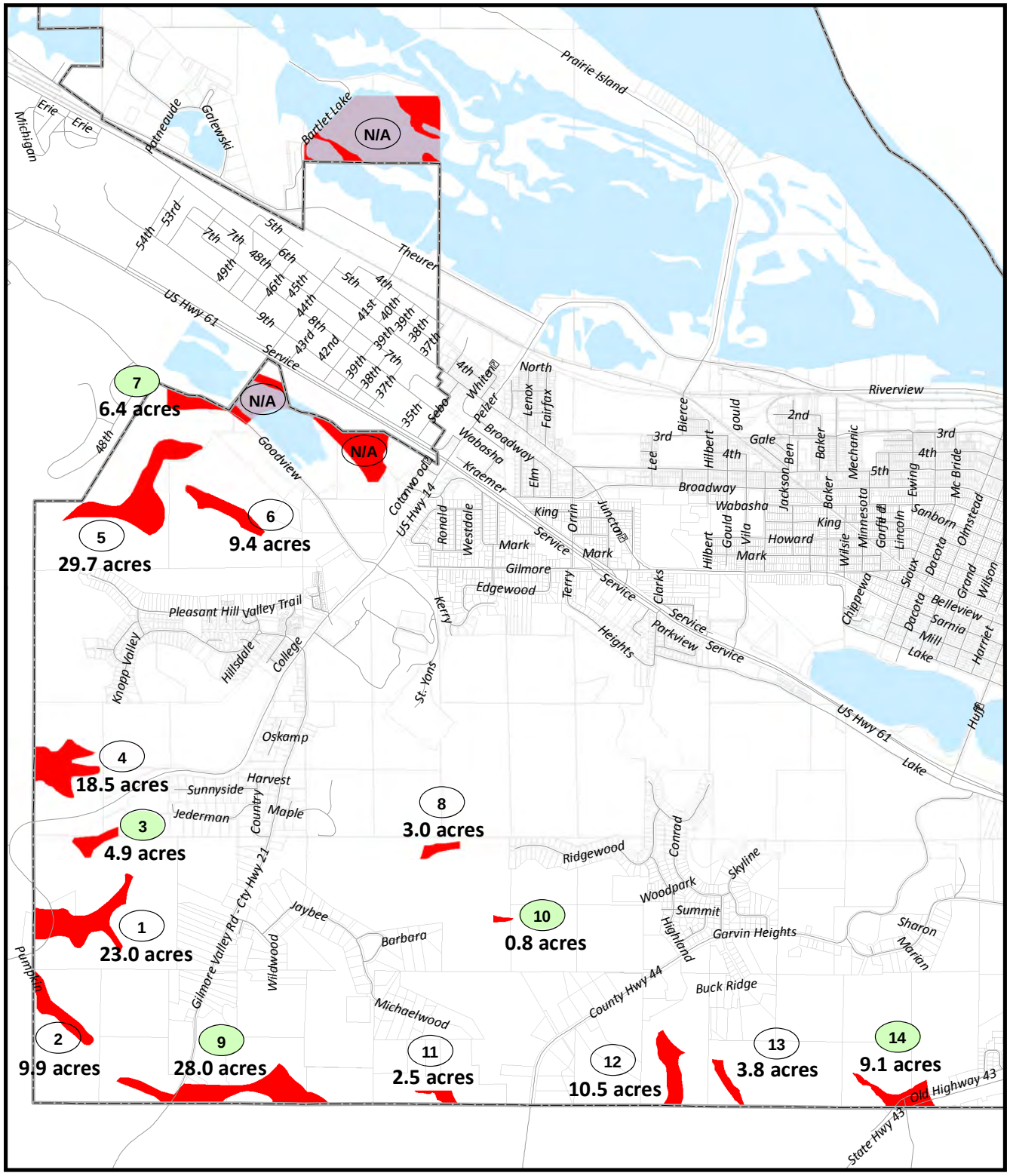
any water supply or otherwise cause the emission of dangerous or offensive elements. (08-17-59)

(4) Additional Requirements. The City of Winona reserves the right to impose additional conditions to, within and upon the issuance of a Conditional Use Permit as it deems necessary or appropriate to protect the health, safety, morals and general welfare of the public.

C

Mining within the City of Winona

Agricultural land area after bluff overlay district and 1000' residential zoning buffer has been taken out.



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May 2012

Active and Proposed Frac Sand Operations in Winona January 2013

Numbers Match Locations on Map:

1) **Active: 2100, 2121 Goodview Road**
Company/Individual: *Bob Hemker*
Activities Occurring: *Sand washing, then sent to number 4) for shipping*
Zoning: A-G (Agricultural)

2) **Proposed: 25 McConnon Drive**
Company/Individual: *Rich Mikrut*
Activities to Occur: *Drying, screening, sorting, storage, and shipping via rail*
Zoning: *M-2 (General Manufacturing)*

3) **Active: 370 West Second Street and Parcel 32-104-0050**
Company/Individual: *Steve Kohner*
Activities Occurring: *Washed and unwashed sand shipped via rail*
Zoning: *M-2 (General Manufacturing)*

4) **Active: Property East of 70 Gould Street**
Company/Individual: Rick Mikrut
Activities Occurring: *Washed sand shipped via rail*
Zoning: *M-2 (General Manufacturing)*

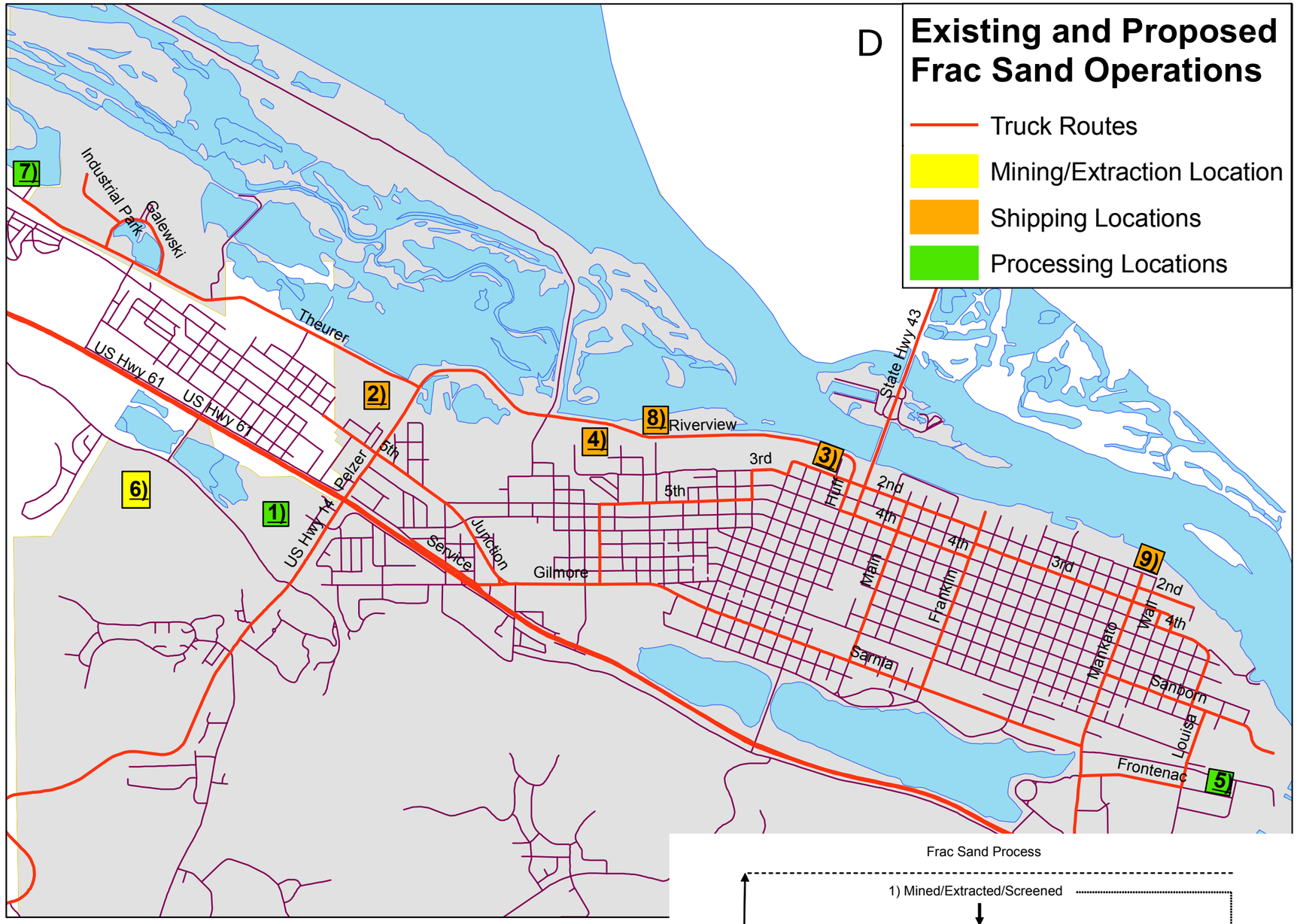
5) **Proposed: 1280-1330 Frontenac Drive**
Company/Individual: *Bob Hemker*
Activities to Occur: *Sand washing, drying, then sent to number 2) for shipping*
Zoning: M-2 (General Manufacturing)

6) **Active: 4600 Goodview Road/Biesanz Stone Company**
Company/Individual: *Biesanz Stone Company*
Activities Occurring: *Mining/extraction and screening, then sent to number 7) for washing*
Zoning: *A-G (Agricultural)*

7) **Active: 6930 West 5th St., MN City**
Company/Individual: *Steve Kohner*
Activities Occurring: *Sand washing, then sent to number 3) for shipping*
Zoning: *N/A*

8) **Active: Port Authority Dock**
Company/Individual: *Cd Corp.*
Activities Occurring: *Washed sand shipped via barge*
Zoning: *M-2 (General Manufacturing)*

9) **Active: Modern Transport Terminal**
Company/Individual: *Steve Kohner/MTT*
Activities Occurring: *Sand shipped via barge and rail*
Zoning: *M-1 (Light Manufacturing)*

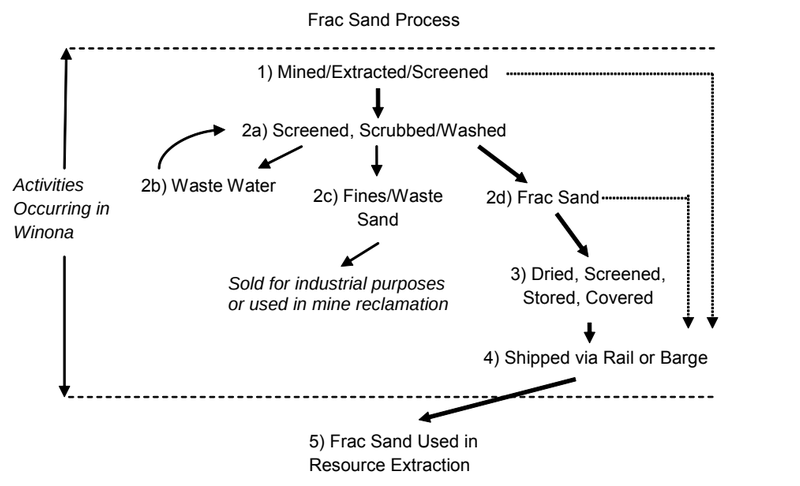


Frac Sand Routes into Winona:

1) Highway 43/Interstate Bridge
2) Highway 61
3) Highway 14

Zoning Regulations for Frac Sand Operations:

1) Mining and Extracting - A-G (Agricultural) District with Conditional Use Permit (CUP).
2) Processing (Washing, Drying, Screening, Storing):
- M-2 (General Manufacturing) District with Conditional Use Permit.



DISCRETIONARY EAW GUIDANCE

The following checklist provides a realm of potential environmental concerns that if present or perceived may be used as justification for an EAW requirement. Discretionary EIS's are subject to the findings of an EAW and require City Council consideration.

For an EAW to be required, one or more of the following conditions may be present:	**Staff Review**	**Planning Commission Review**
1. Nearby vulnerable populations such as nursing homes, day care centers, residential areas, urban development and schools.		
2. Project may have adverse impacts on hydrology including the quality or quantity of groundwater or surface water resources, public water supplies, wellhead protection areas, groundwater recharge areas, adjacent wells, springs, seeps, or wetlands.		
3. Prevalent land cover includes a floodplain, shoreland, or protected bluff/ steep slope area as defined in City Code.		
4. Prevalent land cover includes rare plant or animal communities or other sensitive ecological resources included in the List of Endangered, Threatened, and Special Concern Species as codified as Minnesota Rules, Chapter 6134.		
5. Project may involve a point or non-point discharge of storm water or wastewater to a stream or river		
6. Project has the potential for creating substantial erosion.		
7. Project is located in an area susceptible to sinkhole formation or other geologic hazards.		
8. Project involves hazardous wastes and/or storage tanks.		
9. Project increases traffic intensity beyond the access and roadway capacity.		
10. Project involves air emission concerns related to high levels of dust such as with blasting, crushing and milling operations.		
11. Project has the potential for high levels of odors or noise.		
12. Site or nearby areas contain archaeological or historic resources.		
13. Site contains prime farmland (soil types as defined in local ordinances) or is part of an agricultural preserve program.		
14. Site impacts designated trails, parks, recreation areas.		
15. Intended disturbance of the Jordan or Wonewoc (Ironton, Galesville Sandstone) geologic formation.		

Approximate Truck Traffic From Active and Proposed Frac Sand Operations in Winona

January 2013

Numbers Match Locations on Map:

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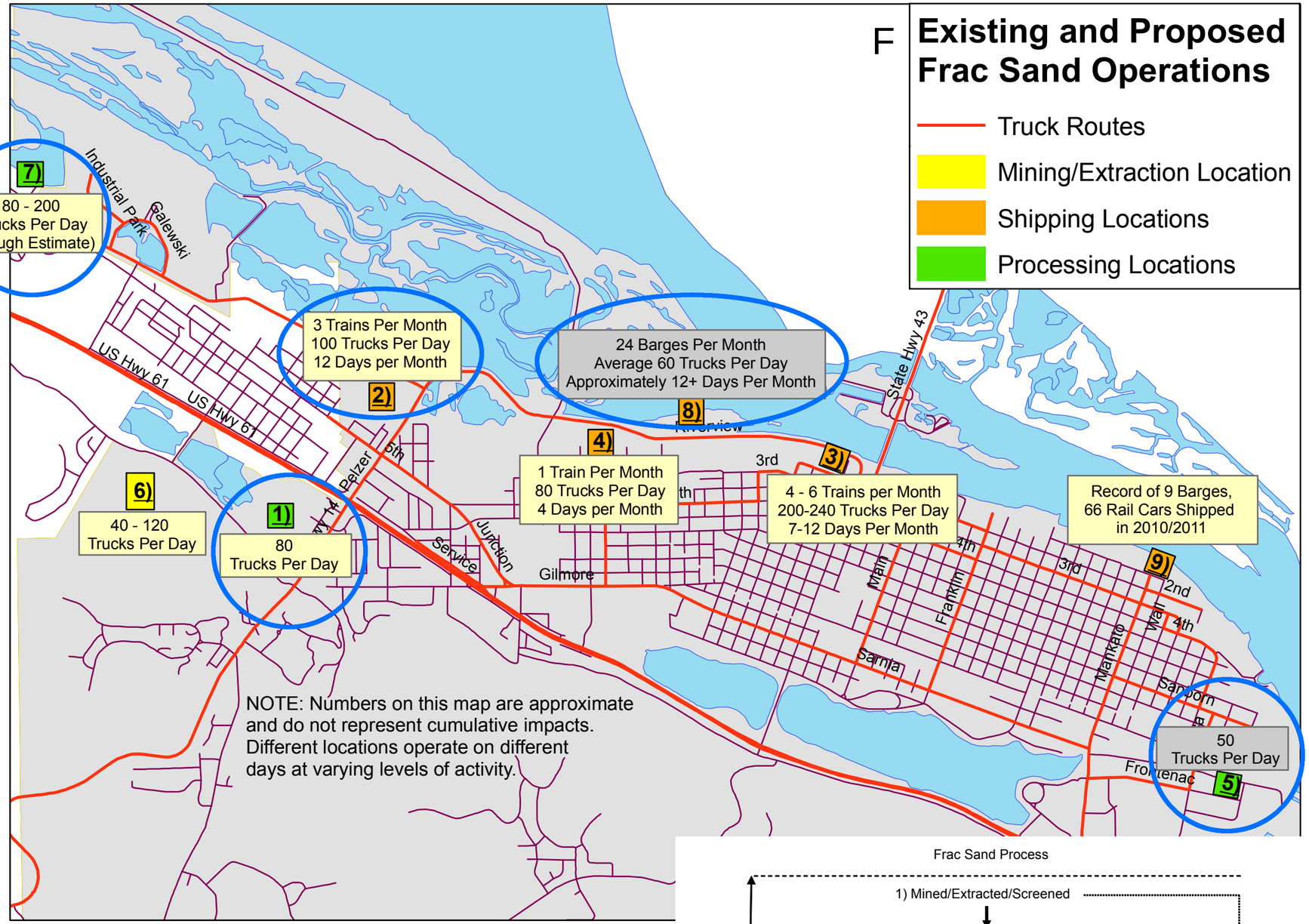

= From Wisconsin/Trucks Travel Over Interstate Bridge

= Truck or Barge Traffic Limited by CUP