



LOWER MINNESOTA RIVER WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting

Wednesday, September 16, 2020

Agenda Item

Item 5. D. - Cost Share Application - S. Mueller, 10745 Lyndale Bluffs Trail

Prepared By

Linda Loomis, Administrator

Summary

The LMRWD received an application for a Cost Share project at 10745 Lyndale Bluffs Trail in Bloomington. The project the resident is requesting funding for will remove invasive species from an area of steep slope and replace with native species. The homeowners has investigated several options for removing the invasive species, including using goats. They have opted to use a contractor that will come in and hand pull invasive species and hand cut and treat buckthorn.

The plans have been forwarded to Young Environmental Consulting Group for review because the project is in the District's Steep Slope Overlay Zone.

This is the fourth application the District has received this year. The applicant is asking for \$2,419. The table below shows the application received in 2020 and the approved amounts. The Larson application is the only one that has been completed and reimbursed so far this year. The work has been completed on the Sullivan application and I have visited the project. The project can be reimbursed once the District has a final report, including receipts.

Applicant name	Project address	Type of project	Amount requested	Amount approved	Amount reimbursed
Braun	10312 Portland Avenue S., Bloomington	Rainwater collection system	\$2,418.00	\$2,418.00	
Sullivan	4419 West Old Shakopee Rd., Bloomington	Raingarden	\$1,240.50	\$1,240.50	
Larson	1033 Sunny Ridge Drive, Carver	Raingarden	\$2,500.00	\$2,500.00	\$2,500.00
Mueller	10745 Lyndale Bluffs Trail, Bloomington	Invasive Species removal	\$2,419.00		
Total			\$8,577.50		

The 2020 LMRWD Budget included \$20,000 for the Cost Share Program. Ms. Mueller has spoken to her neighbors about addressing additional slopes adjacent to her property. She did try to get her neighbors to try to apply for a townhome project, but the neighbors were not as prepared to submit applications at this time.

Attachments

Cost Share Application for 10745 Lyndale Bluffs Trail, Bloomington

Recommended Action

Motion to approve funding of Cost Share Application for 10745 Lyndale Bluffs Trail

September 1, 2020

Linda Loomis, Administrator
Lower Minnesota River Watershed District
112 E. Fifth St., Suite 102
Chaska, MN 55318

Dear Linda,

We are pleased to apply for a Lower Minnesota River Watershed District 2020 Cost Share grant. The application is for a residential Slope Remediation project (Phase I), which would start in September 2020 and extend through May 2021, if possible.

Given the lateness of the year we hope to hear a determination as soon as possible. We have included the Slope Restoration plan (Phase II) for the complete picture. We plan to apply for the Cost Share 2021 grant for Phase II.

Please let us know if you have questions or need additional information.

Thank you for your consideration.

Sandy and Nathan Mueller

Sandy and Nathan Mueller
10745 Lyndale Bluffs Trail
Bloomington, MN 55420
651-303-2626; 612-616-4655
skmueller@comcast.net;
nmueller@comcast.net

Enclosures:

- A: Grant Application
- B: Project Narrative
- C: Location Maps
- D: Ownership Record
- E: Contractor Bid Phase I
- F: Contractor Bid Phase II



Application type (check one) Homeowner Non-profit - 501(c)(3) School
 Business or corporation Public agency or local government unit

Project type (check all that apply) Raingarden Vegetated Swale Infiltration Basin
 Wetland restoration Lake/creek/wetland buffer Conservation practice
 Shoreline/bank stabilization Pervious hard surface
 Other Environmentally sensitive bluff and steep slope restoration

Applicant Information

Name of Organization or Individual Applying for Grant (to be named as Grantee):

Sandy and Nathan Mueller

Address (street, city and ZIP code):

10745 Lyndale Bluffs Trl, Bloomington, MN 55420

Phone: 651-303-2626; 612-616-4655 Email address: skmueller@comcast.net;

nmueller@comcast.net

Primary Contact (if different from above)

Name of Organization or Individual Applying for Grant (to be named as Grantee):

Address (street, city and ZIP code):

Phone: _____ Email address: _____

Project location

Address (street, city and ZIP code):

10745 Lyndale Bluffs Trl, Bloomington, MN 55420

Property Identification Number (PID)

22-027-24 33 0004

Property Owners:

Sandy and Nathan Mueller

Project Summary

Title Slope Remediation and Restoration

Total Project Cost \$4839 Phase I Remediation Grant amount requested \$2419

Estimated start date September 2020 (ASAP) Estimated completion date May 31, 2021

Is project tributary to a water body? No, water remains on site Yes, indirectly Yes, directly adjacent

Project description:

We wish to remediate and restore our back property slope, which extends 200 feet down the Minnesota River Bluffs. We ask the Lower Minnesota River Watershed District (LMRWD) to co-sponsor our efforts to remove noxious, invasive vegetation and shrubs (such as Buckthorn) planned for Phase I of our project. We wish to begin as soon as possible. Phase II Restoration plans are included for reference.

Is this work required as part of a permit? No Yes

(If yes; describe how the project provides water quality treatment beyond permit requirement on a separate page.)

Project Details

Checklist To be considered complete the following must be included with the application.

App C: location map

App E: project timeline

App B: site plan & design schematic

App D: proof of property ownership

App E: itemized budget or contractor bid

App F: Phase II plant list & planting plan (reference)

Description

Describe the current site conditions, as well as site history, and past management

Our home is situated in The Bluffs on Sans Pierre townhome development, along the Bluffs of the Minnesota River. A corporation owned our site and sold to our developer. To our knowledge, neither party took initiative to preserve/maintain the bluffs slope (s). We purchased in 2015, inheriting a back slope filled with buckthorn and invasive plants that encroached on our lawn. We removed larger buckthorn and installed rip rap where the top of the slope was eroding. Our slope does not have a dense canopy so invasive plantings (such as garlic mustard) grew in where the buckthorn was cut down and are now rapidly multiplying.

What are the project objectives and expected outcomes? Give any additional project details.

Phase I objectives are to:

- 1) Reduce noxious/invasive vegetation that crowds out native plants and tree growth.
- 2) Use brush and existing logs to make "wind rows" to help reduce erosion and provide habitat.
- 3) Protect our home and lawn from erosion impact.
- 4) Reduce further erosion and potential habitat loss and water pollution down slope.

List other key participants and their roles (provide contact information for each partner and his/her expected contribution to the project)

None at this time. We are open to suggestions if there are others who should be involved in some way.

Which cost share goals does the project support? (check all that apply)

improve watershed resources

Foster water resource stewardship

increase awareness of the vulnerability of watershed resources

increase familiarity with and acceptance of solutions to improve waters

How does the project support the goals you checked?

We have learned so much about invasive vegetation, animal habitat support, protecting our woodlands, and water drainage and possible pollution. We have already increased awareness with our neighbors, have investigated solutions including the use of goats, and our efforts will be an example to foster water resource stewardship.

Project Details (continued)

Benefits Estimate the project benefits in terms of restoration and/or **annual** pollution reduction. If you are working with a designer or contractor, they can provide these numbers. If you need help contact the district Administrator.

Benefit	Amount
Water captures	gal/year
Water infiltrated	gal/year
Phosphorus removed	lbs/year
Sediment removed	lbs/year
Land restored	10,000 sq. ft. Bluffs Steep Slope sq. ft.

How will you share the project results with your community?

- 1) We will share results within our townhome community, especially the 16 Villa townhomes along the Bluffs (word of mouth, visits to our lot, a pictorial journal, and lists and photos of noxious weeds).
- 2) We can provide summaries and photos for the City of Bloomington, LMRWD or other agencies.

Are there other projects that could be initiated as a result of this one?

Yes, certainly. We would like to submit the Phase II Resoration part of our project for funding in 2021. And, as mentioned, there are 16 other Bluffs on Sans Pierre Villa units that sit on the Bluffs. Homeowners welcome grant assistance for conservation and restoration.

Evaluation

How will the project be monitored and evaluated?

- 1) The contractor will direct staff and monitor progress.
- 2) As homeowners, any issues or problems will be communicated for feedback and resolve.
- 3) LMRWD representatives or other experts are welcome to visit along the way and at the conclusion.

Maintenance agreement

I acknowledge that receipt of a grant is contingent upon agreeing to maintain the project for the number of years outlined in the cost share guidelines. Yes we understand 5 years with minimal costs.

Authorization

Name of landowner or responsible party Sandy and Nathan Mueller

Signature  Date 09/01/20

Type or handwrite your answers on this form. Attached additional pages as needed

(For questions, contact Linda Loomis at [Naiad Consulting@gmail.com](mailto:NaiadConsulting@gmail.com) or call 763-545-4659.)

Mail the completed application to:

or Email to:

Lower Minnesota River Watershed District
c/o Linda Loomis, Administrator
112 E. Fifth St., Suite 102
Chaska, MN 55318

Linda Loomis, Administrator
naiadconsulting@gmail.com

APPENDIX B: PROJECT NARRATIVE**“Slope Remediation and Restoration”****THE NEED**

We wish to remediate and restore our property back slope, which extends 200 feet down the Minnesota River Bluffs. We ask the Lower Minnesota River Watershed District (LMRWD) to co-sponsor our efforts to remove noxious, invasive vegetation and shrubs (such as buckthorn) in Phase I of our initiative. Phase II Restoration plans are included for reference.

PHASE I OBJECTIVES (September 2020 – May 2021)

- 1) Reduce noxious/invasive vegetation that crowds out native plants and tree growth.
- 2) Use brush and existing logs to make "wind rows" to help reduce erosion and provide habitat.
- 3) Protect our home and lawn proper from erosion impact.
- 4) Reduce further erosion and potential habitat loss and water pollution down slope.

**BACKGROUND**

Our home is situated in The Bluffs on Sans Pierre townhome development, along the Bluffs of the Minnesota River. A corporation previously owned our site and sold to our land developer. To our knowledge, neither party took initiative to preserve and maintain the bluffs slope (s).

We purchased in 2015, inheriting a back slope filled with buckthorn and invasive plants that encroached on our lawn. In 2017 we cut and treated larger buckthorn clumps and installed rip rap where the top of the slope was eroding (with necessary permissions). We found out just how expensive this can be.

Our slope does not have a dense canopy so invasive plantings (such as garlic mustard) grew in where the buckthorn was cut down. By now the noxious vegetation is rapidly multiplying and we wish to reduce the spread and prepare for woodland restoration.



LOCATION AND APPROACH

- 1) Our property is in the LMRWD. In early 2020 we participated in Bloomington community meetings around the Bluffs Standards, zoning changes and the LMRWD's Vegetation Management Plan. We plan to conduct our project using experts and in accordance with these standards and vegetation management recommendations.
- 2) Our 200' down the slope is a scenic easement and deed language reads that we should "refrain from cutting, destroying, or removing foliage, trees or vegetation of any kind whatsoever, except noxious or offensive weeds and dead, diseased, or damaged trees, as directed by the City Forester, or as approved by the City Council of the City of Bloomington. Subject to easements of record and reservations by the State of Minnesota of minerals or mineral rights."
- 3) We sought consultation on the approach to remediate noxious vegetation on our back slope and restore native species. We learned that this is a phased approach, and that vegetation management is an ongoing process. We wish to start immediately on removal and move toward restoration so that ongoing maintenance is not as expensive for us in the years to come.



CONTRACTOR SELECTION

Our contractor choice is:

Ed Mallam, Founder & Operator
Ed's Buckthorn Control
 14702 Excelsior Boulevard #1245
 Minnetonka, MN 55345
 Edsbuckthorncontrol.com
edsbuckthorncontrol@gmail.com;
 612-564-5771



Ed's Buckthorn Control specializes in buckthorn management and forest restoration services in the West Metro area of Minnesota. Their mission includes invasive weed removal, attention to responsibility and sustainability, and forest restoration. We gravitated to their message that: "Invasive plant control is an ongoing battle due to the "seed bank" in the soil teeming with deposits from mother plants each year. By using an "integrated pest management" method, we will create the plan for your woodlot that is the most successful and cost effective over time."

Ed's team has been working with the University of Minnesota on a seed experiment. They published a paper last year, showing that sufficient diversity and abundance of native plants can seriously challenge invasive plants coming from seed. Over the next few years, Ed's team will be studying this small-scale epic battle in action and put findings to use in the field.

As a Master Water Steward Volunteer, Ed is concerned about the management and conservation of water and soil along with the above-ground health and biodiversity. He and his team are constantly seeking ways to sustain pollinators on their worksites.

References: *(Contact information available upon request but is not for public distribution.)*

- 1) **Erica Sniegowski**, Program and Project Manager, Nine Mile Creek Watershed District, ninemilecreek.org *Ed and Erica have been in contact numerous times for Watershed District grants.*
- 2) **Heather Holm**, Holm Consulting. Local restoration expert and author: "Pollinators of Native Plants" & "Bees: An Identification and Native Plant Forage Guide." www.pollinatorsnativeplants.com/ *Ed's mentor for planting and species selection for native restoration in Minnetonka.*
- 3) **Janet Van Sloun**, Restoration Specialist for the City of Minnetonka. B.S. in Urban Forestry, University of Minnesota. *Ed's inspiration and mentor for invasive plant removal and passive restoration.*

PHASE II RESTORATION STEPS (Early to Late Fall 2021)

To complete our project, we will seek LMRWD Cost Share funding in 2021. The Phase II plan from Ed's Buckthorn Control is attached. The goals of Phase II are to:

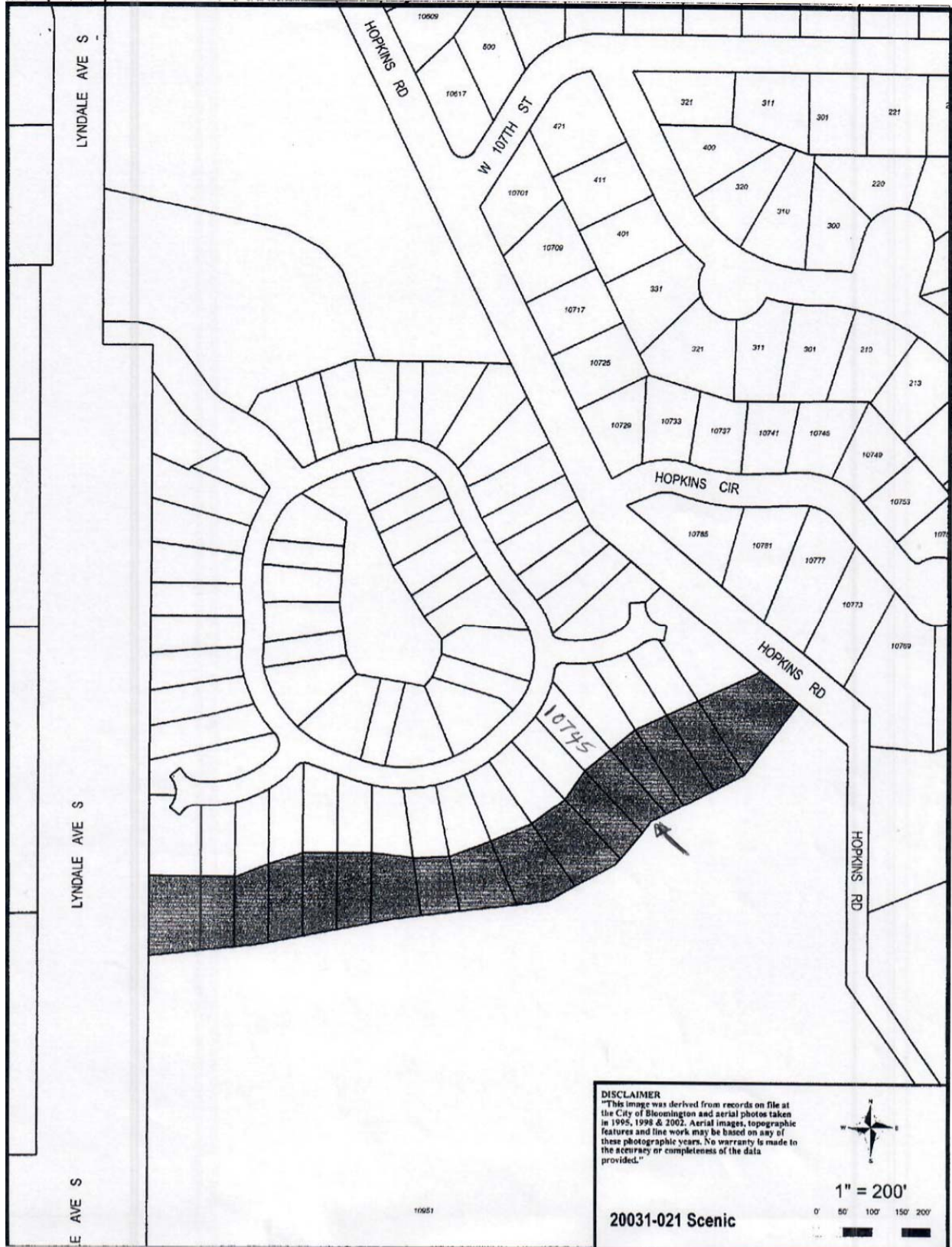
- 1) Prepare the site to maximize seed to soil contact and germination.
- 2) Apply woodland and native pollinator mix, with nettled straw seed blankets for protection.
- 3) Plant shrubs and trees and add wire fencing to deter rodents and deer.
- 4) Spot spray weeds to encourage new planting growth.



VEGETATION MAINTENANCE PHASE (FIVE YEARS 2022-2027)

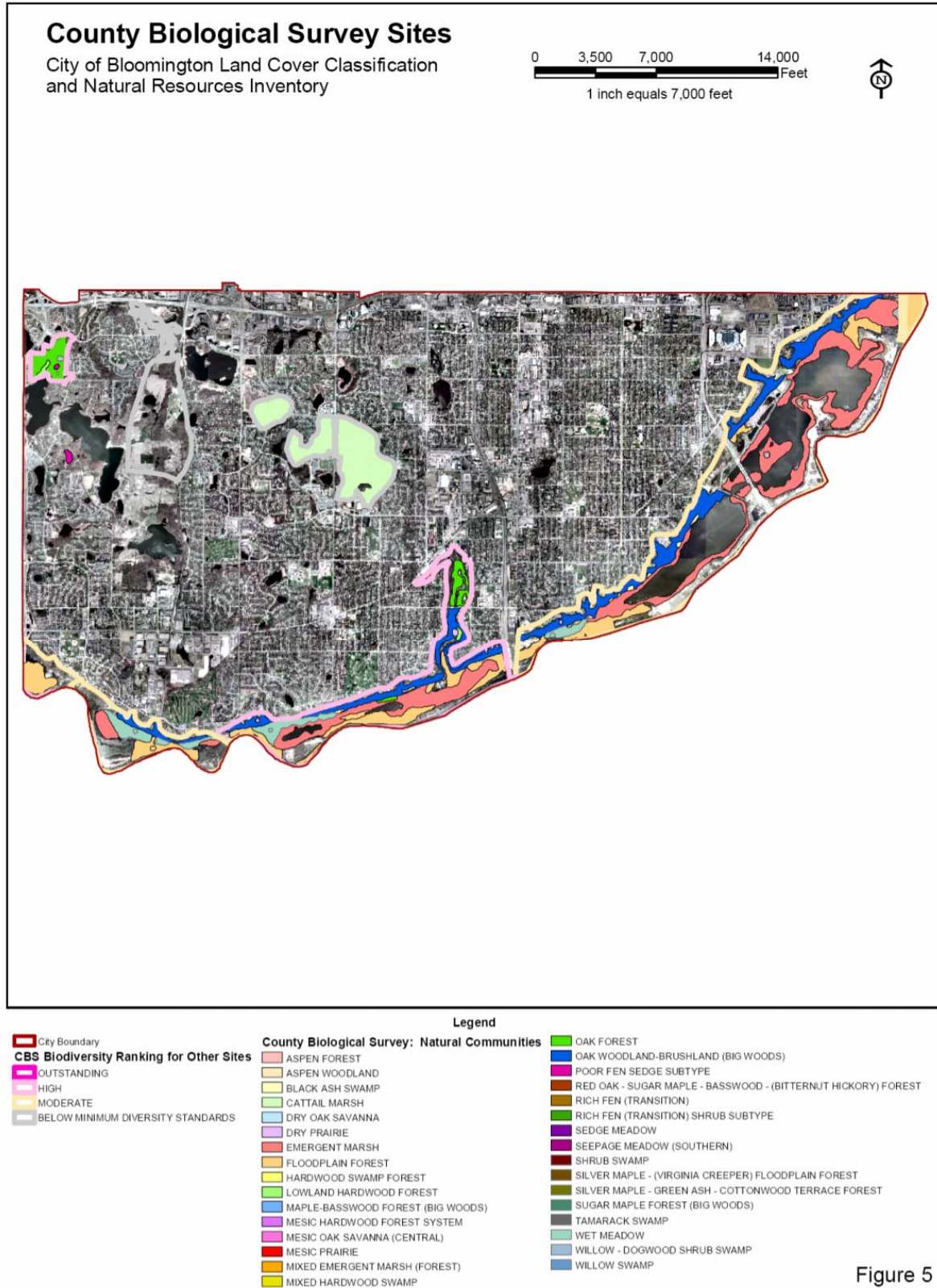
We will do our best to maintain the vegetation in the five-year period following the grant project (s). We expect that yearly vegetation management costs will be minimal and will get estimates later on.





MUELLER SEED MAP





APPENDIX D: RECORD OF OWNERSHIP



Hennepin County
 A-600 Government Center
 300 S. Sixth Street
 Minneapolis, MN 55487-0060
 612-348-3011 www.hennepin.us

Property ID number: 22-027-24 33 0004

Property taxes statement schedule

Property tax statement **2020**
 2019 values for taxes payable in 2020

Step 1	Value & classification	2019	2020
	TAX YEAR PAYABLE CLASS (ES):	2019 HOMESTEAD	2020 HOMESTEAD
	Estimated Market Value:	777,500	737,500
	Homestead Exclusion:		
	Other Exclusion/Deferral:		
	New Improvements/Expired Exclusions:	0	0
	Taxable Market Value:	777,500	737,500

TAXPAYER(S):
 NATHAN SCOTT MUELLER
 SANDRA KAY MUELLER
 10745 LYNDALDE BLUFFS TR
 BLOOMINGTON MN 55420-5652

Step 2	Proposed levies & taxes	2019	2020
	2020 Proposed:	10,310.15	

Owner: NATHAN S MUELLER/S K MUELLER

Property address:
 10745 LYNDALDE BLUFFS TR

Property description:
 LOT 019 BLK 001 ADDITION: THE BLUFFS ON SANS PIERRE

Step 3	Property tax statement	2019	2020
	First-half Taxes:	5,138.98	
	Second-half Taxes:	5,138.98	
	Total Taxes 2020:	10,277.96	

Property tax refund information	Taxes payable in year:	2019	2020
1. Use this amount on Form M1PR to see if you are eligible for a property tax refund. File by August 15. If this box is checked, you owe delinquent taxes and are not eligible.	<input type="checkbox"/> Taxes owed		10,277.96
2. Use these amounts on Form M1PR to see if you are eligible for a special refund.		11,116.56	

Don't forget to see if you qualify for a property tax refund! Go to www.revenue.state.mn.us for Form M1PR.

Property Tax and Credits

3. Property tax before credits	11,116.56	10,277.96
4. A. Agricultural and rural land credits	.00	.00
B. Other credits	.00	.00
5. Property taxes after credits	11,116.56	10,277.96
Property Tax by Jurisdiction		
6. A. County	3,545.20	3,273.97
B. Regional Rail Authority	153.03	110.60
7. City or Town	3,391.40	3,152.29
8. State General Tax	.00	.00
9. School District:		
A. Voter approved levies	1,936.51	1,875.92
B. Other Local Levies	1,344.61	1,153.52
10. Special Taxing Districts:		
A. Metropolitan Special Taxing Districts	215.28	196.11
B. Other Special Taxing Districts	530.53	515.55
C. Tax Increment	.00	.00
D. Fiscal Disparity	.00	.00
11. Non-School Voter Approved Referenda Levies	.00	.00
12. Total property tax before fees and Special Assessments	11,116.56	10,277.96
13. A. Special Assessment Principal and Fees		
B. Special Assessment Interest		
14. YOUR TOTAL PROPERTY TAX AND SPECIAL ASSESSMENTS	11,116.56	10,277.96



Learn about property taxes: www.hennepin.us/propertytaxes





14702 Excelsior Boulevard | #1245 | Minnetonka, Minnesota 55345
6125645771 | edsbuckthorncontrol@gmail.com | edsbuckthorncontrol.com

APPENDIX E: PHASE I - REMEDIATION

August 28, 2020

Sandy and Nathan,

Thank you for inviting me to your wonderful woods! We would be delighted to help you restore the natural beauty and resilience to your threatened forest.

Keep in mind, we can postpone planting and seeding to fit your budget and the grant cycle. We can change the quantity of planting and seeding, if you wish.

Timing for planting and seeding can be scheduled, or can be on an "observe and adjust" basis, depending on what we see come up next spring after the buckthorn is gone. The more natural regeneration there is, the less intervention the ecosystem needs.

This is a prime example of Norway maple exhibiting invasive behavior. They are competing with (and even rubbing against) bur oaks. The maples have reached the canopy, and are a real threat to this special ecosystem. I have recommended we cut down the ones flagged with green ribbon, and girdle/treat the largest ones to die standing and become critter condos.

Stickseed and burdock will need to be managed before we start buckthorn removal. We will bag the seeds and dispose. We will cut and treat the buckthorn to ensure they do not grow back from the stump.

Rather than haul out all the brush, (we will responsibly dispose of the brush with berries), we will use it on site to stabilize the soil (prevent further erosion) by lining it up in "wind rows." Wind rows are continuous stripes of brush, usually about 3 feet tall at first, aligned along the slope, perpendicular to water flow. This makes water slow down, spread out, and infiltrate the soil, rather than running off and taking soil with it.

The brush will naturally decompose over time, and leaves will cover them up, and we will compact them during later visits. Typically, within a year or two, they are hardly noticeable.

Per the land inventory, (attached), and observation, we recommend planting chokecherry, raspberry, gooseberry, nannyberry, snowberry, American elm, and butternut. We may also recommend other native flowering shrubs that belong in this forest type, which were not on the 2007 inventory survey.

The steepest slopes will need more shrubs like native honeysuckles and elderberry. Shrubs and a canopy tree will be strategically placed, especially where there is a recent hole in the canopy.

After initial bulk removal of buckthorn, we have planned several return visits to manage new growth from seed, mainly buckthorn and garlic mustard. These visits are strategically timed to take advantage of the invasive plants' seasonal weaknesses, to maximize efficiency and efficacy.

We will pull down or cut grape vines that are climbing desirable trees. There is a deeply eroded ravine/trench. We will cut and strategically place some maple and other deadfall logs into the trench to help with erosion.

I flagged the property corners with dull orange ribbons. I may have marked the official corners, but my ribbons are unofficial.

Please share your thoughts and questions as they arise. Thank you!

Ed



14702 Excelsior Boulevard | #1245 | Minnetonka, Minnesota 55345
 6125645771 | edsbuckthorncontrol@gmail.com | edsbuckthorncontrol.com

RECIPIENT:

Sandy Mueller
 10745 Lyndale Bluffs Trail
 Minneapolis, Minnesota 55420

Quote #69	
Sent on	Aug 28, 2020
Total	\$4,838.63

PRODUCT / SERVICE	DESCRIPTION	QTY.	UNIT COST	TOTAL
Hand Pull Weeds	ASAP: Weed out the invasive species among the native wildflowers at the edge of the lawn/woods. pull stickseed and burdock across entire property. Bag up seeds and dispose.	1	\$350.00	\$350.00
Buckthorn Control - Wind Rows	ASAP: Cut buckthorn greater than 3 feet tall. Apply herbicide to stumps with wick daubers to prevent regrowth. Use all brush in "wind rows" to prevent further erosion, provide habitat, and decompose on site.	1	\$2,000.00	\$2,000.00
Brush Removal	ASAP: Haul away brush with berries for responsible disposal, usually either burned by the power plant for electricity or burned by a local greenhouse for heat!	1	\$200.00	\$200.00
General	ASAP: Cut down invasive Norway maple trees that are marked with green tape. limb them and cut to length, and use the logs to fight erosion. Girdle and apply herbicide to the larger ones, so they die standing, and become critter condos.	1	\$1,000.00	\$1,000.00
Buckthorn Maintenance - Foliar Herbicide Application	Late Fall 2020: Once native plants are dormant, apply herbicide to control smallest buckthorn, and garlic mustard, along with other noxious invasive plants that are still susceptible to herbicide this time of year. Backpack sprayer with wand for precise application. Wetland-approved herbicide included. Workers are experts at identifying our target species and licensed herbicide applicators.	1	\$350.00	\$350.00
Spot Spray Weeds	April 2021 (1 of 2) Spot spray for garlic mustard, motherwort, burdock, and other invasive/pesky weeds. Backpack sprayer with wand for precise application. Wetland-approved herbicide included. Workers are experts at identifying our target species and licensed herbicide applicators.	1	\$350.00	\$350.00
Spot Spray Weeds	May 2021 (2 of 2) Spot spray for garlic mustard, motherwort, burdock, and other invasive/pesky weeds. Backpack sprayer with wand for precise application. Wetland-approved herbicide included. Workers are experts at identifying our target species and licensed herbicide applicators.	1	\$250.00	\$250.00



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This quote is valid for the next 30 days, after which values may be subject to change.

Subtotal	\$4,500.00
Minnesota, 80004 District (0.5%)	\$22.50
Minnesota, Hennepin County (0.15%)	\$6.75
Minnesota State (6.875%)	\$309.38
Total	\$4,838.63

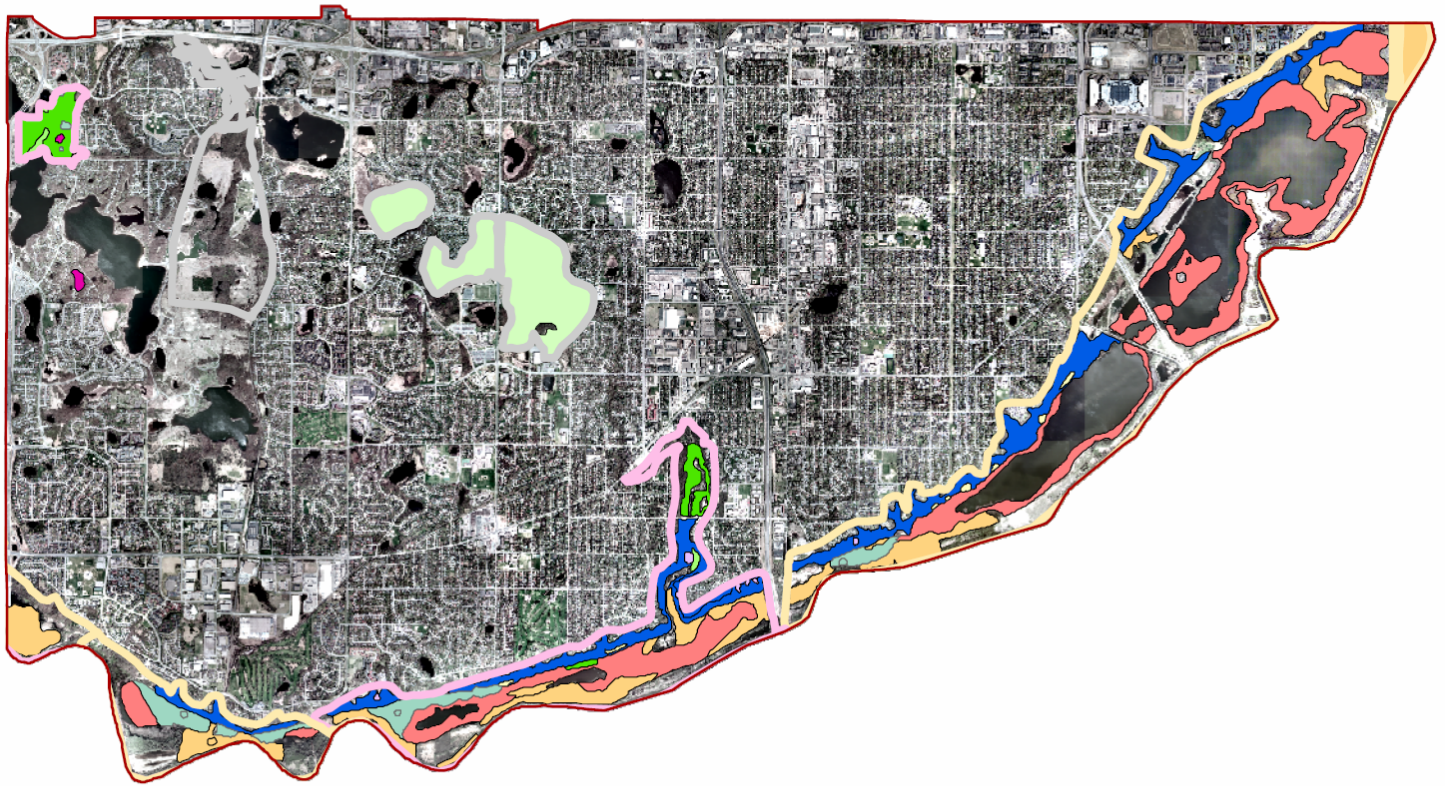
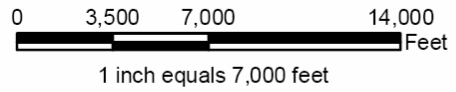
Natural Polygon ID	381	MLCCS Code	42120
Community Description	Oak woodland-brushland	Quality Ranking	DC
Field Check Level	3	Invasives	408-6
Surveyor	FH	Date	8/2/2006

Location	Scientific Name	Common Name
Canopy	<i>Quercus macrocarpa</i>	Bur oak
	<i>Quercus rubra</i>	Northern red oak
Subcanopy	<i>Celtis occidentalis</i>	Hackberry
	<i>Juglans cinerea</i>	Butternut
	<i>Juniperus virginiana</i> var. <i>virginiana</i>	Eastern red cedar
	<i>Ulmus americana</i>	American elm
Shrubs	<i>Rhamnus cathartica</i>	Common buckthorn
	<i>Rubus idaeus</i> var. <i>strigosus</i>	Red raspberry
	<i>Symphoricarpos</i> sp.	Snowberry
	<i>Viburnum lentago</i>	Nannyberry
	<i>Zanthoxylum americanum</i>	Prickly ash
Ground	<i>Aster cordifolius</i>	Heart-leaved aster
	<i>Carex pensylvanica</i> var. <i>pensylvanica</i>	Pennsylvania sedge
	<i>Eupatorium rugosum</i>	White snakeroot
	<i>Sanicula marilandica</i>	Maryland black snakeroot

Notes: Oak woodland dominated by Northern red oak and Bur oak within a matrix of Eastern red cedars and dense Common buckthorn.

County Biological Survey Sites

City of Bloomington Land Cover Classification and Natural Resources Inventory



Legend

- | | | | | | |
|--|---|--|-------------------------------------|-----------------------------------|------------------------------------|
| City Boundary | CBS Biodiversity Ranking for Other Sites | OUTSTANDING | HIGH | MODERATE | BELOW MINIMUM DIVERSITY STANDARDS |
| County Biological Survey: Natural Communities | | | | | |
| ASPEN FOREST | ASPEN WOODLAND | BLACK ASH SWAMP | CATTAIL MARSH | DRY OAK SAVANNA | DRY PRAIRIE |
| EMERGENT MARSH | FLOODPLAIN FOREST | HARDWOOD SWAMP FOREST | LOWLAND HARDWOOD FOREST | MAPLE-BASSWOOD FOREST (BIG WOODS) | MESIC HARDWOOD FOREST SYSTEM |
| MESIC OAK SAVANNA (CENTRAL) | MESIC PRAIRIE | MIXED EMERGENT MARSH (FOREST) | MIXED HARDWOOD SWAMP | OAK FOREST | OAK WOODLAND-BRUSHLAND (BIG WOODS) |
| POOR FEN SEDGE SUBTYPE | RED OAK - SUGAR MAPLE - BASSWOOD - (BITTERNUT HICKORY) FOREST | RICH FEN (TRANSITION) | RICH FEN (TRANSITION) SHRUB SUBTYPE | SEDGE MEADOW | SEEPAGE MEADOW (SOUTHERN) |
| SHRUB SWAMP | SILVER MAPLE - (VIRGINIA CREEPER) FLOODPLAIN FOREST | SILVER MAPLE - GREEN ASH - COTTONWOOD TERRACE FOREST | SUGAR MAPLE FOREST (BIG WOODS) | TAMARACK SWAMP | WET MEADOW |
| WILLOW - DOGWOOD SHRUB SWAMP | WILLOW SWAMP | | | | |

Figure 5



14702 Excelsior Boulevard | #1245 | Minnetonka, Minnesota 55345
 6125645771 | edsbuckthorncontrol@gmail.com | edsbuckthorncontrol.com

APPENDIX F: PHASE II – RESTORATION

RECIPIENT:

Sandy Mueller
 10745 Lyndale Bluffs Trail
 Minneapolis, Minnesota 55420

Quote #70	
Sent on	Aug 28, 2020
Total	\$5,391.49

PRODUCT / SERVICE	DESCRIPTION	QTY.	UNIT COST	TOTAL
Seeding Labor	Labor for site prep to maximize seed to soil contact and germination, seed dispersal, and application of seed blankets. Price per 5,000 square feet	1	\$500.00	\$500.00*
Seed - Woodland Mix	Shady woodland native plant mix - about 20 wildflowers, plus grasses and sedges. price per 5,000 square feet.	1.2	\$500.00	\$600.00*
Seed - Native Pollinator Mix	Native pollinator-friendly wildflower seed mix with grasses. Local genotype for best possible outcome. Price per 1000 square feet	1	\$75.00	\$75.00*
Seed Blanket	Netted straw seed blankets to protect seed from wind, rain, and birds. Includes delivery and biodegradable stakes. Price per 1,000 square feet	7	\$85.00	\$595.00*
Planting Shrubs/Trees	Labor cost for design, species selection, layout, installation, guarding, labeling, and watering. Price per 20 shrubs/trees	2	\$500.00	\$1,000.00*
Trees/Shrubs #1/#2 Pots	Plant native flowering shrubs, #1 or #2 pot size to replace buckthorn and invasive maples in the understory. Price per 20 shrubs.	2	\$500.00	\$1,000.00*
Wire Fencing	4 foot tall welded wire fencing to deter rodents and deer from destroying planted shrubs/trees. Shipping and stakes included. Price per 20 shrubs' worth = 200 feet.	2	\$300.00	\$600.00*
Spot Spray Weeds	April 2022: Spot spray for garlic mustard, motherwort, burdock, and other invasive/pesky weeds. Backpack sprayer with wand for precise application. Wetland-approved herbicide included. Workers are experts at identifying our target species and licensed herbicide applicators.	1	\$350.00	\$350.00
Spot Spray Weeds	May 2022: Spot spray for garlic mustard, motherwort, burdock, and other invasive/pesky weeds. Backpack sprayer with wand for precise application. Wetland-approved herbicide included. Workers are experts at identifying our target species and licensed herbicide applicators.	1	\$250.00	\$250.00



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PRODUCT / SERVICE	DESCRIPTION	QTY.	UNIT COST	TOTAL
Foliar herbicide treatment	Late Fall 2022: Once native plants are dormant, apply herbicide to control smallest buckthorn, and garlic mustard, along with other noxious invasive plants that are still susceptible to herbicide this time of year. Backpack sprayer with wand for precise application. Wetland-approved herbicide included. Workers are experts at identifying our target species and licensed herbicide applicators.	1	\$350.00	\$350.00

*Non-taxable

This quote is valid for the next 30 days, after which values may be subject to change.

Subtotal	\$5,320.00
Minnesota, 80004 District (0.5%)	\$4.75
Minnesota, Hennepin County (0.15%)	\$1.43
Minnesota State (6.875%)	\$65.31

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Total \$5,391