City Council Meeting

February 19, 2018
6:00 p.m.

Cadillac Municipal Complex
Council Chambers
200 N. Lake St.
Cadillac, MI 49601

February 19, 2018 City Council Meeting Agenda
6 p.m. at City Hall – 200 N. Lake St. – Cadillac, MI 49601

We are all accountable

CALL TO ORDER
PLEDGE OF ALLEGIANCE
ROLL CALL

I. APPROVAL OF AGENDA

II. PUBLIC COMMENTS

It is requested that comment time be limited to three (3) minutes.

III. CONSENT AGENDA

All items listed on the consent agenda are considered routine and will be enacted by one motion with roll call vote. There will be no separate discussion of these items unless a Council Member so requests it, in which event the items will be removed from the consent agenda and discussed separately.

A. Minutes from the regular meeting held on February 5, 2018.
Support Document III-A

IV. PUBLIC HEARINGS

A. Public hearing to consider approval of a resolution to adopt Ordinance Amending Chapters 8 and 18 of the City of Cadillac Code.
Support Document IV-A

V. COMMUNICATIONS

A. Lake Cadillac Annual Report - Restorative Lake Sciences.
Support Document V-A

VI. APPOINTMENTS

A. Recommendation regarding reappointment to the Cemetery Board.
Support Document VI-A

B. Recommendation regarding reappointment to the Downtown Development Authority.
Support Document VI-B

VII. CITY MANAGER'S REPORT

A. State of the City Presentation.

B. Bids and recommendation regarding Bio-Solids Injection.
Support Document VII-B

C. Bids and recommendation regarding Final Effluent Water (FEW) Pump.
Support Document VII-C

D. Bids and recommendation regarding Equalization (EQ) Basin Repair.
Support Document VII-D

E. Bids and recommendation regarding Muffin Monster Cutter Stack.
Support Document VII-E

F. Bids and recommendation regarding Return Activated Sludge (RAS) Pump.
Support Document VII-F

G. Bids and recommendation regarding Digester Circulator Pump.
Support Document VII-G

H. Hardship (Poverty) Exemption Policy.
Support Document VII-H

I. Mixed-Use Planned Unit Development District (MPUD) Waiver Request.
Support Document VII-I

VIII. PUBLIC COMMENTS

It is requested that comment time be limited to three (3) minutes.

IX. GOOD OF THE ORDER

X. CLOSED SESSION

Adjourn to closed session to consult with the City Attorney regarding trial or settlement strategy in connection with Wexford County Circuit Court Consolidated Case Nos. 13-24803-CH and 17-27610-CZ, *TeriDee LLC et al. v Clam Lake Township and Haring Charter Township v City of Cadillac and HOP Family, LLC and City of Cadillac v Haring Charter Township and Clam Lake Township.*

XI. ADJOURNMENT

Core Values (R.I.T.E.)

Respect
Integrity
Trust
Excellence

Guiding Behaviors

We support each other in serving our community
We communicate openly, honestly, respectfully, and directly
We are fully present
We are all accountable
We trust and assume goodness in intentions
We are continuous learners

CITY COUNCIL MEETING MINUTES

6:00 PM – February 5, 2018
Cadillac City Hall – 200 N. Lake St. - Cadillac, Michigan 49601

CALL TO ORDER

Mayor Filkins called the City Council meeting to order at approximately 6:00 pm.

PLEDGE OF ALLEGIANCE

ROLL CALL

Council Present:	Spoelman, Schippers, Engels, King, Mayor Filkins
Council Absent:	None
Staff Present:	Peccia, Dietlin, Coy, Wolff, Homier, Wasson

APPROVAL OF AGENDA

2018-011 Approve agenda as presented.
Motion was made by King and supported by Schippers to approve the agenda as presented.

Motion unanimously approved.

PUBLIC COMMENTS

There were no public comments.

CONSENT AGENDA

2018-012 Approve consent agenda as presented.
Motion was made by Schippers and supported by King to approve the consent agenda as presented.

Motion unanimously approved.

APPOINTMENTS

A. Recommendation regarding appointment to the Planning Commission.

Schippers asked to be recused due to her relationship with the applicant.

Spoelman noted that Mr. Bunce is the husband of Council Member Schippers.

2018-013 Approve recusal of Council Member Schippers.
Motion was made by King and supported by Spoelman to approve the recusal request from Council Member Schippers.

Motion unanimously approved.

Spoelman noted that applications are normally included in the packet.

Peccia stated the application would be forwarded to Council.

2018-014 Approve appointment to the Planning Commission.
Motion was made by Spoelman and supported by Engels to approve the appointment of David Bunce to the Planning Commission for a 3-year term to expire on February 6, 2021.

Motion unanimously approved.

CITY MANAGER'S REPORT

A. Household Hazardous Waste Collection Day – General Program Information.

Peccia stated the City is currently seeking proposals and will potentially hold a Household Hazardous Waste Collection Day in the spring or summer. He noted the City is in communication with the County regarding this project. He explained that if the County decides to participate then it will be open to all County residents. If the County decides not to participate, then it will be available to all customers of the City's sanitary sewer system. He added in the event the County decides not to participate, the City may develop a mechanism to allow residents of the County to participate through a coupon or voucher system.

Spoelman asked about collaborating with some of the surrounding townships.

Peccia stated the City has not reached out to the townships regarding their interest in collaborating on this project. He noted some of the townships hold their own collection days.

INTRODUCTION OF ORDINANCES AND RESOLUTIONS

A. Adopt resolution to introduce Ordinance Amending Chapters 8 and 18 of the City of Cadillac Code and set a public hearing for February 19, 2018.

Peccia noted Chapters 8 and 18 of the City Code pertain to the Property Maintenance and Fire Codes. He stated to ensure cohesion between the State's Building Code and our Property Maintenance and Fire Codes (City Code), it is advisable at this time to update our City Code to reference the 2015 International Property Maintenance Code (IPMC) and the 2015 International Fire Code (IFC) Editions in addition to the following related City Code updates and amendments. He reviewed the following five (5) key points:

IPMC

- It is recommended that our City Code be updated to reference the 2015 International Property Maintenance Code instead of the 2012 Edition.

- In collaboration with the Police Department, during their review several code enforcement redundancies, specifically regarding noxious weeds and junk/abandoned vehicle codes were noticed, and therefore it is recommended that the City Code be amended appropriately to remove the various code enforcement redundancies.

- It is recommended to amend the City Code to include updated language regarding condemned housing and carbon monoxide detection.

IFC

- It is recommended that our City Code be updated to reference the 2015 International Fire Code instead of the 2012 Edition.

- It is recommended to amend the City Code to include a no-fee registration program for fire protection system contractors. This program will provide a formal way for our Fire Department to share information on City Codes and permit processes with companies or individuals that work on fire protection systems such as sprinklers, alarms, and extinguishers.

Peccia noted the City hosted an informational meeting and invited the Rental Housing Association. He stated the head of the Rental Housing Association attended the meeting but did not propose any changes to the current draft. He noted it is possible that additional feedback may be received before or at the public hearing that could be taken into consideration.

King noted communication regarding the proposed changes was posted on the City's website. He inquired if there were other places, such as social media sites, that information could be posted.

Peccia stated Facebook could be utilized to communicate information.

2018-015 Set public hearing for Ordinance 2018-01.

Motion was made by Engels and supported by Schippers to adopt the resolution to introduce Ordinance Amending Chapters 8 and 18 of the City of Cadillac Code and set a public hearing for February 19, 2018.

Motion unanimously approved.

ADOPTION OF ORDINANCES AND RESOLUTIONS

A. Adopt Resolution Supporting Water Asset Management Plan.

Peccia noted the Michigan Department of Environmental Quality (MDEQ) requires that the City adopt a resolution in support of the Water Asset Management Plan. He stated the Water Asset Management Plan, developed by Prein & Newhof, was submitted by the January 1, 2018 deadline.

Spoelman asked if an executive summary of the plan will be presented to Council.

Peccia stated the complete report was provided to Council so a presentation was not prepared.

Spoelman asked if any recommendations were included in the report.

Peccia noted the resolution can be postponed until a presentation is provided by Prein & Newhof.

King briefly summarized the format of the report.

Spoelman recommended that Council be provided with an executive summary before action is taken on the resolution.

The item was tabled.

MINUTES AND REPORTS OF BOARDS AND COMMISSIONS

A. Downtown Development Authority

Engels mentioned that the minutes from the DDA reflect discussions regarding wayfinding. He stated that addressing wayfinding in the downtown area is important.

Spoelman stated she is glad there has been discussion regarding traffic on Mitchell Street.

PUBLIC COMMENTS

There were no public comments.

GOOD OF THE ORDER

Peccia provided a brief update on the Mitchell-Bentley site. He noted the Brownfield Redevelopment Authority will be meeting at the end February.

Spoelman requested an update on the Market project.

Spoelman stated the City will be bidding out the solid waste contract this year and asked if the recycling contract will also be reviewed.

Peccia stated there is an opportunity to extend the solid waste contract. He noted it will be addressed in one of the upcoming work sessions. He stated recycling is provided by a different vendor. He noted there is no indication the current vendor is uninterested in continuing to provide services to the City.

Jeff Dietlin, Director of Utilities, stated there is an option to extend the recycling contract.

Peccia provided an update on the Market project. He noted some materials are already on-site and the roof structure is in the process of being painted. He stated the plan is to have all of the materials on-site by the end of March. He added the project will likely be completed in the summer.

Schippers noted she has heard a lot of snowmobiles around Diggins Hill. She stated snowmobiles can damage streets and are a danger to children playing the area. She reminded everyone to only ride snowmobiles in authorized areas.

Spoelman noted it is illegal to ride snowmobiles on City streets.

ADJOURNMENT

Respectfully submitted,

Carla J. Filkins, Mayor Sandra L. Wasson, City Clerk

February 19, 2018

COUNCIL COMMUNICATION

Re: Ordinance Amending Chapters 8 and 18 of the City of Cadillac Code

The following information was provided at the Council meeting held on February 5, 2018.

As part of the Fire Department's routine code review, they were advised that the in the spring of 2017, the State updated its Building Code to the 2015 Edition. To ensure cohesion between the State's Building Code and our Property Maintenance and Fire Codes (City Code), it is advisable at this time to update our City Code to reference the 2015 International Property Maintenance Code (IPMC) and the 2015 International Fire Code (IFC) Editions in addition to the following related City Code updates and amendments as mentioned below:

- IPMC
    - It is recommended that our City Code be updated to reference the 2015 International Property Maintenance Code instead of the 2012 Edition.
    - In collaboration with the Police Department, during their review several code enforcement redundancies, specifically regarding noxious weeds and junk/abandoned vehicle codes were noticed, and therefore it is recommended that the City Code be amended appropriately to remove the various code enforcement redundancies.
    - It is recommended to amend the City Code to include updated language regarding condemned housing and carbon monoxide detection.
- IFC
    - It is recommended that our City Code be updated to reference the 2015 International Fire Code instead of the 2012 Edition.
    - It is recommended to amend the City Code to include a no-fee registration program for fire protection system contractors. This program will provide a formal way for our Fire Department to share information on City Codes and permit processes with companies or individuals that work on fire protection systems such as sprinklers, alarms, and extinguishers.

The Fire Department, identical to what they did in 2015 when the City last made this type of update to its Code, hosted a meeting to discuss the updates and amendments, and invited the Cadillac Rental Housing Association in addition to posting the opportunity on our website should anyone in the general public also have interest in attending. Note, the Fire Department's meeting does not take the place of the required public hearing. The

head of the Rental Housing Association attended but did not propose any changes to our current draft. It is possible that additional feedback may be received before or at the public hearing that could be taken into consideration.

Recommended Action:
Approve the resolution to adopt Ordinance Amending Chapters 8 and 18 of the City of Cadillac Code.

City Council

200 North Lake Street
Cadillac, Michigan 49601
Phone (231) 775-0181
Fax (231) 775-8755

RESOLUTION NO. _____

RESOLUTION TO ADOPT
ORDINANCE AMENDING CHAPTERS 8 AND 18 OF THE CITY OF CADILLAC CODE

At a meeting of the City Council of the City of Cadillac, Wexford County, Michigan, held in the Council Chambers, Cadillac Municipal Complex, 200 North Lake Street, Cadillac, Michigan, on the 19th day of February, 2018, at 6:00 p.m.

PRESENT:
_____

ABSENT:
_____

The following preamble and resolution was offered by _____and seconded by _____ .

WHEREAS, the International Code Council, Inc. has issued its 2015 International Fire and Property Maintenance Codes (the "2015 Codes"); and

WHEREAS, the 2015 Codes regulate and govern the safeguarding of life and property from conditions hazardous to life or property in the occupancy of buildings and premises; and

WHEREAS, the City wishes to consider adopting an ordinance to amend Chapters 8 and 18 of the Cadillac City Code to adopt the 2015 Codes by reference, as amended and to consolidate existing City of Cadillac Code provisions/regulations into the 2015 Codes;

WHEREAS, at its meeting on February 5, 2018, the City introduced an Ordinance to amend Chapters 8 and 18 of the City Code; and

WHEREAS, on February 19, 2018, the City held a public hearing to consider adoption of the Ordinance; and

WHEREAS, following the public hearing, the City has determined it is in the best interests of the health, safety and welfare of City residents to adopt the Ordinance.

NOW, THEREFORE, the City Council of the City of Cadillac, Wexford County, Michigan, resolves as follows:

1. Ordinance No. 2018-01, Ordinance Amending Chapters 8 and 18 of the City of Cadillac Code (the "Ordinance," attached as Exhibit A) is hereby adopted.

2. The Ordinance shall be filed with the City Clerk.

3. The City Clerk is directed to publish a Notice of Adoption within seven (7) days after its adoption.

4. Any and all resolutions that are in conflict with this Resolution are hereby repealed to the extent necessary to give this Resolution full force and effect.

YEAS: _____

NAYS: _____

STATE OF MICHIGAN)
)ss
COUNTY OF WEXFORD)

I, Sandra Wasson, City Clerk of the City of Cadillac, hereby certify this to be a true and complete copy of Resolution No. ____, duly adopted at a regular meeting of the City Council held on the 19th day of February, 2018.

_____
Sandra Wasson
Cadillac City Clerk

City Council

200 North Lake Street
Cadillac, Michigan 49601
Phone (231) 775-0181
Fax (231) 775-8755

ORDINANCE NO. 2018-01

ORDINANCE AMENDING CHAPTERS 8 AND 18 OF THE CITY OF CADILLAC CODE

THE CITY OF CADILLAC ORDAINS:

Section 1. Amendment of Chapter 8, Article V

Chapter 8, Article V, Section 8-121 of the City Code is hereby amended as follows:

Sec. 8-121. Adoption of 2015 International Property Maintenance Code.

The city hereby adopts by reference the **2015** International Property Maintenance Code issued by International Code Council, Inc., except those sections herein deleted or amended.

Chapter 8, Article V, Section 8-124 of the City Code is hereby amended to incorporate the following amendments to the 2015 International Property Maintenance Code:

Sec. 8-123. Amendments.

Section 101.1: These regulations shall be known as the "International Property Maintenance Code of **the City of Cadillac,**" hereinafter referred to as "this code."

Section 103.1: **This code shall be enforced by the City Manager or his designee. The City Manager or his designee shall be known as the *code official.***

Section 103.2: Appointment. **This section is deleted in its entirety.**

Section 103.5: The fees for activities and services performed by the department in carrying out its responsibilities under this code shall be **established by resolution of the city council.**

Section 107.6: It shall be unlawful for the owner of any dwelling unit or structure who has received a compliance order or upon whom a notice of violation has been served to sell, transfer, mortgage, lease or otherwise dispose of such until the provisions of the compliance order or notice have been complied with; or until such owner or the owner's authorized agent shall first furnish the grantee, transferee, mortgage or lessee a

true copy of any compliance order or notice issued by the code official a signed and notarized statement acknowledging the receipt of such compliance order or notice and fully accepting the responsibility without condition for making the corrections or repairs required by such compliance order or notice of violation. **A violation of this section shall be deemed a misdemeanor offense.**

Section 108.8: **The owner of any structure placarded pursuant to Section 108.4 is responsible for paying a monthly, non-refundable administrative fee while the placard remains on the structure. The administrative fee shall be established by resolution of the City Council in an amount sufficient to defray the cost incurred by the City to monitor the structure for the purpose of preventing public safety hazards. The owner or party in interest whose name appears on the City's real property tax assessment records shall be notified of the amount owed by first class mail at the address shown on the City's real property tax assessment records. After 30 days, any unpaid amount shall be reported to the City Assessor for placement on the next tax roll of the City and imposition of a lien against the property, as permitted by State law.**

Section 111.1 through Section 111.8: These sections are deleted in their entirety and are replaced by the following:

Section 111.1: **Any person directly affected by a decision of the code official or a notice or order issued under this code shall have the right to a hearing before the city's Construction Code Board of Appeals as established in Article II of the Cadillac City Code.**

Section 111.2: **Appeal to Circuit Court. Any person aggrieved by a decision of the Construction Code Board of Appeals under Section 111.1 may appeal said decision to the circuit court.**

Section 112.4: Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine **in an amount to be established by resolution of the City Council.**

Section 202: (Add definitions)

ABANDONED VEHICLE. A vehicle which has remained on private property for a period of time so as to appear to be abandoned and which remains on private property for a period of 48 hours.

INOPERABLE VEHICLE. A vehicle, which is incapable of performing the function for which it was manufactured because of damage, missing or malfunctioning parts or equipment, or for any other reason. The term "inoperable vehicle" shall include junk vehicles and scrap vehicles. A historic motor vehicle, duly registered and certified as such as prescribed by the Michigan Vehicle Code, Public Act No. 300 of 1949 (MCL 257.1 et seq.), shall not be deemed an inoperable vehicle. Vehicles presently in use and subject to routine maintenance (oil change, tire rotation, etc.) shall not be deemed inoperable.

RECREATIONAL VEHICLE. A motorized or nonmotorized vehicle that is not generally used as a primary means of transportation and is generally used for recreational purposes. The term "recreational vehicle" includes, but is not limited to a motor home, motorcoach, trailer, camper, watercraft, snowmobile, offroad motorcycle, quad runner, dune buggy, offroad vehicle, personal aircraft or plane.

Section 302.4: All premises and exterior property shall be maintained free from weeds or plant growth in excess of **12** inches. **In addition to the remedies otherwise provided, any costs incurred by the City in the destruction or maintenance of weeds in violation of this Ordinance may be placed on the next tax roll of the City and the City may impose a lien against the property, as permitted by State law.** (The remainder of this section shall be in effect as written.)

Section 302.8: Except as provided for in other regulations, no inoperative, **abandoned** or unlicensed motor vehicle shall be parked, kept or stored on any premises, and no vehicle shall at any time be in a state of major disassembly, disrepair, or in the process of being stripped or dismantled. Painting of vehicles is prohibited unless conducted inside an approved spray booth.

Exception: A vehicle of any type is permitted to undergo a major overhaul, including body work, provided that such work is performed inside a structure or similarly enclosed area designed and approved for such purposes **and subject to obtaining an operational permit from the fire code official pursuant to the International Fire Code**.

Mobile homes must be located within a licensed mobile home park or within a designated area, properly zoned, such as a mobile home district.

Storage of recreational vehicles is limited to those recreational vehicles owned by the owner of record, renter or legal occupant of property.

Recreational vehicles shall be stored or parked within the confines of the rear or side yard areas with a minimum three-foot setback from side or rear lot lines. On lake front property, the yard abutting the lake shall be considered as the rear yard for the enforcement of this section. The code enforcement officer shall determine if rear lot storage is possible for purposes of this section.

Recreational vehicles shall not be connected to sanitary facilities or permanent water connections, and shall not be occupied for a period to exceed 72 hours.

The code enforcement officer may, upon written request, grant a one-time extension of 72 hours renewal for occupancy.

Section 304.14: **During the period from April 1 through October 31**, every door, window and other outside opening required for ventilation of habitable rooms, food preparation areas, food preparation areas, food service areas or any areas where products to be included or utilized in food for human consumption are processed, manufactured, packaged or stored shall be supplied with approved rightly fitting screens of not less than 16 mesh per inch (16 mesh per 25 mm), and every screen door

used for insect control shall have a self-closing device in good working condition. (The remainder of this section shall be in effect as written.)

Section 602.3: Every owner and operator of any building who rents, leases or lets one or more dwelling units or sleeping units on terms, either expressed or implied, to furnish heat for the occupants thereof shall supply heat **at all times** to maintain a temperature of not less than 68°F (20°C) in all habitable rooms, bathrooms and toilet rooms. (The remainder of this section shall be in effect as written.)

Section 602.4: Indoor occupiable work spaces shall be supplied with heat **at all times** to maintain a temperature of not less than 65°F (18°C) during the period the spaces are occupied. (The remainder of this section shall be in effect as written.)

(Added) ***Section 704.2.5:*** **Carbon monoxide alarms. Existing residential occupancies shall be equipped with carbon monoxide alarms. Alarms shall be installed outside of each separate dwelling unit sleeping area in the immediate vicinity of the sleeping area. Alarms shall receive power from building wiring where such wiring is served from a commercial source. When primary power is interrupted, the alarm shall receive back-up power from a battery.**

Exception: Alarms having a 10-year sealed battery may be used in lieu of a wired alarm.

Chapter 8, Article V, section 8-127 of the City Code entitled “Violations” is hereby amended to read as follows in its entirety:

Sec. 8-127. - Violations.

Any violation of this Article or the 2015 International Property Maintenance Code shall be punishable as a municipal civil infraction **unless otherwise specified**.

Section 2. Amendment of Chapter 18, Article II.

Chapter 18, Article II, Section 18-19 of the City Code shall hereby be amended as follows:

Sec. 18-19. Adoption of 2015 International Fire Code.

The city hereby adopts by reference the **2015** International Fire Code issued by International Code Council, Inc., except those sections herein deleted or amended.

Chapter 18, Article II, Section 18-22 of the City Code is hereby amended to incorporate the following amendments to the 2015 International Fire Code:

Section 101.1. Title. These regulations shall be known as the "Fire Code of **the City of Cadillac**," hereinafter referred to as "this code."

Section 103.2. Appointment. **This section is deleted in its entirety.**

*Section 108.*1. Board of appeals established. In order to hear and decide appeals of orders, decisions or determinations made by the fire code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The fire code official shall be an ex officio member of said board but shall not have a vote on any matter before the board. The board shall adopt rules of procedure for conducting its business, and shall render all decisions and findings in writing to the appellant with a duplicate copy to the fire code official.

Any person directly affected by a decision of the code official or a notice or order issued under this code shall have the right to a hearing before the city's Construction Code Board of Appeals as established in Article II of the Cadillac City Code.

Any person aggrieved by a decision of the Construction Code Board of Appeals may appeal said decision to the circuit court.

Section 109.3. Violation penalties. Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of a **civil infraction, unless otherwise specified**. Each day that a violation continues after due notice has been served shall be deemed a separate offense.

Section 111.4. Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than **one hundred ($100.00), plus costs, for the first offense, not less than two-hundred fifty dollars ($250.00), plus costs, and one month suspension from providing services within the City for the second offense, and not less than five-hundred dollars ($500.00), plus costs, and one year suspension for each repeat offense thereafter.**

Section 901.1. Scope. The provisions of this chapter shall specify where fire protection systems are required and shall apply to the design, installation, inspection, operation, testing and maintenance of all fire protection systems. **Violations of this Section 901 shall be deemed misdemeanors, punishable by a fine of not more than five-hundred dollars ($500.00) or imprisonment not exceeding ninety (90) days.**

(Added) *Section 901.11:* Authorized Fire Protection Contractor. All fire protection system contractors performing inspection, testing, maintenance, repair, modification, or installation activities of any fire protection system shall first be approved to perform such work by the authority having jurisdiction. In addition to the penalties set forth in Section 901.11, violators of this section are also subject to the penalties set forth in Section 111.4 of the Fire Code of the City of Cadillac.

1031.1 *General*. The means of egress for buildings or portions thereof shall be maintained in accordance with this section. **Violations of this Section 1031 shall be deemed misdemeanors, punishable by a fine of not more than five-hundred dollars ($500.00) or imprisonment not exceeding ninety (90) days.**

Section 3. Amendment of Section 16-208 of City Code.

Section 16-208 of the City Code is hereby amended to remove the definition of "vehicle," "abandoned vehicle," "inoperable vehicle" and "recreational vehicle" as those definitions shall hereafter be incorporated into the International Property Maintenance Code of the City of Cadillac pursuant to Section 1 above.

Section 4. Amendment of Section 16-209 of City Code.

Section 16-209 of the City Code is hereby amended to remove paragraphs (4) and (5) regarding inoperable and abandoned vehicles as those regulations shall hereafter be incorporated into the International Property Maintenance Code of the City of Cadillac pursuant to Section 1 above.

Section 5. Repealer of Sections 16-210 & 16-213 of City Code.

Section 16-210 and 16-213 of the City Code regarding dismantling of vehicles and storage of recreational vehicles are hereby repealed in their entirety as those regulations shall hereafter be incorporated into the International Property Maintenance Code of the City of Cadillac pursuant to Section 1 above.

Section 6. Repealer of Chapter 16 Article V of City Code.

Chapter 16 Article V of the City Code regarding weed control is hereby repealed in its entirety and the City hereby incorporates the provisions regarding weed control in the International Property Maintenance Code of the City of Cadillac pursuant to Section 1 above.

Section 7.Validity and Severability.

Any section or subsection not expressly amended by this Ordinance shall remain in full force and effect. Should any portion of this Ordinance be found invalid for any reason, such holding shall not be construed as affecting the validity of the remaining portions of this Ordinance.

Section 8. Repealer.

All other ordinances inconsistent with the provisions of this Ordinance are hereby repealed but only to the extent necessary to give this Ordinance full force and effect.

Section 9. Effective Date.

This Ordinance shall take effect twenty (20) days after its adoption.

Approved this _____ day of _____, 2018.

_____ _____

Sandra Wasson, Clerk Carla Filkins, Mayor

I, Sandra Wasson, City Clerk of the City of Cadillac, Michigan, do hereby certify that a summary of Ordinance No. 2018-01 was published in the Cadillac News on the _____ day of _____, 2018.

_____

Sandra Wasson, City Clerk

February 19, 2018

Council Communication

Re: Lake Management Report for 2017

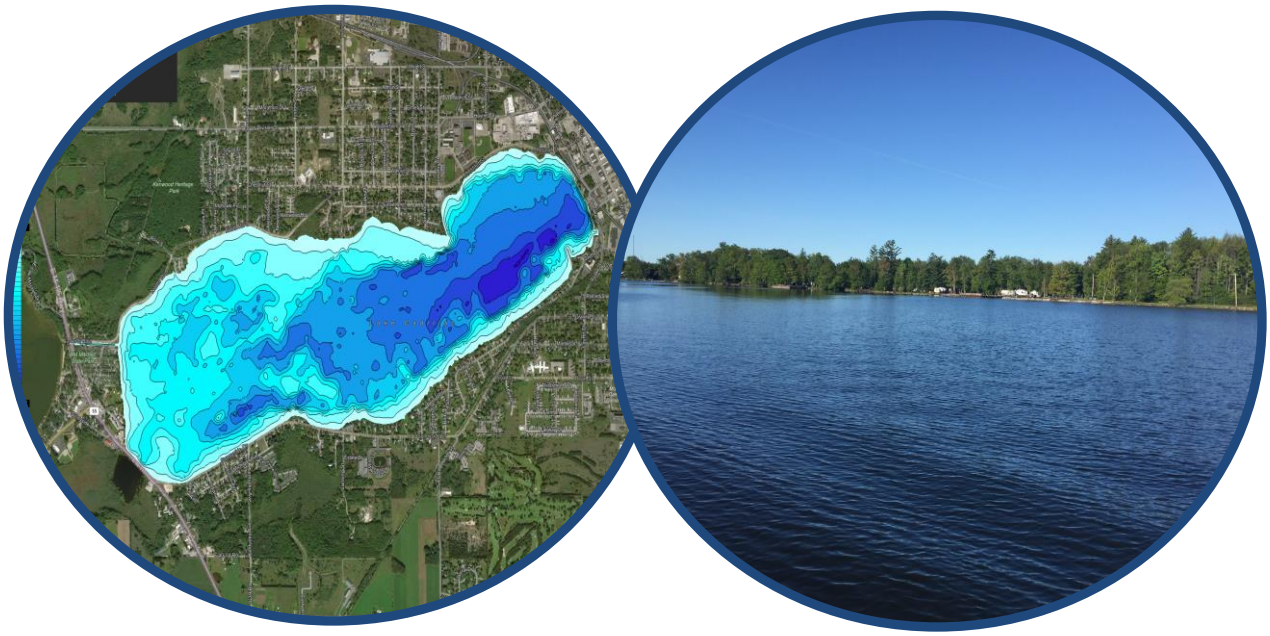
Restorative Lake Sciences (RLS), the city's lake management consultant, will be presenting the Lake Management Report for 2017 to City Council. RLS was selected as the consultant in early 2017 making this their initial report. See attached report.

Dr. Jennifer Jermalowicz-Jones, Water Resources Director and owner of RLS will be presenting. The presentation will focus on the results of their sampling and research, as well as recommendations for invasive species control, algal blooms, ecological factors influencing the lake and opportunities to educate the public.

Recommended Action:
No action required.

Restorative Lake Sciences™

Lake Cadillac 2017 Aquatic Vegetation, Water Quality, and 2018 Management Recommendations Annual Report



January, 2018

Lake Cadillac 2017 Aquatic Vegetation, Water Quality, and 2018 Management Recommendations Annual Report

© Restorative Lake Sciences
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Spring Lake, Michigan 49456
Email: info@restorativelakesciences.com
Website: http://www.restorativelakesciences.com

Table of Contents

Section 1

Lake Cadillac 2017 Aquatic Vegetation, Water Quality, and 2018 Management Recommendations Annual Report

The following Cadillac report is a summary of key lake findings collected in 2017.

The overall condition of Lake Cadillac relative to invasive species management has been improving over the years due to rigorous aquatic vegetation surveys and selective spot-treatments to control invasive aquatic plant species such as hybrid Eurasian Watermilfoil (EWM), and Curly-leaf Pondweed. Both of these species are declining in Lake Cadillac and providing space for the 20 native aquatic plant species that are so important to the ecological balance of Lake Cadillac.

In 2017, RLS collected multiple water quality parameters from Lake Cadillac which include water temperature, dissolved oxygen, pH, conductivity, oxidative reduction potential, total dissolved solids, turbidity, total phosphorus, total nitrogen, Secchi transparency , chlorophyll-a and algal community, macroinvertebrates, and zooplankton composition. In addition, RLS collected 10 sediment samples from around Lake Cadillac to determine the sediment nutrients such as phosphorus and organic matter and to determine the extent of the lake dissolved oxygen. There is concern about the overabundance of the blue-green algae *Microcystis*, the low dissolved oxygen at the lake bottom during the warm summer months, and the low amount of native aquatic vegetation cover as well as the macroinvertebrates that represent fair water quality.

RLS offers many improvement recommendations for the 2018 season and beyond relative to storm drain monitoring, nutrient reduction, blue-green algal reduction, continued management of invasive aquatic plant species, reduction of Canada geese, and the education of Lake Cadillac riparians.

Section 2

Lake Cadillac Water Quality Data (2017)

Water Quality Parameters Measured

There are hundreds of water quality parameters one can measure on an inland lake but several are the most critical indicators of lake health. These parameters include water temperature (measured in °C or °F), dissolved oxygen (measured in mg/L), pH (measured in standard units-SU), conductivity (measured in micro-Siemens per centimeter-µS/cm), total alkalinity (mg/L $CaCO_3$), total dissolved solids (mg/L), turbidity (NTU's), oxidative reduction potential (µmhos), secchi transparency (feet), total phosphorus and total nitrate nitrogen (both in mg/L), chlorophyll-*a* (in µg/L), and algal species composition. Water quality was measured in the three deep basins of Lake Cadillac in spring (June 1, 2017) and summer (August 16, 2017) of 2017 (Figure 1). There was very little variation in 1-foot interval readings so the top, middle, and bottom depth measurements are reported below to show the change in water column conditions from the surface to the bottom of the lake.

Additional water quality samples collected at the three deep basins included sediment macroinvertebrates and water column zooplankton. Also collected were ten sediment samples which were analyzed for sediment organic matter, total phosphorus, and dissolved oxygen at depth.

RLS attempted to get flow measurements and water quality samples from the Black River inflow at Kenwood Park and the M-115 causeway area but the incoming water was mixing with the lake water due to high water levels and an unmixed sample could not be obtained. A sample of water quality parameters at the Lake Mitchell inlet was able to be measured at the other end of the channel and that data is presented below.

Table 1 below demonstrates how lakes are classified based on key parameters. Lake Cadillac would be considered eutrophic (productive) since it does contain ample phosphorus, nitrogen, and aquatic vegetation and excessive blue-green algae growth. General water quality classification criteria are defined in Table 1. 2017 water quality data for Lake Cadillac are shown below in Tables 2-7.

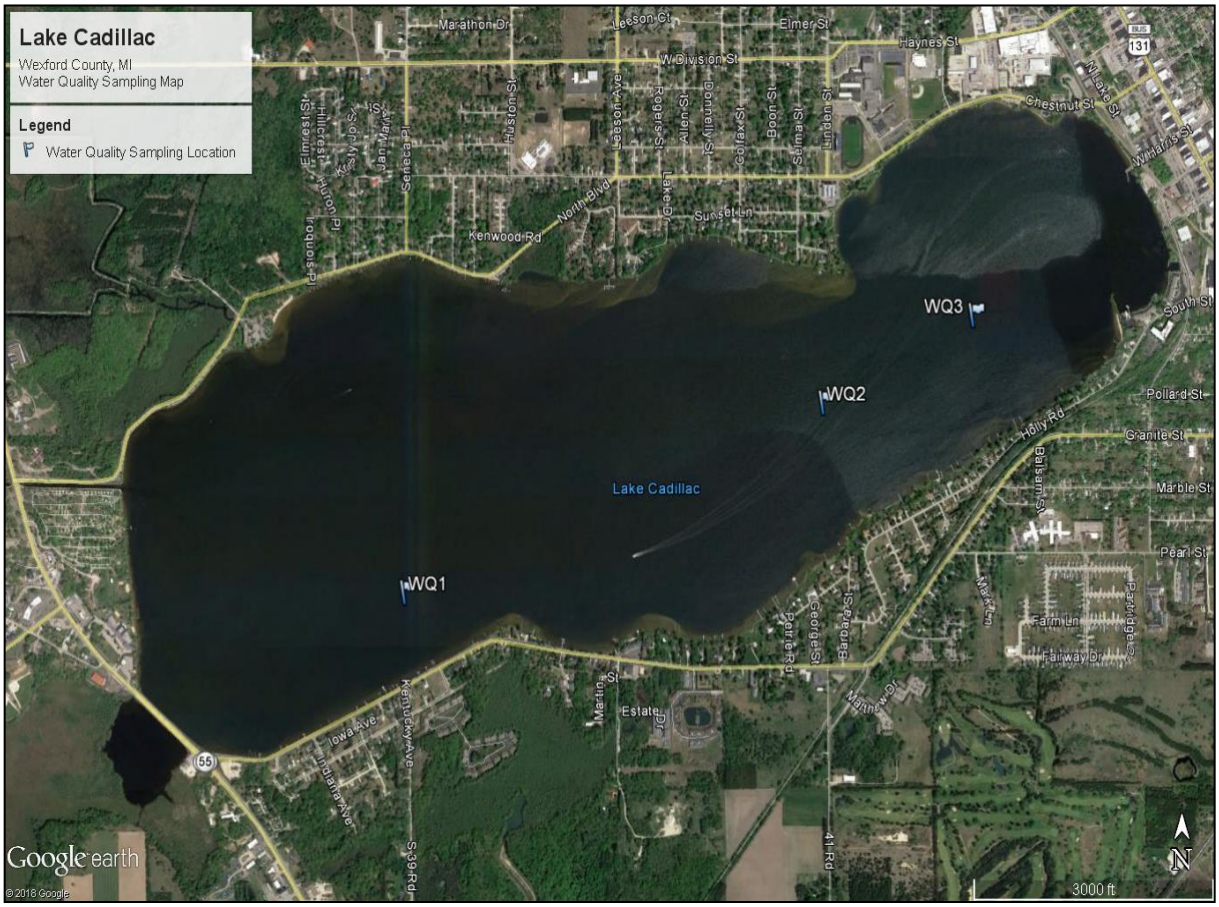

Figure 1. Deep Basin Water Quality Sampling Locations (n=3) in Lake Cadillac.

Table 1. Lake trophic classification (MDNR).

Lake Trophic Status	*Total Phosphorus ($\mu g\ L^{-1}$)*	*Chlorophyll-a ($\mu g\ L^{-1}$)*	*Secchi Transparency (feet)*
Oligotrophic	< 10.0	< 2.2	> 15.0
Mesotrophic	10.0 – 20.0	2.2 – 6.0	7.5 – 15.0
Eutrophic	> 20.0	> 6.0	< 7.5

Lake Cadillac Deep Basin Water Quality Data Tables:

Table 2. Lake Cadillac water quality parameter data collected over deep basin #1 on June 1, 2017.

Depth ft.	*Water Temp ºC*	*DO mg L^{-1}*	*pH S.U.*	*Cond. $\mu S\ cm^{-1}$*	*Turb. NTU*	*TDS mg L^{-1}*	*TP mg L^{-1}*	*TKN mg L^{-1}*	*Chl-a $\mu g\ L^{-1}$*
0	19.2	7.4	8.6	162	4.9	93	0.034	0.8	5.0
11.0	16.4	6.0	8.5	163	5.5	93	0.040	0.9	--
22.0	13.5	1.0	8.4	171	6.0	92	0.042	1.0	--

Table 3. Lake Cadillac water quality parameter data collected over deep basin #2 on June 1, 2017.

Depth ft.	*Water Temp ºC*	*DO mg L^{-1}*	*pH S.U.*	*Cond. $\mu S\ cm^{-1}$*	*Turb. NTU*	*TDS mg L^{-1}*	*TP mg L^{-1}*	*TKN mg L^{-1}*	*Chl-a $\mu g\ L^{-1}$*
0	18.4	7.7	8.6	166	4.2	97	0.032	0.9	6.0
11.0	17.5	5.9	8.5	165	5.0	99	0.042	1.2	--
22.0	15.7	2.1	8.5	163	5.5	96	0.036	0.9	--

Table 4. Lake Cadillac water quality parameter data collected over deep basin #3 on June 1, 2017.

Depth ft.	*Water Temp ºC*	*DO mg L^{-1}*	*pH S.U.*	*Cond. µS cm^{-1}*	*Turb. NTU*	*TDS mg L^{-1}*	*TP mg L^{-1}*	*TKN mg L^{-1}*	*Chl-a µg L^{-1}*
0	18.5	7.5	8.5	164	4.0	95	0.030	0.9	6.0
13.0	15.5	6.3	8.5	160	4.1	65	0.042	1.0	--
26.0	15.1	1.5	8.4	162	5.9	56	0.030	0.9	--

Table 5. Lake Cadillac water quality parameter data collected over deep basin #1 on August 16, 2017.

Depth ft.	*Water Temp ºC*	*DO mg L^{-1}*	*pH S.U.*	*Cond. µS cm^{-1}*	*Turb. NTU*	*TDS mg L^{-1}*	*TP mg L^{-1}*	*TKN mg L^{-1}*	*Chl-a µg L^{-1}*
0	22.5	8.7	8.6	154	4.1	110	0.033	0.8	6.0
11.0	21.6	4.5	8.4	154	5.2	102	<0.050	0.8	--
22.0	21.0	0.4	8.3	161	5.8	99	<0.050	0.8	--

Table 6. Lake Cadillac water quality parameter data collected over deep basin #2 on August 16, 2017.

Depth ft.	*Water Temp ºC*	*DO mg L^{-1}*	*pH S.U.*	*Cond. µS cm^{-1}*	*Turb. NTU*	*TDS mg L^{-1}*	*TP mg L^{-1}*	*TKN mg L^{-1}*	*Chl-a µg L^{-1}*
0	22.4	8.6	8.6	154	4.0	101	0.022	0.6	6.0
11.0	21.5	4.9	8.4	155	4.8	98	0.022	0.6	--
22.0	19.7	0.4	8.4	161	5.1	103	<0.050	0.6	--

Table 7. Lake Cadillac water quality parameter data collected over deep basin #3 on August 16, 2017.

Depth ft.	*Water Temp ºC*	*DO mg L^{-1}*	*pH S.U.*	*Cond. µS cm^{-1}*	*Turb. NTU*	*TDS mg L^{-1}*	*TP mg L^{-1}*	*TKN mg L^{-1}*	*Chl-a µg L^{-1}*
0	22.6	8.6	8.6	154	4.2	104	0.022	<1.0	6.0
13.0	21.4	4.5	8.3	154	5.0	110	0.022	<1.0	--
26.0	21.0	0.4	8.3	159	5.0	106	<0.050	<1.0	--

Dissolved Oxygen

Dissolved oxygen is a measure of the amount of oxygen that exists in the water column. In general, dissolved oxygen levels should be greater than 5 mg L^{-1} to sustain a healthy warm-water fishery. Dissolved oxygen concentrations may decline if there is a high biochemical oxygen demand (BOD) where organismal consumption of oxygen is high due to respiration. Dissolved oxygen is generally higher in colder waters.

Dissolved oxygen was measured in milligrams per liter (mg L^{-1}) with the use of a calibrated Eureka Manta II® dissolved oxygen meter and multi-probe. During the summer months, dissolved oxygen at the surface is generally higher due to the exchange of oxygen from the atmosphere with the lake surface, whereas dissolved oxygen is lower at the lake bottom due to decreased contact with the atmosphere and increased biochemical oxygen demand (BOD) from microbial activity. Dissolved oxygen concentrations during the July 1, 2017 sampling event ranged from a high of 7.7 mg L^{-1} to a low of 1.0 mg L^{-1}. On this date, all three deep basins showed dissolved oxygen depletion. On the August 16, 2017 sampling date the dissolved oxygen concentration ranged from a high of 8.7 mg L^{-1} among the deep basins to a low of 0.4 mg L^{-1} which was observed at the bottom of all three deep basins. The dissolved oxygen concentration in the channel ranged from 7.9-8.6 mg L^{-1} between June and August of 2017.

Water Temperature

A lake's water temperature varies within and among seasons, and is nearly uniform with depth under the winter ice cover because lake mixing is reduced when waters are not exposed to the wind. When the upper layers of water begin to warm in the spring after ice-off, the colder, dense layers remain at the bottom. This process results in a "thermocline" that acts as a transition layer between warmer and colder water layers. During the fall season, the upper layers begin to cool and become denser than the warmer layers, causing an inversion known as "fall turnover". In general, shallow lakes will not stratify and deeper lakes may experience single or multiple turnover cycles. Water temperature was measured in degrees Celsius (ºC) with the use of a calibrated submersible thermometer electrode. The June 1, 2017 water temperatures of Lake Cadillac demonstrated a weak thermocline with a temperature difference of 3-6°C in the three deep basins. During the August 16, 2017 sampling event, the three deep

basins demonstrated a temperature difference of 2°C from the surface to the bottom. Lake Cadillac likely turns over multiple times per season with strong wind events that evenly mix the water column. The water temperatures of the channel ranged between 19-23 °C during the June and August sampling events.

Oxidative Reduction Potential

The oxidation-reduction potential (E_h) of lake water describes the effectiveness of certain atoms to serve as potential oxidizers and indicates the degree of reductants present within the water. In general, the Eh level (measured in millivolts) decreases in anoxic (low oxygen) waters. Low E_h values are therefore indicative of reducing environments where sulfates (if present in the lake water) may be reduced to hydrogen sulfide (H_2S). Decomposition by microorganisms in the hypolimnion may also cause the E_h value to decline with depth. The E_h values for Lake Cadillac ranged from 178.2 mV to 79.1 mV from the surface to the bottom in both June and August and are within a normal range for a large inland lake.

Water Clarity (Secchi Transparency)

Elevated Secchi transparency readings allow for more aquatic plant and algae growth. The transparency throughout Lake Cadillac was adequate on June 1, 2017 (mean of 4.0 feet) to allow abundant growth of algae and aquatic plants in the majority of the littoral zone of the lake. On August 16, 2017, the mean Secchi transparency was 3.5 feet. Secchi transparency is variable and depends on the amount of suspended particles in the water (often due to windy conditions of lake water mixing) and the amount of sunlight present at the time of measurement. Other parameters such as turbidity (measured in NTU's) and Total Dissolved Solids (measured in mg/L) are correlated with water clarity and show an increase as clarity decreases. The Secchi transparency of Lake Cadillac has been decreasing over time due to intense blue-green algal blooms that limit light penetration throughout the water column. This can also negatively impact native aquatic plant communities that depend on adequate light.

Total Phosphorus

Total phosphorus (TP) is a measure of the amount of phosphorus (P) present in the water column. Phosphorus is the primary nutrient necessary for abundant algae and aquatic plant growth. TP concentrations are usually higher at increased depths due to higher release rates of P from lake sediments under low oxygen (anoxic) conditions. Phosphorus may also be released from sediments as pH increases. The TP levels in Lake Cadillac are moderate; however, the dissolved oxygen levels are low enough at the bottom to possibly cause release of phosphorus from the bottom. The TP concentrations on June 1, 2017 ranged from 0.030-0.042 mg L^{-1}, which is above the eutrophic threshold (≤ 0.025 mg L^{-1}). The TP concentrations on August 16, 2017 ranged from 0.022 mg L^{-1} to ≤ 0.050 mg L^{-1}. The TP concentrations in the channel ranged from 0.020-0.025 mg L^{-1}.

Total Kjeldahl Nitrogen

Total Kjeldahl Nitrogen (TKN) is the sum of nitrate (NO_3^-), nitrite (NO_2^-), ammonia (NH_4^+), and organic nitrogen forms in freshwater systems. Much nitrogen (amino acids and proteins) also comprises the bulk of living organisms in an aquatic ecosystem. Nitrogen originates from atmospheric inputs (i.e. burning of fossil fuels), wastewater sources from developed areas (i.e. runoff from fertilized lawns), agricultural lands, septic systems, and from waterfowl droppings. It also enters lakes through ground or surface drainage, drainage from marshes and wetlands, or from precipitation (Wetzel, 2001). In lakes with an abundance of nitrogen (N: P > 15), phosphorus may be the limiting nutrient for phytoplankton and aquatic macrophyte growth. Lakes with a mean TKN value of 0.66 mg L^{-1} may be classified as oligotrophic, those with a mean TKN value of 0.75 mg L^{-1} may be classified as mesotrophic, and those with a mean TKN value greater than 1.88 mg L^{-1} may be classified as eutrophic. The mean TKN concentration in Lake Cadillac on June 1, 2017 averaged 0.9 mg L^{-1}, which is moderate for an inland lake. The mean TKN concentration in Lake Cadillac on August 16, 2017 averaged 0.8 mg L^{-1}. The mean TKN concentration in the channel was also around 0.8 mg L^{-1}.

Total Alkalinity

Lakes with high alkalinity (> 150 mg L^{-1} of $CaCO_3$) are able to tolerate larger acid inputs with less change in water column pH. Many Michigan lakes contain high concentrations of $CaCO_3$ and are categorized as having “hard” water. Total alkalinity may change on a daily basis due to the re-suspension of sedimentary deposits in the water and respond to seasonal changes due to the cyclic turnover of the lake water. The total alkalinity of Lake Cadillac and the channel was moderately low and averaged around 54 mg L^{-1} of $CaCO_3$ throughout the summer and this indicates a slightly soft water lake.

Turbidity and Total Dissolved Solids

Turbidity is a measure of the loss of water transparency due to the presence of suspended particles. The turbidity of water increases as the number of total suspended particles increases. Turbidity may be caused by erosion inputs, phytoplankton blooms, storm water discharge, urban runoff, re-suspension of bottom sediments, and by large bottom-feeding fish such as carp in shallow areas. Particles suspended in the water column absorb heat from the sun and raise water temperatures. Since higher water temperatures generally hold less oxygen, shallow turbid waters are usually lower in dissolved oxygen. Turbidity is measured in Nephelometric Turbidity Units (NTU’s) with the use of a turbidimeter. The World Health Organization (WHO) requires that drinking water be less than 5 NTU’s; however, recreational waters may be significantly higher than that.

The turbidity of Lake Cadillac was moderate and ranged from 4.0-6.0 NTU’s during the sampling events. Spring values would likely be higher due to increased watershed inputs from spring runoff and/or from increased algal blooms in the water column from resultant runoff

contributions. The mean turbidity of the channel was 3.8 NTU's and is slightly lower possibly due to less wind and sediment re-suspension.

Total dissolved solids (TDS) is a measure of the amount of dissolved organic and inorganic particles in the water column. Particles dissolved in the water column absorb heat from the sun and raise the water temperature and increase conductivity. TDS was measured with the use of a calibrated TDS probe in mg L^{-1}. Spring values are usually higher due to increased watershed inputs from spring runoff and/or increased planktonic algal communities. The TDS in Lake Cadillac ranged from 56-110 mg L^{-1} for the deep basins during the sampling events, which is moderate for an inland lake. The preferred range for TDS in surface waters is between 0-1,000 mg L^{-1} but the lower values are most favorable. The TDS in the channel ranged from 58-65 mg L^{-1} which is lower than the lake.

pH

Most Michigan lakes have pH values that range from 6.5 to 9.5. Acidic lakes (pH < 7) are rare in Michigan and are most sensitive to inputs of acidic substances due to a low acid neutralizing capacity (ANC). Lake Cadillac is considered "slightly basic" on the pH scale. The pH of Lake Cadillac and channel ranged from 8.3-8.6 S.U. during the sampling events which is ideal for an inland lake. All of these values are normal and favorable for aquatic environments.

Conductivity

Conductivity is a measure of the amount of mineral ions present in the water, especially those of salts and other dissolved inorganic substances. Conductivity generally increases as the amount of dissolved minerals and salts in a lake increases, and also increases as water temperature increases. The conductivity in Lake Cadillac ranged from 160-171 µS/cm on June 1, 2017 and from 153-161 µS/cm on August 16, 2017. These values are ideal for an inland lake. Severe water quality impairments do not occur until values exceed 800 µS/cm and are toxic to aquatic life around 1,000 µS/cm.

Chlorophyll-*a* and Algal Species Composition

Chlorophyll-*a* is a measure of the amount of green plant pigment present in the water, often in the form of planktonic algae. High chlorophyll-*a* concentrations are indicative of nutrient-enriched lakes. Chlorophyll-*a* concentrations greater than 6 µg L^{-1} are found in eutrophic or nutrient-enriched aquatic systems, whereas chlorophyll-*a* concentrations less than 2.2 µg/L are found in nutrient-poor or oligotrophic lakes. The chlorophyll-*a* concentrations on June 1, 2017 ranged from 5.0-6.0 µg L^{-1} and the chlorophyll-*a* concentrations on August 16, 2017 ranged from 9.0-11.0 µg L^{-1}. These concentrations are all quite high and correlate with the observed blue-green algal blooms along with other planktonic green algae in the water column.

The algal genera were determined from composite water samples collected over the deep basins of Lake Cadillac in 2017 were analyzed with a compound bright field microscope. The genera present included the Chlorophyta (green algae): *Scenedesmus* sp., *Mougeotia* sp., *Chlorella* sp., *Cladophora* sp., *Rhizoclonium* sp., *Haematococcus* sp., *Radiococcus*

sp., *Pandorina* sp., *Spirogyra* sp., and *Chloromonas* sp. The Cyanophyta (blue-green algae): *Microcystis* sp., *Anabaena* sp., and *Oscillatoria* sp., the Bascillariophyta (diatoms)*: Synedra* sp., *Navicula* sp., *Cymbella* sp., and *Fragillaria* sp. The aforementioned species indicate a diverse algal flora and represent a good diversity of alga; however, the most dominant algae in the water samples was the blue-green *Microcystis* sp. (Figure 2), which is problematic for dense algal blooms that may form toxins and present a risk for public health and the overall health of the Lake Cadillac ecosystem.

Microcystis sp. colonies are a few micrometers in diameter and are evenly distributed throughout a gelatinous matrix. Younger colonies are spherical and older ones are more irregularly shaped. There are numerous gas vesicles and the algae can thrive at the surface with minimal photo-degradation (breaking down) by the sun. When the sunlight is excessive, the algae can break down and release toxins and lower the dissolved oxygen in the water column. The algae are the only type known to fix nitrogen gas into ammonia for growth. *Microcystis* has also been shown to overwinter in lake sediments (Fallon et *al.*, 1981). In addition, it may thrive in a mucilage layer with sediment bacteria that can release phosphorus under anaerobic conditions (Brunberg, 1995). They assume a high volume in the water column (Reynolds, 1984) compared to diatoms and other single-celled green algae. The blue-green algae have been on the planet nearly 2.15 billion years and have assumed strong adaptation mechanisms for survival. In general, calm surface conditions will facilitate enhanced growth of this type of algae since downward transport is reduced. *Microcystis* may also be toxic to zooplankton such as *Daphnia* which was a zooplankton present in Lake Cadillac (along with *Bosmina* sp.) and in most lakes (Nizan et *al.*, 1986). Without adequate grazers to reduce algae, especially blue-greens, the blue-green population will continue to increase and create negative impacts to water bodies.

References:

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Fallon, R.D., and T.D. Brock. 1981. Overwintering of *Microcystis* in Lake Mendota. *Freshwater Biology* 11:217-226.

Nizan, S., C. Dimentman, and M. Shilo. 1986. Acute toxic effects of the Cyanobacterium *Microcystis aeruginosa* on *Daphnia magna*. *Limnology and Oceanography* 31(3):497-502.

Reynolds, C.S. 1984. The Ecology of Freshwater Phytoplankton. Cambridge University Press, Cambridge, UK.

Figure 2. A pea-green colored blue-green algae (*Microcystis*) bloom in Lake Cadillac (June-October, 2017).

Section

3

Lake Cadillac Aquatic Vegetation Data (2017)

Status of Native Aquatic Vegetation in Lake Cadillac

The native aquatic vegetation present in Lake Cadillac is essential for the overall health of the lake and the support of the lake fishery. There were two types of surveys conducted on Lake Cadillac during the 2017 season. The first type of survey was a whole-lake aquatic plant survey and the second type of survey was a whole-lake benthic scan which utilized 14,595 points to generate an updated lake depth contour map and aquatic vegetation biovolume map.

A whole-lake aquatic plant survey using the GPS Point-Intercept survey method as in Figure 3 below determined that there were a total of 20 native aquatic plant species in the lake. These included 13 submersed species, 2 floating-leaved species, and 5 emergent species. This indicates a good biodiversity of aquatic vegetation in Lake Cadillac. The overall % cover of the lake by native aquatic plants is low relative to the lake size due to the great mean depth and thus these plants should be protected unless growing near swim areas at nuisance levels. A list of all current native aquatic plant species and their frequency is shown below in Table 8. Aquatic vegetation biovolume is displayed in Figure 4 below. The blue color represents a lack of aquatic vegetation whereas the green color represents low-growing aquatic vegetation. A red color represents aquatic plants that grow high into the water column such as milfoil or pondweeds. This figure demonstrates that a lot of area in the lake lacks aquatic vegetation.

The most dominant aquatic plant species in June of 2017 included: 1) Large-leaf Pondweed which has wide, brown leaves and resembles a small cabbage on the lake bottom in spring but eventually emerges into the water column as a tall aquatic plant; 2) Illinois Pondweed which has lance-shaped brown leaves that often have a reddish cast and the plant also grows tall into the water column; and 3) The macro-alga, Chara which has a skunky odor and feels brittle to the touch as it carpets the bottom of many lakes.

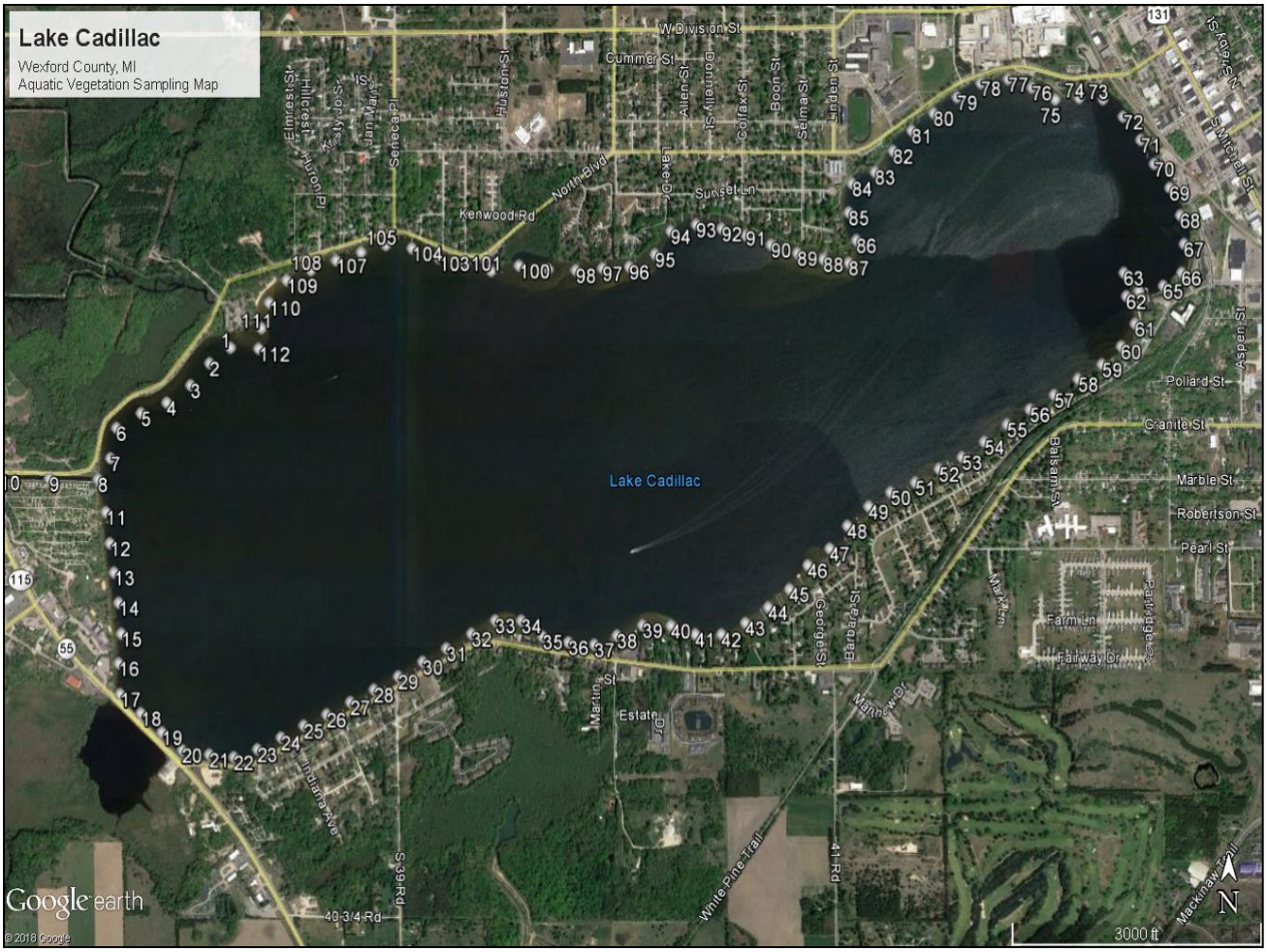


Figure 3. Aquatic vegetation sampling points in Lake Cadillac (June 1, 2017: Note: Each of these locations includes survey areas from the shoreline to the 10-foot depth contour).

Table 8. Lake Cadillac Native Aquatic Plant Species (June 1, 2017).

Native Aquatic Plant Species Name	*Aquatic Plant Common Name*	*Frequency (%)*	*Aquatic Plant Growth Habit*
Chara vulgaris	Muskgrass	34	Submersed, Rooted
Potamogeton pectinatus	Thin-leaf Pondweed	20	Submersed, Rooted
Potamogeton amplifolius	Large-leaf Pondweed	36	Submersed, Rooted
Potamogeton zosteriformis	Flat-stem Pondweed	25	Submersed, Rooted
Potamogeton gramineus	Variable-leaf Pondweed	13	Submersed, Rooted
Potamogeton robbinsii	Fern-leaf Pondweed	25	Submersed, Rooted
Potamogeton praelongus	White-stem Pondweed	16	Submersed, Rooted
Potamogeton richardsonii	Clasping-leaf Pondweed	9	Submersed, Rooted
Potamogeton illinoensis	Illinois Pondweed	35	Submersed, Rooted
Elodea canadensis	Common Waterweed	13	Submersed, Rooted
Ceratophyllum demersum	Coontail	20	Submersed, Non-Rooted
Utricularia vulgaris	Bladderwort	13	Submersed, Non-Rooted
Najas guadalupensis	Southern Naiad	10	Submersed, Rooted
Nuphar variegata	Yellow Waterlily	4	Floating-leaved, Rooted
Spirodella sp.	Duckweed	4	Floating-leaved, Non-Rooted
Typha latifolia	Cattails	1	Emergent
Scirpus acutus	Bulrushes	7	Emergent
Iris sp.	Iris	3	Emergent
Sagittaria sp.	Arrowhead	3	Emergent
Pontedaria cordata	Pickerelweed	3	Emergent

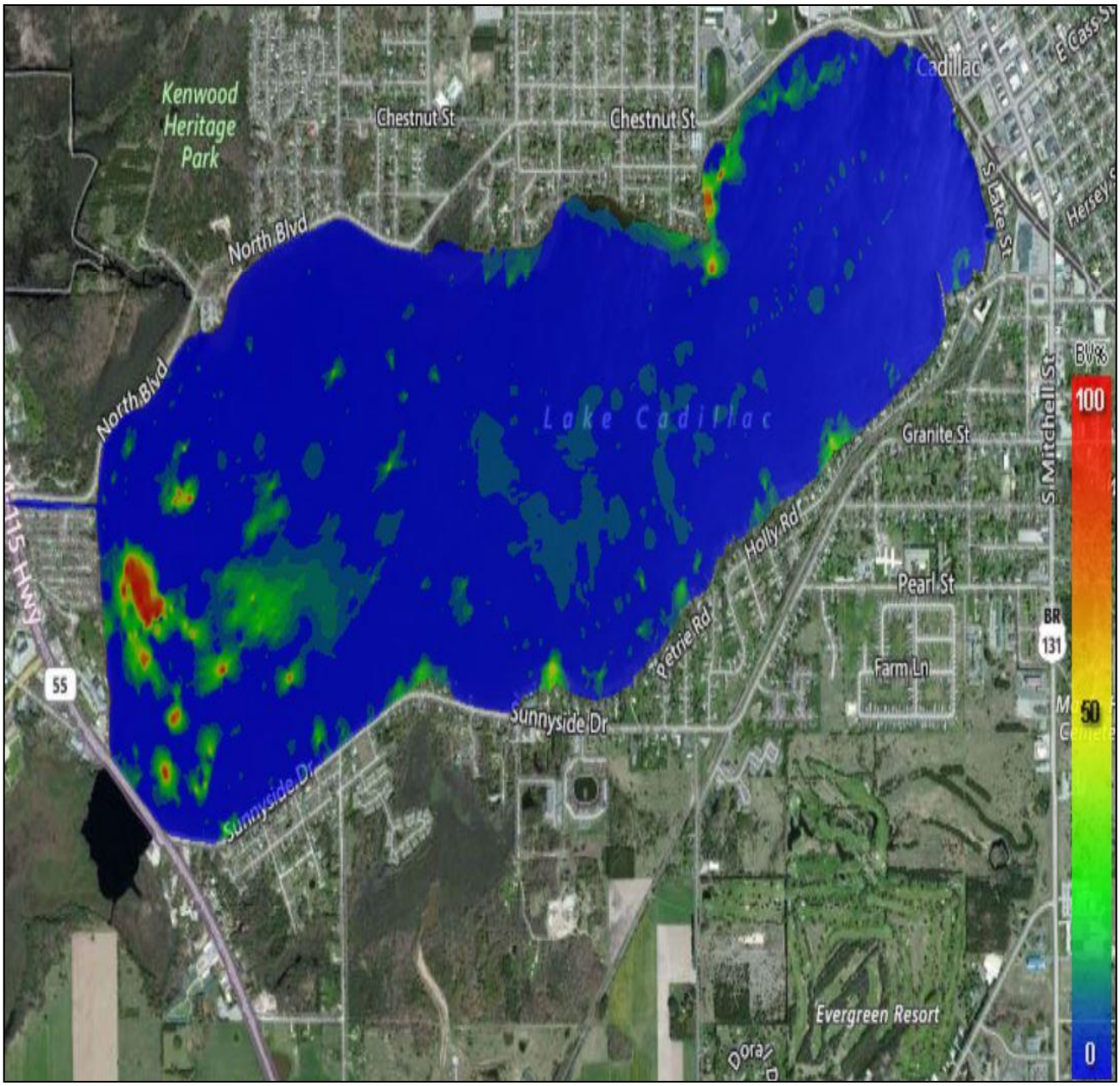


Figure 4. Aquatic vegetation biovolume scan and map of Lake Cadillac on June 1, 2017 (RLS). NOTE: The blue color represents no vegetation present; Red color represent tall, high-growing aquatic plants; Green color represents low-growing vegetation on the lake obttom such as Chara.

Status of Invasive (Exotic) Aquatic Plant Species

The amount of Eurasian Watermilfoil (Figure 5) and Curly-leaf Pondweed (Figure 6) present in Lake Cadillac varies each year and is dependent upon climatic conditions, especially runoff-associated nutrients. There were intense rainfall events in 2017 that resulted in increased runoff and many lakes experienced nuisance milfoil and algal outbreaks. The June 1, 2017 survey revealed that approximately 23.5 acres of dense milfoil was found throughout the entire lake. These areas were treated on June 8, 2017 by PLM with the systemic herbicide Sculpin G® at a dose of 200 lbs./acre. In addition to the EWM, approximately 25 acres of Curly-leaf Pondweed were present but only 2 acres required treatment since the plant naturally dies back when the water temperatures increase. Those areas were also treated on June 8, 2017 with the use of the contact herbicide diquat at a dose of 2 gallons per acre. Treatment maps for each of these invasive species are shown in the maps below (Figures 7 and 8). Table 9 shows the treatment history for Lake Cadillac relative to the use of herbicides and previously bio-control for the management of invasive aquatic plants.

Figure 5. Eurasian Watermilfoil

Figure 6. Curly-leaf Pondweed

Figure 7. Dense EWM in Lake Cadillac (June 1, 2017).

Figure 8. Dense Curly-leaf Pondweed in Lake Cadillac (June 1, 2017).

Table 9. Lake Cadillac invasive aquatic plant treatment history to date (2006-2017). Note: RLS did not have access to the 2016 treatment acreage.

Year	Acres Treated With Aquatic Herbicides	# Milfoil Weevils Stocked
2006	180	12,000
2007	50	12,000
2008	47	6,000
2009	143	12,000
2010	160	0
2011	113	0
2012	140	0
2013	101	0
2014	89	0
2015	97	0
2016	?	0
2017	23.5	0

Section

4

Lake Cadillac Sediment Data: Benthic Macroinvertebrates and Sediment Organic Matter

RLS scientists collected sediment samples at the three deep basins of Lake Cadillac on June 1, 2017 with the use of an Ekman hand dredge to establish the current sediment macroinvertebrate communities as a measure of lake health. In addition to the three deep basin locations, a total of ten additional sediment samples were collected on September 15, 2017 and analyzed for sediment organic matter and sediment phosphorus. Table 10 below shows the laboratory data for these sediment samples. Tables 11-12 list all of the aquatic macroinvertebrates found during the sampling. In general, sediment organic matter and nutrients were moderate, dissolved oxygen was low at the bottom, and the biodiversity of sediment macroinvertebrates was fair.

Figure 9. Sediment sampling sites in Lake Cadillac (September 15, 2017).

Table 10. Lake Cadillac sediment nutrient sampling data (September 15, 2017).

Sampling Site	Sediment TP (mg/kg)	Sediment % Organic Matter	Dissolved Oxygen at depth (mg/l)
1	220	25	4.0
2	280	22	5.1
3	330	40	4.0
4	310	12	0.9
5	190	15	0.2
6	160	20	0.9
7	210	36	2.8
8	290	41	0.4
9	420	28	0.6
10	280	19	2.4

Freshwater macroinvertebrates are ubiquitous, as even the most impacted lake contains some representatives of this diverse and ecologically important group of organisms. Benthic macroinvertebrates are key components of lake food webs both in terms of total biomass and in the important ecological role that they play in the processing of energy. Others are important predators, graze alga on rocks and logs, and are important food sources (biomass) for fish. The removal of macroinvertebrates has been shown to impact fish populations and total species richness of an entire lake or stream food web (Lenat and Barbour 1994). In the food webs of lakes, benthic macroinvertebrates have an intermediate position between primary producers and higher trophic levels (as fish) on the other side. Hence, they play an essential role in key ecosystem processes (food chain dynamics, productivity, nutrient cycling and decomposition). These may also include many rare species.

The macroinvertebrates found in Lake Cadillac had very low counts of each macroinvertebrate and were very low biodiversity. Additionally, the taxa found were indicative of fair water quality.

Taxa found included midge larvae (Chironomindae), wheel snails (Planorbidae), water mites (Hydrachnellae), glassworms (Chaoboridae), banded Mystery snails (Viviparidae), sow bugs (Oniscoidea), and caddis larvae (Odontoceridae). In addition, there were many Zebra Mussels (Dreisseniidae) found. Of all the species found, all were native except for the Zebra Mussels. While the majority of the species were native, some are located universally in low quality and high quality water. The midge larvae family Chironomidae can be found in both high and low quality water (Lenat and Barbour 1994).

Native lake macroinvertebrate communities can and have been impacted by exotic and invasive species. A study by Stewart and Haynes (1994) examined changes in benthic macroinvertebrate community in southwestern Lake Ontario following the invasion of Zebra and Quagga Mussels (*Dreissena spp*.). They found that *Dreissena* had replaced a species of freshwater shrimp as the dominant species. However, they also found that additional macroinvertebrates actually increased in the ten-year study, although some species were considered more pollution-tolerant than others. This increase was thought to have been due to an increase in *Dreissena* colonies increasing additional habitat for other macroinvertebrates.

In addition to exotic and invasive macroinvertebrate species, macroinvertebrate assemblages can be affected by land-use. Stewart et *al*. (2000) showed that macroinvertebrates were negatively affected by surrounding land-use. They also indicated that noted these land-use practices are important to restoration and management and of lakes. Schreiber et *al.*, (2003) stated that disturbance and anthropogenic land use changes are usually considered to be key factors facilitating biological invasions.

References:

Lenat, D.R. and M.T. Barbour. Using benthic macroinvertebrate community structure for rapid, cost-effective, water quality monitoring: rapid bio assessment. Biological monitoring of aquatic systems. Lewis Publishers, Boca Raton, Florida (1994): 187-215.

Schreiber, E.S.G., Quinn, G.P. and P.S. Lake. 2003. Distribution of an alien aquatic snail in relation to flow variability, human activities and water quality. *Freshwater Biology* Vol 48:6, pages 951-961.

Stewart, T.W. and J.M. Haynes. 1994. Benthic macroinvertebrate communities of southwestern Lake Ontario following invasion of *Dreissena*. *Journal of Great Lakes Research* Vol 20(2):479-493.

Stewart, P.M., Butcher, J.T. and T.O. Swinford. 2000. Land use, habitat, and water quality effects on macroinvertebrate communities in three watersheds of a Lake Michigan associated marsh system. *Aquatic Ecosystem Health & Management* Vol. 3.

Table 11. Lake Cadillac sediment macroinvertebrate sampling data (June 1, 2017).

Sample DB 1	**Grab**	**Order**	**Family/Genus**	**Number**	**Common name**
		Diptera	Chironomidae	1	Midge larvae
			Total	**1**	
Sample DB 2	**Grab**	**Order**	**Family/Genus**	**Number**	**Common Name**
		Diptera	Chaoboridae	4	Glassworms
			Total	**4**	
Sample DB 3		Gastropoda	Vivaparus georgianus	**2**	Banded Mystery Snail
		Isopoda	Asellidae	**1**	Sow Bugs
			Total	**3**	

Table 12. Lake Cadillac sediment macroinvertebrate sampling data (September 15, 2017).

Sample DB 1	Grab	Order	Family/Genus	Number	Common name
		Diptera	Chironomidae	2	Midge larvae
		Trichoptera	Phryganeidae	1	Caddis larvae
		Arachnida	Hydrachnidiae	4	Water mites
		Gastropoda	Planorbidae	2	Wheel Snails
			Total	**9**	
Sample DB 2	**Grab**	**Order**	**Family/Genus**	**Number**	**Common Name**
		Isopoda	Asellidae	1	Sow bugs
		Gastropoda	Planorbidae	3	Wheel snail
		Diptera	Chironomidae	2	Midge larvae
			Total	**10**	
Sample DB 3		Diptera	Chaoboridae	**7**	Glassworms
			Total	**7**	

Section 5

Management Recommendations for 2018

1. Aquatic Vegetation Surveys:

Continuous aquatic vegetation surveys are needed to determine the precise locations of Eurasian Watermilfoil (EWM) Curly-leaf Pondweed (CLP), or other problematic invasives in or around Lake Cadillac. These surveys should include a whole lake inventory in early to mid-June and again later in the season. In addition, partial surveys post-treatment as needed in 2018. Scientists from RLS will be present to oversee all aquatic herbicide treatments in 2018 as in 2017. Treatment results will then be compared with previous years in the 2018 annual lake report.

2. Aquatic Herbicide Treatments:

Due to the relative scarcity of native aquatic vegetation in Lake Cadillac, the treatment of these species with aquatic herbicides is not recommended and re-colonization of the lake by these species is a major goal for the health of Lake Cadillac. Reduction in blue-green algae throughout the lake should also assist with this re-colonization as the plants will have more access to light for continued growth. The plan for 2018 includes the use of high doses of systemic aquatic herbicides (such as triclopyr nearshore and 2, 4-D offshore) for the hybrid milfoil that may be present. Doses will be dependent upon the MDEQ permit requirements as well as the size and density of the weed beds. If Curly-leaf is found at a nuisance level, it could be treated with the contact herbicide Aquathol-K® with great efficacy.

3. Lake Water Quality Monitoring:

Water quality parameters will also be monitored in Lake Cadillac for 2018 as in 2017 and graphed with historical data to observe long-term trends. RLS is in the process of gathering additional historical data and comparing units of measure to assist with the goal of graphing the data for each water quality parameter to determine these trends. In addition, water quality from the in-flow areas may also be sampled if running and an independent sample can be collected. RLS will use that data to make any necessary recommendations for additional BMPs (best management practices) if needed.

4. Goose Control:

Throughout the 2018 season, RLS noted that there are an abundance of geese around the parks on Lake Cadillac (Figure 10). A study by Manny et *al.* (1994) found that the annual contribution of carbon, nitrogen, and phosphorus from migratory waterfowl including Canada geese (*Branta canadensis*) can exceed the external loading contributions on some inland lakes. Thus, an overabundance of geese can lead to increased nutrient loads to Lake Cadillac. Fortunately, there are some strategies for reducing geese populations which include but are not limited to the following:

1. Encourage riparians to grow waterfront grass to ≥ 3 inches tall as geese prefer short grass.
2. Plant tall native plants near the shore to encourage a soft shoreline that geese may avoid due to the potential of predators hiding in the tall weeds.
3. Avoid mowing to the water's edge.
4. Do not feed geese or waterfowl as this encourages their presence.
5. Egg replacement, goose round-up, and nest destruction methods are effective to a degree but require an MDNR permit and training.
6. Coyote or other intimidating effigies can scare geese away from lawns.
7. The Audubon Society recommends placement of string 6 inches above the ground followed by another row of string an additional 6 inches above the water.
8. Visit the following website for more methods: http://icwdm.org/handbook/Birds/CanadadGeese/Default.aspx

Reference: Manny B.A., Johnson W.C., Wetzel R.G. (1994) Nutrient additions by waterfowl to lakes and reservoirs: predicting their effects on productivity and water quality. In: Kerekes J.J. (eds) Aquatic Birds in the Trophic Web of Lakes. Developments in Hydrobiology, vol 96. Springer, Dordrecht.

Reference: Canada Goose Management Website. University of Nebraska-Lincoln, NRES 348 Wildlife Damage Management class, Spring Semester, 2010. Scott Hygnstrom, Instructor; Stephen Vantassel, Webmaster.

Figure 10. An over-abundance of Canada geese near the shore of Lake Cadillac during the 2017 season.

5. Stormwater Monitoring/Nutrient Loading:

RLS recommends meeting with the City of Cadillac to mutually determine the possibility of storm drain sampling to determine whether they are contributing to the nutrient loading of Lake Cadillac. RLS obtained a map of the storm drains from the City of Cadillac and has prioritized some areas due to the area that they drain which contributes a higher volume of water to the lake. These drains should be studied prior to the implementation of any whole-lake within-basin improvements that may be costly (i.e. technologies to reduce blue-green algal blooms in the lake).

6. Lake Cadillac Educational Community Workshop:

Lake Cadillac riparians are encouraged to attend regular City of Cadillac meetings that may held to discuss data trends and evaluate lake improvement progress. Additionally, riparians would be encouraged to attend a lake workshop. Education alone (i.e. meetings, brochures, etc.) will not adequately introduce all riparians to lake issues as many people are participatory learners. There is therefore a need to incorporate different educational strategies into this lake restoration program. RLS proposes to develop an annual lake workshop where new data is presented to the public and new research information is disseminated. Riparian BMP's and lake protection methods would be openly discussed with attendants. There would be handouts at the workshop with modernized lake maps, water quality graphs, and other updated lake information. Lastly, there would be water quality sampling demonstrations along with key Lake Cadillac biota present in the lake available for learning.

Glossary of Scientific Terms used in this Report

1) Biodiversity- The relative abundance or amount of unique and different biological life forms found in a given aquatic ecosystem. A more diverse ecosystem will have many different life forms such as species.

2) $CaCO_3$- The molecular acronym for calcium carbonate; also referred to as “marl” or mineral sediment content.

3) Eutrophic- Meaning “nutrient-rich” refers to a lake condition that consists of high nutrients in the water column, low water clarity, and an over-abundance of algae and aquatic plants.

4) Mesotrophic- Meaning “moderate nutrients” refers to a lake with a moderate quantity of nutrients that allows the lake to have some eutrophic qualities while still having some nutrient-poor characteristics

5) Oligotrophic- Meaning “low in nutrients or nutrient-poor” refers to a lake with minimal nutrients to allow for only scarce growth of aquatic plant and algae life. Also associated with very clear waters.

6) Sedimentary Deposits- refers to the type of lake bottom sediments that are present. In some lakes, gravel and sand are prevalent. In others, organic muck, peat, and silt are more common.

February 19, 2018

COUNCIL COMMUNICATION

Re: Reappointment of Tom Olmsted to a Three-Year Term on the Cemetery Board

Tom Olmsted has expressed his interest in continuing his service on the Cemetery Board for another three year term. He was originally appointed in 2014.

Requested Council Action:

Motion to reappoint Tom Olmsted to a three-year term on the Cemetery Board, which will expire on 1/17/2021.

February 19, 2018

COUNCIL COMMUNICATION

Re: Reappointment of Chris Huckle to a Four-Year Term on the Downtown Development Authority (DDA)

Chris Huckle has expressed his interest in continuing his service on the Downtown Development Authority (DDA) for another four year term. He was originally appointed in 2006.

Requested Council Action:

Motion to reappoint Chris Huckle to a four-year term on the Downtown Development Authority (DDA), which will expire on 3/06/2022.

February 19, 2018

Council Communication

Re: Bio-Solids Injection Bids

The City recently invited bids for the contract for Bio-Solids Injection of our EQ Class "A" bio-solids. Four firms submitted the following bids:

Contractor	Bid Price
Nutri Gro Charlotte, MI	$0.0870/gallon
BioTech Agronomics Beulah, MI	$0.0467/gallon
Michigan AgriBusiness Saginaw, MI	$0.0510/gallon
Midwest Injection Cascade, IA	$0.0440/gallon

The City applies between 1.5 and 2.0 million gallons of biosolids each year. At 1.5 million gallons of biosolids applied a year the cost would be $66,000.

Recommended Action
It is recommended that the contract for Bio-Solids Injection from the date of the award through December 31, 2020 be awarded to Midwest Injection in accordance with their bid. Funds are available in the Sludge Treatment department within the Water and Sewer Fund.

February 19, 2018

Council Communication

Re: Final Effluent Water (FEW) Pump

The FY2018 Annual Operating Budget includes an appropriation of $20,000 for the purchase of a final effluent water pump for wastewater treatment operations. This purchase will replace the current pump that is at the end of its useful life. The FEW pump supplies reuse water throughout the waste water plant. Competitive bids were solicited and the following bids were received:

Vendor	Manufacturer	Bid
Detroit Pump Grand Rapids, Michigan	Deming	$11,250
Detroit Pump Grand Rapids, Michigan	Burks	$9,850
Technology International Lake Mary, FL	Crane	$12,891
Jett Pump and Valve Waterford, Michigan	Deming	$12,020

The lowest bid meets the specifications required for the City's usage and processes. This replacement pump is an off-center discharge pump similar to the current model and therefore most of the existing piping can be reused. The originally recommended replacement of the current pump was a center discharge and would have required extensive pipe work to make the needed connections.

Recommended Action
It is recommended that the purchase of a final effluent water pump be awarded to Detroit Pump in the amount of $9,850. Funds are available in the Water and Sewer Fund.

February 19, 2018

Council Communication

Re: Equalization (EQ) Basin Repair

The FY2018 Annual Operating Budget includes an appropriation of $25,000 to repair the equalization (EQ) basin at the Waste Water Treatment Plant. This repair will extend the life and usefulness of the equalization basin. Although the current tank has not failed, these repairs need to be made so that the tank continues to operate as designed. Competitive bids were solicited and the following bid was received:

Vendor	Bid
Gerace Construction Midland, Michigan	$25,710

Recommended Action
It is recommended that the Equalization (EQ) Basin Repair project be awarded to Gerace Construction in the amount of $25,710. Funds are available in the Water and Sewer Fund.

February 19, 2018

Council Communication

Re: Muffin Monster Cutter Stack Purchase

The FY2018 Annual Operating Budget includes an appropriation of $25,000 for the purchase of a Muffin Monster Cutter Stack grinder unit for wastewater treatment operations. This purchase will replace a current unit that has surpassed its useful life. Competitive bids were solicited and the following bid was received:

Vendor	Manufacturer	Bid
JWC Environmental Santa Ana, California	JWC Environmental	$9,543

Recommended Action
It is recommended that the purchase of a Muffin Monster Cutter Stack grinder be awarded to JWC Environmental in the amount of $9,543. Funds are available in the Water and Sewer Fund.

February 19, 2018

Council Communication

Re: Return Activated Sludge (RAS)Pump

The FY2018 Annual Operating Budget includes an appropriation of $11,000 for the purchase of a return activated sludge pump for wastewater treatment operations. This purchase will be for a spare pump to have on hand as a backup measure should one of the current pumps fail. The pump is part of the aeration process. Competitive bids were solicited and the following bids were received:

Vendor	Manufacturer	Bid
Detroit Pump Grand Rapids, Michigan	Advance Engineered Pump	$10,496
Kennedy Industries Wixom, Michigan	Xylem AC	$10,977
Hydrodynamics Waterford, Michigan	ABBA	$9,980

The lowest bid meets the specifications required for the City's usage and processes. Spare pump parts currently on hand at the Waste Water Treatment Plant will be able to be used on this pump.

Recommended Action
It is recommended that the purchase of a Return Activated Sludge Pump be awarded to Hydrodynamics in the amount of $9,980. Funds are available in the Water and Sewer Fund.

February 19, 2018

Council Communication

Re: Digester Circulator Pump Replacement

The FY2018 Annual Operating Budget includes an appropriation of $15,000 for the purchase a digester circulator pump unit for wastewater treatment operations. This purchase will replace a current unit in the digester that has surpassed its useful life. Competitive bids were solicited and the following bids were received:

Vendor	Manufacturer	Bid
Kennedy Industries Wixom, Michigan	Xylem AC	$11,923
Hydrodynamics Waterford, Michigan	ABBA	$10,612

The low bid meets the specifications required for the City's usage and processes. All of the spare parts that are currently at the Waste Water plant will be able to be used on the recommended pump.

Recommended Action
It is recommended that the purchase of a digester circulator pump be awarded to Hydrodynamics in the amount of $10,612. Funds are available in the Water and Sewer Fund.

February 19, 2018

Council Communication

Re: Hardship (Poverty) Exemption Policy

Public Act 390 states that the governing body of the local assessing unit shall determine and make available to the public, the policy and guidelines the local assessing unit uses for granting hardship (poverty) exemptions. Furthermore, MCL 211.7u requires local units to **annually** adopt a policy, including an asset test used to approve or deny poverty exemptions.

The City of Cadillac has adopted and incorporated the federal poverty guidelines established by US Department of Health & Human Services. The revision to our existing policy establishes the 2018 Health and Human Services Poverty guidelines. The Board of Review utilizes these guidelines when a hardship (poverty) application comes before them.

Recommended Action
Approve the updated Hardship (Poverty) Exemption Policy utilizing the 2018 Health and Human Services Poverty guidelines.

POLICY: Hardship (Poverty) Exemption

DATED: January 21, 1997
REVISED: February 16, 1998; March 1, 1999; February 6, 2006; May 7, 2007; December 15, 2008; December 11, 2012; November 18, 2013; March 5, 2018

PURPOSE: Public Act 390 of 1994 was passed by the Michigan legislature and signed by the Governor on December 29, 1994, and said Public Act makes significant changes to the poverty exemption policy found in 211.70 as amended, of the Michigan Compiled laws. Public Act 390 states that the governing body of the local assessing unit shall annually determine and make available to the public, the policy and guidelines the local assessing unit uses for granting hardship (poverty) exemptions. The City of Cadillac develops a hardship exemption policy of real and personal property of persons, who, in the opinion of the Board of Review, by reason of poverty, are unable to contribute towards the public charges. MCL 211.7u (1)

POLICY: In order to be eligible for a hardship (poverty) exemption, the claimant must establish or comply with <u>all</u> of the following:

1. Be the owner and occupant of property that is his/her principal residence for the year for which the exemption is requested. If requested by the Board of Review, a copy of the deed, land contract, or other evidence of ownership of the property. MCL 211.7u (2) (a)+(d)

2. Not own any other real estate and/or recreational vehicles in or out of the State of Michigan.

3. Fully complete the Declaration of Poverty Request for tax relief application, including the asset and income schedule.

4. Hardship exemption may be granted up to a maximum of 50 percent of the amount of the property tax considering any amount returned pursuant to the Michigan Homestead Property Tax Credit. In no case shall the combination of the Michigan Homestead Property Tax Credit and the hardship exemption granted by the City of Cadillac exceed 100 percent of the total property taxes levied.

5. The exemption is also dependent upon the total household income of the applicant meeting the guidelines established by the City of Cadillac.

    a. Total household income is defined as money, wages, and salaries before deductions; net receipts from non-farm self-employment, business, professional, enterprise, or partnership after deductions; payments from social security, retirement, unemployment compensation, veteran's payments, public assistance; alimony, child support, military family allotments or other regular support from an absent family member or someone not living in the household; private pensions, government pensions, annuity or insurance payments; scholarships, grants, fellowships, assistantships; dividends, interest, rental income, royalties, periodic receipts from estates or trusts, gambling or lottery winnings.

    b. In compliance with *Ferrero v Walton Township*, 295 Mich App 475: 813 NW2d 368 (2012), when determining "total household income" of the

applicant, the City shall not include or consider monies the applicant received from claiming homestead property tax credit. Returns concerning the homestead property tax credit may be used only to ensure compliance with Paragraph 4 of this policy.

6. Provide a current or preceding year federal and state income tax returns for all persons residing in the principal residence, including any property tax credit returns. The applicant must include a copy of the Michigan Homestead Property Tax Credit Statement. An exemption shall not be given for the amount of property tax refundable by any organization or governmental agency.

7. Provide a valid driver's license or other form of identification if requested by the Board of Review. MCL 211.7u (2)(c)

8. Meet the City of Cadillac's income standards for "Poverty Threshold" for the calendar year in question. As its "Poverty Threshold", the City of Cadillac has adopted and incorporated the federal poverty guidelines updated annually in the Federal Register by the United States Department of Health and Human Services. (under authority of Section 673 of subtitle B of Title VI of the Omnibus Budget Reconciliation Act of 1981, Public Law 97-35, 42 USC 9902)

2018 HHS POVERTY GUIDELINES

Persons in Family/Household	Poverty Guideline
1	$12,140
2	$16,460
3	$20,780
4	$25,100
5	$29,420
6	$33,740
7	$38,060
8	$42,380

*Families with more than 8 persons, add $4,320 for each person.

9. This policy applies only to individuals and is not for trusts or other types of ownerships such as corporations, limited liability companies, partnerships, associations, and co-owners (the only exception being the individual owner of a life estate).

10. Only the assessed value of the principal residence of an owner of a life estate shall apply, but the incomes of the owner of a life estate and income of all interested persons and household members shall be combined for determination of the poverty threshold. The owner of the life estate must reside and use the property as his or her principal residence.

11. Any tax exemption given to an individual under these guidelines shall be for the one (1) year's taxes. A new application will be required each year an exemption is requested.

12. During the deliberation process, the Board of Review must remain totally objective and ensure that their decisions is in no way arbitrary.

13. The Board of Review must follow this hardship exemption policy and the guidelines set forth within, unless it determines there are substantial and compelling reasons to deviate from this policy and guidelines. MCL 211.7u(5) Substantial and compelling reasons are defined as those that:

    a. Are objective and verifiable,
    b. Keenly or irresistibly grab one's attention,
    c. Are of considerable worth in deciding whether to grant the exemption,
    d. Exist only in exceptional cases.

14. When exercising the discretion to deviate from this policy, the Board of Review must articulate the substantial and compelling reasons found, and must communicate the reasons in writing to the applicant requesting the exemption. Examples of substantial and compelling reasons might include excessive medical expenses or excessive expenses relating to the care of elderly or disabled persons.

15. The City Assessor and the Board of Review shall notify in writing all applicants whose application for exemption is being denied. The applicant may appeal the decision by applying to the Michigan Tax Tribunal and filing the appeal in writing prior to June 30th for a March Board of Review action. For July and December Board of Review actions the appeal must be filed with the Tax Tribunal within 30 days of receipt of your answer from the Board of Review. The address is Michigan Tax Tribunal, 611 West Ottawa, PO Box 30232, Lansing, Michigan 48909.

16. The assessor will act as an advisor for the Board of Review. The Board of Review will have the final determination for a hardship exemption. A person who files a claim is not prohibited from also appealing the assessment on the property for which that claim is made before the Board of Review in the same year. MCL211,7u (6).

17. The application filing for an exemption under this policy shall be filed after January 1, but before the day prior to the last day of the Board of Review. MCL 211.7U (3)

February 19, 2018

Council Communication

Re: Approval of waiver to the minimum required development site size of 20 acres to apply for a rezoning into the Mixed-Used Planned Unit Development (MPUD) District.

Section 46-656 subsection (a) (2) of the city's zoning ordinance requires a minimum of 20 acres of property for a developer(s) to apply for a rezoning into a Mixed-Use Planned Unit Development (MPUD). The same section allows for a waiver to this minimum property size requirement if the Planning Commission recommends such a waiver to the City Council, and the Council subsequently grants such a waiver to a developer(s). Mr. Robb Munger who has optioned what is commonly referred to as the "Oleson Block" and is negotiating with other developers to redevelop such Block wrote a letter to the Planning Commission requesting such a waiver (see attached). In that letter Mr. Munger outlined the reasons for the waiver and the benefits which would accrue to the city as the zoning ordinance requires. The Planning Commission at a special meeting on February 12th approved a motion to recommend to the City Council the minimum 20 acres size requirement be waived by the Council so that Mr. Munger or other negotiating development partners could apply for this property to be rezoned into the MPUD zoning district. Due to it not yet being known which single or combination of developers may be the final developer of the project the motion specified that the waiver apply to any single or combination of developers who could demonstrate unified control of the property and could submit a unified sketch plan and final site plan for the project area as is required by the MPUD section of the zoning ordinance.

The Community Development Director has reviewed all of the early redevelopment concepts and concurs that the MPUD District would be the most appropriate district to successfully implement the redevelopment plans. The Director has also reviewed the benefits which would accrue to the city if this project were implemented and finds these benefits to be realistic and in line with what is required by the zoning ordinance.

Recommended Action

To waive the minimum required project size of 20 acres so that the developer(s) of the "Oleson Block" would become eligible to file a rezoning petition with the city to rezone the property into a Mixed-Use Planned Unit Development District (MPUD).

Pre-Application Conference Before City of Cadillac Planning Commission
Request for a Mixed-Use Planned Unit Development of Less Than 20 Acres

Applicant:
Cadillac Downtown Market LLC.
Robb Munger
PO Box 603
Cadillac, MI. 49601

I am requesting that the City of Cadillac Planning Commission and City Council consider rezoning land in downtown Cadillac for what has commonly been referred to as "the Oleson Block" into a Mixed-Use Planned Unit Development District (MPUD). See attached survey and legal description. This zoning district classification was created during the planning and implementation of the Teri-Dee Project (Cadillac Junction), but was envisioned for use in other areas of the city that may be uniquely suited for mixed use development. I am submitting for this pre-application conference with the Planning Commission to obtain a waiver of the minimum MPUD district size of 20 acres. Such waiver requires a recommendation from the Planning Commission to the City Council as well as approval by the City Council.

The subject site for the proposed rezoning is an approximately 3 acre site which is being planned for redevelopment under a mixed-use plan. Proposed uses for the site include retail, restaurant, microbrewery, and residential apartments or condominiums. Building heights are planned to be between one and four stories in height.

Benefits To The City

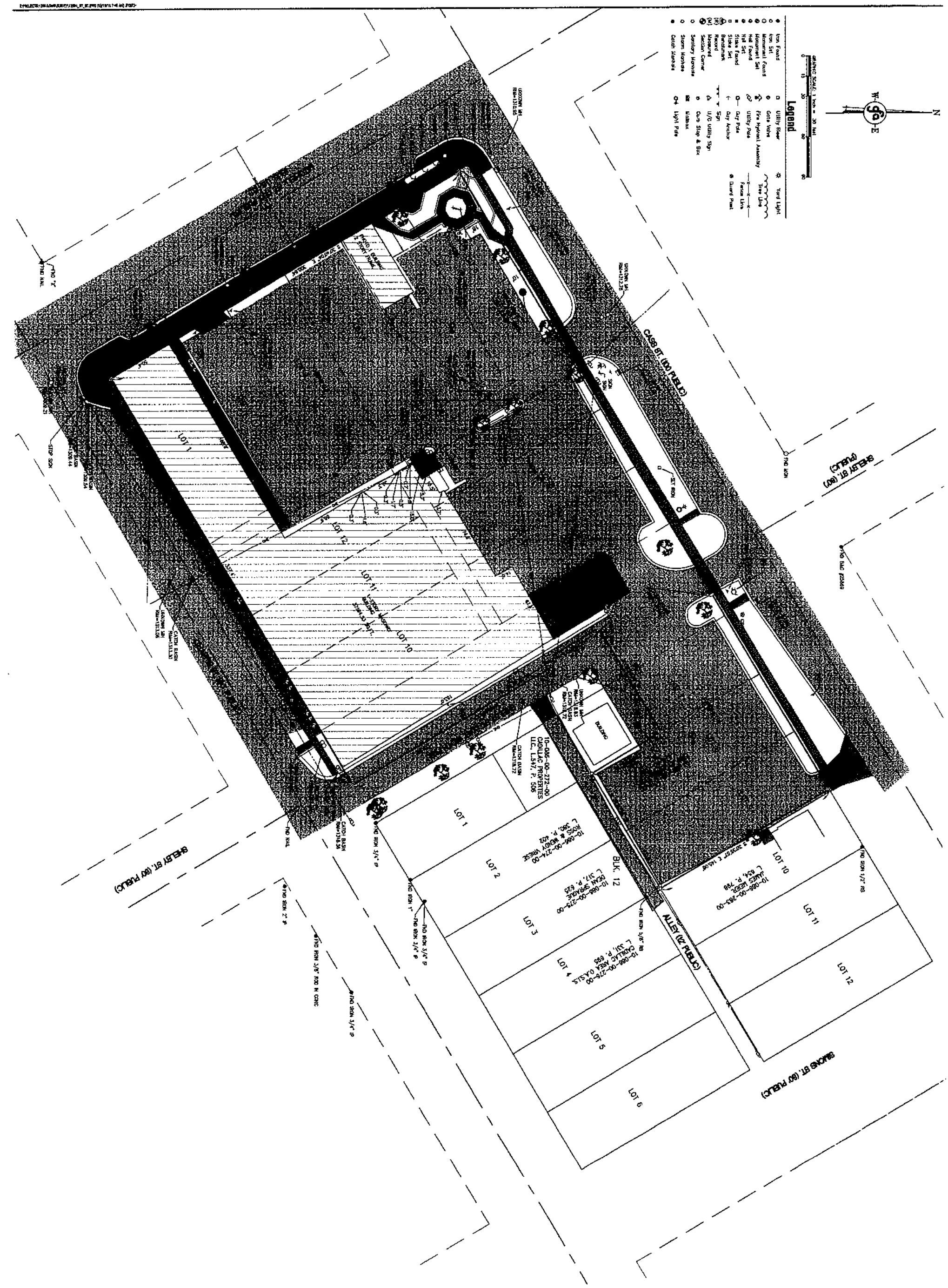
- This redevelopment project will re-establish a new zero or near zero lot line block face along Mitchell Street. This develop pattern will match development on the other side of the street and will increase building values on both sides of the street.
- This project will increase building density on the block of multiple uses including much needed housing development.
- This project will be designed in keeping with modern form-based principles of development.
- This project will result in a significant increase in property values and tax base.
- This project will create a large increase in tax increment revenue which can be used to pay for the public infrastructure portions of this project.
- The scale and investment level of this project is large enough to attract grant funds from the Michigan Economic Development Corporation.
- This project is at a scale and level of investment that it can drive further private investment in downtown Cadillac.

Another reason for the need for a MPUD is that the development pattern for this project does not work well with conventional zoning standards including building setback and parking standards. The parking plan for this project will have a greater level of sophistication which will take into account shared parking based on different demand patterns both by time of day and day of week.

I have reviewed the Mixed-Use Planned Unit Development District and believe if the Planning Commission and City Council waives the minimum size I can meet all of the ordinance requirements to redevelop a full block of downtown that will become a major asset for the city.

Respectfully Submitted,

Robb Munger



GDO INVESTMENTS
BOUNDARY
AND TOPOGRAPHIC SURVEY
SECTION 8, TOWN 21 NORTH, RANGE 9 WEST
CITY OF CADILLAC, WEXFORD COUNTY, MI

These documents are prepared in accordance with the contractual terms and conditions for this project.

Gourdie-Fraser
Municipal | Development | Transportation

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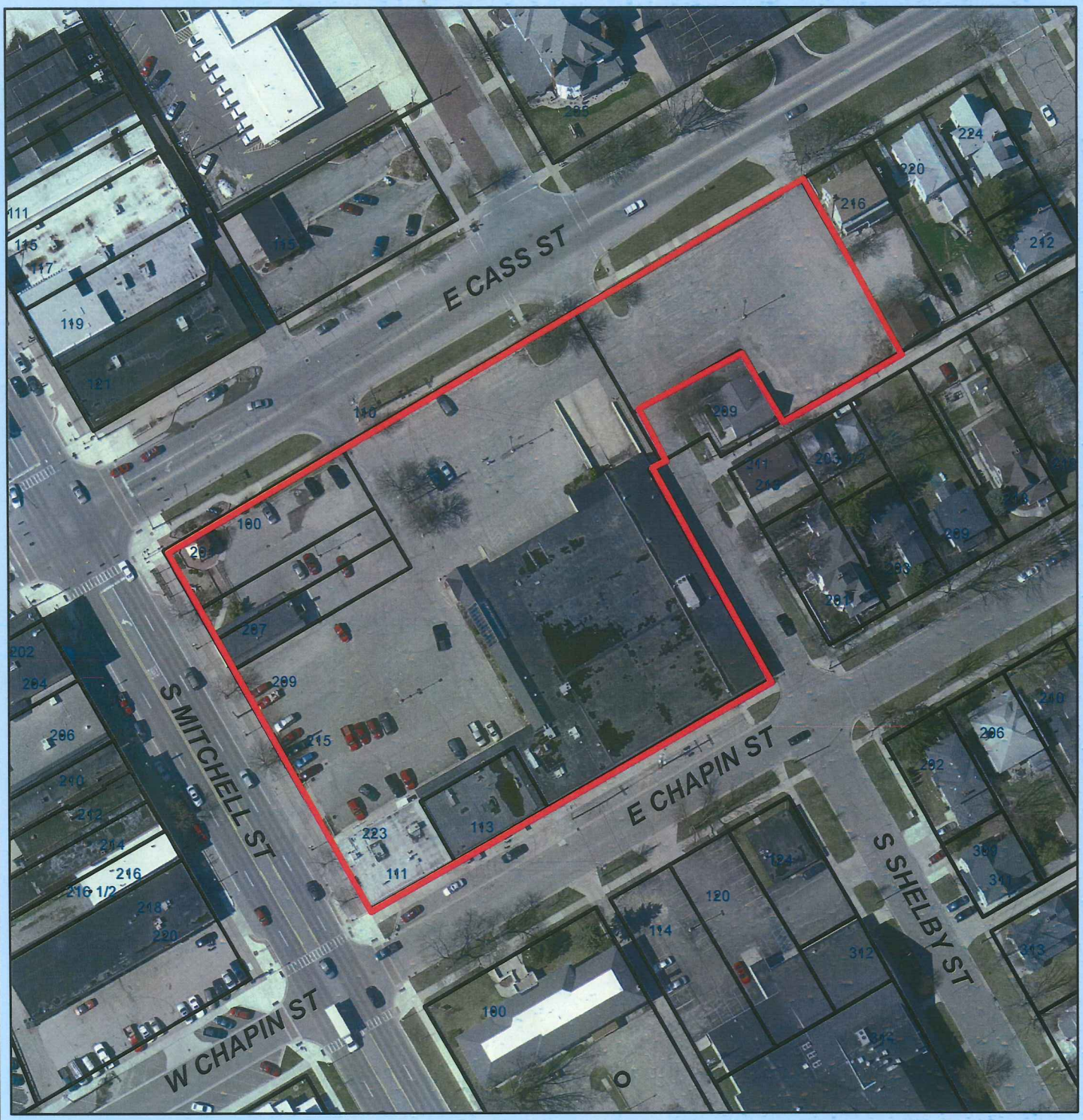
123 W Front Street
Traverse City, MI 49684

13384
SHT 1 OF 1

City of Cadillac
Proposed Area for
Mixed-Use PUD Area Waiver



Prepared By:
GIS Department
City of Cadillac
200 N. Lake St
Cadillac, MI 49601
231-775-0181

Date of Aerials
April 7, 2005

CITY OF CADILLAC MICHIGAN

Note:
This is not a LAND or BOUNDARY LINE SURVEY and may not be used for the construction of any improvements.