

Lakeland Shores City Council Meeting
April 6, 2017
Workshop: Code Enforcement 6:00 p.m.
Regular City Council Meeting 6:30 p.m.
Lakeland City Hall



- 1) Regular Council Meeting
 - Call to Order
 - Roll Call
 - Pledge of Allegiance
 - Adopt Agenda
 - Awards Presentation

- 2) Consent Agenda (Items may be pulled for discussion and/or separate action)
 - A) Approve March 2, 2017 City Council Meeting Minutes
 - B) Approve Monthly Claims and Financial Reports
 - C) Approve Youth Service Bureau Agreement for 2017 for \$200
 - D) Approve Ragnar Race for August 2017
 - E) Approve Resolution 2017-4-02 LSCV Relief Association

- 3) Public Comments

- 4) Agency Reports
 - A) Washington County Sheriff Report
 - B) Fire Department Report
 - C) Building Permit Report
 - D) Engineering Report

- 5) Public Hearing: Variance for 195 Lakeland Shores Road Reconstruction

- 6) Unfinished and New Business
 - A) Resolution 2017-4-01 Variance 195 Lakeland Shores Road
 - B) Simple Recycling: Free Curbside Recycling Program
 - C) Accept City Clerk Resignation and Approve Position Posting

- 7) Council and Staff Reports
 - A) Roads Commissioner Report
 - B) Treasurer Report
 - C) Mayor and Council Reports

- 8) Adjourn

Lakeland Shores City Council Meeting Minutes | 2017 March 2

Regular City Council Meeting
Lakeland City Hall

Agenda Item
2a

Lakeland Shores City Council Meeting Call to Order: Mayor
March 2, 2017 City Council meeting at 6:36 p.m.

Roll Call:

Council Present: Mayor Brian Zeller, Council Member Tom Wilson, Council Member John Bischoff, Council Member Tim Schroeder, **Council Absent:** Council Member Randy Kopesky

Staff Present: City Treasurer Tom Niedzwiecki, City Clerk/Zoning Administrator Sandie Thone, **Staff Absent:** City Engineer John Parotti, and City Attorney Dave Magnuson

The Pledge of Allegiance was said.

Review and Approve Meeting Agenda: Council Member Wilson made a motion to adopt the agenda; Council Member Schroeder seconded. All ayes, 4-0. Agenda Adopted.

Review and Approve Consent Agenda (Items may be pulled for discussion or separate action):

- A) Approve February 2, 2017 City Council Meeting Minutes
- B) Approve Monthly Claims and Financial Reports
- C) Authorization to Solicit Bids for 2017 Street Improvements: Quinnell

Council Member Bischoff made a motion to approve Consent Agenda, Council Member Wilson seconded; All ayes, 4-0. Motion carried. Council Member Bischoff raised concerns regarding the high costs of sand/salt received from Washington County; discussion ensued, staff and council concurred it appeared to be higher than normal. Council directed the treasurer to review the issue and prepare a comparison of the past and current costs for council review; Council Member Bischoff agreed to contact the current snowplowing contractor for additional information.

Public Comments: Flood Run Fundraiser: April 15 and September 16, 2017: Flood Run representative Tom McCarthy summarized the Flood Run events requested to be held at Shiner's in the city requesting temporary driveway access to 2nd Street on the two event dates. He informed the city that they do hire two police officers at the events and have two fundraisers as well and request authorization for the two LG220 Gambling Permits for both events, waiving the city fee as done in the past. **Flood Run Raffle Permit/Shiner's Temporary Driveway Approvals: Mayor Zeller made a motion to approve Flood Run Raffle Permits/ waiving the fees and allowing for the temporary Shiner's Temporary Driveway Approvals for Friday through Sunday on the weekend of the events; Council Member Schroeder seconded; all ayes, motion carried; 4-0.**

Lakeland Shores City Council Meeting Minutes **2017**

March 2

Washington County Sheriff's Report: Mayor Zeller reported there were three calls in the month delineated in the report in the packet.

Fire Department Report: Council Member Wilson reported 41 runs in January; one (1) to Lakeland Shores and five (5) to Interstate 94.

Building Permit Report: Mayor Zeller explained that in efforts to become more autonomous, building permits will no longer be issued by Lakeland at Lakeland city offices and no further services will be offered at that location for Lakeland Shores – all Lakeland Shores needs should be directed to the city phone number or email.

Washington County Trail Project: Mayor Zeller explained that the council was in support of the project as presented at last month's meeting and if agreed would move forward to confirm Louis Jambois as the representative of the project for the community. Council Member Schroeder agreed to send an email regarding concerns on one portion of the trail. **Mayor Zeller made a motion to approve Washington County Trail Project and Authorize the City Engineer to sign the plans as requested; Council Member Wilson seconded, all ayes, motion carried; 4-0.**

Water Department Discussion: Mayor Zeller explained there have been significant changes at the City of Lakeland by not replacing the Director of Public Works who held the Class C operator license which is required for running the water department. The mayor explained in addition they had two additional support staff working at the water department. His concern, he stated, was that the city's water supply remained safe. He attended the February 28, 2017 meeting ratifying the decision to terminate all existing water department personnel and move forward with a contract with SEH to operate and provide oversight of the water department short term as an interim solution. He was assured by Public Works Commissioner Jim Stanton of Lakeland that there was no concern from a safety standpoint and that the cost should decrease not increase. He expressed it is a significant issue in his mind and Council Member Bischoff agreed. A discussion ensued and all residents were encouraged to continue to follow the progress on this important issue and to become involved if they felt compelled, encouraging anyone to contact Jim Stanton at the City of Lakeland for more information.

Roads Commissioner Report: Council Member Bischoff reported he spoke with Tri-County owner and reported street sweeping is expected to be performed at the end of April, hoping for a decent bid for Quinnell so that project can be completed this year, reported 4th Street appears reasonable and that there are no plans to do street patching on city streets this year, road restrictions went into effect on February 17, 2017 and signs are up, storage of the signs will be determined when the restrictions are lifted.

City Treasurer Report: Treasurer Niedzwiecki reported on the two financial reports for January/February and stated he does have concerns regarding the high cost of sand/salt, good news Long Term Improvement Fund has a reserve for snow/ice if it does end up over budget.

Final Year End Financial Report: 2016 Report

Treasurer Niedzwiecki explained the 2016 Financial Reports for the council and reviewed the funds, reports, trends, summaries, revenues, and expenditures for the year. Mayor Zeller requested the treasurer add the footnote comments of the changes made in fund balances for this year. **Mayor Zeller made a motion to approve the 2016 Financial Reports; Council Member Bischoff seconded; All ayes; 4-0; Motion carried.**

City Clerk/Zoning Administrator Report:

Council Reports

Mayor Zeller: Mayor Zeller explained a commercial property owner has paid a portion of his back taxes and has worked out a long term payment plan with the county to get caught up with the rest of the overdue taxes; He explained the city should begin looking at the Comp Plan update and has spoken with Mark Nagel who has offered to help look into some grants for the city to help with the updates, The Middle St. Croix Watershed Management Organization (WMO) is also looking into what they can do in supplying information and data regarding water management systems to the city for the upcoming Comp Plan update as well.

Council Member Bischoff: No additional report.

Council Member Schroeder: Council Member Schroeder reported he was involved with the Comp Plan ten years ago and thanked the mayor for attending the water department meeting as that is a concern for him as well.

Council Member Wilson: Council Member Wilson reported it is going to be a busy year at the fire department; additional training requirements for EMT's, additional active shooter training, losing the fire chief this summer and have begun the interviews for the new hire with four applicants to date but having trouble with response times, Washington County is starting a new auto dispatch system in order for other units/departments to respond to fires, the new chief must be selected from within the department.

Cable Commission Report via Mayor Zeller through Council Member Kopesky: The cable commission met on March 1, 2017 and made the decision to cancel the cable channels.

City Clerk/Zoning Administrator Report: The city no longer has software to burn the city meeting DVD's and upload them to the website and is considering both a new computer with the expanded capabilities, will consider options for old electronic files, and will keep the council posted and will add pertinent information to the website. She explained she has been working on and meeting with the other local communities on updating garbage, recycling ordinances and possibly, receiving 2017 hauler licenses, issuing ROW permit for Xcel to replace poles in city, 195 Lakeland Shores Road should come for variance public hearing next month, many variances coming forward in the next couple of months, newsletter is scheduled for April, spring clean-up scheduled for first weekend in May 2017. Direction was provided to move forward with Spring Clean-Up as

Lakeland Shores City Council Meeting Minutes | 2017

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part of the recycling project plan/grant. 2020 Census contact information was updated and is right around the corner.

Adjourn: Council Member Bischoff made a motion to adjourn the meeting; Council Member Schroeder seconded the motion; All ayes; 4-0; Motion carried. Mayor Zeller adjourned the meeting at 7:37 p.m.

City Council of Lakeland Shores

Brian Zeller, Mayor

Sandie Thone, City Clerk/Administrator



Helping youth and families learn to succeed
at home, in school and throughout the community.
www.ysb.net

March 20, 2017

City of Lakeland Shores
Attn: Sandie Thone, City Clerk/Administrator
P.O. Box 246
Lakeland, MN 55043

Dear Sandie,

Thank you for the City of Lakeland Shore's past support of Youth Service Bureau, Inc. (YSB). This year YSB is asking you to renew your commitment by investing \$200 to help youth and families in our community learn the skills they need to become more successful at home, in school, and throughout the community.

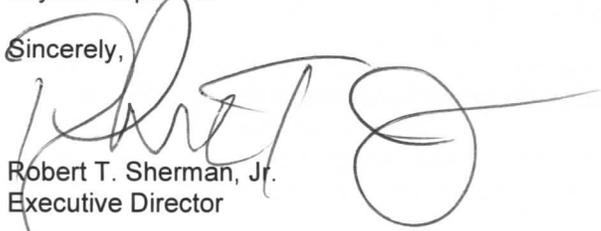
- **YSB seeks to serve all youth and families in the St. Croix Valley by providing effective diversion, counseling, school-based chemical health prevention and youth & family education services.** We use a variety of prevention and early intervention strategies that start with identifying strengths first building individualized plans with youth and families.
- **YSB diversion and counseling services offer timely support to address challenges as they occur.** Most new families can be offered an appointment within a week of initial contact, and in a crisis can often be offered a same day appointment.
- **YSB provides quality service regardless of family income or ability to pay.** YSB is affordable and accessible to all youth and families, utilizing insurance and a sliding fee scale as needed.
- **YSB has a broad impact with the support of extensive community partnerships and networks – partners like you.** We collaborate closely with schools, law enforcement, and community organizations to comprehensively support youth and families we serve.

Last year YSB provided 7007 hours of services to 1210 youth and their families throughout Washington County and 5600 attended 122 Youth & Family Education sessions. We know that our programs make a real difference in the lives of youth and families by improving school performance and health outcomes and reducing truancy, near-term court costs, and the need for social services. A summary of the number of youth served and hours of service provided in your area is enclosed.

Youth Service Bureau is also responding to the needs in our community through an expansion campaign, which includes adding three additional Youth & Family Therapists and three additional Chemical Health Specialists to better serve the needs in our schools and community.

If you would like us to make a short presentation about our work in Lakeland Shores at an upcoming City Council meeting, please contact us at 651-439-8800. Thank you for your past support in finding local solutions that help youth and their families make better choices and have brighter futures. We appreciate your consideration of our request and look forward to your response.

Sincerely,


Robert T. Sherman, Jr.
Executive Director

Enclosures

Property 195 Lakeland Shores Rd, Lakeland Shores, MN Legal Description

EXC S 150FT THEREOF TOG WITH & SUBJ TO EASE AND ALSO: ALL THAT TRCT OF LAND AVG 50FT IN WIDTH M/L
ON ELY SIDE OF C/L OF RR R/W AND CAN ALSO BE DESC AS COM AT A PT ON C/L OF SD R/W WHICH PT IS DIST
330FT S M/L FROM C/L SUBDIVISIONNAME COUNTY AUDITOR'S PLAT NO.10 LOT 2 SUBDIVISIONCD 42065

153.008

natural setting, to reduce the adverse effects of poorly planned shoreland and bluffland development, to provide sufficient space on lots for sanitary facilities, to minimize flood damage, to prevent pollution of surface and ground water, to minimize soil erosion, and to provide a natural buffer between the river and developed areas.

B. Minimum Dimensional Requirements.

- (1) The following chart sets forth the minimum area, setbacks, and other dimensional requirements of each district.

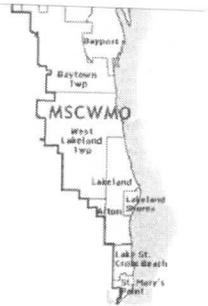
	Urban District	
	Without Sewer and Water	With Public Sewer and
Minimum lot size above ordinary high water mark	1 acre	20,000 sq. ft.
Lot width at building setback line	150 feet	100 feet
Lot width at water line	150 feet	100 feet
Structure setback from ordinary high water mark	100 feet	100 feet
Structure setback from bluffline	50 feet	40 feet
On-site sewage treatment system setback from ordinary high water mark	100 feet	
On-site sewage treatment system setback from bluffline	40 feet	
Maximum structure height	35 feet	35 feet
Maximum total lot area covered by impervious surface	20% (8,700 sq. ft.)	20% (4,000 sq. ft.)
On slopes less than 12%, the controlled vegetative cutting areas setback are from: ordinary highwater mark	100 feet	100 feet
Blufflines	40 feet	40 feet

C. Other Requirements.

- Slopes.** Structures shall not be permitted on slopes greater than 12 percent, with the exception of stairways and lifts. The physical

MIDDLE ST. CROIX WATERSHED MANAGEMENT O

455 HAYWARD AVENUE OAKDALE, MINNESOTA 55128
 Phone 651.330.8220 x22 fax 651.330.7747 www.mscwmo.org



March 14, 2017

Sandie Thone, City Administrator
 Lakeland Shores
 P.O. Box 246
 Lakeland, MN 55043

RE: 195 Lakeland Shores Rd. N.

Dear Ms. Thone,

The Middle St. Croix Watershed Management Organization (MSCWMO) received required submittal items on March 14, 2017 for the proposed 195 Lakeland Shores Rd. N., located within MSCWMO boundaries and in the City of Lakeland Shores. The proposed project qualifies for full review under the MSCWMO 2015 Watershed Management Plan (WMP).

The project, as proposed, contains sufficient information to determine conformance with the Policies and Performance Standards contained within Section 7.0 of the 2015 MSCWMO Watershed Management Plan.

The MSCWMO staff recommends approval of this project with the following two conditions:

1. Submit confirmation for the infiltration area bottom separation from bedrock or groundwater table with a soil boring or test pit.
2. Amend plans to add a note to install the infiltration basin in dry soil conditions.

The MSCWMO Board will consider this application at the April 13, 2017 regular meeting.

The enclosed checklists contain detailed information on project review qualification and the policies and performance standards of the WMP. MSCWMO review process information can be downloaded from www.mscwmo.org. Feel free to contact me at 651-330-8220 x21 or jlandini@mnwcd.org if you have any questions regarding these comments.

Sincerely,

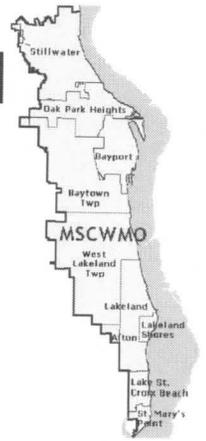
James Landini
 Watershed Engineer
 Middle St. Croix Watershed Management Organization C/O Washington Conservation District

Cc: John Parotti, City Engineer
 Brian Zeller, MSCWMO Board Manager
 Kelly Meyer, JG Hause Construction, Inc.

Enclosures

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Phone 651.330.8220 x22 fax 651.330.7747 www.mscwmo.org



MSCWMO PROJECT REVIEW

MSCWMO Project Review ID: 17-003

Project Name: 195 Lakeland Shores

Applicant: Tom Brockman

Purpose: Residential Construction

Location: 195 Lakeland Shores Rd. N.

Review date: 3/14/2017

Recommendation: Approval with 2 Conditions.

Conditions:

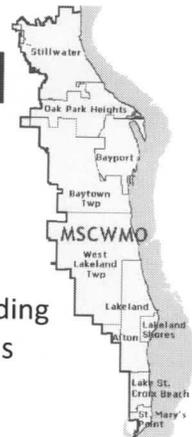
1. Provide a soil sample or dig a test pit to verify 3' separation from infiltration bottom to bedrock or water table.
2. Add a note install the infiltration basin in dry soil conditions.

Applicability:

- Any project undertaking grading, filling, or other land alteration activities that involve movement of 100 cubic yards of earth or removal of vegetation on greater than 10,000 square feet of land
- Any project that creates or fully reconstructs 6,000 square feet or more of impervious surface
- All major subdivisions or minor subdivisions that are part of a common plan of development. Major subdivisions are defined as subdivisions with 4 or more lots.
- Any project with wetland impacts
- Any project with grading within public waters
- Any project with grading within buffers
- Any project with grading within 40-feet of the bluff line

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- Development projects that impact 2 or more of the member communities
- New or redevelopment projects within the St. Croix Riverway that require a building permit that adds five hundred (500) square feet or more of additional impervious surface
- Any project requiring a variance from the current local impervious surface zoning requirements for the property
- Any land development activity, regardless of size, that the City determines is likely to cause an adverse impact to an environmentally sensitive area or other property, or may violate any other erosion and sediment control standard set by the member community.

Required Submittals:

- 1. Review Fee: Single lot residential \$350 fee.
- 2. Grading plan showing grading limits, existing and proposed contours related to NAVD 1988 datum (preferred) or NGVD 1929.
- 3. Location of existing and proposed permanent structures.
- 4. Ordinary High Water (OHW) elevations and location of all existing water bodies.
- 5. Location of all bluff lines.
- 6. Lowest floor elevations of structures built adjacent to stormwater management features and other water bodies must be a minimum of two feet above the 100-year flood elevation.
- 7. Delineation of existing wetland, shoreland, ordinary high water levels, drain tiling, and floodplain areas.
- 8. Details of proposed buffer upslope of water resources including size and vegetation characteristics (when applicable). **Not Applicable - existing 100' buffer preserved**
- 9. Erosion/sediment control plan demonstrating locations, specifications, and details of the following items:
 - A. Erosion Prevention
 - i. Stabilize all exposed soil areas (including stockpiles) with temporary erosion control (seed and mulch or blanket) within 7 days after

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construction activities in the area have temporarily or permanently ceased.

- ii. Identify location, type and quantity of temporary erosion prevention practices.
- iii. Identify permanent vegetation.

B. Sediment Control

- i. Sediment control practices will be placed down-gradient before up-gradient land disturbing activities begin.
- ii. Identify the location, type and quantity of sediment control practices.
- iii. Vehicle tracking practices must be in place to minimize track out of sediment from the construction site. Streets must be cleaned if tracking practices are not adequate to prevent sediment from being tracked onto the street.

C. Inspections and Maintenance

- i. Applicant must inspect all erosion prevention and sediment control practices once every 7 days or after a ½" rain event to ensure integrity and effectiveness. All nonfunctional practices must be repaired, replaced or enhanced the next business day after discovery.
- ii. Plans shall include contact information including email and a phone number of the person responsible for inspection and compliance with erosion and sediment control.

D. Pollution Prevention

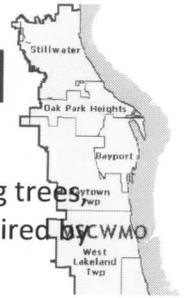
- i. Solid waste must be stored, collected and disposed of in accordance with state law.
- ii. Provide effective containment for all liquid and solid wastes generated by washout operations (concrete, stucco, paint, form release oils, curing compounds).
- iii. Hazardous materials that have potential to leach pollutants must be under cover to minimize contact with stormwater.

E. Final Stabilization

- i. For residential construction only, individual lots are considered final stabilized if the structures are finished and temporary erosion protection and downgradient sediment control has been completed.
- ii. Grading and landscape plans shall include soil tillage and soil bed preparation methods that are employed prior to landscape installation to a minimum depth of 8" and incorporate amendments to meet Minnesota State Stormwater Manual predevelopment soil type bulk densities.

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- iii. Observe minimum setbacks for areas within the dripline of existing trees over utilities within 30 in of the surface, where compaction is required by design and inaccessible slopes.

10. Details of proposed structural stormwater practices (Meets Minnesota Stormwater Manual guidelines) **Address underlined items.**

- A. Stormwater flows are diverted away from bluffs whenever feasible.
- B. Volume control facilities must drain down within 48 hours, as required by the MPCA NPDES Construction Stormwater Permit.
 - i. The period of inundation shall be calculated using the maximum water depth below the surface discharge elevation and the soil infiltration rate.
- C. The maximum water depth for volume control facilities is 1.5 feet.
- D. Planting plan identified vegetation suitable for the hydrology of the basin.
- E. Separation from seasonally saturated soils or bedrock is 3 feet or more for bioretention and infiltration practices.
- F. Volume control facilities meet the following setback requirements:

<i>Setback</i>	<i>Minimum Distance (ft)</i>
<i>Property line</i>	<i>10</i>
<i>Building foundation*</i>	<i>10</i>
<i>Private well</i>	<i>50</i>
<i>Public water supply well</i>	<i>50</i>
<i>Septic system tank/leach field</i>	<i>35</i>
<i>*Minimum with slopes directed away from the building</i>	

- G. Volume control is provided for the first 1.1" inch of runoff for all new & reconstructed impervious:

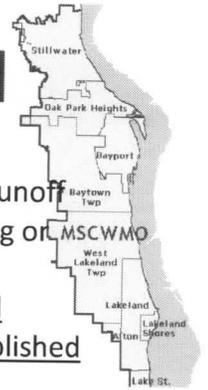
Volume Retention Required (cu. ft.)	Volume Retention Provided (cu. ft.)
4400 sf * 1.1" = 403 cf 403 cf total required	BMP #1 Volume = 518
	Total = 518

H. Construction Standards

- i. To prevent soil compaction, the proposed volume control facility must be staked off and marked during construction to prevent heavy equipment and traffic from traveling over it.
- ii. Facilities may not be excavated within 2.0 feet of final grade until the contributing drainage area has been constructed and fully stabilized.

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- iii. Facilities are in-place during construction activities, all sediment and runoff must be diverted away the facility, using practices such as pipe capping or diversions.
 - iv. Facilities installation must occur in dry soil conditions. Excavation, soil placement and rapid stabilization of perimeter slopes must be accomplished prior to the next precipitation event.
 - v. Excavation shall be performed by an excavator with a toothed bucket. Use excavator bucket to place materials. Construction equipment shall not be allowed into the basin.
 - vi. Prior to the release of any remaining fee or security, the owner must provide documentation that constructed volume control facilities perform as designed.
- I. Details
- i. Include a standard cross section of the infiltration device similar to those identified in the Minnesota Stormwater Manual
http://stormwater.pca.state.mn.us/index.php/Bioretention_plan_and_section_drawings
 - ii. The cross section must detail the infiltration media used in the device. Typically, devices use Mix B as described in the Minnesota Stormwater Manual: A well-blended, homogenous mixture of 70 to 85 percent washed construction sand; and 15 to 30 percent MnDOT Grade 2 compost .



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TECHNICAL MEMORANDUM

DATE: March 13, 2017

TO: Mike Isensee, Middle St. Croix Watershed Management Organization

FROM: Steve Johnston, PE

RE: **Drainage Calculations**
195 Lakeland Shores Rd, Lakeland, MN

Attached you will find the Erosion Control / Stormwater Management Plan, Construction Details, Planting Plan and a HydroCAD model for this property. Cornerstone Land Surveying will provide the Grading Plan and Survey. The existing site generally drains east to the St. Croix River. The proposed drainage system collects the runoff from new and reconstructed impervious surfaces before the runoff reaches the bluff. Undisturbed areas that do not flow to the proposed management system are allowed to drain in their present manner.

Currently, the site is occupied by a home and two detached garages. A new home will be constructed using the foundation of the existing home. Both the existing and proposed home encroach on the city's 50 foot bluff setback and will require grading within 40 feet of the bluff line.

The new home will feature an attached garage and have a larger footprint than the existing home. New pavement will be placed outside of the attached garage. The backyard and yard immediately south of the home will be regraded to incorporate stormwater management features.

This report relies on generalized soil information from the USDA/NRCS. Based on this resource we have assumed that the surface soils are classified as Hydrologic Soil Group A and the underlying soils are poorly graded sand (SP).

The following calculations only address the conditions within the disturbed portion of the site. See sheet C1.1 for the drainage area. Undisturbed areas of the property will be allowed to continue draining offsite in the same manner as present. In the pre-developed condition, 0.280 acres of the 0.438 acres within the study area is covered by impervious surfaces. Post development this number increases to 0.328 acres with a total of 0.101 acres of new or reconstructed imperious surface.

It is required to capture 1.1 inches of runoff from all new and reconstructed impervious surfaces. The raingarden shown on the plan exceeds this requirement by 25% to facilitate any potential changes during construction.

$$\begin{aligned}\text{Required Volume} &= 0.101 \text{ acres} \times 43,560 \times 1.1" / 12 = \underline{403 \text{ ft}^3} \\ \text{Provided Volume} &= (170 + 520) / 2 \times 1.5 = \underline{518 \text{ ft}^3}\end{aligned}$$

Based on an assumed infiltration rate of 0.8 inches per hour the rain garden will drain dry in 22.5 hours.

RE: 195 Lakeland Shores Road Stormwater Management
Date: March 13, 2017
Page 2 of 2

Runoff from higher intensity storms will pass through the rain garden and then overflow and flow to the river. The outlet is controlled with a trapezoidal weir in the berm. The weir and downstream slope is stabilized with sod and ScourStop Transition Mats. <https://hanesgeo.com/Catalog/Product?id=1661>

Pretreatment is provided by the turfed back yard.

The Watershed requires that the existing runoff rates from the 2, 10 and 100 year events be maintained post development. The table below summarizes the existing and redevelopment runoff rates based on the attached HydroCAD model.

Event	Existing Rate (CFS)	Re-Development Rate (CFS)
2 year, 24 hour	1.3	1.3
10 year, 24 hour	2.0	2.0
100 year, 24 hour	4.1	4.0

The high water level (HWL) of the raingarden 718.2. The basement elevation of the proposed home is 716.9 which is lower than this elevation. However, the building's lowest opening is 723. Given the distance to the home, subsurface soils and significant drop to the river it is our opinion that the rain garden presents no flooding danger for the proposed home. In order to provide an infiltration basin with a lower HWL it would be necessary to disturb the slope to the river which is clearly not desirable from an erosion control perspective.

It appears that the proposed stormwater management system meets all applicable watershed requirements. If you have any questions or need additional information regarding this report, please feel free to contact me at sjohnston@elanlab.com or 612-260-7982.

Encl: Sheets C1.1, C2.1, L1.1
Generalized Soil Report
HydroCAD Model

cc: Élan File No.: CLS17013



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Washington County, Minnesota



March 9, 2017

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Soil Map



MAP LEGEND

- Area of Interest (AOI)
- Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points
- Special Point Features**
 - Blowout
 - Borrow Pit
 - Clay Spot
 - Closed Depression
 - Gravel Pit
 - Gravelly Spot
 - Landfill
 - Lava Flow
 - Marsh or swamp
 - Mine or Quarry
 - Miscellaneous Water
 - Perennial Water
 - Rock Outcrop
 - Saline Spot
 - Sandy Spot
 - Severely Eroded Spot
 - Sinkhole
 - Slide or Slip
 - Sodic Spot

- Spoil Area
- Story Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features
- Water Features**
 - Streams and Canals
- Transportation**
 - Rails
 - Interstate Highways
 - US Routes
 - Major Roads
 - Local Roads
- Background**
 - Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Minnesota
 Survey Area Data: Version 11, Sep 19, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 16, 2012—Apr 26, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Washington County, Minnesota (MN163)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
454D	Mahtomedi loamy sand, 12 to 25 percent slopes	0.7	26.0%
858	Urban land-Chetek complex, 0 to 3 percent slopes	1.9	73.8%
W	Water	0.0	0.2%
Totals for Area of Interest		2.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

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delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Washington County, Minnesota

454D—Mahtomedi loamy sand, 12 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1t95l
Elevation: 670 to 1,600 feet
Mean annual precipitation: 27 to 33 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 135 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Mahtomedi and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mahtomedi

Setting

Landform: Outwash plains
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Outwash

Typical profile

A - 0 to 5 inches: loamy sand
E - 5 to 8 inches: sand
Bw - 8 to 30 inches: gravelly coarse sand
C - 30 to 60 inches: gravelly sand

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Other vegetative classification: Sandy (G090XN022MN)
Hydric soil rating: No

Minor Components

Antigo

Percent of map unit: 4 percent
Hydric soil rating: No

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Demontreville

Percent of map unit: 3 percent

Hydric soil rating: No

Kingsley

Percent of map unit: 3 percent

Hydric soil rating: No

858—Urban land-Chetek complex, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1t96f

Elevation: 800 to 1,950 feet

Mean annual precipitation: 27 to 33 inches

Mean annual air temperature: 39 to 46 degrees F

Frost-free period: 135 to 180 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 65 percent

Chetek and similar soils: 35 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Outwash plains

Down-slope shape: Linear

Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified

Other vegetative classification: Not Suited (G090XN024MN)

Hydric soil rating: Unranked

Description of Chetek

Setting

Landform: Outwash plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Outwash

Typical profile

Ap - 0 to 6 inches: sandy loam

Bt - 6 to 20 inches: gravelly sandy loam

2C - 20 to 60 inches: gravelly coarse sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

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Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Other vegetative classification: Sandy (G090XN022MN)
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

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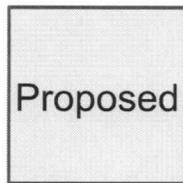
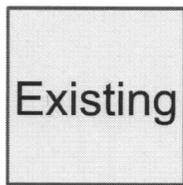
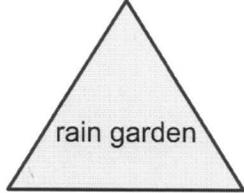
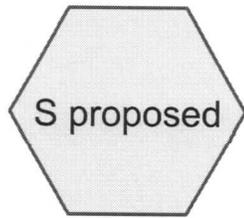
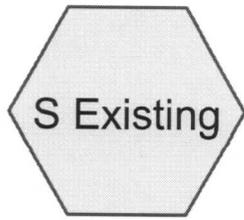
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Routing Diagram for CLS17013_EXISTING and PROPOSED
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CLS17013_EXISTING and PROPOSED

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195 Lakeland Shores Road

Type II 24-hr 2yr 24hr Rainfall=2.80"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S Existing:

Runoff Area=31,267 sf 39.05% Impervious Runoff Depth=1.00"
Tc=0.0 min CN=39/98 Runoff=1.32 cfs 0.060 af

Subcatchment S proposed:

Runoff Area=31,267 sf 45.67% Impervious Runoff Depth=1.17"
Tc=0.0 min CN=39/98 Runoff=1.54 cfs 0.070 af

Reach Existing:

Inflow=1.32 cfs 0.060 af
Outflow=1.32 cfs 0.060 af

Reach Proposed:

Inflow=1.30 cfs 0.044 af
Outflow=1.30 cfs 0.044 af

Pond rain garden:

Peak Elev=717.87' Storage=779 cf Inflow=1.54 cfs 0.070 af
Discarded=0.02 cfs 0.026 af Primary=1.30 cfs 0.044 af Outflow=1.32 cfs 0.070 af

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Type II 24-hr 2yr 24hr Rainfall=2.80"

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Summary for Subcatchment S Existing:

Runoff = 1.32 cfs @ 11.90 hrs, Volume= 0.060 af, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2yr 24hr Rainfall=2.80"

	Area (sf)	CN	Description
	19,058	39	>75% Grass cover, Good, HSG A
*	12,209	98	Impervious
	31,267	62	Weighted Average
	19,058	39	60.95% Pervious Area
	12,209	98	39.05% Impervious Area

Summary for Subcatchment S proposed:

Runoff = 1.54 cfs @ 11.90 hrs, Volume= 0.070 af, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 2yr 24hr Rainfall=2.80"

	Area (sf)	CN	Description
	16,988	39	>75% Grass cover, Good, HSG A
*	14,279	98	Impervious
	31,267	66	Weighted Average
	16,988	39	54.33% Pervious Area
	14,279	98	45.67% Impervious Area

Summary for Reach Existing:

Inflow Area = 0.718 ac, 39.05% Impervious, Inflow Depth = 1.00" for 2yr 24hr event
 Inflow = 1.32 cfs @ 11.90 hrs, Volume= 0.060 af
 Outflow = 1.32 cfs @ 11.90 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach Proposed:

Inflow Area = 0.718 ac, 45.67% Impervious, Inflow Depth = 0.73" for 2yr 24hr event
 Inflow = 1.30 cfs @ 11.92 hrs, Volume= 0.044 af
 Outflow = 1.30 cfs @ 11.92 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

CLS17013_EXISTING and PROPOSED

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195 Lakeland Shores Road
Type II 24-hr 2yr 24hr Rainfall=2.80"

Printed 3/12/2017

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Summary for Pond rain garden:

Inflow Area = 0.718 ac, 45.67% Impervious, Inflow Depth = 1.17" for 2yr 24hr event
 Inflow = 1.54 cfs @ 11.90 hrs, Volume= 0.070 af
 Outflow = 1.32 cfs @ 11.92 hrs, Volume= 0.070 af, Atten= 14%, Lag= 1.2 min
 Discarded = 0.02 cfs @ 11.92 hrs, Volume= 0.026 af
 Primary = 1.30 cfs @ 11.92 hrs, Volume= 0.044 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 717.87' @ 11.92 hrs Surf.Area= 966 sf Storage= 779 cf

Plug-Flow detention time= 242.0 min calculated for 0.070 af (100% of inflow)
 Center-of-Mass det. time= 242.2 min (992.1 - 749.9)

Volume	Invert	Avail.Storage	Storage Description
#1	716.00'	1,553 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
716.00	170	0	0
717.00	390	280	280
717.50	520	228	508
718.00	1,130	413	920
718.50	1,400	633	1,553

Device	Routing	Invert	Outlet Devices
#1	Discarded	716.00'	0.800 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 678.00'
#2	Primary	717.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 Width (feet) 1.50 3.50

Discarded OutFlow Max=0.02 cfs @ 11.92 hrs HW=717.87' (Free Discharge)
 ↑1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=1.30 cfs @ 11.92 hrs HW=717.87' (Free Discharge)
 ↑2=Custom Weir/Orifice (Weir Controls 1.30 cfs @ 1.90 fps)

CLS17013_EXISTING and PROPOSED

Prepared by Élan Design Lab, Inc.

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195 Lakeland Shores Road
Type II 24-hr 10yr 24hr Rainfall=4.20"

Printed 3/12/2017

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S Existing: Runoff Area=31,267 sf 39.05% Impervious Runoff Depth=1.59"
Tc=0.0 min CN=39/98 Runoff=1.99 cfs 0.095 af

Subcatchment S proposed: Runoff Area=31,267 sf 45.67% Impervious Runoff Depth=1.85"
Tc=0.0 min CN=39/98 Runoff=2.33 cfs 0.111 af

Reach Existing: Inflow=1.99 cfs 0.095 af
Outflow=1.99 cfs 0.095 af

Reach Proposed: Inflow=2.00 cfs 0.082 af
Outflow=2.00 cfs 0.082 af

Pond rain garden: Peak Elev=717.97' Storage=889 cf Inflow=2.33 cfs 0.111 af
Discarded=0.02 cfs 0.028 af Primary=2.00 cfs 0.082 af Outflow=2.02 cfs 0.111 af

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195 Lakeland Shores Road

Type II 24-hr 10yr 24hr Rainfall=4.20"

Printed 3/12/2017

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Summary for Subcatchment S Existing:

Runoff = 1.99 cfs @ 11.90 hrs, Volume= 0.095 af, Depth= 1.59"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10yr 24hr Rainfall=4.20"

Area (sf)	CN	Description
19,058	39	>75% Grass cover, Good, HSG A
* 12,209	98	Impervious
31,267	62	Weighted Average
19,058	39	60.95% Pervious Area
12,209	98	39.05% Impervious Area

Summary for Subcatchment S proposed:

Runoff = 2.33 cfs @ 11.90 hrs, Volume= 0.111 af, Depth= 1.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 10yr 24hr Rainfall=4.20"

Area (sf)	CN	Description
16,988	39	>75% Grass cover, Good, HSG A
* 14,279	98	Impervious
31,267	66	Weighted Average
16,988	39	54.33% Pervious Area
14,279	98	45.67% Impervious Area

Summary for Reach Existing:

Inflow Area = 0.718 ac, 39.05% Impervious, Inflow Depth = 1.59" for 10yr 24hr event
 Inflow = 1.99 cfs @ 11.90 hrs, Volume= 0.095 af
 Outflow = 1.99 cfs @ 11.90 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach Proposed:

Inflow Area = 0.718 ac, 45.67% Impervious, Inflow Depth = 1.38" for 10yr 24hr event
 Inflow = 2.00 cfs @ 11.92 hrs, Volume= 0.082 af
 Outflow = 2.00 cfs @ 11.92 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

CLS17013_EXISTING and PROPOSED

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195 Lakeland Shores Road
Type II 24-hr 10yr 24hr Rainfall=4.20"

Printed 3/12/2017

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Summary for Pond rain garden:

Inflow Area = 0.718 ac, 45.67% Impervious, Inflow Depth = 1.85" for 10yr 24hr event
 Inflow = 2.33 cfs @ 11.90 hrs, Volume= 0.111 af
 Outflow = 2.02 cfs @ 11.92 hrs, Volume= 0.111 af, Atten= 13%, Lag= 1.1 min
 Discarded = 0.02 cfs @ 11.92 hrs, Volume= 0.028 af
 Primary = 2.00 cfs @ 11.92 hrs, Volume= 0.082 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 717.97' @ 11.92 hrs Surf.Area= 1,096 sf Storage= 889 cf

Plug-Flow detention time= 168.3 min calculated for 0.111 af (100% of inflow)
 Center-of-Mass det. time= 168.6 min (917.3 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1	716.00'	1,553 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
716.00	170	0	0
717.00	390	280	280
717.50	520	228	508
718.00	1,130	413	920
718.50	1,400	633	1,553

Device	Routing	Invert	Outlet Devices
#1	Discarded	716.00'	0.800 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 678.00'
#2	Primary	717.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 Width (feet) 1.50 3.50

Discarded OutFlow Max=0.02 cfs @ 11.92 hrs HW=717.97' (Free Discharge)
 ↗1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=1.99 cfs @ 11.92 hrs HW=717.97' (Free Discharge)
 ↗2=Custom Weir/Orifice (Weir Controls 1.99 cfs @ 2.14 fps)

CLS17013_EXISTING and PROPOSED

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195 Lakeland Shores Road

Type II 24-hr 100yr 24hr Rainfall=7.30"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S Existing: Runoff Area=31,267 sf 39.05% Impervious Runoff Depth=3.29"
Tc=0.0 min CN=39/98 Runoff=4.11 cfs 0.197 af

Subcatchment S proposed: Runoff Area=31,267 sf 45.67% Impervious Runoff Depth=3.70"
Tc=0.0 min CN=39/98 Runoff=4.62 cfs 0.221 af

Reach Existing: Inflow=4.11 cfs 0.197 af
Outflow=4.11 cfs 0.197 af

Reach Proposed: Inflow=4.01 cfs 0.190 af
Outflow=4.01 cfs 0.190 af

Pond rain garden: Peak Elev=718.21' Storage=1,164 cf Inflow=4.62 cfs 0.221 af
Discarded=0.02 cfs 0.031 af Primary=4.01 cfs 0.190 af Outflow=4.04 cfs 0.221 af

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195 Lakeland Shores Road

Type II 24-hr 100yr 24hr Rainfall=7.30"

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Summary for Subcatchment S Existing:

Runoff = 4.11 cfs @ 11.90 hrs, Volume= 0.197 af, Depth= 3.29"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 100yr 24hr Rainfall=7.30"

	Area (sf)	CN	Description
	19,058	39	>75% Grass cover, Good, HSG A
*	12,209	98	Impervious
	31,267	62	Weighted Average
	19,058	39	60.95% Pervious Area
	12,209	98	39.05% Impervious Area

Summary for Subcatchment S proposed:

Runoff = 4.62 cfs @ 11.90 hrs, Volume= 0.221 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type II 24-hr 100yr 24hr Rainfall=7.30"

	Area (sf)	CN	Description
	16,988	39	>75% Grass cover, Good, HSG A
*	14,279	98	Impervious
	31,267	66	Weighted Average
	16,988	39	54.33% Pervious Area
	14,279	98	45.67% Impervious Area

Summary for Reach Existing:

Inflow Area = 0.718 ac, 39.05% Impervious, Inflow Depth = 3.29" for 100yr 24hr event

Inflow = 4.11 cfs @ 11.90 hrs, Volume= 0.197 af

Outflow = 4.11 cfs @ 11.90 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach Proposed:

Inflow Area = 0.718 ac, 45.67% Impervious, Inflow Depth = 3.18" for 100yr 24hr event

Inflow = 4.01 cfs @ 11.92 hrs, Volume= 0.190 af

Outflow = 4.01 cfs @ 11.92 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

CLS17013_EXISTING and PROPOSED

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195 Lakeland Shores Road

Type II 24-hr 100yr 24hr Rainfall=7.30"

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Summary for Pond rain garden:

Inflow Area = 0.718 ac, 45.67% Impervious, Inflow Depth = 3.70" for 100yr 24hr event
 Inflow = 4.62 cfs @ 11.90 hrs, Volume= 0.221 af
 Outflow = 4.04 cfs @ 11.92 hrs, Volume= 0.221 af, Atten= 13%, Lag= 1.2 min
 Discarded = 0.02 cfs @ 11.92 hrs, Volume= 0.031 af
 Primary = 4.01 cfs @ 11.92 hrs, Volume= 0.190 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 718.21' @ 11.92 hrs Surf.Area= 1,241 sf Storage= 1,164 cf

Plug-Flow detention time= 94.9 min calculated for 0.221 af (100% of inflow)
 Center-of-Mass det. time= 95.1 min (851.6 - 756.5)

Volume	Invert	Avail.Storage	Storage Description
#1	716.00'	1,553 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
716.00	170	0	0
717.00	390	280	280
717.50	520	228	508
718.00	1,130	413	920
718.50	1,400	633	1,553

Device	Routing	Invert	Outlet Devices
#1	Discarded	716.00'	0.800 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 678.00'
#2	Primary	717.50'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 Width (feet) 1.50 3.50

Discarded OutFlow Max=0.02 cfs @ 11.92 hrs HW=718.21' (Free Discharge)
 ↖1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=4.00 cfs @ 11.92 hrs HW=718.21' (Free Discharge)
 ↖2=Custom Weir/Orifice (Weir Controls 4.00 cfs @ 2.57 fps)



Building a Better World
for All of Us®

MEMORANDUM

TO: Sandie Thone, Zoning Administrator, City of Lakeland Shores, Minnesota

FROM: John D. Parotti, PE | City Engineer

DATE: March 21, 2017

RE: 195 Lakeland Shores Road - Brockman, City Engineer Review
SEH No. LAKSH 138249 14.00

The City Engineer is in receipt of the following documents which have been provided for review:

- Certificate of Survey prepared by Cornerstone Land Surveying, Inc. with revision date of March 13, 2017
- Erosion Control/Stormwater Management Plan prepared by Elan Design Lab dated March 13, 2017
- Details prepared by Elan Design Lab dated March 13, 2017
- Planting Plan prepared by Elan Design Lab dated March 13, 2017

We are also in receipt of the Middle St. Croix Watershed Management Organization (WMO) review letter dated March 14, 2017 and signed by Watershed Engineer James Landini.

REVIEW COMMENTS

Based on an engineering review of the above documents, the following comments are provided for consideration:

1. This property is located in the City's Shoreland Management Area (Zone A - River A). As a result, the City's Shoreland Management Area Ordinance (Ch. 153) applies.
2. Chapter 153.008 6. requires a grading permit for any grading, filling, excavating or changing the topography landward of the high water mark. 153.088 6 provides some exceptions to this requirement. However, the grading associated with the infiltration basin does not qualify for an exception and therefore it is the City Engineer's opinion that a grading permit is required.
3. This property is also partially located in the St. Croix River floodplain. Therefore, the City's Floodplain Ordinance (Ch. 154) applies. However, the documents submitted do not indicate any proposed construction in the floodplain. Construction in the floodplain requires approval from the City and potentially the Minnesota DNR and US Army Corps of Engineers. Construction in the floodplain is not contemplated in this review and therefore not allowed without further review.
4. **The St. Croix River elevations should be labeled on the plans as follows: Ordinary High Water Level (OHWL) = 680.0, 100-yr Floodplain (1% chance occurrence) = 692.0.**
5. The structure appears to be approximately 150 feet from the OHWL of 680. The minimum setback from OHWL is 100 feet. The project meets this requirement.
6. Impervious surface calculations are provided on the Certificate of Survey. These calculations can be summarized as follows:

Existing Impervious Surface = 18.46%
Proposed Imperious Surface = 19.8%

15. Portions of the existing home are located within the 50-foot bluffline setback. The proposed home will remain in this location within the setback. The proposed building location does not comply with the City's bluffline setback of 50 feet. The southeast corner of the house is approximately 25 feet from the bluffline and the northern most corner of the existing deck to remain is 0 feet from the bluffline.
16. The Certificate of Survey indicates that impervious surfaces labeled as "gazebo", "concrete" and "lawn shed" are going to be reduced in size as follows:

Area Description	Existing Area	Proposed Area
Gazebo	187	168
Concrete	760	488
Lawn Shed	65	62

It is not clear how or where these area adjustments will be made. **The Certificate of Survey shall be revised to show (graphically) the impervious surfaces that are planned for removal and resubmitted for review.**

17. How will the proposed porch on the west site of the house be accessed? Will a portion of the existing sidewalk remain or a new sidewalk constructed for this purpose? **Clarify and revise plans as necessary.**
18. The Erosion Control / Stormwater Management Plan contains detailed direction to the contractor with respect to grading activities and related staging and erosion control. These directives must be adhered to by the contractor until the project is complete and the entire site is fully stabilized with the approved landscaping and vegetation.
19. According to the Certificate of Survey, the steps leading down the bluff in the vicinity of the south lot line are located partially on the neighboring property. The project does not propose to remove or relocate these stairs.
20. The existing swing set appears to be located across the south property line.
21. The plans show a "proposed future water service" located along the south side of the driveway. Is this service to be constructed as part of the current project or a future project? **This requires clarification.**
Note: Contact the Lakeland Water Utility at (651) 436-8444 for new water service connection.
22. The plans indicate a septic system is, or will be located in the center island of the driveway. However, it's not clear if this is the existing system, the proposed system or both. **If the existing septic system is to be used, the applicant shall obtain a letter from the Washington County Department of Health and Environment stating that the existing system is adequate for the proposed use. If the existing system is not adequate, the applicant shall obtain a permit from the County for the installation of a new system and submit a copy to the City prior to final approval.**

The items noted in bold require plan revisions or additional information to be submitted by the applicant. It is recommended that the above be considered by the City and, if approval is given, made conditions of approval. If revisions are made to these plans for any reason, the revised plans must be resubmitted to the City for review.



o: 612.227.4582
890 Dawn Avenue
Shoreview, MN 55126
pgardner@wastezero.com

www.WasteZero.com

simple recycling

FREE CURBSIDE CLOTHING & HOME GOODS RECYCLING PROGRAM

FREE

**TURN
KEY**

**SIMPLE
& EASY**

**SAVE \$
MAKE \$**

**simple
recycling**



FREE CURBSIDE CLOTHING & HOME GOODS RECYCLING PROGRAM



Clothing and Home Goods account for approximately 10% of the residential waste stream



85% of textiles are NOT recycled or donated



EPA estimates 68 lbs/person of clothing are thrown away each year.



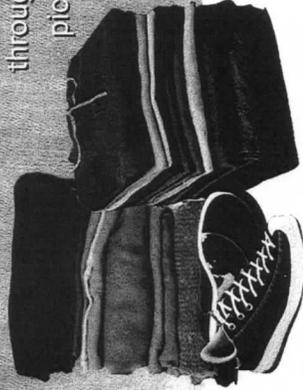
ITEMS THAT ARE ACCEPTABLE FOR SIMPLE RECYCLING COLLECTION...

- Men's Clothing
- Children's Clothing
- Women's Clothing
- Boots & Shoes
- Bedding (sheets, pillow cases, blankets, comforters)
- Belts & Ties
- Books (single or in pairs)
- Bras
- Coats & Jackets
- Fashion Accessories
- Handbags & Purses
- Hats & Gloves
- Kitchenware
- Linens
- Pillows
- Sandals & Slippers (in pairs)
- Socks
- Stuffed Animals
- Table Linens
- Tools
- Towels
- Toys
- Undergarments

Items we CANNOT collect include: Appliances, Furniture, Tires, Paint, Carpeting, Mattresses, Traditional Recyclables (metal, glass, paper), Hazardous Waste.

DID YOU KNOW:
Clothing and shoes are 100% recyclable, but 85% still ends up in landfills!

You can help change that by recycling your unwanted clothing and small household items through this free curbside pick-up service on your regular recycling collection day!



Place green bags beside your recycling cart for collection.

Questions?

Call Simple Recycling:

866.835.5068

info@simplerecycling.com

simple recycling
Clothing and Household Discards
(216) 438-7109
www.SimpleRecycling.com
CAUTION FREQUENT STOPS



NOW AVAILABLE

Residents can recycle unwanted clothing and more with free, curbside pick-up.

Recycle Clothing and Textiles on your normal recycling day!

simplerecycling.com

SIMPLE RECYCLING IS EXCITED TO ANNOUNCE A SIMPLE, EASY AND FREE NEW WAY TO RECYCLE YOUR CLOTHING, SHOES, ACCESSORIES AND OTHER HOUSEHOLD DISCARDS SUCH AS KITCHENWARE, TOOLS, TOYS, HOMEGOODS AND BOOKS.

Simple Recycling provides a simple and convenient way to keep this 100% recyclable and reusable material out of landfills to give these items a second life.



Step 1

Place clothing, shoes and housewares in the bag provided or other waterproof bag with the Simple Recycling tag provided.



Enclosed are two Simple Recycling collection bags to get you started. Whenever you use the Simple Recycling Collection bags and/or tags, the collecting driver will leave another bag for you to use the next time you have materials for collection.

If you need more Simple Recycling collection bags, please call us at **866-835-5068** or email **info@SimpleRecycling.com**.

Step 2

Leave the filled bag(s) **beside** your recycling bin on your regular recycling pickup day.

- This program is in addition to your current recycling program.
- Your recycling collection day will remain the same.

Please refer to the list on the other side of this brochure for items that are acceptable for recycling and collection.

Step 3

Simple Recycling will collect the bags and recycle their contents for reuse!



simplerecycling

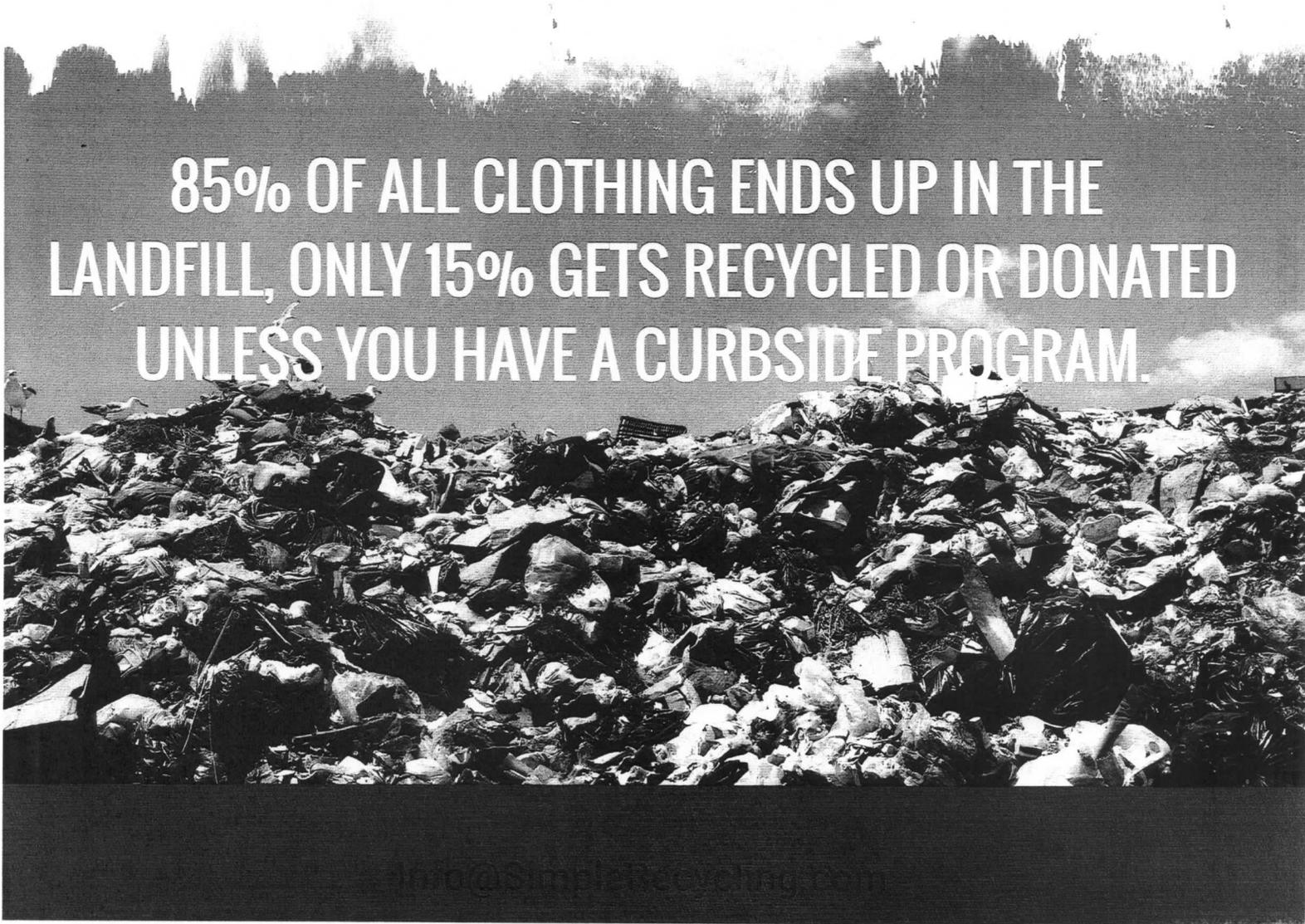


Without a curbside program, 85% of clothing and usable home goods get thrown into a landfill. That's 20 Billion pounds per year in the US!



Our program is offered at ZERO cost to the city and residents

85% OF ALL CLOTHING ENDS UP IN THE LANDFILL, ONLY 15% GETS RECYCLED OR DONATED UNLESS YOU HAVE A CURBSIDE PROGRAM.



Who is Simple Recycling?

We have over 50 years of experience in clothing & household discard collection

Our sister company manages clothing & household discard donation programs in partnership with non-profit organizations¹

Environmental Impact Facts

Clothing, Appliances, Durables, & Furniture account for 15% of local waste stream



**85% OF TEXTILES
ARE NOT RECYCLED
OR DONATED**



**EPA ESTIMATES
70 LBS./PERSON OF CLOTHING
ARE THROWN AWAY EACH YEAR**

(YOUR CITY'S POPULATION X 70LBS = MILLIONS OF LBS./YEAR)

Source:
1. <http://www.wearonaterecycle.org>

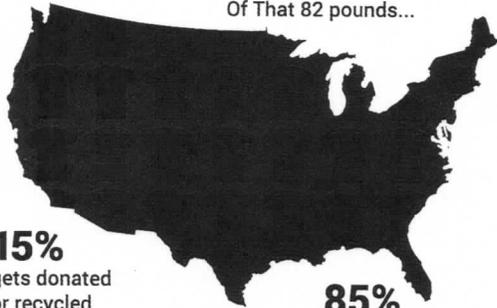
www.SimpleRecycling.com • Info@SimpleRecycling.com

THE FACTS ABOUT TEXTILE WASTE

The U.S. generates and average of **25 BILLION POUNDS** of textiles* per year.¹ → That's about **82 POUNDS** per U.S. resident.

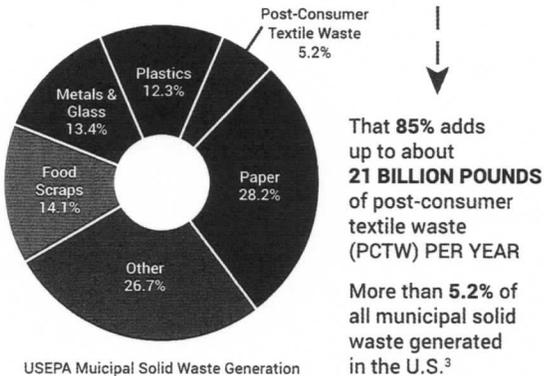
* Textiles includes clothing, footwear, accessories, towels, bedding, drapery, etc.

Of That 82 pounds...



15% gets donated or recycled
3.8 billion lbs recovered through donation/recycling; (12 lbs. per person.)

85% goes to our landfills.² (70 lbs. per person)



That **85%** adds up to about **21 BILLION POUNDS** of post-consumer textile waste (PCTW) PER YEAR

More than **5.2%** of all municipal solid waste generated in the U.S.³

AND THIS AMOUNT IS GROWING

Between 1999 and 2009 the volume of PCTW generated grew by 40% while the diversion rate only increased by 2%⁴

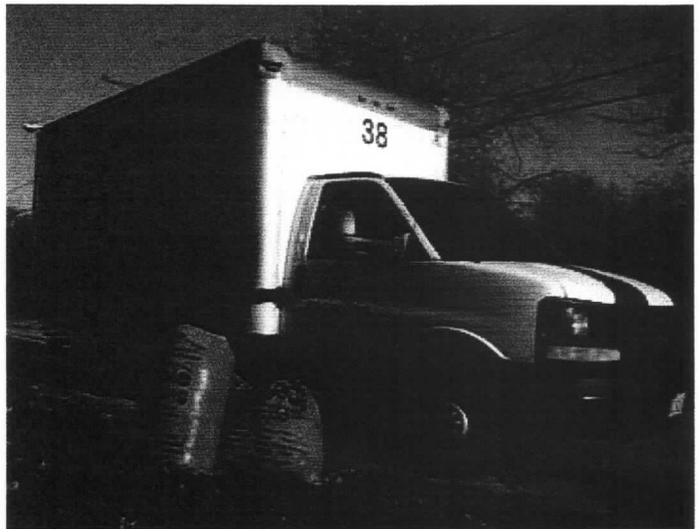


This Model has been Tested & Proven

Excerpt from USA Today, April 23, 2013 -

"Clothes recycling is going curbside in more U.S. towns as global prices rise for the used apparel, shoes and linens that Americans often toss in the trash.

Since September, more than a dozen local governments -- in Arizona, Massachusetts, New Jersey, Pennsylvania and Washington State -- have begun curbside pickup of textiles, often in special bags next to bins containing paper and cans."²



Source:
2. <http://www.usatoday.com/story/news/nation/2013/04/20/recycling-clothes-expands-curbside/2092351/>



COST TO YOUR RESIDENTS = \$0
COST TO YOUR CITY = \$0



Details & Logistics

Simple Recycling provides:

- Free residential curbside pickup service
- Specially designed recycling collection bags
- All informational materials
- All trucking, pickup expenses & program management
- Local jobs
- All related insurance coverage
- Drop boxes in locations of city's choosing (if desired)

Your city provides:

- Supplemental notification & information to residents



THE LIFE CYCLE OF SECONDHAND CLOTHING

simple
recycling

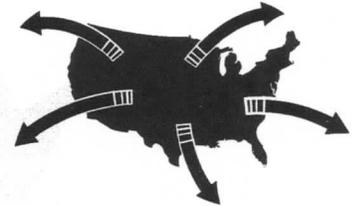
WHAT HAPPENS TO YOUR RECYCLED USED CLOTHING?

Once a resident determines that their clothing, shoes, handbags, or household textiles have reached the end of their useful life, materials are collected by Simple Recycling and collected clothing is sorted and graded for condition.



45%

Reused and Repurposed
Majority exported as
secondhand clothing.



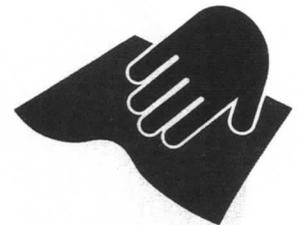
10-20%

Top quality materials are sold to local thrift stores where they create access to low cost clothing and jobs for local residents.



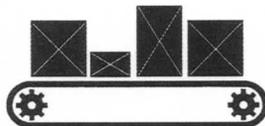
30%

Recycled and Converted
Reclaimed wiping rags
are used in various ways
as industrial and
residential absorbents.



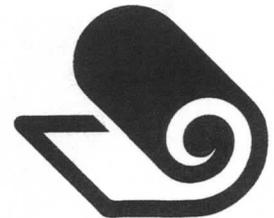
80%

The vast majority of clothing collected is not resaleable in the U.S. so it is further sorted for international export or broken down for raw materials.



20%

Recycled into Fiber
Post-consumer fiber is
used to make home
insulation, carpet padding,
and raw material for the
automotive industry.



Only 5% ends up as waste.

Thrift industry employs nearly 100,000 workers in the U.S. with over \$1 billion wages paid. In addition, private sector recyclers create an additional 15,000 to 20,000 jobs nationally.¹

WE MAKE IT SIMPLE TO DRAMATICALLY REDUCE TEXTILE WASTE.

Source:
1. "Textile Recycling in the U.S." Report submitted to
SMART by Dr. Jana Hawley PhD. Univ. of Missouri 2009

www.SimpleRecycling.com • Info@SimpleRecycling.com



Textile Recycling Fact Sheet

You and your students are probably used to recycling aluminum, paper, glass, and other items. But did you know that clothing and other textiles can be recycled too? Here are some textile recycling facts to share with your class:

The basics

- The Environmental Protection Agency estimates that the average person throws away **70 pounds** of clothing per year. That adds up to **3.8 billion pounds of unnecessary waste added to our landfills**.
- Clothing and household textiles currently make up **5.2% of the waste in landfills**.
- A textile is any item made from cloth or an artificial fabric like vinyl. Textiles are used for clothing, linens, bedding, upholstery, curtains, carpets, and other items. **Any textile item, even if it's worn, torn, or stained, can be recycled.** You can even recycle a single shoe! Items simply need to be clean and dry.
- Recycling clothing and textiles **decreases the use of natural resources**, such as water used in growing crops and petroleum used in creating new clothing and textiles. It also decreases the need for chemicals used in manufacturing new textiles and the pollution caused by the manufacturing process.

How are recycled textiles used?

- Resold at charities' secondhand clothing stores
- Sent to developing countries
- Turned into wiping cloths, which are used in a variety of industries and businesses (everything from manufacturers to repair shops, construction industries, stores, and maintenance and custodial departments)
- Processed back into fibers and turned into paper, yarn, insulation, carpet padding, and other items

Where can clothing and textiles be recycled?

If your town doesn't accept textiles with other recyclables, donate your items to a local recycling center or charity. **Nearly 100% of donated items are recycled.** The recycling center or charity will determine which items are usable as clothing, which can be sold and turned into wiping rags, and which can be sold and processed back into fibers to make new products. Charities and recyclers generate revenue for their programs, and textiles get a second (or third or fourth) life. To locate a donation center near you, visit www.smartasn.org.



More Textile Recycling Facts

What are specific textiles recycled into?

Here are a few examples:

- Stuffed toys and pillows become car seat stuffing and automobile insulation.
- T-shirts, sheets, towels, and clothing become wiping cloths.
- Denim becomes home insulation.
- Shoe soles become paving material.
- Sweaters and coats become carpet padding.
- Curtains and drapes become stuffing for pillows, sleeping bags, and animal beds.
- Wool sweaters and materials become baseball and softball filling.
- Velvet materials become jewelry box lining.
- Leftover fabric scraps become paper money.

Additional resources

- *Something From Nothing* by Phoebe Gilman (Scholastic, 1992); geared for students from preschool to grade 3, this adaptation of a Yiddish folktale follows a piece of fabric as it goes from a baby blanket to a jacket to a vest to a tie, and so on.
- *The Travels of a T-Shirt in the Global Economy* by Pietra Rivoli (John Wiley, 2005); good source of background information about what happens to used clothing.
- *Salaula: The World of Secondhand Clothing and Zambia* by Karen Tranberg Hansen (University of Chicago Press, 2000); good source of information about the used clothing industry in Africa.



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Textiles

Fleece, flannel, corduroy, cotton, nylon, denim, wool, and linen. What can you do with these fibers when you're finished wearing them, sleeping on them, or draping them over your windrows? One way to benefit both your community and the environment is to donate used textiles to charitable organizations. Most recovered household textiles end up at these organizations, who sell or donate the majority of these products. The remainder go to either a textile recovery facility or the landfill.

Just the Facts

- An estimated 13.1 million tons of textiles were generated in 2011, or 5.2 percent of total municipal solid waste (MSW) generation.
- An estimated 13.9 percent of textiles in clothing and footwear and 17.6 percent of items such as sheets and pillowcases was recovered for export or reprocessing in 2011.
- The recovery rate for all textiles was 15.3 percent in 2011, 2.0 million tons.

Collecting Textiles

Textiles typically are not sorted at the point of collection, but keeping them clean and free from moisture is important. Once clothes get wet, stained, or mildewed, they cannot be sold for reuse. To prevent contamination, many charities offer enclosed drop-off boxes for clothing or other fabrics. Communities with curbside collection for textiles should educate donors on how to properly bag clothing.

Recycling Textiles

Textile recovery facilities separate overly worn or stained clothing into a variety of categories. Based on data from the Council for Textile Recycling, it was estimated that 1.3 million tons of textiles in clothing were recovered for recycling in 2009. Some recovered textiles become wiping and polishing cloths. Cotton can be made into rags or form a component for new high-quality paper. Knitted or woven woollens and similar materials are "pulled" into a fibrous state for reuse by the textile industry in low-grade applications, such as car insulation or seat stuffing. Other types of fabric can be reprocessed into fibers for upholstery, insulation, and even building materials. Buttons and zippers are stripped off for reuse. Very little is left over at the end of the recycling process. The remaining natural materials, such as various grades of cotton, can be composted.

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More Textiles Information

The Secondary Materials and Recycled Textiles (SMART) Association [\[EXTR Disclaimer\]](#) is working to increase the amount of textile waste that can be recovered while developing new uses, products and markets for products derived from pre-consumer and post-consumer textile waste.

The Oklahoma Cooperative Extension Service has created a fact sheet on household textile and apparel recycling (PDF) (4 pp, 1.6MB, about PDF) [\[EXTR Disclaimer\]](#).

March 21, 2017

Lakeland Shores City Council
PO Box 246
Lakeland Shores, MN 55043

Mayor Zeller and Councilmembers Bischoff, Kopesky, Wilson, and Schroeder:

It is with mixed emotion that I submit my letter of resignation as City Clerk/Zoning Administrator for the City of Lakeland Shores. The past three and a half years working in this capacity have been a pleasure. I have enjoyed developing relationships with you, many past council members, election judges and the community as well. We have accomplished many good things together in a fair and transparent matter, and this I will always be proud to have been a part of.

I have accepted another position that will not allow me to continue with my part time work at Lakeland Shores. For this reason, please consider this my two-week notice. My last day will be April 4, 2017. I will be happy to meet with you over the next couple of weeks to ensure as smooth a transition as possible.

Once again, I appreciate the opportunity to have worked with you. I wish you the best in the future.

Sincerely,

Sandie Thone

Sandie Thone
Lakeland Shores City Clerk/Zoning Administrator

The City of Lakeland Shores is recruiting for the position of Part Time City Clerk:

Position: City Clerk

Posted: March 30, 2017

Application Deadline: Until Filled

FT/PT Status: Part Time: Flexible Hours

Compensation Range: \$500.00 to \$600.00 (DOQ) per month. This position reports to Mayor/City Council and performs a variety of clerical and administrative responsibilities involving the duties of City Clerk as assigned pursuant to Minnesota Statutes 412.151. *Minimum Qualifications* include experience in local government or supporting a board, proficiency in Microsoft Word/Outlook, customer service experience in a public setting with a high degree of professionalism, and a clean background check. *Preferred Qualifications* include direct experience as a deputy clerk or city clerk, certification as a Municipal Clerk, or the ability to obtain within three years. Please send cover letter and resume to lakelandshores@gmail.com or Lakeland Shores, PO Box 246, Lakeland, MN 55043. Contact 651.436.1789 with questions/for additional information.