City of RED WING

CITY COUNCIL AGENDA REPORT

TO: Honorable Mayor and City Council Members

FROM: Rick Moskwa – Director of Public Works
Lynn Nardinger – Deputy Director, Public Works

Agenda Item No.: 9-C-1

Meeting Date: April 25, 2016

ACTION REQUESTED: Motion to Approve Land Lease Agreement with Xcel Energy for the use of Real Property at Tyler Hills Fourth Addition Lot 1 and Lot 2 for Public Works Storage and Material Operations and Outlot B for ingress and egress and removing Condition # 10 from the Conditions placed in the Conditional Use Permit.

ATTACHMENTS: Draft Lease Agreement
Exhibit A. Plat Remapping
Exhibit B. Access Road/Sketch Plan
Exhibit C. Upper Harbor Consensus Plan Map
Exhibit D. Sound Study Memo from SEH and DB Associates, Inc.
Exhibit E. Air/Dust/Silica Emissions Memo from SEH
Exhibit F. Ground Water Flow
Exhibit G. Storm water Design Attachment from SEH
Exhibit H. Property Tax report of property on Cougar Court
Exhibit I. Map of Zoning in Bench Street/Cougar Court Area

BACKGROUND: In 2005, the City Council adopted the "Red Wing Riverfront Redevelopment Plan" as part of the City's Comprehensive Plan. One of the major elements of this plan related to the Upper Harbor and included the initiative to: Redevelop city yard and recycle center; the bulleted initiative is to Relocate the city yard and recycle center, Pages 11 and 15.

In 2007, the City Council adopted an update to the City's "Comprehensive Plan" that incorporated the Red Wing Riverfront Redevelopment Plan initiatives, Page 4-12. Also, in 2007, the City Council adopted the Upper Harbor Master Plan that established a Master Site Plan for the Upper Harbor. This further set the City policies in the direction of relocating the Public Works operations on the north side of Levee Road in the Upper Harbor so that the property could be restored and used as a natural site for

environmental education. There is a specific reference to relocation of the city yard in the implementation section of this plan, see pages 11 and 23. As part of the plan, the City partnered with the State to relocate the salt storage building onto State property therefore removing the storage structure from the riverfront. Another item was for the construction of a new storage facility.

> **II. Community Connections**: *Create and maintain* strong public and public-private partnerships and an active and engaged citizenry.
> Promote successful working relationships between city's elected leaders, the Prairie Island Tribal Council and all adjacent local governments.
> Provide Services to residents in most cost effective manner by partnering where appropriate.

One of the recommendations in the Upper Harbor Master Plan that was adopted in 2007 and amended in 2008 calls for a change in the land use in the Upper Harbor from material handling to natural area/environmental education opportunity.

Zone 2: Upper Harbor Zone - is comprised of the area located downriver from the Red Wing Wildlife League land and extending to include Bay Point Park; from the River to the base of the bluff including both sides of Levee Road. The area is currently underutilized as the City's storage yard and recycling center located on an abandoned landfill, Pottery Pond and Bay Point Parks; some vacant parcels; and some industrial/storage structures. This area also contains the former bulkhead and a very diverse river edge condition from naturalistic to vertical sheet pile.

Recommendations from the Upper Harbor Consensus Plan.

- Develop a continuous riverfront trail along the Mississippi River and develop additional linkages.
- Develop a trail loop into the City Yard property along Hay Creek and the Mississippi River in conjunction with the development of the Environmental Interpretive Center.
- Create a Riverfront Promenade as part of the Riverfront Trail that will extend to Colvill Park.
- Retain public ownership and control of the Upper Harbor.
- Reconstruct Levee Road as a parkway as per Design Character
- Maintain existing industrial working waterfront.
- Coordinate public trail access along the Riverfront.
- Improve and develop appropriate management plan for truck fleeting and vehicle parking.
- Expand open space.
- Develop the 9-acre parcel (currently managed by the Port Authority) and additional private land east to Jackson Street (as available) as programmable open space for active and passive recreation and seasonal events.
- Create opportunity for publicly-owned concessions.
- Pursue opportunities to acquire private property west of Jackson Street to be used for public purposes
- Expand the Pottery Pond and related programming.

- Expand Pottery Pond to create a Wetland Habitat Project incorporating the proposed amphitheater.
- Develop an outdoor amphitheater.
- Maintain the existing bulkhead bump outs.
- Provide parking space for large festival events.
- Work with catalytic projects in the Old West Main Street/Pottery District to help create opportunities to make pedestrian connections from the upper terrace to the riverfront properties.
- Consider winter boat storage in master site planning process.
- Consider this area as one of the potential sites for relocation of the farmer's market.
- Redevelop city yard and recycle center.
- Relocate city yard and recycle center
- Develop a trailhead.
- Incorporate an Environmental Interpretive Center.
- Develop an environmental interpretation program.
- Develop a management program for the proposed Environmental Interpretive Center area to be optimized for use as a wildlife conservation area.
- Further evaluate need for a second boat launch.
- Further evaluate need for expanding transient dockage.

In order to facilitate the implementation of the plan, Council adopted the Strategic Plan in 2012 that included three Projects under two Strategies.

The three projects related to the Upper Harbor Master Plan incorporated into the 2012 Strategic Plan are as follows:

Strategy II. Community Connections: *Create and maintain* strong public and public-private partnerships and an active and engaged citizenry.
Promote successful working relationships between city's elected leaders, the Prairie Island Tribal Council and all adjacent local governments.
Provide Services to residents in most cost effective manner by partnering where appropriate.

Goal A. Promote successful working relationships between local elected leaders, the Prairie Island Tribal Council and all adjacent local governments.

Project 8. Partner with MNDOT to relocate salt shed

Goal D. **Promote innovative partnerships with businesses and organization in the non-profit and private sectors.**

Project 2. Work with Xcel on Bench Street land improvements for Public Works storage yard, need to rezone property and do site work.

Strategy III. Community Vitality: *Plan and fund* steady and sustainable population growth, workforce development and a diversified employment and business base.

Goal C. Promote innovative partnerships with businesses and organization in the non-profit and private sectors.

Project 6. Design Levee Road River Renaissance project in 2014 for 2015/2016 construction

Update on Strategy II; Goal A; Project 8 – The City completed this project in 2015 by partnering with the State of Minnesota to share their site on Pepin Avenue. This site now handles the City's salt storage requirements for winter snow maintenance. This is a project with significant environmental benefits because the old salt and sand storage facility on the Upper Harbor property did not include the best management practices to manage run off and was located near Hay Creek and the Mississippi River. Now this material is handled with a state of the art facility in partnership with the Highway Department.

Update on Strategy II; Goal D; Project 2. - The Public Works Department has been diligently searching for a site that is centrally located and could accommodate the balance of the storage needs that has been in the Upper Harbor. Through these efforts, staff has been unable to identify any sites within the core City limits. Staff did not search land options outside of the City limits because of the additional cost associated with fuel, trucking and employee time.

Staff began that process by partnering with the State of Minnesota to share their site on Pepin Avenue that now handles the City's salt storage requirements for winter snow maintenance.

The City has proposed to relocate their materials storage site to property currently owned by Xcel Energy that is adjacent to the Goodhue County landfill, City Ash landfill, and Xcel Energy Ash landfill in the Bench Street area which is currently Outlot A, Tyler Hills 2 Development. After the approval of the Conditional Use Permit (CUP) the site will be replatted, Tyler Hills 4th Addition Lot 1 and Lot 2 with Outlots A and B.

This proposed site is situated south of the Goodhue County Landfill which was opened by the City in 1976 after which time the County took over the site. The City of Red Wing Ash Landfill was added in 1994 and Xcel's Landfill was built in 1987. This site is zoned Agriculture Residential and is zoned for this type of activity. The residential sub division located directly south and above this site, Cougar Court was first built on in 2000 according to County records.

Staff has been working with Xcel for the past 5 years on Public/Private Partnerships to provide opportunities that each entity can use to help provide services and reduce costs in operating budgets. For example; Staff worked with Xcel to provide untreated water from a retired well and storage tank. This was done by an agreement between the City and Xcel with a lease payment of $7,500 to cover annual costs to the building and surrounding site. Staff has also entered into a waste delivery agreement to have our waste incinerated at Xcel's Steam Plant in Red Wing .The initial contract was for 5 years with the option to renew the agreement and this has allowed the City to decommission its facility. The Land Lease agreement has been part of these

discussions as well and Xcel as a valued Community Corporation has worked out an agreement for us to lease the proposed site.

Action to date by Council and Planning and Sustainability Commission

City Council approved the introduction of Ordinance 84, Fourth Series at the September 28th Council meeting and adopted the ordinance at their October 12th meeting which amends the City Zoning Code, Chapter 11 to add a new definition to Section 10-040 for Public Works Maintenance Shop and Yards; and to establish where this use is allowed with a Certificate of Compliance or Conditional Use Permit.

The Planning Commission approved the Public Works Storage and Material Operations and Outlot B for ingress and egress, Conditional Use Permit and minor subdivision and plat request at their February 16 and March 15, 2016 meetings subject to the following conditions of approval:

1. Prior to commencement of any part of the proposed project, the City Council shall have approved and executed a lease agreement with Xcel Energy that specifies the terms of the city's use of the site, and access to private roads and utilities.
2. The Tyler Hills Fourth Addition plat shall not be recorded until the lease agreement is executed.
3. Prior to commencement of any part of the proposed project, the applicant shall complete a final grading plan, erosion control plan, storm water management plan, and road and utility plan that shall require review and approval by the City Engineer.
4. Outlot A shall be considered an unbuildable lot unless it is platted in the future as a buildable lot and the specific use of the property is clarified.
5. If lots 1 and 2 of Block 1 discontinue use as a Public Works Maintenance Shop and Yard for a period of one year or more, any future use of these lots shall require a new conditional use permit.
6. Lot 1, Block 1 of Tyler Hills Fourth Addition shall not be used for crushing operations on weekends or official holidays.
7. The Planning Commission shall require a new conditional use permit for Lot 2, Block 1 of Tyler Hills Fourth Addition, prior to any sublease being approved
8. The Applicant's use of Lot 1, Block 1 of Tyler Hills Fourth Addition shall be limited to the footprint of the approved project plans that identify a total of 150,000 of graveled storage yard area and building.
9. The Applicant shall use best management practices to ensure that the material crushed in the crushing operation has a moisture content to meet state and local air quality standards. In addition, the applicant will make every effort to maintain a large mound of material between the crushing site and the south property line intended to help reduce noise impacts.
10. Prior to commencement of any part of the proposed project, the applicant shall complete a final landscape plan that shall include a vegetative buffer planting

immediately south of the crushing operation intended to further reduce sound impacts.

Regarding Condition #10, Staff would like Council to consider removing this Condition as the planting would be purely cosmetic in nature. The approximate distance of 1400' and vertical height of 235' to Cougar Court and the amount of natural buffer of trees and underbrush which already exists will provide the needed screening. The natural buffer of trees and the wooded area is 740' deep at the narrowest point before you get to Cougar Court.

This year's spring tour with the City Council included two stops related to the CUP. Council Members, Planning and Sustainability Commission members along with residents in the area met on the end of Cougar Court to listen to equipment run on the proposed site along with Xcel Energy equipment at the same time. Readings at the time were 41 decibels, the same decibels as the ambient noise levels, well below the allowed levels. The tour also made a stop at Luhman's Quarry where both Council and residents were able to hear the sound made by the crushing while it was operating. Those levels were 66-67 decibels at approximately 550 feet.

At the April 12th Sustainability Commission meeting, a review of the CUP presented to the Planning Commission was held with a public comment period. After all comments were heard answers were provided by SEH and City Staff. After reviewing all of the concerns and seeing that all of the sound, dust, and water issues are well below the state standards, the Commission recommended approval of Public Works request for a CUP for the Public Works Maintenance Shop and Yard by a unanimous vote.

DISCUSSION: Staff has attached many documents related to comments received from residents, Council and Commission members during the 2 Planning Commission meetings, 1 City Council meeting and the Sustainability Commission meeting.

The proposed site will be used for a number of Public Works operations with the hours of operation being generally 7 am to 5 pm Monday through Saturday. Other hours of operation would only be in emergency situations. Storage of concrete, blacktop, fill, and dirt that is removed from construction projects will be on piles in an area approximately 150' x 250' on the site to be crushed, screened, or stored to be used on future projects. Crushing will be done once a year, usually in the fall and would take approximately a month to a month and a half. Crushing hours are 7 am to 5 pm, Monday through Friday. The area will also be used for processing black dirt and storage of light poles, water, storm, and sewer pipes, and other materials. The area for black dirt and fill material is approximately 150' x 250'. The pipe storage areas are approximately 100' x 100'. Poles and pipes will be stored on the ground or in cradles just off the ground. A 20"x30" shed will be located on the site for the storage of a front end loader. The site also includes an area designated for future development with similar operations in an area approximately 160' x 400'.

Cost Benefit

Public Works estimates that roughly 5,000 yards of blacktop and concrete are crushed yearly. The cost for the crushing of this material is $6.31 per yard for a total of $31,550. In 2015, City staff used 3,500 yards of recycled blacktop and concrete on various City projects. The cost for purchasing this material from a supplier would have been $7.15 per yard at a cost of $25,025. By using the City's recycled material, it saved $2,940 on City projects. The big savings comes from not having to dispose of the blacktop and concrete that comes off City projects in a landfill or another recycling plant in the metro area. The cost to dispose of this material at another location is $22.60 per yard. This includes the $150.00 per load for disposal plus $81.25 per hour for trucking, plus the lost production time of 1.5 hours of hauling time versus .5 hour if hauled to City site. The cost for hauling the same 5,000 yards of material to another location would be $113,000. This gives a total cost saving of roughly $85,000 per year by reusing our own material.

Lease Terms

The construction of two storm water ponds would be required to control runoff, one will be built for Lot 1 by the City at the time the site is developed and the other will be built at the time of the future development of Lot 2 by a developer.

Outlot B is for ingress and egress to Lots 1 & 2. Road improvements will be needed for access to the lots and will be the responsibility of the tenant, the City or the sub lessee. At such time Lot 2 is subleased, additional improvements to Outlot B may be needed and will be the responsibility of the sub lessee. Traffic accessing the Public Works area would range from 10-30 pickups and trucks per day depending on the operations of Public Works.

The lease/rent term with Xcel will be for 20 years. This Lease may be renewed by the execution of a letter of agreement by both the landlord and tenant confirming both parties' desire for a successive term (renewal periods). Each renewal period will be for a period of five years and will follow upon the same terms and conditions as set forth in this lease unless specified otherwise in the letter of agreement. Lessee is also required to pay any property taxes, storm water fees or assessments due on the property. These costs are estimated at $500. There is no rent payment.

Access to the leased Premises will be granted through the lease agreement and described in Exhibit B.

Number 19 in the lease agreement address the sublease of Lot 2 and states as follows; Assignment or Subleasing by Tenant. Tenant shall not encumber, assign, or otherwise transfer this Lease, or any right or interest herein, the Premises, or any existing or future improvement constructed or installed thereon; and Tenant shall not sublet all or any part of the Premises or allow any persons other than Tenant's agents, employees, and representatives to occupy or use all or any part thereof; unless approved in writing by Landlord prior to entry. In the event Tenant, with Landlord's written approval, assigns, subleases or otherwise transfers this Lease or any right or interest herein to another

party (said party generally referred to hereinafter as the "Sublessee"), Landlord may require Sublessee to pay Landlord a percentage of each rental payment Tenant receives from Sublessee. If Landlord will require such a payment, the amount of such payment will be set forth in a separate agreement between Landlord and Tenant in which Landlord approves the Sublease. The form of agreement with the Sublessee shall require Sublessee to acknowledge and agree to the terms of this Lease, and the form of agreement and other terms and conditions thereof shall be subject to Landlord's approval.

Sound Study Memo from SEH – Exhibit D

City Staff along with Council President Hove conducted a sound study on the site on March 21st. Staff took two front end loaders to the site and had them drive around the crushing area in reverse with their backup alarms activated and engines running at max rpm. Rick Moskwa, Lynn Nardinger, Steve Kohn, and Council President Hove were in the cul-de-sac on Cougar Court while the machines were running. The Decibel reader picked up no reading from the machines below. The conversation between the 4 of us was reading higher than any other noise. As we were standing there, a recycling truck turned around in the cul-de-sac and had a reading of 80-85 decibels. Staff also has decibel readings from the same crusher being used at a different facility. Readings were taken at the crusher and they were 88 decibels, at 100' away from the crusher they were 80 decibels and at 200' away they were 75 decibels with readings dropping considerably as you get further away.

The SEH sound memo is not a full modeling study as it used the field numbers provided by City Staff and basic assumptions by SEH without the full modeling study taking into consideration things like terrain and trees.

The following paragraph is from the SEH Sound Memo.

> *The City of Red Wing measured decibel levels at three distances from a crushing operation similar to that which will be used at the Red Wing laydown area. Based on these measurements and the inverse distance law for sound pressure, decibel levels were extrapolated to various distances from the planned crushing operation location. The equations that were used to evaluate the sound at distances away from the source are based on a controlled interior environment. These calculations do not take into account any natural attenuation or buffering of the sound from outside factors. The measured values would be further decreased by additional attenuation from the atmosphere, the height difference between the receptors further up the bluff and the crushing operations as well as the trees surrounding the operations.*
>
> *Following is Table 1 with calculated decibel levels versus various distances. The nearest anticipated residential receptor is at approximately 1,350 away in distance and 235 feet higher in elevation. The decibel level near this receptor is calculated at 59. A level of 60 is allowed between the hours of 7:00 AM to 5:00 PM at this location based on the City of Red Wing sound ordinance.*

Table 1 *shows decibel levels at various distances from the anticipated crusher location.*

Distance	***Decibel***
300'	*72*
500'	*68*
1,000'	*62*
1,350'	*59*
2,000'	*56*

The attached Noise Assessment memo by D B Associates is a full modeling study done by them from their database of sound levels developed for over 45 years.

This memorandum presents findings of a noise assessment of potential noise levels associated with the proposed crushing operation along Bench Street in Red Wing, Minnesota. Predicted sound levels are based upon a computer model that takes into account the sound source frequency spectrum, distance from the source (crusher) to receptor sites (homes and selected property line), atmospheric absorption (standard atmospheric pressure, temperature and humidity assumed here), and shielding by intervening topography. Model calculations are then adjusted by attenuation provided by intervening tree cover.

Location of the crusher and potentially impacted homes and property line receptors are shown on Exhibit 1. Distance from the crusher to each of the receptor sites are presented in Table 1.

Table 1 Distance from Crusher to Receptor Sites.

Receptor	**Type**	**Dist (ft)**
#1	Home	2061
#2	Home	1659
#3	Home'	1428
#4	Prop Line	593

The sound source for the concrete crusher has been taken from our database of sound levels developed for over 45 years.

Table 2 represents the decibel levels used to model the Red Wing crusher. The decibel levels were determined across a typical spectrum of frequencies associated with the crusher. The frequencies were adjusted with an A-weighting to account for the relative loudness perceived by the human ear and standardized to one value. The resulting decibel values were 4 decibels higher than the Red Wing crusher at the measured distances 100 feet and 200 feet. For example the sound measured by the City at the 100 foot distance was 81 dBA and the value used to model the situation was 85 dBA.

Table 2. Assumed Octave Band Spectrum for Crusher

Freq (Hz)	100 ft	200 ft
31	78	72
63	81	75
125	87	81
250	83	77
500	81	75
1000	83	77
2000	73	67
4000	75	69
8000	66	60
16000	60	54
dBA	85	79
Red Wing	81	75

The Red Wing readings are seen to be 4 dBA lower than the spectrum used in our model. Therefore, the results presented here can be assumed to be worst case or conservative prediction of sound level at the four receptor sites.

Predicted crusher sound levels at the four receptor sites are presented in Table 3.

Table 3. Predicted Crusher Sound Levels (dBA)

Receptor	**w/Leaves**	**wo/leaves**
1	41	46
2	41	46
3	49	51
4	68	69

Assuming that the crusher will only operate during daytime hours as defined in the state noise rules, the applicable noise standard for residential sites is L50 60 dBA. The L50 is the median hourly sound level or level not to be exceeded for 50% of the hour or 30 minutes. If the crusher operates for less than 30 minutes of an hour, then the L10 65 would apply. L10 is the level not to be exceeded for 10% or 6 minutes of an hour. The state noise standards are "receiver" standards and not property line standards, but for purposes of this report, the property line receptor is included along with the residential receptors. It should also be noted that the 60 dBA limit is consistent with the Red Wing noise ordinance if the crusher operates in daytime hours for more than 2 hours.

It can be seen from **Table 3** that the three residential receptor sites fall well below the daytime noise standard of 60 dBA at all seasons of the year. Therefore, the crusher should be able to operate as planned without exceeding the state standards or the Red Wing noise ordinance.

Noise Restrictions under State Rules

The City Attorney has reviewed the MPCA standards and the City noise ordinance and the comments are noted as follows.

We have reviewed the State noise rules, as well as the Red Wing City Ordinance regarding noise restrictions. It is our understanding that under Minnesota Administrative Rule 7030.0040, the following noise restrictions apply:

1. *Daytime noise levels (from 7:00AM to10:00PM): During the one-hour period of monitoring, cannot exceed 65 dBA for more than 10 percent of the time (six minutes) and cannot exceed 60 dBA more than 50 percent of the time (30 minutes).*

2. *Nighttime noise levels (from 10:00PM to 7:00AM): During the one-hour period of monitoring, cannot exceed 55 dBA for more than 10 percent of the time (six minutes) and cannot exceed 50 dBA more than 50 percent of the time (30 minutes).*

Minnesota Administrative Rule 7030.0030 further notes that any municipality with authority to regulate land use shall take all reasonable measures within its jurisdiction to prevent establishing land use activities which violate the standards set forth above. State statute section 116.07, subd. 2(c) goes on to require that no local governing unit shall set standards describing the maximum levels of sound pressure which are more stringent than those set by the Pollution Control Agency.

The City of Red Wing Performance Standard for Sound are shown below

G) ***Noise***. *It shall be unlawful to make, continue, or cause to be made or continued, any noise in excess of the noise levels set forth unless such noise be reasonably necessary to the preservation of life, health, safety, or property.*

1) ***Measurement of Noise***. *Any activity not expressly exempted by this section which creates or produces sound regardless of frequency exceeding the ambient noise levels at the property line of any property (or if a condominium or apartment house within any adjoining development) by more than six (6) decibels above the ambient noise levels as designated in the following table at the time and place and for the duration then mentioned, shall be deemed to be a violation of the Ordinance, but any enumeration herein shall not be deemed to be exclusive.*

	6:00 PM - 10:00 PM (residential districts) and		
Duration of Sound	*7:00 AM - 6:00 PM (all districts)*	*6:00 PM - 7:00 AM (all other districts)*	*10:00 PM - 7:00 AM (residential districts)*
Less than 10 min.	*75 db*	*70 db*	*60 db*
Between 10 min. and 2	*70 db*	*60 db*	*50 db*

hours			
In excess of 2 hrs.	*60 db*	*50 db*	*40 db*

2) *In determining whether a particular sound exceeds the maximum permissible sound level in the above table:*

   a) *Sounds in excess of the residential district limitations as measured in residential district are in violation of this section whether the sound originates in a residential district or any other district;*

   b) *During all hours of Sunday and State and Federal holidays, the maximum allowable decibel levels for residential districts are set as forth in Column III of the table.*

3) *Sounds emanating from the operation of motor vehicles on a public highway, aircraft, outdoor implements such as power lawn mowers, snow blowers, power hedge clippers, and power saws, and pile drivers or jackhammers and other construction equipment are exempt from the provisions of this section. Sounds emanating from lawful and proper activities at school grounds, playgrounds, parks, or places wherein athletic contests take place are also exempt from the provisions of this Ordinance.*

Air/Dust Emissions Memos from SEH – Exhibit E.

The attached memos document the air emission calculations and air permit applicability review for the proposed City of Red Wing concrete and asphalt crushing operations ("Facility") to be located near the Xcel Energy Ash Landfill in Red Wing, Minnesota. Because the Facility does not include combustion units and only includes material handling/processing, the Facility only has the potential to emit particulate matter (PM) and PM less than 10 microns in diameter (PM10). Emissions are calculated using emission factors from the most current U.S. Environmental Protection Agency (USEPA) AP-42 document. Because AP-42 does not contain any specific emission factors for the crushing/screening of concrete or asphalt, general emission factors that would represent aggregate or similar material are used. Table 1 shows the emission thresholds for State Air Permits in Minnesota. Facilities in Minnesota with emissions below these thresholds are not required to obtain an air permit. The total projected PM and PM10 emissions from the Facility, even with the conservative assumptions described above, are still well below state air permit thresholds. The federal permit thresholds are higher than state thresholds and are therefore not shown above.

The attached map shows the location of the proposed Public Works site with prevailing wind direction in the summer/winter months identified. The prevailing winds in our area are northwest winds during the winter months and south southwest winds during spring and summer. The Model always assumes prevailing wind direction is toward the receptor.

The City of Red Wing retained Short Elliott Hendrickson, Inc. to evaluate the impacts of particulate matter emissions from a concrete and asphalt crusher on ambient air. Emission estimating and dispersion modeling methods developed by the United States Environmental Protection Agency (USEPA) were used for this evaluation. The analysis was conducted for particulate matter with aerodynamic diameters less than 10 microns (PM10). The calculated maximum 24-hour impact from the crusher at the receptor property line is 0.1 micrograms per cubic meter (ug/m^3). This concentration is less than 0.07 percent of the regulatory ambient 24-hour standard (150 ug/m^3) and less than 0.2 percent of actual background concentrations measured by the Minnesota Pollution Control Agency (MPCA) in Minnesota (54 ug/m^3).

METHODS

The PM10 emission rate was calculated using the capacity of the crusher, 70 tons per hour (tph), and an emission factor for uncontrolled tertiary crushing operations, 0.0024 pound PM10 per ton crushed[1]. The subject crusher is a secondary crusher so using the tertiary crusher emission factors will overestimate the crusher's emission rate. The resulting hourly emission rate is 0.17 pounds per hour (equivalent to 0.02 grams per second).

RESULTS

The highest calculated 1-hour PM10 impact from the crusher at a receptor 300 meters away is 0.7 ug/m^3. To convert this concentration to a 24-hour average (so that it can be compared to the 24-hour standard), the result is multiplied by a factor of 0.15[3]. The resulting maximum 24-hour concentration is 0.1 ug/m^3. The 0.1 ug/m^3 impact is about 0.07 percent of the 24-hour ambient PM10 standard, 150 ug/m^3.

The MPCA measures ambient PM10 concentrations at six locations throughout Minnesota. The average 24-hour PM10 concentration at these monitoring locations measured during 2014 is 54 ug/m^3.[4] The estimated maximum impact from the Red Wing crusher is less than 0.2 percent of the state-wide average ambient PM10 concentration.

COMMENTS ON CRYSTALLINE SILICA

Concerns have been raised about respirable crystalline silica emissions from the subject crusher. "Respirable" is fine particulate matter generally defined as smaller than PM10, such as particulate matter with diameters less than 4 or 2.5 microns (PM4 and PM2.5 respectively). A concrete crusher is not expected to generate significant amounts of material this small. The Occupational Safety & Health Administration (OSHA) lists potential sources of respirable crystalline silica as operations that chip, cut, drill or grind objects that contain crystalline silica (e.g. abrasive blasting, foundry work, stonecutting, rock drilling, quarry work and tunneling)[5]. A crusher does not drill or grind materials and crushing would not readily expose silica materials.

The California Office of Environmental Health Hazard Assessment has established an inhalation reference exposure level (REL) for respirable crystalline silica of 3 ug/m^3. If the Red Wing crusher generated crystalline silica in this small size fraction, the impact would be much less than 3.0 ug/m^3. In fact, the impact would be less than 0.3 percent of the REL.

Environmental Assessment Worksheet / Environmental Impact Statement (EAW/EIS)

Neither Facility falls under the necessary requirements of any mandatory EAW category set forth in Minnesota Rules 4410.4300, nor do the facilities fall under any mandatory EIS category set forth in Minnesota Rules 4410.4400. Therefore, an environmental review is not required regarding the Minnesota Pollution Control Agency as the Regulatory Governing Unit (RGU). If the citizens wanted an Environmental Assessment Worksheet (EAW) or and Environmental Impact Study (EIS), the City of Red Wing would have to be the RGU and develop the evaluation criteria, review it and approve or disapprove of it based on local requirements.

Review of water flow in this area by City Staff Exhibit F.

Records identifying the underground geologic formations and groundwater movement were reviewed to provide an indication of the potential for contamination of drinking water supply wells for the residents in the Tyler Hills Development. The records that were reviewed include the drilling logs for the water supply wells for the residents, drilling logs for the existing Xcel monitoring wells, geologic formation descriptions from the recently completed City's Well Head Protection Plan and the Minnesota Geologic Survey for Goodhue County.

All of the drinking water supply wells draw water from a formation known as the Birkmose Member (deepest portion of the Franconia formation) and to a lesser extent from the Ironton-Galesville formation. The Birkmose formation is overlaid by a confining layer known as the Tomah Member. Confining layers are formations that have low permeability, i.e. resistant to the flow of water, and minimize the potential for water to migrate to the underlying formations. The metal reclamation efforts will be above this confining layer. Also, the groundwater movement in this area is generally toward the North-Northeast, away from the residential wells. The geologic formations and groundwater movement will minimize any potential for impacts on the water supply wells.

There are other factors that will further reduce the potential for the reclamation efforts to impact the water supply wells for the residents. Leachate from both the City and Xcel ash landfills is removed and pumped to the Red Wing wastewater treatment plant daily. This serves to reduce the hydraulic gradient that would promote water migration, and reduces the contact time with the leachate, which is rainfall derived. Also, Xcel has monitoring wells between the landfill operations and the residents. While these are up

gradient wells, as the groundwater moves in the opposite direction, they would provide an advance notice of contaminate migration toward the water supply wells.

Storm water Design Attachment from SEH – Exhibit G.

Staff has been working with SEH to develop a site plan including storm water ponds, access roads, grading, storm water and erosion control and vegetation and restoration plans. The City Engineer will approve the site plan ensuring it will meet the City's storm water/site plan as he would for any other proposed development.

Truck Traffic Map, On site and Average Daily Traffic Count on County Road 1/Bench Street and map showing proximity to Cougar Court.

Xcel Energy has an approved CUP which states up to 18 trucks per day can access the site. Traffic accessing the Public Works area would range from 10-30 pickups and trucks per day depending on the operations of Public Works. The average daily traffic count on Bench Street is 7100 vehicles, a map is attached to show the distance to Cougar Court.

Property Tax report of property on Cougar Court - Exhibit H.

A question was raised by the Planning Commission and Residents regarding the impact on property valuation. The information at first glance shows a drop when the housing decline occurred and now appears to be returning to its previous values. We did nothing other than go to Goodhue County web site.

Zoning Map of Area – Exhibit I.

The attached zoning map shows the multiple types of zoning adjacent to Cougar Court and the proposed Public Works site. The map identifies Cougar Court as a Planned Unit Development site, the Xcel owned land as Agriculture/Residential, the land across Bench Street has Light Industrial and General Industrial and Split Zoning which isn't used anymore, but was listed as Industrial and AG/Residential.

Final Design

After final plans are developed for Lot 1, City Staff will request bids for the grading of the lot. Estimated costs for grading the site are $120,000 and another $40,000 for material. Until final plans are completed, we only have the estimated costs. Staff will provide as much of the labor and materials as possible. Some of the material cost can be reduced by using the recycled material at our current site.

Costs spent to date for survey and consultants are $21,443 with another $11,000 still expected. Final design cost for bidding and construction are estimated to be $14,000.

The above conditions of the CUP will be met as follows;

1. The approval of the attached agreement will meet the requirement of executed agreement.
2. Upon execution of lease the Tyler Hills 4th addition will be recorded.
3. Upon approval of this lease City Staff will work with SEH on final grading plans, storm water plans and get approval from the City Engineer.
4. Outlot A will be platted as an unbuildable lot.
5. This will be a recorded document and the condition will go with the use of the property.
6. Crushing will not be allowed on weekends and official holidays.
7. At the time Lot 2 is developed, an additional Conditional Use Permit will be applied for.
8. Final plans will be approved by the City Engineer.
9. City will use best management practices.
10. City will plant a buffer along the south side of the crushing area. We are requesting to remove this.

The Xcel Land Lease document has been reviewed by the City Attorney.

ONGOING OPERATING & MAINTENANCE COSTS: General maintenance of the area and processing of stored material. Yearly taxes, fees, and assessments for Lots 1 and 2 and Outlot B.

FUNDING SOURCE(S): Public Works Streets Budget, Storm Water Fund and Encumbered CIP monies. Additional funds will be needed to cover consultants cost.

ALTERNATIVES:

1. Approve Land Lease Agreement and remove Condition 10 from the conditions placed in the CUP.
2. Approve Land Lease Agreement and all conditions placed in the CUP.
3. Not Approve and advise staff as to how to proceed.

RECOMMENDATION: Staff recommends Alternative 1, Approval of the Land Lease Agreement with Xcel Energy for the use of Real Property at Tyler Hills Fourth Addition Lot 1 and Lot 2 for Public Works Storage and Material Operations and Outlot B for ingress and egress and removing Condition 10 from the Conditions placed in the CUP.

.

LEASE AGREEMENT

THIS LEASE is made this ____ day of _____, 2016, by and between Northern States Power Company, a Minnesota corporation, d/b/a Xcel Energy ("Landlord") and the City of Red Wing, a municipal corporation under the laws of Minnesota ("Tenant").

1. **Premises**. Landlord hereby leases to Tenant and Tenant hereby leases from Landlord that certain real property located in Goodhue County, Minnesota, described as follows: Lot 1, Block 1 and Lot 2, Block 1, and Outlot B, Tyler Hills Fourth Addition, on file at the Goodhue County Recorder's Office, Goodhue County, Minnesota and shown on Exhibit A attached hereto (the "Premises").

2. **Access.** Landlord hereby grants to the Tenant ingress and egress access to the Premises as follows:

   a. Upon roadway on Outlot B, Tyler Hills Fourth Addition shown on Exhibit A (Hereafter referred to as Outlot B)
   b. Upon roadway as depicted on the attached Exhibit B and labeled as "Proposed Access Road"
   c. Upon roadway across parcel owned by Goodhue County, Parcel identification Number 55-645-0240. Assignment of access is allowed in "Road and Drainage Easement Agreement" recorded as document # 319554 at the Goodhue County Recorder's Office, Goodhue County, Minnesota. In the alternative, Landlord shall use commercially reasonable efforts to obtain written consent from Goodhue County to grant Tenant ingress and egress access to the roadway described in Section 2c. If access to the roadway described in this paragraph is not granted to the Tenant, Tenant has the right to terminate the Lease Agreement immediately.

3. **Use of Premises**. The Premises may be occupied and used by Tenant for the purpose of equipment and material storage and public works service or other activities related thereto, including, but not limited to, the crushing and processing of concrete, bituminous, soil, ash and aggregate such as sand, rock and recycled materials. Tenant shall not allow any personal use of the Premises by its employees, contractors or assigns. The Premises shall not be used for any other purpose without Landlord's prior written consent.

4. **Term of Lease**. The initial term of this Lease shall be for a (20) twenty-year period commencing on the 28th day of March, 2016, and ending on the 28th day of January, 2036. This Lease may be renewed by the execution of a letter agreement by both the Landlord and Tenant confirming both parties' desire for a successive term (Renewal Periods). Each Renewal Period will be for a period of five years and will follow upon the same terms and conditions as set forth in this Lease unless specified otherwise in the letter agreement.

5. **Rent**. The consideration for this Lease will be the terms and conditions stated herein; Tenant shall pay any annual property taxes and storm water utility fee due on the Premises. Landlord shall notify Tenant of such taxes and the amount due at least sixty (60) days before they are due. Such payment shall be made two times per year, when such taxes become due. The Tenant shall make such payment directly to Goodhue County if directed to do so by the Landlord.

6. **Improvements by Tenant.** It is understood by and between the Landlord and Tenant that certain improvements of the Premises, including but not limited to substantial grading of the Premises, will be necessary in order to render it appropriate for the uses set forth in paragraph 3 above. Any such improvements are made solely at the Tenant's expense. The Landlord hereby provides consent for the Tenant to grade the premises in order to accommodate the uses set forth in paragraph 3 above. Tenant shall notify Landlord in writing prior to commencing any grading activities. Within three (3) calendar days of receipt of notice that the Tenant intends to commence grading activities, Landlord shall notify Tenant in writing if it intends to claim stockpiled topsoil. Any topsoil produced during grading and other improvements shall be used to develop the Premises. Any topsoil remaining after development of the Premises shall be stockpiled. Landlord is responsible for all costs to relocate stockpiled topsoil it intends to use for its own purposes. If Landlord does not provide written notice of its claim to excess topsoil, Tenant can then reuse the topsoil for Tenant's own purposes. After completing the necessary grading, the Tenant agrees to cover the portion of the Premises that was graded with fill and to place crushed concrete and/or crushed blacktop on top of the fill. Tenant shall remove base material of crushed concrete and/or crushed blacktop at Landlord's request.

   The Landlord also grants the Tenant permission to erect a building in which to store the Tenant's loader and other equipment. Tenant agrees to submit construction plans for said building and associated facilities, to Landlord for review and approval, at least ninety (90) days prior to construction. The Tenant agrees to remove the building at the end of the Lease term if requested by the Landlord.

   The Tenant agrees to widen, to a width of up to 30 feet, and/or improve the Outlot B Roadway accessing the Premises. The Tenant agrees to use best management practices in widening and improving the road.

7. **Improvements by Landlord**. At such time each lot is developed, one storm pond will be constructed for each lot. These ponds will be for the sole purpose of managing run off for the balance of the property. The Tenant is

responsible for the design, construction and maintenance of the storm ponds on the Premises.

8. **Prohibition of Certain Actions and Practices**. Tenant shall not, without obtaining Landlord's prior written consent (which consent may be withheld by Landlord in its sole and absolute discretion), engage in any of the following actions or practices upon or with respect to the Premises:

   a. Cut or clear any live trees, except as pursuant to improvements by the Tenant as set forth in paragraphs 6 and 7 above;
   b. Allow the presence of livestock;
   c. Remove any dirt, fill, sand, gravel or other minerals from the Premises, except as pursuant to improvements by the Tenant as set forth in paragraphs 6 and 7 above;
   d. Construct or erect any non-movable structure or improvement;
   e. Allow or give any person or party permission to hunt on or otherwise enter onto or use the Premises or any portion thereof for any purpose, except those activities directly related to Tenant's use;
   f. Allow or give any person or party permission to dump or dispose of human waste on the Premises or any portion thereof;
   g. Dispose of any trash, chemicals or other substances on the Premises;
   h. Use any part of the Premises for landfill or similar purposes except as pursuant to Paragraph 3 above.

9. **Control of Weeds and Grasses**. Tenant will use due diligence and reasonable practices to:

   a. Prevent noxious weeds from growing and going to seed on the Premises;
   b. Destroy any such noxious weeds found on the Premises; and
   c. Cut and/or control grasses upon land within the Premises.

10. **Maintenance.** Tenant shall, at its expense, keep and maintain the Premises and all improvements and facilities existing thereon in as good order and repair and in as safe and clean a condition as they were when received by it from Landlord, excluding reasonable wear and tear. Tenant agrees to restore the Premises to a condition acceptable to the Landlord, including the restoration contained in Paragraph 6. Maintenance of access roads will be as follows:

   a. Roadway on Outlot B as depicted on Exhibit A shall be maintained by the Tenant.

   b. Roadway as depicted on Exhibit B shall be maintained by the Landlord.

   c. Roadway across parcel currently owned by Goodhue County, Parcel Identification Number 55-645-0240, shall be maintained by Landlord.

11. **Control of Soil Erosion and Maintenance of Drainage Facilities.** Tenant shall act to control soil erosion upon the Premises in accordance with best management practices. In the event the Tenant causes damage to any terraces, open ditches, drain tile systems and established watercourses on the Premises, Tenant shall repair them to good working order.

12. **Compliance with Laws.** Tenant agrees to comply with all applicable laws and regulations imposed by any governmental authority with respect to the Premises and Tenant's use thereof.

13. **Alterations and Liens**. Tenant shall not, without Landlord's prior written consent, make, or permit any other person to make, any alterations to the Premises, or to any improvement thereon or facility appurtenant thereto except as pursuant to paragraphs 6 and 7, above. Tenant shall keep the Premises free and clear from all liens, claims, demands for work performed, materials furnished, or operations conducted thereon by Tenant or at its request.

14. **Right of Entry by Landlord**. Tenant shall permit Landlord, its agents, representatives, or employees to enter upon the Premises at all reasonable times in order to inspect the Premises to determine whether Tenant is complying with the terms of this Lease, and to do all other lawful acts that are desirable or necessary in order to protect Landlord's interest in the Premises. In addition, Landlord hereby reserves the right for Landlord, its agents, representatives, employees or contractors to enter upon portions of the Premises for various purposes related to the construction or operation of Landlord's facilities located on adjacent property. Landlord shall pay Tenant for damages caused by such entry, construction or operations.

15. **Acceptance by Tenant**. Tenant accepts the Premises and the improvements and facilities thereon in their present condition. Tenant warrants and represents to Landlord that Tenant has inspected the Premises, and that Tenant is leasing the Premises as a result of its inspection and investigation and not any representations made by Landlord or its agents.

16. **Indemnity**. To the extent permitted by law, Tenant shall indemnify and hold Landlord and its directors, officers, agents, employees and affiliates free and harmless from all claims, liability, loss, damage, or expense resulting from or arising in connection with Tenant's occupation and use of the Premises, including, without limitation, any claim, liability, loss or damage arising by reason of:

    a. Any injury or damage to person or property, from whatever cause, while in or on the Premises or in any way connected with the Premises or with Tenant's activities or operations thereon, including any liability for injury to the person or property of Tenant or of its agents, officers, or employees, except that the Tenant is not liable for

any injury caused by contamination, hazardous materials, or other dangerous condition existing on the Premises prior to the execution of this Lease;

b. Any work performed on the Premises or materials furnished to the Premises by or at the request of Tenant or its agents or employees;

c. Any failure by Tenant to perform any provision of this Lease or to comply with any requirement imposed on it or on the Premises by any duly authorized governmental agency or political subdivision; or

d. Any failure or inability by Tenant to pay as they become due any obligation incurred by it in conducting its operations on the Premises.

Tenant shall not be responsible to indemnify or hold harmless Landlord for injury or damage to Landlord's directors, officers, affiliates, employees, contractors, or agents who are on the Premises in accordance with paragraph 14. Tenant shall not be responsible to indemnify or hold harmless Landlord and its directors, officers, agents, employees, and affiliates from all claims, liability, loss, damage, or expense resulting from negligence or willful misconduct of Landlord, its directors, officers, affiliates, employees, or agents.

The foregoing indemnity shall survive and be enforceable by Landlord after the expiration or termination of this Lease.

17. **Tenant's Insurance**. Throughout the entire term of this Lease, and as a condition precedent to entering upon the Premises, Tenant shall carry in full force and effect the following insurance:

a. "All risk" fire and extended coverage insurance covering the full replacement value of all of Tenant's leasehold improvements, trade fixtures and personal property upon the Premises.

b. Commercial general liability insurance covering all acts of Tenant, its employees, agents, representatives and guests in at least the limits set forth in Minnesota Statutes Section 466.04, subdivision 1, as amended.

All such insurance shall name Landlord as an additional insured and shall provide for thirty (30) days written notice to Landlord prior to cancellation, non-renewal or material modification. Certificates of all such insurance shall be delivered to Landlord prior to occupancy of the Premises by Tenant and at least thirty (30) days prior to the termination date of any existing policy. Such insurance may be in the form of blanket or umbrella policies so long as the Premises are specifically designated therein.

18. **Environmental**. Before Tenant may store any petroleum products, or use, store or apply any fertilizers, pesticides, or herbicides or any other chemicals or biological agents ("Agricultural Chemicals"), on the Premises, Tenant must receive the express, written consent of Landlord (which consent may not be unreasonably withheld). The Landlord hereby provides written consent for the Tenant to store the following Agricultural Chemicals on the premises: sugar beet deicer or other similar deicing agent.

19. **Assignment or Subleasing by Tenant**. Tenant shall not encumber, assign, or otherwise transfer this Lease, or any right or interest herein, the Premises, or any existing or future improvement constructed or installed thereon; and Tenant shall not sublet all or any part of the Premises or allow any persons other than Tenant's agents, employees, and representatives to occupy or use all or any part thereof; unless approved in writing by Landlord prior to entry. In the event Tenant, with Landlord's written approval, assigns, subleases or otherwise transfers this Lease or any right or interest herein to another party (said party generally referred to hereinafter as the "Sublessee"), Landlord may require Sublessee to pay Landlord a percentage of each rental payment Tenant receives from Sublessee. If Landlord will require such a payment, the amount of such payment will be set forth in a separate agreement between Landlord and Tenant in which Landlord approves the Sublease. The form of agreement with the Sublessee shall require Sublessee to acknowledge and agree to the terms of this Lease, and the form of agreement and other terms and conditions thereof shall be subject to Landlord's approval.

20. **Default by Tenant**. If Tenant shall abandon the Premises before the end of the Lease term or otherwise default in performing any term, provision, covenant, or condition required herein by Tenant to be kept, observed or performed, Landlord may terminate this Lease and reenter and regain possession of the Premises in the manner then provided by the laws of the State of Minnesota. If Landlord believes Tenant is in default, Landlord will notify Tenant in writing of the default and allow Tenant ninety (90) days to cure the default before Landlord exercises the remedies in this paragraph.

21. **Surrender of Possession.** Tenant shall surrender possession and occupancy of the Premises peaceably upon the expiration or termination of this Lease.

22. **No Partnership.** Nothing in this Lease shall be deemed to create a partnership, joint venture or any other relationship between Landlord and Tenant, other than that of landlord and tenant.

23. **Notices**. All notices, demands and requests required or permitted to be given under this Lease shall be in writing and must be delivered personally, by prepaid nationally recognized overnight courier, or by deposit in the United States mail, prepaid and certified or registered mail, return receipt requested, addressed in each instance to Landlord or Tenant, as the case may be, at the following addresses:

To Landlord: XCEL ENERGY
414 NICOLLET MALL
SITING & LAND RIGHTS, MP 7
414 NICOLLET MALL
MINNEAPOLIS MN 55401

To Tenant: City of Red Wing
229 Tyler Road North
Attn: Public Works Director
Red Wing, MN 55066

Any notice, demand or request required or permitted to be served or given in writing by one party to the other party shall be deemed to have been given as of the date the same is personally delivered to the party to be notified or the date the same is sent by U.S. certified or registered mail, postage prepaid and addressed to the respective party at the address of record, or elsewhere as directed by the respective party to whom such notice is to be given.

24. **Binding Effect**. This Lease shall be binding upon and inure to the benefit of both parties and their respective heirs, executors, administrators, successors and assigns; provided, however, that in relation to Tenant, the foregoing provision is expressly subject to the terms of Paragraph 19 hereof.

25. **Time of Essence**. Time is of the essence of this Lease.

26. **Non-waiver**. A party's waiver of any breach of any provision of this Lease shall not constitute a continuing waiver or a waiver of any subsequent breach by that party of either the same or any other provision hereof.

27. **Headings**. Headings in this Lease are for convenience only and shall not be used to interpret or construe its provisions.

28. **Governing Law**. This Lease shall be construed in accordance with and governed by the laws of the State of Minnesota.

29. **Counterparts**. This Lease may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

30. **Entire Agreement**. This Lease constitutes the sole agreement between the parties with regard to the subject matter hereof and supersedes all prior understandings or agreements between the parties relative thereto.

IN WITNESS WHEREOF, the parties have caused this Lease to be executed on the day and year first above written.

LANDLORD:

NORTHERN STATES POWER COMPANY,

By: _____
Pamela Jo Rasmussen
Senior Manager, Siting & Land Rights
Xcel Energy Services Inc.
an Authorized Agent for Northern States Power
Company, a Minnesota corporation

TENANT:

CITY OF RED WING

By: _____
Kay Kuhlmann
Its: Council Administrator

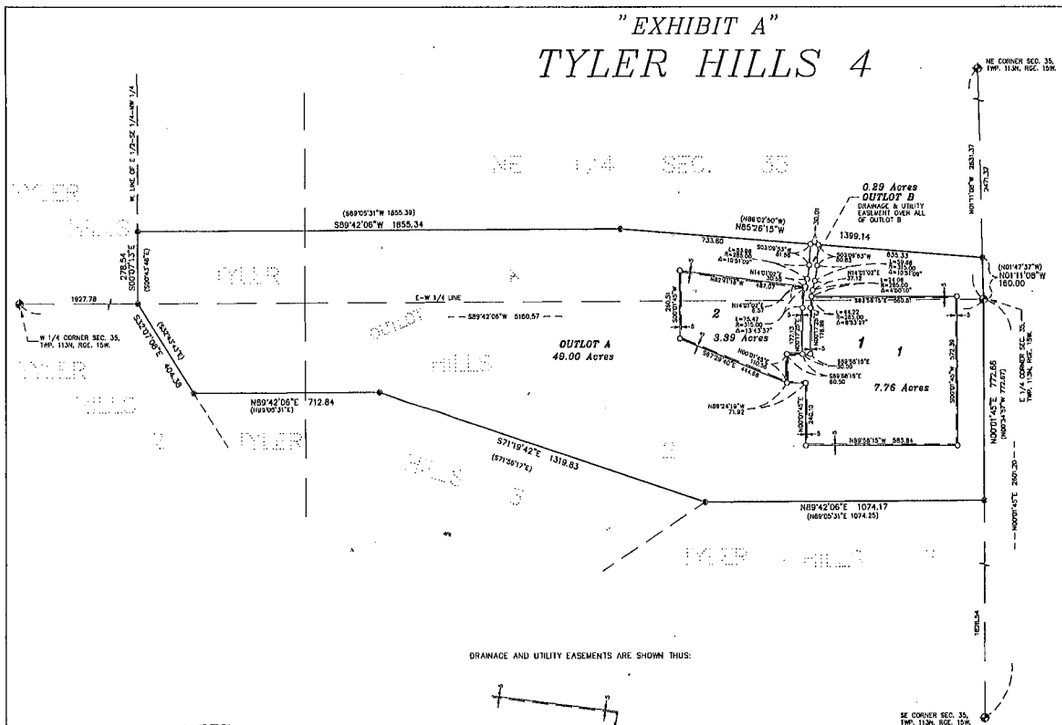
By: _____
Dan Bender
Its: Mayor

By: _____
Kathy Seymour Johnson
Its: City Clerk

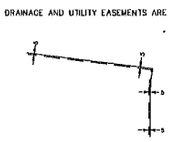
Exhibit A

"EXHIBIT A"

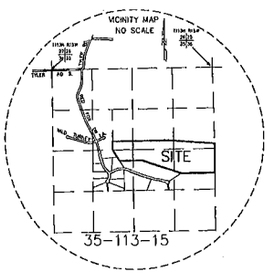
TYLER HILLS 4



DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



BEING 5.00 FEET IN WIDTH AND ADJOINING LOT LINES AS SHOWN ON THE PLAT.



- ○ DENOTES A PLACED 1" BY 18" IRON PIPE HAVING A PLASTIC CAP BEARING LAND SURVEYOR LICENSE NO. 47460.
- ● DENOTES A FOUND IRON MONUMENT.
- ⊕ DENOTES FOUND COUNTY MONUMENT.

BEARINGS & COORDINATES SHOWN HEREON ARE ORIENTED TO THE GOODHUE COUNTY COORDINATE SYSTEM, NAD 83, 1996 ADJUSTMENT (HARN)

KNOW ALL PERSONS BY THESE PRESENTS: That Northern States Power Company d/b/a Xcel Energy, a Minnesota corporation, owner and proprietor of the following described land, situated in the County of Goodhue, State of Minnesota, to wit:

Outlot A, of TYLER HILLS 2, according to the plat thereof, on file and of record in the office of the County Recorder for the County of Goodhue and State of Minnesota.

Has caused the same to be surveyed and platted as TYLER HILLS 4 and does hereby dedicate to the public for public use the drainage and utility easements as created by this plat.

In witness whereof said Northern States Power Company d/b/a Xcel Energy, a Minnesota corporation, has caused these presents to be signed by it's proper officers this _____ day of _____, 2016.

_____ It's _____ and _____ It's _____

STATE OF MINNESOTA
COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ day of _____, 2016 by_____ It's _____ and _____ It's _____ of said Northern States Power Company d/b/a Xcel Energy, a Minnesota corporation on behalf of said corporation.

_____
Notary Public _____County, Minnesota
My Commission Expires _____

I hereby certify:
That I have surveyed or directly supervised the survey of the property described on this plat; that I have prepared or directly supervised the preparation of this plat as TYLER HILLS 4; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on the plat; that all monuments depicted on the plat have been correctly set; that as of the date of this certification, all water boundaries and wetlands, as defined in Minnesota Statutes 505.01, subd. 3, are shown and labeled on the plat; and that all public ways are shown and labeled on the plat.

Dated this _____ day of _____, 2016.

_____
Marcus S. Johnson, Land Surveyor
Minnesota License Number 47460

STATE OF MINNESOTA
COUNTY OF GOODHUE

The foregoing instrument was acknowledged before me this _____ day of _____, 2016, by Marcus S. Johnson, Land Surveyor.

_____
Notary Public Goodhue County, Minnesota
My Commission Expires January 31, 2021.

Approved by the City Council of Red Wing, Minnesota, this _____day of _____, 2016.

SIGNED: _____ City Clerk _____ Mayor

Taxes payable in the year 2016 on the land herein described have been paid, there are no delinquent taxes and transfer has been entered this ____ day of _____, 2016.

_____
Goodhue County Auditor/Treasurer By _____ Deputy

Pursuant to Chapter 389.09, laws of Minnesota, and Goodhue County Ordinance No. 2-78, this plat has been approved this ____ day of _____, 2016.

_____
Goodhue County Surveyor

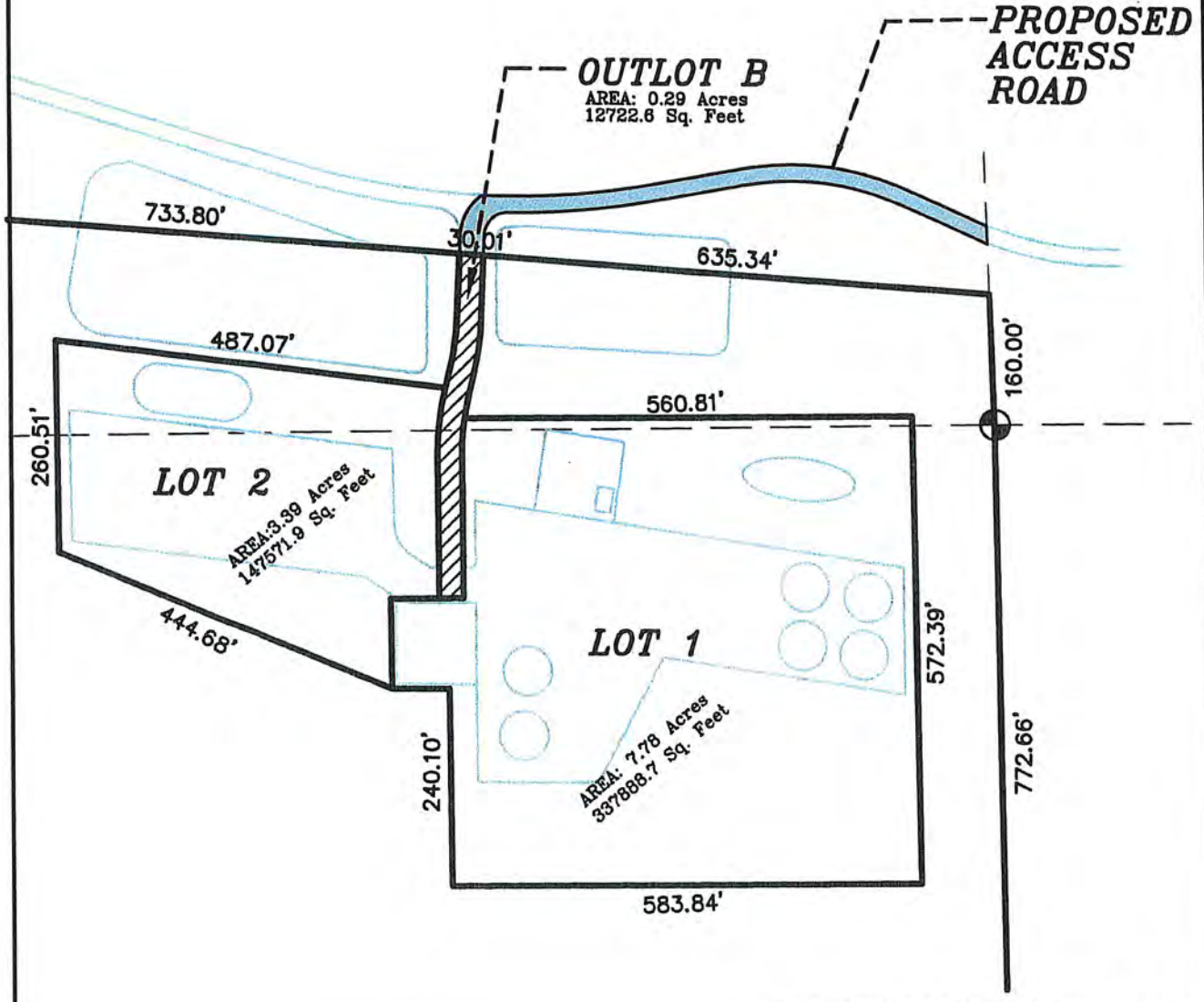
I hereby certify that the within instrument was filed in this office for record this _____ day of _____, 2016, at _____m and was duly recorded as document number _____.

_____
Goodhue County Recorder

JOHNSON & SCOFIELD INC.
LAND SURVEYORS
1203 MAIN ST. RED WING, MN 55066 (651) 388-1658
MANKATO, MN 56001 (651) 625-9544

Exhibit B

ACCESS ROAD EXHIBIT B



S/PLATS/TYLER HILLS 2/CITY OF RW-XCEL/TYLER HILLS FOURTH ADDITION-ACCESS ROAD.DWG

JOHNSON & SCOFIELD INC.
SURVEYING AND ENGINEERING
1203 MAIN STREET, RED WING, MN 55033
(651)388-1558

SKETCH PLAN FOR:
CITY OF RED WING c/o BRIAN PETERSON

DENOTES AREA OF OUTLOT B

DENOTES ACCESS ROAD

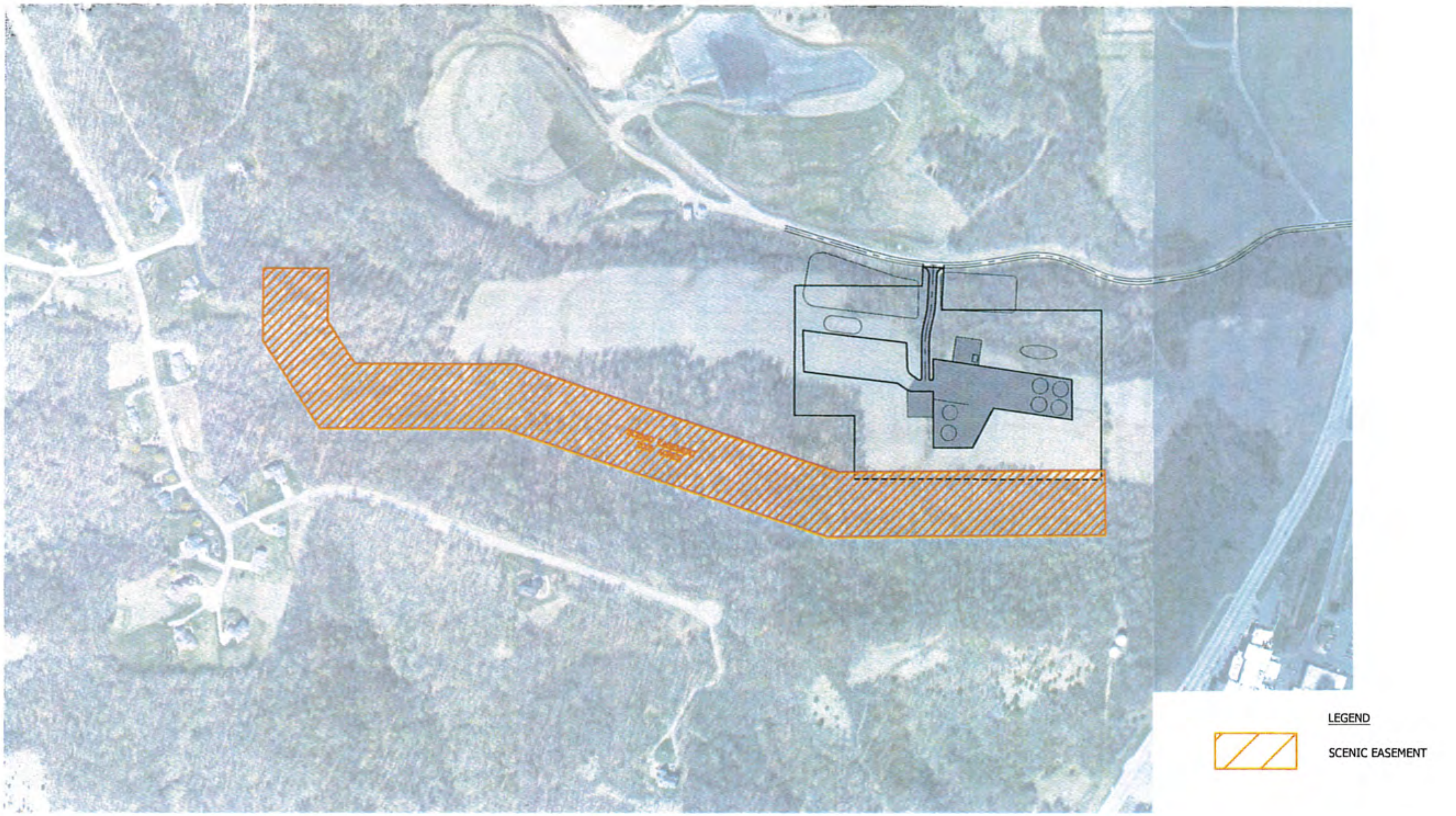
BK. NA PG. NA

W.O. NUMBER 16-153

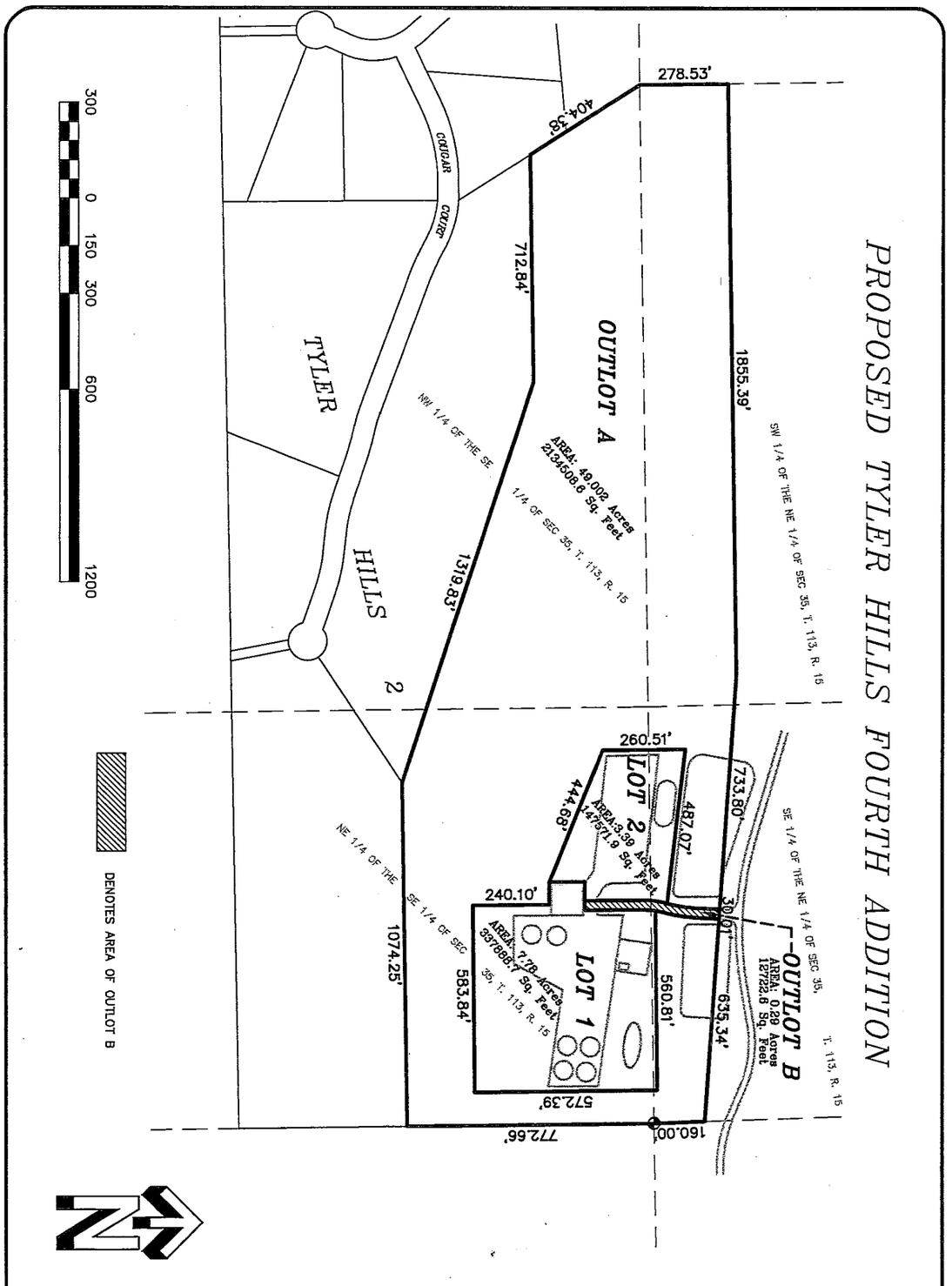
DATE: FEBRUARY 11, 2016

0 200 400

N



CONCEPTUAL NOT FOR CONSTRUCTION	DRAWN BY: MSG DESIGNER: BJR CHECKED BY: DRH DESIGN TEAM	SEH 651.490.2000 3535 VADNAIS CENTER DRIVE ST. PAUL, MN 55110-5196 www.sehinc.com	City of RED WING	CITY OF RED WING, MN MATERIAL STORAGE CONDITIONAL USE PERMIT REQUEST	PUD AND SCENIC EASEMENT DIMENSIONS MAP	FILE NO. RWING 135849	FIGURE 3



s/plats/tyler hills 2/city of rw-xcel/tyler hills fourth addition.dwg

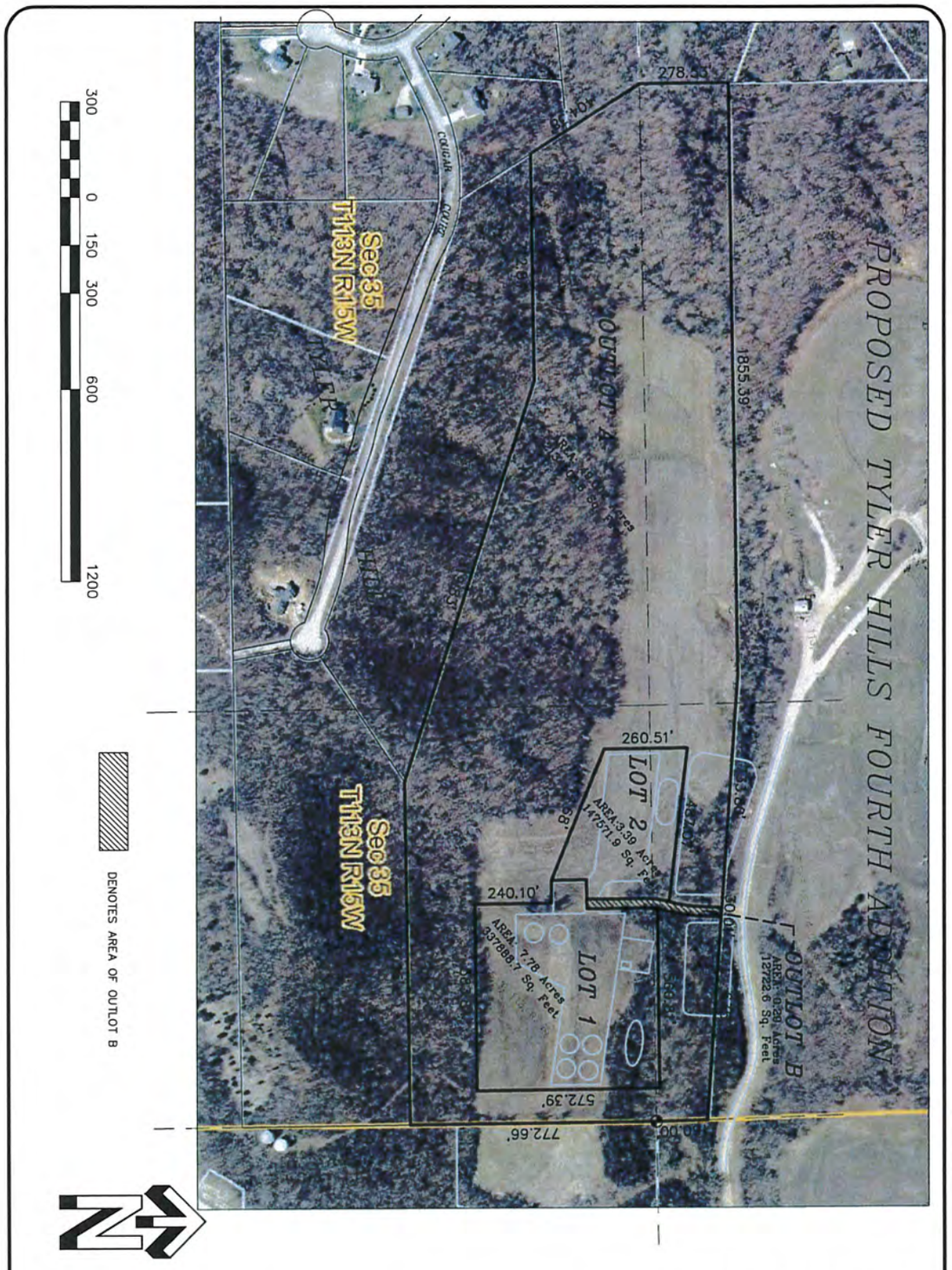
SKETCH PLAN FOR: *CITY OF RED WING*
c/o BRIAN PETERSON

JOHNSON & SCOFIELD INC.
SURVEYING AND ENGINEERING
1203 MAIN STREET, RED WING, MN 55066
(651) 388-1558

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Marcus S. Johnson
Minnesota License No. 47460
Date: February 9, 2016

BK. NA	PG. NA	W.O.#	DRAWING NUMBER
SHEET 1 OF 1 SHEETS		16-153	S-6088



s/plats/tyler hills 2/city of rw-xcel/tyler hills fourth addition.dwg

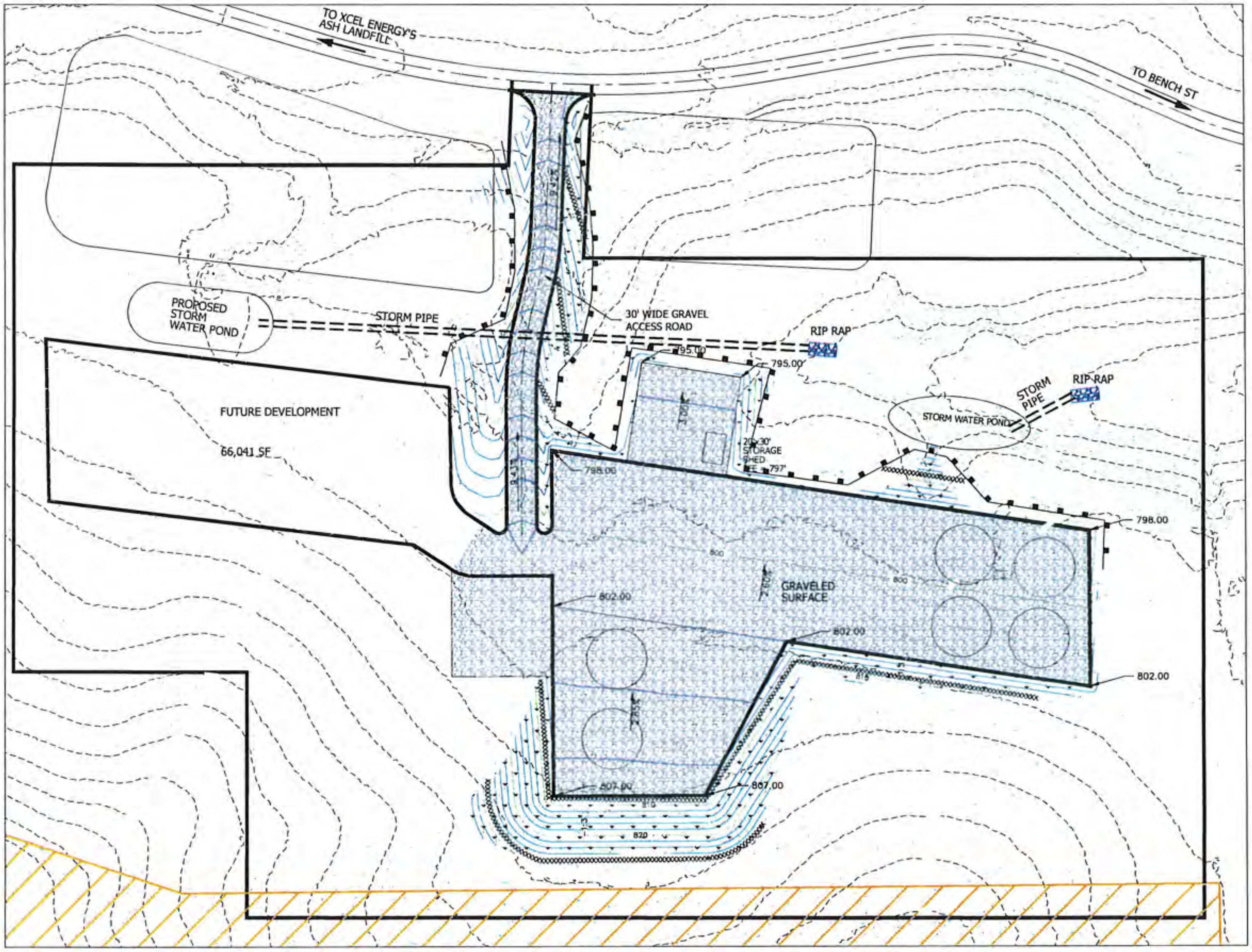
SKETCH PLAN FOR: *CITY OF RED WING*
c/o BRIAN PETERSON

JOHNSON & SCOFIELD INC.
SURVEYING AND ENGINEERING
1203 MAIN STREET, RED WING, MN 55066
(651) 388-1558

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Marcus S. Johnson
Minnesota License No. 47460
Date: February 9, 2016

BK. NA	PG. NA	W.O.#	DRAWING NUMBER
SHEET 1 OF 1 SHEETS		16-153	S-6088



N

50 0 50 100
scale 25 feet

NOTES

1. 35 TREES WILL BE REMOVED. TREES WILL BE REPLACED THROUGHOUT THE CITY PARKS AND BOULEVARD SYSTEM.
2. PLACE 4" TOPSOIL, SEED, FERTILIZER AND MULCH OVER ALL DISTURBED AREAS. EROSION CONTROL BLANKET SHALL BE USED FOR ALL SLOPES GREATER THAN 4:1.
3. INSTALL TURF REINFORCEMENT MAT ALONG BERMS ON SLOPES GREATER THAN 10%.

LEGEND

SEEDING
SITE - MNDOT 25-141
POND - MNDOT 33-261

SCENIC EASEMENT

DIVERSION BERM

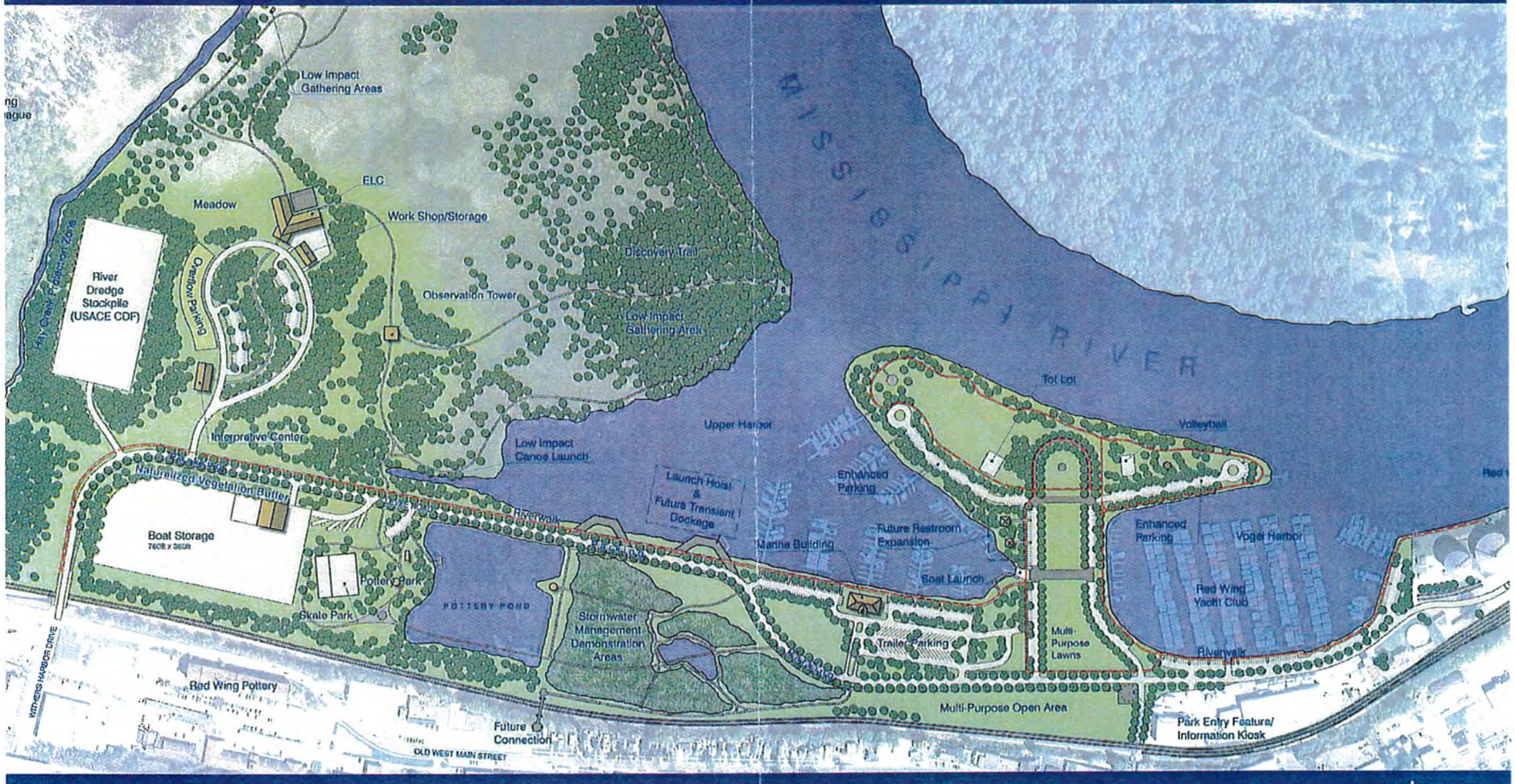
STRAW WATTLE

SILT FENCE

CONCEPTUAL NOT FOR CONSTRUCTION	DRAWN BY: MSG DESIGNER: BJR CHECKED BY: DRH DESIGN TEAM	SEH 651.490.2000 3535 VADNAIS CENTER DRIVE ST. PAUL, MN 55110-5196 www.sehinc.com	City of RED WING — CITY OF RED WING, MN MATERIAL STORAGE CONDITIONAL USE PERMIT REQUEST	STORM WATER, LANDSCAPING AND RESTORATION PLAN	FILE NO. RWING 135849	FIGURE 2

P:\KO\L\LABUS\134253\5-final-dsgn\51-drawings\10-Civil\cad\dwg\base map2.dwg 2/2/2016 3:02 PM mgoil

Exhibit C



UPPER HARBOR CONSENSUS PLAN

Exhibit D

SEH

Building a Better World for All of Us®

MEMORANDUM

TO: Lynn Nardinger, City of Red Wing

FROM: SEH Inc.

DATE: March 23, 2016

RE: Air Emissions Evaluation for City of Red Wing Concrete/Asphalt Crushing Operations
SEH No. RWING 135849

This memo documents the air emission calculations and air permit applicability review for the proposed City of Red Wing concrete and asphalt crushing operations ("Facility") to be located near the Xcel Energy Ash Landfill in Red Wing, Minnesota. Applicability for state (Minor Source) and federal (Title V) air quality permits were reviewed for the proposed Facility. If applicable, an air quality permit would be required prior to construction and operation of the Facility.

To calculate air emissions from the Facility, the following process design was assumed:

1. Trucks deliver uncrushed concrete or asphalt (material) to the Facility and unload the material
2. Material is stored in storage piles prior to crushing
3. Material is crushed with a diesel generator powered crusher
4. Crushed material is separated using two screens (assumed in parallel)
5. Conveyors transfers material between different process steps
6. Processed material is added (dropped) to finished storage piles
7. The processed material is hauled off-site via trucks.

The Facility's material handling/processing operations have the potential to emit particulate matter (PM) and PM less than 10 microns in diameter (PM_{10}). In addition, fuel combustion in the Facility's diesel generator has the potential to emit PM, PM_{10}, sulfur dioxide (SO_2), oxides of nitrogen (NO_x), carbon monoxide (CO), and volatile organic compounds (VOCs). Facility emissions are calculated using emission factors from the most current U.S. Environmental Protection Agency (USEPA) AP-42 document. Because AP-42 does not contain any specific emission factors for the crushing/screening of concrete or asphalt, general emission factors that would represent aggregate or similar material are used. For the purposes of this evaluation, the following conservative assumptions are used in calculations:

- Average material moisture content is 1% (however, expected moisture content could be greater than 1% if material is stored outdoors in storage piles)
- Material throughput is assumed to be 20,000 tons per year, four times the expected typical throughput of only 5,000 tons per year
- A fuel usage rate of 0.2 gallons diesel per ton of material crushed (or 5 tons crusher per gallon diesel) is assumed for the diesel generator.
- Material processing steps (crushing, screening, drop points) are not enclosed or controlled with water
- Combined area of the storage piles is assumed to be 0.5 acres (about 22,000 square feet) and includes no wind shields/barriers

- Round trip travel distance for truck traffic on the Facility site is assumed to be 3,000 feet per truck load. (Emissions from truck traffic off of the Facility site is not included)
- There are two round trips via trucks (initial delivery and hauling off-site) for each ton of material
- No dust control (e.g. water application, road binder, etc.) on the Facility's unpaved roadways

Table 1 shows the projected Facility-wide emissions. As is shown, the majority of calculated PM and PM_{10} emissions at the Facility is attributable to truck traffic on the Facility's unpaved roadways. Calculated combustion emissions from the generator are low.

Table 1. Projected Air Emissions from Red Wing Crushing Operations

	PM (ton/yr)	PM_{10} (ton/yr)	CO (ton/yr)	NO_x (ton/yr)	SO_2 (ton/yr)	VOC (ton/yr)
Facility Emissions	**5.9**	**2.0**	**0.3**	**1.2**	**<0.01**	**0.1**
Roadway Emissions (truck traffic)	*4.1*	*1.1*	-	-	-	-
Material Processing/Handling Emissions	*1.7*	*0.8*	-	-	-	-
Diesel Generator for Crusher	*0.1*	*0.1*	*0.3*	*1.2*	*<0.01*	*0.1*
MN State Air Permit Thresholds	**100**	**25**	**100**	**100**	**50**	**100**

Table 1 also shows the emission thresholds for State Air Permits in Minnesota. These thresholds for PM and PM_{10} are listed in MN Administrate Rules, 7007.0250, Subp. 4 and on the Minnesota Pollution Control Agency (MPCA) website (https://www.pca.state.mn.us/air/who-needs-air-permit). Facilities in Minnesota with emissions below these thresholds are not required to obtain an air permit. The total projected emissions from the Facility, even with the conservative assumptions described above, are still well below state air permit thresholds. The federal permit thresholds are higher than state thresholds and are therefore not shown above.

Because the Facility could be co-located with the proposed Lab USA Ash Processing Plant ("Plant") at the Xcel Energy Ash Landfill, the two facilities may be required to aggregate their air emissions in order to determine permit applicability. Based on results from air permitting calculations for the Plant, the combined emissions are still expected to be below state and federal air permit thresholds.

This evaluation does not calculate projected Facility emissions based on equipment capacities (e.g. crusher capacity of 70 ton/hr). The Facility emissions calculated based on this capacity and daily operation would be significantly higher than the approach presented in this memo.

Attachments

- Attachment 1 – Air Emission Calculations Spreadsheet

sdp/DRH

City of Red Wing - Crushing Operations
PM Emissions (assuming 1% moisture material)

Process	Max Daily Production (12-hr day)	Typical Annual Production	Conservative Annual Production	PM Emission Rate		Max Hourly Emissions	Annual Emissions	Comments on Emission Factors
	ton/day	ton/yr	ton/yr	lb/ton		lb PM/hr	ton PM/yr	
Concrete/Asphalt Crushing Operations								
F01 - Truck Unloading	840	5,000	20,000	0.0164		1.15	0.16	AP-42 13.2.4 (1): $EF = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ U = 10.5 mph; k = 0.74 (PM), k = 0.35 (PM10); M = 1%
F02 - Conveyor Transfer Points (assume 3)	2520	15,000	60,000	0.0030		0.63	0.09	AP-42 Table 11.19.2-2. Uncontrolled Transfer Point
F03 - Crusher	840	5,000	20,000	0.0054		0.38	0.05	AP-42 Table 11.19.2-2. Tertiary Crushing (uncontrolled)
P03 - Diesel Generator						0.60	0.09	See Table A.
F04A - Screen #1	420	2,500	10,000	0.025		0.88	0.13	AP-42 Table 11.19.2-2. Screening (uncontrolled)
F04B - Screen #2	420	2,500	10,000	0.025		0.88	0.13	AP-42 Table 11.19.2-2. Screening (uncontrolled)
F05 - Drop Points onto piles	840	5,000	20,000	0.0164		1.15	0.16	AP-42 13.2.4 (1): $EF = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ U = 10.5 mph; k = 0.74 (PM), k = 0.35 (PM10); M = 1%
F06 - Storage Piles						0.20	0.87	See Table B.
F07 - Truck Loading	840	5,000	20,000	0.0164		1.15	0.16	AP-42 13.2.4 (1): $EF = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ U = 10.5 mph; k = 0.74 (PM), k = 0.35 (PM10); M = 1%
F08 - Vehicle Traffic Unpaved						11.0	4.1	See Table C.
				Totals =		**18.0**	**5.9**	

March 23, 2016

City of Red Wing - Crushing Operations

PM_{10} Emissions (assuming 1% moisture material)

Process	Max Daily Production (12-hr day)	Typical Annual Production	Conservative Annual Production	PM Emission Rate		Max Hourly Emissions	Annual Emissions	Comments on Emission Factors
	ton/day	ton/yr	ton/yr	lb/ton		lb PM10/hr	ton PM10/yr	
Concrete/Asphalt Crushing Operations								
F01 - Truck Unloading	840	5,000	20,000	0.0078		0.54	0.08	AP-42 13.2.4 (1): $EF = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ U = 10.5 mph; k = 0.74 (PM), k = 0.35 (PM10); M = 1%
F02 - Conveyor Transfer Points (assume 3)	2520	15,000	60,000	0.0011		0.23	0.03	AP-42 Table 11.19.2-2. Uncontrolled Transfer Point
F03 - Crusher	840	5,000	20,000	0.0024		0.17	0.02	AP-42 Table 11.19.2-2. Tertiary Crushing (uncontrolled)
P03 - Diesel Generator						0.60	0.09	See Table A.
F04A - Screen #1	420	2,500	10,000	0.0087		0.30	0.04	AP-42 Table 11.19.2-2. Screening (uncontrolled)
F04B - Screen #2	420	2,500	10,000	0.0087		0.30	0.04	AP-42 Table 11.19.2-2. Screening (uncontrolled)
F05 - Drop Points onto piles	840	5,000	20,000	0.0078		0.54	0.08	AP-42 13.2.4 (1): $EF = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ U = 10.5 mph; k = 0.74 (PM), k = 0.35 (PM10); M = 1%
F06 - Storage Piles						0.09	0.41	See Table B.
F07 - Truck Loading	840	5,000	20,000	0.0078		0.54	0.08	AP-42 13.2.4 (1): $EF = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ U = 10.5 mph; k = 0.74 (PM), k = 0.35 (PM10); M = 1%
F08 - Vehicle Traffic Unpaved						3.0	1.1	See Table C.
				Totals =		**6.3**	**2.0**	

March 23, 2016

Table A
Combustion Emissions from Diesel Generator

Diesel Energy Content ***0.138 MMBtu/gallon***

Diesel Generator for Crusher

Pollutant	Material Processed (ton/yr)	Assumed Fuel Usage Rate (gal/ton processed)	Estimated Fuel Usage (gal/yr)	Emission Factor AP-42 Section 3.3 (lb/MMBtu)	Emission Factor AP-42 Section 3.3 (lb/1,000 gal)		**Max Hourly Emissions (lb/hr)**	**Annual Emissions (ton/yr)**
CO	20,000	0.2	4,000	0.95	131.1		1.8	**0.26**
NMHC (VOC)				0.35	48.3		0.7	**0.10**
NO_x				4.41	608.6		8.5	**1.22**
PM, PM10				0.31	42.8		0.6	**0.09**
SO_2				0.0015	0.21		0.0	**0.0004**

Table B
Storage Piles - Potential Fugitive PM Emissions

Material Handling factors (AP-42, Sect. 13.2.4, Aggregate Handling and Storage Piles, 2006)
Assume PM30 as presented in AP-42 equates to total PM.

k = 0.053 for PM 2.5
k = 0.35 for PM 10
k = 0.74 for PM 30

Emission Factors			Emission Calculations				
Active Piles			Active Piles				
Emission Factor =	0.72 * u	lb PM 30/acre/hr (disturbed area)	Disturbed area =	0.1	acres		
From Fifth Edition of AP-42, Table 11.9-1, Chapter 11.9, "Western Surface Coal Mining", 1998			PM Emissions =	Area * Active Storage Pile EF * Disturbed Hours/yr			
Note: No scaling factors available for PM 2.5 & 10; use ratio of 'k' factors (above)			PTE worst case:	Disturbed hours = 24 hr/day x 365 day/yr = 8760 hr			
u =	10.5	mph (average wind speed for Minneapolis-St. Paul, MN)					
	(from http://lwf.ncdc.noaa.gov/oa/climate/online/ccd/avgwind.html)						
EF =	**0.54**	lb PM 2.5/acre/hr (uncontrolled)	PM 2.5 Emissions =	**0.01**	lb/hr	**0.06**	ton/yr
EF =	**3.58**	lb PM 10/acre/hr (uncontrolled)	PM 10 Emissions =	**0.09**	lb/hr	**0.39**	ton/yr
EF =	**7.56**	lb PM 30/acre/hr (uncontrolled)	PM 30 Emissions =	**0.19**	lb/hr	**0.83**	ton/yr
Inactive Piles			Inactive Piles				
Emission Factor =	0.38	ton PM/acre/yr (undisturbed area)	Inactive pile area =	0.4	acres		
From Fifth Edition of AP-42, Table 11.9-4, Chapter 11.9, "Western Surface Coal Mining", 1998			PM Emissions =	Area * Inactive Storage Pile EF * yr			
Note: No scaling factors available for PM 2.5 & 10; use ratio of 'k' factors (above)							
EF =	**0.03**	ton PM 2.5/acre/year (uncontrolled)	PM 2.5 Emissions =	**0.00**	lb/hr	**0.00**	ton/yr
EF =	**0.18**	ton PM 10/acre/year (uncontrolled)	PM 10 Emissions =	**0.00**	lb/hr	**0.02**	ton/yr
EF =	**0.38**	ton PM 30/acre/year (uncontrolled)	PM 30 Emissions =	**0.01**	lb/hr	**0.04**	ton/yr

ANNUAL EMISSIONS	ton PM 2.5/yr	ton PM 10/yr	ton PM 30/yr
Active Storage Piles =	0.06	0.39	0.83
Inactive Storage Piles =	0.00	0.02	0.04
SITE TOTALS =	**0.06**	**0.41**	**0.87**

HOURLY EMISSIONS	lb PM 2.5/hr	lb PM 10/hr	lb PM 30/hr
Active Storage Piles =	0.01	0.09	0.19
Inactive Storage Piles =	0.00	0.00	0.01
SITE TOTALS =	**0.01**	**0.09**	**0.20**

Table C
Vehicle Traffic on Unpaved Roads

(based on AP-42 Section 13.2.2 Unpaved Roads, 2006)

$E = k(s/12)^a(W/3)^b * [(365 - P)/365]$ Particulate emission factor, lb/VMT

Where:

k (PM 10) =	1.5	constant for PM-10, lb/VMT
a =	0.9	
b =	0.45	
k (PM 30) =	4.9	constant for PM-30, lb/VMT
a =	0.7	
b =	0.45	
s =	**6.4**	surface material silt content, % (from AP-42 Table 13.2.2.1 for MSW Landfill)
W =	**34**	Mean weight of vehicles, tons (Truck weight: 25 tons empty, 25+18 tons full)
P =	**115**	(Figure 13.2.1.2 for days with >0.01 in precipitation)
EF =	1.7	PM-10 lb/VMT
EF =	6.4	PM-30 lb/VMT

Control Efficiency from watering = **0%**

Annual Emission Rates

Trips =	1,111	Delivery of uncrushed material - Vehicle trips per year (assumed 18 ton/truck)
	1,111	Hauling crushed material - Vehicle trips per year (assumed 18 ton/truck)
Distance =	3,000	Distance per trip, feet
VMT =	1,263	Vehicle miles traveled per year

Uncontrolled		Controlled (with watering)	
1.1	tpy PM 10	1.1	tpy PM 10
4.1	tpy PM 30	4.1	tpy PM 30

Hourly Emission Rates

Trips =	3.0	Vehicle trips per hour
Distance =	3,000	Distance per trip, feet
VMT =	1.7	Vehicle miles traveled per hour

Uncontrolled		Controlled (with watering)	
3.0	lb/hr PM 10	3.0	lb/hr PM 10
11.0	lb/hr PM 30	11.0	lb/hr PM 30

SEH

Building a Better World
for All of Us®

MEMORANDUM

TO: Lynn Nardinger

FROM: SEH, Inc.

DATE: March 9, 2016

RE: City of Red Wing Lay Down Area CUP – Sound Study
SEH No. RWING 135849 14.00

The City of Red Wing (City) is requesting a conditional use permit for a lay down area located on property to be leased from Xcel energy near their ash disposal facility. The planned site use will include a crushing operation operated by the City. The site will also be used by Lab USA (Lab) to process ash wastes. Considering noise potential for the two uses, the operation by Lab will be inside a metal building. The metal building will absorb the sounds and drastically reduce noise at the building walls. Based on data from similar operations and a test by the City at their waste processing facility on the waste campus, noise from this operation should be minimal.

The City concrete crushing operation however will not be enclosed. The City of Red Wing measured decibel levels at three distances from a crushing operation similar to that which will be used at the Red Wing laydown area. Based on these measurements and the inverse distance law for sound pressure, decibel levels were extrapolated to various distances from the planned crushing operation location. The equations that were used to evaluate the sound at distances away from the source are based on a controlled interior environment. These calculations do not take into account any natural attenuation or buffering of the sound from outside factors. The measured values would be further decreased by additional attenuation from the atmosphere, the height difference between the receptors further up the bluff and the crushing operations as well as the trees surrounding the operations.

Following is Table 1 with calculated decibel levels versus various distances. The nearest anticipated residential receptor is at approximately 1,350 away in distance and 235 feet higher in elevation. The decibel level near this receptor is calculated at 59. A level of 60 is allowed between the hours of 7:00 AM to 5:00 PM at this location based on the City of Red Wing sound ordinance.

Table 1

Distance	Decibel
300	72
500	68
1,000	62
1,350	59
2,000	56

A figure showing decibel levels at various distances from the anticipated crusher location is attached.

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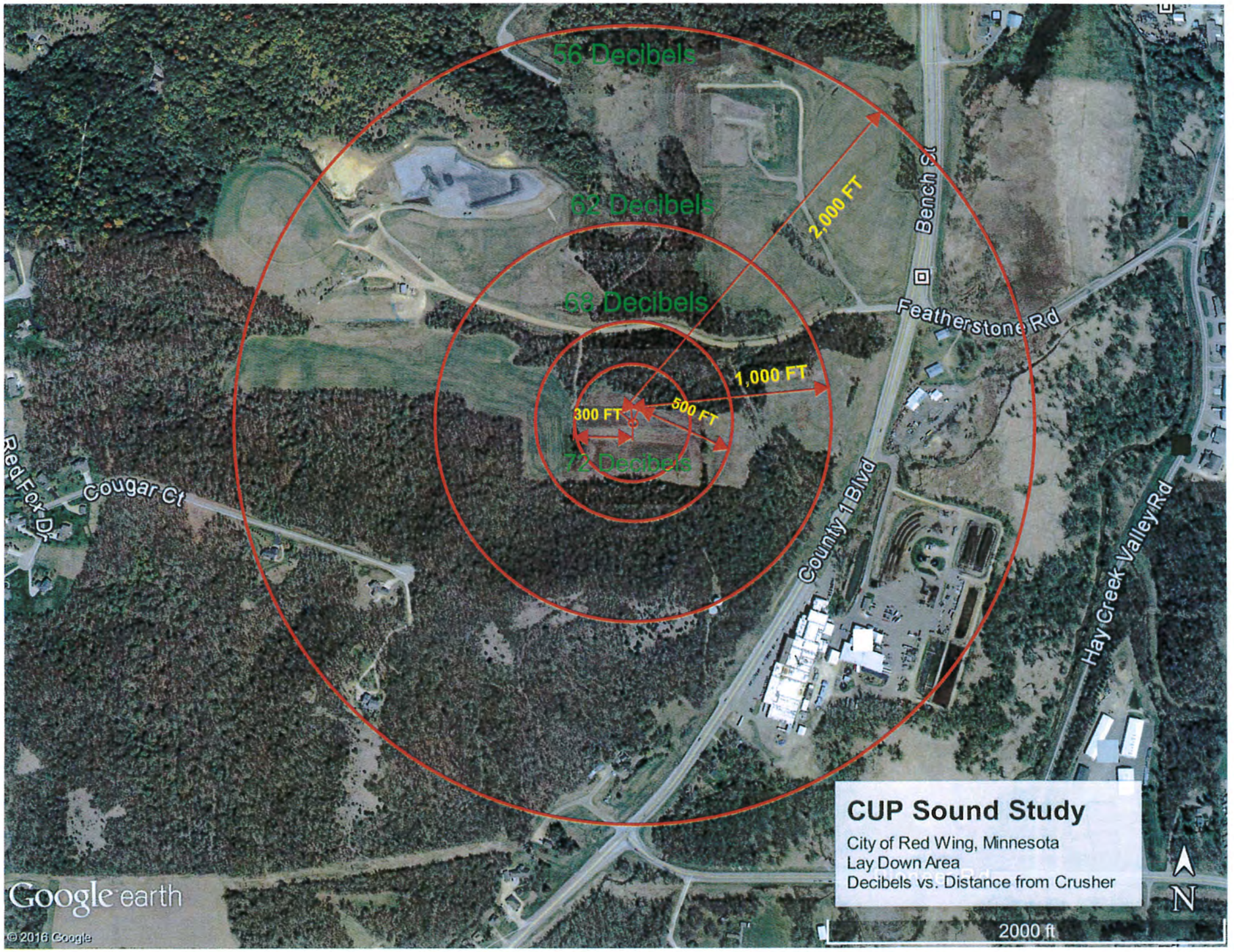
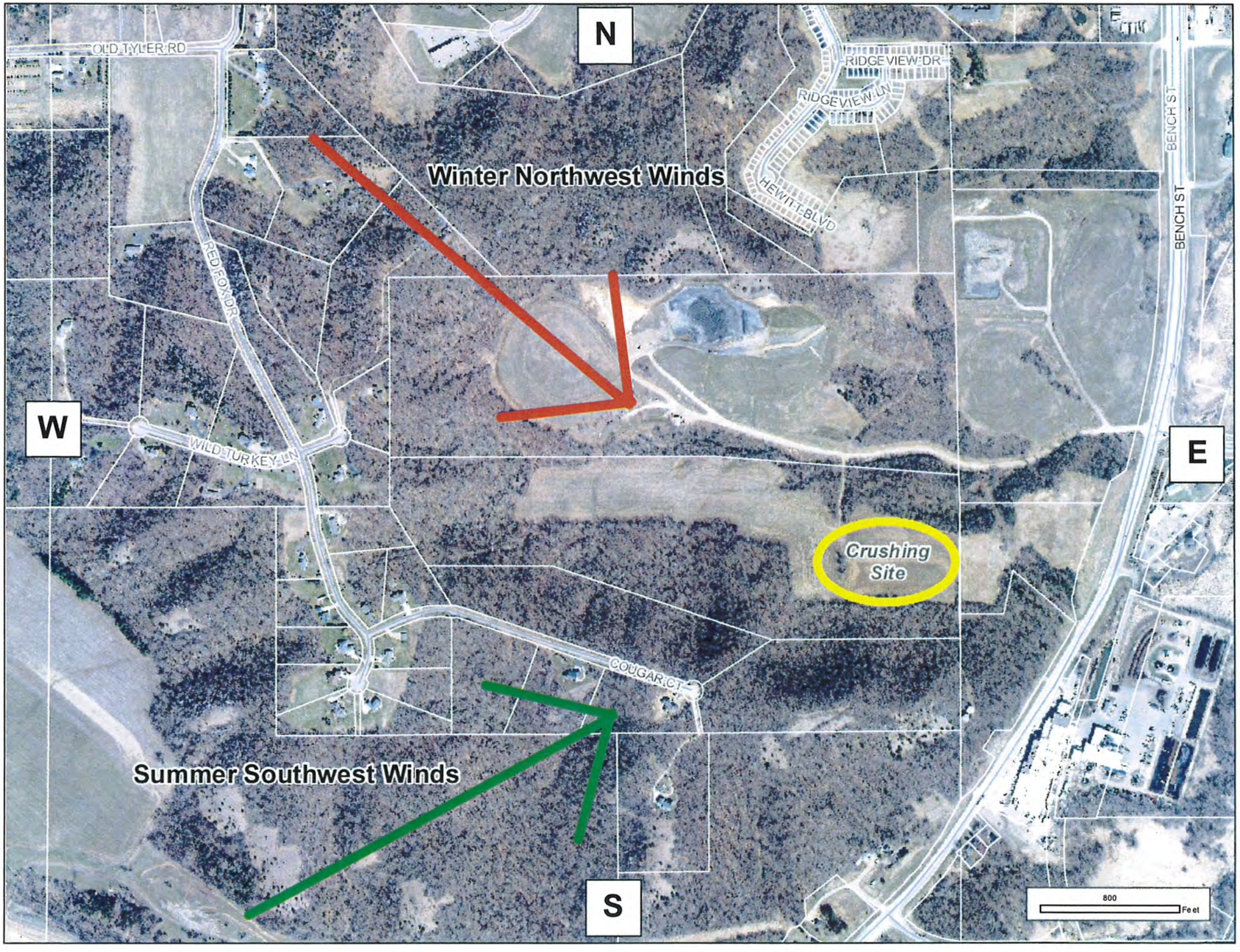

56 Decibels
62 Decibels
68 Decibels
72 Decibels
2,000 FT
1,000 FT
500 FT
300 FT
Bench St
Featherstone Rd
County 1 Blvd
Hay Creek Valley Rd
Cougar Ct
Red Fox Dr
CUP Sound Study
City of Red Wing, Minnesota
Lay Down Area
Decibels vs. Distance from Crusher
N
2000 ft
Google earth
© 2016 Google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RIDGEVIEW LN
HEWITT BLVD
BENCH ST
RED FOX DR
WILD TURKEY LN
COUGAR CT
Winter Northwest Winds
Summer Southwest Winds
Crushing Site
800
Feet

david braslau associates, incorporated
6603 Queen Ave So. • Suite N • Richfield, MN 55423
telephone: 612-331-4571 • fax: 612-331-4572

31 March 2016

MEMORANDUM

TO: Daryl Heaps

FROM: David Braslau

RE: City of Red Wing Concrete Crusher – Noise Assessment

This memorandum presents findings of a noise assessment of potential noise levels associated with the proposed crushing operation along Bench Street in Red Wing, Minnesota. Predicted sound levels are based upon a computer model that takes into account the sound source frequency spectrum, distance from the source (crusher) to receptor sites (homes and selected property line), atmospheric absorption (standard atmospheric pressure, temperature and humidity assumed here), and shielding by intervening topography. Model calculations are then adjusted by attenuation provided by intervening tree cover.

Location of the crusher and potentially impacted homes and property line receptors are shown on **Exhibit 1**. Distance from the crusher to each of the receptor sites are presented in **Table 1**.

Table 1 Distance from Crusher to Receptor Sites

Receptor	Type	Dist (ft)
#1	Home	2061
#2	Home	1659
#3	Home'	1428
#4	Prop Line	593

Based on a review of photographs of Cedar Rapid Crushers, the sound source height for the crusher is assumed to be 15 feet above grade. The home and property line receptors are assumed to be 5 feet above grade. Ground profiles between the crusher and four receptors have been provided by S.E.H. and are shown on Exhibit 2. These have been supplemented with detail from the USGS topographic map for the area. Topographic shielding is calculated for terrain elevations that project above the "line-of-sight" between the crusher and receptors.

Tree cover between the receptors (as shown on **Exhibit1**) was assumed to be mixed deciduous with leaves or conifer and also deciduous trees with no leaves. Tree attenuation is based upon International Standard Organization standard 9613-2. This amount of attenuation is based upon the distance that sound passes through trees between the source and the receiver. The sound path is assumed to be curved slightly upward with radius of 5 kilometers because of ground level atmospheric conditions.

All of the above assumptions are shown schematically on **Exhibit 3** to **Exhibit 6** and defined on **Exhibit 3**. In these figures, the vertical scale is greatly exaggerated to emphasize factors assumed in the analysis.

The sound source for the concrete crusher has been taken from our database of sound levels developed for over 40 years. The assumed frequency spectrum and overall dBA (A-weighted) level is shown for 100 and 200 feet and compared with the measurements of the Red Wing crusher taken by the City is shown on Table 2.

Table 2 Assumed Octave Band Spectrum for Crusher

Freq (Hz)	100 ft	200 ft
31	78	72
63	81	75
125	87	81
250	83	77
500	81	75
1000	83	77
2000	73	67
4000	75	69
8000	66	60
16000	60	54
dBA	85	79
Red Wing	81	75

The Red Wing readings are seen to be 4 dBA lower than the spectrum used in our model. Therefore, the results presented here can be assumed to be worst case or conservative prediction of sound level at the four receptor sites.

Predicted crusher sound levels at the four receptor sites are presented in **Table 3**.

Table 3 Predicted Crusher Sound Levels (dBA)

Receptor	w/Leaves	wo/leaves
1	41	46
2	41	46
3	49	51
4	68	69

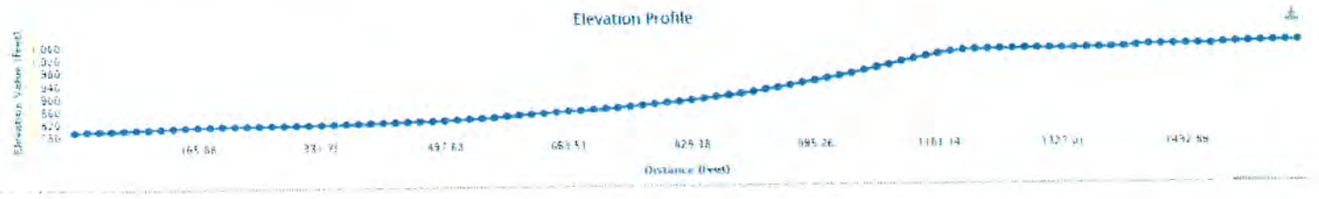
Assuming that the crusher will only operate during daytime hours as defined in the state noise rules, the applicable noise standard for residential sites is L50 60 dBA. The L50 is the median hourly sound level or level not to be exceeded for 50% of the hour or 30 minutes. If the crusher operates for less than 30 minutes of an hour, then the L10 65 would apply. L10 is the level not to be exceeded for 10% or 6 minutes of an hour. The state noise standards are "receiver" standards and not property line standards, but for purposes of this report, the property line receptor is included along with the residential receptors.

It should also be noted that the 60 dBA limit is consistent with the Red Wing noise ordinance if the crusher operates in daytime hours for more than 2 hours.

It can be seen from **Table 3** that the three residential receptor sites fall well below the daytime noise standard of 60 dBA at all seasons of the year. Therefore, the crusher should be able to operate as planned without exceeding the state standards or the Red Wing noise ordinance.

EXHIBIT 1 LOCATION OF CRUSHER AND CRITICAL RECEPTOR SITES

Profiles for site 1 and 2



Profile for Site 3

Profile o Ste 4

EXHIBIT 2 GROUND PROFILES BETWEEN THE CRUSHER LOCATION AND RECEPTOR GROUND ELEVATION

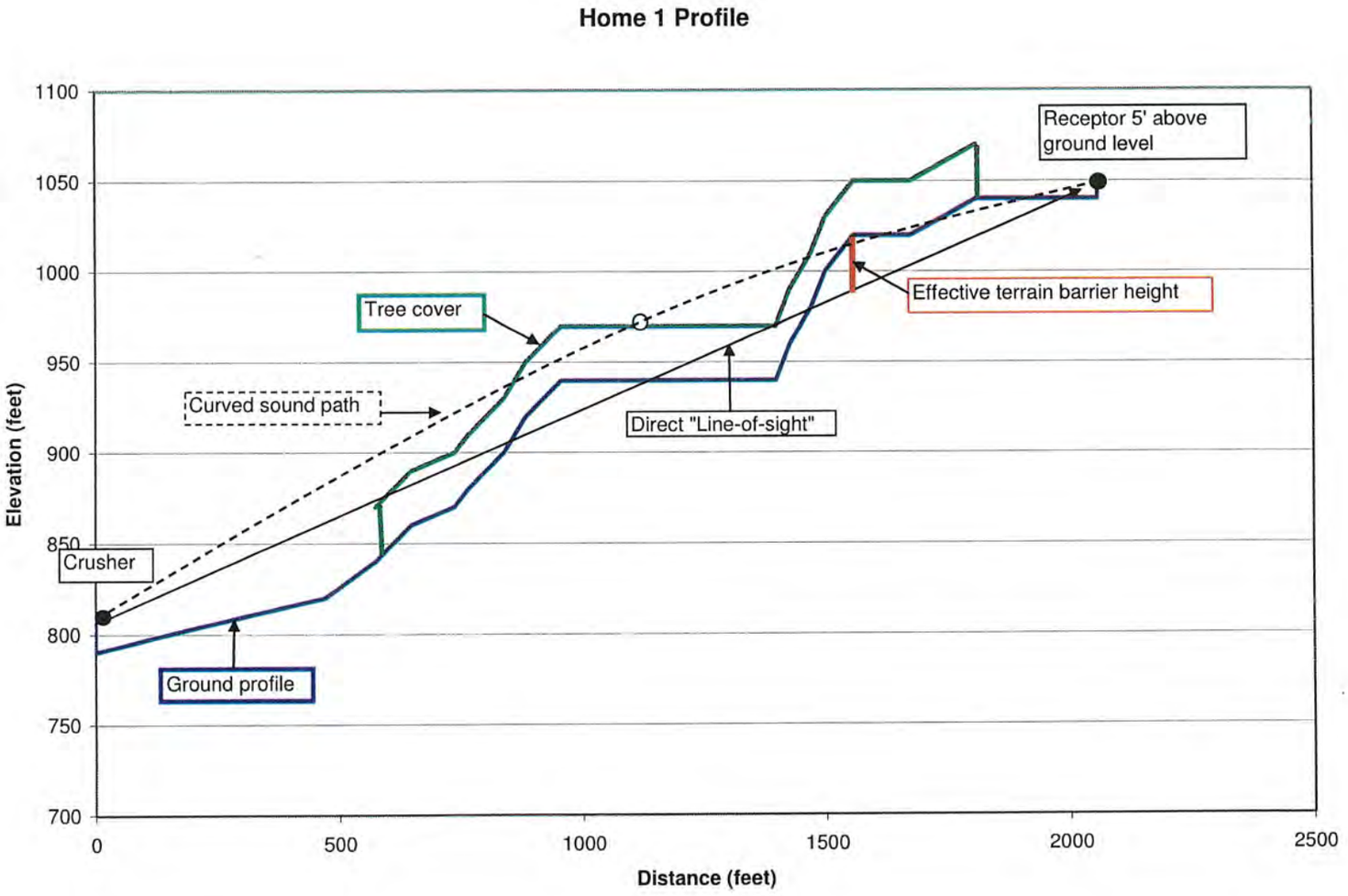


EXHIBIT 3 HOME 1 PROFILE

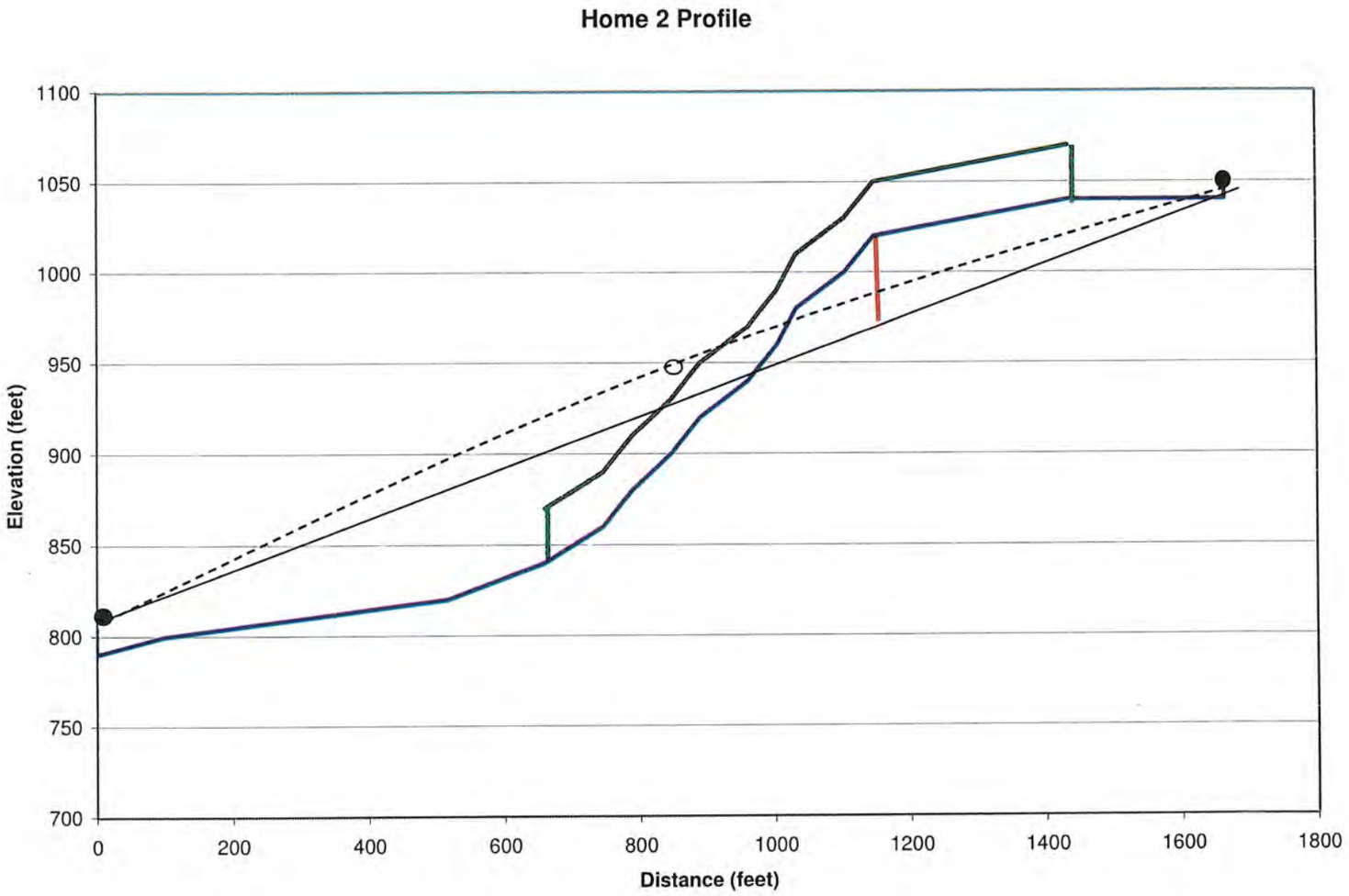


EXHIBIT 4 HOME 2 PROFILE

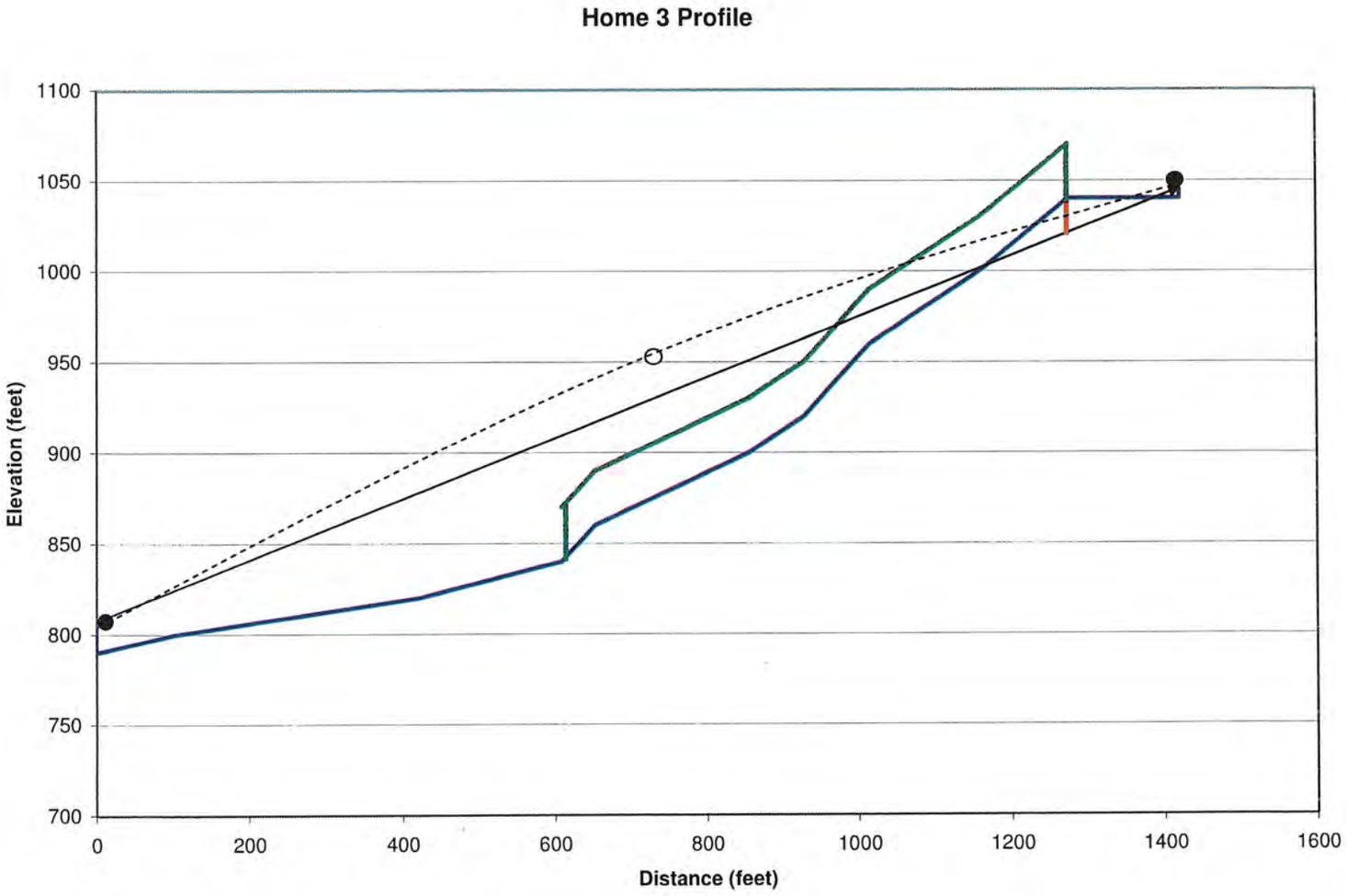


EXHIBIT 5 HOME 3 PROFILE

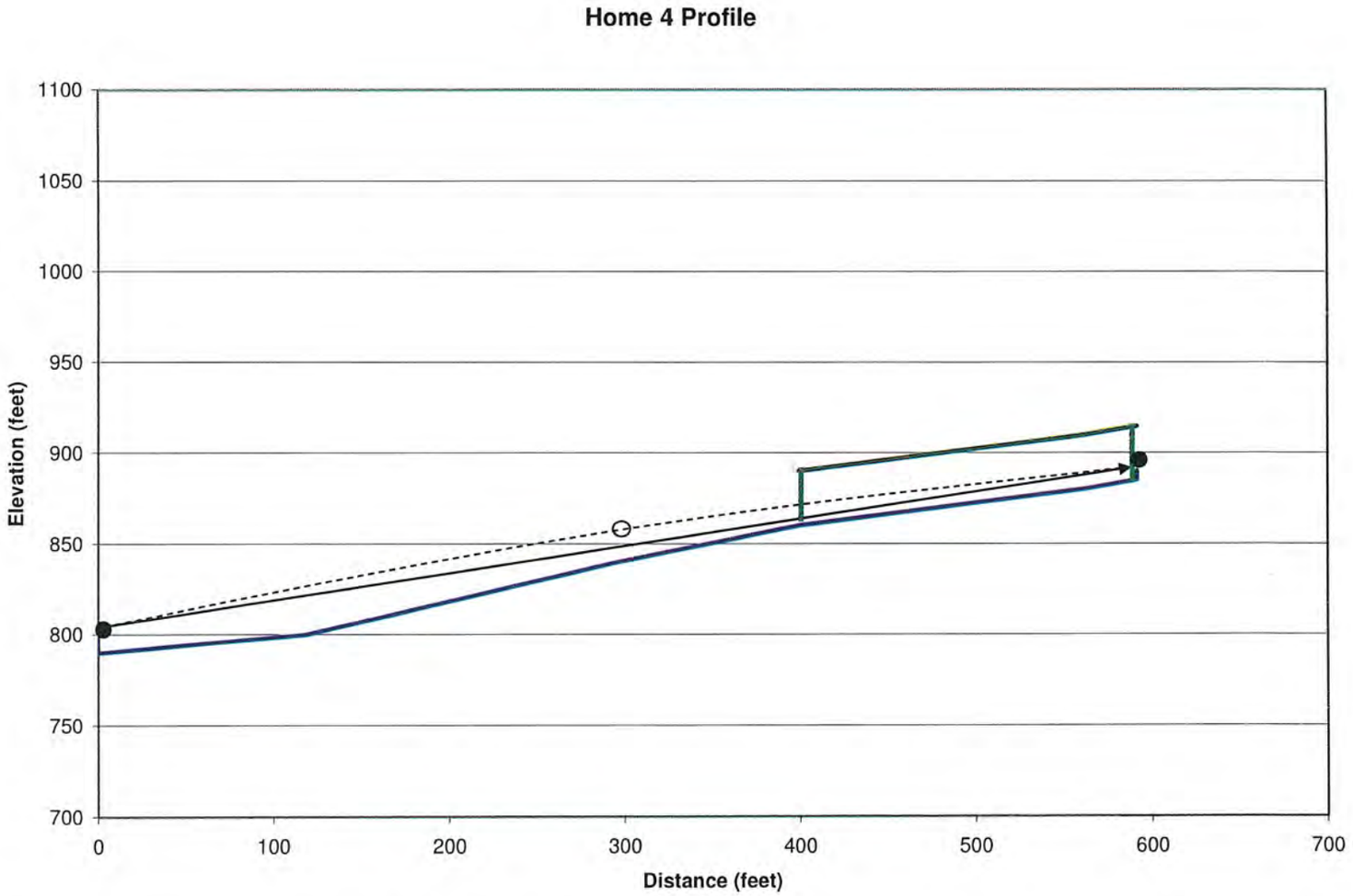


EXHIBIT 6 RECEPTOR 4 (PROPERTY LINE) PROFILE

Exhibit E

SEH

Building a Better World for All of Us®

MEMORANDUM

TO: Lynn Nardinger, City of Red Wing

FROM: Tom Henning, PE, SEH Inc.

DATE: March 25, 2016

RE: Ambient Air Impacts from City of Red Wing Concrete Crusher
SEH No. RWING 135849 14.00

SUMMARY

The City of Red Wing retained Short Elliott Hendrickson, Inc. to evaluate the impacts of particulate matter emissions from a concrete and asphalt crusher on ambient air. Emission estimating and dispersion modeling methods developed by the United States Environmental Protection Agency (USEPA) were used for this evaluation. The analysis was conducted for particulate matter with aerodynamic diameters less than 10 microns (PM_{10}). The calculated maximum 24-hour impact from the crusher at the receptor property line is 0.1 micrograms per cubic meter (ug/m^3). This concentration is less than 0.07 percent of the regulatory ambient 24-hour standard (150 ug/m^3) and less than 0.2 percent of actual background concentrations measured by the Minnesota Pollution Control Agency (MPCA) in Minnesota (54 ug/m^3).

METHODS

The PM_{10} emission rate was calculated using the capacity of the crusher, 70 tons per hour (tph), and an emission factor for uncontrolled tertiary crushing operations, 0.0024 pound PM_{10} per ton crushed[1]. The subject crusher is a secondary crusher so using the tertiary crusher emission factors will overestimate the crusher's emission rate. The resulting hourly emission rate is 0.17 pounds per hour (equivalent to 0.02 grams per second).

Concentrations of PM_{10} at the property boundary were estimated using the SCREEN3 air dispersion model[2]. SCREEN3 is USEPA's recommended tool to calculate maximum screening level impacts from stationary emission sources. The model calculates peak 1-hour impacts assuming continual operation of the crusher 365 days per year. The average impact at any given receptor is much less than the model output because during much of the year the actual impact is zero (e.g. when the wind is blowing in the opposite direction.

The following inputs were used in the model:

Source Type: Volume Source (2 meters x 2 meters)
Emission Rate: 0.02 gram per second
Release height: 0 meters

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[1] From USEPA, AP-42, Chapter 11.19 Crushed Stone Processing and Pulverized Stone Processing, Table 11.19.2-2, dated August 2004.
[2] SCREEN3 is available from the USEPA Technology Transfer Network website: www3.epa.gov/scram001/dispersion_screening.htm

Receptor Height: 70 meters
Dispersion Type: Rural
Terrain: Complex terrain
Meteorology: Full meteorology
Automated Distance Array: Yes
Distance to Nearest Receptor: 300 meters

RESULTS

The highest calculated 1-hour PM_{10} impact from the crusher at a receptor 300 meters away is 0.7 ug/m^3. To convert this concentration to a 24-hour average (so that it can be compared to the 24-hour standard), the result is multiplied by a factor of 0.15[3]. The resulting maximum 24-hour concentration is 0.1 ug/m^3. The 0.1 ug/m^3 impact is about 0.07 percent of the 24-hour ambient PM_{10} standard, 150 ug/m^3.

The MPCA measures ambient PM_{10} concentrations at six locations throughout Minnesota. The average 24-hour PM_{10} concentration at these monitoring locations measured during 2014 is 54 ug/m^3.[4] The estimated maximum impact from the Red Wing crusher is less than 0.2 percent of the state-wide average ambient PM_{10} concentration.

COMMENTS ON CRYSTALLINE SILICA

Concerns have been raised about respirable crystalline silica emissions from the subject crusher. "Respirable" is fine particulate matter generally defined as smaller than PM_{10}, such as particulate matter with diameters less than 4 or 2.5 microns (PM_4 and $PM_{2.5}$ respectively). A concrete crusher is not expected to generate significant amounts of material this small. The Occupational Safety & Health Administration (OSHA) lists potential sources of respirable crystalline silica as operations that chip, cut, drill or grind objects that contain crystalline silica (e.g. abrasive blasting, foundry work, stonecutting, rock drilling, quarry work and tunneling)[5]. A crusher does not drill or grind materials and crushing would not readily expose silica materials.

The California Office of Environmental Health Hazard Assessment has established an inhalation reference exposure level (REL) for respirable crystalline silica of 3 ug/m^3. If the Red Wing crusher generated crystalline silica in this small size fraction, the impact would be much less than 3.0 ug/m^3. In fact, the impact would be less than 0.3 percent of the REL.

$PM_{2.5}$ emission factor: 0.0004 (estimated from USEPA AP-42, Table 11.19.2-2)
$PM_{2.5}$ Emission Rate: 0.028 lb/hr (0.0028 gram/sec)
Modeled Maximum Impact: 0.01 ug/m^3 (using SCREEN3)

Since the crystalline silica content of the particulate matter would be a fraction of the total content, the crystalline silica portion of the impact would less than 0.01 ug/m^3. Therefore the estimated impact is less than 0.3 percent of the REL.

[3] See Table 3 of Colorado Department of Public Health and Environment document, SCREEN3 Stationary Source Modeling Guidance, dated December 28, 2005, page 9.
[4] See Minnesota Pollution Control Agency Document, *2016 Annual Air Monitoring Network Plan*, October 2015, Figure 12: 24-hour PM_{10} Concentrations Compared to the NAAQS.
[5] Crystalline Silica Exposure Health Hazard information, www.osha.gov/Publications/osha3176.html.

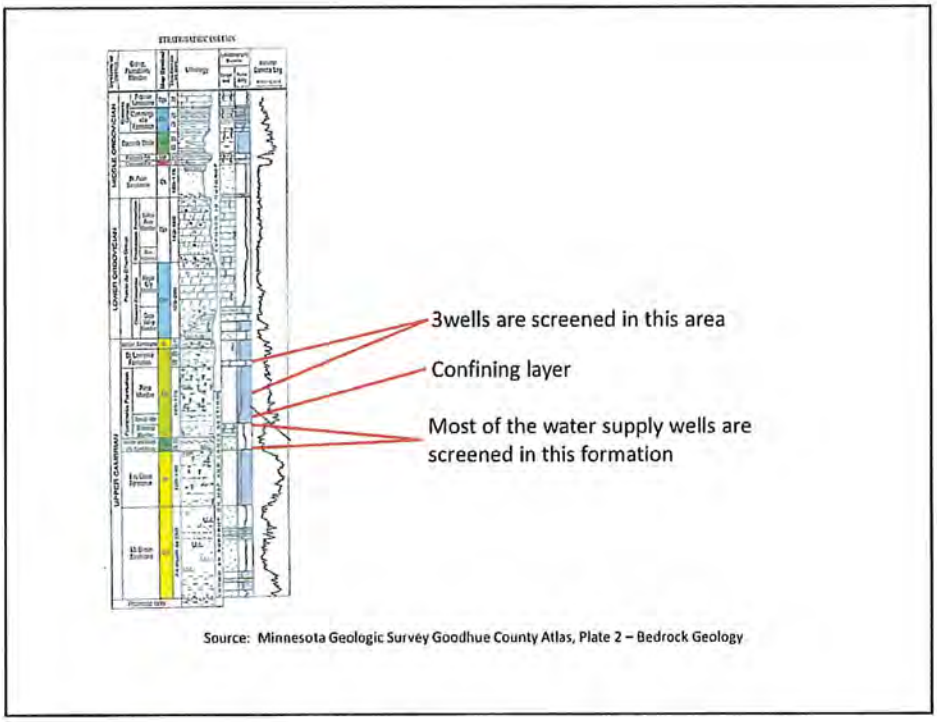
Exhibit F

Impact of Proposed Public Works Material Storage Operations on Water Supply Wells

- Aquifer and confining layer orientation
- Groundwater flow direction
- Evaluation of water age
- Summary

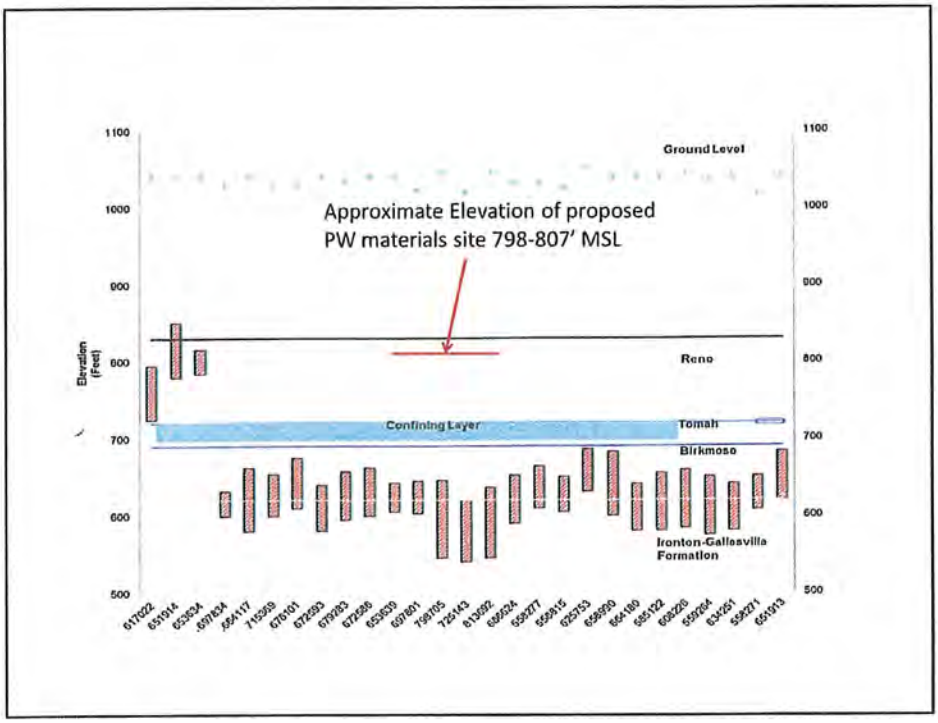
Slide 1 – Introduction

This identifies the topics that will be addressed. It is important to note that the public works operations are "dry" and do not generate a liquid waste other than surface runoff, which will be directed to engineered storm water ponds.



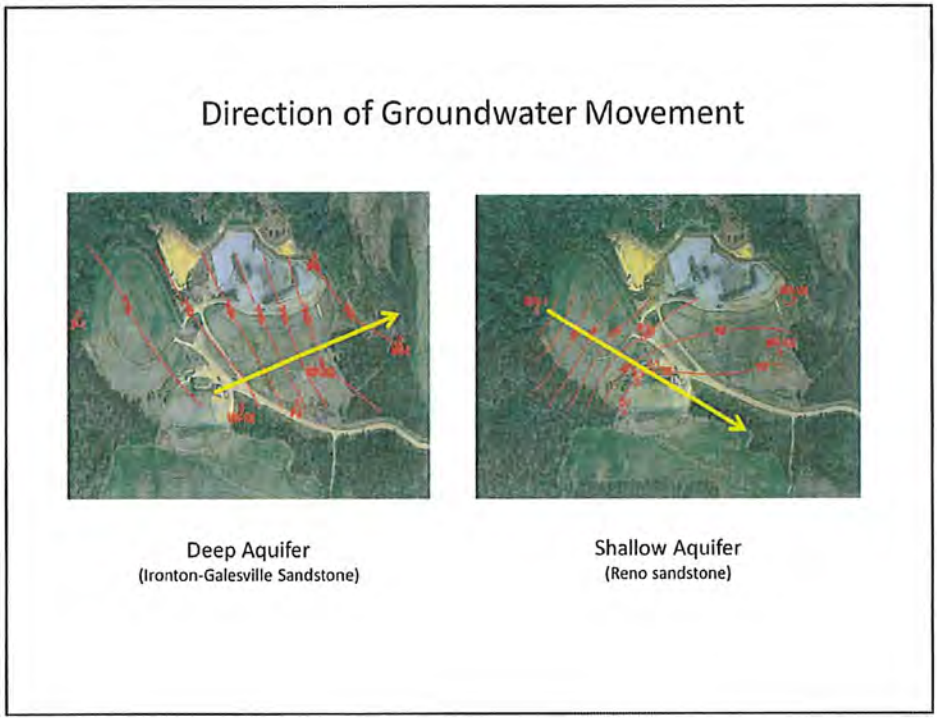
Slide 2 - Underground geologic formations showing aquifers and confining layers

The second column from the right shows which layers are aquifers and which are confining layers. Those that are white would be aquifers if they are below the water table. Those that are grey are confining layers, meaning, they have low permeability and would not easy allow groundwater to pass through. Three of the wells are screened at shallower depths, and are below a significant confining layer. These lower wells would be protected from contamination from above.



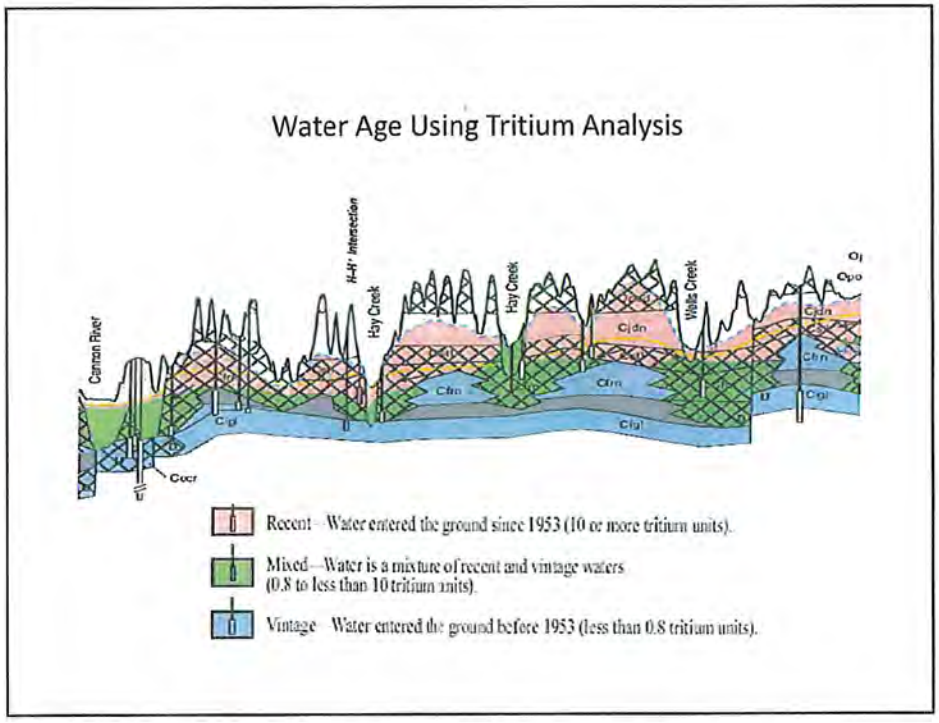
Slide 3 – Drinking water well depths in relation to confining layer

All the wells but 3 are below the confining layer, and are 100-200 feet below the ground elevation of the proposed public works facility. The identifying 6 digit numbers on the X-axis are the unique well identification numbers assigned by the Stte.



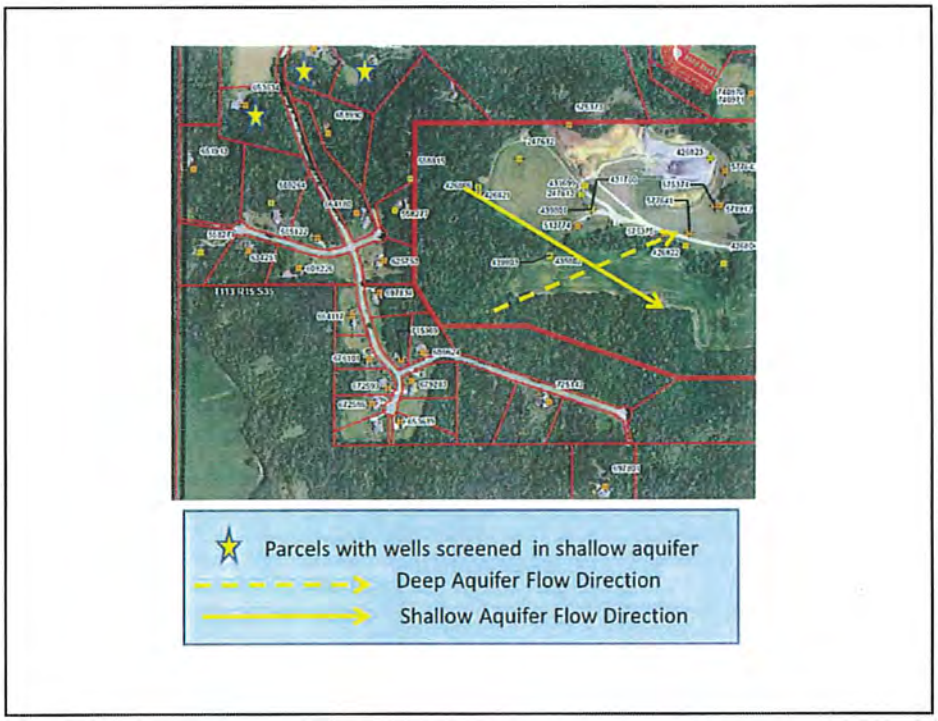
Slide 4 – Groundwater travel direction

There are 2 aquifers of interest at the site. Xcel has monitoring wells in both aquifers which enables the direction of groundwater flow to be determined. The water supply wells that are deeper pull water from the Ironton-Galesville formation. That water is traveling to the east-northeast as indicated by the yellow arrow on the figure on the left. The water in the shallower Reno formation is used by the 3 shallower wells. That water is traveling to the southeast, as indicated by the arrow in the figure on the right.



Slide 5 – Water age

Groundwater can be ages by looking at the proportion of the hydrogen molecules that are radioactive (tritium). There is a very small proportion that are naturally radioactive, however the proportion went up dramatically after 1953 due to the atmospheric testing of atomic weapons. The tritium content in the water in the Ironton-Galesville formation is at the natural background levels, indicating that the water had been in the ground since at least before 1953. This would indicate that there is very little movement of water from above, and these wells are not vulnerable to contamination from surface activities. The water in the aquifer that the 3 shallower wells use is "newer", and is not protected to the degree that the deeper wells are.



Slide 6 – Summary

This slide shows the direction of groundwater travel in relation to the residential properties. The groundwater travel is away from the residential properties. There is essentially no potential for the public works operations to have any impact on the nearby residential wells.

Exhibit G

SEH

Building a Better World for All of Us®

MEMORANDUM

TO: Darryl Heaps

FROM: Dan Cazanacli

DATE: January 28, 2016

RE: Stormwater Design for City of Red Wing Material Storage Lay Down Area
SEH No. RWING 135849 14.00

The City of Red Wing plans to develop a material storage (stock pile) facility on parcel leased from XCEL Energy.
In accordance with the Red Wing Zoning Ordinance 57 - Stormwater Management Regulations, new developments disturbing over one acre require a Stormwater Management Plan.
Per Ordinance 57, the key requirements applicable to this development are:
1. Provide rate control, specifically no increase in peak discharge rate for 2, 10, and 100-year 24-hour rainfall events.
2. Provide runoff volume control, specifically retain the runoff volume from rainfall events of up to 1-inch depth.
Providing runoff volume control, also provides stormwater quality treatment in form of sediment particle and pollutant removal. To meet the second requirement infiltration practices are encouraged unless they pose an environmental risk due to the nature of discharge and/or proximity of bed rock, karst or groundwater. Also, infiltration may not be feasible if soils are deemed to be predominantly clay with low permeability. Preliminary assessment, subject to further more detailed confirmation indicate that karst, bedrock or groundwater are not a concern. The site soils are silty to sandy loam, mostly in the Hydrologic Group B, considered to have an infiltration rate of 0.3 to 0.45 inches per hour (per MPCA guidelines).
The area to be developed is approximately 3 acres in size. One way to meet the criteria mentioned above is to build a basin that can provide both detention storage (for rate control) and infiltration (for runoff volume reduction). Essential this basin would be a dry pond with a granular media substrate for infiltration.

A simple HydroCAD model was developed to assess the performance of the basin under the following assumptions:

Curve Number of 65 for existing conditions (grass/wood, fair condition) and a Curve Number of 85 for proposed conditions, corresponding to a gravel surface.
Time of concentration (TC) of 5 minutes (minimum value typically used for small surfaces) for both existing and proposed conditions. The basin assumptions and model results are summarized in the following table.

ASSUMPTIONS

15-IN RCP OUTLET PIPE @ 790.0

	Existing	Proposed
CN	65	85
TC(min)	5	5
Area (ac)	3.0	3.0

HYDROCAD RESULTS

Flow Rates(cfs)	Existing	Proposed
2-yr Peak	1.6	0.5
10-yr Peak	5.9	4.5
100-year Peak	17.4	9.8

1-inch unfiltered volume

area	3	ac
volume	10890	cu-ft

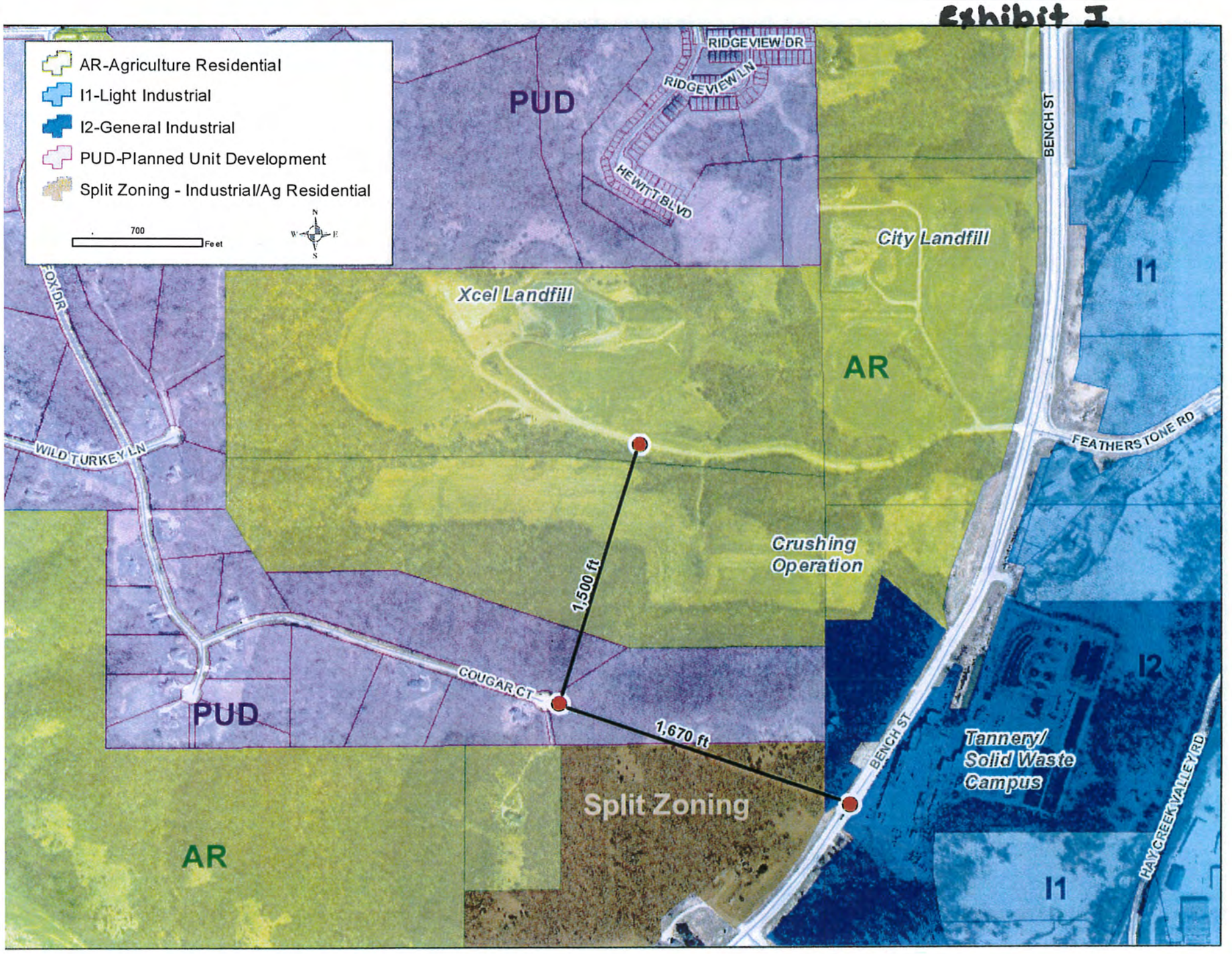
PROPOSED POND GEOMETRY (~3H:1V SLOPES)

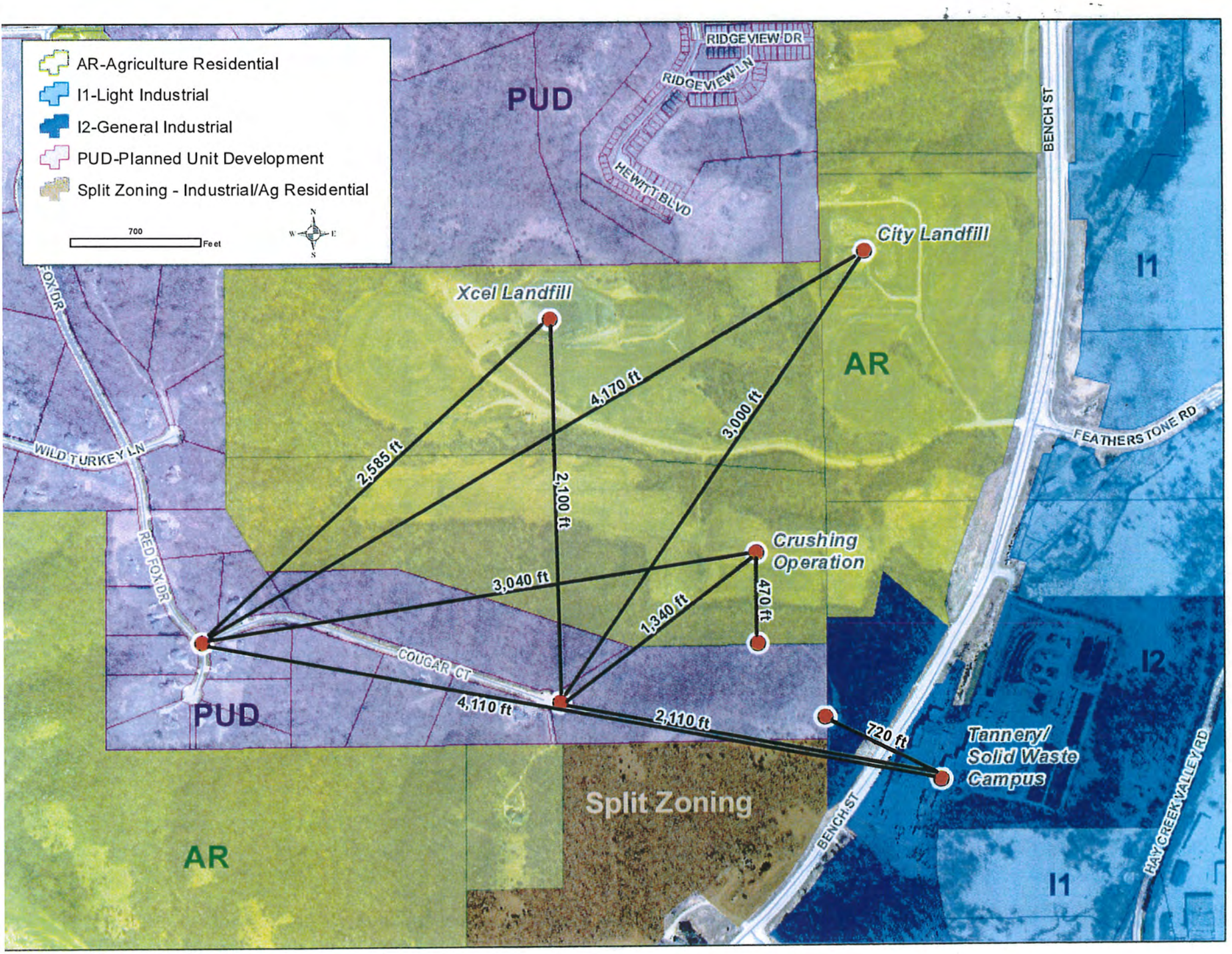
	Elevation	Area(sq-ft)	Cumulative
BOTTOM	786.0	1261	0
	787.0	1667	1459
	788.0	2130	3353
	789.0	2650	5739
OUTLET	**790.0**	3227	**8673**
	791.0	3861	12212
	792.0	4551	16413
	793.0	5298	21333
BERM (MIN)	794.0	6101	27027

Exhibit H

	Parcel PIN	Address	Year of Development	Property Value 2012	Property Value 2013	Property Value 2014	Property Value 2015
Alex Burns	559290020	1764 Red Fox Dr	2002	$ 319,200.00	$ 298,300.00	$ 319,600.00	$ 333,700.00
Darin Winn	559290030	1842 Red Fox Dr	2002	$ 305,900.00	$ 286,400.00	$ 287,900.00	$ 300,000.00
Kenton Geer	559290040	1896 Red Fox Dr	2002	$ 350,700.00	$ 327,400.00	$ 327,400.00	$ 342,000.00
Jean Walch	559290050	1904 Red Fox Dr	2001	$ 511,000.00	$ 473,900.00	$ 483,100.00	$ 506,800.00
Christopher Walch	559290060	1901 Red Fox Dr	2000	$ 433,000.00	$ 402,600.00	$ 399,500.00	$ 418,300.00
Mark Grant	559290080	1865 Red Fox Dr	2002	$ 320,200.00	$ 299,600.00	$ 299,600.00	$ 312,400.00
Douglas Host	559290070	1889 Red Fox Dr	2003	$ 45,800.00	$ 45,800.00	$ 45,800.00	$ 45,800.00
Tim Sloan	559290110	1685 Red Fox Dr	2003	$ 334,500.00	$ 315,400.00	$ 319,700.00	$ 333,600.00
Dan Bender	559290120	1729 Red Fox Dr	2004	$ 284,600.00	$ 267,100.00	$ 269,900.00	$ 281,100.00
Mike Stensland	559290130	3160 Cougar Ct	2002	$ 317,500.00	$ 297,100.00	$ 298,800.00	$ 311,600.00
Jess Brehmer	559320010	2985 Cougar Ct	2005	$ 490,800.00	$ 459,700.00	$ 459,800.00	$ 479,300.00
George Noesen	559320020	2895 Cougar Ct	2013	$ 89,400.00	$ 89,400.00	$ 89,400.00	$ 384,800.00
Mark Walsworth	559290140	Cougar Ct	0	$ 70,000.00	$ 70,000.00	$ 70,000.00	$ 70,000.00
Brian Knap	559320011	3065 Cougar Ct.	2016	$ 100,000.00	$ 100,000.00	$ 100,000.00	$ 100,000.00
David Bahl	557350071	2857 Cougar Ct.	2003	$ 596,800.00	$ 562,100.00	$ 570,900.00	$ 596,200.00

Exhibit I


AR-Agriculture Residential
I1-Light Industrial
I2-General Industrial
PUD-Planned Unit Development
Split Zoning - Industrial/Ag Residential
700
Feet
N
W
E
S
PUD
RIDGEVIEW DR
RIDGEVIEW LN
HEWITT BLVD
BENCH ST
City Landfill
I1
Xcel Landfill
AR
FOX DR
WILD TURKEY LN
FEATHERSTONE RD
Crushing Operation
1,500 ft
COUGAR CT
PUD
1,670 ft
I2
BENCH ST
Tannery/ Solid Waste Campus
HAY CREEK VALLEY RD
Split Zoning
AR
I1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Split Zoning - Industrial/Ag Residential
700
Feet
N
W
E
S
PUD
RIDGEVIEW DR
RIDGEVIEW LN
HEWITT BLVD
BENCH ST
City Landfill
I1
Xcel Landfill
AR
4,170 ft
3,000 ft
2,585 ft
2,100 ft
FEATHERSTONE RD
WILD TURKEY LN
RED FOX DR
Crushing Operation
3,040 ft
1,340 ft
470 ft
I2
COUGAR CT
4,110 ft
2,110 ft
720 ft
Tannery/ Solid Waste Campus
PUD
Split Zoning
AR
BENCH ST
HAY CREEK VALLEY RD
I1