



City of Ypsilanti
SUSTAINABILITY COMMISSION MEETING
One South Huron Street
Ypsilanti, Michigan 48197

MONDAY, February 11, 2019
7:00 P.M.

- I. CALL TO ORDER
- II. ROLL CALL

Keith Michalowski	P	A	Nancy Heine	P	A
Emily Drennen	P	A	Thomas McKee	P	A
Bryan Foley	P	A	Katy Greenwald	P	A
Brett Zeuner	P	A	Julia Bayha	P	A
Christian Cannon	P	A			
- III. AGENDA APPROVAL
- IV. PRESENTATIONS
 - A. Washtenaw Regional Resource Management Authority (WRRMA) Presentation [1](#) [2](#) [3](#)
- V. AUDIENCE PARTICIPATION
- VI. CONSENT AGENDA
 - A. Approval of January 14, 2019 minutes [1](#) [2](#)
- VII. RESOLUTIONS/MOTIONS/DISCUSSIONS
 - A. Resolution 2019-02-001 - Energy Plan Adoption Resolution [1](#) [2](#)
 - B. Resolution 2019-01-001 - Peninsular Place Dam Remove and Restoration of Fishing Habitat [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#)
- VIII. LIAISON REPORTS
 - A. Sustainability Plan Committee (Drennen/Zeuner)
 - B. MGC Challenge Committee (Heine/McKee)
 - C. Outreach Committee (Foley/Bayha)
 - Zero Waste events volunteers (Michalowski/Foley)
 - D. Master Plan: Housing Affordability & Access Committee (Foley)
 - E. EMU Sustainability Commission (Greenwald)
- IX. COMMUNICATIONS
 - A. GRID Alternatives Students for Sustainable Energy project update (Cannon)
 - B. SEMIS Coalition Winter professional development day update (Wilcoxon) [1](#)
 - C. Recycling update (Michalowski) [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#)
 - D. City Council Resolution 2019-013 [1](#)
- X. AUDIENCE PARTICIPATION
- XI. PROPOSED BUSINESS
- XII. NEXT MEETING DATE

Monday, March 11, 2018
- XIII. ADJOURNMENT

DISCUSSION DRAFT – JANUARY 2019

ARTICLES OF INCORPORATION

OF THE

WASHTENAW REGIONAL RESOURCE MANAGEMENT AUTHORITY

These Articles of Incorporation (“Articles”) are adopted by the Constituent Members for the defined purposes set forth herein as allowed under the provisions of Act No. 179 of the Michigan Public Acts of 1947, being MCL 123.301, et. seq. (“Enabling Law”). The Effective Date of the Articles is _____, 2019 (“Effective Date”).

ARTICLE I

Legal Name

The name of this Authority shall be, for all legal purposes, Washtenaw Regional Resource Management Authority (“WRRMA”), with a principal place of business at _____, County of Washtenaw, State of Michigan.

ARTICLE II

Constituent Members

The Constituent Members of WRRMA as of the Effective Date are:

-
-
-
-
-
-
-
-
-
-

All Constituent Members as of the Effective Date are located in the County of Washtenaw, State of Michigan.

ARTICLE III

Defined Purposes of WRRMA

The purposes of WRRMA are, as of the Effective Date of these Articles, limited to the purposes set forth herein. For purposes of these Articles, "materials management" shall mean the management, including the "collection", of municipal solid waste, yard waste and recyclables.

- Coordinate the materials management activities of the Constituent Members.
- Coordinate materials management promotional materials and related outreach activities for the Constituent Members.
- Ensure clear and consistent materials management activities/opportunities for all Constituent Members.
- Ensure that there are locations and resources to provide for efficient and effective materials management capabilities for all Constituent Members.

The following shall not be an authorized purpose of WRRMA as of the Effective Date of these Articles:

- The ownership or purchase of any property and/or any facility used, in the past or the future, for the disposal of municipal solid waste, by permit or otherwise.

ARTICLE IV

Powers of WRRMA

WRRMA shall be a body corporate with the power to sue or to be sued in any Michigan Court subject to the then applicable and controlling laws on jurisdiction and venue. WRRMA shall be comprised of the physical territory situated within the boundaries of the Constituent Members. WRRMA shall possess all the powers granted

to it by these Articles, and all powers necessary to, and incidental to, carrying out the currently stated and defined purposes of WRRMA as set forth by these Articles. WRRMA shall have a corporate seal.

ARTICLE V

Definitions

As used herein, all words and phrases, unless specifically defined by law or MCL 123.311(12), shall have their plain meaning and shall be construed accordingly.

ARTICLE VI

Dissolution of WRRMA

(This provision is required under MCL 123.311(11))

WRRMA shall continue in existence until dissolved in accordance with the Enabling Law as set forth at MCL 123.311, including all definitions set forth at MCL 123.311(12).

For this Article VI, the definitions at MCL 123.311(12) shall apply as used herein and where applicable.

Unless it would cause an impairment of a WRRMA contract under MCL 123.306, WRRMA, as a “qualified authority” as defined at MCL 123.311(12)(K)), shall dissolve if the following requirements are met:

- (a) The legislative bodies of 60% of the Constituent Members each adopt a resolution stating that WRRMA is no longer effectively serving the public good for which it was created and directing that WRRMA be dissolved pursuant to MCL 123.311(6)-(9); and
- (b) The clerk (or equivalent) of each Constituent Member whose legislative body adopts a resolution under subdivision (1) above promptly files a certified copy of the resolution with WRRMA and the Secretary of State.

Within six (6) months after the requirements of MCL 123.311(6) are met, WRRMA shall establish a mechanism to manage and pay for environmental activities, if any, required under existing law and cease the activities described in Article III above. Within six (6) months of ceasing activities allowed under Article III, WRRMA shall settle its accounts, including, but not limited to, any vested or accrued employee benefits, employment contracts, collective bargaining agreements, and unemployment compensation, and, subject to MCL 123.311(2), shall sell all of its property, if any. In addition, WRRMA shall establish a mechanism for handling future environmental liabilities, if any. If the requirements of MCL 123.311(6) have been met and a new Authority is incorporated under MCL 123.311(10), WRRMA may agree to the assignment of contracts from WRRMA to the new Authority.

After the requirements of MCL 123.311(7) are met, WRRMA shall distribute to each Constituent Member that Constituent Member's fair share of WRRMA's remaining assets.

Upon distribution of WRRMA's assets under MCL 123.311(8), both of the following apply:

- (a) WRRMA is dissolved.
- (b) All liabilities of each Constituent Member and former Constituent Member of WRRMA are terminated, except for both of the following:
 - (i) Any environmental liabilities attributed to WRRMA to the extent that the environmental liabilities result from WRRMA's disposal of the Constituent Member's or former Constituent Member's fair share of municipal solid waste, recyclable materials or yard waste.
 - (ii) The Constituent Member's fair share of any obligation to reimburse WRRMA following the dissolution for liability incurred by WRRMA as a result of litigation or arbitration proceedings that were initiated before the

date of dissolution, or litigation or arbitration involving a cause of action arising before the date of dissolution, if the total amount of the Constituent Member's fair share of the obligation cannot be exactly determined by the time the requirements of MCL 123.311(7) are met.

MCL 123.311(6)-(9) do not prevent the incorporation of a new Authority by some or all of the Constituent Members or former Constituent Members of an authority with respect to which the requirements of subsection (6) have been met.

ARTICLE VII

Fiscal Year

The fiscal year of WRRMA shall commence on the first day of January in each year and end on the thirty-first day of December of each year.

ARTICLE VIII

The Board

The governing body of WRRMA shall be known as a Board of Trustees ("Board") which shall be comprised of one designated representative from each Constituent Member, who shall be appointed by the applicable governing body of such Constituent Member on or before the fifteenth day of December of each year, and shall serve during the next fiscal year and until his/her successor is appointed by the Constituent Member. The members of the Board shall serve without compensation but the Board, in its discretion, may authorize the payment of the actual expenditures of any Board member incurred in connection with the actual and approved business of WRRMA.

The Board shall, at its January meeting of each year, place on its Agenda the issue of "organization". At the January organizational meeting, the Board shall select a Chairperson, a Vice Chairperson and a Secretary, who shall otherwise be existing and designated members of the Board. Such officers shall serve until the January organizational meeting of the following year and/or until their respective successors shall

be selected. No person shall serve as Chairperson, Vice Chairperson or Secretary after he/she ceases to be a designated member of the Board.

The governing body of each Constituent Member shall, at the time of appointing its regular representative on the Board, also appoint an alternate representative who shall have the right to act in the place of the regular representative in event of the latter's absence from any meeting of the Board, but his/her authority shall be limited to the actual business conducted at such meeting whether set forth on the agenda or not. For any other purpose, the alternate shall not be considered a member of the Board. It shall not be necessary to serve any notice of meetings upon such alternates. No appointment to the Board and no selection of an officer of the Board shall be deemed to be invalid because it was not made within or at the time specified in these Articles. Any Board member or any alternate may be removed at any time by action of the governing body of the Constituent Member which he/she represents. Any officer of WRRMA may be removed by action of the Board by a majority vote of the then Constituent Members.

ARTICLE IX

Vacancies

In the event of a vacancy on the Board, the governing body of the Constituent Member entitled to such representative shall promptly fill the vacancy for the unexpired term. In the event of a vacancy in any office of the Board, such vacancy shall be promptly filled by the Board for the unexpired term at the next regular meeting of the Board. In the case of the temporary absence or disability of any officer, the Board may appoint a qualified person to temporarily act in his/her stead except that, in the event of the temporary absence or disability of the Chairperson, the Vice Chairperson shall so act immediately.

ARTICLE X

Voting Power

Each Constituent Member shall have one vote.

ARTICLE XI

Meetings and Voting

All meetings of the Board shall comply with Michigan's Open Meetings Act, MCL 15.261, et. seq., including all future amendments to that statute. Meetings of the Board shall be held monthly at such times and places as shall be prescribed by resolution of the Board. Special meetings of the Board may be called by the Chairperson, or any three Constituent Members of the Board, by serving written notice of the time, place and purpose thereof, upon each member of the Board, personally, or by leaving it at his/her office, at least twenty-four hours prior to the time of such special Board meeting, or by depositing the same in a United States Post Office or mail box within the limits of WRRMA, at least seventy-two hours prior to the time of such special Board meeting, enclosed in a sealed envelope properly addressed to him/her at his/her home or office address, with postage fully prepaid thereon. Special meetings of the Board at which all Constituent Members are present shall be deemed to be valid even though no written notice thereof may have been given as above provided. Any Constituent Member of the Board may waive notice of any meeting either before or after the holding thereof. The presence of Constituent Members of the Board holding more than fifty percent of the total voting power of the entire Board shall be required for a quorum.

The Board shall act on all matters before it by motion or resolution. For the passage of any motion or resolution, there shall be required the affirmative vote of a majority of the Constituent Members, except when a larger vote is required by law. For purposes of approving and expending money beyond normal operating costs, there shall be an affirmative vote of at least two-thirds (rounded up if necessary) of the Constituent

Members. The Board shall have the right to adopt, from time to time, rules governing its procedures which are not in conflict with the terms of any statute or of these Articles. Board procedures shall be governed by Robert's Rules of Order, as amended from time to time. The Board shall keep minutes of its proceedings, which shall be approved and signed by the Chairperson and Secretary. All votes shall be by "Yeas" and "Nays". The minutes shall show how each Constituent Member voted and the total number of votes for and against each motion, resolution or ordinance.

ARTICLES XII

General Manager

If necessary, and at any time, the Board shall have the right to select and appoint a General Manager. Any General Manager shall be the chief administrative officer of WRRMA and shall perform all of the purely administrative functions of WRRMA, unless otherwise expressly delegated in these Articles. All such functions shall be performed in harmony with the adopted policies and direction of the Board. Any General Manager shall serve at the will and direction of the Board and the General Manager compensation and benefits shall be determined by the Board.

ARTICLE XIII

Finances

The Board Chairperson shall be the presiding officer of the Board. Except as provided herein, he/she shall not have any executive or administrative functions. In the absence or disability of the Chairperson, the Vice Chairperson shall perform the duties of the Chairperson. The Secretary shall be the recording officer of the Board. All monies of WRRMA shall be deposited in a bank or banks, to be designated by the Board, and all checks or other forms of withdrawal therefrom shall be signed by the Chairperson and Secretary of the Board.

ARTICLE XIV

Annual Budget Process

Each October of each fiscal year, the Board shall discuss and complete a proposed budget for the next fiscal year and provide a copy of the proposed budget to the governing body of each Constituent Member. Any objections to the proposed budget shall be provided to the Board by December 1 of each year. Any objections shall be addressed by the Board at the December Board meeting and prior to approving the proposed budget.

For the initial fiscal year, the contribution to the budget for each Constituent Member shall be \$5,000.00 with an equal matching contribution by the County of \$5,000.00. The contribution in each subsequent year shall be determined by the annual budget process. Any expenditure in any fiscal year that exceeds the established contribution and is greater than \$5,000.00 for any Constituent Member shall be first approved by the governing body of the Constituent Member.

ARTICLE XV

Activity Report

Each October of each fiscal year, the Board shall prepare and issue to the governing board of each Constituent Member a report of WRRMA activities.

ARTICLE XVI

Constituent Member Contracts

WRRMA, and its Constituent Members, may, from time to time, enter into a Contract or Contracts, for services performed by WRRMA, and for payment to WRRMA, by the Constituent Members. Such Contract shall be for a period not exceeding thirty (30) years.

ARTICLE XVII

Third-Party Contracts

WRRMA shall have the power to contract with any person, firm or corporation for the performance of the work to carry out the designated purposes of WRRMA.

ARTICLE XVIII

Employment Contracts

The Board shall have the power to secure all necessary services to carry out the lawful purposes of WRRMA, and to fix the compensation of any required employees of WRRMA, and to provide benefits for the employees as determined from time to time by the Board. No officer or employee of any Constituent Member shall receive any compensation from WRRMA except as allowed for expenditures under Article VIII above.

ARTICLE XIX

Annual Audit

The Board shall cause an annual audit to be made of its financial transactions by a certified public accountant, and shall furnish, in a timely manner, a copy thereof to each Constituent Member. The annual audit shall include the details of the total liabilities of WRRMA and each Constituent Member's share of the total liability as of the date of each audit.

ARTICLE XX

Insufficient Income

If the total funds of WRRMA during any fiscal year is not sufficient to satisfy obligations that were previously presented to and approved by the WRRMA Board, then the amount of any such deficiency shall be prorated equally among the Constituent Members. Any funds required to satisfy an obligation incurred but not subject to a prior

approval of the WRRMA Board shall be prorated equally among the Constituent Members after unanimous approval by the legislative body for each Constituent Member or, based on the facts of the expenditure, in another equitable manner unanimously approved by the legislative bodies of the Constituent Members.

ARTICLE XXI

Withdrawal of Constituent Members

(This provision is required under MCL 123.311(11))

For this Article XIX, the definitions at MCL 123.311(12) shall apply where applicable.

Unless its withdrawal would cause an impairment of any contract, a Constituent Member may withdraw from WRRMA if all of the following requirements are met:

- (a) The legislative body of the Constituent Member adopts a resolution stating that WRRMA is no longer effectively serving the Constituent Member's needs and declaring its decision to withdraw from WRRMA on a date specified in the resolution.
- (b) The withdrawal date specified in the resolution under subdivision (a) is not either of the following:
 - (i) Less than 60 days after the date the resolution is adopted.
 - (ii) Within 1 year before the termination date of WRRMA's most recently approved contract under MCL 123.305 unless the filings required by subdivision (c) (immediately below) are made more than 1 year before the specified withdrawal date.

- (c) The clerk of the Constituent Member promptly files a certified copy of the resolution adopted under subdivision (a) with WRRMA and the Secretary of State.

By the withdrawal date, the withdrawing Constituent Member, at its option, either shall pay to WRRMA the amount of the withdrawing Constituent Member's fair share of the negative equity of WRRMA, if any, determined as of the withdrawal date, or shall provide WRRMA with a bond or other independent, insured guarantee that any such amount will be paid not later than 30 days after the expiration date of the authority's most recently approved contract under MCL 123.305. This provision does not relieve the withdrawing Constituent Member from either of the following:

- (a) The Constituent Member's fair share of any obligation to reimburse WRRMA following the Constituent Member's withdrawal for any environmental liabilities subsequently incurred by WRRMA, to the extent that the environmental liabilities result from WRRMA's disposal of the withdrawn former Constituent Member's municipal solid waste, recyclable materials, or yard waste.
- (b) The Constituent Member's payment of any money damages, owed on account of its or WRRMA's default under a contract under MCL 123.306 if the default and damages result directly and solely from the Constituent Member's withdrawal and are necessary to prevent an impairment of the contract. If 2 or more Constituent Members withdraw, they are jointly liable for damages under this provision.
- (c) The Constituent Member's fair share of any obligation to reimburse WRRMA following the Constituent Member's withdrawal for liability incurred by WRRMA as a result of litigation or arbitration proceedings that were initiated before the date of withdrawal, or litigation or arbitration

involving a cause of action arising before the date of withdrawal, if the total amount of the Constituent Member's fair share of the obligation cannot be exactly determined by the date of withdrawal.

At the option of WRRMA, by the withdrawal date, WRRMA shall pay to the withdrawing Constituent Member its fair share of the equity of WRRMA, determined as of the withdrawal date, or shall provide the withdrawing Constituent Member with a bond or other independent, insured guarantee that such amount will be paid no later than 30 days after the expiration date of WRRMA's most recently approved contract under MCL 123.305. If WRRMA elects to provide such a bond or other guarantee, the withdrawn former Constituent Member may direct the bonding company or guarantor at any time thereafter to pay from the bond or other guarantee any obligation or liability owed to WRRMA by the withdrawn former Constituent Member, including, but not limited to, an obligation described in MCL 123.311(4) (a) or (b).

ARTICLE XXII

Publication of Articles

These Articles shall be published once in a newspaper circulating within the WRRMA Constituent Member communities. One printed copy of such Articles of Incorporation, certified as a true copy thereof, with the date and place of publication, shall be filed with the Secretary of State and the Clerk of the County of Washtenaw, within thirty (30) days after execution has been completed.

ARTICLE XXIII

Amendment of Articles

All Amendments to these Articles require a positive vote of the legislative body of each Constituent Member and a unanimous vote of the Board. Any amendment to these Articles shall be endorsed, published and certified printed copies filed in the same manner as the original Articles, except that the filed printed copies shall be certified by the recording officer of the Authority.

ARTICLE XXIV

New Members

A municipality may become a Constituent Member of WRRMA by a positive vote of that municipality's legislative body and by an Amendment of these Articles consistent with the procedure set forth in Article XXIII above.

SIGNATURES

AUTHORITY FAQ

DRAFT: 1/2/2019

What is an Authority?

A solid waste authority is a legally-recognized entity, formed by agreement of two or more municipalities to manage and operate solid waste management programs. While the enabling legislation was created for trash collection and disposal. The most common and current use focuses on recycling and landfill diversion. The proposed Washtenaw Regional Resource Management Authority (WRRMA) plans to follow that trend by focusing on landfill diversion and moving towards zero waste.

Who has been involved in the process?

Representatives from Ann Arbor Township, the City of Ann Arbor, the City of Dexter, Pittsfield Charter Township, the City of Saline, Scio Township, the City of Ypsilanti, and the Charter Township of Ypsilanti have been engaged in drafting the Articles of Incorporation.

How did this process start?

The process started grew out of regional stakeholder meetings and the 2017 Solid Waste Management Plan whereby members expressed desire for greater regional collaboration. Representatives from eight communities (above) have met monthly from May-November to discuss the vision and formation of the Authority, including the Articles of Incorporation.

What is the vision for the Authority?

The Authority's member municipalities will create the formal vision once formed and, to that end, have expressed a strong desire to increase the quantity and quality of the recycling stream first, with a desire to move closer to zero waste over the long-term.

First steps will include tracking materials to create a baseline for comparison, inserting language into contracts to allow for collective contracting (discussed below), and improving the quality and quantity of recycling streams through education and outreach. There is consensus among members to create additional drop-off stations where members could bring recycling, and potentially household hazardous waste, tires, electronics, etc. After recycling streams have been improved, the Authority will hope to attract a private partnership for the development and operation of a MRF (Materials Recovery Facility).

What are the benefits of an Authority?

Authorities may take advantage of economies of scale to improve and increase service levels, lower costs, or both. There are more than a dozen such authorities in Michigan, including WWRA (Western Washtenaw Recycling Authority), MMWA (Mid-Michigan Waste Authority), SOCRRA (South Oakland County Resource Recovery Authority), and RRRASOC (Resource Recovery and Recycling Authority of Southwest Oakland County). An authority can "stretch" dollars by eliminating duplication of educational efforts while providing a consistent message to authority residents. Collaborating and eventually aggregating the recycling streams of authority member signals to industry that the region is serious about waste diversion. In formation meetings, stakeholders agreed to start with metrics and recycling education, then move towards expanding locations for collection and processing (attracting private industry for a MRF).

Why is solid waste or materials management included in the purview of the Authority?

The Authority expects to be able to manage multiple materials to decrease the amount being landfilled and take advantage of potential costs savings.

AUTHORITY FAQ

DRAFT: 1/2/2019

Solid waste and materials management are broad terms. If the Authority is going to increase diversion through recycling from single-family residential homes, removing the recycling from the trash is a logical starting place. In order to create quality metrics, they should have the ability to manage multiple aspects of the waste stream. Additionally, by collaboratively contracting trash hauling, Authority members can opt-in to a collective bid process. By collectively bidding, there are opportunities for cost savings. By enabling optimized routes and increasing purchase power, authorities can typically achieve decreased carbon emissions and reduced hauling costs.

How does the collaborative contracting process work?

Please see the attached contracting sheet for a flow chart explaining the process.

What does it take to withdraw or leave the Authority?

If the Authority moves in a direction to which a member objects, it may withdraw. State law prescribes the process for withdrawal. In summary, an Authority member will need to adopt and file a resolution with certain language and timeframes. Members cannot leave within 60 days of the resolution being passed or within 1 year of the end date on the most recently signed contract. For example, if the Authority's most recent contract lasts 5 years, a member could leave between years 0-4.

What is the financial commitment?

Members' financial commitment to the Authority are governed by its Articles of Incorporation. In short, however, they may incur liability to the Authority by contracting with it. They may also incur liability based on activities the Authority undertakes while they're a member, many of which are activities members are already undertaking on their own (e.g., education, collecting metrics, and contracting for hauling waste).

What support is Washtenaw County providing?

Washtenaw County has provided staff support and funding through a SEMCOG grant to facilitate the authority formation process. During the first year, small contributions (\$5,000 per community for 2019) will be pooled to create educational materials and create outreach activities. Washtenaw County Public Works will match the initial contribution and anticipates supporting future activities commensurate with anticipated impact. Washtenaw County has expressed a willingness to help fund capital improvements and starter capital in the near-term, but not operational capital.

The County anticipates supporting the Authority for the first two years with financial support and with administrative assistance.

How will municipalities pay for the services of an Authority?

The Authority is being created under PA 179. Unlike other acts that can form an authority, PA179 has no taxing authority. It will be funded by revenues from contracts it enters, funds provided by its members, and start-up support from the County.

How do the finances work?

In the initial year, each member will contribute \$5,000, which will support administration and initial projects. Washtenaw County, through the approval of the Washtenaw County Board of Public Works, has agreed to match the initial contribution of every member (estimated at \$40,000). Contributions in future years will be determined through the annual budget and reflect the scope of the Authority's undertakings. The Authority will create a budget each October and will circulate it to its members.

AUTHORITY FAQ

DRAFT: 1/2/2019

Objections received by Dec 1st will be addressed in the Authority's December meeting, prior to approval of the budget. A brief annual report will accompany the proposed budget in October.

Single expenditures greater than \$5,000 for any member requires approval of the respective member's governing body.

How does the voting structure work?

Each member gets one vote. A simple majority may take routine actions. However, an at least 2/3^{rds} (rounded up if 2/3^{rds} isn't met) vote is required for monetary expenditures beyond routine operating costs.

What does it take to amend the articles?

It will take approval from **every** Authority board member and their respective board or council to amend the articles.

Who can be a member of the Authority?

Municipalities (cities, villages, and townships) can choose to be Members of the Authority. After the Authority is established, additional municipalities can request to become a member, but the Authority will need to decide whether or not to accept any new members. Adding a member requires amending the articles, which will require approval from every Authority member's respective legislative body. New members will also have to pay for their share of equity to "catch up." In the beginning, these costs will be minimal, if existent. Long term, these costs become prohibitively expensive, and new members are more likely to be "customers" of the Authority, for which they pay a premium relative to members of the Authority.

As Washtenaw County, universities, and non-profits are not municipalities, they may not be members of the authority. They may be customers of the Authority, contract with the Authority, and contribute to/benefit from the activities of the Authority, but they are not allowed to be a member and therefore have no voting power.

How does WWRA factor into this effort?

Authority members desire to create county wide messaging about recycling and anticipate working collaboratively with WWRA after forming.

Collaborative Contracting Process

Draft materials for Washtenaw Regional Authority Formation: 10/11/2018

Authority is formed

The group decides upon common purposes and goals, Articles of Incorporation, which leads to Authority Formation



Contract Language

Authority members coordinate expirations and insert language which allows them to pull recycling from the contract/dictate where recycling goes



Authority Members opt in or opt out of "the BOX"

Members determine if they want to collaboratively bid once contracts align. Members who opt out neither gain nor lose any rights/powers of membership.

Service Agreement

Members seeking to collaboratively bid agree on what level of service becomes standard for their contracts.



Hauler determination. Authority contracts with hauler

Members who opted in agree upon a single hauler to contract with.



Authority Members contract with Authority

Members contract with Authority, including any nuances agreed upon in service agreements.



**City of Ypsilanti
Sustainability Commission**

Monday, January 14, 2019 – 7:00 p.m.

Zeuner (Second Foley) moved to extend Commission meeting time to 9:30p and spend a maximum time of one minute per liaison report.

Motion: Carried

XIII. ADJOURNMENT: 9:36pm

Cannon (second Heine) moved to adjourn the meeting of the Sustainability Commission.

Voice Vote: Unanimous

Motion: Carried

Meeting Minutes

City of Ypsilanti Sustainability Commission

Regular Meeting City Hall Council Chambers – 1 South Huron St. Ypsilanti, MI 48197

Monday, January 14, 2019 – 7:00 p.m.

I. CALL TO ORDER: 7:02pm

II. ROLL CALL:

Commissioner Michalowski	Present
Commissioner Drennen	Absent
Commissioner Heine	Present
Commissioner Zeuner	Present
Commissioner Bayha	Absent
Commissioner Foley	Present
Commissioner McKee	Present
Commissioner Greenwald	Present
Commissioner Cannon	Present

Also Present: Council Liaison Steve Wilcoxon
Nancy Hare-Dickerson, Commission Recording Secretary

III. AGENDA APPROVAL:

Per inquiry by Commissioner Foley, Commissioner Michalowski clarified that item VII. B. was being presented for discussion only at this time.

Zeuner (Second Heine) moved to approve the Agenda as submitted.

Voice Vote: Unanimous

Motion: Carried

IV. PRESENTATIONS:

A. A Review of the Peninsular Dam Feasibility Study with the Huron River Watershed Council

Laura Rubin and Daniel Brown were present from the Huron River Watershed Council (HRWC). Mr. Brown summarized the *Peninsular Paper Dam: Dam Removal Assessment And Feasibility Report* [located on the City website-Sustainability Commission agenda packet], prepared by Princeton Hydro and presented to City Council in December 2018. He also outlined HRWC's viewpoints regarding the report as to: ecological benefits of

removal; cost considerations; hydropower feasibility; PFAS and dams; and sustainability benefits.

An overview of Commission queries and comments discussed are as follows:

Commissioner Heine: Asked if the City would be responsible for looking for outside funding sources.

Mr. Brown: Responded that the City of Ypsilanti would be responsible for finding outside funding; however, a number of partners would be willing to help with that process of identifying funding sources.

Commissioner Zeuner: Asked if the dam is not removed and a dam failure occurred in the future, if the property boundaries would go to where they would be if the dam was removed.

Mr. Brown: Responded that the same rules would apply in terms of the property boundaries. He added that some of the properties are not defined by the water's edge; that those properties would not be affected even though they are next to the impoundment.

Commissioner Foley: Asked about the amount of damage expected to vegetation and wildlife downstream, how long before the river returns to its normal flow downstream, and a concern regarding fisheries.

Mr. Brown: Responded that over the long-term, no significant difference is seen between the way the river is now, downstream, and the way it would be with the sediment flushing/diluting as they go downriver.

Ms. Rubin: Added that per other dam removals seen by the HRWC, the dam is removed over an 8 to 12 week period which helps maintain and stabilize the sediments upstream. She explained that because the sediment is being managed and contained, there is usually a year or two where downstream is murkier and then it stabilizes itself; and that usually fishery and animal diversity improves afterwards because the water quality improves.

Commissioner Foley: Asked how Riverside Park, which is a natural flood plain, would be affected.

Mr. Brown: Responded that, generally speaking, downriver, over the long-term, is expected to be basically as it is now.

Commissioner Cannon: Asked if there is a way to calculate the return on investment in regards to how much energy could be produced by possibly integrating into a hydro aspect.

Mr. Brown: Responded that there is not a hydro study for this particular dam; however, it is substantially lower and has a much lower drop for the water going over the dam. He explained that the potential

energy generated or harnessed from the dam is going to be lower than the other dams upriver that were discussed.

Commissioner Michalowski: Asked what risks would present themselves to the houses along the way as well as all the way downriver towards Riverside Park, etc., in the event of a catastrophic failure.

Mr. Brown: Responded that it is all the things you have with catastrophic failure of a dam – sudden abrupt catastrophic flooding. He indicated that it is a high hazard dam with loss of life as a concern.

B. Community Impact of the Peninsular Dam with the Friends of Peninsular Park (FoPP)

Laura Lein, Ypsilanti Township resident and FoPP member, outlined the history of the group and explained their goal to preserve, restore, protect and enhance Peninsular Park. Ms. Lein presented a PowerPoint presentation and provided a hard copy summary to the Commission and audience regarding questions and concerns of the group as to the impact of dam removal on their homes and cost implications.

The following questions/concerns were discussed:

As to dam removal – real costs vs estimated cost; continuing costs of reclamation of land; potential flood and flood issues downstream;

As to dam repair – real costs and continuing costs;

As to park improvement – what elements of park improvement can occur independent of the decision on the dam and at what cost.

Rod Casey, Ypsilanti Township resident, and FoPP member, shared that he grew up in the area and fished, fished with his children at the dam and would like to continue the tradition with his grandchildren. Mr. Casey spoke of the dam being an icon to Ypsilanti, and that many residents and students walk across the bridge and stop to take in the beauty of the surrounding area. He expressed that the \$2.8M to remove the dam could be better spent restoring the dam.

Anne Brown, Ypsilanti City resident, and FoPP member, indicated that the group raised funds and asked to participate in the feasibility study in order to make sure the citizen voice was heard. Ms. Brown expressed that whether you are for the removal or repair, the issue has to be understood what will happen to the residents and what will happen downstream. She shared information which she indicated was gained from contact with DNR and urged the Commission to do their own research.

Brian Athey, Superior Township resident, and FoPP member, concluded the presentation by discussing green energy and overall sustainability considerations, including PFAS and invasive species concerns. Mr. Athey also discussed the importance of promoting green and renewables.

Further discussion ensued from the following Commission queries:

Commissioner Cannon: Prompted discussion regarding energy generated when the dam was initially built and operating, and discussion as to hydro energy which could possibly be produced in the future.

Commissioner Zeuner: Prompted discussion regarding cost solutions - contributions from other municipalities/annexation.

Commissioner Foley: Prompted discussion regarding the 2013 study as to sediment analysis, which Ms. Rubin (HRWC) indicated is included in the *Peninsular Dam Feasibility Study* by Princeton Hydro.

Commissioner Michalowski: Prompted discussion as to the deadline for response to the State regarding the City's dam repair/removal determination.

Anne Brown expressed that the power house is a historic structure, which she would like to see remain, regardless of the determination made.

C. The City of Ypsilanti *Draft* Energy Plan with City Staff - Bonnie Wessler, Ypsilanti City Planner

Bonnie Wessler, Ypsilanti City Planner, introduced herself and Brittany Turner from EcoWorks. Ms. Wessler explained that the implementation of Commission feedback from the September presentation of the draft Plan would be discussed.

Brittany Turner, EcoWorks Energy Analyst and Lead Planner, gave a brief overview of the EcoWorks organization and their services. Ms. Turner provided a PowerPoint presentation of the revised draft *City of Ypsilanti Energy Plan* [located on the City website-Sustainability Commission agenda packet], as to recommendations regarding project selection and implementation, funding, staffing, policies and procedures, data, communication and an action plan. She explained that the Energy Plan covers municipal facility energy management only.

Commissioner Zeuner: Query prompted a brief conversation regarding the role of an energy manager as relates to greenhouse gas inventory.

- D. Paint Recycling – with Commissioner Bayha
Commissioner Michalowski: *[Indicated receiving contact from Commissioner Bayha that she would be unable to attend the meeting]*

V. AUDIENCE PARTICIPATION

Lisa Bashert, Grant St.: shared her many involvements as related to her work with sustainability concerns in the City. Ms. Bashert expressed that she advocates dam removal; that removal would improve the health of the river, improve public safety and be better for wildlife.

Commissioner Michalowski: Indicated the current time as 9pm, with the meeting having been set from 7p-9p.

Zeuner (Second Foley) moved to extend Commission meeting time to 9:30p and spend a maximum time of one minute per liaison report.

Commissioner Michalowski: Indicated that agenda items not discussed will be included in the February meeting agenda.

Voice Vote: Unanimous

Motion: Carried

VI. CONSENT AGENDA

A. Approval of December 10, 2018 Minutes

Heine (Second Foley) moved to approve the Consent Agenda as follows:

Approval of the December 10, 2018 Minutes as submitted.

Voice Vote: Unanimous

Motion: Carried

VII. RESOLUTIONS/MOTIONS/DISCUSSIONS

A. Introduction to new Council Liaison – Steve Wilcoxon

Council Liaison Wilcoxon indicated that he is a biochemist who has lived in the City for 28 years. He provided an overview of his family, work, hobbies and sustainability interests.

B. Resolution 2018-01-001 – Peninsular Place Dam Removal and Restoration of Fishing Habitat

Commissioner Michalowski: Explained that the resolution was put together from an ecological perspective. He asked for a volunteer group to look into the concerns and questions from the presentations in order to further discussion at the next meeting - i.e., tracking repair of similar dam costs, concerns about invasive species/sediment/mud flap/short and long-term fishery impact and, possible grant opportunities to assist with removal/restoration/maintenance.

[Commissioners Cannon, Greenwald and Foley agreed to collaborate]

Commissioner Zeuner: Prompted discussion regarding content of the proposed resolution and edit suggestions.

C. Sustainability Plan RFP Proposals

Commissioner Michalowski: Asked commissioners for their feedback regarding the three proposals.

[Discussion ensued regarding cost differences; desire to work with a plan that emphasizes equity and inclusiveness in the process, resilience building and provides flexibility]

Commissioner Zeuner: Indicated that the Beckett & Raeder/EcoWorks partnership could be valuable due to the working relationship with EcoWorks in the City's Energy Plan. He added that the Beckett & Raeder proposal explicitly discussed inclusive outreach, that there seemed to be flexibility to break up the greenhouse gas inventory from a sustainability plan, as well as the resiliency aspect. *[Commission agreement]*

Zeuner (Second Foley) moved to recommend the firm of Beckett & Raeder as Sustainability Plan Advisor:

Voice Vote: Unanimous

Motion: Carried

Commissioner Michalowski requested that Council Liaison Wilcoxon and City Planner Wessler take the Commission recommendation to City Council. *[Wilcoxon/Wessler acknowledged request]*

Commissioner Zeuner suggested extending the Commission meeting time for an additional five minutes and to move Agenda items VII D/E: Draft Energy Plan and Climate Action Plan Discussions to the February meeting. *[Commission Consensus]*

VIII. LIAISON REPORTS

A. Sustainability Plan Subcommittee

Commissioner Michalowski indicated no new information to report.

B. MGC Challenge Subcommittee

Commissioner Michalowski indicated that a meeting to work on metrics is being set up.

C. Outreach Subcommittee

Commissioner Foley indicated that the Parkridge Community Center is booked in the evening until May and that he is working to secure a different location to host the Town Hall for Commissioner Drennen's "Climate Reality Project" presentation and Commissioner Zeuner's "Ypsilanti's Climate Action Plan" presentation.

Commissioner Cannon indicated that he spoke to a couple of University of Michigan student groups who are interested in doing a solar energy project at the high school in Ypsilanti to work to reduce the operating costs for the school system. He asked for commissioner feedback regarding pursuing the idea.

[Discussion ensued, including conversation regarding schools in the City proper which may benefit from such a project]

Commissioner Michalowski asked Commissioner Cannon to prepare a brief plan description and stated that he will reach out to a school board contact for information on how to possibly move the idea forward.

D. Master Plan: Housing Affordability & Access Committee
Commissioner Foley indicated no new information to report.

E. EMU Sustainability Commission
Commissioner Greenwald indicated no new information to report.

IX. COMMUNICATIONS

A. Recycling Update

Commissioner Michalowski indicated that he would be meeting on Wednesday with Recycle Ann Arbor to discuss the curbside recycling program. He provided the specifics of time and location for those who may be available to attend.

X. AUDIENCE PARTICIPATION- none

XI. PROPOSED BUSINESS

- A. Draft Energy Plan Discussion
- B. Climate Action Plan Discussion

XII. NEXT MEETING DATE:

Monday, February 11, 2019

XIII. ADJOURNMENT: 9:36pm

Cannon (second Heine) moved to adjourn the meeting of the Sustainability Commission.

Voice Vote: Unanimous

Motion: Carried



Resolution No. 2019-02-001
11 February 2019

RESOLVED BY THE SUSTAINABILITY COMMISSION:

WHEREAS, the Sustainability Commission has been charged with the review and update of the Climate Action Plan; and

WHEREAS, the City has entered into a Memorandum of Understanding with EcoWorks to complete an Energy Plan that draws from and updates the 2012 Climate Action Plan with specific regard to City facilities; and

WHEREAS, EcoWorks has worked with the City to develop a plan that addresses the energy use of City facilities;

WHEREAS, the Sustainability Commission has reviewed this Energy Plan and supports the goals and objectives therein;

NOW THEREFORE BE IT RESOLVED that the Sustainability Commission adopts this plan as policy to guide future recommendations;

NOW THEREFORE BE IT FURTHER RESOLVED that the City of Ypsilanti Sustainability Commission recommends that the City Council adopt the Energy Plan as guiding policy.

OFFERED BY: _____

SUPPORTED BY: _____

YES: NO: ABSENT: VOTE:



THE CITY OF YPSILANTI

ENERGY PLAN 2018



CITY OF
YPSILANTI

Home of Eastern Michigan University

November 2018

This page was intentionally left blank.

ACKNOWLEDGMENTS

This report was written through a collaborative effort between the City of Ypsilanti City Manager's Office, EcoWorks, and the Southeast Michigan Regional Energy Office (SEMREO). The project was made possible by a grant awarded to EcoWorks from the C.S. Mott Foundation.

THE CITY OF YPSILANTI

Darwin McClary - City Manager

Bonnie Wessler – City Planner

CITY COUNCIL

Mayor Beth Bashert

Mayor Pro Tem Lois Richardson

Council Member – Ward 1, Nicole Brown

Council Member – Ward 2, Steve Wilcoxon

Council Member – Ward 2, Jennifer Symanns

Council Member – Ward 3, Peter Murdock

Council Member – Ward 3, Anthony Morgan

SUSTAINABILITY COMMISSION

Chair - Keith Michalowski

Commission Member - Julia Bayha

Commission Member - Emily Drenen

Commission Member - Nancy Heine

Commission Member - Natalie Sampson

Commission Member - Thomas McKee

Commission Member - Brett Zeuner

Commission Member – Bryan Foley

ECOWORKS

Brittany Turner - Energy Analyst and Lead Planner

Nithiya Saravanan – Energy Analyst

Henrik Mader - Energy Analyst

Briana DuBose – Director of Strategic Community Initiatives, EcoWorks

Special Thanks

The authors would like to extend a special thanks to Bonnie Wessler for her leadership and commitment to the strategic energy planning process. Importantly, the author would also like to thank Rick Bunch for contributing initial revisions of this document.



TABLE OF CONTENTS

PURPOSE OF THE PLAN	5
AN ENERGY VISION FOR YPSILANTI.....	5
SUMMARY OF RECENT ACCOMPLISHMENTS.....	6
SUMMARY OF RECOMMENDATIONS.....	6
1. PROJECT SELECTION AND IMPLEMENTATION	7
2. FUNDING.....	15
3. STAFFING.....	18
4. POLICIES AND PROCEDURES	21
5. DATA	23
6. COMMUNICATION	26
ACTION PLAN	28
LIST OF APPENDICES	35

PURPOSE OF THE PLAN

This document lays the foundation for a robust energy plan employing six categories to help the City of Ypsilanti achieve its goals of saving energy and reducing costs. This plan is written in a complementary way to be easily added into existing plans such as the city's overall Master Plan. An action plan is located on page 28 and outlines each category by goals, timeframe, and subsequent actions that represent a step-by-step approach to maximizing facility efficiency within the budgetary constraints of the city.

AN ENERGY VISION FOR YPSILANTI

Having established a Sustainability Commission, adopted a Climate Action Plan, and completed numerous clean energy projects including solar photovoltaic installations, the City of Ypsilanti has demonstrated a commitment to reducing emissions and energy consumption in municipal facilities. The following pages represent a pathway for accomplishing the city's vision of becoming a clean, efficient city powered by renewable energy.

Energy production, management, and consumption are inextricably linked to environmental and community health and climate change – impacts that ripple through local economic development and municipal financial situations in ways that are hard to value but are real and significant nonetheless. Therefore, for municipalities and local governments, prioritizing clean energy projects in concert with long-term energy planning efforts can simultaneously promote community sustainability while generating significant financial benefits.

An energy plan is an important tool for cutting costs, reducing risks, and optimizing returns on investment - in other words, improving the bottom line, inescapably a central concern of city leaders. This benefit alone justifies the exercise. The City of Ypsilanti is positioned to benefit to a far greater and fundamental extent from development of an overall energy strategy that grows the top line - economic growth and municipal revenue - by helping the city become its best self.

The vision and goals articulated in the master plan, Climate Action Plan, and economic development and downtown plans, as well as the values widely held among residents, elected officials and city staff, all strongly resonate with an ambitious energy vision. For example, residents are conscious about costs, fossil fuel consumption, and public health; they have pushed for complete streets, lively downtowns and intact neighborhoods – and also have pushed for solar power, energy efficient buildings, modern LED street lighting and other clean-energy investments. These elements are powerful community-building commitments of a population that is confidently investing in their own future in the course of building and improving a strong and healthy city.

SUMMARY OF RECENT ACCOMPLISHMENTS

- During the planning process for this document, the City of Ypsilanti City Council passed a resolution in support of developing a Community Energy Strategic Plan for the City of Ypsilanti. The resolution language can be found in Appendix 1.
- In 2018, the city received the Michigan Green Communities bronze certification.
- The City of Ypsilanti established a Sustainability Commission effective February 2017 under Ordinance No. 1280. The ordinance language can be found in Appendix 2.
- The city is actively working to create a sustainability plan being led by the Sustainability Commission.
- In 2016, the City of Ypsilanti joined SolSmart earning a Gold SolSmart designation. Various variables of the program included: Determining path to designation; reviewing the zoning code, developing a checklist to make the solar permitting process more transparent; and cross-training inspection and permitting staff on solar PV.
- According to the City of Ypsilanti Resolution #2013-175, on April 2nd, 2013, “the City of Ypsilanti officially set its own goal of the City of Ypsilanti and its residents generate 5 MW of electricity from distributed solar, to reach 1,000 solar roofs by 2020.” The resolution language can be found in Appendix 3.
- Through a collaborative effort with Solar Ypsi, the city has invested resources in installing solar PV arrays throughout the city.

The development of a municipal energy vision will tie these efforts, as well as many other existing and future initiatives, into a coherent, prioritized and cost-effective framework that is synergistic with the city’s economic and social development, fiscal, sustainability and other goals.

SUMMARY OF RECOMMENDATIONS

The six sections of the Energy Plan present a wide range of recommended goals and actions to build on Ypsilanti’s strengths and improve its weaknesses related to energy management and sustainability in the city.

Recommendations reflect how Ypsilanti city management and leadership envision Ypsilanti’s energy future and relevant energy goals that the city wishes to achieve in order to advance that vision.

To this end, the opportunities for energy management are presented in six categories:

1. Project selection and implementation
2. Funding
3. Staffing
4. Policies and procedures
5. Data
6. Communications

A comprehensive set of action steps can be found in the Action Plan located at the end of this document.

Disclaimer:

This plan covers energy generation and uses in municipal facilities only and does not cover transportation planning or municipal fleet management. Also, while the plan does not directly address energy management for residents and businesses it is our hope that city officials, residents, and businesses will be encouraged by the success of municipal energy planning to adopt broader-reaching policies, practices, and projects.

1

PROJECT SELECTION & IMPLEMENTATION

The development of this energy plan revealed opportunities for updating how the city manages buildings and selects projects.

GOAL 1: IMPROVE MUNICIPAL BUILDING PERFORMANCE.

GOAL 2: IDENTIFY AND IMPLEMENT CLEAN ENERGY PROJECTS.

The EcoWorks/SEMREO approach to becoming a 100% renewable energy municipality begins with efficiency. Efficient buildings increase the benefits of renewable energy generation while creating comfortable, healthy work environments for municipal employees. The determination of which projects are tackled first is most effective as a data-driven decision guided by an understanding of which buildings are underperforming compared to other buildings of comparable size and use.

Second, a whole-building approach that examines how the various parts of the building work together is strongly recommended. Tackling only the “low-hanging fruit” for example, can lead to oversized HVAC systems, excess lighting, or lost opportunities to couple projects together for more attractive loan terms.

Finally, working across departments and gathering input from facilities maintenance staff and department heads can identify non-energy related building issues (mold, pests, etc.) that can be addressed simultaneously with other upgrades.

Reviewing ongoing planning efforts such as the city’s master plan will help to address priority ar-

eas and round out the final project selection process. A full set of recommended steps can be found in the Action Plan at the end of this document.

The City of Ypsilanti has been a longtime supporter of renewable energy and energy efficiency having completed numerous energy efficiency measures and solar PV projects at city facilities. A summary of implemented energy projects is located in Table B. As the city continues to invest in efficient projects it is recommended to conduct energy audits of municipally owned facilities as to prioritize poorly performing facilities.

It is recommended to incorporate future energy assessments into a larger municipal energy portfolio such as the capital improvement plan. Table A includes a summary of technical assessments and audits previously completed for the City of Ypsilanti.

The city has a strong history of addressing energy efficiency, however to the authors’ knowledge, the City of Ypsilanti has not consistently benchmarked and/or analyzed energy usage. Benchmarking facility energy usage via platforms like the EPA’s Portfolio Manager can empower the

Table A: Summary of Technical Assessments and Audits			
Facility Name	Assessment/Audit Description	Assessment/Audit Administrator	Assessment/Audit Date
Previous Assessments/Audits Over Last Five Years			
All Municipal Facilities	Energy Management Study	Honeywell	3/7/2007

city to best address usage, billing and rate issues independently.

Climate Action Plan Recommendations

In the 2012 City of Ypsilanti Climate Action Plan (CAP), it was recommended that the city implement a variety of direct investments, those most relevant to this energy plan are provided below:

- upgrade lighting fixtures in city buildings as soon as possible;
- install occupancy sensors on lights throughout public buildings;
- upgrade streetlights as quickly as possible, focusing on least efficient fixtures first with the city's revolving loan fund, working with the DDA, EMU and Regional Energy Office to achieve the best price through bulk upgrades and to identify any grants or other funding opportunities.

Two out of three of the recommendations have been implemented as of 2018. All DTE owned streetlights were converted to LED lights in 2014; all light fixtures in city buildings have been converted to LED as of 2016; these projects are also listed in the summary of implemented clean energy actions located in Table B. It is recommended to fulfill the remaining project of occupancy sensor installations on lights throughout public buildings.

According to the 2012 CAP, 54% of Ypsilanti's governmental sector emissions come from streetlights and traffic signals. It is recommended to upgrade the city's greenhouse gas (GHG) inventory to reflect the expected reduction in GHG from LED streetlight conversions.

The three following recommendation from the 2012 CAP are outside the scope of municipal facilities, but are valuable to project implementation and selection, diversifying municipal employee transportation options, and helping to reduce GHG emissions for the city:

- adopt a Green Globes certification requirement for any development project receiving at least \$10,000 in municipal incentives or tax abatements in a single year;
- continue development of bicycle and pedestrian network in coordination with Townships, WCRC, and Border to Border (B2B) trail development;
- partner with Eastern Michigan University bike-sharing program and car-sharing program.

None of the three recommendations listed above have been implemented yet.

With strong support for energy efficient projects from the City Council and Mayor, the city is positioned to continue exploration of creative methods to manage and finance energy efficiency improvements and clean energy projects. It is recommended to establish a process to continuously assess municipal facilities by way of energy audits and assessments. A trusted auditor such as Michigan Energy Options can help identify key opportunities for performance improvements.

An up-to-date summary of implemented clean energy actions is in Table B and a summary of clean energy projects to be completed in the near future is located in Table C.

GOING SOLAR:

"The city of Ypsilanti has partnered with grassroots effort SolarYpsi and independent power producer Chart House Energy to create a local team named Solar Destination Ypsilanti" for "the SunShot Prize: Solar in Your Community Challenge...The team plans to install three PV systems at the New Parkridge housing development, at the Ypsilanti Department of Public Services, and at the site of the old landfill near exit 183 on I-94."

Source: <http://www.secondwavemedia.com/concentrate/features/ypsisolar0449.aspx>

PROJECT COMMITMENT:

During the planning process of this energy plan, the City of Ypsilanti made a commitment to install a solar array at the Department of Public Service car port by year 2018.

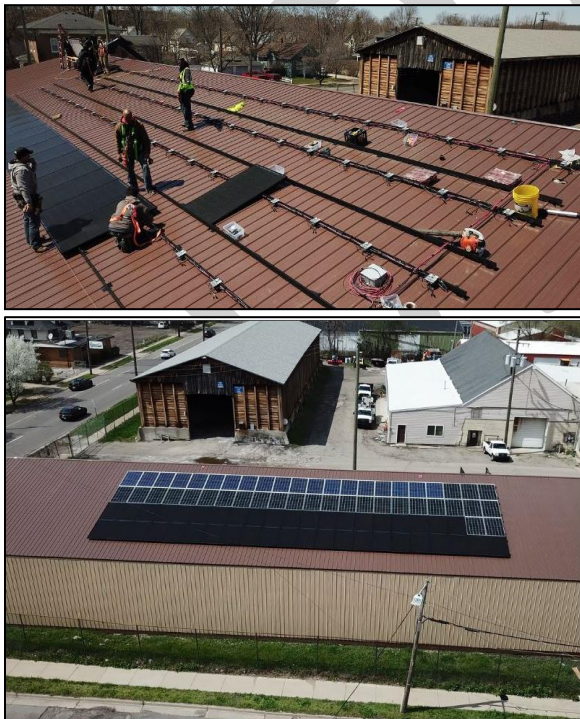


Figure 1. Solar array Installation on City of Ypsilanti Department of Public Service carport. Source: solarypsi.org



Figure 2. Solar array Installation on City of Ypsilanti Fire Station. Source: solarypsi.org



Figure 3. DTE Energy solar array located on land owned by Highland Cemetery. Source: City of Ypsilanti.



Figure 4. Solar array installed on historic property in City of Ypsilanti. Source: City of Ypsilanti.

Table B: Summary of Implemented Clean Energy Actions

Facility Name	Projects Completed								
	Project Description	Date Completed	Fund Source	Retro-Commissioning	Lighting	Building Envelope	Supplemental Loads (Electronic Equipment)	Renewable Energy	HVAC
Fire Station	Photovoltaic solar array expansion (52 SolarWorld 295-watt solar panels on the Ypsilanti Fire Station).	2018	Private funding source					✓	
DPS Carport	Photovoltaic solar array (19 SolarWorld 240-watt and 69 290-watt panels).	2018	Private funding source					✓	
Parkridge Meeting Center	Photovoltaic solar array (68 SolarWorld 290-watt panels).	2017	Lease						
Fire Station	Photovoltaic solar array (176 SolarWorld 285-watt solar panels).	2016	Lease					✓	
All Municipal Facilities	Converted lights to LED	2016	RLF		✓				
North River	844 kW Photovoltaic array on North River St north (collaboration with DTE).	2016	Lease					✓	
Senior Center	Photovoltaic solar array (20 SolarWorld 250-watt solar panels).	2015	Lease					✓	
Ypsilanti Freight house	Photovoltaic solar array (15 Unisolar 128-watt PVI solar panels).	2015	Private funding source					✓	
Parkridge Community Center	Photovoltaic solar array (19 Suniva MVX 270-watt mono solar panels).	2014	Lease					✓	
City Streetlights	All DTE owned streetlights converted to LED	2014	Special assessment		✓				

West Cross St.	Streetscaping on West Cross used LED fixtures in new streetlights	2011	Unknown		✓				
City Hall	2.5 kW photovoltaic solar array with help of Solar Ypsi initiative (12 Sanyo HIT 205 watt). <i>Historic District Commission developed explicit guidelines to streamline appropriate installation of solar panels on historic properties.</i>	2010	Lease					✓	

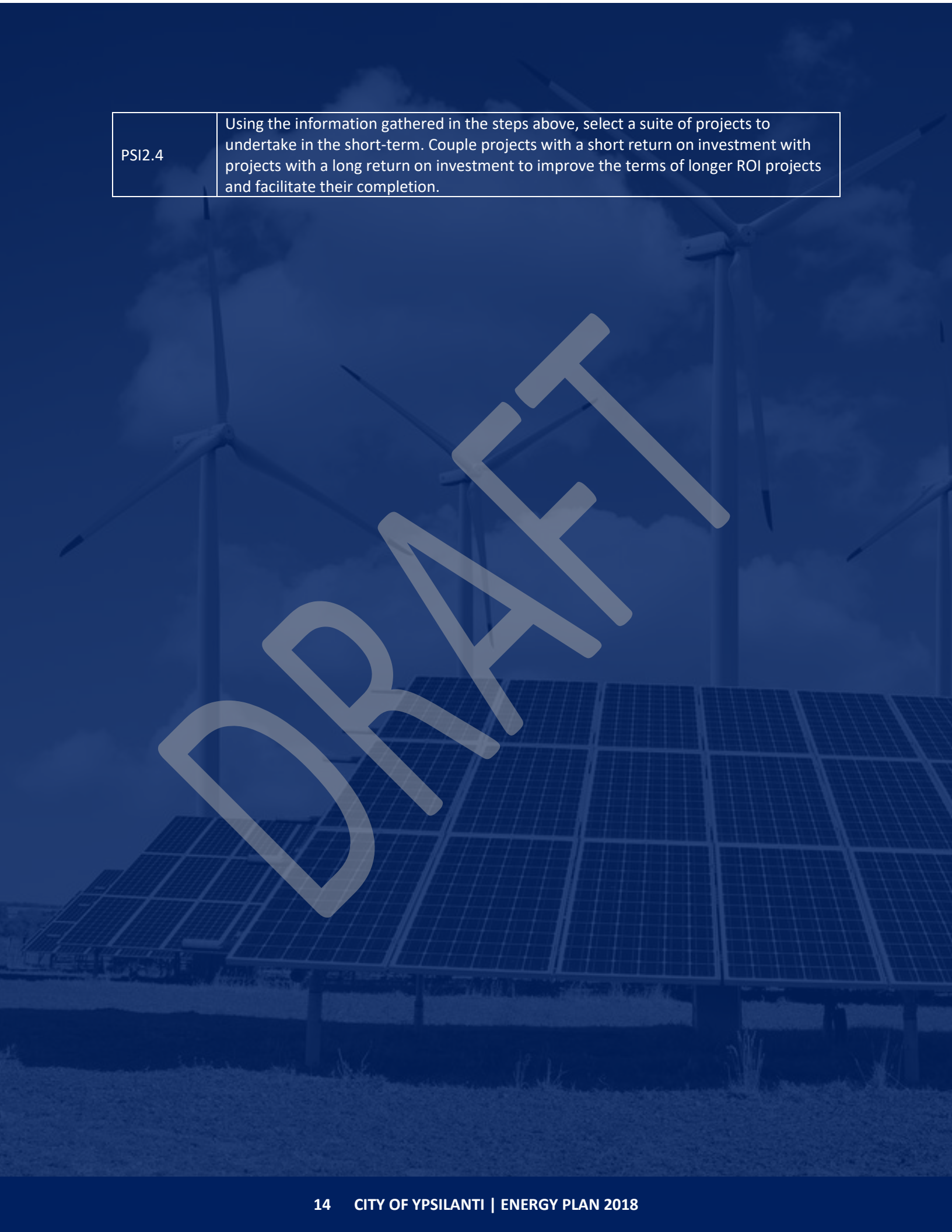
DRAFT

Table C: Project Action Plan Summary

Facility Name	Expected Implementation Date	Best Practices Opportunity										Preparation		Impact		
		Air Handlers/ RTUs	Boilers	Chillers	Cooking Equipment	DHW Systems	Heating/Cooling Systems	Building Envelope	Lighting	Other	Project Description	Building Drawings	Equipment Drawings, Manuals	Project Quote		Short-term or long-term
														Yes	No	
Former City Landfill	2020									✓	Photovoltaic solar array					L
Public facilities	TBD									✓	Ypsi Housing Commission and Solar Ypsi collaboration to do solar installations and provide job training.					L
Public facilities	TBD								✓		Install occupancy sensors on lights throughout public buildings.					S
City parking lots and city parks	TBD								✓		Upgrade exterior lighting in city owned parking lots and city parks.					L

IMPLEMENTATION STRATEGIES AND ACTIONS

GOAL 1: Improve municipal building performance.	
PSI1.1	Assemble all audit reports from any buildings that have had audits within the last 10 years.
PSI1.2	Review the existing capital improvement plan to identify any equipment that is otherwise due for replacement. Adopt a life cycle costing approach to equipment replacement decisions.
PSI1.3	Interview facilities maintenance staff, department heads, the city manager, the mayor, and other key staff and officials to identify any other energy-related needs or opportunities.
PSI1.4	Use the results of Portfolio Manager accounting to identify buildings that are underperforming and/or experiencing unusual spikes in consumption that may be a sign of gas leaks or malfunctioning electrical equipment.
PSI1.5	Have audits performed on underperforming buildings and/or any buildings that have not had an audit performed in the past 10 years.
PSI1.6	Have retro-commissioning studies performed on any building with equipment that is not due for replacement, but may be showing a steady decline in performance over time.
PSI1.7	Update the city's greenhouse gas (GHG) inventory to reflect the expected reduction in GHG from LED streetlight conversions.
PSI1.8	Prioritize the following unimplemented 2012 Climate Action Plan recommendations: 1. adopt a Green Globes certification requirement for any development project receiving at least \$10,000 in municipal incentives or tax abatements in a single year; 2. continue development of bicycle and pedestrian network in coordination with Townships, WCRC, and Border to Border (B2B) trail development; 3. partner with Eastern Michigan University bike-sharing program and car-sharing program.
PSI1.9	Review ongoing planning efforts including the city's master plan to identify any priority areas that may not be identified through a strictly data-driven approach.
PSI1.10	Assess existing electrical systems at all municipal buildings and ensure that facilities meet the minimum requirements of National Fire Protection Association (NFPA) and National Electrical Code (NEC).
GOAL 2: Identify and implement clean energy projects.	
PSI2.1	Prioritize table C: Project Action Plan Summary.
PSI2.2	Prioritize a list of potential energy assessments and audits to be completed in the next five years.
PSI2.3	Utilize the most efficient equipment available and incorporate renewable energy into the energy portfolio of each building including back-up generation.



PSI2.4

Using the information gathered in the steps above, select a suite of projects to undertake in the short-term. Couple projects with a short return on investment with projects with a long return on investment to improve the terms of longer ROI projects and facilitate their completion.

DRAFT

2

FUNDING

Most energy upgrades save municipalities money in the long term, but the challenges in obtaining upfront capital must be acknowledged. The steps identified in this document are recommendations geared toward avoiding impacts to the general fund and are outlined in the Action Plan located at the end of this document.

GOAL 1: INCREASE ENERGY EFFICIENCY AND RENEWABLE ENERGY FUNDING THROUGH INTERNAL AND EXTERNAL SOURCES.

GOAL 2: SUSTAIN THE CITY'S REVOLVING LOAN FUND.

To enhance current efforts an overview of less well-known funding opportunities is provided in table D to support municipal energy efficiency and/or renewable energy projects.

Revolving energy funds are a promising alternative to external financing where savings can then be used to fund future energy savings projects, capturing additional capital.

According to the city's 2012 Climate Action Plan, the City of Ypsilanti seeded a Revolving Loan

Fund with \$250,000 from past years' budget surpluses during the early 1990s, to finance municipal energy efficiency improvements.

Various project accomplishments like the LED lighting upgrade to all municipal facilities was made possible through the city's Revolving Loan Fund. It is recommended to annually track energy savings from RLF financed projects.

Regarding additional funding options, the city has pursued various grant funded opportunities such as the EcoWorks Municipal Energy Planning program funded by the C.S. Mott Foundation.



Dedicated Revolving Loan Fund Management:

It is recommended to assign dedicated staff to monitor and select projects for the revolving loan fund. Just a few benefits of consistent management include safeguarding funds from being spent on non-energy efficiency projects and increased municipal department and staff awareness of fund monies.

According to the 2012 City of Ypsilanti Climate Action Plan, it was recommended that the city “upgrade as many streetlights as possible with the city’s revolving loan fund, working with the DDA, EMU and Regional Energy Office to achieve the best price through bulk upgrades and to identify any grants or other funding opportunities; “.

Table D: Project Financing Options

Financial Source	Eligible Projects	Available Funding
Loans		
State Revolving Fund	Renewable energy and energy efficiency measures	Varies
Michigan Saves	Energy efficiency and renewable energy projects for the residential, commercial, multifamily, and public sectors	Varies
Grants		
DOE Small Grants and EERE Exchange	Residential, commercial, and municipal building energy efficiency and renewable energy measures	\$1,000-\$100,000; Grant-specific
Private Foundations	Diverse renewable energy initiatives	Varies
Rebates		
DTE Commercial & Industry Energy Efficiency Program	Energy efficiency improvements, equipment replacement, efficient retrofits	Varies by equipment
Alternative Options		
Tax- exempt Lease Purchase (TELP)	Energy conservation improvements	Municipality annual appropriations
Third-party Power Purchase Agreement (PPA)	Renewable energy projects i.e. solar photovoltaic	Varies

IMPLEMENTATION STRATEGIES AND ACTIONS

GOAL 1: Increase energy efficiency and renewable energy funding through internal and external sources.

F1.1	Apply for applicable utility-based energy waste reduction programs.
F1.2	Continue to take advantage of sporadic and time-sensitive grant opportunities like the Mott funded Energy Planning with EcoWorks.
F1.3	Review the table of Project Financing Options located in Table D of this document for financing mechanisms that may be a good fit for a particular project or need.

GOAL 2: Sustain the city's revolving loan fund.

F2.1	Assign dedicated staff to monitor and select projects for the revolving loan fund.
F2.2	Report on the revolving loan fund annually during budget review.
F2.3	Establish and adopt guidelines for revolving loan fund decision criteria.
F2.4	Define scope of the fund (i.e. single building, municipal, community-wide).
F2.5	Return 80% of energy cost savings from all projects to the revolving energy fund to allow for seeding of projects in the following year.

3

STAFFING

For many years, the Mayor, Council and community members have spearheaded energy efficiency projects for the city. Supporting that work have been the City Manager, the Department of Public Services, the Community & Economic Development Department, and the Finance Department. There is currently no one point of contact or responsibility for energy efficiency or other sustainability initiatives; elected officials and staff lead these as the opportunities arise. The planning process associated with this document revealed the need for dedicated staff to lead the ongoing and future energy management and sustainability work.

GOAL 1: ESTABLISH AN ENERGY MANAGER POSITION.

GOAL 2: INCORPORATE THIS ENERGY PLAN INTO THE SCOPE OF WORK FOR THE CITY'S SUSTAINABILITY COMMISSION.

Cities that have successfully managed their energy portfolios have dedicated staff to lead the work. This is typically a staff member who has the technical skills necessary to identify key energy projects, has the authority level to move projects through the approvals process, and the financial know-how to make sure that projects fit within the budgetary constraints of a city.

For larger cities with populations of 100,000 or more, it is recommended to hire a full-time energy manager to serve on the municipal staff. For cities under 100,000 in population, a part-time energy manager is typically sufficient. This person may be on staff or be part of a third-party organization like the members of the Michigan Community Energy Partnership (MI-CEP) which includes EcoWorks, SEMREO, SEEDS, and Michigan Energy Options.

Regardless of the staffing structure for the energy manager, political buy-in from decision

makers including the mayor, city manager, members of city council, and department heads is essential for making productive changes in how a city manages its energy portfolio.

The City of Ypsilanti created a sustainability commission with ordinance No. 1280 (please refer to Appendix 2), effective February 2017. The commission is made up of nine regular members, serving for staggered three-year terms, and two non-voting youth members serving one-year terms. Incorporating this energy plan into the scope of work for the city's sustainability commission is recommended to compliment energy efforts pursued by the city.

In the City of Ypsilanti, the City Manager's Office, the Office of the Mayor, the City Council, and the Department of Economic Development have all been supportive and instrumental in passing significant energy goals. Establishment of at least a part-time Energy Manager is a strong next step toward ensuring that these energy goals are

brought to fruition and sustained. In the meanwhile, it is recommended that the city establish authority of an interim Energy Manager to coordinate energy management activities and identify the individual as a recognized resource for city staff.

The bullets below are recommended components of the job description of an Energy Manager:

- Monitor energy bills and facility performance for all of the city's holdings.
- Manage capital improvement projects related to energy efficiency or renewable energy generation.
- Lead bid processes for large-scale energy efficiency and/or renewable energy projects.
- Promote the energy vision among staff, residents, and businesses.
- Seek grants, loans, special assessments, bonds, PPAs, and/or other external funding mechanisms to implement clean energy projects.
- Support the establishment of policies and procedures that make energy efficiency and/or renewable energy projects easier to undertake in the city.
- Establish and facilitate an energy commission of local government staff and officials as well as residents who will be responsible for enacting the energy vision of the city.



IMPLEMENTATION STRATEGIES AND ACTIONS

GOAL 1: Establish an Energy Manager position.	
S1.1	Continue to support the City Manager's Office as the resource for energy management activities and initiatives.
S1.2	Hire a part-time Energy Manager as an added part of a current employee's job description, as a new position within the government, or as a third-party contract.
GOAL 2: Incorporate this energy plan into the scope of work for the city's Sustainability Commission.	
S2.1	Include implementation of this Action Plan in the Sustainability Commission scope of work.
S2.2	Establish an energy sub-committee within the Sustainability Commission.

4

POLICIES AND PROCEDURES

The City of Ypsilanti Sustainability Commission is committed to establishing a comprehensive sustainability plan within the next couple of years. This commitment is outlined in ordinance 1280 (please refer to Appendix 2). The planning process involved in this document revealed opportunities for the city to take this commitment and continue to institute written energy policy that improves sustainable design and raises awareness within the community.

GOAL 1: PROMOTE AND STRENGTHEN ENERGY MANAGEMENT POLICIES AND PROCEDURES.

GOAL 2: IMPROVE KNOWLEDGE OF ENERGY MANAGEMENT AND SUSTAINABLE DESIGN AMONG CITY STAFF AND APPOINTED AND ELECTED OFFICIALS.

The sections discussed previously including project selection and implementation, funding, and staffing, are all critical to beginning the transition to becoming a clean energy city, but changes in policy and procedures are essential follow ups to build clean energy into city operations and ensure the longevity of efforts regardless of staff turnover or election cycle.



IMPLEMENTATION STRATEGIES AND ACTIONS

GOAL 1: Promote and strengthen energy management policies and procedures.	
PP1.1	Continue to promote “alternative energy” zoning policies permitted as an accessory use in all districts, subject to certain conditions- PV panels have to be building-mounted or, in the case of solar lighting, attached to the light pole; geothermal and solar water heating are also permitted everywhere; wind is only permitted when attached to a building; other methods are also potentially permissible- upon consultation with city planning and Development Department, Planning Commission, and other departments as fit.
PP1.2	Continue to promote installation of “alternative energy” according to the Ypsilanti Historical Preservation ordinance and the Standards for Rehabilitation of Historic Structures set by the U.S. Secretary of the Interior governing the review of any work proposed in the district. The term “alternative energy” covers a variety of technologies including geothermal, wind, and solar power.
PP1.3	Continue to promote “alternative energy” special use permitting policies including solar farms/solar as a primary use permissible with a special use permit in city Parks zoning district and Production, Manufacturing, and Distribution (industrial) zoning district.
PP1.4	Pass a council resolution in support of adopting this Energy Plan.
PP1.5	Examine procurement policies to ensure that the bidding and/or purchasing processes account for the energy efficiency of equipment and do not create a barrier to implementing clean energy projects.
PP1.6	Pass a resolution or policy that requires the city to benchmark energy consumption data annually for all municipal buildings and report the usage to City Council annually.
PP1.7	Continue to promote the goal of the City of Ypsilanti and its residents to generate 5 MW of electricity from distributed solar, to reach 1,000 solar roofs by 2020.
PP1.8	Establish and adopt a municipal energy vision statement.
PP1.9	Create and adopt a Sustainability Plan.
PP1.10	Sign and uphold the commitments of the Paris Climate Agreement.
PP1.11	Sign and uphold the Sierra Club’s Ready for 100 pledge to commit to running your city facilities on 100% renewable energy.
PP1.12	During the city’s next master plan cycle, adopt energy policy guidance as a part of the Master Plan.
PP1.13	Consider development of a clean vehicle fleet plan.
GOAL 2: Improve knowledge of energy management and sustainable design among city staff, appointed and elected officials.	
PP2.1	Include information on the city’s energy vision and energy management strategy in the orientation packets for all appointed and elected members of boards and commissions as well as municipal staff members.

5

DATA

The planning process revealed opportunities to benchmark energy consumption data and in return save money.

GOAL 1: IMPROVE THE DATA-DRIVEN APPROACH TO MANAGING ENERGY USAGE.

GOAL 2: ESTABLISH A PROCESS TO ANALYZE DATA TO DETERMINE ENERGY USE TRENDS AND BILLING ERRORS.

GOAL 3: IMPROVE COMMUNICATIONS WITH FACILITY MANAGERS, UTILITY PROVIDERS, AND RELEVANT CONTRACTORS TO RESOLVE ISSUES QUICKLY.

To help stretch project dollars as far as possible and ensure the “best bang for the buck”, a data-driven approach to decision making should be taken. By assessing Ypsilanti’s current annual energy consumption and dollar expenditure, it becomes possible to identify in quantifiable terms underperforming facilities, gas leaks, and sometimes even faulty equipment causing otherwise unexplained spikes in energy consumption and/or gradual increases in energy consumption that are not explained by other factors.

TIPS!

Gas leaks are an emergency and the appropriate hotline should be called immediately:

- DTE Energy Gas Leak Hotline: 1-800-947-5000

The widespread energy and financial benefits of systematically reporting and analyzing energy

HOW TO BENCHMARK:

Begin benchmarking by gathering all available information on municipal facilities including 12-36 months of energy bills, square footage, occupancy levels, and the year built.

Common places to look for missing information are your facility managers, finance department, and/or your DTE account representative.

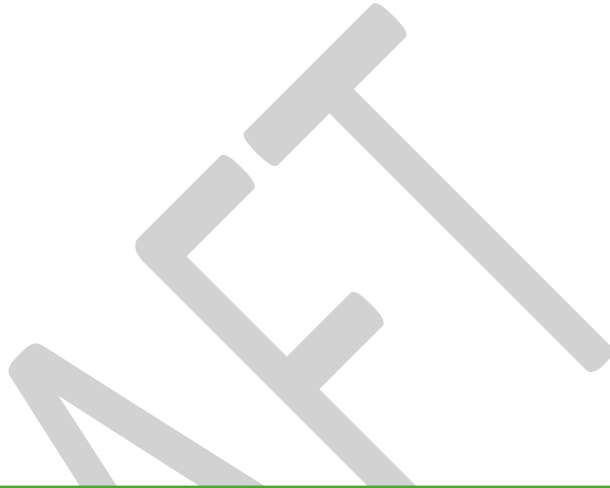
The Energy Star Portfolio Manager tool is recommended for tracking. This tool will enable your energy manager to compare, at a glance, each building’s performance against similar buildings in your region as well as with one another.

data with Portfolio Manager are reflected in the findings of a study on benchmarking and energy savings conducted by the U.S. Environmental Protection Agency. With data from over 35,000 facilities using the EPA Portfolio Manager tool

for energy benchmarking, average energy consumption per building was reduced by 7% over the period of 2008-2011.

The Planning and Development Department and the Finance Department are working together

collecting electricity and natural gas bills and establishing a list of facilities and associated addresses, square footage, account numbers, and meter numbers. City Planner, Bonnie Wessler is leading the benchmarking effort with technical assistance from EcoWorks.



IMPLEMENTATION STRATEGIES AND ACTIONS

GOAL 1: Improve the data-driven approach to managing energy use.	
D1.1	Collect copies of the previous 12-36 months of energy (gas, electricity, and steam) consumption data and enter into a spreadsheet format consistent with Portfolio Manager.
D1.2	Create a spreadsheet on the shared drive to organize energy use information including the appropriate level of detail such as facility name, address, account numbers, meter numbers, square footage, year built, number of computers etc.
D1.3	Create a Portfolio Manager account to upload all building and consumption information into the EPA's Portfolio Manager.
D1.4	Establish a process to populate energy consumption data monthly or quarterly into Portfolio Manager.
GOAL 2: Establish a process to analyze data to determine energy use trends and billing errors.	
D2.1	Examine bills from each facility for any errors or rate optimization that may be possible.
D2.2	Set a base year for comparison using the most complete and relevant sets of data and normalize for weather.
D2.3	Audit at least 10% of energy consumption data in Portfolio Manager for quality assurance/quality control.
D2.4	Look at each building's performance noting any energy spikes or gradual increases in energy consumption that may indicate mechanical failures or leaks.
D2.5	Look at how your facilities compare to others in the region. For any buildings that have recently had upgrades, ensure that the expected drops in energy consumption are also represented. The absence of reductions may indicate failing equipment or incorrect installation.
GOAL 3: Improve communications with facility managers, utility providers, and relevant contractors to resolve issues quickly.	
D3.1	Call DTE to request any refunds for billing errors.
D3.2	Ensure that it is part of the energy manager's task load to review building performance quarterly to flag any new issues.

6

COMMUNICATION

The City Manager's office currently uses face to face meetings to communicate with staff. Fully using existing and potential channels of communication across departments and with constituents is key to the implementation of any energy plan.

GOAL 1: IMPROVE ENERGY AND SUSTAINABILITY-RELATED COMMUNICATION RESOURCES.

GOAL 2: PROMOTE AND SHARE ENERGY REDUCTION ACHIEVEMENTS WITH STAFF AND RESIDENTS.

Energy conservation as a municipal-wide strategy will be most successful when it is built into the culture of the organization. Sharing project successes and conservation tips broadly through the communications channels of the City so that there is awareness among staff, officials, and boards is encouraged. Full adoption of the energy vision will ensure that energy conservation cascades throughout the City's various operations in ways that will likely be creative and surprising.



IMPLEMENTATION STRATEGIES AND ACTIONS

GOAL 1: Improve energy and sustainability-related communication resources.	
C1.1	Highlight achievements at the municipal, departmental, and individual level by way of an annual report and submit to the Sustainability Commission and the City Council.
C1.2	Distribute easy to follow tips and reminders about the city's energy vision on a regular basis (monthly or quarterly).
C 1.3	Publish the final adopted version of this energy plan on the city's website.
GOAL 2: Promote and share energy reduction achievements and projects with staff and residents.	
C2.1	Promote the city's energy vision on municipal marketing materials, the city's website, through regional conferences, and/or other appropriate communication mechanisms.
C2.2	Increase communications and citizen outreach around sustainability, publicizing efforts and providing information on how citizens can get involved or replicate green initiatives.
C2.3	Consider the development of a website dashboard to report on municipal energy management achievements and progress.
C2.4	Continue reporting on energy management progress via the Michigan Green Communities Challenge annually.
C2.5	Work with community stakeholders to initiate an energy competition (the University and city can partner together to challenge another city and university to an energy reduction competition).
C2.6	Provide a discounted AATA pass via the City Treasurer and DDA as an alternative to downtown parking permits (City Hall can lead by example by implementing a parking cash-out alternative benefit option for employees currently eligible for parking permits).

ACTION PLAN

In order for the Energy Plan to be implemented, the city and relevant community stakeholders must carry out the actions needed to achieve the goals and the vision for Ypsilanti's future. The Action Plan should be updated frequently by the energy manager who will serve in an overall project management capacity and advised by the Sustainability Commission. This Action Plan can be used as a checklist to acknowledge accomplishments and identify next steps which the city can consider at critical decision-making points.

Time Frame

ONGOING: Actions that require continuous monitoring or effort.

NOW: Begin work immediately upon plan adoption.

1-2 YEARS: Begin work within 1-2 years.

3-5 YEARS: Begin work within 3-5 years.

Next Master Planning Cycle: Actions recommended for next master plan update.

RECOMMENDED TASK LEADERS INVOLVED

CITY GOVERNMENT:

City Mayor
City Manager (CM)
Department of Public Works (DPW)
Planning and Development
Finance
Energy Manager (EM)*

*Proposed new position

BOARDS AND COMMISSIONS:

City Council
Sustainability Commission (SC)
Downtown Development Authority (DDA)
Planning Commission (PC)
Parks and Recreation (PRC)

PROJECT SELECTION AND IMPLEMENTATION		
ACTION	TIME FRAME	LEAD DEPARTMENT

GOAL 1: Improve municipal building performance.

PSI1.1	Assemble all audit reports from any buildings that have had audits within the last 10 years.	NOW	EM
PSI1.2	Review the existing capital improvement plan to identify any equipment that is otherwise due for replacement. Adopt a life cycle costing approach to equipment replacement decisions.	NOW	EM/Finance
PSI1.3	Interview facilities maintenance staff, department heads, the city manager, the mayor, and other key staff and officials to identify any other energy-related needs or opportunities.	NOW	EM
PSI1.4	Use the results of Portfolio Manager accounting to identify buildings that are underperforming and/or experiencing unusual spikes in consumption that may be a sign of gas leaks or malfunctioning electrical equipment.	1-2 YEARS	EM
PSI1.5	Have audits performed on underperforming buildings and/or any buildings that have not had an audit performed in the past 10 years.	1-2 YEARS	EM
PSI1.6	Have retro-commissioning studies performed on any building with equipment that is not due for replacement, but may be showing a steady decline in performance over time.	1-2 YEARS	EM/CM
PSI1.7	Update the city's greenhouse gas (GHG) inventory to reflect the expected reduction in GHG from LED streetlight conversions.	1-2 YEARS	EM
PSI1.8	Prioritize the following unimplemented 2012 Climate Action Plan recommendations: 1. adopt a Green Globes certification requirement for any development project receiving at least \$10,000 in municipal incentives or tax abatements in a single year; 2. continue development of bicycle and pedestrian network in coordination with Townships, WCRC, and Border to Border (B2B) trail development; 3. partner with Eastern Michigan University bike-sharing program and car-sharing program.	1-2 YEARS	EM/CM
PSI1.9	Review ongoing planning efforts including the city's master plan to identify any priority areas that may not be identified through a strictly data-driven approach.	Next Master Planning cycle	EM/PC/Planning & Development
PSI1.10	Assess existing electrical systems at all municipal buildings and ensure that facilities meet the minimum requirements of National Fire Protection	1-2 YEARS	EM

	Association (NFPA) and National Electrical Code (NEC).		
--	--	--	--

GOAL 2: Identify and implement clean energy projects.

PSI2.1	Prioritize table C: Project Action Plan Summary.	NOW	SC/City Council
PSI2.2	Prioritize a list of potential energy assessments and audits to be completed in the next five years.	Now	SC/City Council
PSI2.3	Utilize the most efficient equipment available and incorporate renewable energy into the energy portfolio of each building including back-up generation.	1-2 YEARS	DPW/SC
PSI2.4	Using the information gathered in the steps above, select a suite of projects to undertake in the short-term. Couple projects with a short return on investment with projects with a long return on investment to improve the terms of longer ROI projects and facilitate their completion.	1-2 YEARS	EM/CM

FUNDING

ACTION	TIME FRAME	LEAD DEPARTMENT
--------	------------	-----------------

GOAL 1: Increase energy efficiency and renewable energy funding through internal and external sources.

F1.1	Apply for applicable utility-based energy waste reduction programs.	ONGOING	EM
F1.2	Continue to take advantage of sporadic and time-sensitive grant opportunities like the Mott funded Energy Planning with EcoWorks.	ONGOING	EM
F1.3	Review the table of Project Financing Options located in Table D of this document for financing mechanisms that may be a good fit for a particular project or need.	NOW	EM/Finance

GOAL 2: Sustain the city's revolving loan fund.

F2.1	Assign dedicated staff to monitor and select projects for the revolving loan fund.	NOW	EM/Finance
F2.2	Report on the revolving loan fund annually during budget review.	NOW	EM/Finance
F2.3	Establish and adopt guidelines for revolving loan fund decision criteria.	NOW	EM/CM
F2.4	Define scope of the fund (i.e. single building, municipal, community-wide).	NOW	EM/CM
F2.5	Return 80% of energy cost savings from all projects to the revolving energy fund to allow for seeding of projects in the following year.	NOW	Finance

STAFFING		
ACTION	TIME FRAME	LEAD DEPARTMENT

GOAL 1: Establish an Energy Manager position.

S1.1	Continue to support the City Manager's Office as the resource for energy management activities and initiatives.	NOW	CM
S1.2	Hire a part-time Energy Manager as an added part of a current employee's job description, as a new position within the government, or as a third-party contract.	NOW	CM

GOAL 2: Incorporate this energy plan into the scope of work for the city's Sustainability Commission.

S2.1	Include implementation of this Action Plan in the Sustainability Commission scope of work.	NOW	SC
S2.2	Establish an energy sub-committee within the Sustainability Commission.	NOW	SC

POLICIES AND PROCEDURES		
ACTION	TIME FRAME	LEAD DEPARTMENT

GOAL 1: Promote and strengthen energy management policies and procedures.

PP1.1	Continue to promote "alternative energy" zoning policies permitted as an accessory use in all districts, subject to certain conditions- PV panels have to be building-mounted or, in the case of solar lighting, attached to the light pole; geothermal and solar water heating are also permitted everywhere; wind is only permitted when attached to a building; other methods are also potentially permissible- upon consultation with city planning and Development Department, Planning Commission, and other departments as fit.	ONGOING	Planning & Development
PP1.2	Continue to promote installation of "alternative energy" according to the Ypsilanti Historical Preservation ordinance and the Standards for Rehabilitation of Historic Structures set by the U.S. Secretary of the Interior governing the review of any work proposed in the district. The term "alternative energy" covers a variety of technologies including geothermal, wind, and solar power.	ONGOING	Planning & Development
PP1.3	Continue to promote "alternative energy" special use permitting policies including solar farms/solar as a primary use permissible with a special use permit in city Parks zoning district and Production,	ONGOING	Planning & Development

	Manufacturing, and Distribution (industrial) zoning district.		
PP1.4	Pass a council resolution in support of adopting this Energy Plan.	NOW	City Council
PP1.5	Examine procurement policies to ensure that the bidding and/or purchasing processes account for the energy efficiency of equipment and do not create a barrier to implementing clean energy projects.	NOW	CM/City Council
PP1.6	Pass a resolution or policy that requires the city to benchmark energy consumption data annually for all municipal buildings and report the usage to City Council annually.	NOW	City Council
PP1.7	Continue to promote the goal of the City of Ypsilanti and its residents to generate 5 MW of electricity from distributed solar, to reach 1,000 solar roofs by 2020.	1-2 YEARS	EM
PP1.8	Establish and adopt a municipal energy vision statement.	1-2 YEARS	City Council
PP1.9	Create and adopt a Sustainability Plan.	1-2 YEARS	SC
PP1.10	Sign and uphold the commitments of the Paris Climate Agreement.	NOW	City Council
PP1.11	Sign and uphold the Sierra Club's Ready for 100 pledge to commit to running your city facilities on 100% renewable energy.	NOW	City Council
PP1.12	During the city's next master plan cycle, adopt energy policy guidance as a part of the Master Plan.	Next Master Planning cycle	PC
PP1.13	Consider development of a clean vehicle fleet plan.	1-2 YEARS	SC

GOAL 2: Improve knowledge of energy management and sustainable design among city staff, appointed and elected officials.

PP2.1	Include information on the city's energy vision and energy management strategy in the orientation packets for all appointed and elected members of boards and commissions as well as municipal staff members.	1-2 YEARS	EM
-------	---	-----------	----

DATA

ACTION	TIME FRAME	LEAD DEPARTMENT
--------	------------	-----------------

GOAL 1: Improve the data-driven approach to managing energy use.

D1.1	Collect copies of the previous 12-36 months of energy (gas, electricity, and steam) consumption data and enter into a spreadsheet format consistent with Portfolio Manager.	NOW	EM
D1.2	Create a spreadsheet on the shared drive to organize energy use information including the appropriate level of detail such as facility name, address, account	NOW	EM

	numbers, meter numbers, square footage, year built, number of computers etc.		
D1.3	Create a Portfolio Manager account to upload all building and consumption information into the EPA's Portfolio Manager.	NOW	EM
D1.4	Establish a process to populate energy consumption data monthly or quarterly into Portfolio Manager.	NOW	EM

GOAL 2: Establish a process to analyze data to determine energy use trends and billing errors.

D2.1	Examine bills from each facility for any errors or rate optimization that may be possible.	1-2 YEARS	EM/Finance
D2.2	Set a base year for comparison using the most complete and relevant sets of data and normalize for weather.	1-2 YEARS	EM
D2.3	Audit at least 10% of energy consumption data in Portfolio Manager for quality assurance/quality control.	1-2 YEARS	EM
D2.4	Look at each building's performance noting any energy spikes or gradual increases in energy consumption that may indicate mechanical failures or leaks.	1-2 YEARS	EM
D2.5	Look at how your facilities compare to others in the region. For any buildings that have recently had upgrades, ensure that the expected drops in energy consumption are also represented. The absence of reductions may indicate failing equipment or incorrect installation.	1-2 YEARS	EM

GOAL 3: Improve communications with facility managers, utility providers, and relevant contractors to resolve issues quickly.

D3.1	Call DTE to request any refunds for billing errors.	NOW	Finance
D3.2	Ensure that it is part of the energy manager's task load to review building performance quarterly to flag any new issues.	NOW	CM

COMMUNICATION

ACTION	TIME FRAME	LEAD DEPARTMENT
--------	------------	-----------------

GOAL 1: Improve energy and sustainability-related communication resources.

C1.1	Highlight achievements at the municipal, departmental, and individual level by way of an annual report and submit to the Sustainability Commission and the City Council.	NOW	EM
C1.2	Distribute easy to follow tips and reminders about the city's energy vision on a regular basis (monthly or quarterly).	NOW	EM

C 1.3	Publish the final adopted version of this energy plan on the city's website.	NOW	EM
-------	--	-----	----

GOAL 2: Promote and share energy reduction achievements with staff and residents.

C2.1	Promote the city's energy vision on municipal marketing materials, the city's website, through regional conferences, and/or other appropriate communication mechanisms.	NOW	EM/CM
C2.2	Increase communications and citizen outreach around sustainability, publicizing efforts and providing information on how citizens can get involved or replicate green initiatives.	NOW	EM
C2.3	Consider the development of a website dashboard to report on municipal energy management achievements and progress.	3-5 YEARS	EM
C2.4	Continue reporting on energy management progress via the Michigan Green Communities Challenge annually.	ONGOING	EM
C2.5	Work with community stakeholders to initiate an energy competition (the University and city can partner together to challenge another city and university to an energy reduction competition).	3-5 YEARS	SC
C2.6	Provide a discounted AATA pass via the City Treasurer and DDA as an alternative to downtown parking permits (City Hall can lead by example by implementing a parking cash-out alternative benefit option for employees currently eligible for parking permits).	3-5 YEARS	DDA

LIST OF APPENDICES

Appendix 1 – Memorandum of Understanding – Community Energy Management Planning Project, Resolution No. 2017-261

Appendix 2 - Ordinance No. 1280 – Establish Sustainability Commission

Appendix 3 – Resolution for 1,000 Solar Roofs Initiative, Resolution No. 2013-175

DRAFT



REQUEST FOR LEGISLATION

November 14, 2017

To: Honorable Mayor and Ypsilanti City Council

From: Darwin D. P. McClary, City Manager

Subject: **MEMORANDUM OF UNDERSTANDING – COMMUNITY ENERGY
MANAGEMENT PLANNING PROJECT**

SUMMARY & BACKGROUND:

City Council is being requested to approve a Memorandum of Understanding (MOU) between the city, EcoWorks, and the Southeast Michigan Regional Energy Office (SEMREO) allowing the three entities to collaborate on the completion of a Community Energy Management Planning project for the city. EcoWorks and SEMREO would provide energy management planning services to the city resulting in the development of a prioritized clean energy management plan. The city would commit to making a good faith effort to launch at least one energy efficiency or renewable energy project totaling at least \$5,000 in value within one year of the completion of the planning project. The city will not incur any cost for completion of the energy management planning work. This project would complement the city's Climate Action Plan and other energy efficiency and sustainability efforts.

PREVIOUS COUNCIL ACTION:

None

FINANCIAL IMPACT:

None to complete the Community Energy Management Planning Project; the city would commit to making a good faith effort to launch at least one energy efficiency or renewable energy project totaling at least \$5,000 within one year of completion of the planning project.

RECOMMENDED ACTION:

Approve the Memorandum of Understanding between EcoWorks, SEMREO, and the city for the Community Energy Management Planning Project and authorize the City Manager to execute the MOU on behalf of the city.

ATTACHMENTS:

Copy of Proposed Memorandum of Understanding for Community Energy Management Planning Project

CITY MANAGER APPROVAL: DDPM

COUNCIL AGENDA DATE: 11/14/2017

CITY MANAGER COMMENTS: Recommend approval of MOU as presented

FISCAL SERVICES DIRECTOR APPROVAL: _____



RESOLVED BY THE COUNCIL OF THE CITY OF YPSILANTI:

WHEREAS, the City of Ypsilanti recognizes the importance of undertaking energy efficiency and renewable energy initiatives as part of its efforts to promote community sustainability; and

WHEREAS, the Southeast Michigan Regional Energy Office, EcoWorks, and Mott Foundation work collaboratively to fund and implement the Community Energy Management Planning Program to provide valuable planning assistance to Michigan municipalities to prepare and implement energy efficiency and renewable energy projects at no cost to those municipalities; and

WHEREAS, the Ypsilanti city council seeks to utilize the Community Energy Management Planning Program to help meet the city's own energy efficiency and renewable energy needs;

NOW THEREFORE BE IT RESOLVED BY THE CITY OF YPSILANTI that the city council does hereby approve the Memorandum of Understanding between EcoWorks, Southeast Michigan Regional Energy Office, and the city to permit the collaboration between the three entities on the preparation of a Community Energy Management Plan for the city at no cost to the city; and

BE IT FURTHER RESOLVED that the city council does hereby commit to making a good faith effort to launch an energy efficiency or renewable energy project totaling a minimum value of \$5,000 within one year of completion of the plan; and

BE IT FURTHER RESOLVED that the City Manager is hereby authorized to execute the Memorandum of Understanding on behalf of the city after approval of the agreement by the City Attorney as to form.

OFFERED BY: Council Member Richardson

SUPPORTED BY: Council Member Bashert

YES: 6 NO: 0 ABSENT: 1 (Edmonds) VOTE: Carried

I do hereby certify that the above resolution is a true and correct copy of Resolution 2017-261 as passed by the Ypsilanti City Council, at their meeting held on November 14, 2017.

Frances McMullan, City Clerk



**CITY OF YPSILANTI
NOTICE OF ADOPTED ORDINANCE
Ordinance No. 1280**

An ordinance to establish a Sustainability Commission

1. THE CITY OF YPSILANTI HEREBY ORDAINS That

The Ypsilanti City Code is hereby amended by adding a new Division 5 Sustainability Commission, to Chapter 2 Administration, Article IV Boards and Commissions, as follows:

Division 5. SUSTAINABILITY COMMISSION

Section 2.171 Sustainability Commission Rationale

City Council by resolution 2016-258, dated November 14, 2016 set forth the reasons for a Sustainability Commission, including:

- a. To create a model of sustainability through efforts to advocate, educate and promote the social, economic and environmental health of the community now and into the future.
- b. To broaden the lens and scope of energy and environmental needs in the future such as wind, solar, clean air, water and improving infrastructure.
- c. To recognize natural resources as chief assets of the City of Ypsilanti and encouraging responsible stewardship of these assets.
- d. To collaborate with citizens, employees, employers, service providers and other governmental agencies and educational agencies to share ideas.
- e. To create a Sustainability Plan.
- f. To review the City of Ypsilanti's Climate Action Plan, Alternate Fuel Policy, the Michigan Green Communities Challenge, and other plans and policies and to continue the work of said plans and policies.
- g. To prioritize sustainability policies.

Section 2.172. Created

Pursuant to Ypsilanti City Charter section 9.03, a commission is hereby created known as the Ypsilanti Sustainability Commission,

- a. to consist of nine regular members, serving for staggered three year terms, and two non-voting youth members serving one year terms. two non-voting youth members to serve one year terms.

- b. There shall be a staff person assigned to the commission.
- c. There shall be a Council liaison appointed to the Commission by City Council.
- d. Commissioners shall be city residents, except that not more than three commissioners may be non-residents of the city of Ypsilanti.

Section 2.173 Appointment

Commissioners shall be appointed by the Mayor with the approval and confirmation of a majority of city council. Non-resident commissioners shall require a finding of the best interest of the city and approval and confirmation of not less than five affirmative votes of city council members.

Section 2.174 Duties

Duties of the Ypsilanti Sustainability Commission shall be to:

- a. Establish by-laws, subject to the approval of the City Council.
- b. Elect officers including a Commission chairperson.
- c. Establish a meeting schedule and meet at least quarterly.
- d. Take action to fulfill the reasons and rationale for the Sustainability Commission set out in Section 2.171, above.
- e. To report Commission actions and findings and make recommendations to City Council at least annually.

2. Severability. If any clause, sentence, section, paragraph, or part of this ordinance, or the application thereof to any person, firm, corporation, legal entity, or circumstances, shall be for any reason adjudged by a court of competent jurisdiction to be unconstitutional or invalid, such judgment shall not effect, impair, or invalidate the remainder of this Ordinance and the application of such provision to other persons, firms, corporations, legal entities, or circumstances by such judgment shall be confined in its operation to the clause, sentence, section, paragraph, or part of this Ordinance thereof directly involved in the case or controversy in which such judgment shall have been rendered and to the person, firm, corporation, legal entity, or circumstances then and there involved. It is hereby declared to be the legislative intent of this body that the Ordinance would have been adopted had such invalid or unconstitutional provisions not have been included in this Ordinance.

3. Repeal. All other Ordinances inconsistent with the provisions of this Ordinance are, to the extent of such inconsistencies, hereby repealed.

4. Savings Clause. The balance of the Code of Ordinances, City of Ypsilanti, Michigan, except as herein or previously amended, shall remain in full force and effect. The repeal provided herein shall not abrogate or affect any offense or act committed or done, or any penalty or forfeiture incurred, or any pending fee, assessments, litigation, or prosecution of any right established, occurring prior to the effective date hereof.

5. Copies to be available. Copies of the Ordinance are available at the office of the city clerk for inspection by, and distribution to, the public during normal office hours. A complete copy of the ordinance is also available for inspection on the City's website, www.cityofypsilanti.com.

6. Publication and Effective Date. The City Clerk shall cause this Ordinance, or a summary of this Ordinance, to be published by printing the same in the publication of record. This Ordinance shall become effective after publication at the expiration of 30 days after adoption.

MADE, PASSED AND ADOPTED BY THE YPSILANTI CITY COUNCIL THIS 24th DAY OF January, 2017.

Andrew Hellenga, Interim City Clerk

Attest

I do hereby confirm that the above Ordinance No. 1280 was published in The Washtenaw Legal News on the 19th day of December, 2016.

Andrew Hellenga, Interim City Clerk

CERTIFICATE OF ADOPTING

I hereby certify that the foregoing is a true copy of the Ordinance passed at the regular meeting of the City Council held on the 24th day of January, 2017.

Andrew Hellenga, Interim City Clerk

Notice Published: December 19, 2016

First Reading: January 10, 2017

Second Reading: January 24, 2017

Published: January 30, 2017

Effective Date: February 23, 2017

TO: Mayor and City Council

FROM: Virginia Shannon, Environment Michigan

DATE: April 2, 2013

SUBJECT: Resolution for Ypsilanti 1,000 Solar Roofs Initiative

To make Ypsilanti a “solar destination”-- and hasten the day when solar powers our buildings and our economy -- Ypsilanti must set a bold solar goal of 1,000 solar roofs by 2020 and encourage solar on thousands more homes, businesses and public buildings.

In order to achieve a goal of 1,000 solar roofs by 2020, the key policies areas identified below should be put in place to increase municipal solar installations, establish successful partnerships that support solar and give Ypsilanti residents and businesses the tools they need to go solar.

- Lead-by example by continuing to identify sites and seek grants for projects on city buildings along with welcoming solar projects on historic buildings;
- Streamline information on financing options and promote financing programs such as PACE to help residents, businesses and industries go solar;
- Partner with nonprofits, solar companies, and Eastern Michigan University to build public awareness of solar potential in Ypsilanti and a literacy of technology and financing options; and
- Support local, state and federal policies that promote the use of solar energy.

With a bold goal of 1,000 by 2020 in place, Ypsilanti can become a solar destination, attracting attention as a national leader and building a solar economy to repower its city and homes.

Approval of this resolution to set a bold solar goal will demonstrate the City’s commitment to becoming a destination to study, live and work in and moving to more sustainable energy future.



Resolution No. 2013-175
September 3, 2013

RESOLUTION FOR 1,000 SOLAR ROOFS INITIATIVE

WHEREAS, the State of Michigan emits more 81 tons of carbon pollution annually to produce electricity; and

WHEREAS, solar power is a clean source of energy with which Michigan can power its homes, businesses and cars to achieve better air quality and reduce carbon pollution; and

WHEREAS, the State of Michigan has vast solar potential with more sunlight than Germany, the world's leader solar power; and

WHEREAS, the solar industry provides more than 6,000 jobs to Michiganders, and that Michigan is ranked in the top five states for solar manufacturing; and

WHEREAS, if Michigan were to generate 1 GW of electricity from distributed generation solar, an additional 100,000 solar rooftops would be installed; and

WHEREAS, the City of Ypsilanti has demonstrated its national leadership in pursuit of solar power and is well positioned to benefit from a growing clean energy economy to bring jobs and investments to the City; and

WHEREAS, the City of Ypsilanti recognizes the above assets of solar power and desires to further its commitment to this important clean energy solution; and

THEREFORE, BE IT RESOLVED that the City of Ypsilanti officially sets its own goal of the City of Ypsilanti and its residents generate 5 MW of electricity from distributed solar, to reach 1,000 solar roofs by 2020; and

BE IT FURTHER RESOLVED that the City of Ypsilanti hereby acknowledges the policy recommendations from the Environment Michigan Research & Policy Center report as to how the City of Ypsilanti and its residents can meet a goal of 1,000 solar roofs by 2020; and

BE IT FURTHER RESOLVED that the City of Ypsilanti calls on the State of Michigan to follow Ypsilanti's lead in making Michigan a leader in solar power and to set the goal of having 100,000 solar roofs by 2020.

OFFERED BY: Council Member Robb

SUPPORTED BY: Council Member Murdock

YES: 5 NO: 0 ABSENT: 2 (Jefferson, Moeller) VOTE: Carried

I do hereby certify that the above resolution is a true and correct copy of Resolution No. 2013-175 as passed by the Ypsilanti City Council, and their meeting held on September 3, 2013.

Frances McMullan, City Clerk



SOUTHEAST MICHIGAN  REGIONAL ENERGY OFFICE



**CITY OF YPSILANTI SUSTAINABILITY COMMISSION RESOLUTION
FOR THE ADOPTION OF
PENINSULAR PLACE DAM REMOVAL AND RESTORATION OF FISHING HABITAT**

RESOLUTION 2019-01-001 - PENINSULAR PLACE DAM REMOVAL AND RESTORATION OF FISHING HABITAT

WHEREAS, a study commissioned by the City of Ypsilanti and the Huron River Watershed Council found removal to be feasible in terms of sediment management, infrastructure stability, and riverfront land ownership;

WHEREAS, dam removal will restore the natural flow regime of the river and improve connectivity for fish and other species living upstream and downstream of the dam;

~~WHEREAS, the long term costs to the City of repairing and maintaining the dam will exceed the cost of removal;~~

WHEREAS, studies have show that environmental cost of dams in fact contributes to climate change;

WHEREAS, restoration following dam removal has been shown to improve fishing habitat--e.g., dam removal in Wisconsin resulted in decreases in common carp and increases in smallmouth bass populations (Kanehl et al. 1997; Stanley et al 2003);

NOW THEREFORE BE IT RESOLVED that the Sustainability Commission urges City Council to:

1. Vote in favor of removal of the Peninsular Place Dam;
2. Ensure that adequate steps are taken to restore or improve the fishing habitat following dam removal.

Peninsular Paper Dam Hydropower Generating Capacity Estimate

Huron River Watershed Council



February 1, 2019

Disclaimer

This document should not be used in place of a professional hydroelectric feasibility and cost assessment conducted by professional engineers. This document is only intended to 1) provide an estimate of the hydroelectric-generating capacity of Peninsular Paper Dam based on its location and dimensions, and 2) discuss additional considerations common to enabling hydropower at dams of similar scale. The information provided is based on publicly available resources. Many unique and often unforeseen challenges can tremendously affect the feasibility and total cost of enabling hydropower at any dam. This document is only intended to help inform the City of Ypsilanti and its residents as they consider options for repair or removal of Peninsular Paper Dam. HRWC has provided the information below based on the best available data and references, but the estimates provided should be not considered as formal conditions of replacing or removing infrastructure.

Background

During the Ypsilanti City Council Meeting on December 4th, 2018, the Sustainability Commission Meeting on January 14, 2019, and in discussions with city councilmembers, many community leaders expressed interest in the feasibility of rebuilding the hydroelectric generating capability at Peninsular Paper Dam (Pen Dam).

Based on that interest, HRWC has reviewed existing information relevant to hydropower capacity at Pen Dam. The installation of turbines, the construction of transmission infrastructure, operating costs, maintenance in addition to the \$807,000 estimated for repairing the dam, FERC licensing, and other associated safety costs are not considered in detail here. This document only examines the possible hydropower capacity of Pen Dam based on its location on the river and its dimensions. There are many other potentially limiting factors that are not discussed here.

Estimating Hydropower Capacity

The capacity for power generation of a dam can be estimated using the following the equation:

$$P = (f) \times (g) \times (H_{net}) \times (n)$$

P is the estimated capacity of power output based on dam dimensions, location on the river, average annual flow rate, and standard efficiency losses power, measured in kilowatts (kW).

(f) is the flow rate in cubic meters /second (m³/s) or cubic feet per second (cfs).

(g) is the gravitational constant, 9.8 m/s²

Peninsular Paper Dam Hydropower Generating Capacity Estimate, HRWC

(H_{net}) is the net head.¹ This is the gross head physically measured at the site, less any head losses. For Pen Dam this can be estimated to be the head of 14 ft minus a standard assumed 10% hydraulic (spillover) loss, making the net head 12.6 feet, or 3.8 meters.

(n) is the product of all of the component efficiencies, which are normally the turbine, drive system and generator. Loss of efficiencies are multiplicative. For typical small hydro systems the turbine efficiency would be 85%, drive efficiency 95% and generator efficiency 93%, so an approximate overall system efficiency would be: $0.85 \times 0.95 \times 0.93 = 0.751$ (75%).

HRWC estimated the flow at Pen Dam by using the high quality USGS gage record at Wall Street in Ann Arbor. This record includes data over more than 30 years and provides an accurate average over high and low flow years.

The 30-year annual average flow at Wall Street is 524 cubic feet per second (cfs). Geddes Dam (also called Dixboro Dam) is only a bit downstream, with 31 square miles of extra drainage to the river. That results in an estimated average flow of 546 cfs at Geddes. An additional 41 square miles drain to the river above Pen Dam, resulting in an annual average flow of 575 cfs. We used the same method to estimate the flow at Argo and Superior Dams.

A 2010 studyⁱ commissioned by the Army Corps of Engineers (ACoE) that examined Argo and Geddes dams in Ann Arbor referenced data from the Michigan Department of Environmental Quality and USGS also used in a prior 2008 study conducted by Stantec Consulting.ⁱⁱ ACoE estimated flow at Geddes to be 633 cfs and 536 at Argo, higher than what we estimate. Annual flow variability on the Huron River is high. The standard deviation in flow is 113 cfs. The ACoE study used USGS data over a shorter reference period that tended to be higher than the long-term average. The flow values we estimate are therefore lower along the entire section of river considered. As a result, we estimate Geddes and Argo dams would also have a lower hydropower potential than reported in the ACoE study.

By converting to metric units, using the above estimated values of flow and following the method above, we estimate the hydropower capacity at Pen Dam in kilowatts to be $P = 16.28 \text{ m}^3/\text{s} \times 9.8 \text{ m/s}^2 \times 3.8 \text{ m} \times 0.75 = 455 \text{ kW}$. We have assumed a water density of 1000 kg/m^3 .

For comparison, we have similarly estimated the flow at Geddes, Argo, and Superior dams to be 546 cfs ($15.5 \text{ m}^3/\text{s}$), 522 cfs ($14.8 \text{ m}^3/\text{s}$), and 571 cfs ($16.3 \text{ m}^3/\text{s}$) respectively. The resulting hydropower capacities at each dam location are provided in the table below.

Dam	Flow (m^3/s)	Head, net effective (m)	Capacity (kW)
Argo	14.8	3.4	370
Geddes	15.5	4.9	557
Superior	16.2	6.9	822
Pen	16.3	3.8	455

The above table shows the estimated flow at each dam based on a 30-year average of flow at the Wall Street USGS gage in Ann Arbor, the net effective head of each dam, and the calculated hydroelectric capacity. The exact values depend on assumptions in the method of estimation. The above table should only be used for informative estimates and to compare relative flow and capacity between dams.

¹ Head is the vertical change in elevation between the reservoir water level and the downstream water level.

Peninsular Paper Dam Hydropower Generating Capacity Estimate, HRWC

These values should be interpreted as a practical estimate of the long-term ceiling for hydroelectric generation. Many other factors can significantly reduce actual electrical output at any location.

Pen Dam's capacity is between that of Argo and Geddes. This is expected as Pen Dam has more river above it and a resulting higher flow. It is a larger dam than Argo with higher head but has a lower head than Geddes. Pen Dam experiences similar flow to Superior Dam but is much shorter and therefore has much less capacity Superior Dam.

We have used a slightly different methodology for estimating output than what the ACoE used. ACoE included the inefficiencies throughout specific elements of their analysis, while we have assumed a generic, standard level of efficiency that we have applied to all dams. In reality, energy production efficiencies vary between dams. To make sure our method yields similar results under similar conditions, we repeated our estimation using the high ACoE flow values. In that case, our flow values for Geddes and Argo are consistent with what the ACoE reported in 2010. The estimate of total output depends on the efficiency method used, but for estimating the relative differences in capacity between the dams being considered, the magnitude of flow at each dam location is more relevant than the method used to estimate efficiency.

We estimate the maximum electricity generation per year at Pen Dam to be about 3,400,000 kWh, assuming a maintenance downtime of 15%. According to a 2008 study of Ann Arbor's dams,ⁱⁱⁱ Barton and Superior Dams in Ann Arbor, which currently produce hydroelectricity, experience 13% and 19% maintenance downtime, respectively.

The actual electricity utilized by Barton and Superior Dams on average was reported in the 2008 Stantec study to be 54% and 46% respectively. Estimating 50% for Pen Dam, the expected annual average utilized electricity would be about 1,993,000 kWh. This total would place Pen Dam between Argo and Geddes in terms of expected utilized electricity.

Summary of the 2010 Geddes and Argo Report

The ACoE study ranked the favorability of Geddes and Argo dams in seven critical criteria for the long-term feasibility and cost-effectiveness of hydroelectric power. They found Geddes Dam was favorable in 3 of the 7 criteria. Argo was found favorable in none of the criteria. Overall, Geddes was found to be more preferable but not cost-effective. Argo was found to be less preferable and less cost-effective. (The benefit-to-cost ratio in both cases was below 1.0).

The study investigated the costs associated with three options for power delivery to the grid and two options for generating power at Argo Dam. Depending on the option considered, the total estimated cost of enabling hydropower ranged from 4.4 to 9.3 million.

Superior Dam

The City of Ann Arbor currently generates hydroelectricity from Superior Dam, immediately up river of Pen Dam. In terms of hydrologic position on the river, Superior Dam is the closest to Pen Dam. Superior Dam (25-foot head) is approximately twice as high as Pen Dam on a narrower section of river and therefore has approximately twice the electric-generating potential.

Peninsular Paper Dam Hydropower Generating Capacity Estimate, HRWC

Superior Dam, however, currently does not generate enough electricity to cover its own annual maintenance and operating costs. Ann Arbor is currently in the early phases of understanding the feasibility of removal of Superior Dam.

Implications for Pen Dam

Without a thorough assessment, there is much uncertainty about which specific elements of the Argo and Geddes study are relevant to Pen Dam. Pen Dam is currently in poorer condition than Argo or Geddes were in 2010 when the study took place. Argo and Geddes are newer dams with greater capacity for reconstruction or additional new infrastructure. Many of the steps needed to enable hydropower at Argo and Geddes, if implemented similarly at Pen Dam, would require additional costs beyond the estimated cost of repairing Pen Dam.

Comparing the potential hydropower capacity of the three dams based on their location and design is more straightforward. The electricity-generating potential at Pen Dam would be less than that of Geddes which was not found to be cost-effective, and significantly less than Superior Dam, which is currently generating hydroelectricity but is not fiscally sustainable.

Other Considerations

In addition to the limitations of generating hydropower based on dam size and available flow, many unrelated issues commonly affect the feasibility of enabling hydropower at a dam. The following issues are apparent in the previous studies of Ann Arbor's dams and in other feasibility studies from dams across Michigan.

Federal Energy Regulatory Commission (FERC) Licensing

The FERC licensing process has presented an obstacle for numerous hydropower projects in Michigan. A 2009 assessment of the Boardman River near Traverse City, Michigan estimated that FERC licensing alone would cost \$600,000-850,000, based on a review of contemporary hydropower projects pursued by utilities and communities across Michigan.^{iv}

The 2008 study of Ann Arbor's Barton and Superior dams included an allowance of \$300,000 for the initial FERC licensing process, but noted that the cost was highly dependent on the number of environmental impact studies needed. The study also points out that additional initial and annually recurring costs should be expected. In the case of Barton and Superior Dams, the annual costs were estimated at \$110,000 per site.

Transmission Infrastructure and Supporting Equipment

Sites without transmission infrastructure that would need to have it installed frequently encounter additional costs that substantially increase the total cost of enabling hydropower. Pen Dam was never constructed to provide electricity to the grid, so there is little supporting infrastructure currently available near the site. Virtually all transmission infrastructure would need to be built.

Another critical assumption regarding power generation is that the dam can house a turbine system capable of capturing all of the available flow minus efficiency and hydraulic (spillover) losses. That is often not the case. It's possible the dam would need to be significantly retrofitted or partially rebuilt to

Peninsular Paper Dam Hydropower Generating Capacity Estimate, HRWC

capture and transmit all of the available capacity. That would greatly increase the cost of enabling hydropower.

Increased Safety Concerns and Safeguard Requirements

Enabling hydropower increases the number of public safety hazards at the site. In many cases, this requires additional area and fencing. The other currently operational hydroelectric dams along the Huron River exhibit these requirements.

Additional Maintenance and Staffing Commitments

Enabling hydropower requires around-the-clock operator attention, either with staff operators on-site or on-call. Maintenance costs and staffing needs vary with the construction of the hydroelectric plant.

ⁱ Argo and Geddes Dams Hydropower Study Final Report. Presented to U.S Army Corps of Engineers by VECSIE Joint Venture. VA Ann Arbor Healthcare System, Ann Arbor, Michigan

ⁱⁱ Hydroelectric Redevelopment: Argo and Geddes Dams Feasibility Study. 2008. Stantec Consulting Michigan Inc. Ann Arbor, Michigan.

ⁱⁱⁱ Hydroelectric Redevelopment: Argo and Geddes Dams Feasibility Study. 2008. Stantec Consulting Michigan Inc. Ann Arbor, Michigan.

^{iv} Summary of Hydroelectric Power Generation at the Boardman Dams. 2009. Environmental Consulting and Technology Services, Traverse City, Michigan.

PENINSULAR PAPER DAM: DAM REMOVAL ASSESSMENT AND FEASIBILITY REPORT

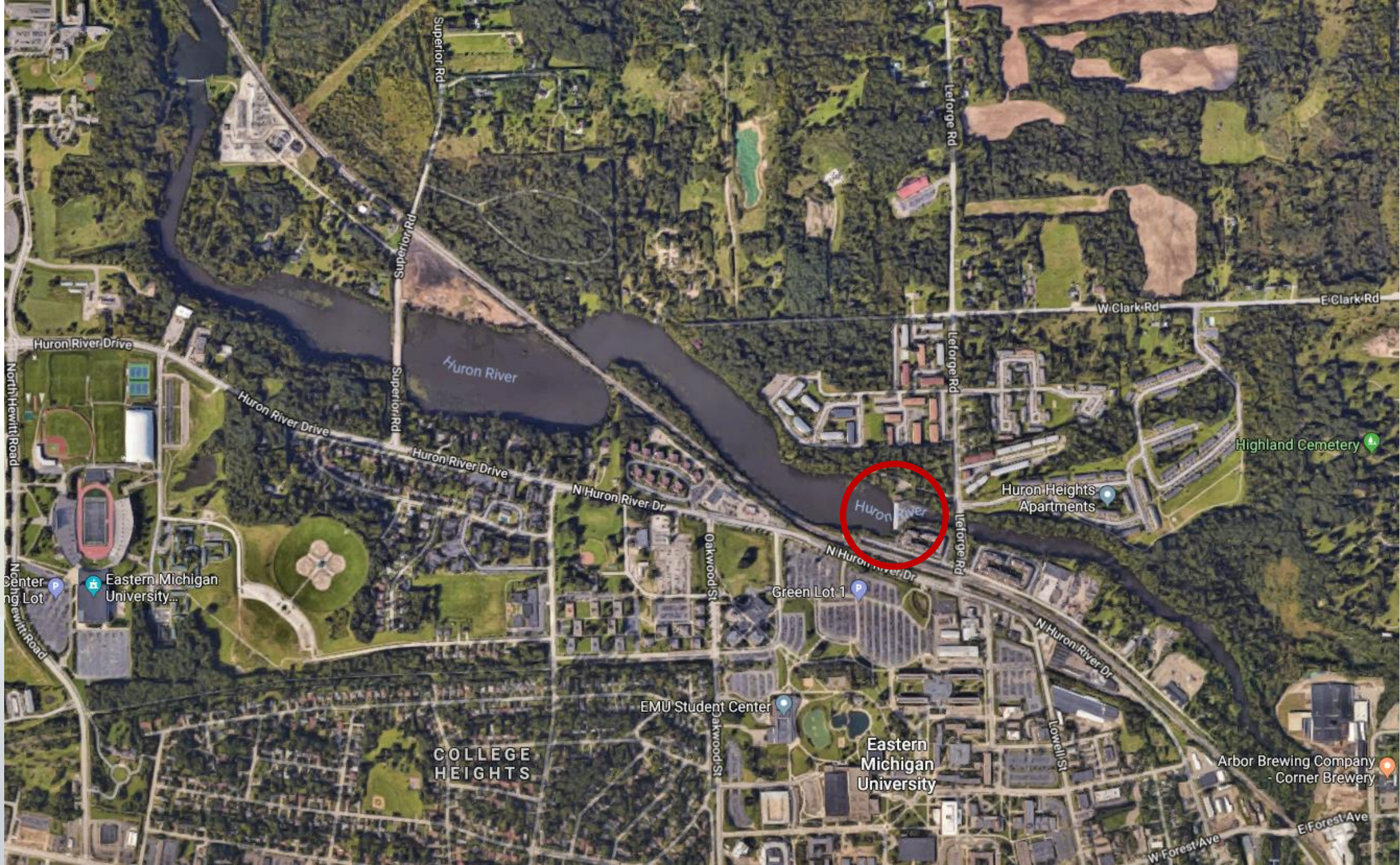
City of Ypsilanti

Originally presented by Princeton Hydro to City Council, 12/4/18

Summarized for presentation by HRWC to the Sustainability Commission, 1/14/19

Presented by Daniel Brown and Laura Rubin, Huron River Watershed Council





Background of Feasibility Study

The City of Ypsilanti approached the Huron River Watershed Council (HRWC) to explore the options for the future of Peninsular Paper Dam and the restoration of the Huron River.

Why: Pen Dam was classified as high hazard* and needs to be repaired or removed.

Goal of the study: Assist the city in the decision-making process by completing the preliminary studies to determine if dam removal is feasible.



To ensure community and stakeholder involvement, a working group was developed early in the process.

- *City of Ypsilanti*
- *Ypsilanti Township*
- *Superior Township*
- *Friends of Peninsular Park*
- *HRWC*
- *with guidance from MDEQ*



The Feasibility Study

Assessed 3 Critical Issues:

1. Sediment quality and quantity
2. Potential infrastructure/utilities impacts
3. Riverfront land ownership

Includes initial conceptual design and an estimate of construction cost for dam removal.

Additional study was deferred to a later phase, pending the outcome of the feasibility study.



- **Owned by the City** of Ypsilanti
- **Built in 1867** to provide power for paper manufacturing.
- **Failed in 1918.** Rebuilt 2 years later.
- **High Hazard* dam** in fair condition (2016 inspection).
- **Dam no longer generates power.** Powerhouse was abandoned. Electricity-generating equipment was removed.

Peninsular Paper Dam



* The high hazard classification (from 2016 inspection) relates to consequences if a dam were to fail, not condition. A “high hazard” dam that fails could result in loss of human life. Dams classified as high hazard require inspections every 3 years and updated Emergency Action Plans.

Peninsular Paper Dam

Dam Construction:

- *Type:* Concrete gravity dam.
- *Height:* 16 ft. *Length:* 290 ft.
- Stoplog outlet structure extends to base of dam.

Impoundment:

- 177 acres reach ~6,575 ft. upstream
- Within the City of Ypsilanti, Ypsilanti Township, and Superior Township
- ~37 abutting properties
- Includes two bridges: Conrail Railroad Bridge & Superior Road Bridge



Why Dam Removal Is Being Considered

The dam no longer generates power or serves an economic purpose to offset the required immediate repairs and ongoing maintenance.

Removing the dam would:

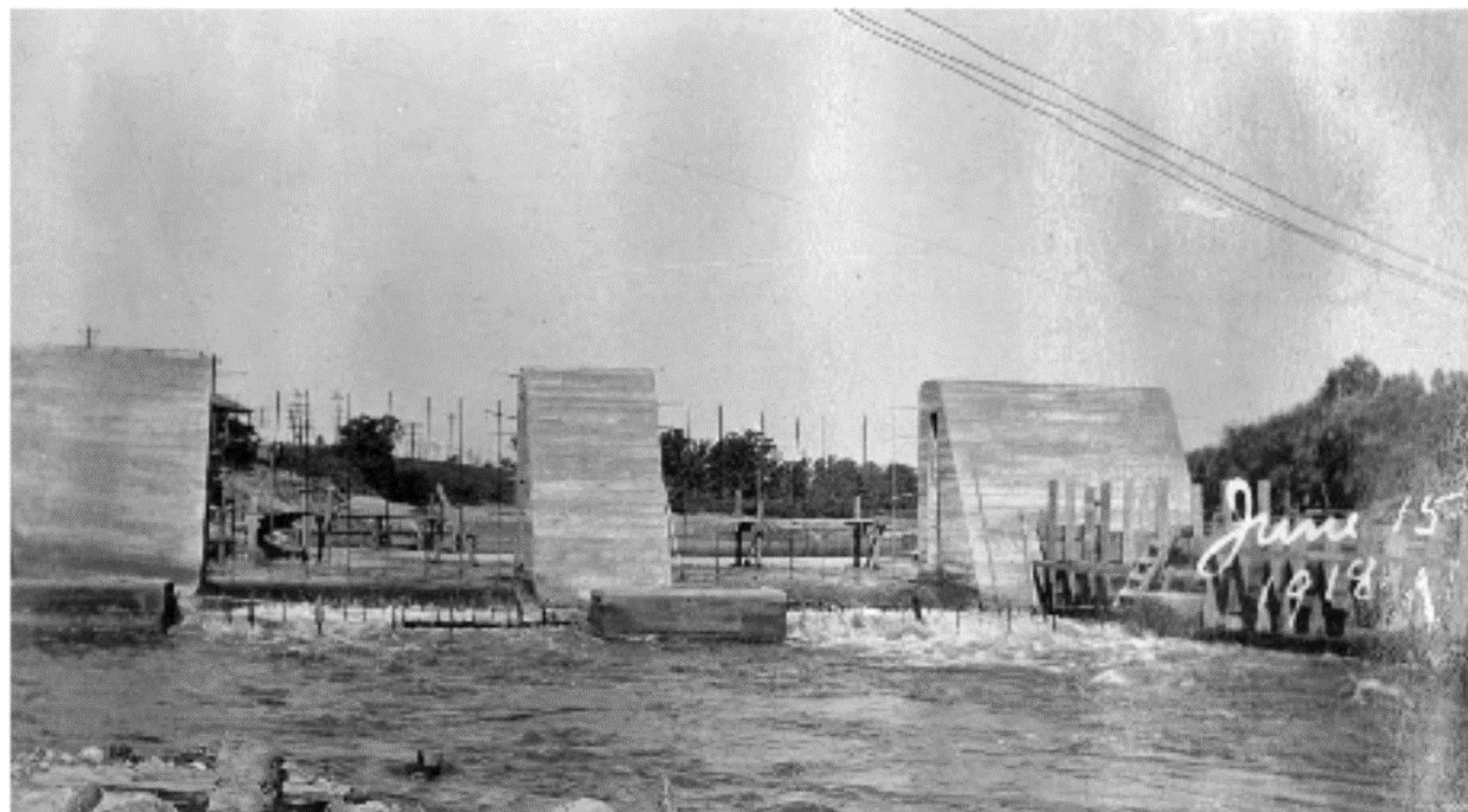
- Eliminate the public safety hazard.
- Deregulate the dam and relieve legal liability to the city.
- Remove city obligations for repair, safety inspections and maintenance
- Improve water quality for this reach of Huron River.
- Restore >1-mile of free-flowing river, associated fishery, with adjacent vegetated floodplain.
- Reconnect >2 miles of river that have been isolated for over 100 years.



Photograph 4: Full dam breach



Photograph 5: Rebuilding dam after breach – dated June 15, 1918



Photograph 6: Spillway after reconstruction

Field Investigation, Survey, and Observations

- Site investigation (included identification of streambank slope failures)
- Survey of dam, riverbed profile, and bridges
- Impoundment sediment probes, identified sediment distribution, type, amount
- 10 vibracores with sediment sample collection
- Upstream and downstream sediment samples

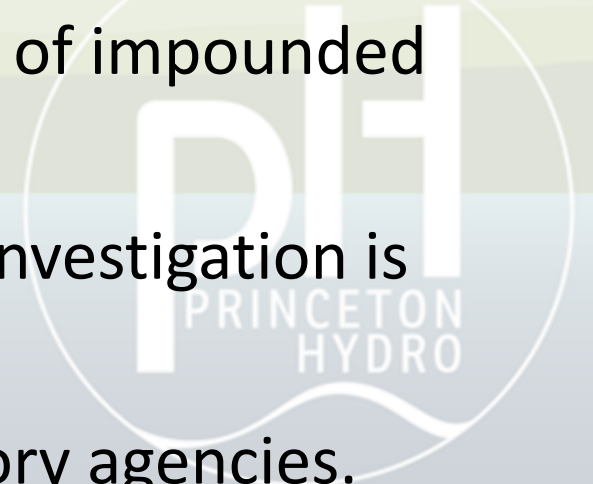


Sediment Analysis

- Majority of samples were below ecological and human health criteria for Metals, PNAs, and PCBs.
- Exceedances were infrequent and of low magnitude.
- Quantity was lower than expected for a dam of this size.

Results:

- Support dam removal and passive, in-stream, sediment management.
- Likely do not necessitate excavation and off-site disposal of impounded sediments.
- Provide reasonable assurance that no further sediment investigation is necessary.
- Management approach requires discussion with regulatory agencies.

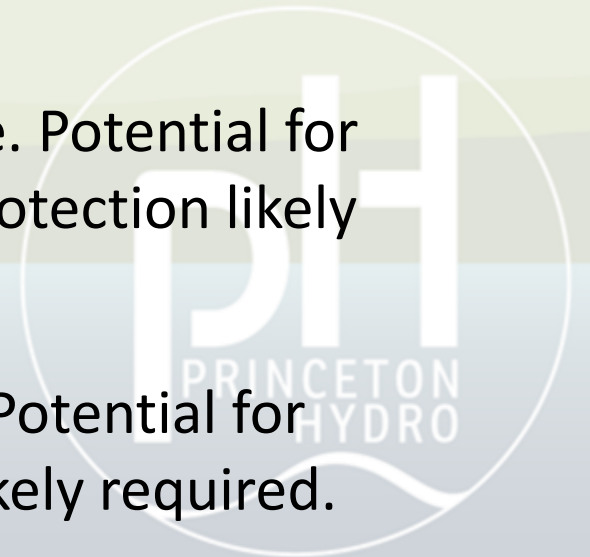


Potential Impacts to Infrastructure and Utilities

Utilities: **No anticipated impacts.**

Infrastructure: **Several considerations require more analysis but do not preclude dam removal feasibility.**

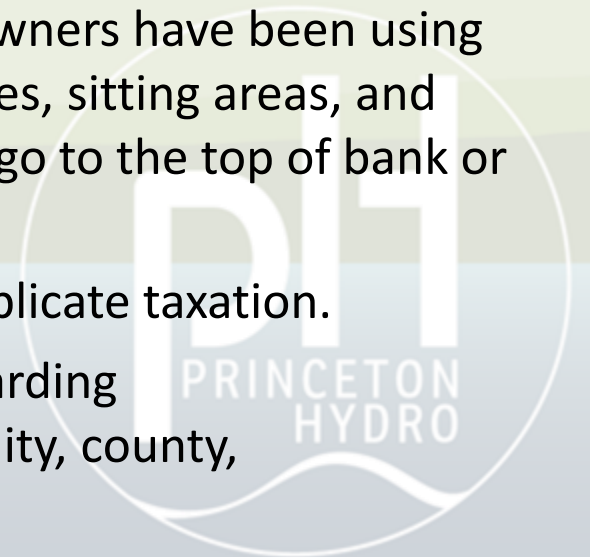
- ***Conrail Railroad Embankment:*** Potential for sediment erosion. Scour protection will be required.
- ***Conrail Railroad Bridge: Built ~1899.*** Current scour under bridge. Potential for increased scour around fortified timber piles. Increased scour protection likely required.
- ***Superior Road Bridge: Built ~1977.*** Current scour under bridge. Potential for increased scour that would undermine piers. Scour protection likely required.

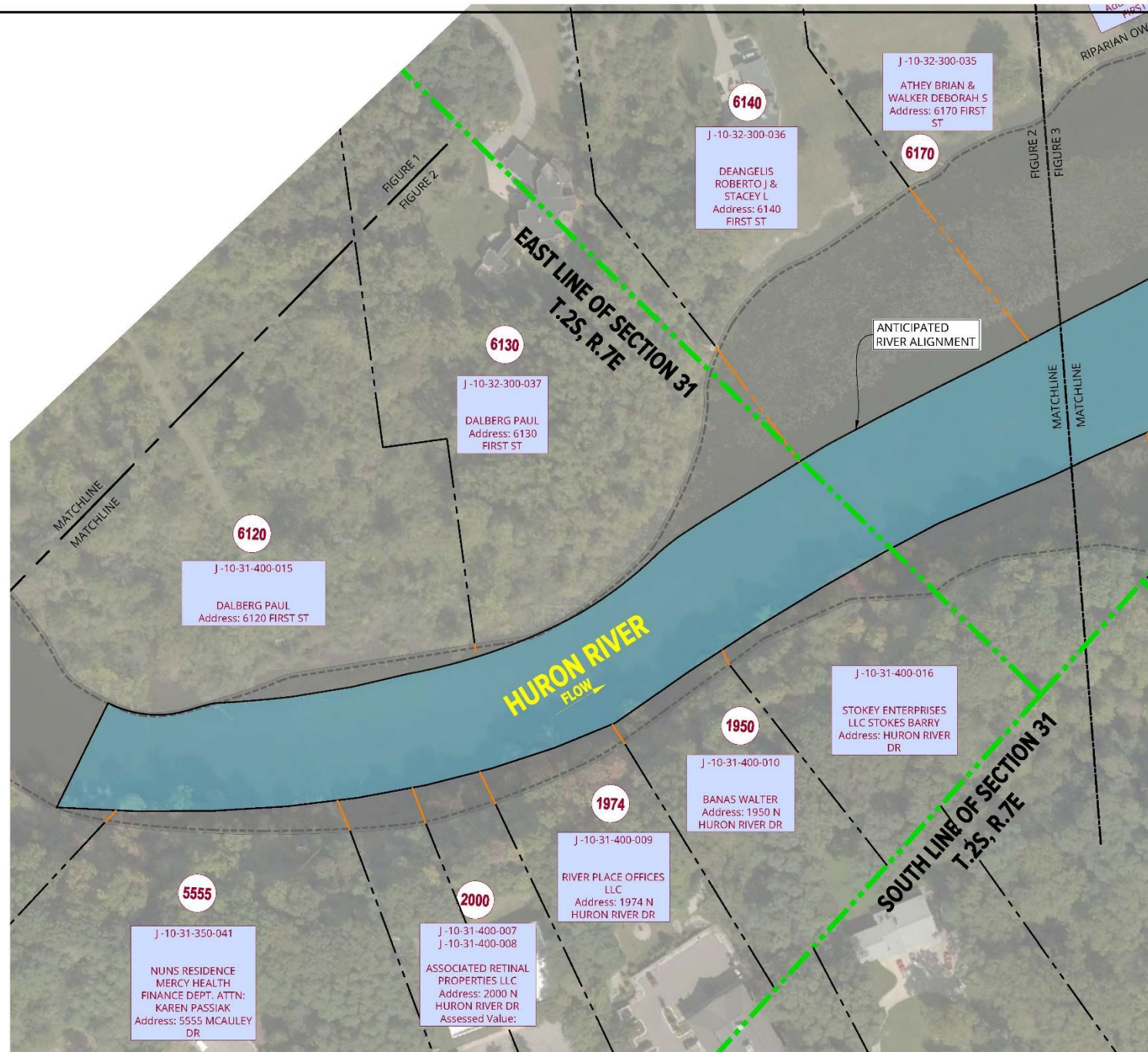


Riverfront Landownership

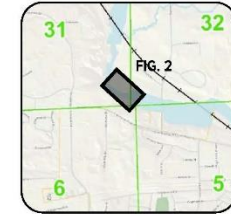
There are many changes that would occur but none preclude feasibility of removal.

- Many properties would expand. No properties would be reduced in area.
- Recovered land will be within regulated floodplain.
- None of the municipalities, nor HRWC, is interested in acquiring restored land that emerges.
- Properties defined by the water boundary will expand to meet the new water boundary.
- Properties defined inland or away from water's edge will not change.
- Some land boundaries are unclear. Along North Huron River Drive, property owners have been using the land from the top of bank to the edge of water for some time (i.e. staircases, sitting areas, and docks). It may be necessary to locate the monuments to determine if the lots go to the top of bank or extend down to the water.
- Some properties would extend across municipal boundaries which could complicate taxation.
- Reasonable to assume individual riverfront landowners will have a choice regarding their property expansion and that unclaimed land may revert to the municipality, county, or state, pending legal guidance pertaining to real estate.





LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

LEGEND

- ORIGINAL HURON RIVER LIMITS
- ANTICIPATED HURON RIVER LIMITS
- DEPT'S BEST PRACTICE CALL TO OR ALONG EDGE OF WATER
- SECTION LINE
- PROPOSED PROPERTY LINE
- PROPERTY LINE
- NO REFERENCE TO WATERS EDGE

NOTES

- THE DEPICTED RIPARIAN OWNERSHIP BOUNDARIES ARE DERIVED FROM THE MOST RECENT RECORDED DEEDS.
- SOUTHEAST 1/4 SECTION 31, T.2S, R.7E
- NO STATEMENT OR REFERENCE TO WATERS EDGE IN THE RECORDED PLAT OR DEEDS.
- THE PARCEL LINES EXTENDED TO THE WATERS EDGE ARE SHOWN FOR CONCEPTUAL VIEWING ONLY. THESE PARCEL LINES DO NOT REFLECT LEGAL BOUNDARIES OR RIPARIAN RIGHTS AND ARE DISPLAYED FOR THEORETICAL PURPOSES.



Orientation
Scale
GRAPHIC SCALE: 1" = 50'

Project
PENINSULAR PAPER DAM

Project Location
HURON RIVER
YPSILANTI, MI

Sheet Name
RIPARIAN OWNERSHIP

Surveyor's Seal

Revisions

REV	REVISION	DATE	BY
01	ANTICIPATED WATERING	10-09-2018	FRZ

Date: 09-12-18
SME Project No.: 079107.00
Project Manager: JAS
Designer: FRZ
CADD: SRP
Checked By: FRZ

Sheet No.
FIGURE 2

DRAFT

Anticipated Landscape Change

- Exposed land will revegetate rapidly.
- View will transition to a river meandering through a floodplain meadow.
- Sediment erosion will be limited and predictable.

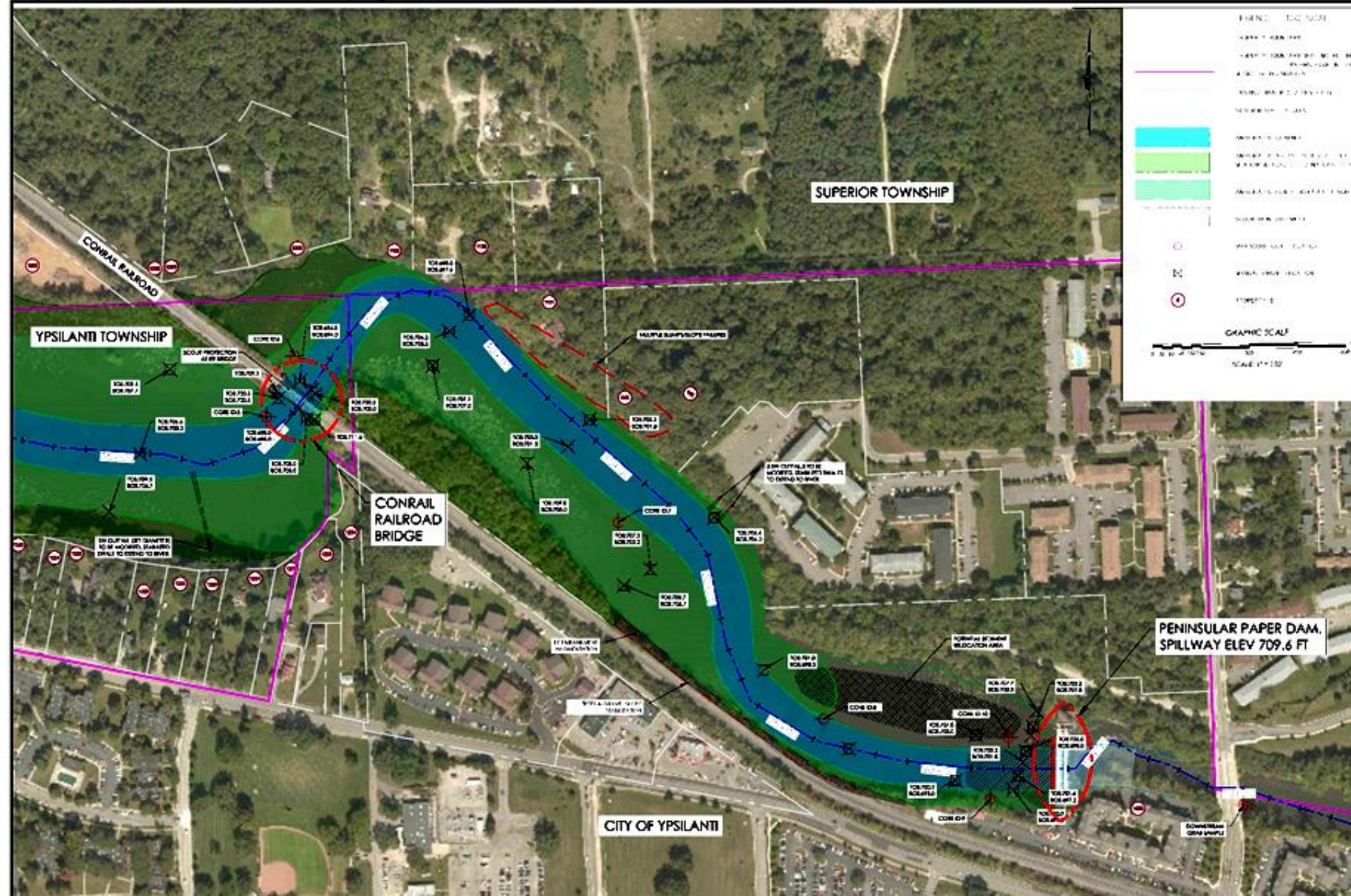
**“Meandering floodplain” example:
Delhi-Barton Pond**



Existing Conditions



Proposed Conditions



HYDREX



Hydro-CETON



Conceptual Dam Removal Design and Sediment Management Approach

The conceptual design for this dam removal includes the following aspects:

- Remove spillway.
- (Optional) Preserve the Peninsular Paper Dam powerhouse and sign.
- Active management of sediment near dam. Passive management of sediment in the impoundment.
- Stabilize banks near Peninsular Park.
- Active planting and landscaping to extend Peninsular Park.
- Large swaths of the impoundment will revert to natural landscape.
- Stabilize stormwater outfalls.
- Structural reinforcement of Conrail Railroad Bridge and Superior Road Bridge.



Conceptual Level Cost Estimate

Peninsular Paper Dam Removal
~\$1,734,000

Railroad Bridge Scour Protection/Reinforcement
~\$705,000

Superior Road Bridge Scour Protection
~\$225,000

Total:
~\$2,664,000

Concept Level* Cost Estimate

Peninsular Paper Dam Removal

*Estimated costs are rounded, and based on broad-estimate lump sums, or quantities and unit costs from similar projects

Princeton Hydro Project Number: 1792.001

Prepared by: PMW on 9/27/2018

Reviewed by: RiverLogic Solutions

Activity	Estimated Cost
Dam Removal	
Mobilization / Demobilization	\$ 100,000
Traffic Control	\$ 1,000
Erosion & Sedimentation Controls	\$ 3,000
Construction Entrance & Staging Area	\$ 10,000
Drawdown (assumes using existing low level outlet)	\$ 5,000
Access ramp / Construction Accessway	\$ 100,000
Hydraulic Sediment Dredging	\$ 300,000
Water Control (Materials, Installation, Maintenance & Modification)	\$ 110,000
Spillway Demolition / Excavation	\$ 105,000
Loading / Hauling of Concrete	\$ 35,000
Disposal of Concrete	\$ 105,000
Abutment Stabilization / Scour Protection	\$ 25,000
Bank creation / stabilization	\$ 360,000
Site Landscaping / Planting / Site Stabilization (not final site vision)	\$ 50,000
Stormwater Outlets Stabilization	\$ 25,000
Contingencies (30%)	\$ 400,000
Subtotal	\$ 1,734,000

RailRoad Bridge Scour Protection / Reinforcement	
Mobilization / Demobilization	\$ 75,000
Traffic Control	\$ 1,000
Turbidity Barrier / Erosion & Sedimentation Controls	\$ 2,000
Construction Access and Staging	\$ 15,000
Water Control (Materials, Installation, Maintenance & Modification)	\$ 75,000
Structural Reinforcement (Optional)	\$ 250,000
Scour Protection Stone (e.g. D50=24")	\$ 76,000
Scour Protection Placement	\$ 8,000
Stormwater Pipe Outlet Modification and Swale	\$ 40,000
Contingencies (30%)	\$ 163,000
Subtotal	\$ 705,000

Superior Road Bridge Scour Protection	
Mobilization / Demobilization	\$ 50,000
Traffic Control	\$ 3,000
Turbidity Barrier / Erosion & Sedimentation Controls	\$ 2,000
Construction Access and Staging	\$ 10,000
Water Control (Materials, Installation, Maintenance & Modification)	\$ 30,000
Scour Protection Stone (e.g. D50=24")	\$ 70,000
Scour Protection Placement	\$ 8,000
Contingencies (30%)	\$ 52,000
Subtotal	\$ 225,000

Conclusions of Dam Removal Feasibility

Results of the initial study show that dam removal is feasible.

Sediment Quantity & Quality

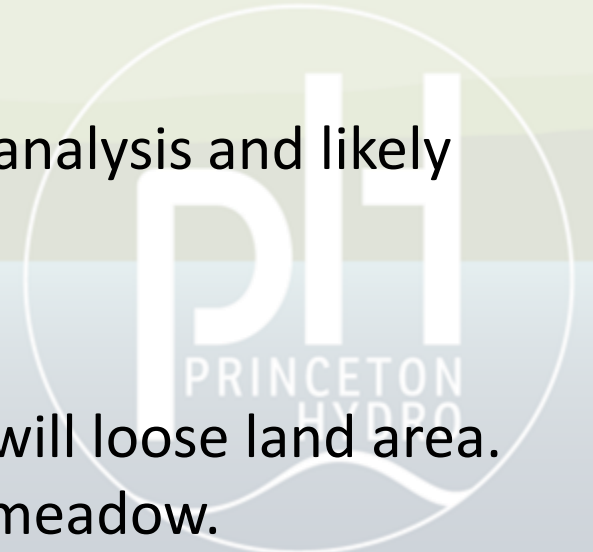
- Quality: Generally within human health and ecological criteria and support the feasibility of dam removal.
- Quantity: Relatively low compared to dam height. Can be addressed with passive and active approaches.

Potential Impacts to Infrastructure & Utilities

- Potential impacts on the two bridges. Bridges will need further analysis and likely stabilization.

Riverfront Landownership

- Most riverfront landowners will gain land. No property owners will lose land area.
- View will transition to a river meandering through a floodplain meadow.
- *HRWC Note: Following similar dam removals, land values have increased. (Provencher 2008)*



HRWC Discussion

The results of the feasibility study strongly favor removal.

Ecological Benefits of Removal

- Water quality will substantially improve, restoring the natural temperature and flow profile of the river.
- Ecological health of the river will improve through Ypsilanti, especially for fish. Fishing conditions may resemble Riverside.
- Removal will create habitat in a segmented urban area, important for helping wildlife and ecosystems adapt to climate change and stressors.



HRWC Discussion of Cost Considerations

Repair cost: ~\$807,000 (20% contingency. Does not include additional and ongoing costs for future inspections, repairs, EAP updates).

Removal cost: ~\$2.66M (30% contingency, incl. bridge reinforcement)

The one-time cost of removal is difficult to compare directly against the immediate cost of repairs and ongoing costs of maintenance.

- Outside funding sources are available to cover some of the costs of removal.
- No funding opportunities exist to cover repair and maintenance costs.

HRWC Discussion of Hydropower Feasibility

For comparison, the hydropower feasibility of Ann Arbor dams was investigated in 2008 and 2010.

- Neither Geddes Dam nor Argo Dam were found to be cost-effective.
- Across 7 criteria, Geddes was favorable in 3. Argo was favorable in none. (Favorable being a benefit-to-cost ratio > 1.0 . Geddes scored 0.66).
- Preliminary costs for enabling hydropower: \$4.4M to \$9.3M, depending on the option considered.

Source: Argo and Geddes Dams, Ann Arbor Hydropower Study Final Report, 2010)

HRWC Discussion: PFAS and Dams

PFAS concentrates in foam. Dams create hotspots of foam.

PFAS generally remain near the water surface. Dams may inhibit flushing of the contaminants.

[HRWC.org/PFAS](https://hrwc.org/PFAS)

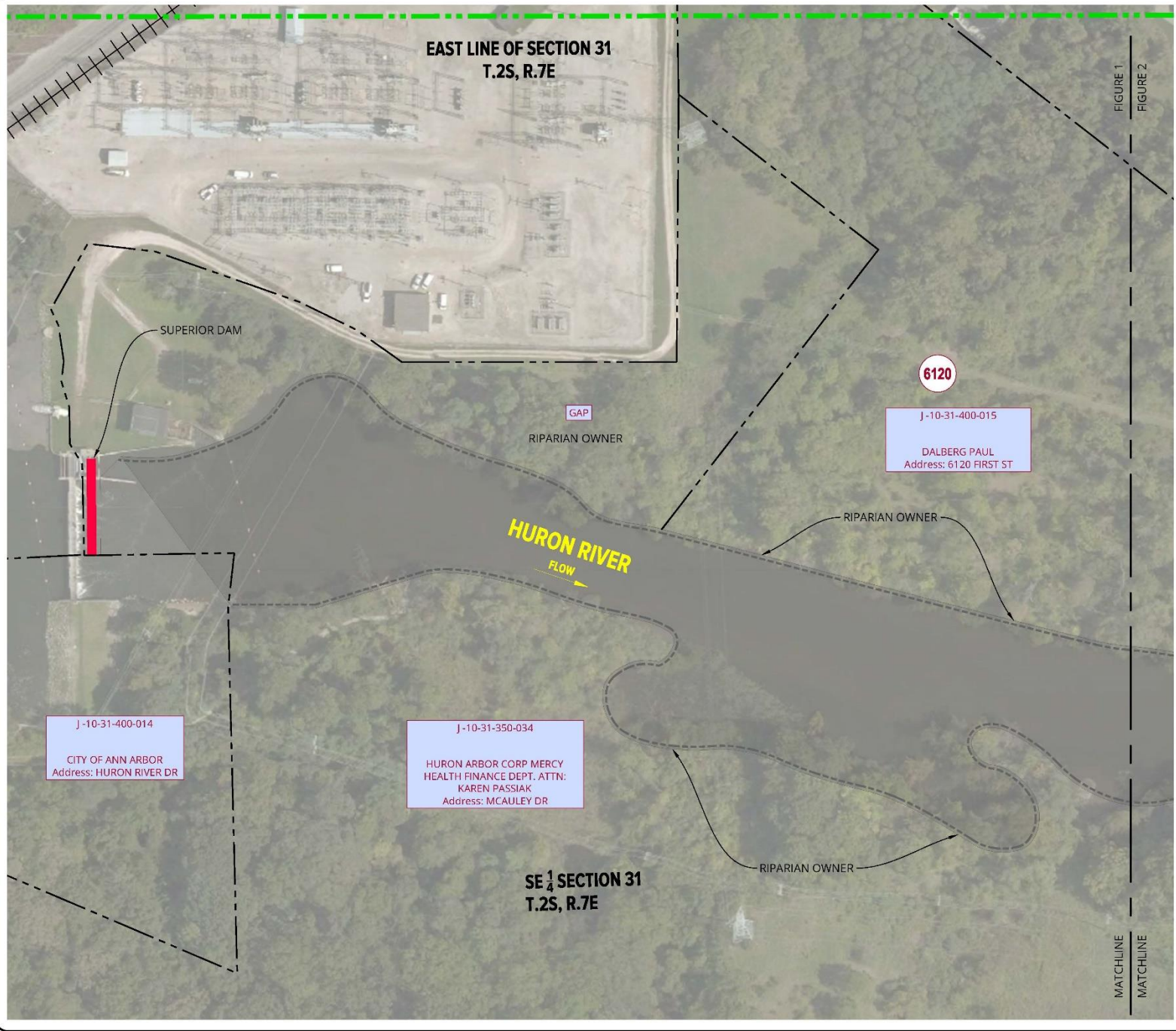


HRWC Discussion of Sustainability Benefits

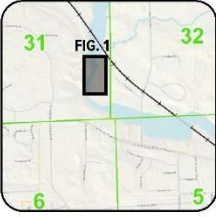
Removal would improve community resilience, provide a sustainable river corridor, and would remove risk of dam failure to Ypsilanti residents.

Removal would reduce the increasing risks of severe precipitation and flooding due to climate change and increasing impervious surface from development.

Removal improves public safety by avoiding contaminant buildup and removing the physical safety hazards of the dam.



LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

- LEGEND**
- ORIGINAL HURON RIVER LIMITS
 - ANTICIPATED HURON RIVER LIMITS
 - DEEDS REFERENCE CALL TO OR ALONG EDGE OF WATER
 - SECTION LINE
 - PROPOSED PROPERTY LINE
 - PROPERTY LINE
 - NO REFERENCE TO WATER'S EDGE

- NOTES**
- THE DEEDS TO RIPARIAN OWNERSHIP BOUNDARIES ARE DERIVED FROM THE MOST RECENT RECORDED DEEDS.
 - SOUTHEAST 1/4 SECTION 31, T.2S, R.7E
 - NO 5' ADJUNCT OR REFERENCE TO WATER'S EDGE BY THE RECORDED PLAT OR DEEDS.
 - THE PARCEL LINES EXTENDED TO THE WATER'S EDGE ARE SHOWN FOR CONCEPTUAL VIEWINGS ONLY. THESE PARCEL LINES DO NOT REFLECT LEGAL BOUNDARIES OR RIPARIAN RIGHTS AND ARE DISPLAYED FOR THEORETICAL PURPOSES.



Orientation
Scale
GRAPHIC SCALE: 1" = 50'

Project
PENINSULAR PAPER DAM

Project Location
**HURON RIVER
YPSILANTI, MI**

Sheet Name
RIPARIAN OWNERSHIP

Surveyor's Seal

Revisions

REV	ISSUED FOR	DATE	BY
01	ANTICIPATED WATERLINE	03-04-2020	FRZ

Date
09-13-18

SME Project No.
079107.00

Project Manager:
JAS

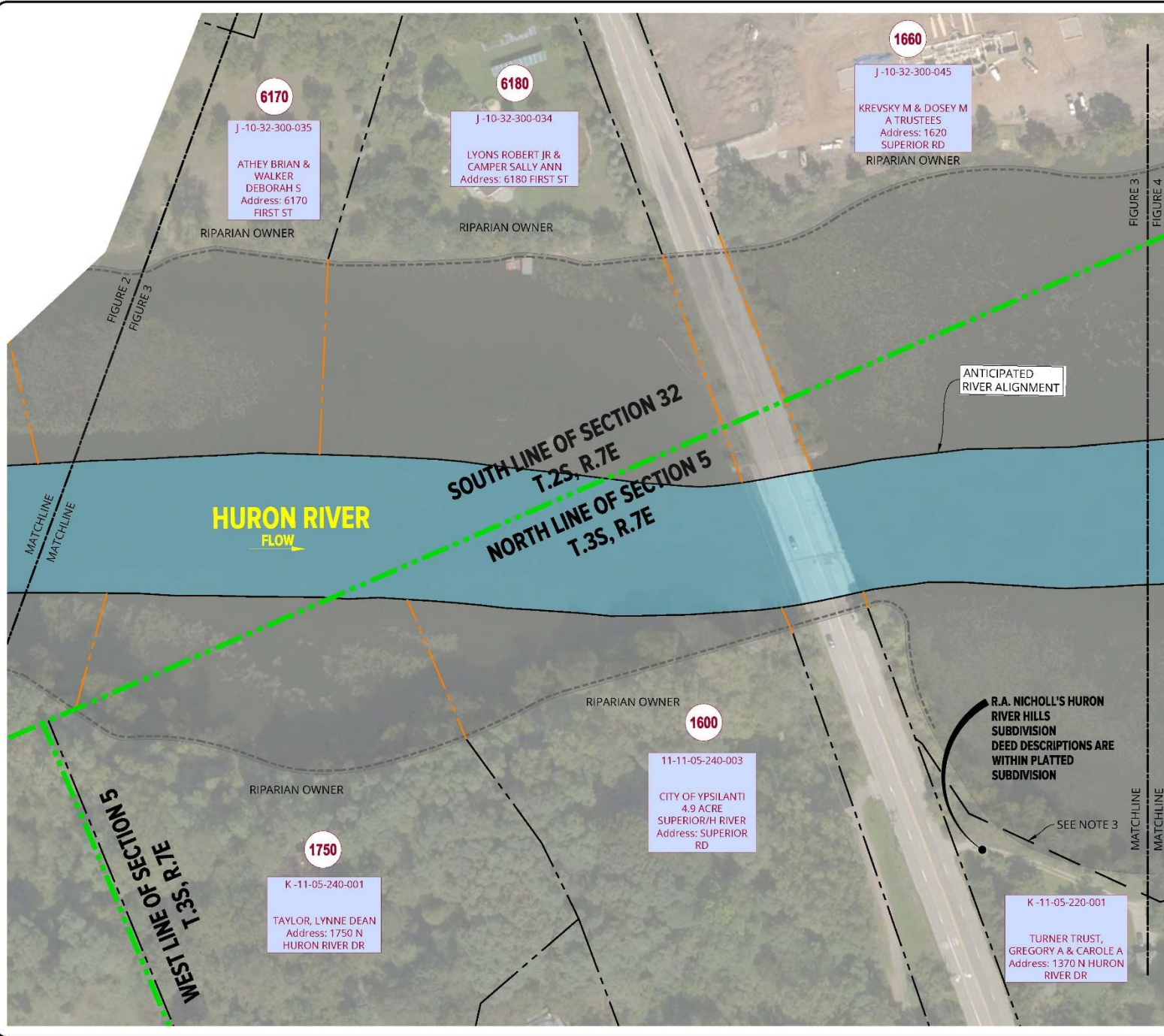
Designer:
FRZ

CADD:
SRP

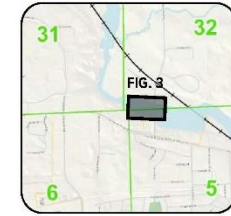
Checked By:
FRZ

Sheet No.
FIGURE 1

DRAFT



LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

LEGEND

- ORIGINAL HURON RIVER LIMITS
- ANTICIPATED HURON RIVER LIMITS
- DEED DESCRIPTION CALL TO DRAINAGE EDGE OF WATER
- SECTION LINE
- PROPOSED PROPERTY LINE
- PROPERTY LINE
- NO REFERENCE TO WATER'S EDGE

NOTES

1. THE DEED DESCRIPTIONS ARE DERIVED FROM THE MOST RECENT RECORDED DEEDS.
2. SOUTH LINE OF SECTION 32, T.2S, R.7E.
3. NO STATEMENT FOR REFERENCE TO WATER'S EDGE IN THE DEED DESCRIPTIONS.
4. THE PARCEL LINES EXTENDED TO THE WATER'S EDGE ARE SHOWN FOR CONCEPTUAL VIEWING ONLY. THE PARCEL LINES DO NOT REFLECT THE BOUNDARIES OR RIPARIAN RIGHTS AND ARE DISPLAYED FOR THEORETICAL PURPOSES.



Orientation

Scale

GRAPHIC SCALE: 1" = 50'

Project

PENINSULAR PAPER DAM

Project Location

**HURON RIVER
YPSILANTI, MI**

Sheet Name

RIPARIAN OWNERSHIP

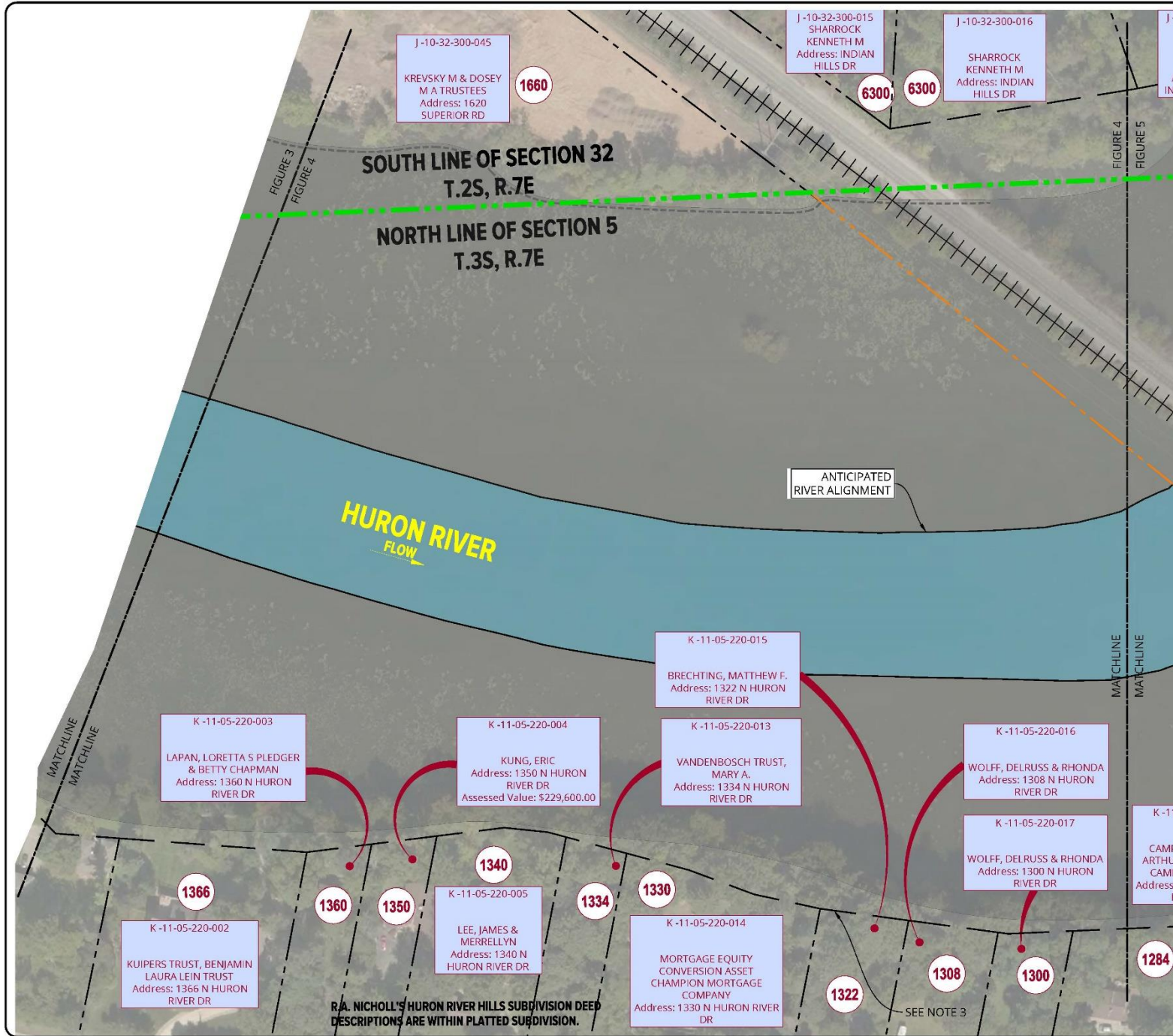
Surveyor's Seal

Revisions

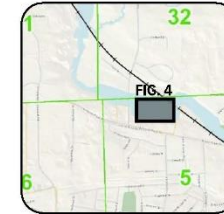
REV	DESCRIPTION	DATE	BY
01	ANTICIPATED WATERLINE	01-04-2018	FRZ

Date	09-13-18
SME Project No.	079107.00
Project Manager:	JAS
Designer:	FRZ
CADD:	SRP
Checked By:	FRZ
Sheet No.	FIGURE 3

DRAFT



LOCATION MAP
NOT TO SCALE



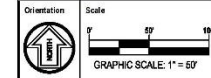
KEY MAP
NOT TO SCALE

LEGEND

- ORIGINAL HURON RIVER LIMITS
- ANTICIPATED HURON RIVER LIMITS
- DEEDS REFERENCE CALL TO OR ALONG EDGE OF WATER
- SECTION LINE
- PROPOSED PROPERTY LINE
- PROPERTY LINE
- NO REFERENCE TO WATERS EDGE

NOTES

- THE DEEDS TO RIPARIAN OWNERSHIP BOUNDARIES ARE DERIVED FROM THE MOST RECENT RECORDED DEEDS.
- SOUTHEAST 1/4 SECTION 31, T.2S, R.7E
- NO'S ATTEMPT OR REFERENCE TO WATERS EDGE BY THE RECORDED PLAT OR DEEDS.
- THE PARCEL LINES EXHIBITED TO THE MAP ARE ONLY FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT LEGAL BOUNDARIES OR RIPARIAN RIGHTS AND ARE DISPLAYED FOR INFORMATIONAL PURPOSES.



Project
PENINSULAR PAPER DAM

Project Location
**HURON RIVER
YPSILANTI, MI**

Sheet Name
RIPARIAN OWNERSHIP

Surveyor's Seal

Revisions

REV	ISSUED FOR	DATE	BY
01	ANTICIPATED WATERLINE	10-03-2018	FRZ

Date

09-13-18

SME Project No.

079107.00

Project Manager:

JAS

Designer:

FRZ

CADD:

SRP

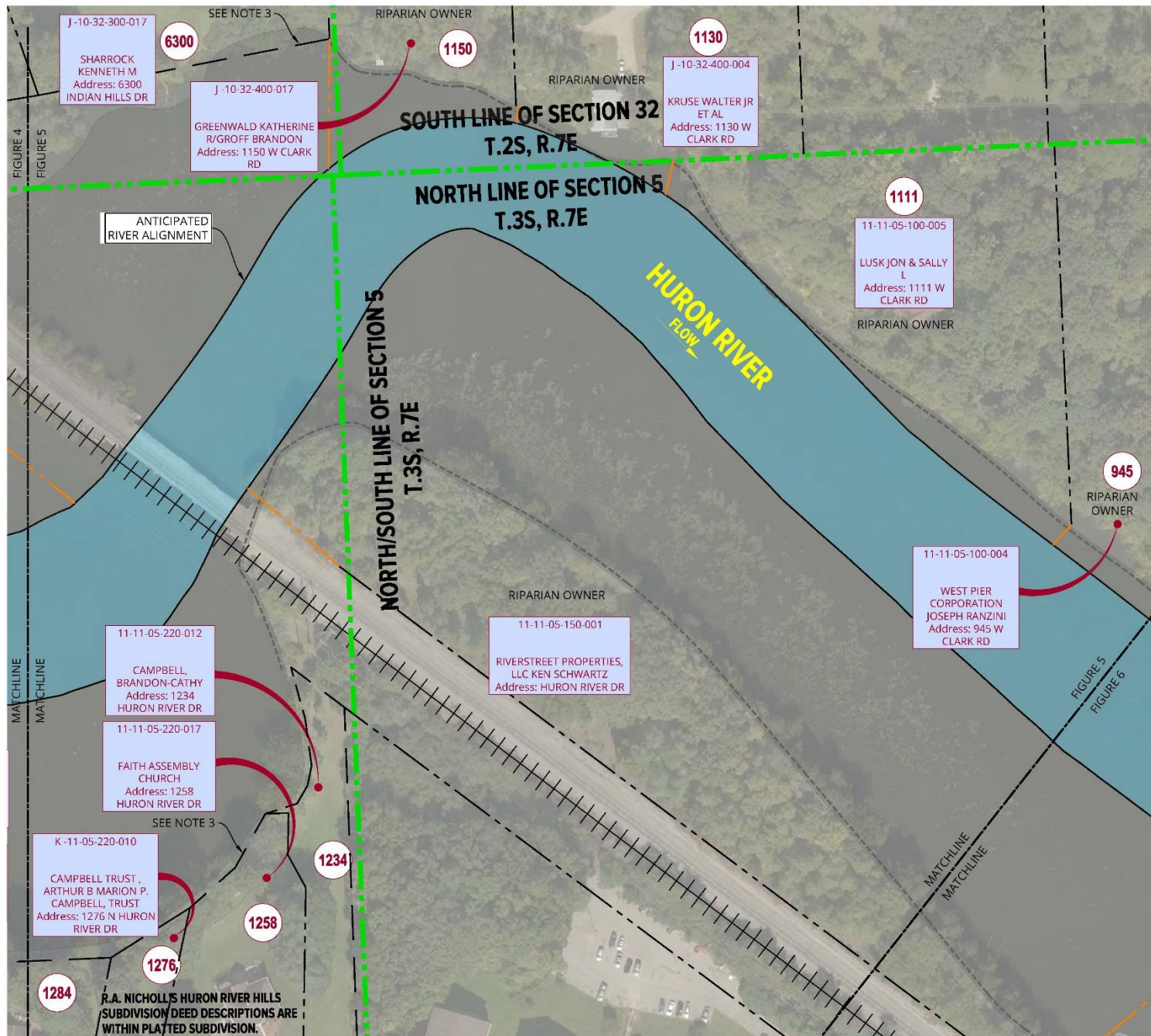
Checked By:

FRZ

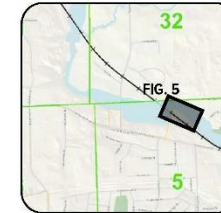
Sheet No.

FIGURE 4

DRAFT



LOCATION MAP
NOT TO SCALE



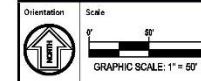
KEY MAP
NOT TO SCALE

LEGEND

- ORIGINAL HURON RIVER LIMITS
- ANTICIPATED HURON RIVER LIMITS
- DEEDS REFERENCE CALL TO OR ALONG EDGE OF WATER
- SECTION LINE
- PROPOSED PROPERTY LINE
- PROPERTY LINE
- NO REFERENCE TO WATERS EDGE

NOTES

- THE DERIVED RIPARIAN OWNERSHIP BOUNDARIES ARE DERIVED FROM THE MOST RECENT RECORDED DEEDS.
- SOUTHEAST 1/4 SECTION 31, T.2S, R.7E
- NO STATEMENT OR REFERENCE TO WATERS EDGE IN THE RECORDED PLAT OR DEEDS.
- THE PARCEL LINES EXTENDED TO THE WATER'S EDGE ARE SHOWN FOR CONCEPTUAL VIEWING ONLY. THESE PARCEL LINES DO NOT REFLECT LEGAL BOUNDARIES OR RIPARIAN RIGHTS AND ARE DISPLAYED FOR THEORETICAL PURPOSES.



Project
PENINSULAR PAPER DAM

Project Location
**HURON RIVER
YPSILANTI, MI**

Sheet Name
RIPARIAN OWNERSHIP

Surveyor's Seal

Revisions			
REV	DATE	DESCRIPTION	BY
1	09-13-18	ANTICIPATED HURON RIVER LIMITS	FRZ

Date
09-13-18

SME Project No.
079107.00

Project Manager:
JAS

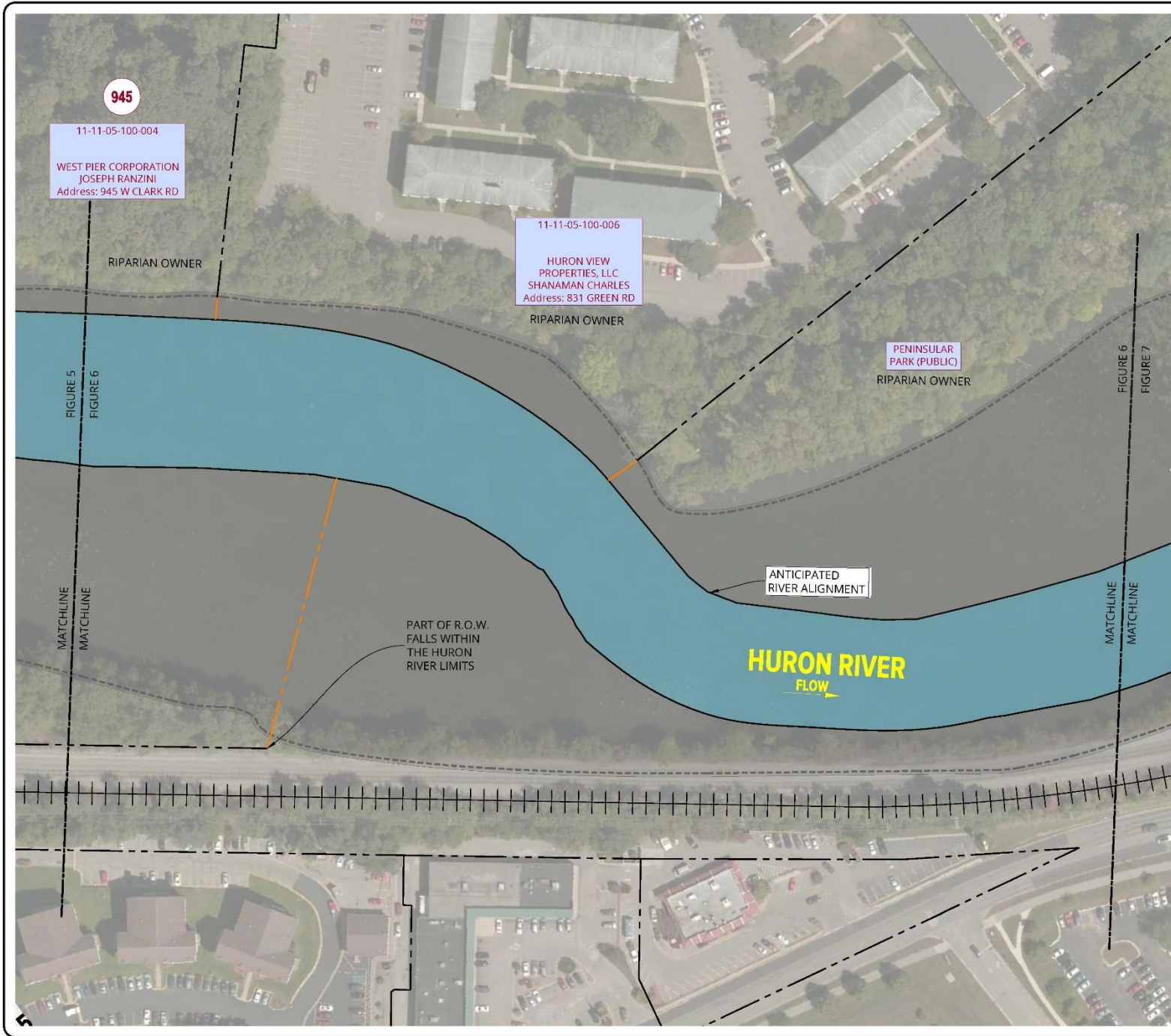
Designer:
FRZ

CADD:
SRP

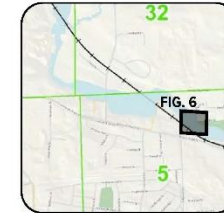
Checked By:
FRZ

Sheet No.
FIGURE 5

DRAFT



LOCATION MAP
NOT TO SCALE



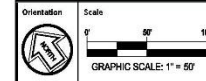
KEY MAP
NOT TO SCALE

LEGEND

- ORIGINAL HURON RIVER LIMITS
- ANTICIPATED HURON RIVER LIMITS
- DEVELOPMENT CALL TO DRAINAGE EDGE OF WATER
- SECTION LINE
- PROPOSED PROPERTY LINE
- PROPERTY LINE
- NO REFERENCE TO WATER'S EDGE

NOTES

1. THE DEED TO THE RIPARIAN OWNERSHIP IS DERIVED FROM THE MOST RECENT RECORDED DEED.
2. SOUTH OF THE SECTION LINE, THE DEED TO THE RIPARIAN OWNERSHIP IS DERIVED FROM THE MOST RECENT RECORDED DEED.
3. NO STATEMENT OR REFERENCE TO WATER'S EDGE IN THE DEED TO THE RIPARIAN OWNERSHIP.
4. THE PARCELS ARE EXTENDED TO THE WATER'S EDGE AS SHOWN FOR CONCEPTUAL VIEWING ONLY. THE PARCELS DO NOT REPRESENT THE RIPARIAN OWNERSHIP RIGHTS AND ARE DISPLAYED FOR THEORETICAL PURPOSES.



Project
PENINSULAR PAPER DAM

Project Location
**HURON RIVER
YPSILANTI, MI**

Sheet Name
RIPARIAN OWNERSHIP

Surveyor's Seal

Revisions

REV	DATE	BY
1	09-13-18	FRZ
2	09-13-18	FRZ
3	09-13-18	FRZ
4	09-13-18	FRZ
5	09-13-18	FRZ
6	09-13-18	FRZ
7	09-13-18	FRZ
8	09-13-18	FRZ
9	09-13-18	FRZ
10	09-13-18	FRZ

Date
09-13-18

SME Project No.
079107.00

Project Manager
JAS

Designer
FRZ

CADD
SRP

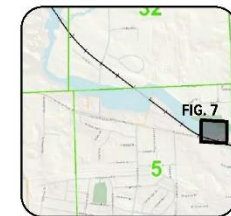
Checked By
FRZ

Sheet No.
FIGURE 6

DRAFT



LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

LEGEND

- ORIGINAL HURON RIVER LIMITS
- ANTICIPATED HURON RIVER LIMITS
- DEEDS REFERENCE CALL TO OR ALONG EDGE OF WATER
- SECTION LIMIT
- PROPOSED PROPERTY LINE
- PROPERTY LINE
- NO REFERENCE TO WATER'S EDGE

NOTES

- THE DEPICTED RIPARIAN OWNERSHIP BOUNDARIES ARE DERIVED FROM THE MOST RECENT RECORDED DEEDS.
- SOUTHEAST 1/4 SECTION 31, T25S, R17E
- NO'S. ATTEMPT OR REFERENCE TO WATER'S EDGE BY THE RECORDED PLAT OR DEEDS.
- THE PARALLEL LINES EXTENDED TO THE WATER'S EDGE ARE SHOWN FOR CLARITY ONLY. VIEWING FROM THE PROJECT LINES DO NOT REFLECT LEGAL BOUNDARIES OR RIPARIAN RIGHTS AND ARE DISPLAYED FOR THEORETICAL PURPOSES.



Orientation
Scale
GRAPHIC SCALE: 1" = 50'

Project
PENINSULAR PAPER DAM

Project Location
**HURON RIVER
YPSILANTI, MI**

Sheet Name
RIPARIAN OWNERSHIP

Surveyor's Seal

Revisions			
REV	REVISION	DATE	BY
01	ANTICIPATED RIVER ALIGNMENT	10-24-2018	FRZ

Date
09-13-18

SME Project No.
079107.00

Project Manager:
JAS

Designer:
FRZ

CADD:
SRP

Checked By:
FRZ

Sheet No.
FIGURE 7

DRAFT

DATE: 09-13-18
PROJECT: 079107.00
SHEET: 01 OF 01
DRAWN BY: FRZ
CHECKED BY: FRZ
DATE: 09-13-18

Sediment Quantity

- Total impounded sediment volume ~ 1 million CY
- Mobile sediment ~60,000 CY
- Extends ~6,000 feet, with average depth of 2.5 feet in center of channel.
- Requires discussion with regulatory agencies, and consideration of potential sediment management options.



Photograph 1: View of Dam site



Photograph 2: View of construction of Dam



Photograph 3: View of Dam spillway



Friends of Peninsular Park
Interest in Pen Park and Pen Dam
January 16, 2019

1. Who are we?

The Friends of Peninsular Park (FoPP) (a Michigan Nonprofit Corporation) started in 2014 and is in the final stages of review for tax-exempt status. FoPP includes a membership of approximately 30 people who reside near or along the Huron River and the dam. They are residents of the City of Ypsilanti, Ypsilanti Township, and Superior Township.

The goal of Friends of Peninsular Park is to preserve, restore, protect and enhance the natural environment, historic signage, smokestack and unique character of Peninsular Park as a public park for the enjoyment of all – now and for future generations (from organizational by-laws).

We originally came together in response to the deterioration of Pen Park. We worked with HRWC to secure a grant from Plantwise in 2015 to deal with invasive species. In addition, we have partnered with the following organizations since 2014 to clean the park and make improvements:

Washtenaw County Sheriff
City of Ypsilanti Parks and Recreation
Church 242
Second Baptist Church
WeROC
Kiwanis Club
Boy Scouts
American Little League
EMU Public Works and Facilities Management
EMU Vision
HRWC
Huron Heights
All Star AAU
Alpha Kappa Alpha Sorority

In 2014 and 2016 the City of Ypsilanti received reports including an assessment of the condition of the dam. In both cases the DNR asked for a written statement from the City indicating the City's current assessment of next steps for the dam. These two reports were focused on repair possibilities and the plans for the City to undertake them. The FPP and other community members became concerned about the plan for improvement of the park and possible removal of the dam without community conversation and knowledge of the issues.

FoPP Members and other residents were concerned that we understand the implications and participate in the decision-making. To that end we have met as an organization to discuss the issue, and we have contributed over \$27,000 to the costs of the most recent study of dam

removal, so that we would have information parallel to that of earlier studies concerning dam repair. We also are exploring any possibilities for use of the dam to generate power.

2. What are our concerns?

Naturally, many of us are concerned about the impact of dam removal on our own homes. We are also concerned with the cost implications of each option for our community. We also see a number of uncertainties in the plan, and remaining questions, outlined in the following table.

Our primary goal at this time is to understand the implications of each option, and to participate in discerning the answers to a number of remaining questions. While some of us are skeptical of the plans for dam removal, at this point we are asking that time and attention be devoted to answering these remaining questions before a decision is made.

We have appreciated the opportunity to talk with various groups concerned in the decision-making, and to participate in the effort to gather and interpret information.

3. What have we been exploring?

The accompanying table to these notes is a chart of the remaining questions as we understand them at this time, and our concerns with what the answers might be. They range from financial to environmental to community concerns. This chart is a working document that changes as we learn more, answer some questions, and raise new ones.

We are also eager to ensure that all those who are affected continue to be part of the discussion. We have appreciated the opportunity to participate and the recognition that this is not just a City of Ypsilanti concern but a concern of residents in neighboring areas as well.

4. Conclusions:

-- Separate Dam Removal/Repair issue from Park Clean-up and Powerhouse Development.

Dam Removal Questions:

- What are the real costs?
- What are the continuing costs of reclamation of land?
- What are potential flood and flood issues downstream?

Dam Repair Questions

- What are the real costs?
- What are the continuing costs?

Park Improvement

- What elements of park improvement can occur independent of the decision on the dam? At what cost?

Power House Improvement

Table 1: Questions Concerning Dam Options

Options	Immediate Cost Estimate¹	Long-Term Costs	Remaining Questions	Potential Problems	Potential Benefits²
Dam Removal	~\$2,800,000 ³	Bank retention Pipe water management Land reclaiming Land maintenance Unknown implications in removal Property value change ⁴	Responsibility/ownership for new land Scour effect on bridges Scour effect on banks Variation in sediment reports Interactions with PFAS Concrete plans for the Powerhouse preservation and use Overall assessment of environmental concerns during the healing period after dam removal	Managing/paying for land ownership issues Preserving historic structures	More park land No further liability from dam Additional short stretch of free running river
Dam Repair	~\$800,000 ⁵	On-going safety checks On-going civil defense drills/plans On-going maintenance	Concrete plans for the Powerhouse preservation and use		Retains historic structure (has occurred in other communities) (Rod Casey) Can be done over time
Dam Repair with Renewal	[No estimate yet]	Should be self-sustaining	Do-ability. Studying hybrid hydro/solar energy green solution. Overall assessment of current environmental status		Model of community green energy (Anne Brown Brian Athey)

1. Other dam removals have had unexpected additional costs.
2. Park improvements can be planned around any of the three options, so we are not including them here.
3. Possibly more needed for information on bridges and banks. May be grants to support this project.
4. Original study: Does Dam Removal Affect Local Property Values? <https://aac.wisc.edu/pubs/sps/does-small-dam-removal-affect/>
Critique of study: Economic Impact of Dam's Removal: <https://www.waupacanow.com/2014/06/19/economic-impact-of-dams-removal/>
5. Can be budgeted at \$200,000 over four years. May be grants to support this project.

Presenters:

Laura Lein (Introduction using PPT and Table)

Rod Casey (History and neighborhoods around the river)

Anne Brown (Other dams generating power)

Brian Athey (Green energy and overall sustainability considerations)

Commissioner Greenwald

I had a really interesting chat this morning with my colleague [REDACTED], who studies (among other things) carbon sequestration of wetland plants. I was curious about the climate change impact of hydro power vs. how much carbon might be taken up by herbaceous vegetation in the newly exposed floodplain area. I don't know the total amount of new area that will be created, but here's what she said--

"Here are some data on Carbon uptake that we collected two summers ago from 7 wetlands that were treated in herbicide in 2012 (so started from scratch, similar to the area that would be exposed by dam removal) and 4 wetlands that were not (and therefore dominated by Phrag).

Herbicide treated wetlands (with a mix of native species): avg of 207 g C / m² / year (+/- 33 SE)
Phragmites wetlands: 951 g C / m² / year (+/- 100 SE)

Because more potent GHGs are produced in anoxic sediments (e.g., CH₄ is 34 x more potent than CO₂; N₂O ~300x) compared to uplands, the reduction in anoxic sediment area may have an even greater impact."

In some ways this is comparing apples to oranges re: the question of hydro power, but I thought it was interesting and important to realize that dam removal would also be a net positive in terms of climate impact. Bummer that the best carbon sink is the super invasive Phragmites!

Commissioner Foley

From my understanding there is a least 96 dams along the Huron River, the Penninsular being one of the least in size. I'm of the opinion it's removal will greatly impact the livelihood of those living along it and those who use it for recreation, sport and fishing in the negative. As far as hydroelectric dams having a negative effect on the environment, that I can agree. However, this is a structure that is in place and harnessing the water to create electricity. I don't see how it can have a negative effect on our environment. Removing dams to return rivers to their normal flow makes sense, if all communities were to do the same. I'm of the opinion the removal of this dam will cause more problems within our already financially strapped community than good and cannot be as environmentally viable as projected to be.

Councilmember Morgan

Thanks for reaching out and seeking input for the dam. The dam is a sensitive and nearly controversial topic now and many years prior. I think there will be MANY folks who believe they know what's best for the dam, the community and the City. I want the best long term outcome for the City with various perspectives, plans and insights that could offer a peace of mind to future Ypsilantians. I am not invested in the dam to the point that I'd hate to see it go IF there won't be more damage caused in doing so. On the other hand functionality and purpose are of major importance to me, so the dam actually serving its purpose to capacity is beneficial, IF it

doesn't cost an arm and a leg. So alas, my concerns have not settled. Please keep me informed. I don't know if this helps.

Councilmember Murdock

Global warming is an existential threat to the planet and future generations

On October 8, 2018, the United Nations released a special report, criticized by many leading climate scientists as overly conservative, which projected that limiting warming to the unsafe 1.5°C target this century will require an unprecedented transformation of every sector of the global economy over the next 12 years;

<https://www.ipcc.ch/sr15/>

On November 23, 2018 the Federal Government issued a climate study detailing the massive threat that climate change poses to the American economy and underscoring the need for immediate climate emergency action at all levels of government;

<https://nca2018.globalchange.gov/>

Even the pentagon sees climate change as a problem

<https://insideclimatenews.org/news/18012019/military-bases-climate-change-risks-wildfires-flood-ing-defense-department-report-congress>

Greenhouse gases have increased in 2018

<https://www.nytimes.com/2018/12/05/climate/greenhouse-gas-emissions-2018.html>

With the increase in electric vehicles, renewable electric generation is going to be more and more in demand

The Green New Deal, which we should adopt demands phasing out fossil-fuel electrical generation by 2035.

<https://www.dataforprogress.org/green-new-deal/>

hydro for our dam will provide a small amount of fossil fuel free electric generation and a reduction in greenhouse gas emissions – removal of the dam provides no reduction in greenhouse gases and doesn't further our commitment to climate change activity.

Commissioner Michalowski

List of concerns brought forward:

- Hydro power potential
- Impact on fishing
- Invasive species overrun

- Recovery time uncertain for fish and wildlife
- Mud fats in people's yards
- The end of an era of generations of families fishing off the dam
- 2013 Study - found sediment 0.1 to 0.6 miles upstream with heavy metal poly-something-hydrocarbons
- True cost of bridge protection
- Land owners property values

Removal cost: \$2.6M

Repair cost: \$807K

Enable hydro: approx \$4.4M-9.6M (based on Argo)

Find below a list of articles which all conclude dams contribute to global warming. It seems to be a pretty sound argument.

- <https://www.ecowatch.com/dams-cause-climate-change-they-are-not-clean-energy-1881943019.html>
- <https://www.theguardian.com/sustainable-business/2016/nov/06/hydropower-hydroelectricity-methane-clean-climate-change-study>
- <https://www.americanrivers.org/threats-solutions/energy-development/hydropower-climate-change/>
- <https://www.theguardian.com/global-development/2016/nov/14/hydroelectric-dams-emit-billion-tonnes-greenhouse-gas-methane-study-climate-change>
- <https://link.springer.com/article/10.1023%2FB%3ACLIM.0000043174.02841.23>
- <https://www.sciencedaily.com/releases/2017/05/170517090509.htm>

Based on HRWC Pen Dam Hydropower Capacity Estimate-2-1-19.pdf

- **Max potential kW per year** = 455kW (per hour) x 24 (hours) x 365 (days) = **3,985,800 kW (per year)**
- According to the US EIA in 2017, the **average annual electricity consumption** for a U.S. residential utility customer was **10,399 kilowatthours (kWh)**, an average of 867 kWh per month <https://www.eia.gov/tools/faqs/faq.php?id=97&t=3>
- Which means annually, the dam is capable of powering approx: 3985800kW / 10399kW = **383.3 households a year**
- According to the U.S. Census Bureau, between 2013-2017 Ypsilanti had approx 7,865 Households. <https://www.census.gov/quickfacts/ypsilanticitymichigan>
- That means the dam will provide power to: 383.3 households / 7865 total households = approx. 5% of households in Ypsilanti

Daniel Brown, Watershed Planner

"A Dam Between Two Dams"

Second, several riverfront owners questioned the benefits of removing a dam that is between two dams. This fundamentally misunderstands how a natural stretch of river will behave following removal. Connecting two currently separated segments will solve many water quality issues right near the dam, many of which are caused by heating of unnaturally slow-moving water behind the dam. Warmer waters encourage algae growth and inhibit the diversity of species that can survive. Removing the dam would restore 2 miles of natural habitat and would allow cold water fish species, sought after by anglers in the Midwest, to have more of a chance in that stretch of river. Removing the dam would also reduce the risk of toxic algae blooms. These are just some of the many benefits we would see that are largely independent of the presence of other dams on the river."

We know Ann Arbor is considering *removal of Superior Dam*. Looking ahead over the next several years, I personally think Superior Dam's days are numbered because it currently isn't covering its own costs. While there are substantial ecological benefits to removing Pen Dam, removing both Superior Dam would amplify the benefits through that stretch of river.

We also learned yesterday that there are fisheries benefits specific to the Ypsilanti stretch of the Huron River. The natural surface geomorphology in the area is particularly good for fish, insects and amphibians. Much of that top layer has been unnaturally covered by silt due to the dam, and removing the dam would clear the silt over time (if much of it isn't removed or moved in the actual removal process).

Years ago, HRWC identified the area above Pen Dam as one of three critical areas that would most benefit ecologically from removal. Several other conservation groups are actively pursuing restoration projects in urbanized areas as well, as even these segmented areas, once restored, provide essential stopover locations for migrating species, and they provide oasis habitat to native resident species in otherwise compromised environments.



Revised 2-5-19

**CITY OF YPSILANTI
CITY COUNCIL REGULAR MEETING
CITY COUNCIL CHAMBERS - ONE SOUTH HURON ST.
YPSILANTI, MI 48197
TUESDAY, FEBRUARY 5, 2019
7:00 p.m.**

I. CALL TO ORDER –

II. ROLL CALL –

Council Member Brown	P A	Council Member Symanns	P A
Council Member Morgan	P A	Council Member Wilcoxon	P A
Council Member Murdock	P A	Mayor Bashert	P A
Mayor Pro-Tem Richardson	P A		

III. INVOCATION –

IV. PLEDGE OF ALLEGIANCE –

"I pledge allegiance to the flag, of the United States of America, and to the Republic for which it stands, one nation, under God, indivisible, with liberty and justice for all."

V. AGENDA APPROVAL –

VI. INTRODUCTIONS –

VII. PRESENTATIONS –

- OPEB Presentation – Kathleen Manning and Dan Colby.
- City of Ann Arbor Hydroelectric Operations Presentation – Brian Stequitz
- Rutherford Pool Bath House Renovation Update – John Weiss
- Historic District Commission Annual Report – Joe Meyers
- Downtown Development Authority Annual Report – Christopher Jacobs
- Traffic Safety and Speed Control Policy – Bonnie Wessler

VIII. AUDIENCE PARTICIPATION –

IX. REMARKS BY THE MAYOR –

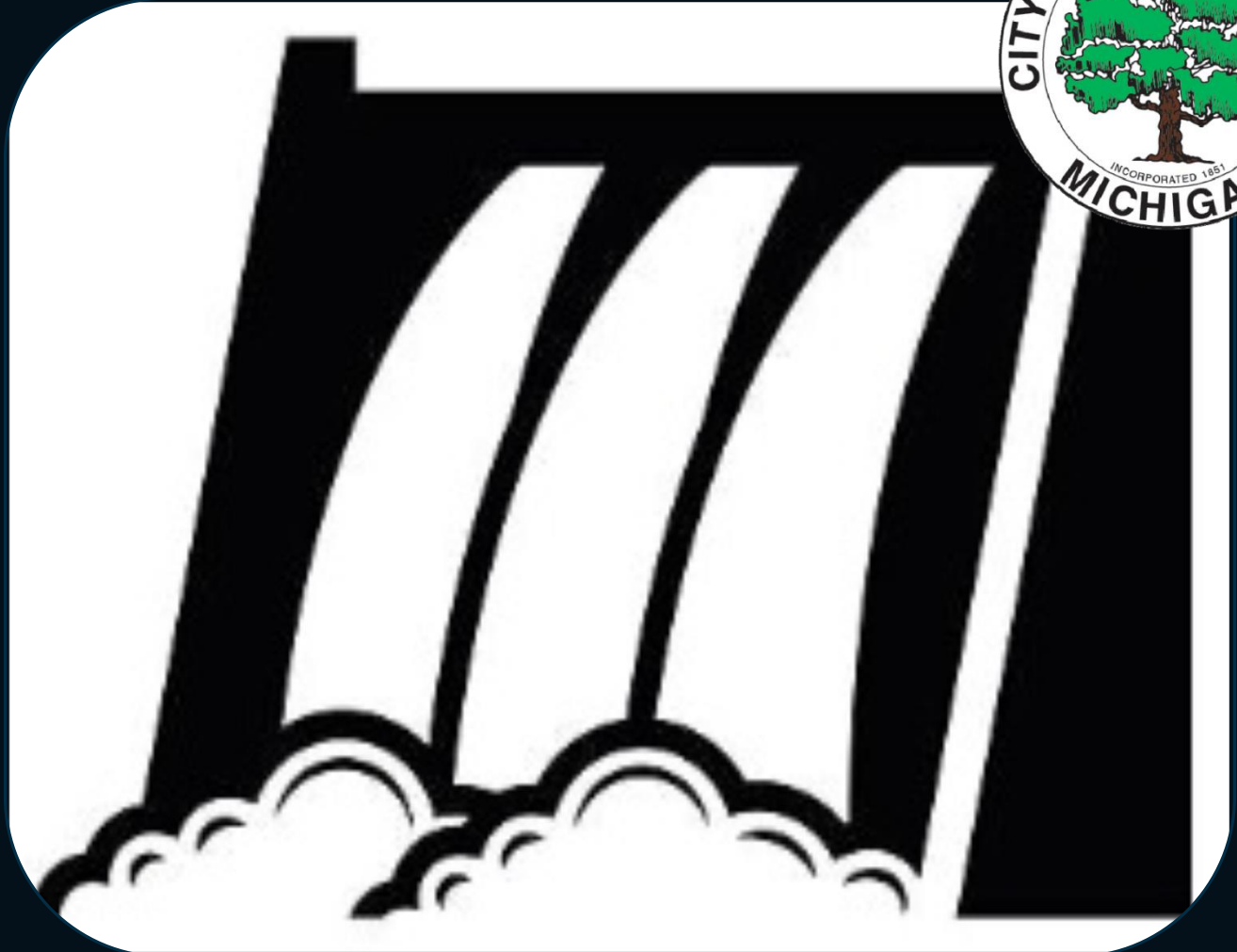
XI. ORDINANCES – FIRST READING –

Ordinance No. 1332

1. An ordinance to amend Chapter 114 of the Ypsilanti City Code, entitled "Vehicles for Hire", by adding a new Article IV, entitled "Shared Mobility Devices", to require a franchise permit to offer shared mobility devices for public use in the City of Ypsilanti, to set forth procedures, regulations, and rules, and to provide for penalties.

CITY OF ANN ARBOR HYDROELECTRIC OPERATIONS PRESENTED TO YPSILANTI CITY COUNCIL

FEBRUARY 5, 2018



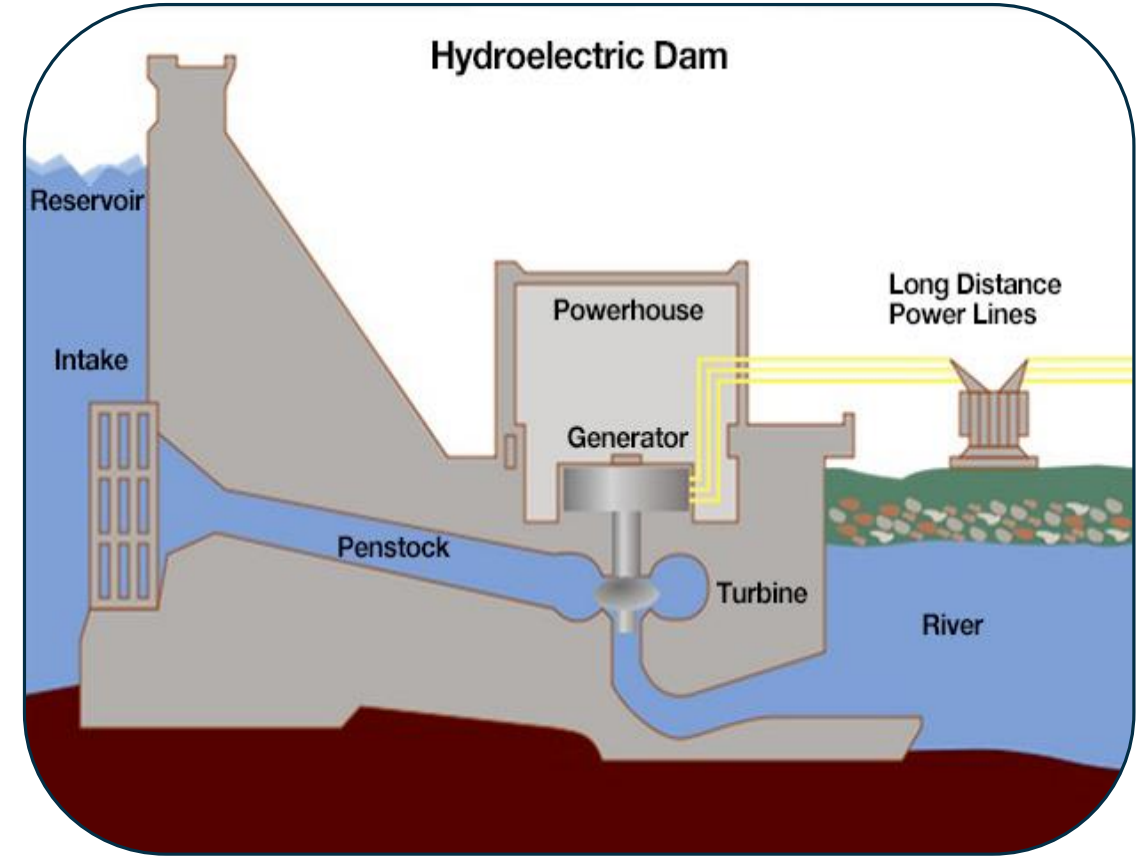
PRESENTATION AGENDA

- Background
- Regulatory Environment
- Revenue History
- Operation and Maintenance Requirements
- Dam Removal



BACKGROUND/HISTORY

- Constructed in 1913 & 1918
- Characteristics & Capacity
 - Barton – 900KW
 - Superior – 550KW
 - Combined – 1,450KW
 - power product = approx. 500 homes
 - Argo and Geddes – Recreational Dams



HOW ARE HYDROELECTRIC DAMS REGULATED?

- Federal Energy Regulatory Commission
 - Federal Power Act
- Power Purchase Agreements (PPA) – MI Public Service Commission
 - Public Utilities Regulatory Policies Act (PURPA)
 - Currently hearing before MPSC on:
 - Contract renewals for QFs
 - New contracts for QFs
 - Compensation for QFs



Recreational Dams are the State's Jurisdiction through Natural Resources and Environmental Protection Act

REVENUE HISTORY

- **City of Ann Arbor - Revenue Potential**
 - \$450K/yr total
 - Net for Barton = \$130K
 - Net for Superior = (\$5K)
- **DTE Purchase Agreement expires in 2036**



CAPITAL & OPERATION AND MAINTENANCE REQUIREMENTS

- **Capital:**
 - dam structures/embankment (non-recurring)
 - power generation equipment (recurring)
 - \$500,000 - \$700,000 every 10 to 15 years
- **Future Needs – aging infrastructure**
- **Employee staffing**
- **Regulatory Compliance - rigorous**
 - Independent Consultant
 - Bi-annual reporting
 - Annual inspections



QUESTIONS?

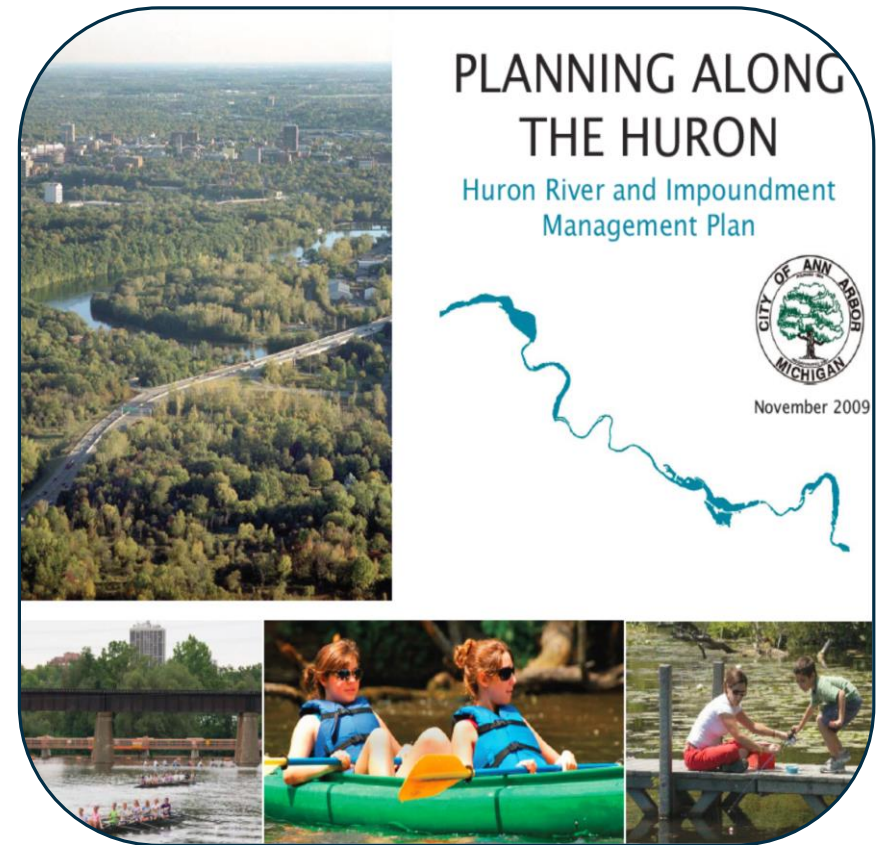
Thank You

Brian Steglitz, P.E.
Manager Water Treatment Services
City of Ann Arbor
bsteglitz@a2gov.org



DAM REMOVAL CONSIDERATIONS

- **Coordination with other local/regional initiatives**
 - Climate Action Plan
 - Sustainability Plan
 - Huron River and Impoundment Management Plan
- **Grant funding - prioritization**
- **Risk**
 - Sediment management
 - Property rights



12/10/18

Ypsilanti City Council
City of Ypsilanti City Hall
One South Huron Street
Ypsilanti, MI 48197

Dear Mayor and Councilors,

I want to thank you for your patience, attentiveness, and thoughtfulness during a long and technical city council meeting on December 4th. It was exciting to hear about the big decisions ahead for Ypsilanti.

I'm writing you as a Watershed Planner for the Huron River Watershed Council, but also as a private citizen of the watershed that has worked on issues of climate change, environmental protection, and public health. I passionately believe that decision makers should have accurate information presented to them so they can make the best decisions for their community. During the meeting, several riverfront landowners, many of who do not live within the city, provided misinformation during their public comments.

In summary, here are a few key facts I'd like to discuss:

- Removing the dam, while not critical to the issue of PFAS contamination, could reduce residents' risk of exposure to PFAS.
- Removing a dam on this stretch of river, regardless of other dams nearby, will improve water quality, public safety, and recreation opportunities.
- The full potential of Peninsular Park can only be realized if the dam is removed.
- Property values will likely increase or remain the same following dam removal.

PFAS and Dam Removal

First, many riverfront owners inaccurately insinuated that the removing the dam may somehow increase residents' risk of PFAS exposure. In fact, we know that PFAS concentrate in foam and generally stay near the surface of the water. Dams create foam by churning water to a froth, and that can lead to hot spots of PFAS contamination. A natural, flowing Huron River in this area would avoid agitating the water to a froth and would presumably keep PFAS from concentrating in foam.

Dams also impede the natural flushing process, trapping contaminants behind them. PFAS tend to cling to the inside of pipes or the sides of metal or concrete structures. PFAS generally do not sink or get deposited in the sediment like other contaminants, but restricting the flow of the river may give it more time to linger in still water and build up in fish meat over time. A natural flowing river removes these impediments and allows PFAS to flush as quickly as possible.



A Dam Between Two Dams

Second, several riverfront owners questioned the benefits of removing a dam that is between two dams. This fundamentally misunderstands how a natural stretch of river will behave following removal. Connecting two currently separated segments will solve many water quality issues right near the dam, many of which are caused by heating of unnaturally slow-moving water behind the dam. Warmer waters encourage algae growth and inhibit the diversity of species that can survive. Removing the dam would restore 2 miles of natural habitat and would allow cold water fish species, sought after by anglers in the Midwest, to have more of a chance in that stretch of river. Removing the dam would also reduce the risk of toxic algae blooms. These are just some of the many benefits we would see that are largely independent of the presence of other dams on the river.

Pen Park Restoration

Third, many made comments that Pen Park can be restored or revitalized in any scenario. This is only partially true. Some elements of restoration, such as refurbishing the powerhouse and sign, could take place whether the dam stays or goes. But many crucial elements can only happen if the dam is removed. Removing the dam would significantly increase the exposed shallow area of the river and beach suitable for swimming or fishing, and would remove the major safety hazards of the dam itself. Removal would alleviate a dangerous obstacle for paddlers on the Huron River. And removal would connect the entire waterfront of the park that is currently divided by the dam. As the coordinator of the Huron River National Water Trail and a kayaker myself, I can say that the dam is currently the major reason why many paddlers and anglers avoid this stretch of river and go elsewhere.

Property Values

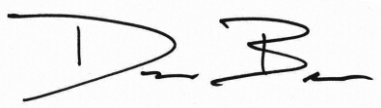
Lastly, some commenters voiced concerns about decreasing property values following dam removal. Many previous studies have shown that property values near dams actually increase after dam removal. The increase in property value tapers off for properties farther upstream and farther from the former dam site. The reasons for increased property values vary, but improved views of a natural river are often a pleasant cause.

Regardless of what city council decides to do regarding Pen Dam, we all need to start with accurate, objective information. Hopefully I've provided some clarity on issues raised during the meeting.

There are and will be many elements for you all to consider regarding repair or removal dam removal of Pen Dam. Every dam removal project is different with its own benefits and challenges. As Laura Rubin stated during the meeting, HRWC wants to help protect the health of the river for Ypsilanti residents and we're more than happy to be a resource for you going forward.

Thank you for reading my lengthy comments, and thank you for your continued attention on this important issue.

Sincerely,



Daniel Brown
Watershed Planner, Huron River Watershed Council

The Huron River Watershed Council protects and restores the river for healthy and vibrant communities. Created in 1965, HRWC envisions a future of clean and plentiful water for people and nature where citizens and government are effective and courageous champions for the Huron River and its watershed.





You are cordially invited to participate in the SEMIS Coalition Winter professional development day, January 25, 2019, 8:30 A.M. – 4 P.M.

Thank you for your support for SEMIS teachers and members. We would be honored if you would attend the January 25, 2019 SEMIS Professional Development day and participate in one of our main activities. Your expertise in Great Lakes issues and water science will be invaluable to our learning, and to the teachers who will facilitate rich water-based, place-based education experiences for students in Southeast Michigan.

The activity we invite you to participate in is a discussion-based activity called a “Fishbowl”. The purpose of the discussion is to gain perspective on some of the more pressing Great Lakes issues that will be exacerbated by climate change, and to begin to explore the idea of how communities can be resilient in the face of climate change. Additionally we will be exploring how to approach Great Lakes issues and climate change from an interdisciplinary perspective. In round one, we will ask fishbowl participants to sit in the middle of the room (in the “fishbowl”) and to have a conversation using some of the following questions as prompts,

- What are the main Great Lakes issues of concern for you, and in your field of work?
- How can these issues be approached using an interdisciplinary approach? What are the interdisciplinary connections within this GL issue?
- How can students and community members be involved in mitigating and finding solutions for these issues?
- Considering our discussion on “resilience” this morning what connections are you making from your perspective?

Round one of this activity will include scientists, policy experts, community partners, and municipal commissioners. Audience members will sit in an outside circle and listen to this open discussion, and enter into the fishbowl at various points during the conversation to ask questions or add their perspective.

During round two of this activity, we will ask several teachers to become the main discussion members in the fishbowl. We will ask them to have a conversation using some of the following questions as prompts,

- What are the main water issues in your community and school community?
- How can we approach these issues in interdisciplinary ways that are meaningful to students?
- How can students be engaged in more meaningful ways to help NOAA, GLERL, and the environment? How do we make “citizen science” experiences richer and more connected to what students care about?

We are looking forward to this discussion and hope that you will be able to accept our invitation for participation. Please join us for all, or part, of the day. [Registration](#) is open now, and an agenda will be shared with all registered participants in mid-January. If you would like to see a draft agenda before then, please let a member of the SEMIS leadership team know and we are happy to share it with you to give you more context for the day.

Thank you!!

~SEMIS Coalition Leadership Team

Recycling Program-Curbside Services Personnel Cost for FY17-18

	Hours			Workers' Rates			Total	Average Cost per Person thr yr
	ST*	OT**	DT***	ST	OT	DT		
Estimate*	4804.5		351	55.5	34.75	52.125	69.5 \$ 189,109.50	\$ 13,507.82
Actual	4804.5		351	55.5			\$ 187,367.25	\$ 13,383.38

*ST-Straight time

**OT-Over time (After work hrs and Saturdays)

***DT-Double time (Sunday and Holiday Hours)

****Estimate-Rates for Estimate are average numbers based on 14 workers involved in curbside recycling program throughout the year.

per 4 people crew estimate \$ 47,277.38

\$ 46,841.81

Vehicle Costs for Recycling Program FY17-18

	Hours	Total
17-Jul	160	\$ 3,770.79
17-Aug	197	\$ 4,803.17
17-Sep	185.5	\$ 4,336.76
17-Oct	173.5	\$ 4,185.22
17-Nov	157	\$ 3,651.62
17-Dec	213.5	\$ 5,094.53
18-Jan	205.5	\$ 4,988.99
18-Feb	185.5	\$ 4,537.60
18-Mar	229.5	\$ 5,715.21
18-Apr	170	\$ 4,280.78
18-May	214.5	\$ 5,434.89
18-Jun	240.75	\$ 5,758.34
		\$ 56,557.90
Grand Total		\$ 243,925.15

Breakddown for 14 workers hours and rates in recycling FY17-18

ID	Hours			Rates			Total	Per Fee Schedule 18-19
	SH	OH	DH	SR	OR	DR		
01-1551		1102	126.5	7	34	51	68 \$ 44,395.50	
01-0486		8	8	0	34	51	68 \$ 680.00	
01-0083		294	21.5	1.5	40	60	80 \$ 13,170.00	
01-0675		0	0	0	34	51	68 \$ -	
01-0700		0	0	0	34	51	68 \$ -	
01-1714		483	2.75	0	34	51	68 \$ 16,562.25	
01-0756		0	3	11	34	51	68 \$ 901.00	
01-0658		2	21	0	34	51	68 \$ 1,139.00	
01-0876		103	0	0	34	51	68 \$ 3,502.00	
01-1511		1126.5	17.75	18	34	51	68 \$ 40,430.25	
01-1367		1077	21.75	0	34	51	68 \$ 37,727.25	
01-0875		15	0	0	34	51	68 \$ 510.00	
01-0626		26.5	12.75	7.5	40	60	80 \$ 2,425.00	

01-0926	567.5	1.75	0	34	51	68	\$	19,384.25
01-0762	0	93.5	10.5	34	51	68	\$	5,482.50
01-0248	0	20.75	0	34	51	68	\$	1,058.25
Estimate	4804.5	351	55.5	34.75	52.125	69.5	\$	189,109.50
Total	5211						\$	187,367.25

WWRA Costs

Type	ID	Description	Tons	Gross Amount	PO	Pay Date	Post Date
INV	14066	DPS RECY JULY 6/26-7/26/17	62	\$1,550.00		08/11/2017	07/31/2017
INV	14096	DPS RECYCLING 7/27-8/21/17	47.5	\$1,187.50		09/01/2017	08/29/2017
INV	14132	RECYCLE 8/22-9/18/17	51	\$1,275.00		10/13/2017	10/10/2017
INV	14182	RECYCLING 9/19-10/20/17	60.5	\$1,512.50		11/03/2017	10/31/2017
INV	14223	DPS RECYCLING 10/23-11/21/17	52.5	\$1,050.00		12/01/2017	11/28/2017
INV	14279	RECYCLE @ DPW 11/22-12/29/17	75	\$1,875.00		01/12/2018	12/31/2017
INV	14319	DPS RECYLING 1/3-1/31/18	68.5	\$1,712.50		02/16/2018	02/13/2018
INV	14354	DPS RECYCLING 2/1-2/20/18	39.5	\$987.50		03/02/2018	02/28/2018
INV	14387	RECYCLE 2/21-3/16/18	48	\$1,200.00		03/29/2018	03/27/2018
INV	14420	RECYCLING 3/19-4/9/18	47	\$1,175.00		04/20/2018	04/17/2018
INV	14479	RECYCLING 4/10-5/14/18	70.5	\$1,762.50		05/25/2018	05/22/2018
INV	14552	RECYCLING 5/16-6/14/18	57.5	\$1,437.50		06/29/2018	06/26/2018
INV	14599	RECYCLING 6/15-7/16/18	54	\$1,350.00		08/03/2018	07/27/2018
INV	14645	RECYCLING 7/17-8/15/18	63	\$1,575.00		08/31/2018	08/27/2018
INV	14692	RECYCLING CHARGES	69.5	\$1,737.50	19-00205	10/05/2018	10/03/2018
INV	14753	RECYCLING CHARGES	65.5	\$1,637.50	19-00205	11/02/2018	11/01/2018
Total			931.5	\$23,025.00			

Approx 5600 households services per Christopher Simmons on 17 Jan 19

There are 11,918 Mailboxes in Ypsilanti.

Western Washtenaw Recycling Authority

8025 Werkner Road, Chelsea MI 48118

Office (734) 476-6160

Fax (734) 476-7341

Email: wwrafacilitymanager@gmail.com

Website: wwrarecycles.org

Fax

Cover Sheet

Attention:

Keith Michalowski

Company

Fax Number

734-222-5008

From

MARC Williams

Number of pages including cover sheet

5

Message

MRF SURVEY: Acceptable Materials Worksheet

MRF/REP more williams /mike pilon

DATE 1-24-18

CITY/REP _____

Use this document to identify and address acceptable and problematic materials, inform front line staff, and create materials to educate residents to clean-up the inbound recycling stream. It is recommended that the **local program representative and MRF operator/plant manager** complete this worksheet together every 6 months and during the creation or renewal of processing contracts. We encourage this document be used in the RFP process as well.

Mark whether each item is: **Yes: Acceptable**

No: Detrimental or **No: Non-detrimental** or **No: But recycled**

Non-detrimental items may or may not go to market but do not cause any major problems.

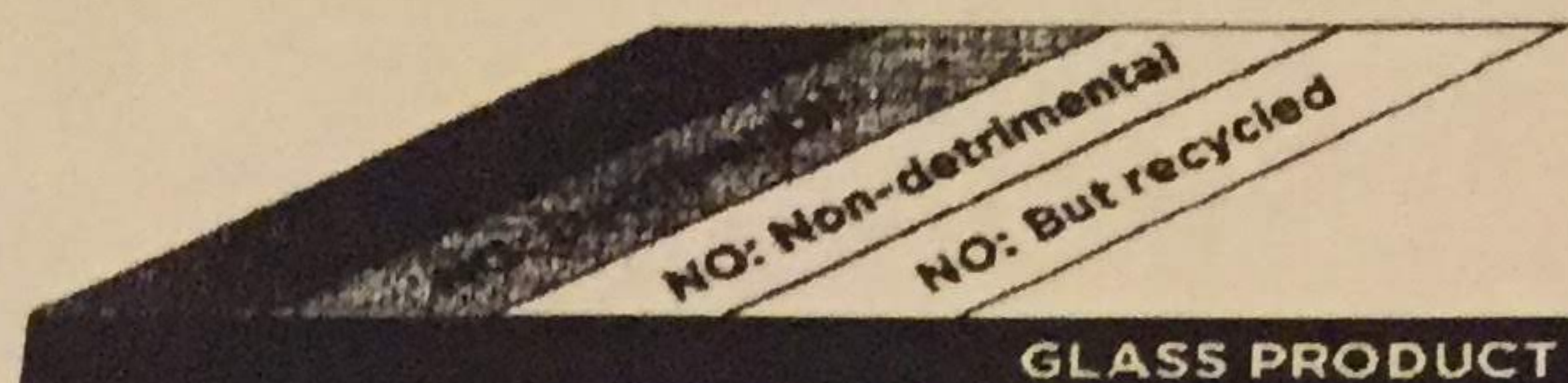
Detrimental items can shut down or damage equipment, harm employees, and/or substantially degrade the value of material.

But recycled items are not wanted in the stream but will be pulled off the sorting line to be recycled if markets exist.

NO: Non-detrimental
NO: But recycled

PAPER PRODUCT

☐	☐	☒	☐	Cartons (gable top e.g. milk and orange juice, and aseptic e.g. juice boxes and soup)
☒	☐	☐	☐	Cold Cups (e.g. paper fountain drink cup)
☒	☐	☐	☐	Hard Cover Books
☐	☐	☒	☐	Hot Cups (e.g. coffee cup)
☐	☐	☒	☐	Ice Cream Container
☒	☐	☐	☐	Mail
☐	☐	☒	☐	Kraft Bags
☒	☐	☐	☐	Magazines
☒	☐	☐	☐	Newspaper
☒	☐	☐	☐	OCC (old corrugated cardboard)
☒	☐	☐	☐	Office Paper
☒	☐	☐	☐	Paperback Books
☒	☐	☐	☐	Paperboard Boxes (e.g. cereal, tissue)
☒	☐	☐	☐	Pizza Boxes
☒	☐	☐	☐	Shredded Paper
Directions on how to prepare:				
☐	☐	☒	☐	Take-out Containers
☒	☐	☐	☐	Tissue Paper
☐	☐	☐	☐	Other:

MRF SURVEY: Acceptable Materials Worksheet (pg. 2/4)**GLASS PRODUCT**

☒	☐	☐	☐
☒	☐	☐	☐
☐	☒	☐	☐
☒	☐	☐	☐
☐	☐	☐	☐

Bottles and Jars

Drinking Glass

Ceramics (*mugs, dishes, etc.*)

Window

Other:

ALUMINUM PRODUCT

☒	☐	☐	☐
☒	☐	☐	☐
☒	☐	☐	☐
☒	☐	☐	☐
☐	☐	☐	☐

Aerosol

Cans (*e.g. beverage container*)Foil or Foil-like Container (*e.g. pie plate*)Other Aluminum Containers (*e.g. pet food*)

Other:

STEEL PRODUCT

☒	☐	☐	☐
☒	☐	☐	☐
☒	☐	☐	☐
☒	☐	☐	☐
☐	☐	☒	☐
☐	☐	☐	☐

Aerosol

Cans

Pots and Pans

Scrap Metal

Directions on how to prepareSpiral Wound Container (*fiber body, metal bottom e.g. Pringles*)

Other:

How do you describe which plastics are accepted?☐By object shape and/or size. (*e.g. bottles and containers*)☒

By resin type/number: #1-7, #1 and #2 only, #1, 2, 3, 4, and 5

NO: Non-detrimental
NO: But recycled

PLASTIC PRODUCT

☐	☒	☐	☐	Bags, Wraps, Film (please circle one if you accept: bag in bag or loose)
☒	☐	☐	☐	Buckets (any size)
				Exclusions, size or preparation requirements - <i>empty</i>
☒	☐	☐	☐	Bulky Plastic (e.g. crates)
				Exclusions, size or preparation requirements
☐	☒	☐	☐	EPS Foam Blocks & Shapes (e.g. Styrofoam™)
☐	☒	☐	☐	EPS Foam Food Service & Other Containers (e.g. Styrofoam™)
☐	☐	☒	☐	Flower Pots
				Exclusions, size or preparation requirements
☒	☐	☐	☐	HDPE Bottles, Jars & Containers
☒	☐	☐	☐	Other Containers & Packaging (i.e. baskets, molded packaging, food storage containers)
				Exclusions, size or preparation requirements
☐	☐	☐	☒	Other Drink Bottles (e.g. juice in #7)
☐	☐	☐	☒	Other Food Bottles & Jars (e.g. items in #3, 4, 6 or 7)
☒	☐	☐	☐	Other Household Bottles & Jars (e.g. #3 shampoo bottle)
☐	☐	☐	☒	Other Tubs & Lids (e.g. tubs that are #3, 4, 6, or 7)
☒	☐	☐	☐	PET Bottles & Jars
☒	☐	☐	☐	PET Cups (e.g. clear plastic fast food cups)
☐	☒	☐	☐	PET Thermoflex (e.g. fruit container, produce, deli & bakery)
☐	☐	☐	☐	PP Bottles (e.g. #5)
☐	☐	☒	☐	PP Containers & Lids (e.g. #5 yogurt container)
☒	☐	☐	☐	Toys
				Size or preparation requirements
				Plastic Size Requirements?
				Other Preparation Requirements?

MRF SURVEY: Acceptable Materials Worksheet (pg. 4/4)

Rank the top five (5) unacceptable items that are causing the most problems in your facility (i.e. degrading other commodities significantly, causing damage to MRF equipment, presenting danger to staff, becoming high volume residual).

Please rank with numbers "1" through "5." Put a "1" in the box of the worst contaminant. Only rank the top five and leave everything else blank.

Top 5 Prohibitive Items

- | | | |
|--|----------|---|
| — Bulky Plastics (e.g. furniture, toys, buckets) | 2 | Plastic Bags or Wrap (e.g. film, dry cleaner bags, pet food bags, pouches) |
| — Cartons | | |
| — Ceramics (dishes, mugs, etc.) | | — Small Appliances (e.g. coffee pots, microwaves, electronics, DVD players) |
| 5 Clothing/Bedding | | — Scrap Metal (e.g. pots and pans, rebar) |
| — Concrete | | — Shredded Paper |
| 3 Diapers | 1 | Tanglers (e.g. wire, hose, cords, rope, chains) |
| 4 EPS Foam (Styrofoam™, block and/or food service containers) | | — Wood |
| — Flammables (propane tanks, batteries, fuel, etc.) | | — Yard Waste |
| — Food or Liquid | | — Other: |
| — General Hazardous Waste (e.g. mercury devices, paint, solvents, oil) | | — Other: |
| — Glass | | — Other: |
| — Needles | | |

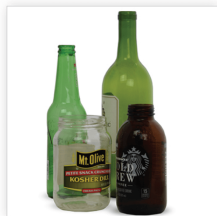
RECYCLE

THANK YOU FOR RECYCLING THESE:



Aluminum and Steel Cans

empty and rinse



Bottles and Jars

empty and rinse



**Cereal Boxes, Newspaper,
Magazines and Mail,
Flattened Cardboard &
Paper Tubes**



**Kitchen, Laundry, Bath:
Bottles and Containers**

empty and replace cap

NO!



Do not Bag Recyclables
(no garbage)



No Tangles,
Cords, Hoses
or Chains



No Flammables,
Fuel Tanks or
Batteries



No Foam



No Clothing
or Linens
(drop-off only)

(734) 483-1810

Ypsilanti, City of Ypsilanti

cityofypsilanti.com/



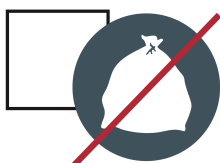
City of Ypsilanti
1 S Huron St
Ypsilanti, MI 48197

**IT'S
ALL YOU
RECYCLE**

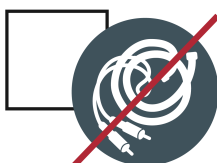


OOPS!

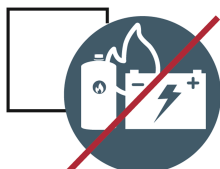
PLEASE LEAVE THESE ITEMS OUT!



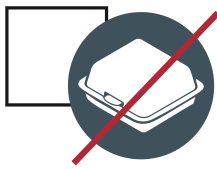
Do not Bag Recyclables
(no garbage)



No Tangles,
Cords, Hoses
or Chains



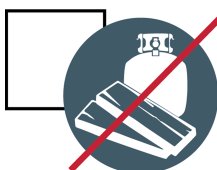
No Flammables,
Fuel Tanks or
Batteries



No Foam



No Clothing
or Linens
(drop-off only)



No Scrap Metal,
Wood, or Furniture

CORRECT THIS AND WE WILL COLLECT NEXT TIME.



CITY OF
YPSILANTI

Home of Eastern Michigan University

cityofypsilanti.com/

Questions about your curbside recycling service?

(734) 483-1810

NO PLASTIC BAGS!

**DO NOT
BAG
Recyclables**



**Collecting recyclables in a bag?
Empty the contents into the cart.**



Return plastic bags to retailers.

cityofypsilanti.com/

NO PLASTIC BAGS IN THE RECYCLING CART



**DO NOT
BAG
Recyclables**

Collecting recyclables in a bag? Empty the contents into the cart.



Return plastic bags to retailers.

Ypsilanti, City of Ypsilanti

(734) 483-1810

cityofypsilanti.com/



City of Ypsilanti
1 S Huron St
Ypsilanti, MI 48197

**IT'S
ALL YOU
RECYCLE**

MRF SURVEY: Acceptable Materials Worksheet

MRF/REP _____

DATE _____

CITY/REP _____

Use this document to identify and address acceptable and problematic materials, inform front line staff, and create materials to educate residents to clean-up the inbound recycling stream. It is recommended that the **local program representative and MRF operator/plant manager** complete this worksheet together every 6 months and during the creation or renewal of processing contracts. We encourage this document be used in the RFP process as well.

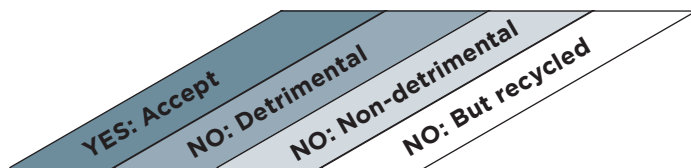
Mark whether each item is: **Yes: Acceptable**

No: Detrimental or **No: Non-detrimental** or **No: But recycled**

Non-detrimental items may or may not go to market but do not cause any major problems.

Detrimental items can shut down or damage equipment, harm employees, and/or substantially degrade the value of material.

But recycled items are not wanted in the stream but will be pulled off the sorting line to be recycled if markets exist.



PAPER PRODUCT				
☐	☐	☐	☐	Cartons (<i>gable top e.g. milk and orange juice, and aseptic e.g. juice boxes and soup</i>)
☐	☐	☐	☐	Cold Cups (<i>e.g. paper fountain drink cup</i>)
☐	☐	☐	☐	Hard Cover Books
☐	☐	☐	☐	Hot Cups (<i>e.g. coffee cup</i>)
☐	☐	☐	☐	Ice Cream Container
☐	☐	☐	☐	Mail
☐	☐	☐	☐	Kraft Bags
☐	☐	☐	☐	Magazines
☐	☐	☐	☐	Newspaper
☐	☐	☐	☐	OCC (<i>old corrugated cardboard</i>)
☐	☐	☐	☐	Office Paper
☐	☐	☐	☐	Paperback Books
☐	☐	☐	☐	Paperboard Boxes (<i>e.g. cereal, tissue</i>)
☐	☐	☐	☐	Pizza Boxes
☐	☐	☐	☐	Shredded Paper
Directions on how to prepare:				
☐	☐	☐	☐	Take-out Containers
☐	☐	☐	☐	Tissue Paper
☐	☐	☐	☐	Other:

YES: Accept	NO: Detrimental	NO: Non-detrimental	NO: But recycled
-------------	-----------------	---------------------	------------------

GLASS PRODUCT

☐	☐	☐	☐	Bottles and Jars
☐	☐	☐	☐	Drinking Glass
☐	☐	☐	☐	Ceramics (<i>mugs, dishes, etc.</i>)
☐	☐	☐	☐	Window
☐	☐	☐	☐	Other:

ALUMINUM PRODUCT

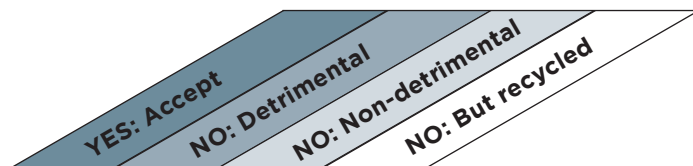
☐	☐	☐	☐	Aerosol
☐	☐	☐	☐	Cans (<i>e.g. beverage container</i>)
☐	☐	☐	☐	Foil or Foil-like Container (<i>e.g. pie plate</i>)
☐	☐	☐	☐	Other Aluminum Containers (<i>e.g. pet food</i>)
☐	☐	☐	☐	Other:

STEEL PRODUCT

☐	☐	☐	☐	Aerosol
☐	☐	☐	☐	Cans
☐	☐	☐	☐	Pots and Pans
☐	☐	☐	☐	Scrap Metal
				Directions on how to prepare
☐	☐	☐	☐	Spiral Wound Container (<i>fiber body, metal bottom e.g. Pringles</i>)
☐	☐	☐	☐	Other:

How do you describe which plastics are accepted?

- ☐ By object shape and/or size. (e.g. bottles and containers)
- ☐ By resin type/number: #1-7, #1 and #2 only, #1, 2, 3, 4, and 5



PLASTIC PRODUCT

☐	☐	☐	☐	Bags, Wraps, Film (please circle one if you accept: bag in bag or loose)
☐	☐	☐	☐	Buckets (any size)
				Exclusions, size or preparation requirements
☐	☐	☐	☐	Bulky Plastic (e.g. crates)
				Exclusions, size or preparation requirements
☐	☐	☐	☐	EPS Foam Blocks & Shapes (e.g. Styrofoam™)
☐	☐	☐	☐	EPS Foam Food Service & Other Containers (e.g. Styrofoam™)
☐	☐	☐	☐	Flower Pots
				Exclusions, size or preparation requirements
☐	☐	☐	☐	HDPE Bottles, Jars & Containers
☐	☐	☐	☐	Other Containers & Packaging (i.e. baskets, molded packaging, food storage containers)
				Exclusions, size or preparation requirements
☐	☐	☐	☐	Other Drink Bottles (e.g. juice in #7)
☐	☐	☐	☐	Other Food Bottles & Jars (e.g. items in #3,4,6 or 7)
☐	☐	☐	☐	Other Household Bottles & Jars (e.g. #3 shampoo bottle)
☐	☐	☐	☐	Other Tubs & Lids (e.g. tubs that are #3, 4, 6, or 7)
☐	☐	☐	☐	PET Bottles & Jars
☐	☐	☐	☐	PET Cups (e.g. clear plastic fast food cups)
☐	☐	☐	☐	PET Thermoform (e.g. fruit container, produce, deli & bakery)
☐	☐	☐	☐	PP Bottles (e.g. #5)
☐	☐	☐	☐	PP Containers & Lids (e.g. #5 yogurt container)
☐	☐	☐	☐	Toys
				Size or preparation requirements
				Plastic Size Requirements?
				Other Preparation Requirements?

MRF SURVEY: Acceptable Materials Worksheet (pg. 4/4)

Rank the top five (5) unacceptable items that are causing the most problems in your facility (i.e. degrading other commodities significantly, causing damage to MRF equipment, presenting danger to staff, becoming high volume residual).

Please rank with numbers “1” through “5.” Put a “1” in the box of the worst contaminant. Only rank the top five and leave everything else blank.

Top 5 Prohibitive Items

- | | |
|--|--|
| — Bulky Plastics (e.g. furniture, toys, buckets) | — Plastic Bags or Wrap (e.g. film, dry cleaner bags, pet food bags, pouches) |
| — Cartons | |
| — Ceramics (dishes, mugs, etc.) | — Small Appliances (e.g. coffee pots, microwaves, electronics, DVD players) |
| — Clothing/Bedding | — Scrap Metal (e.g. pots and pans, rebar) |
| — Concrete | — Shredded Paper |
| — Diapers | — Tanglers (e.g. wire, hose, cords, rope, chains) |
| — EPS Foam (Styrofoam™, block and/or food service containers) | — Wood |
| — Flammables (propane tanks, batteries, fuel, etc.) | — Yard Waste |
| — Food or Liquid | — Other: |
| — General Hazardous Waste (e.g. mercury devices, paint, solvents, oil) | — Other: |
| — Glass | — Other: |
| — Needles | |



City of Ypsilanti

Office of the City Clerk

January 23, 2019

Sustainability Commission
1 South Huron
Ypsilanti, MI 48197

Sustainability Commissioners,

Please find enclosed a resolution passed by the Ypsilanti City Council (Resolution No. 2019-013), encouraging the reduction in single use-plastics.

Should you have any questions or concerns, please contact the Ypsilanti City Clerk's office at (734) 483-1100.

Sincerely,

Frances McMullan
City Clerk



Resolution No. 2019 - 013
January 22, 2019

RESOLVED BY THE COUNCIL OF THE CITY OF YPSILANTI:

WHEREAS, the City of Ypsilanti is committed to serving as an effective and careful steward of our natural resources and environment, including the air, water and soil of our city, state and planet, and believes that doing so is a fundamental responsibility of government at all levels; and

WHEREAS, the reliance on single-use plastics contributes significantly to global warming, landfill size and associated air pollution, and marine plastic pollution; and

WHEREAS, plastic does not biodegrade but instead breaks down into smaller particles that enter the marine food chain and, eventually, into humans, potentially causing as yet unknown health risks; and

WHEREAS, the City of Ypsilanti is committed to environmentally sustainable practices;

NOW THEREFORE BE IT RESOLVED THAT, the Ypsilanti City Council urges all departments and offices to reduce the purchase of single-use plastics, particularly polystyrene, which requires the use of carcinogenic chemicals and other chemicals harmful to humans in its manufacture, which faces a rapidly diminishing recycling market, and which has been identified as a possible human carcinogen.

BE IT FURTHER RESOLVED, the Ypsilanti City Council directs the City Manager to revise the City's current procurement policy and disseminate this to City departments and offices, and ensure adherence to the policy.

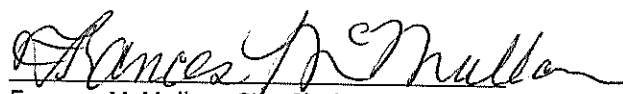
BE IT FURTHER RESOLVED, the Ypsilanti City Council directs the City Clerk to send copies of this resolution to the Washtenaw Board of Commissioners, the Ypsilanti Downtown Development Authority, the Ypsilanti Sustainability Commission, and the city's representatives in both the Michigan State House and State Senate.

OFFERED BY: Council Member Morgan

SUPPORTED BY: Council Member Symanns

YES: 6 NO: 0 ABSENT: 1 (Murdock) VOTE: Carried

I do hereby certify that the above resolution is a true and correct copy of Resolution 2019-013 as passed by the Ypsilanti City Council, at their meeting held on January 22, 2019.


Frances McMullan, City Clerk