

**City of Lino Lakes
Environmental Board Meeting**

**March 30, 2016
6:30 p.m.**

AGENDA

1. Call to Order
2. Approval of Agenda
3. Approval of Minutes
4. Open Mike
5. Action Items
 - A. NE Area Drainage Study
 - B. Mattamy Storm Water Reuse and Irrigation System
 - C. Wellhead Protection Plan
6. Discussion Items
 - A. Earth Day
 - B. Site Visit Recommendations
 - C. Organics Recycling
 - D. Other Recycling Updates
7. Adjourn

**CITY OF LINO LAKES
ENVIRONMENTAL BOARD MINUTES**

DATE	: February 24, 2016
TIME STARTED	: 6:34 P.M.
TIME ENDED	: 7:27 P.M.
MEMBERS PRESENT	: Steve Heiskary, Barbra Bor, Paula Andrzejewski, Liz Kaufenberg, Nancie Klebba, Alex Schwartz, John Sullivan
MEMBERS ABSENT	: None
STAFF PRESENT	: Marty Asleson, Aubrey Fonfara

I. CALL TO ORDER AND ROLL CALL:

Mr. Heiskary called the Lino Lakes Environmental Board meeting to order at 6:34 p.m. on February 24, 2016.

II. APPROVAL OF AGENDA

The Agenda was approved with changes:

ADD

- C. Discussion on NE Drainage
- D. Saturday Heron Rookery Plans

Ms. Andrzejewski made a MOTION to approve the agenda with the above changes. Motion was supported by Ms. Klebba. Motion carried 7 - 0.

III. APPROVAL OF MINUTES:

January 27, 2016

Ms. Andrzejewski made a MOTION to approve the January 27, 2016 Meeting Minutes. Motion was supported by Mr. Sullivan. Motion carried 7 - 0.

IV. OPEN MIKE

Mr. Heiskary declared Open Mike at 6:35 p.m.

DRAFT MINUTES

There was no one present for Open Mike.

Mr. Heiskary made a MOTION to close Open Mike at 6:36p.m.

V. ACTION ITEMS

A. Rice Lake Elementary Addition – 575 Birch Street/Conditional Use Permit/Site Plan

Mr. Asleson presented a condition use permit for a proposed 17,064 square foot addition on the southeast corner of the existing building for early childhood education.

Since the proposed addition is simply adding on to an existing building, and it is preexisting CUP, it maintains the performance standards for Natural Resources Management System Plan as it existed in 1997. There are exceptions. New surface water management rules require providing treatment for the 1.1 inch rainfall event on impervious surfaces. Maintenance agreements for surface water pond/infiltration areas constructed, and tree replacement requirements.

The School is proposing to provide treatment for surface water by expanding the rain garden area to the west. And a joint stormwater maintenance agreement must be executed by the Rice Creek Watershed and the City of Lino Lakes for the rain garden/infiltration pond. Informational signage should be provided around the pond.

The school district still has to get permits from the Rice Creek Watershed but would like to start the addition this summer.

Site-Plan/Landscaping

The detail sheets for the proposed school addition show the following:

1. Sod is proposed for the pervious area groundcover around the building. **Recommendation;** the sod area must be irrigated.
2. There are 7 trees proposed for removal. **Recommendation;** replace these trees with a species of tree acceptable to the city. Suggested new tree planting site in the green area to the South and East of the site.
3. Planting materials proposed for the expanded infiltration pond are appropriate for the site. **Recommendation; approve planting plan for the pond with Environmental Board changes if desired.**

Mr. Schwartz was wondering if the lights are International Dark-Sky Association approved.

Mr. Asleson said yes the lights are all down lights.

Ms. Bor noticed that there is Honeysuckle, which is invasive, on the landscape plan. Mr. Asleson will ask them to substitute with some other shrub.

Ms. Andrzejewski mentioned that there is a lot of snow placed on the rain garden when the snow is plowed. And then in the spring time the clean-up and maintenance is overwhelming. Children also run through the garden when coming off the ballfields to go back into the school building.

Mr. Schwartz believes that a path and a sign would help elevate the problem.

Mr. Heiskary mentioned that this is a good time to make sure that the maintenance and snowplowing plans are functioning.

The recommendations of the board are:

- Snowplowing plan to not put snow on rain gardens – and a yearly reminder of such plan
- Clean outs in the rain garden
- Maintenance agreements should include all rain gardens
- Signs on both sides identifying the rain gardens
- Add stepping stones or path through the western garden where the children run through the garden

Ms. Bor motioned to accept the CUP site plan with the Environmental Board recommendations. Motion was supported by Ms. Andrzejewski. Motion carried 7 - 0.

VI DISCUSSION ITEMS

A. Recycling Updates

On Saturday February 20, there was a slight increase in fees for furniture recycling due to the increase in fees from the business the city works with called Great River Energy.

Please save the date for the Yearly Recycling Day which is May 7, 9am – 3pm at Old City Hall. Besides our regular items there will be carpet recycling, paper shredding, battery recycling and clothing donation to the Salvation Army.

Ms Fonfara mentioned that there is a A- Z list on the City's web site that list other options for recycling. She will add links to the business within the list.

B. Other Updates

2016 Anoka County Recycling contract will be presented to the City Council on March 7, 2016 along with the Environmental Board Goals

C. NE Drainage Improvement Project

Mr. Asleson handed out more information about the water quality in the NE Drainage Improvement project as it stands now. The project is being redesigned so we will be visiting this area again.

Mr. Asleson mentioned that there will a joint meeting and as soon as he is notified he will email the Environmental Board.

D. Heron Rookery Plans

The day for going out to the Heron Rookery will be Saturday, March 5. Meet at 9am and be ready to spend the day doing flashing repair and install new flashing.

VII. ADJOURNMENT

Mr. Sullivan made a MOTION to adjourn the meeting at 7:27 p.m. Motion was supported by Ms. Andrzejewski. Motion carried 7 - 0.

Respectfully submitted,

Mary Fogarty

ENVIRONMENTAL BOARD AGENDA ITEM 5A

STAFF ORIGINATOR: Katy Thompson, WSB & Associates

MEETING DATE: March 30, 2016

TOPIC: Northeast Drainage Area Study Update

BACKGROUND

The surface water in the Northeast area of Lino Lakes is landlocked inhibiting site improvements within this area. The area has been historically landlocked until the installation of agricultural field drains in the early 20th century. These drainages have limited capacity, and as such, cannot convey any additional runoff from development within the watershed. The field drains also do not provide any water quality benefits to Peltier Lake.

The NE Area Drainage feasibility study models the drainage for 1400 acres of land on the east and west sides of I-35E, and north of Main Street. The study evaluates water quality improvements and a new surface water outlet to Peltier Lake. Implementation of the plan will require approval from the Rice Creek Watershed District (RCWD). City staff submitted the draft NE Area Comprehensive Surface Water Management Plan (CSMP) to the RCWD in June of 2015 for review and comment. The RCWD has requested additional information as part of the approval process and which is being addressed in the study. The purpose of the feasibility study is to:

- Confirm modeling results and parameters.
- Examine design alternatives and develop a preferred alternative.
- Prepare preliminary plans and cost estimates.
- Develop and recommend proposed alignment.
- Identify effected property owners and stakeholders.
- Identify all necessary permits.
- Identify potential funding options.

Council authorized completion of the feasibility study in September 2015. The draft feasibility study was completed in January 2016 and after review by City staff, a new greenway option is now being considered.

The earlier preferred alternative included a new outlet to Peltier Lake, a new culvert crossing under I-35E, storm sewer along the proposed Otter Lake Road extension and

regional ponding facilities with gate structures to detain peak storm flows and prevent increasing the flood levels on Peltier Lake.

The new greenway option includes the new culvert crossing under I-35, storm sewer and regional storage facilities, but rather than a pipeline from Peltier Lake to 20th Avenue, an open channel design is being considered. The conceptual alignment and typical cross-section have been developed with the intent to provide live storage for large flood events, to be in agreement with the City's AUAR and greenspace requirements, as well as to avoid wetland impacts as much as possible. The final design of the channel will require special attention to the wetlands so that the project does not inadvertently drain them via lateral effects.

The greenway option also provides additional water quality treatment opportunities for the study area, above and beyond the City's and RCWD's development requirements. At the January Environmental Board meeting, additional data on the water quality determination was requested. The following is a summary of the preliminary water quality calculations for the study area as a whole, to be revised during final design.

After meeting with Rice Creek Watershed District, it was determined that at the conceptual level, water quality impacts could be evaluated using a simple land use analysis. The analysis is based on a 1.1-inch rainfall depth, which corresponds to the RCWD volume treatment requirements, and uses total phosphorus concentrations provided by RCWD. Board member Heiskary provided updated total phosphorus concentrations and the calculations have been revised.

Under existing conditions, the study area generates 13.6 pounds of total phosphorus; under full build-out conditions, the study area would generate approximately 53.0 pounds of total phosphorus annually. RCWD requires treatment of the 1.1-inch rainfall from the new impervious surfaces for all new development, for the study area this equates to roughly 44 acre-feet of water quality treatment that must be provided within the watershed. The required water quality BMPs would reduce the TP loading to Peltier Lake by 26.5 pounds per year. Using the updated TP concentrations, the study area is short of water quality treatment BMPs and additional treatment must be provided to prevent impacts at Peltier Lake.

Finally, the Environmental Board also requested information on how drainage rights would be maintained at the January board meeting. Ultimately it will be up to the affected land owners to petition the Rice Creek Watershed District for re-alignment or abandonment of the drain tile. This process is dictated by the Minnesota Statutes Chapter 103E. The proposed project has been designed to convey existing ditch flows through developed sections of the study area. If sections of the study area remain agricultural, the surrounding developments are mandated under Chapter 103E to maintain drainage rights and continue to pass the offsite ditch flows through the development to prevent adverse impacts to the benefitted landowners.

The following is a tentative schedule to finalize the feasibility study:

April 4, 2016 – Present the revised feasibility study at the City Council Work Session and receive feedback

May 2016 – Formally present the final study to Council.

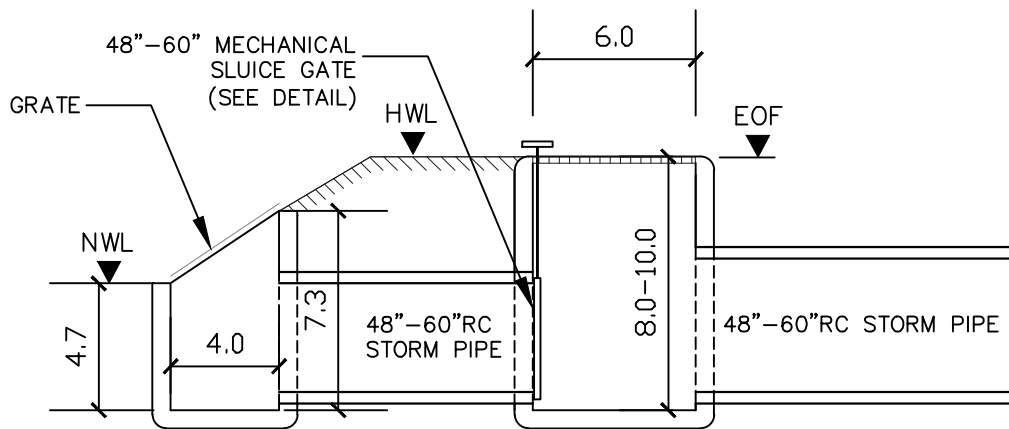
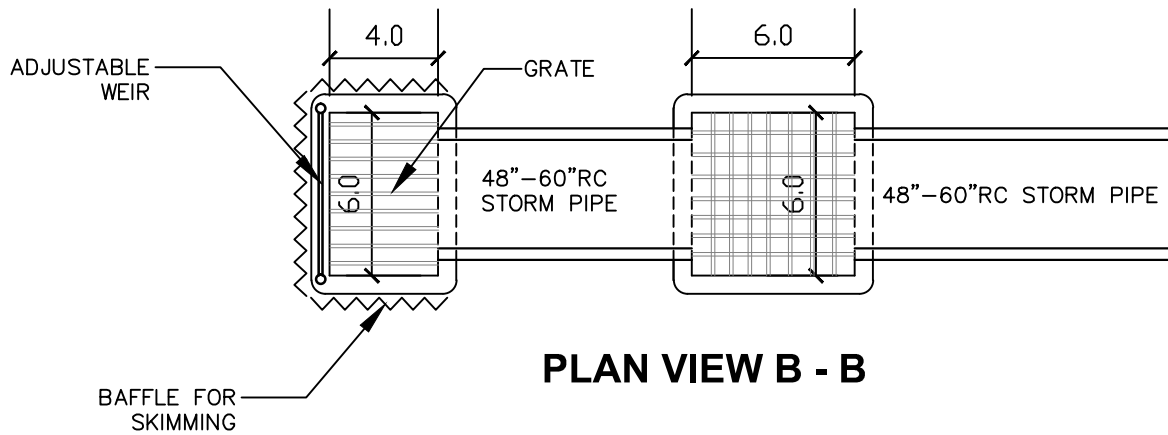
WSB & Associates staff will be in attendance at the board meeting to provide an update on the project.

ENVIRONMENTAL DIRECTION

None required. Staff is requesting board comments.

ATTACHMENTS

1. Preliminary gate structure design
2. Conceptual greenway design
3. Preliminary water quality calculations
4. Revised water quality calculations per S. Heiskary 3/24/16



NE AREA DRAINAGE STUDY
LAKE PELTIER OUTFALL

ATTACHMENT A
OUTLET CONTROL STRUCTURES

STRUCTURE DETAIL

SHEET 1 OF 2 SHEETS

SERIES 3000 SELF- CONTAINED SLUICE GATE

- Galvanized or Stainless Steel Rails
- Rising Stem or Non-rising Stem

The Series 3000-Y Sluice Gate (Y indicates self-contained frame and yoke) can be furnished with any of the options noted for the standard units and includes extended side rails, a structural steel yoke (headrail), stem, and lift. The thrust of operation is transferred directly to the yoke. Both rising stem (S-3000-RSY) and non-rising stem gates (S-3000 NRS-Y) are available.

Standard units feature galvanized steel structural guide rails and fasteners. Stainless steel may be substituted as an extra cost item. Minimum frame heights for openings are provided unless extended heights are specified.

Self-contained gates with rising stems can be installed where it is impractical to have independently mounted handwheel and pedestal lifts and can project above a headwall to give necessary operating clearance. Stems are cold finished steel with modified acme threads, secured to the slide (cover) with a thrust nut and operated by a cast bronze lift nut with suitable handwheel or geared crank lift. Stainless steel stems are optional.

Self-contained gates with non-rising stems are similar to rising stem units, but have a cast bronze thrust nut threaded to match the stem threads which travel up and down (operating the slide) as the stem is rotated. Non-rising stems are stainless steel unless specified otherwise. The thrust of the stem is transferred directly to the yoke (headrail) through a flange and thrust collar. Ball or roller bearings should not be used at the thrust flange if they will be submerged.

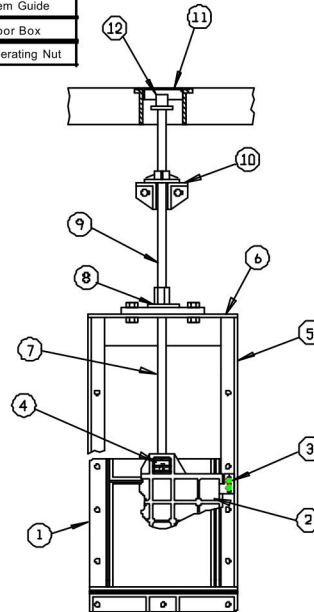
APPLICATION

A non-rising stem gate is used where a standard Series 3000 gate is required, and where it is desirable not to have the stem rise into walk-ways, roads, or other obstructions.



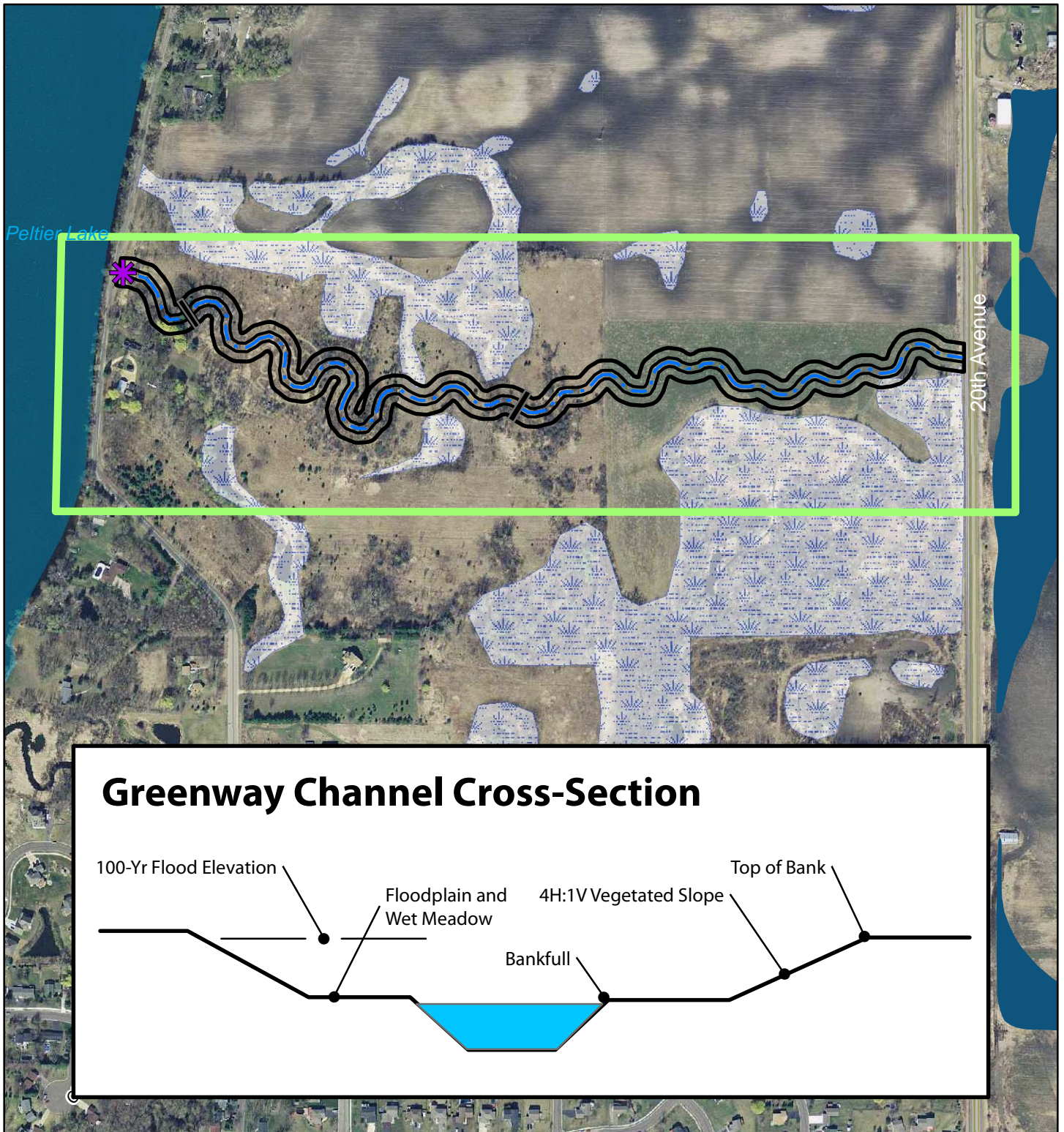
MODEL S-3000-NRS-Y (NON-RISING STEM)

PARTS LIST			
No.	Name	No.	Name
1	Frame	7	Stem
2	Cover	8	Lift
3	Wedge	9	Extension Stem
4	Thrust Nut	10	Stem Guide
5	Guide Rail	11	Floor Box
6	Headrail	12	Operating Nut










Typical installation of S-3000-NRS-Y Gate with floor box, stem extension and coupling.





LEGEND

-  Outlet Control Structure
-  Project Area
-  Proposed Stream
-  Proposed Regional Storage
-  Channel Bankfull
-  Existing Wetlands
-  Top of Floodplain Bank

Lino Lakes Stormwater Greenway Option

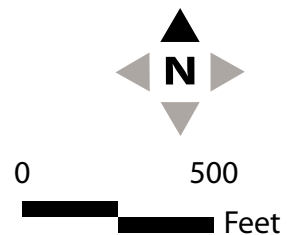


Table 1. Total Phosphorus Concentrations by Land Use [RCWD]

LAND USE CATEGORY	TP CONCENTRATION [mg/L]	ASSUMED RUNOFF C	ESTIMATED EXPORT [lb/ac/yr]
Agricultural Row Crops	0.32	0.40	0.9
Open Space / Meadow	0.01	0.10	0.008
Urban Impervious Area	0.10	0.90	0.7
Urban Open Space	0.11	0.30	0.17

Table 2. Existing Conditions - UNTREATED

LAND USE CATEGORY	AREA [ac]	WEIGHTED CN	S [in]	1.1-IN EVENT		TP CONC [mg/L]	TP [lbs]
				RUNOFF VOLUME [in]	[ac-ft]		
Agricultural Row Crops	1,060	81	2.41	0.13	11.14	0.320	9.70
Open Space / Meadow	315	65	5.50	0.00	0.00	0.010	0.00
Urban Impervious Area	42	99	0.07	1.02	3.57	0.100	0.97
Urban Open Space	0	73	3.79	0.03	0.00	0.110	0.00
TOTAL	1,417	78		1.17	14.71		10.67

Table 3. Proposed Conditions - UNTREATED

LAND USE CATEGORY	AREA [ac]	WEIGHTED CN	S [in]	1.1-IN RUNOFF		TP CONC [mg/L]	TP [lbs]
				[in]	[ac-ft]		
Agricultural Row Crops	80	81	2.41	0.13	0.84	0.320	0.73
Forest / Woods	311	65	5.50	0.00	0.00	0.010	0.00
Urban Impervious Area	559	99	0.07	1.02	47.53	0.100	12.92
Urban Open Space	467	73	3.79	0.03	1.10	0.110	0.33
TOTAL	1,417	82		1.17	49.47		13.99

Estimated Increase in Total Phosphorus Load Without Treatment	3.32 lbs
Water Quality Treatment Volume Required by RCWD	44 ac-ft
Reduction in Loading Gained via Water Reuse, Treatment Ponding or Infiltration BMPs	6.99 lbs
Estimated Decrease in Total Phosphorus Load from Required Treatment	-3.68 lbs

Table 4. Existing Conditions - UNTREATED [Revised per S. Heiskary 3/24/16 email]

LAND USE CATEGORY	AREA [ac]	WEIGHTED CN	S [in]	1.1-IN EVENT [in] [ac-ft]		TP CONC [mg/L]	TP [lbs]
Agricultural Row Crops	1,060	81	2.41	0.13	11.14	0.320	9.70
Open Space / Meadow	315	65	5.50	0.00	0.00	0.010	0.00
Urban Impervious Area	42	99	0.07	1.02	3.57	0.400	3.88
Urban Open Space	0	73	3.79	0.03	0.00	0.200	0.00
TOTAL	1,417	78		1.17	14.71		13.58

Table 5. Proposed Conditions - UNTREATED [Revised per S. Heiskary 3/24/16 email]

LAND USE CATEGORY	AREA [ac]	WEIGHTED CN	S [in]	1.1-IN RUNOFF [in] [ac-ft]		TP CONC [mg/L]	TP [lbs]
Agricultural Row Crops	80	81	2.41	0.13	0.84	0.320	0.73
Forest / Woods	311	65	5.50	0.00	0.00	0.010	0.00
Urban Impervious Area	559	99	0.07	1.02	47.53	0.400	51.70
Urban Open Space	467	73	3.79	0.03	1.10	0.200	0.60
TOTAL	1,417	82		1.17	49.47		53.03

Estimated Increase in Total Phosphorus Load Without Treatment	39.45 lbs
Water Quality Treatment Volume Required by RCWD	44 ac-ft
Reduction in Loading Gained via Water Reuse, Treatment Ponding or Infiltration BMPs	26.51 lbs
Estimated Decrease in Total Phosphorus Load from Required Treatment	12.92 lbs

**ENVIRONMENTAL BOARD
AGENDA ITEM 5B**

STAFF ORIGINATOR: Diane Hankee and Erin Heydinger, WSB & Associates

MEETING DATE: March 30, 2016

TOPIC: Mattamy Homes Water Reuse Study

BACKGROUND

At the January 27, 2016 Environmental Board meeting staff presented the Feasibility Study for Mattamy Water Reuse. The feasibility study provides an overview of three options for stormwater reuse in the proposed Mattamy development:

1. Reusing stormwater to irrigate public places;
2. Reusing stormwater to irrigate public places and the townhomes; and
3. Reusing stormwater to irrigate the entire development.

A water balance was conducted to determine if there was sufficient water quantity available for each of the three options. The balance evaluated runoff, precipitation, evaporation, and irrigation. The proposed stormwater pond will receive enough runoff to implement Options 1 or 2, but a potable water connection will be required to implement Option 3.

In addition, the cost of each of the three options was estimated. After considering water supply and cost, WSB recommended that the City implement Option 2: reusing stormwater to irrigate public places and the townhomes for an estimated cost of \$463,000. Financing was delineated for the recommended option, as well as ownership and maintenance recommendations. It is recommended that development fees cover \$197,000 of the total cost, with the remaining funded by the City's Trunk Water fund.

RECOMMENDATION

Staff is recommending acceptance of the Mattamy Homes Water Reuse Study and implementation of Option 2.

ATTACHMENTS

1. Mattamy Homes Water Reuse Study



City of Lino Lakes, MN
600 Town Center Parkway • Lino Lakes, MN 55014

FEASIBILITY Report

June 8, 2015

Mattamy Homes Water Reuse

*City of Lino Lakes
Hennepin, MN*

WSB Project No. 2988-01



477 Temperance Street
St. Paul, MN 55101
Tel: (651) 286-8450 · Fax: (651) 286-8488
wsbeng.com

FEASIBILITY REPORT

MATTAMY HOMES WATER REUSE

FOR THE CITY OF LINO LAKES, MINNESOTA

June 8, 2015

Prepared By:

**WSB & Associates, Inc.
477 Temperance Street
St. Paul, MN 55101
651-286-8450
651-286-8488 (Fax)**

CERTIFICATION

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

DRAFT

Greg F. Johnson, PE

Date: March 30, 2016

Lic. No. 26430

Prepared By:

DRAFT

Erin J. Heydinger

Date: March 30, 2016

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Appendix A

Figure 1 – Project Location

Figure 2 – Option 1: Irrigating Public Spaces

Figure 3 – Option 2: Irrigating Public Spaces and Townhomes

Figure 4 – Option 3: Irrigating Entire Development

Appendix B

Table 1 – Estimated Annual Irrigation

Appendix C

Table 1 - Water Balance Summary

Table 2 – Option 1 Cost Summary

Table 3 – Option 2 Cost Summary

Table 4 – Option 3 Cost Summary

Appendix D

Water Balance Tech Memo

1. EXECUTIVE SUMMARY

The proposed Mattamy Homes Development is a 400 acre residential development located east of Interstate 35E and north of Main Street in the City of Lino Lakes. Surface water management for the project would include storm water quality, storage and rate control. The storm water storage area will hold a significant amount of water that can be used to provide irrigation verses conventional groundwater use for irrigation.

Over the past three years, management of both surface water and groundwater resources have received increased awareness both locally and regionally. Lino Lakes is included in the North and East Metro Groundwater Management District established by the Department of Natural Resources (DNR). The goal is to protect of water resources through sustainable water use solutions such as the one being proposed.

The water reuse project was evaluated through a water balance analysis and multiple options for an irrigation reuse system. The options for an irrigation reuse system are:

1. Irrigate the park and public spaces
2. Irrigate the townhomes, park, and public spaces
3. Irrigate the entire development, including single-family residences

The options were evaluated based on the estimated costs, ownership, storm water requirements, and maintenance. Option 2 is recommended: it includes irrigation of the townhomes, park and public spaces.

The estimated project cost for Option 2 is \$463,000 which includes 10% construction contingency and 20% indirect costs. Funding for the project is proposed through development fees generated from surface water management fees, and City trunk water system funds.

This project is feasible and cost-effective from an engineering standpoint, and should be constructed as proposed herein.

2. MATTAMY HOMES WATER REUSE

2.1 INTRODUCTION

2.1.1 Authorization

On June 8, 2015, the City of Lino Lakes City Council authorized the preparation of a feasibility report for the Mattamy Homes Water Reuse project.

2.1.2 Scope

The Mattamy Homes Development includes a large storm water storage area that can be used as an irrigation source. The proposed project includes storm water used for irrigating the development. This report evaluates several options for water reuse and considers water resources, cost, regulatory requirements, and value of the reuse irrigation system.

2.1.3 Data Available

Information and materials used in the preparation of this report include the following:

- City of Lino Lakes Comprehensive Plan
- City of Lino Lakes Base Map and/or Topography Maps
- Minnesota Department of Natural Resources Water Usage Reports
- Grading plans and plat for the Mattamy Homes development

2.2 GENERAL BACKGROUND

2.2.1 Project Location

The Mattamy Homes Development is located in the City of Lino Lakes, west of Interstate 35E, east of 20th Avenue North, north of Main Street, and south of the bounds extended by 77th Street East. A map showing the project area can be found in **Figure 1, Appendix A** of this report.

2.2.2 Existing Conditions

The existing land use at Mattamy Homes is agricultural, with stormwater currently running through the site via Anoka County Ditch 55 (ACD-55) and Anoka County Ditch 72 (ACD-72). These ditch systems receive storm water runoff from watersheds located in the cities of Hugo and Lino Lakes and discharge to Peltier Lake. A study is being completed to address the surface water in the NE area of Lino Lakes. This report assumes that ditch water is not available as a source for irrigation and will be addressed through the NE Drainage Study.

2.2.3 Stormwater Management

The Rice Creek Watershed District (RCWD) Rules state that stormwater volume and rate control must occur in any location with new or reconstructed impervious surfaces, such as the Mattamy development. Stormwater infiltration is the preferred method of volume control. Prior to this feasibility study, an analysis was conducted to determine if the site was suitable for infiltration. Because a large portion of the site is within a vulnerable portion of the Drinking Water Supply Management Area (DWSMA), and the Minnesota Department of Health recommends that infiltration not occur in a vulnerable DWSMA, it

was determined that infiltration is not feasible. In this instance, the RCWD Rules state that stormwater irrigation can occur in lieu of infiltration as a volume reduction practice. The three scenarios in this study reflect this determination.

2.2.3 Current Irrigation Practices

The City currently regulates irrigation within the community to promote water conservation. It is estimated that irrigation accounts for 43% of the potable water used in the City each year (**Appendix B, Table 1**). The large proportion of water allocated towards irrigation presents an opportunity for the City to reduce its summer demand on the potable water system through water reuse.

2.3 PROPOSED IMPROVEMENTS

There were three options identified to coincide with the Mattamy development

Option 1: Irrigating Public Spaces with Storm Water

Option 1 includes a water reuse irrigation system for public open spaces within the Mattamy Homes Development. This system includes the park in the center of the development as well as the berm on the east side of the development. In total, the irrigated area for Option 1 is 11 acres. A figure depicting Option 1 is shown as **Appendix A, Figure 2**.

Option 2: Irrigating Public Spaces and Townhomes with Storm Water

Option 2 includes a water reuse irrigation system for public open spaces and multi-family residential (townhome) area in the southeastern portion of the development. The townhome area includes 12 acres of green space that will require irrigation, in addition to the 11 acres irrigated in the public space. A figure depicting Option 2 is shown as **Appendix A, Figure 3**.

Option 3: Irrigating all of the Mattamy Development with Storm Water

Option 3 includes a water reuse irrigation system for public open spaces, multi-family residential townhomes, and single-family residences. A fourth municipal utility would be installed throughout the development. The third option requires homeowner education and interaction for system management and coordination with City maintenance staff. The total irrigated area for Option 3 is 144 acres. A figure depicting Option 3 is shown as **Appendix A, Figure 4**.

A water balance analysis was completed and can be found in **Appendix D**. The water balance summary for each option:

Option 1: Irrigating Public Spaces with Storm Water

The water balance model indicates that the storm water stored can sufficiently supply water for irrigation of the public spaces with minimal pond level fluctuations.

Option 2: Irrigating Public Spaces and Townhomes with Storm Water

The water balance model indicates that the storm water stored can sufficiently supply water for irrigation of the public spaces and townhomes with minimal pond level fluctuations.

Option 3: Irrigating all of the Mattamy Development with Storm Water

The water balance model indicates that the storage area cannot supply enough irrigation water to support this option. The model showed that storage levels will reach significantly low levels and that the reuse system would require supplementation from the municipal water system. The cost to supplement the water reuse system with the municipal supply is not a cost that required with Option 1 or 2. In addition there will be vegetation issues if the storage area is drawn down this low, along with it is anticipated that residents will not desire to have the storage area this low.

Option 2 is recommended because it provides the most surface water reuse without a fourth municipal utility system and individual service lines. Option 2 can be implemented without supplementation/connection to the municipal water system.

2.3.1 Pump and Pipe Materials

Appendix C includes pump and forcemain layouts for each option, as well as suggested meter locations. The pump size should be determined by the irrigation designer, and they should be controlled by soil-moisture sensors, to ensure that watering is dictated by weather and soil conditions. The proposed forcemain is 2 to 4" diameter, high density polyethylene (HDPE).

2.3.2 Water Quality

Prior to each irrigation season, it is recommended that the storage area be tested for water quality. The Minnesota Pollution Control Agency has recommended water quality parameters as outlined in **Appendix D**. If the parameters are not met, additional treatment should be considered to ensure the storage water remains of high enough quality to use for irrigation.

2.3.3 Ownership Recommendation

It is recommended that the City own and operate the system, and within the townhome area, the City should have a maintenance agreement with the HOA where they are responsible for maintaining the system in the townhome area.

2.3.4 Metering, Usage, and Billing

It is recommended that the park and berm irrigation systems be operated with independent meters so that the townhome maybe invoiced for their water usage to support maintenance of the system. Watering restrictions should remain in place for consistency and promote water conservation.

2.3.5 Permitting

A Rice Creek Watershed District (RCWD) permit will be required. The project will meet volume reduction, treatment and rate control per RCWD rules. A Minnesota Department of Natural Resources (DNR) appropriations permit will also be required for the project.

2.3.6 Right of Way

The proposed reuse system with Option 2 would be constructed within public right of ways and public land or land owned by the Home Owner Association for the townhomes. Option 3 may require additional easement or right of way dedicated through platting for the distribution system.

3. FINANCING

3.1 OPINION OF COST

The detailed opinion of probably cost for each of the three options can be found in **Appendix C** of this report. The opinions of cost incorporate estimated construction costs and include a 10% construction contingency and 20% for indirect costs (legal, administrative, engineering, and financing items).

Table 4 below provides a summary of the estimated cost for each of the three options considered:

Option	Construction with Contingency	Indirect (20%)	Total
Option 1: Public Areas Irrigated	\$296,000	\$60,000	\$356,000
Option 2: Public Areas and Townhomes Irrigated	\$386,000	\$77,000	\$463,000
Option 3: Public Areas, Townhomes, and Single-Family Homes Irrigated	\$2,151,000	\$431,000	\$2,582,000

3.2 FUNDING

Funding for the project is proposed through development fees generated from surface water management fees, and City trunk water system funds. The proposed funding for Option 2 is outlined as follows:

Funding Source	Amount
Surface Water Management	\$197,000
Trunk Water	\$266,000
Total	\$463,000

The trunk fee is calculated based on 40% of the \$4,069 trunk water fee for each townhome unit, based on the estimated water savings. It was assumed that each townhome is one Residential Equivalency Unit (REU).

The project may be eligible for grants from the Metropolitan Council of Environmental Services for Targeted Storm Water. Grant funding opportunities will be evaluated during the design of the project.

4. RECOMMENDATION

The project is feasible, necessary, and cost-effective from an engineering perspective. WSB & Associates, Inc. recommends construction of the proposed improvements as detailed in this report. The economic feasibility of this project will be determined by the City Council.

APPENDIX A

Figure 1: Project Location

Figure 2: Option 1: Irrigating Public Spaces

Figure 3: Option 2: Irrigating Public Spaces and Townhomes

Figure 4: Option 3: Irrigating Entire Development

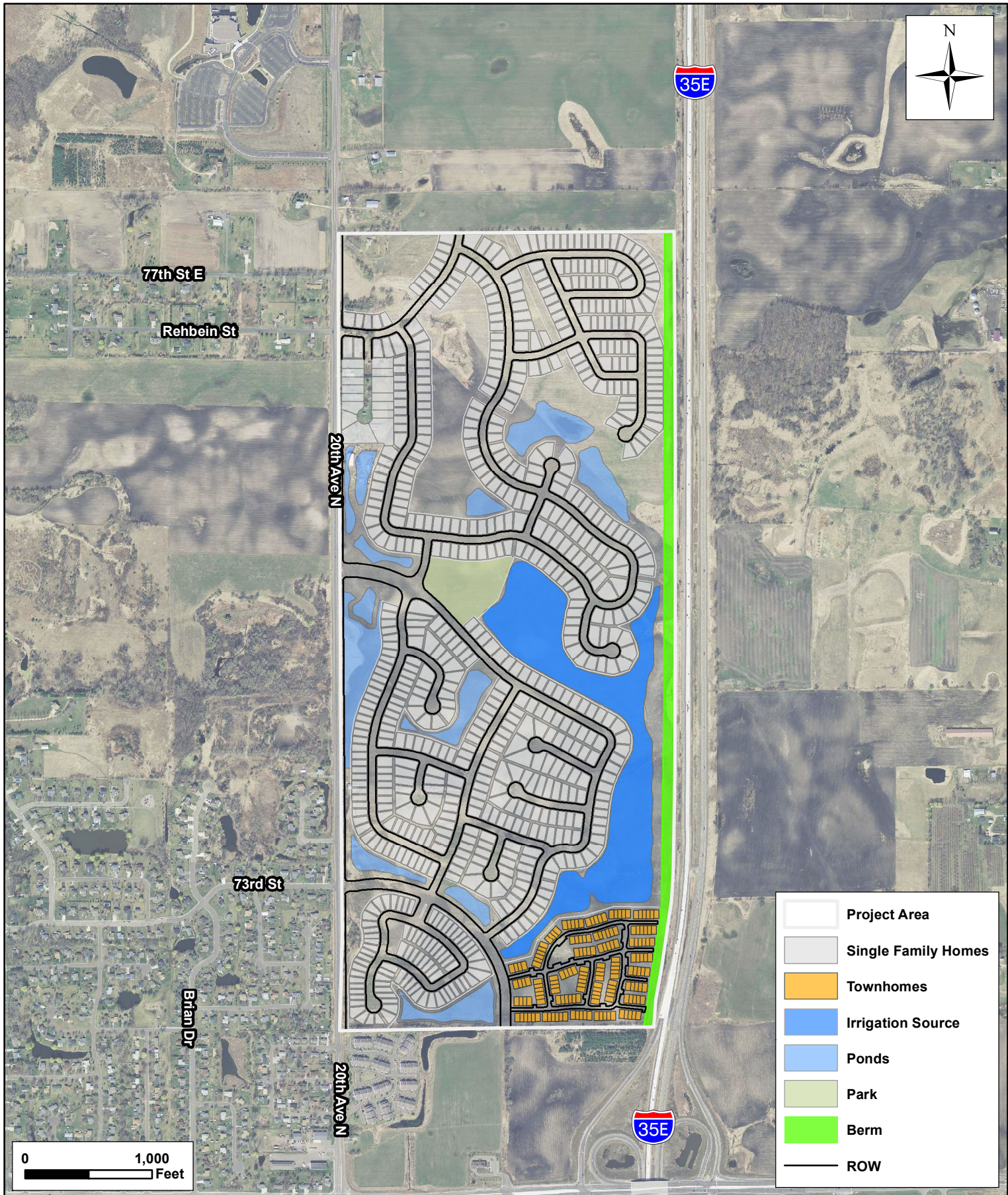


Figure 1
Mattamy Homes Project Area



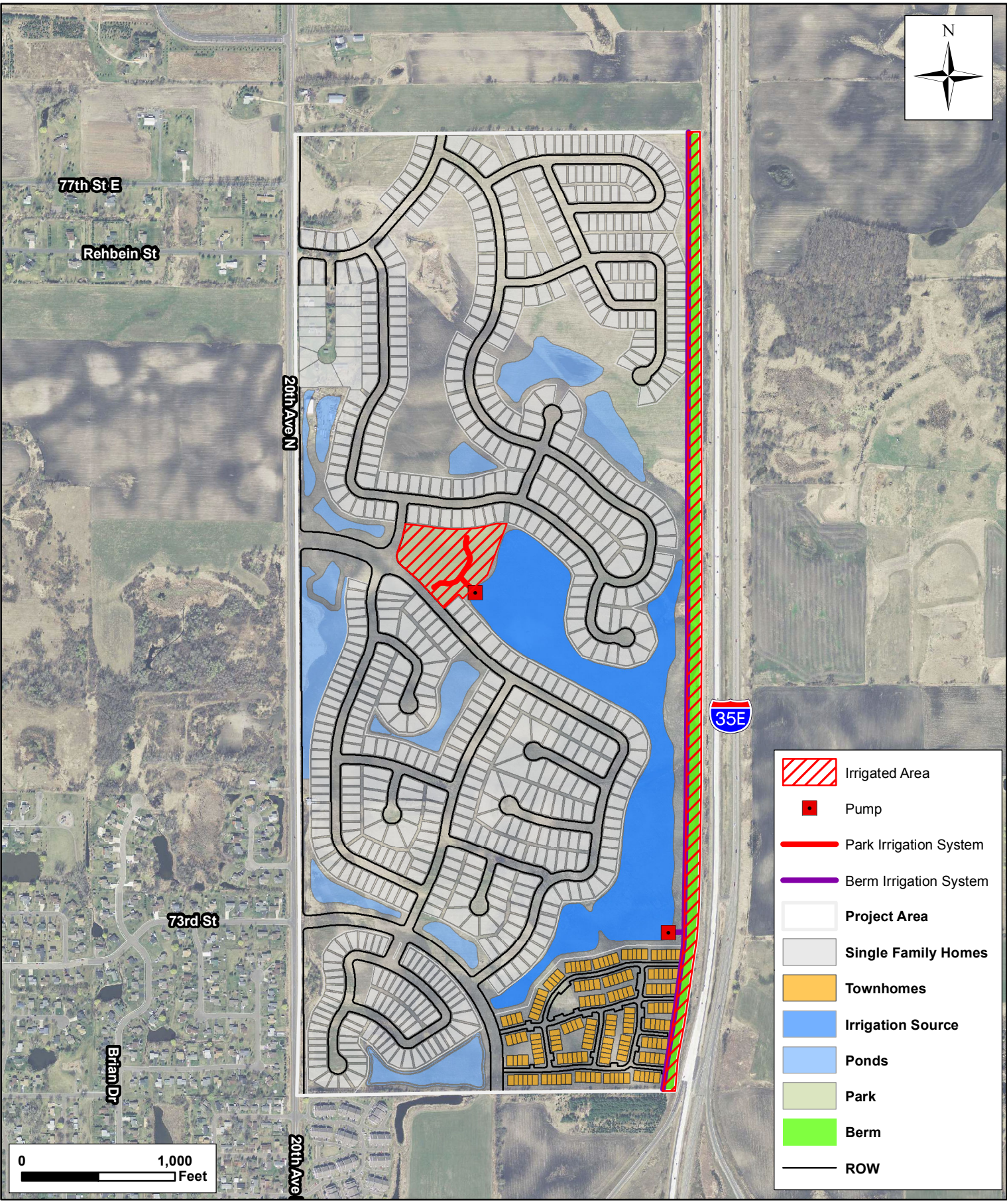
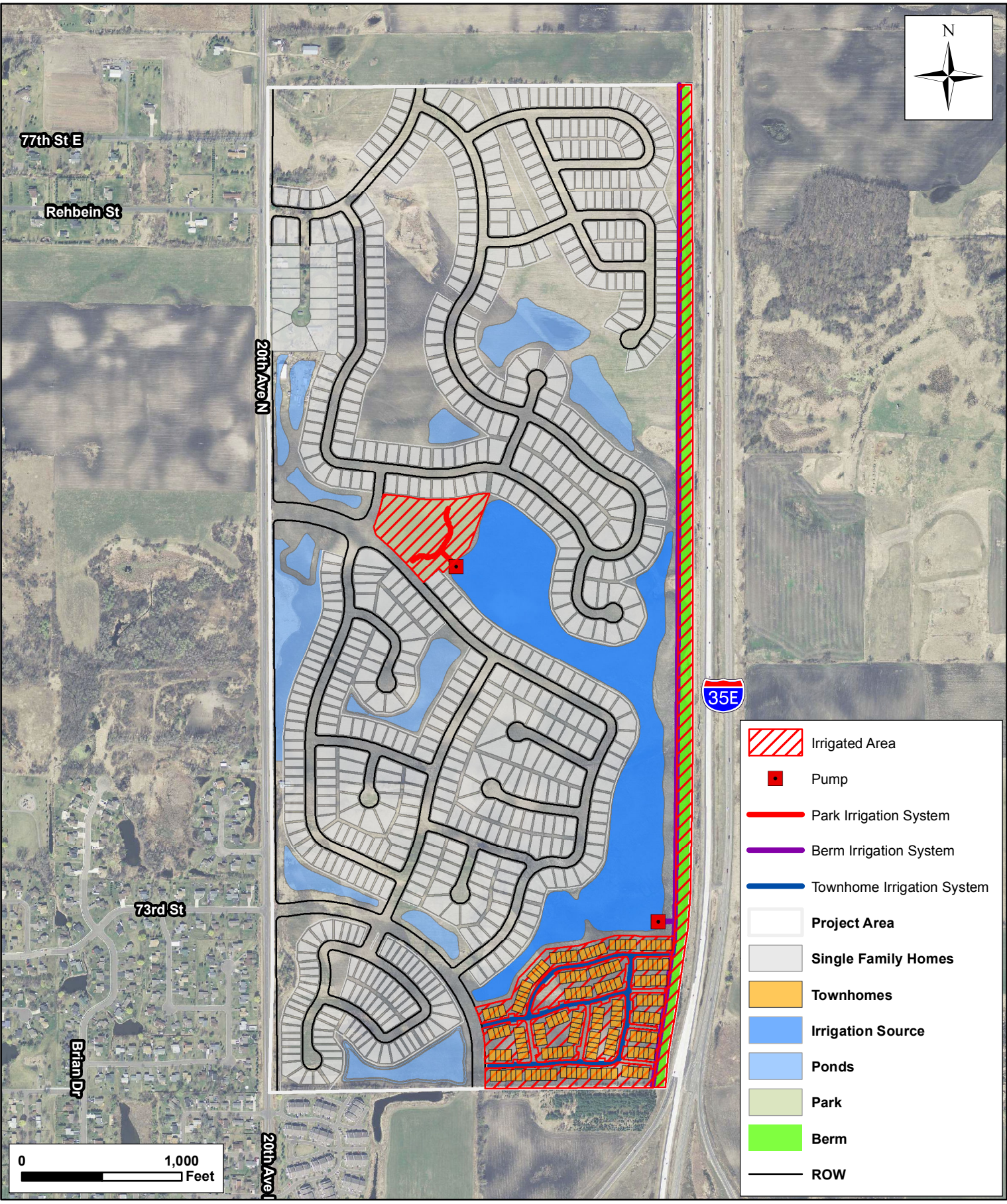















Figure 2
Option 1 - Parks and Berm





-  Irrigated Area
-  Pump
-  Park Irrigation System
-  Berm Irrigation System
-  Townhome Irrigation System
-  Project Area
-  Single Family Homes
-  Townhomes
-  Irrigation Source
-  Ponds
-  Park
-  Berm
-  ROW

0 1,000 Feet

Figure 3
Option 2 - Parks, Berm, and Townhomes



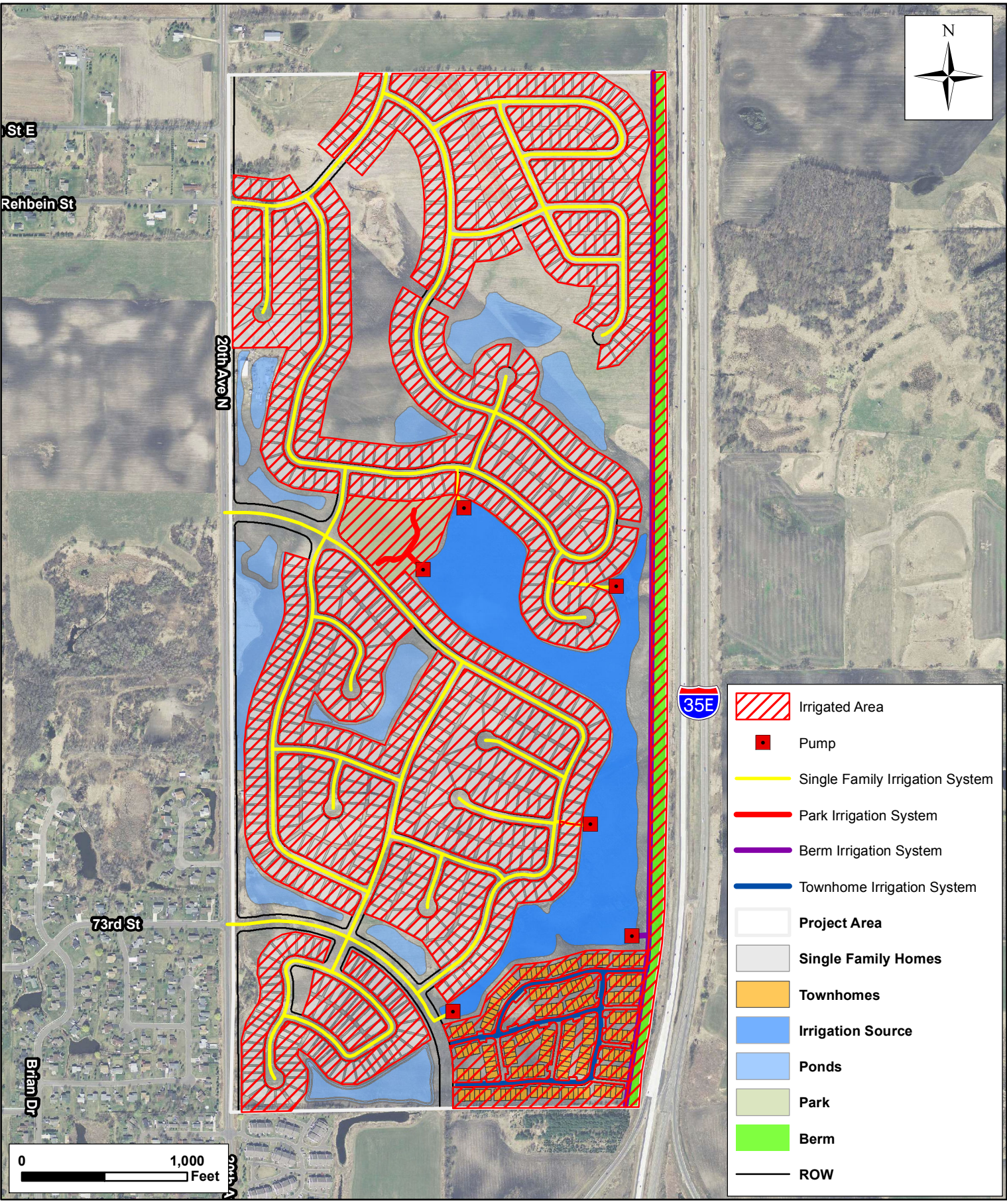


Figure 4

Option 3 - Entire Development Irrigated



APPENDIX B

Table 1 - Estimated Annual Irrigation

Pumping Data

	2011	2012	2013	2014	Average
January	25,888,000	25,071,000	27,807,000	25,983,000	26,187,250
February	23,596,000	22,437,000	23,407,000	22,194,000	22,908,500
March	23,542,000	24,787,000	23,681,000	24,295,000	24,076,250
April	26,549,000	35,803,000	27,568,000	25,505,000	28,856,250
May	32,688,000	48,084,000	35,966,000	36,576,000	38,328,500
June	61,591,000	66,619,000	38,388,000	42,654,000	52,313,000
July	66,370,000	95,916,000	83,252,000	64,403,000	77,485,250
August	59,137,000	93,978,000	101,316,000	73,428,000	81,964,750
September	69,350,000	90,784,000	89,821,000	47,160,000	74,278,750
October	51,635,000	56,177,000	34,861,000	33,170,000	43,960,750
November	25,097,000	24,722,000	24,858,000	24,064,000	24,685,250
December	26,704,000	25,046,000	24,703,000	25,310,000	25,440,750
Total	492,147,000	609,424,000	535,628,000	444,742,000	520,485,250
Summer Usage:	367,320,000	487,361,000	411,172,000	322,896,000	397,187,250
Winter Usage:	124,827,000	122,063,000	124,456,000	121,846,000	123,298,000

Average Monthly Winter Use:	24,659,600
Average Monthly Summer Use:	56,741,036
Average Estimated Irrigation:	224,570,050
Percent of Total:	43.1%

APPENDIX C

Table 1 - Water Balance Summary

Table 2 – Option 1 Cost Summary

Table 3 – Option 2 Cost Summary

Table 4 – Option 3 Cost Summary

	Irrigated Area (ac)	Volume Required to Irrigate Area (gal)	Average Days Irrigating from Lake Yearly	Average Daily Irrigation Demand (gal)	Annual Lake Water Used (MG)	Annual Lake Water Used (ac-ft)	Annual Potable Water Used (MG)
Option 1: Irrigate Park and Berm	10.79	42,000	156	35,336	6.54	20.06	0
Option 2: Irrigate Park, Berm, and Townhome	23.04	88,000	156	74,038	13.69	42.02	0
Option 3: Irrigate Entire Development*	143.7	547,000	134	460,215	73.09	224.3	12.05

*Numbers assume an 11' protective depth

Opinion of Probable Cost

Item No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
A. Irrigating Public Spaces (Park and Berms)					
1	MOBILIZATION	LUMP SUM	1	\$8,000.00	\$8,000.00
2	CLEARING AND GRUBBING	LUMP SUM	1	\$500.00	\$500.00
3	DEWATERING	LUMP SUM	1	\$5,000.00	\$5,000.00
4	2" FORCE MAIN HDPE	LIN FT	6,991	\$18.00	\$125,832.87
5	ELECTRICAL SERVICE	LUMP SUM	1	\$12,000.00	\$12,000.00
6	IRRIGATION METER AND CONTROLS	EACH	2	\$3,000.00	\$6,000.00
7	LIFT STATION, FILTER, CONTROLS, AND APPURTENANCES*	LUMP SUM	2	\$55,000.00	\$110,000.00
8	SILT FENCE, TYPE HEAVY DUTY	LIN FT	250	\$3.50	\$875.00
9	CONCRETE PUMP PAD	EACH	2	\$1,000.00	\$1,000.00
SUBTOTAL					\$269,207.87
+ 10% CONTINGENCY					\$26,920.79
CONSTRUCTION SUBTOTAL					\$296,128.66
+ 20% INDIRECT					\$59,225.73
TOTAL					\$356,000.00

Opinion of Probable Cost

Item No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
B. Irrigating Public Spaces and Townhomes					
1	MOBILIZATION	LUMP SUM	1	\$16,700.00	\$16,700.00
2	CLEARING AND GRUBBING	LUMP SUM	1	\$500.00	\$500.00
3	DEWATERING	LUMP SUM	1	\$5,000.00	\$5,000.00
4	2" FORCE MAIN HDPE	LIN FT	6,991	\$18.00	\$125,838.00
5	ELECTRICAL SERVICE	LUMP SUM	1	\$12,000.00	\$12,000.00
6	IRRIGATION METER AND CONTROLS	EACH	3	\$3,000.00	\$9,000.00
7	LIFT STATION, FILTER, CONTROLS, AND APPURTENANCES*	LUMP SUM	2	\$55,000.00	\$110,000.00
8	SILT FENCE, TYPE HEAVY DUTY	LIN FT	250	\$3.50	\$875.00
9	CONCRETE PUMP PAD	EACH	2	\$1,000.00	\$2,000.00
11	4" FORCE MAIN HDPE	LIN FT	3,807	\$18.00	\$68,531.73
SUBTOTAL					\$350,444.73
+ 10% CONTINGENCY					\$35,044.47
CONSTRUCTION SUBTOTAL					\$385,489.21
+ 20% INDIRECT					\$77,097.84
TOTAL					\$463,000.00

Opinion of Probable Cost

Item No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
C. Irrigating Entire Development					
1	MOBILIZATION	LUMP SUM	1	\$93,100.00	\$93,100.00
2	CLEARING AND GRUBBING	LUMP SUM	1	\$500.00	\$500.00
3	DEWATERING	LUMP SUM	1	\$5,000.00	\$5,000.00
4	2" FORCE MAIN HDPE	LIN FT	6,991	\$18.00	\$125,838.00
5	ELECTRICAL SERVICE	LUMP SUM	1	\$12,000.00	\$12,000.00
6	IRRIGATION METER AND CONTROLS	EACH	8	\$3,000.00	\$24,000.00
7	LIFT STATION, FILTER, CONTROLS, AND APPURTENANCES*	LUMP SUM	6	\$55,000.00	\$330,000.00
8	SILT FENCE, TYPE HEAVY DUTY	LIN FT	250	\$3.50	\$875.00
9	CONCRETE PUMP PAD	EACH	6	\$1,000.00	\$1,000.00
10	CONNECT TO POTABLE WATER	EACH	6	\$8,000.00	\$48,000.00
11	4" FORCE MAIN HDPE	LIN FT	36,944	\$18.00	\$664,992.00
12	POTABLE WATER SYSTEM OVERSIZING	LUMP SUM	1	\$650,000.00	\$650,000.00
SUBTOTAL					\$1,955,305.00
+ 10% CONTINGENCY					\$195,530.50
CONSTRUCTION SUBTOTAL					\$2,150,835.50
+ 20% INDIRECT					\$430,167.10
TOTAL					\$2,582,000.00

APPENDIX D

Water Balance Technical Memo



January 21, 2016

Mr. Mike Grochala, AICP
Community Development Director
City of Lino Lakes
600 Town Center Pkwy
Lino Lakes, MN 55015

Re: Mattamy Homes Water Reuse – Water Balance Technical Memorandum
WSB Project Number 02988-01

Dear Mr. Grochala:

We are providing you this technical memorandum to summarize the results of the water balance model for the water reuse feasibility study in the Mattamy Homes development. This document describes the methodology used to calculate the quantity of stormwater available and the amount used for irrigation purposes.

Project Background

The City of Lino Lakes wishes to implement a water reuse program using water from the lake in the Mattamy Homes development to irrigate portions of the development. There are three potential scales with respect to water reuse that were evaluated. The first is using water in the lake to irrigate the development's park and the berms on the eastern edge of the development. The second is to irrigate the park and the berms as well as the townhomes in the southeastern corner of the development. Finally, the water balance modeled the feasibility of irrigating the entire development, including single-family homes, with water from the lake.

Water Balance Theory

The water balance presented in this document evaluates the amount of water provided to the pond via stormwater runoff, the amount that will be withdrawn for irrigation, and the resulting lake levels. The estimate takes into consideration precipitation, runoff, evaporation, irrigation demand, and pond overflow. While water balances rely on historic data and do not predict future climate patterns, they are a helpful tool when determining if stormwater irrigation is feasible, and if so, whether or not potable water augmentation will be required.

Calculating Drainage Area

To determine the amount of water available for irrigation, the drainage area to the lake was taken from the current Lino Lakes Northeast Study being conducted by WSB & Associates for the City. In addition, drainage information was obtained from the the developer to estimate the area in the future development that will drain to the lake.

The purpose of the water balance is to determine if the lake holds enough water for irrigation purposes throughout the irrigation season. Therefore, a conservative approach was taken when estimating the drainage area; only the immediate drainage within the development was considered for the water balance.

Calculating Precipitation

Rainfall data was obtained from the Minnesota Climatology Working Group. Data was available beginning on May 1, 1959, and extending to June 30, 2015. Days in which rainfall data was missing were assumed to have received no precipitation.

Calculating Runoff

The water balance uses the United States Department of Agriculture (USDA) Natural Resources Conservation Service method for determining runoff. This method, commonly known as the SCS Runoff Curve Number method, has widespread use in hydrologic modeling. The curve number for the drainage area was calculated as part of the Lino Lakes Northeast Study. The curve numbers for the drainage area within the development was estimated using soil type and single- and multi-family residential published curve numbers. Using the calculated curve numbers, an S-value (the amount of maximum soil moisture retention after runoff begins) was determined using the following equation:

$$S = \frac{1000}{Curve\ Number} - 10$$

From the S-value, the initial abstraction (I_a) was calculated as $0.2*S$, per the USDA. To predict the amount of runoff (Q) from a particular rain event, the USDA gives the equation:

$$Q = \begin{cases} 0 & \text{for } P \leq I_a \\ \frac{(P-I_a)^2}{P-I_a+S} & \text{for } P > I_a \end{cases}$$

The equation dictates that there is no runoff from a storm where the amount that falls (in inches) is less than the initial abstraction. In the single-family residential area, a storm of 0.47 inches is required, and in the multi-family residential (townhome) area, a storm of 0.26 inches is required. In the model, runoff from the three areas was considered independently to ensure the most accurate estimate of total runoff volume possible. Using the equation above, the runoff entering the lake was evaluated for each rain event from the historical rainfall data.

Calculating Pond Volume

Pond volume was determined using contour data from the grading plan for the lake. First, a stage to surface area relationship was developed using surface area from the grading plan. Once the surface area was evaluated at several elevations, the trapezoidal method was used to estimate overall pond volume as well as the volume at several elevations. The storage capacity of the pond is approximately 122 million gallons, with a volume of 86 million gallons at the normal water elevation. The total possible volume was assumed to be the volume at the overflow

elevation. The grading plans assume a normal water level of 900 feet, which was set as the initial lake volume for modeling purposes.

Calculating Evaporation

Based on the estimated volume contained in the lake, the surface area was calculated in Excel using the Forecast function. The Forecast function gives a predicted value of a variable using a linear regression analysis. In this case, the function uses the elevation-surface area data calculated in the pond volume analysis to predict what the surface area would be for any volume of water. This is a necessary component for the model because the volume analysis as outlined in the previous section gives volume at one foot increments only. Once the surface area is estimated, the amount of evaporation is predicted using the pan evaporation method with a pan coefficient, as outlined by the University of Minnesota. The guiding document recommends a pan coefficient of 0.75 for Minnesota. The equation used is below:

$$\text{Evaporation} = \text{Water Surface Area (ft}^2\text{)} \times 0.75 \times \frac{36.98 \text{ inches}}{12 \text{ inches/ft}}$$

The value of 36.98 inches is the average pan evaporation for the State of Minnesota between 1974 and 2004. The equation above provides annual evaporation. Therefore, in the water balance, the value was divided by 180, or the approximate number of days in which evaporation occurs annually.

Calculating Irrigation Requirements

Using aerials and plans provided by the developer, the irrigated area was estimated for the berms, park, townhomes, and single-family homes. It is estimated that to maintain a lawn, one inch of water is required per week (including precipitation). 1-inch of irrigation weekly results in an average of 1/7, or 0.14, inches per day. Therefore, if the rainfall is greater than 0.14 inches in a given day, it was assumed in the water balance that irrigation did not occur that day.

Rice Creek Watershed District rules dictate that stormwater irrigation occurs, at maximum, from April 15 to October 15 for the generation of volume reduction credits. The water balance calculates irrigation between these dates.

Phase	Irrigation Volume per Day (gal)
1. Park and berms only	42,000
2. Park, berms, and townhome area	88,000
3. Park, berms, townhome area, single family area	546,150

Water Balance: Final Calculation and Results

Once all of the above parameters were calculated, the balance was conducted to determine lake levels throughout the irrigation season. The overall water balance equation is as follows:

$$\text{Pond Volume} = \text{Initial Pond Volume} + \text{Stormwater Runoff} + \text{Ditch Inflow} - \text{Discharge} - \text{Evaporation} - \text{Irrigation}$$

The average annual precipitation, including snowmelt, was 33.5 inches. The model predicted that on average, irrigation will occur 156 days each year, out of 184 possible irrigation days. This

Mr. Mike Grochala

January 21, 2016

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leads to a weekly irrigation depth of 0.84 inches, resulting in a total water depth of 1.6 inches applied to the turf on a weekly basis, including precipitation. Studies conducted by the University of Minnesota indicate that this irrigation rate is likely slightly more than necessary given the soils and precipitation. A small overestimation of the irrigation rate is desired so that the model is conservative.

Option 1: Irrigating Public Spaces with Storm Water

Option 1 resulted in a daily irrigation rate of 42,000 gallons on days in which irrigation occurred (days in which precipitation was less than 1/7-inch). The water balance model indicates that the storage can sufficiently supply water for irrigation of the public spaces with minimal effect on storage levels. Evaporation and irrigation combined resulted in maximum storage level fluctuation of 36.8 million gallons (MG), or 4 feet in elevation change. Option 1 is feasible in terms of water supply.

Option 2: Irrigating Public Spaces and Townhomes with Storm Water

Option 2 resulted in a daily irrigation rate of 88,000 gallons on days in which irrigation occurred. The water balance model indicates that the storage can sufficiently supply water for irrigation of the public spaces and townhome properties with minimal effect on storage levels. Evaporation and irrigation combined resulted in maximum storage level fluctuation of 37.0 MG, or 4 feet in elevation change. Option 2 is feasible in terms of water supply.

Option 3: Irrigating all of the Mattamy Development with Storm Water

Option 3 resulted in a daily irrigation rate of 547,000 gallons. The storage cannot supply enough irrigation water to support this option. The model showed that storage levels will reach approximately two feet in depth during the summer if irrigating at this rate. A protective elevation can be set, such that at a certain storage depth the irrigation system does not run. Depending on the elevation chosen, the system will turn off for different time ranges. If, for example, the protective elevation is 896 feet (corresponding to an eleven foot depth), the system would run off of potable water an average of 22 days per summer. Given the system and operating cost, Option 3 is not feasible in terms of water supply.

Please contact me at (763) 287-8319 with any questions.

Sincerely,

WSB & Associates, Inc.



Erin Heydinger

Mr. Mike Grochala

January 21, 2016

Page 5

Sources:

Gulliver, J.S., A.J. Erickson, and P.T. Weiss (editors). 2010. Stormwater treatment: Assessment and Maintenance. University of Minnesota, St. Anthony Falls Laboratory. Minneapolis, MN.
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**ENVIRONMENTAL BOARD
AGENDA ITEM 5C**

STAFF ORIGINATOR: Diane Hankee and Erin Heydinger, WSB & Associates
MEETING DATE: March 30, 2016
TOPIC: Adoption and Implementation of Wellhead Protection Plan

BACKGROUND

On February 26, 2016, the Minnesota Department of Health (MDH) notified the City of Lino Lakes that its Part 2 Wellhead Protection Plan (WHPP) was officially approved. The preparation of the City's WHPP is a requirement of Minnesota Rules 4720.5100 to 4720.5590. The goal of the Plan is to prevent human-caused contaminants from entering the water supply wells and to protect all who use the water supply from adverse health effects associated with groundwater contamination. The Plan falls under the jurisdiction of the MDH and consists of two parts (Part 1 and Part 2).

Part 1

Part 1 of Lino Lakes' WHPP was completed in 2014. Part 1 is a technical exercise that uses groundwater modeling to delineate the wellhead protection area (WHPA), Drinking Water Supply Management Area (DWSMA) and includes a well and aquifer vulnerability assessment. Part 1 addresses the three municipal water supply wells used by the City and the associated source water aquifer.

Part 2

Part 2 of the WHPP describes how the results of the Part 1 can be applied to best protect a community's water supply. Data elements were collected and interpreted, and then impacts of changes in land and water use were assessed. This allowed issues, problems, and opportunities to be identified and included in the WHPP.

Next Steps

The goals and objectives of the Part 2 WHPP focus on managing potential contaminant sources within the DWSMA, reducing the potential contaminant pathways to the source water aquifer that may be provided by private wells, educating property owners and water supply users, and working with the cities within the DWSMA to ensure proper management of the portion within their respective community. Once adopted, the City must begin implementation of these objectives. Specific goals outlined in Chapter 5 of the Part 2 Plan fall under the following categories:

- A. Well Management

- B. Public Education
- C. Storage Tank Management
- D. Septic Systems (ISTS)
- E. Stormwater Management
- F. Hazardous Waste Management
- G. Data Collection
- H. Water Conservation
- I. Planning and Zoning
- J. Implementation
- K. Evaluation

Specific examples of implementation activities include educating the public on lawn care practices, maintain an up-to-date septic system inventory, and notifying storage tank owners within the DWSMA that the tank is in a source water protection area.

The annual cost for WHP implementation is approximately \$10,000. Source Water Protection grants from the Minnesota Department of Health are available to offset some of this cost. These grants are available twice annually and do not require a cost-share.

RECOMMENDATION

Staff is recommending adoption and implementation of the Wellhead Protection Plan.

ATTACHMENTS

1. WHPP – Part 2 Objectives and Plans of Action

CHAPTER FIVE – OBJECTIVES AND PLANS OF ACTION (4720.5250)

I. OBJECTIVES

Given the issues, problems, and opportunities discussed in Chapter Three and the goals stated in Chapter Four, the WHP Plan delegates direct management efforts to the following areas to prevent future contamination of the aquifer and increase awareness of groundwater protection:

- A. *Well Management*
- B. *Public Education*
- C. *Storage Tank Management*
- D. *Septic Systems (ISTS)*
- E. *Stormwater Management*
- F. *Hazardous Waste Management*
- G. *Data Collection*
- H. *Water Conservation*
- I. *Planning and Zoning*
- J. *Implementation*
- K. *Evaluation*

Each activity shall only be implemented in the sections of the DWSMA that are of the vulnerability level that is applicable to that specific action item per MDH requirements. In general, action items shall follow the basic rule for activities relating to the following areas:

- Low vulnerability areas – wells
- Moderate vulnerability areas – wells and tanks
- High vulnerability areas – all land uses and potential contaminant sources, including wells and tanks

II. Plan of Action

A. WELL MANAGEMENT

Objective A1: Take measures to promote proper sealing of abandoned, unused, unmaintained, or damaged wells.

Action A1.1: Make property owners aware of potential technical and financial resources that are available to assist them in securing grant funding for properly sealing wells.

Who:	City of Lino Lakes Staff
Cooperators:	Anoka County, Wellhead Protection Joint Powers Group
Time Frame:	On-going
Estimated Cost:	\$500 annually
How:	Use the City's website, newsletters, or direct mailings to make well owners aware of well sealing cost-share programs. Provide information to realtors to pass along to property owners preparing to sell and during disclosure process.

Action A1.2: Seek funding when available and feasible to locate and/or seal wells located on City property.

Who:	City Staff
Cooperators:	Anoka and Washington Counties, Consultant
Time Frame:	On-going, when grant funding is available
Estimated Cost:	\$2,000 (grant application); additional cost for sealing TBD.
How:	If wells are discovered on City owned property, grant funding shall be sought after to properly seal the well.

Objective A2: Take measures to identify properties with abandoned, unused, unmaintained, or damaged wells and potential cross connections between private wells and the City's water system.

Action A2: Identify properties with potential water supply cross connections or wells that pose a hazard to the public water supply.

Who:	City of Lino Lakes Staff or consultant
Cooperators:	MDH, Anoka County, City of Lino Lakes
Time Frame:	3 to 5 years
Estimated Cost:	\$5,000 to \$6,000 research effort, remaining work dependent on results
How:	Through mapping and field investigation, as well as historical records. When possible, the list of parcels likely to have wells will be incorporated into the City Building Officials records or shared with other jurisdictions in the DWSMA. When the application is made to rebuild or demolish an existing building, the records can be reviewed to determine if a well search is required.

Objective A3: Educate the public about proper well management.

Action A3: Provide links to MDH and County well management websites on the City's website, include information in the City's newsletter or other direct mailings.

Who:	City of Lino Lakes Staff or consultant
Cooperators:	MDH
Time Frame:	Ongoing
Estimated Cost:	\$500
How:	Use the City's website, newsletters, or direct mailings. Use local newspaper, public access or social media sites

Objective A4: Investigate “unlocated” or undocumented wells within the City and DWSMA.

Action A4: Provide data to MDH, County well management, and the Minnesota Geological Survey regarding the measured location of “unlocated” and undocumented wells, and investigate the “as built” construction of wells without construction records.

Who:	City of Lino Lakes Staff
Cooperators:	MDH, Hugo, Centerville, Circle Pines, Blaine
Time Frame:	5 to 7 years
Estimated Cost:	unknown
How:	Apply for grant funding to investigate the location of unlocated wells through Objective A2, surface measurements, and inspections.

Objective A5: Incorporate WHP initiatives into City Plans

Action A5: The City will use this Wellhead Protection Plan as a resource when updating its Comprehensive Plan, Local Water Management Plan, Water Supply Plan, and other relevant plans.

Who:	City of Lino Lakes Staff or consultants
Cooperators:	City of Hugo, Circle Pines, Centerville
Time Frame:	When other plans are revised
Estimated Cost:	Varies per plan
How:	WHP initiatives will be addressed and incorporated into the City’s various plan updates.

Objective A6: Identify New High-Capacity Wells within the DWSMA.

Action A6: The City will identify new high capacity wells that are proposed for construction in or near the City’s DWSMA, and/or major changes to groundwater appropriations for existing high capacity wells, to determine whether the pumping of wells will alter the current boundaries of the DWSMA delineations or other portions of the City’s WHP Plan.

Who:	City of Lino Lakes Staff or consultant
Cooperators:	Comprehensive Water Supply Plan contents
Time Frame:	3 to 5 years
Estimated Cost:	varies
How:	City will request to be notified of new permits or changes to existing appropriation permits for high capacity wells near the DWSMA. If determined to potentially be impactful, City Staff, Consultant, and MDH will be requested to evaluate whether proposed pumping will change the boundaries of the DWSMA delineated for the City’s wells or if the vulnerability of the aquifer will be affected.

Objective A7: Continue to monitor the water quality from City's wells (existing and new) to ensure water quality standards are met.

Action A7: Examine and review the annual water quality reports to ensure maximum levels of contaminants are not changing.

Who:	City of Lino Lakes Staff
Cooperators:	Consultant
Time Frame:	MDH
Estimated Cost:	When reports are available
How:	No additional cost – staff time

Objective A8: Encourage owners on ISTS and private wells to connect to city services, when they become available.

Action A8: Re-evaluate the sewer and water connection policy when services become available in the DWSMA.

Who:	City of Lino Lakes Community Development staff
Cooperators:	City Council
Time Frame:	3 to 5 years
Estimated Cost:	No cost
How:	Discuss the importance of connections to city services, as they become available.

B. PUBLIC EDUCATION

Objective B1: Develop a public support and understanding for the WHP planning through the use of websites, newsletters, and handouts.

Action B1.1: Include information about WHP and groundwater protection in the City newsletter, perhaps in conjunction with the City's MS4 permitting requirements.

Who:	City of Lino Lakes Staff
Cooperators:	MDH, Minnesota Rural Water Association (MRWA)
Time Frame:	Ongoing
Estimated Cost:	\$500 each mailing/posting
How:	Identify and obtain existing educational materials available from MDH and other sources. Write newsletter articles describing WHP and include contact information and website addresses for existing educational resources.

Action B1.2: Provide information about the WHP Plan and links to other WHP related resources on the City's website.

Who:	City of Lino Lakes Staff
Cooperators:	City of Lino Lakes Public Works and Building Departments
Time Frame:	Ongoing
Estimated Cost:	\$500 each year of mailing/posting
How:	Provide a summary of WHP goals and implementation. Provide links to WHP related websites including MDH, Anoka County, MDA, and EPA.

Action B1.3: Educate property owners of rural lands on the issues related to agricultural activity and how these issues affect or relate to the protection of the aquifer.

Who:	City of Lino Lakes Staff or consultant
Cooperators:	MDH, MRWA
Time Frame:	Ongoing, when applicable
Estimated Cost:	\$500 each mailing/posting
How:	Coordinate with Anoka County and MDH to provide best management practices, handouts, and other resources for dissemination.

Objective B2: Educate City staff on transportation corridor and pipeline issues

Action B2: Create awareness about transportation corridor and pipelines issues that may affect the public water supply.

Who:	City of Lino Lakes Staff
Cooperators:	MDH
Time Frame:	Year 1-3
Estimated Cost:	City staff time
How:	Post information available online about the importance of addressing and preventing released contaminants. Communicate the procedures in place by posting a notice in City Hall or sending an email to City staff.

Objective B3: Educate emergency management officials of the importance of spills/cleanup within the DWSMA.

Action B3: Send a summary memo to the Fire Department, County Emergency Manager, County Engineer, and MnDOT regarding the DWSMA location, sensitivity, and importance of spill cleanup within the management area.

Who:	City Staff
Cooperators:	MDH, MRWA, Fire Department, MnDOT, County
Time Frame:	Year 2
Priority:	High
Estimated Cost:	\$500
How:	Develop of summary memo to provide to local emergency management officials on the DWSMA location and importance of spill cleanup within the management areas.

C. STORAGE TANK MANAGEMENT

Objective C1: Notify owners of storage tanks located within the DWSMA that the tank is in a source water protection area, and educate the owners of properties containing the storage tanks of the importance of spill prevention.

Action C1: Update list of storage tank owners and contact each property owner and make them aware of their placement within the City's DWSMA.

Who:	City of Lino Lakes Staff or consultant
Cooperators:	City of Lino Lakes administration, MDH
Time Frame:	3 years
Estimated Cost:	\$3,000
How:	Send mailings out to property owners notifying them about the DWSMA delineation and the importance of spill prevention. Provide contact numbers for appropriate government agencies to each property owner.

D. SEPTIC SYSTEMS (ISTS)

Objective D1: Coordinate with Anoka County to educate property owners about the need for having onsite sewage treatment systems that comply with environmental standards and other regulations.

Action D1: Support County's efforts to educate property owners about ISTS systems and proper maintenance of them.

Who:	Anoka County
Cooperators:	City of Lino Lakes Public Works and Building departments
Time Frame:	Ongoing
Estimated Cost:	Staff time
How:	Provide assistance to Anoka County as requested. Continue to discuss requirements in building department.

Objective D2: Maintain an up-to-date septic system inventory.

Action D2: Build off the inventory in this report to maintain an accurate inventory of septic system locations, especially in the high vulnerability portions of the DWSMA.

Who:	City of Lino Lakes Building and Planning department
Cooperators:	Other City of Lino Lakes Staff
Time Frame:	Ongoing
Estimated Cost:	\$1,500
How:	At the time of building or demolition permit, keep a tracking record of new or removed ISTS. Periodically review and revise database.

E. STORMWATER MANAGEMENT

Objective E1: Educate the public on proper stormwater management, turf management, proper lawn care practices and water conservation

Action E1: Conduct a public education campaign using existing communication devices on the importance of turf management and proper lawn care

Who:	City of Lino Lakes Administration
Cooperators:	MDH, RCWD
Time Frame:	On-going
Estimated Cost:	\$500
How:	In conjunction with the SWPPP and MS4 reporting requirements, include articles on the website, in city newsletters on the importance of lawn care and water conservation.

Objective E2: Cooperate with other agencies and programs to manage stormwater quality.

Action E2: Set up an annual interagency meeting to discuss stormwater management issues and implementation of the Surface Water Management Plan

Who:	City of Lino Lakes Staff
Cooperators:	Rice Creek Watershed District, Minnesota Pollution Control Agency
Time Frame:	On-going
Estimated Cost:	unknown
How:	When applicable and economical, the City work to assist government agencies to promote proper management of stormwater quality within the City.

F. HAZARDOUS WASTE MANAGEMENT

Objective F1: Educate the public on the proper disposal of hazardous waste items.

Action F1: Provide event information on the household hazardous waste collection day with Anoka County near Lino Lakes.

Who:	City of Lino Lakes Staff
Cooperators:	Other City of Lino Lakes Staff and Anoka County
Time Frame:	On-going
Estimated Cost:	\$500
How:	Include information on the City's website, in the City's newsletter, distribute direct mailers, or include water billing inserts to encourage residents within the DWSMA, and throughout the City, to participate in the County's household hazardous waste collection day.

Objective F2: Educate hazardous waste generators about hazardous waste management.

Action F2: Offer information on “Hazard Waste Training Seminar” for all hazardous waste generators covering all the information that the average generator needs to stay in compliance with the rules.

Who:	City of Lino Lakes Staff
Cooperators:	MDH, Anoka County, Hugo, Centerville, Circle Pines, Blaine
Time Frame:	2 years
Estimated Cost:	\$1,500
How:	Include information on the City’s website or in the City’s newsletter to encourage residents and business owners within the DWSMA, and throughout the City, to participate in Hazardous Waste Training Seminars sponsored by the County or other agencies.

G. DATA COLLECTION

Objective G1: Continue to collect and maintain local geologic and hydrogeologic data in order to improve and augment current information and to provide additional data for future revisions to this Plan.

Action G1.1: Monitor static and pumping levels in municipal wells.

Who:	City of Lino Lakes Staff
Cooperators:	Consultant
Time Frame:	On-going
Estimated Cost:	Staff time
How:	Conduct routine collection of groundwater levels in the municipal wells, which will provide data for the evaluation of groundwater elevation trends over time. A decreasing trend in static water levels in the municipal wells may be cause for the City to pursue more restricted water use measures and /or more effective methods to control public water supply use.

Action G1.2: Cooperate and support future data collection efforts by other agencies.

Who:	City of Lino Lakes Staff
Cooperators:	MPCA, DNR, MDH, USGS, RCWD
Time Frame:	On-going
Estimated Cost:	1,500 staff time
How:	Provide assistance to agencies as requested when reasonable and economical.

Objective G2: Evaluate the water quality monitoring strategy and results to ensure that they are consistent with federal and state requirements yet also take into account local conditions.

Action G2: Maintain water quality sampling requirements mandated by MDH and analyze trends in water chemistry, looking for any possible degradation of quality or changes in aquifer hydraulics.

Who:	City of Lino Lakes Staff
Cooperators:	Consultant
Time Frame:	Ongoing
Estimated Cost:	No additional cost
How:	Identify changes to trends in water chemistry by evaluating records of analysis results. This includes sharing data with the MDH and the option to sample for radiological testing.

Objective G3: Maintain up to date information about wells and potential contaminant sources within the DWSMA.

Action G3: In cooperation with existing state or local agencies and programs, create and maintain a database of wells, ISTS, storage tanks, and shallow disposal wells within the DWSMA.

Who:	City of Lino Lakes Staff
Cooperators:	Property owners, MDH
Time Frame:	On going
Estimated Cost:	\$1,500
How:	An inventory of wells and potential contaminant sources was performed as part of the development of this Plan. Database will be reviewed periodically and updated as information becomes available.

Objective G4: If new high capacity wells are completed and begin to pump into the water supply system, conduct a study to determine impact that the newly implemented high capacity wells have on DWSMA boundary.

Action G4: In cooperation with existing state or local agencies and programs, maintain database of newly implemented wells within DWSMA that was developed as a part of this WHP Plan and assess their impact on the DWSMA location and vulnerability.

Who:	City of Lino Lakes Staff
Cooperators:	MDH
Time Frame:	TBD
Estimated Cost:	Varies
How:	If the City receives a notice, or when the quality and quantity of water to be pumped from proposed Well No. 6 is known, the City will work with MnDNR and MDH to determined implications for the DWSMA or the vulnerability of the aquifer. If the changes result in a required amendment to this Plan, the City will seek grant funding for assistance.

H. WATER CONSERVATION**Objective H1: Implement a community-wide water conservation program.****Action H1.1:** Implement conservation measures included in the Water Supply Plan as part of the 2030 Comprehensive Plan.

Who:	City of Lino Lakes Staff
Cooperators:	MDH
Time Frame:	3 years
Estimated Cost:	\$2,500
How:	Educate the public to encourage users to voluntarily incorporate water saving habits and tools into their lifestyles, improve the exiting water system's operation and maintenance procedure s and incorporate costs associated with water conservation programs, adjusting water rate structure, and ensure that all customers are paying for the water they use through audits and meter replacement of calibration.

Action H1.2: Implement a water pricing model that encourages water conservation.

Who:	City of Lino Lakes Staff
Cooperators:	MDH
Time Frame:	3 years
Estimated Cost:	\$2,500
How:	Work with the City Council to structure water pricing to encourage limited watering, especially during peak times.

I. LAND USE PLANNING AND ZONING**Objective I1: Eliminate or reduce the potential pollution risks to the source water aquifer and minimize the risk of altering the WHPA and DWSMA.****Action I1.1:** Include a review of this Plan as part of the normal zoning and planning review process.

Who:	City of Lino Lakes Planning Staff
Cooperators:	City of Lino Lakes Building Staff
Time Frame:	On-going
Estimated Cost:	Staff time
How:	Copies of this Plan will be distributed to City staff and they will review this Plan and incorporate it as part of their project planning review process.

Action I1.2: Participate with other jurisdictions within the DWSMA to identify land use changes outside the City limits.

Who:	City of Lino Lakes Planning Staff
Cooperators:	City of Lino Lakes Building Staff
Time Frame:	On-going
Estimated Cost:	\$500 staff time
How:	Copies of this Plan will be distributed to other jurisdictions within the DWSMA.

Action I1.3: Consider establishment of a WHP overlay district to ensure the development of compatible land uses within the high and very high vulnerable areas of the DWSMA.

Who:	City of Lino Lakes Planning Staff
Cooperators:	City of Lino Lakes Building Staff
Time Frame:	On-going
Estimated Cost:	\$10,000 if fully implemented; \$2,000 to consider implementation
How:	Copies of this Plan will be distributed to city staff and they will review this Plan and incorporate it as part of their project planning review process.

J. IMPLEMENTATION

Objective J1: Track and report WHP activities to aid in implementing WHP objectives.

Action J1: Complete and submit an annual report on completed WHP activities.

Who:	City of Lino Lakes Staff
Cooperators:	Consultant
Time Frame:	Annually
Estimated Cost:	\$500
How:	Update WHP records of completed implementation activities.

L. EVALUATION

Objective K1: Evaluate Plan

Action K1: Complete an evaluation report every 2.5 years.

Who:	City of Lino Lakes Staff
Cooperators:	Consultant
Time Frame:	Every two and one-half years
Estimated Cost:	\$2,000
How:	Prepare a written report using the MDH WHP Program Evaluation form or a format selected by the City. Provide report to the Utility Commission, City Council and MDH Source Water Protection Unit.

CHAPTER SIX – EVALUATION PROGRAM (4720.5270)

The success of the WHP Plan must be evaluated in order to determine whether or not the Plan is accomplishing what the City of Lino Lakes intended to do. Monitoring and evaluation of the WHP Plan and associated activities will be conducted every two and one-half years that the Plan is in effect. The evaluation activities will include the following items:

- Track the implementation of the goals, objectives, activities, and tasks discussed in Chapter Five of this Plan;
- Determine the effectiveness of specific management strategies regarding the protection of Lino Lakes' municipal water supply;
- Identify possible changes to these strategies which may improve their effectiveness; and
- Determine the adequacy of financial resources and staff availability to carry out the management strategies planned for the each year.

The City will continue to coordinate with the MDH in the annual monitoring of the City's municipal water supply to determine if the management strategies presented in this Plan are having a positive impact on water quality and to identify what water quality problems may still be occurring and how they need to be addressed.

At the end of each evaluation period (every two and one-half years) the City will make a written report regarding progress in implementing the WHP Plan, as well as an evaluation of the costs and benefits of the Plan activities. This report may be completed using the MDH WHP Program Evaluation form. A copy of the report will also be sent to the MDH Source Water Protection Unit in St. Paul. The City will keep a copy of the report in its records. The intent of the annual reports is to compile a complete and comprehensive study of the implementation of the source management strategies for use when the City updates or revises this Plan. As required by the WHP Rules, this Plan will be updated every 10 years at a minimum.

**ENVIRONMENTAL BOARD
AGENDA ITEM 6A**

STAFF ORIGINATOR: Marty Asleson, Environmental Coordinator

MEETING DATE: March 30, 2016

TOPIC: Earth Day Activities

BACKGROUND

The annual Earth Day event is scheduled for April 22nd. Each year the Environmental Board has an information table at the Wargo Nature Center on Earth Day. This discussion item is intended to list information needed and interactive activity that will be used on Earth Day. The seed balls were a good idea in the past for an activity. There may be other suggestions from the board. Come with your ideas.

ENVIRONMENTAL DIRECTION

Staff would like to know what the Environmental Board would need at Earth Day.

ATTACHMENTS

None.

**ENVIRONMENTAL BOARD
AGENDA ITEM 6B**

STAFF ORIGINATOR: Marty Asleson, Environmental Coordinator

MEETING DATE: March 30, 2016

TOPIC: Site Visit Recommendations

BACKGROUND

The Environmental Board has adopted, as part of their goals, site visit reviews for projects that were previously reviewed by the Board and implemented. The following is a list of potential sites to visit before the scheduled Environmental Board meetings this year:

1. Shell Station Lake Drive and Main
2. Bill's Superette
3. Foxborough (not done)
4. Saddle Club (not done)
5. North Point (not done)
6. Dairy Queen on Main Street
7. Wollan's Park Wetland Bank (not done)
8. Park and Ride on 35E

ENVIRONMENTAL DIRECTION

Staff is requesting the board's preference for sites to review.

ATTACHMENTS

None.

ENVIRONMENTAL BOARD AGENDA ITEM 6C

STAFF ORIGINATOR: Aubrey Fonfara, Recycling Assistant

MEETING DATE: March 30, 2016

TOPIC: Organics Recycling

BACKGROUND

With support and encouragement from the Environmental Board, Anoka County, and area residents, staff has been working for several months to develop an Organics Recycling neighborhood drop-off program.

A survey was published online and in the Winter 2015 and Spring 2016 City newsletters, asking residents if they would be interested in an organics recycling drop-off program and where they would like to see a drop-off point. We received 25 survey responses. Attached is the map of organics recycling survey results, depicting the locations of suggested organics recycling drop-off points.

Residents who indicated on the survey that they were interested in helping implement the organics recycling program were invited to a public input meeting on March 23, 2016. The discussion yielded the following results:

- Residents would like to see two neighborhood drop-off sites – one in the south, and one in the west of the City.
- Residents would *not* take their organics recycling to the Anoka County Rice Creek Chain of Lakes Compost site on a weekly basis, indicating a need for other neighborhood opportunities.
- 24/7 access to the drop-off sites are extremely important to residents.
- Marshan Park would be the most convenient location in the west because of its close proximity to Lake Drive.
- City-wide mailers, school presentations, and free starter kits would help persuade residents to sign-up for the program.

As a result of the survey and the public input meeting, staff recommends placing organics recycling drop-offs at Birch Park (located at 6520 Pheasant Run) and Marshan Park (located at 7204 Lake Drive).

Two 96-gallon carts will be placed at each of these sites with signage identifying them as an organics recycling drop-off site. The carts will be secured with a coded lock. Beginning May 2, 2016, the carts will be open during limited hours and monitored to ensure correct usage and quality of material brought by residents. This soft launch will help staff educate participants and collect data about usage. On June 6, all residents who sign up for the program will receive an email with the code to unlock the carts on a 24/7 basis.

The organics material will be collected weekly by Ace Solid Waste, the only licensed hauler in Lino Lakes which collects organics recycling from carts.

Staff has created a page on the City website where residents can read more information about the organics recycling drop-off program and sign-up to use the sites (see attached). Signing-up requires providing an email address so that participants can be notified of any changes or problems with the program.

All residents who sign up to use the organics recycling drop-off sites will receive a complimentary kitchen pail and one free roll of BPI Certified Compostable bags. Natur-Tec[®] has generously agreed to donate bags and a limited supply of kitchen pails to this program. This will incentivize organics recycling and help educate residents on using correct bags. The BPI Certification indicates that the bag has been tested to break-down under industrial composting conditions and is not simply labeled “compostable” for marketing purposes.

City staff is currently in the process of working with Anoka County and the Minnesota Pollution Control Agency to register these locations as Source Separated Organic Material Collection Sites, as is required by the MPCA.

Our annual Recycling Flyer will be mailed to all Lino Lakes residents at the beginning of April with information about signing-up for the organics recycling program. Staff will be contacting Homeowners Associations and other active groups to ask for help promoting the drop-off sites. City staff will also be tabling at the Earth Day Celebration on April 23 and the Spring Recycling Day on May 7 to allow residents to sign-up at those events.

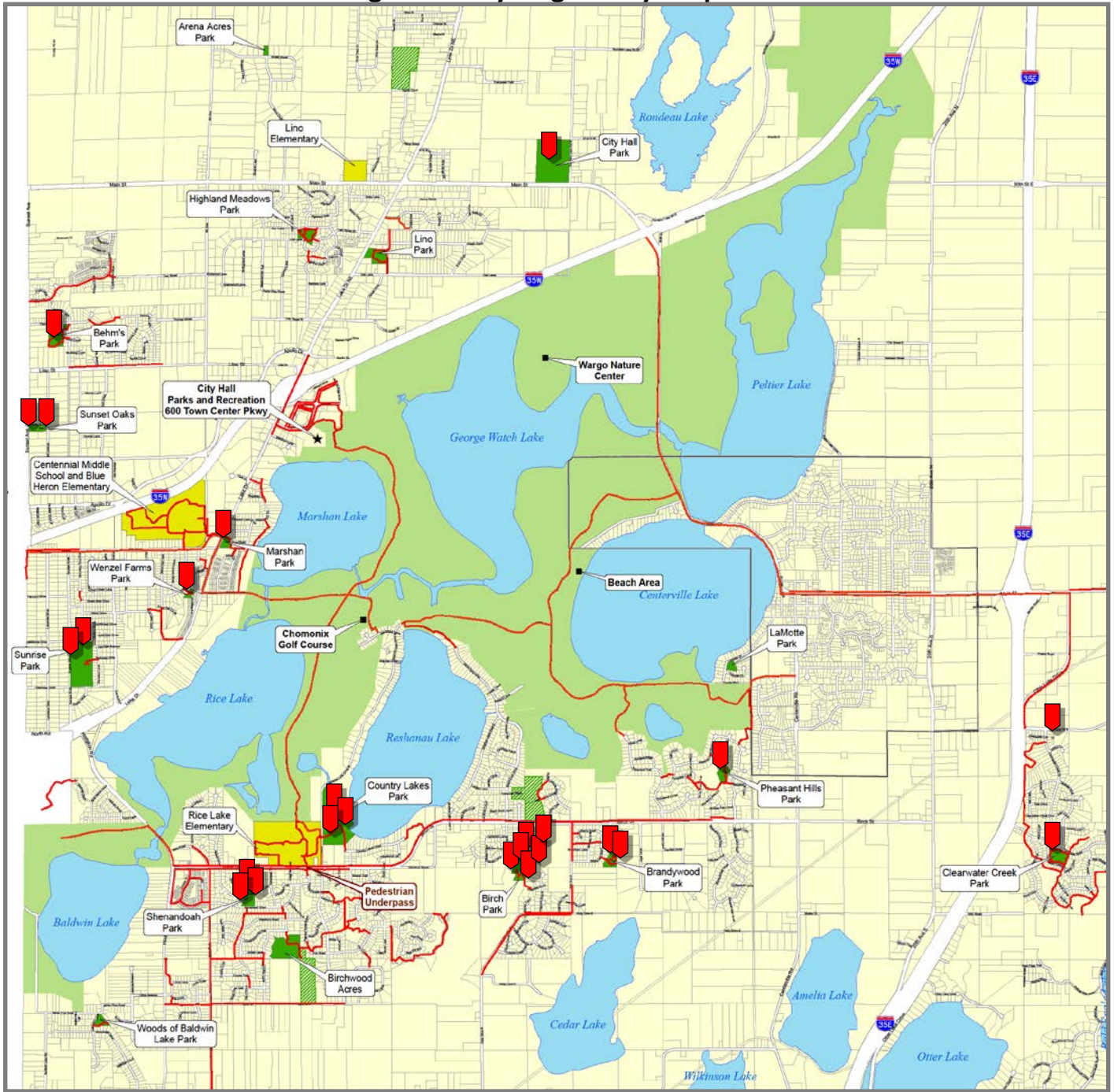
ENVIRONMENTAL DIRECTION

Staff is requesting Environmental Board input on the Organics Recycling Drop-Off program.

ATTACHMENTS

1. Map of Organics Recycling Survey Results
2. Draft of the Organics Recycling Brochure

Organics Recycling Survey Responses



	Birch Park	Brandywood Park	Country Lakes Park	Clearwater Creek Park	Clearwater Utility Building	Marshan Park	Shenandoah Park	Sunrise Park
Parking Lot	✓		✓		✓	✓		✓
Active neighborhood group(s)?	✓			✓	✓			
Located on a main street	✓ Birch St.	✓ Birch St.	✓ Birch St.			✓ Lake Dr.	✓ Birch St.	✓ Lake Dr.
High traffic/construction	✓		✓	✓		✓		✓

Discussion Questions

1. What is important to you for an Organics Recycling drop-off program? What barriers would prevent you from participating?
2. Is Organics Recycling something your neighborhood would be receptive to trying?
 - a. What barriers would prevent them from participating?
 - b. What information would they need to sign-up?
 - c. What would be the best way to reach them with this information? (I.e. door-to-door knocking, flyers, community meeting, emails, phone calls, etc.)
3. The pilot program would start at one park location, with possible expansion to other sites. How far would you be willing to walk/drive to drop-off your organics for recycling?
4. Are you involved in any community groups (Homeowners Associations, church groups, Lions Club, etc.)? If so, are there any upcoming opportunities to provide outreach about the Organics Program at meetings or events?
5. Anoka County will be operating a second Organics Recycling drop-off location at Rice Creek Chain of Lakes Compost Site (near Wargo Nature Center). Will this be a convenient option for you and your family?
6. What volunteer activities are you interested in participating in?
 - a. Knocking on doors, distributing flyers, or attending events with sign-up information?
 - b. Monitoring organics bins during drop-off hours for the first month?
 - c. Interviewing for news articles, social media, PSA video?

How Does it Work?

Collect food scraps and household organic matter in a convenient container.



When your pail is full, bag your organics securely in a BPI Certified compostable plastic bag OR brown paper bag. Make sure the bag is tied or secured tightly with string.



Starting May 2, 2016, drop off your organics on Tuesdays and Thursdays from 4:00-7:00 pm at these locations:



Birch Park | 6520 Pheasant Run
Marshan Park | 7204 Lake Drive

Drop-offs will be monitored for the first month to ensure quality of material. In June, all participants will receive an email with the code to unlock the carts at **any time**.

Sign-Up Today!

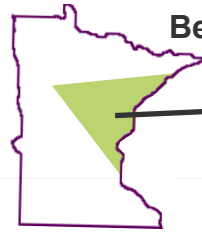
Go to:
www.ci.lino-lakes.mn.us/organics

Residents who sign-up receive a complimentary kitchen pail and one free roll of compostable bags!

WHY RECYCLE ORGANICS?

REDUCE WASTE

More items are accepted for organics recycling than can go in your backyard compost bin, increasing your ability to return soil to the earth naturally.



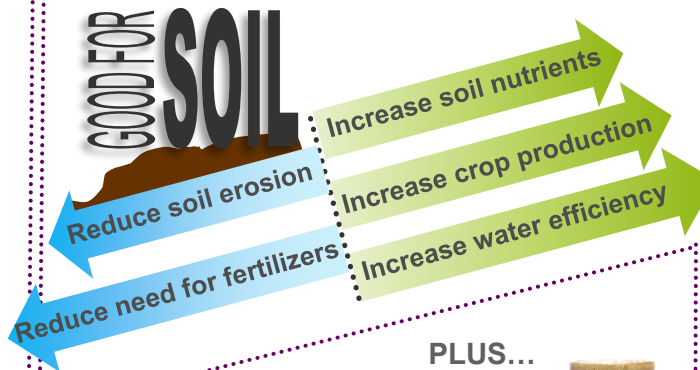
Because according to the MPCA,
30%
of our waste in MN is organics!

BOOST THE ECONOMY



Composting is worth
\$148,000,000
to Minnesota's economy

GOOD FOR SOIL



PLUS...

The more you recycle,
the more money you'll save
on your garbage bill!



Lino Lakes Organics Recycling Drop-off Spring 2016



What Goes in Your Organics Recycling?

Organics recycling is the collection of household **organics matter** for composting. There are even more items that can be put in organics recycling than in your backyard compost bin!

— Food Scraps: —

- Fruits & vegetables
- Meat, fish & bones
- Baked goods
- Eggs & Eggshells
- Dairy Products



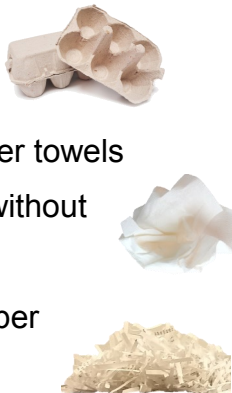
— Other: —

- Coffee grounds & filters
- Paper tea bags
- Hair & fur
- BPI Certified compostable plates, cups, containers and bags
- Untreated wooden chopsticks, popsicle sticks, & toothpicks
- Houseplant trimmings



— Non-Recyclable Papers: —

- Delivery pizza boxes
- Paper egg cartons
- Tissues, napkins & paper towels
- Paper plates & bowls (without plastic lining)
- Parchment and wax paper
- Shredded paper



**NO
Cartons**



**NO regular
plastic bags**



**NO plastic-
lined paper**

NOT ACCEPTED:

- Yard waste (leaves, grass, brush)
- Milk cartons & juice boxes

- Pet Waste
- Animal litter & bedding
- Dryer lint
- Expanded polystyrene (i.e. Styrofoam™)

- Plastic lined paper products
- Diapers and wet wipes
- Feminine hygiene products
- Non-certified compostable plastics

Be sure your bags are BPI Certified!

All organics material for recycling **MUST** be bagged securely in a brown paper bag or BPI Certified compostable bag.

Look for this symbol to be sure your bags are compostable:



BPI®

COMPOSTABLE
IN INDUSTRIAL FACILITIES

Check locally, as these do not exist in many communities. **Not suitable for backyard composting.** CERT # SAMPLE

Many products are advertised as biodegradable but will not break-down at a compost site. This certification tells us that the bags are tested and known to degrade completely under industrial composting conditions.

Sign-Up Today!

Go to:

www.ci.lino-lakes.mn.us/organics

Residents who sign-up receive a complimentary kitchen pail and one free roll of compostable bags!

**ENVIRONMENTAL BOARD
AGENDA ITEM 6D**

STAFF ORIGINATOR: Aubrey Fonfara, Recycling Assistant

MEETING DATE: March 30, 2016

TOPIC: Recycling Updates

BACKGROUND

The Anoka County 2016 Agreement for Residential Recycling Program was presented to City Council and approved on March 14, 2016.

The 2016 Environmental Board Goals were presented to the City Council and approved on March 14, 2016.

Recycling Saturday was March 19 at Lino Park. In addition to the regular bulky items, paper shredding and hard drive destruction were available to residents. First Choice Document Destruction reported this to be the most successful paper shredding event in Lino Lakes so far, with approximately 1200 pounds of paper shredded. Our next Recycling Saturday will be April 16, 2016.

ENVIRONMENTAL DIRECTION

None required. Information only.

ATTACHMENTS

None.