



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

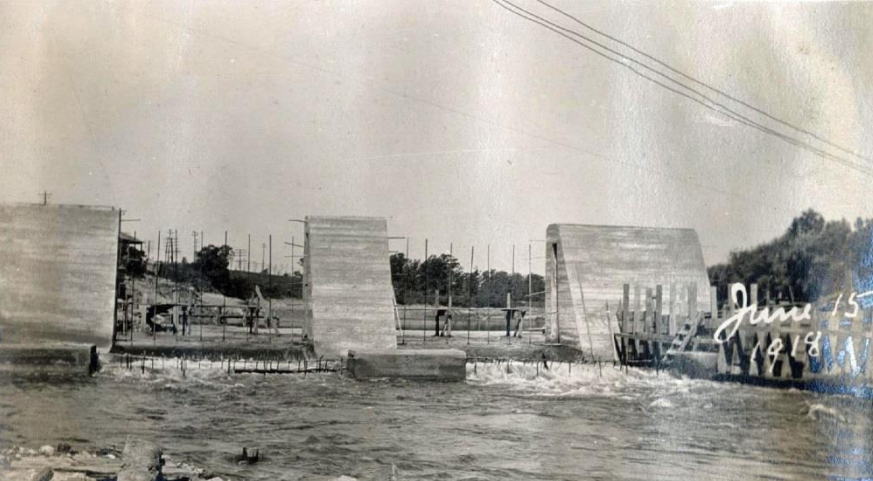
MONDAY, January 14, 2018
7:00 P.M.

- 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. A review of the Peninsular Dam Feasibility study with the Huron River Watershed Council [1](#) [2](#)
 - B. Community impact of the Peninsular Dam with the Friends of Peninsular Park [1](#) [2](#)
 - C. The City of Ypsilanti *Draft* Energy Plan with City Staff [1](#) [2](#)
 - D. ~~Paint Recycling with Commission Bayha~~
- V. AUDIENCE PARTICIPATION
- VI. CONSENT AGENDA
 - A. Approval of Dec 10, 2018 minutes [1](#) [2](#)
- VII. RESOLUTIONS/MOTIONS/DISCUSSIONS
 - A. Introduction to new Council liaison Councillor Steve Wilcoxon
 - B. Resolution 2018-01-001 - Peninsular Place Dam Removal and Restoration of fishing habitat [1](#)
 - C. Sustainability Plan RFP proposals [1](#) [2](#) [3](#)
 - D. Draft Energy Plan discussion
 - E. Climate Action Plan discussion [1](#)
- VIII. LIAISON REPORTS
 - A. Sustainability Plan Committee (Drennen/Zeuener)
 - B. MGC Challenge Committee (Heine/McKee)
 - C. Outreach Committee (Christian/Foley)
 - D. Master Plan: Housing Affordability & Access Committee (Foley)
 - E. EMU Sustainability Commission (Greenwald)
- IX. COMMUNICATIONS
 - A. Recycling Update
- X. AUDIENCE PARTICIPATION
- XI. PROPOSED BUSINESS
- XII. NEXT MEETING DATE

Monday, Feb 11, 2019

XIII. ADJOURNMENT



PENINSULAR PAPER DAM: DAM REMOVAL ASSESSMENT AND FEASIBILITY REPORT

HURON RIVER, WASHTENAW COUNTY, MICHIGAN

SEPTEMBER 2018

PREPARED FOR:

HURON RIVER WATERSHED COUNCIL
1100 NORTH MAIN, SUITE 210
ANN ARBOR, MI 48104
734-769-5123

PREPARED BY:

PRINCETON HYDRO
931 MAIN STREET, SUITE 2
SOUTH GLASTONBURY, CT 06073
860-652-8911





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F. Concept-Level Cost Estimate for Dam Removal	
G. Potential Funding Opportunities for Dam Removal	



PRINCETON HYDRO

SCIENCE
ENGINEERING
DESIGN

PRIMARY AUTHOR

PAUL WOODWORTH

CONTRIBUTING AUTHORS

LAURA A.S. WILDMAN, P.E.
JAKE DITTES

Cover Photo Credits: Left: Ypsilanti Historic Society. Reconstruction of Peninsular Paper Dam, June 15, 1918, after full dam failure earlier that year. Right: MarkMaynard.com. Peninsular Paper Dam and powerhouse.



PRINCETON HYDRO

SCIENCE
ENGINEERING
DESIGN



Introduction

The Huron River Watershed Council (HRWC) and the City of Ypsilanti are exploring the options for the future of Peninsular Paper Dam, the revitalization of the Peninsular Park, and the long-term restoration of the Huron River. The goal of this study is to assist the dam owner, who is interested in exploring dam removal, in the decision-making process by completing the initial preliminary studies to determine the feasibility of dam removal.

HRWC and the City of Ypsilanti have contracted with Princeton Hydro to assess three critical issues that strongly affect the feasibility of removing Peninsular Paper Dam: (i) sediment quality and quantity, (ii) potential infrastructure/utilities impacts, and (iii) riverfront land ownership. This study culminates in a conceptual design for dam removal and an estimate of construction cost.

To ensure community and stakeholder involvement through this process, HRWC has convened a working group with representatives from Ypsilanti Township, City of Ypsilanti, Superior Township, and Friends of Peninsular Park. Michigan DEQ has also provided guidance and background information in the planning stages of this project. From this initial feasibility assessment, HRWC anticipates continuing to work with the local community stakeholders to shape the vision of a successful river restoration project, and to identify the next steps including additional data collection and analysis.

This targeted study intentionally does not encompass all tasks that are typically completed for comprehensive feasibility assessments, alternatives analyses, engineering designs, permitting, and construction, such as: detailed professional survey of the dam, bridges, and associated structures; wetland delineation and resource assessment; bathymetric survey of the impoundment; hydraulic modeling; engineering design and plan set preparation; engineer's estimate of probable cost; permit preparation; or, construction specifications. Rather, those tasks have been deferred to a later phase, pending the outcome of this targeted assessment.

This study does not include an assessment of the feasibility for hydropower generation. The potential for hydropower generation has been considered for Peninsular Paper Dam in the past and ultimately was dismissed. From 2008 to 2010, the City of Ypsilanti had considered the potential of restoring Peninsular Paper Dam for hydropower generation and selling the power to the local Eastern Michigan University. Representatives of Eastern Michigan University expressed interest in purchasing the power at rates cheaper than their existing supplier and promoting the University's shift toward a "greener" alternative energy source. However, the City was unable to resolve the complications to restoring generating capacity of the dam, so no agreement was reached. In 2012, the City was contacted by a local business owner who was considering building a facility on the Peninsular Paper Dam site and spending up to \$1 million to restore the generating capacity of the dam; however, in 2013 the business owner lost interest without reaching an agreement with the City.

While this study is not an assessment of hydropower potential, the City of Ann Arbor provides an example of regional trends in hydropower. The City owns four dams on the Huron River: Barton, Argo, Geddes, and Superior; two of the dams (Barton and Superior) generate hydroelectric power. The City commissioned a hydroelectric redevelopment feasibility study for both the Argo and Geddes Dams (Appendix A, dated 2008). At its core, the study considered the power production potential (based on hydraulic head, river flow, and plant efficiency), capital costs, indirect costs, and conceptually recommended a specific type of turbine. A follow-up study was commissioned (Appendix A, dated 2010) that entailed an economic evaluation based on current energy rates, and a present worth analysis; the report concluded that the Geddes Dam was preferable to the Argo Dam for redevelopment. To date, neither dam has been re-powered. In 2018, The City of Ann Arbor had approved over \$500,000 to overhaul Barton Dam by replacing and rebuilding the turbine and equipment.



Three Critical Issues

While dam removal often encompasses multiple technical and social issues, this feasibility study is intentionally focused on three critical issues -- (i) sediment quality and quantity, (ii) potential infrastructure/utilities impacts, and (iii) riverfront land ownership -- that have the potential to render dam removal infeasible, and thus, justify no further investigation. Dam removal will likely result in the mobilization and downstream transport of impounded sediment, and the exposure of formerly inundated sediment on the floodplain. As pollutants tend to bind to and accumulate in impounded sediment, this study investigates sediment quality to assess the potential adverse impacts to living organisms and humans. Regardless of quality, excessive sediment quantity can adversely impact downstream reaches by burying stream bottom habitat, filling pools, or potentially raising flood elevations. In addition, removal of a 17 ft-high spillway has the potential to initiate changes in the river, primarily upstream of the dam, that could adversely impact existing structures, for example, by undermining bridges. This study identifies those components of public infrastructure, assesses how they could be impacted, and what counter-measures would be necessary. Finally, the impoundment of Peninsular Paper Dam has multiple riverfront landowners that could be affected by dam removal and the resulting change in the water's edge. This study identifies these properties and assesses how they would be affected by the reduction in water depth and reversion to a free-flowing river channel. Following careful assessment, this study concludes that none of these critical issues renders dam removal infeasible.

Firm Overview

Princeton Hydro, LLC is a small business enterprise that provides unparalleled consulting services for the analysis, design, and implementation of water resources engineering and ecological restoration projects. The unique skills and cumulative expertise of our experienced, multidisciplinary staff of engineers and scientists are reflected in the creative nature of Princeton Hydro's projects and our ability to deliver comprehensive ecosystem-based solutions. Our staff include individuals with academic training and project experience stakeholder engagement, hydrology and hydrogeology, aquatic and wetland ecology, fishery biology, population and community ecology dynamics, environmental planning, dam safety and decision making, green infrastructure, geotechnical design, and environmental risk analysis. Our staff's unique perspectives are apparent in the innovative nature of many of our projects, especially in the disciplines of aquatic and wetland ecology, environmental engineering, and watershed management.

Site Description

Peninsular Paper Dam is located on the Huron River in Ypsilanti, Michigan (Washtenaw County) (latitude: 42.25605, longitude: - 83.6241). The original structure was completed in 1867 to provide power for paper manufacturing. The dam failed in 1918 and was rebuilt two years later. The powerhouse is a prominent feature in the area topped by its iconic, free-standing letters spelling "PENINSULAR PAPER CO. SINCE 1867 YPSILANTI." The dam is classified as a concrete gravity dam that measures 16 feet high with crest length of 290 feet; of which 250 feet is the concrete spillway. The spillway sill extends approximately 25 feet downstream of the crest. The river left (north) end of the spillway ties into a low-level outlet structure, or "floodgate." Historic photos taken during construction show the bottom of this structure nearly equal to the bottom of the spillway, with a large metal swing gate; however, the engineering plans dated 1983 show this floodgate was replaced with a stop-log structure. The spillway and low-level outlet structure tie into the powerhouse; concrete retaining walls extend downstream from the powerhouse over 170 feet. On the river right side (south), the spillway ties into a large retaining wall that is approximately 21 feet in height, stands 5 feet above the spillway crest, extends approximately 60 feet downstream, and extends approximately 70 feet upstream around the perimeter of the impoundment. Downstream of the spillway, second retaining wall parallels the primary retaining wall, and is set 15 feet behind and extends approximately 112 feet downstream. The area of the impoundment measures 177



acres, and extends approximately 6,575 feet upstream of the spillway to approximate station 82+25 on the profile, which is 1,722 feet downstream of the Superior Dam, the next upstream dam. Approximately 37 properties abut the impoundment. The impoundment is crossed by two causeways/bridges. The Conrail Railroad Bridge crosses the impoundment approximately 3,210 feet upstream of the Peninsular Paper Dam; the Superior Road Bridge crosses the impoundment approximately 4,910 feet upstream of the dam. The dam site is accessible from the northern side on public property, Peninsular Park, from Leforge Road, which crosses the Huron River approximately 450 feet downstream of the dam.

The dam structure, Peninsular Park, and the lower portion of the impoundment lies within the City of Ypsilanti; a central portion of the impoundment lies within Ypsilanti Township; the upper portion of the impoundment lies within Superior Township. The dam no longer generates power, and all electricity-generating equipment has been removed from the powerhouse. The City of Ypsilanti now owns the dam and powerhouse.

The dam has a “high” hazard potential classification, as classified by the US Army Corps of Engineers. Hazard classification relates to the degree of adverse incremental consequences resulting from a failure or mis-operation of a dam. The hazard potential classification does not reflect in any way the current condition of the dam (e.g., safety, structural integrity, flood routing capacity). Dams assigned the high hazard potential classification are those where failure or mis-operation will probably cause loss of human life (2004 Federal Guidelines for Dam Safety). In the state of Michigan, high hazard dams require dam inspections by a licensed professional engineer every three years and the development of an Emergency Action Plan, that describes the actions to be taken in the event of a potential dam failure. The most recent Dam Safety Inspection Report for the dam was completed in July 2016 by the Hydrologic Studies and Dam Safety Unit of the Michigan Department of Environmental Quality. The report concluded that the dam is in “fair” condition and requires the City to provide a plan for how it will address the deficiencies identified in the report. An Opinion of Probable Construction Cost completed by OHM Advisors in 2014 totaled approximately \$659,000 for repairs and demolition of the powerhouse, which with inflation, would now likely exceed \$750,000.

The dam is being considered for removal for a variety of reasons. The dam no longer generates power or serves an economic purpose to offset the required immediate repairs and ongoing maintenance. The removal of the spillway would (i) deregulate the dam and remove any owner obligation for repair and ongoing inspections and maintenance as per dam safety regulations; (ii) greatly reduce the public safety hazard and legal liability to the owner; (iii) likely result in improved water quality for this reach of Huron River, such as temperature moderation and increased dissolved oxygen; (iv) restore the existing impoundment to over 1-mile of free-flowing river (and associated fishery) with an adjacent vegetated floodplain; and, (v) reconnect over 2 miles of river that have been isolated for over 100 years.

Review of Existing Files and Historical Documents

Princeton Hydro has received, compiled and reviewed dozens of files including plans, reports, and historic photos. An inventory of files is included as Appendix A, and digital copies can be provided upon request. Historic photos, particularly of the 1918 dam failure and subsequent re-construction have been especially informative of the current spillway material and dimensions, and provided hints of the floodplain and channel form in the existing impoundment.

Sampling and laboratory analysis of sediment impounded behind Peninsular Paper Dam has been conducted at least one time in the past. In 2013, six sediment samples were collected from throughout the impoundment and analyzed for a range of common contaminants. A sample location map, and summary table of results are included in Appendix A and discussed further in the subsequent section regarding sediment quality.



Engineering plans of the bridges that span the impoundment have been crucial in learning the depth of foundations to assess vulnerability to river channel erosion following dam removal, as discussed in subsequent sections.

Since initiating this project, HRWC has coordinated several in-person meetings with project partners and community stakeholders. An early meeting was held in May 2017 and included a site visit. Several following stakeholder meetings/conference calls were convened to discuss available data and potential concerns, to provide updates on the fieldwork and ongoing assessment, and to discuss initial findings.

Field Investigation, Survey, and Observations

Princeton Hydro fluvial geomorphologist and SME professional surveyor completed an investigation of the site and impoundment on April 15 and 16, 2018. The investigation, completed mostly from a motorized jon boat, included manual probing and survey of sediment within the impoundment, and selected survey of the dam spillway, abutments, and the two bridges crossing within the impoundment (Railroad Bridge and Superior Road Bridge).

Topographic survey shots (coordinates and elevations) were captured by SME utilizing survey-grade RTK GPS with a cell-phone connection to a local base-station. Survey coordinates and elevations were processed following a least squares adjustment that generates precision of approximately 0.02' of a foot. Coordinates are presented in North American Datum 1983, state plane, feet (NAD83); elevations are reported North American Vertical Datum 1988, feet (NAVD88). Survey of the dam spillway established the real-world elevation of the low chords and abutments of both bridges, and the spillway crest (712.4' NAVD88). Sediment probing was conducted by measuring with graduated range rods down from the boat to the top of sediment and manually driving the rod to resistance. Surveyed elevations of manual probings, and selected structures are depicted in the project basemap (Appendix B, Existing Conditions) and the longitudinal profile of the dam and impoundment (Appendix B, Profile); all survey data are contained within an AutoCAD Civil3D drawing file.

The field investigation identified locations of features and structures that may influence the dam removal decisions, including valley walls, slope instability, low vegetated floodplains, maintained yards, eroding banks, banks stabilized with stone or retaining wall, stormwater outfalls; all of which are plotted on the project basemap (Appendix B, Existing Conditions). Steep slopes, particularly about 4,000 feet upstream of the dam on river left, showed signs of slope failures above the normal water surface elevation. Manual sediment probing established the location of a legacy thalweg (i.e. deepest part of the original riverbed channel) and the likely former river alignment, as well as the distribution, depth and general grain size class (clay, silt, sand, gravel, cobble, boulder) of impounded sediments. Sediment in and around the legacy thalweg was coarser in nature, generally coarse sand and gravel; whereas, sediment outside of the thalweg and on the impoundment margins was finer, sand, silt, and clay. The legacy thalweg, which is plotted in the longitudinal profile, contained the least unconsolidated sediment, with the lowest elevations of top of sediment. At the dam, top of sediment was approximately 11 feet below the crest of the spillway, and was approximately 4 feet in thickness. Sediment depth in the thalweg diminished in the upstream direction, as is typical, to zero feet at approximately 6,000 feet upstream of the dam, which is approximately 1,000 feet downstream of the upstream extent of the impoundment. Interestingly, there were no deposits of unconsolidated sediment located under either of the bridges, indicating that the bridges create hydraulic constrictions that cause scour and prevent the deposition of impounded sediments. Plotting and analyzing the manual probing data in longitudinal profile (Appendix B, Profile) strongly indicates that the depth of bottom of sediment throughout the impoundment is at an original river bottom and very closely approximates the equilibrium channel profile that the river would return to following dam removal (Appendix B, Profile and Concept Dam Removal Design).



Areas away from the thalweg exhibited higher top of sediment elevations and greater sediment depth, commonly 4 to 5 feet, with a maximum of 7 feet. These sediment depths are markedly low compared to the spillway height of 16 feet. The low depths of sediment accumulated in this impoundment may be the result of the full dam failure and sediment release in 1918, as well as the presence of multiple large upstream dams on the river that serve as near total sediment traps and reduce the overall sediment load (bedload and suspended load) of the River.

Vibracoring and Sediment Sampling

Vibracoring was completed by Limnotech and a subcontractor on July 17, 2018 as detailed in the memo Appendix D. The vibracoring system, mounted to a 20-foot pontoon boat, mechanically drove 3-inch diameter polycarbonate cores into the sediment until reaching resistance. Vibracoring is an effective mechanical method of extracting full depth sediment cores from deep water and deep sediment. In addition, vibracoring can provide important confirmation regarding the depth of impounded sediment, and the depth (i.e. elevation) of reservoir bottom / original riverbed. Vibracores were completed in 10 pre-selected sampling locations, to capture the depth of impounded sediment adjacent to bridges and where the river channel is likely to reform following dam removal.

Sediment cores were characterized by soil texture, color, and composition; observations were recorded in core logs. Cores were also scanned using a photo-ionization detector (PID). Sediment thickness ranged from 0.9 to 5.9 feet; core recovery ranged from 0.8 to 5.9 feet. Samples for laboratory analysis were extracted and composited from selected core intervals. Two additional sediment grab samples were extracted directly from the river bed upstream of the impoundment and downstream of the dam; while not directly affected by dam removal, upstream and downstream sediment samples provide context for the impounded sediment and assist with categorizing background or ambient concentrations of contaminants. Sediment samples were stored in a cooler with ice and transferred to Brighton Analytical laboratories of Brighton, Michigan.

Analysis of Sediment Samples

Samples were analyzed for the following parameters based on guidance from Michigan DEQ:

- Metals: Mass-Based Analysis for metals
 - Arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc
- Polynuclear Aromatic Hydrocarbons (PNAs)
- Total PCBs
- Grain size
- Total Organic Carbon
- Moisture Content

These results have been compared against:

- Human Health Criteria: Michigan Residential Direct Contact,
- Ecological Criteria: Freshwater Sediment Probable Effect Concentrations (PEC) from MacDonald, Ingersoll, and Berger¹.

¹ MacDonald, DD, Ingersoll, CG, and Berger, TA. 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology. 39:20-31.



The Freshwater Sediment Probable Effect Concentrations are the consensus-based, freshwater sediment quality guidelines compiled by MacDonald and Ingersoll² and compiled in the NOAA 2008 Screening Quick Reference Tables (SQiRTs). Consensus-based Sediment Quality Guidelines (SQGs) have been developed to synthesize previously published toxicity studies and have been shown to be both accurate predictors of sediment toxicity and negative predictors for toxicity to benthic invertebrates by direct contact. The Probable Effect Concentration (PEC) is the concentration above which harmful effects are likely to be observed. These SQGs do not consider the potential for bioaccumulation and are not intended to serve as site-specific clean-up levels. Instead, they are applied to facilitate the decision-making process regarding sediment management; an absence of exceedances generally serves as a defensible basis for no further investigation.³

If the dam is removed, some portions of the impoundment, once dewatered, will revert to floodplain that abuts some residences, therefore residential direct criteria is applied. Residential direct contact criteria are based on conservative estimates including daily ingestion for 350 days/year and dermal exposure 245 days/year, with separate considerations for adults and children 6 years or younger. In this way, residential direct contact criteria serve as a conservative threshold for human health risk in this setting, where direct contact, especially chronic exposure, is unlikely. However, if sediment was to be excavated from the channel, concentrations relative to residential direct contact criteria would determine any limitations in its re-use or disposal.

Analytical Results

A summary table of lab results is attached, and a complete laboratory report can be provided upon request. Samples ranged from 45% to 81% solid, with corresponding percentages of moisture. Sample #1 was predominantly medium to fine sand with coarse sand and fine gravel. Samples #2, #3, #5, #6, #9, and #12 (upstream) were predominantly medium to fine sand. Samples #4, #7, #8, and #10 were predominantly fine sand, silt, and clay. Sample #11 (upstream of the impoundment) was predominantly medium to coarse sand with fine gravel. Samples #11 and #12 (downstream of the dam) contained by far the lowest percentage of TOC, 0.14% and 1.3%.

Laboratory reporting limits were below the corresponding criteria for all analytes. Results may be summarized as follows:

- PCBs were not detected.
- **Polynuclear Aromatic Hydrocarbons (PNAs)** were either not detected or detected below the **human health criteria** for nine (9) of the ten (10) impounded sediment samples; one (1) of the impounded sediment samples contained concentrations that slightly exceeded human health criteria for *benzo(a)pyrene*.
- **PNAs** were detected below the **ecological criteria** for seven (7) of the ten (10) impounded sediment samples; three (3) of the impounded sediment samples contained concentrations that exceeded ecological criteria, which are discussed below.
- **Metals** concentrations were detected below the **human health criteria** for seven (7) of the ten (10) impounded sediment samples; three (3) of the impounded sediment samples contained concentrations that slightly exceeded human health criteria for Arsenic.

² MacDonald, DD, and Ingersoll, CG. 2002. A Guidance Manual to Support the Assessment of Contaminated Sediments in Freshwater Ecosystems, Volume III – Interpretation of the Results of Sediment Quality Investigations.

³ MacDonald, DD, Ingersoll, CG, and Berger, TA. 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology. 39:20-31.



- **Metals** concentrations were detected below the **ecological criteria** for eight (8) of ten (10) impounded sediment samples; two (2) samples contained concentrations that exceeded ecological criteria, which are discussed below.
- Samples #11 (upstream of the impoundment) and #12 (downstream of the dam) contained no detections that exceeded ecological or human health criteria.

Polynuclear Aromatic Hydrocarbons (PNAs)

Samples #1, #3, and #6 from the impoundment contained concentrations that exceeded ecological criteria for multiple PNAs (3, 8, 6 PNAs respectively). Exceedances were generally within one order of magnitude of the corresponding criteria. These PNAs include Naphthalene, Fluorene, Phenanthrene, Anthracene, Flouranthene, Pyrene, Chrysene, and Benzo(a)pyrene. Sample #3 contained concentrations that slightly exceeded the human health criteria for Arsenic.

Metals / Inorganics

Sample #7 contained concentrations of Cadmium, Lead, and Mercury that exceeded ecological criteria. Sample #10 contained a concentration of Lead that exceeded ecological criteria. Samples #7, #8, and #12 contained concentrations that slightly exceeded the human health criteria for Arsenic.

Discussion of Sediment Quality

Polynuclear Aromatic Hydrocarbons are a class of compounds, generally occurring as complex mixtures, that are known contaminants and commonly occur in fine sediments (fine sand, silt, clay) in river systems. Sources of PNAs in the environment are both natural and man-made. Some PNAs are manufactured for research or for the production of dyes, plastics, and pesticides. PNAs occurring in the environment are more likely the by-product of incomplete combustion – sources include wildfires, trash burning, wood-burning stoves, furnaces, industrial emissions, energy production (i.e. coal burning), and motor vehicle engines. Recent research has identified asphalt seal-coats as concentrated sources of PNAs, particularly in stormwater runoff. PNAs enter freshwater bodies by atmospheric deposition or stormwater runoff and then bind preferentially to fine grain sizes, which settle out of suspension in backwater depositional areas and accumulate in man-made impoundments. If sediment deposition conditions remain stable, contaminant concentrations may gradually increase over time particularly since PNAs persist in the environment for long periods of time. Common modes of human exposure include breathing polluted air, eating grilled meats, and smoking. Less common sources include coming in contact with heavy oils, coal tar, roofing tar, or creosote. Research suggests that inhalation and skin contact may be associated with cancer in humans.

These PNAs are frequently detected in impounded sediments throughout the northeastern US; and likewise, they were detected in 3 of 10 impounded sediment samples. These samples contained a range of TOC percent (46%-90%). Sample #1 contained larger proportions of coarse sand and fine gravel; Samples #3 and #6 were among several samples that were predominantly medium and fine sand. As such, neither TOC nor grain size appears to correlate strongly to these detected exceedances, and thus suggests the results cannot be extrapolated to other impounded sediment of similar characteristics. PNAs were either detected at low levels or not detected at all in most (7 of 10) impounded sediment samples. The exceedances of ecological criteria indicate these pollutants may exert a minor impact to the aquatic ecosystem (most likely benthic aquatic organisms) in existing conditions. The lack of exceedances of human health criteria indicate no cause for concern toward human health.



2013 Sediment Sampling and Analysis

As stated above, six (6) sediment samples were collected by others in 2013 from throughout the impoundment and analyzed for a range of common contaminants included metals, polynuclear aromatic hydrocarbons (PNAs or PAHs), polychlorinated biphenyls, and organochlorine pesticides. A map of sample locations and tables of results are presented in the appendix; no report was ever produced. Three (3) samples were collected in the lower impoundment, two (2) in the central portion of the impoundment (between the railroad bridge and Superior Road bridge, and one (1) in the upper portion of the impoundment upstream of Superior Road bridge. All samples were collected approximately midway between opposing banks and apparently collected manually with a surface dredge sampler (i.e. clam-shell style Ponar or similar).

Laboratory analytical results were compared against ecological guidelines – threshold effect concentrations [TEC] and probable effects concentrations [PEC] for freshwater sediment. Pesticides and PCBs were not detected in any sample. Samples #1 and #2 contained low concentrations of metals and PNAs with minor exceedances of TEC, but no exceedances of PEC. Sample #3 contained no exceedances of TEC for metals but exceedances of PEC for most PNAs. Sample #4 contained no exceedances of TEC for metals, but exceedances of TEC (not PEC) for most PAHs. Sample #5 contained exceedances of TEC for metals and PNAs, but no exceedances of PEC (with the exception of Mercury, which slightly exceeded PEC). Sample #6, closest to the dam, contained exceedances of PEC for metals, but no exceedances for PNAs.

In totality, the lack of persistent exceedances of PEC for metals and PNAs in the results of the 2013 sediment sampling are not in conflict with the results of this most recent round of sampling and do not create a substantial concern for river biota or human health in the event of dam removal.

Conclusions of Sediment Quality

Sediment contaminants identified and described above provide important information to the feasibility of the removal of the Peninsular Paper Dam. The feasibility of dam removal is supported by the following conclusions:

1. Detections in a majority of impounded sediment samples were below ecological and human health criteria for Metals, PNAs, and PCBs.
2. Exceedances of ecological criteria for PNAs were infrequent (3 of 10) and low magnitude (i.e. within an order of magnitude).
3. Exceedances of ecological criteria for Metals were infrequent (2 of 10) and low magnitude (i.e. less than 5x).
4. Exceedances of human health criteria for PNAs were infrequent (1 of 10) and low magnitude (i.e. less than 2x).
5. Exceedances of human health criteria for Metals were infrequent (3 of 10) and low magnitude (i.e. less than 2x).
6. Ecological criteria are sufficiently conservative and protective, such that minor exceedances rarely exert significant adverse impacts on ecological receptors.
7. Human health criteria are sufficiently conservative and protective in this setting, such that daily direct contact is highly improbable.

Based on these conclusions, sediment analysis results (i) support dam full removal and passive, in-stream, sediment management, (ii) do not necessitate excavation and off-site disposal of impounded sediments, post dam removal, and furthermore, (iii) provide reasonable assurance that no further sediment investigation is necessary.



Sediment Quantity

Compilation of manual sediment probing data, vibracore data, and survey data in plan view basemapping and longitudinal profile provides the best means for estimating sediment volumes. The longitudinal profile includes the top and bottom of sediment in the thalweg; the thalweg is the anticipated alignment of the re-formed free-flowing channel after dam removal, and the bottom of sediment closely approximates the anticipated profile (i.e. the river bottom and channel slope) of the free-flowing channel.

As stated above, the impoundment is over 1 mile long and 177 acres; at an average of 4 feet in sediment depth, total impounded sediment volume may exceed 1 million cubic yards. However, the impounded sediment that would actually be mobilized following full dam removal would be mobilized by the new free-flowing channel; whereas, sediment offset from the channel would settle, dewater, revegetate, and revert to a naturalized floodplain. Thus, the mobile volume of sediment is significantly less than the total volume and the more relevant quantity to guide dam removal decisions.

The bankfull channel width upstream of the impoundment and downstream of the dam measures approximately 125 feet. Downstream free-flowing reaches range approximately from 125 to 160 feet in width. Bankfull width as determined by the regional hydraulic geometry curve for Southern Lower Michigan⁴ is 156 feet based on a drainage area of 813 mi². The product of the depth of impounded sediment depicted in the profile and the anticipated bankfull channel width (accounting for a slightly convex channel bottom and sloping banks) yields the volume of mobile sediment is closer to 60,000 CY. This volume extends over the length of approximately 6,000 feet, where an average depth of 2.5 feet of sediment in the thalweg is anticipated to be mobilized (i.e. average sediment depth is lower on the anticipated channel margins). This depth of sediment is deeper at the dam but diminishes to zero at 6,000 feet upstream. This mobilization of sediment would be initiated at the downstream extent in the form of a head-cut that progresses upstream, and yet thin layers of surficial sediment may be mobilized throughout. Over this entire length, the transport of sediment would be constant but gradual. In published dam removal studies, the majority of the re-formation of the free-flowing channel, and the associated mobilization of impounded sediment, occurred within the first six to 12 months. Thereafter, sediment mobilization was primarily associated with high flow events.

The quantity of sediment that may be mobilized by dam removal is relatively small compared to the height of the dam and size of the impoundment, and thus does not preclude dam removal but does warrant further consideration of potential impacts (e.g. Ford Lake), discussion with regulatory agencies, and consideration of potential mitigation measures, some of which are discussed in the conceptual design section below.

Potential Impacts to Infrastructure and Utilities

Utilities

Overhead powerlines cross the impoundment in two locations. One set of powerlines parallel the Conrail Railroad and span the impoundment at the Conrail bridge. Also, at the upstream extent of the impoundment, high-tension overhead powerlines cross the impoundment. Neither of these lines, or the supporting poles are anticipated to be adversely affected by dam removal as they are outside of the impoundment or distal from anticipated position of the restored channel, and thus they do not limit the feasibility of dam removal.

⁴ Rachol, C.M. and Boley-Morse, K. 2009. Estimated bankfull discharge for selected Michigan rivers and regional hydraulic geometry curves for estimating bankfull characteristics in southern Michigan rivers. US Geological Survey Scientific Investigations Report 2009-5133.



None of the sources of information Princeton Hydro and HRWA obtained from the municipalities indicated any water lines, sewer lines, gas lines or similar utilities that crossed the impoundment.

Conrail Railroad Embankment

The Conrail Railroad parallels the impoundment near the Peninsular Paper Dam for several hundred feet. In this reach, the deeper water depths revealed that the river thalweg meanders to the river right side of the impoundment along the railroad embankment. If the dam were removed, the river channel is anticipated to also emerge in this location. The longitudinal profile with sediment probing data indicates that sediment depths are greatest closest to the dam and that the river channel bed may erode down by several feet along this railroad embankment. The potential for the post-removal, free-flowing river channel to erode or undermine the embankment does not preclude dam removal but does warrant additional consideration, such as hydraulic modeling (i.e. embankment scour analysis) and mitigation measures. For example, following dam removal, bank/slope stabilization will likely be necessary to provide additional protection for the embankment and Conrail rail line.

Conrail Railroad Bridge

The Conrail Railroad bridge is constructed of masonry abutments and two-central piers that create three openings for flow; engineering plans are dated 1899. The thalweg, or deepest path, passes through the central opening. Based on normal water depth, the bridge has approximately 4.5 feet of freeboard. The river right opening was shallow and armored with large riprap. It appeared that sheet-piling and riprap encased the front of the abutments and piers well below the water surface. Original engineering design plans indicate the depth of the two central piers and that they are founded on timber piles that, however, extend down to an unknown depth. The river right pier is shallow, and its bottom is several feet above the elevation of the adjacent thalweg, as indicated in the longitudinal profile.

With a cross-section opening width of 139 feet (150 ft span minus 2 central piers) the bridge presents a constriction of the floodplain and thus a hydraulic constriction during high flows. Manual probing revealed an absence of impounded sediment at the bridge and that the river thalweg elevation at the bridge is actually below the river bed elevation at the base of the dam (see profile), indicating no potential for head-cutting or channel degradation at the bridge. However, the post-removal, free-flowing river channel will likely create greater flow velocities, which may increase scour at the bridge, particularly the river right or river left bridge openings, and potentially damage the abutments or piers, or worse, expose the timber piles under the river right pier. Exposure of the timber piers presents a serious risk to the bridge because it introduces the potential for decomposition of the timbers and eventual collapse of the pier.

The potential for increased scour at the bridge does not preclude dam removal but does warrant additional consideration and mitigation measures. A detailed hydrologic and hydraulic model with a bridge scour analysis will be necessary to further assess the existing and post-removal conditions. Mitigation measures would likely include scour protection, the careful placement of large rock around the bridge abutments. More extensive measures may be necessary to protect the underlying timbers such as concrete encasement, which can be complicated and costly. This river right pier presents of the most complicating factor in the removal of Peninsular Paper Dam.

Superior Road Bridge

The Superior Road Bridge is a steel I-beam span with concrete abutments and two central concrete piers that create three openings for flow; engineering plans are dated 1972. The thalweg passes through the right opening. Based on normal water depth, the bridge has approximately 5 feet of freeboard. Original engineering



plans indicate the depth of central piers, which according the survey/manual probing, is approximately equal to the invert of the channel at that location.

With a cross-section opening width of approximately 160 feet (170 ft span minus 2 central piers), this bridge presents a constriction of the floodplain and thus a hydraulic constriction during high flows. Manual probing also revealed an absence of impounded sediment at the bridge and that the river thalweg elevation at the bridge is approximately 1-foot above the river bed elevation at the base of the dam (see profile), indicating a slope of 0.02% and thus little or no potential for head-cutting or channel degradation at the bridge. However, the post-removal, free-flowing river channel will likely create greater flow velocities, which may increase scour at the bridge and potentially undermine the piers.

The potential for increased scour at the bridge does not preclude dam removal but does warrant additional consideration and mitigation measures. A detailed hydrologic and hydraulic model with a bridge scour analysis will be necessary to further assess the existing and post-removal conditions. Mitigation measures would likely include scour protection, the careful placement of large rock around the bridge abutments.

Riverfront Landownership

SME Surveyor completed online research of the deeds of all abutting properties; results are presented in map form (Appendix E). For most properties, the deed clearly references the edge of water as a parcel boundary. Following dam removal, the water's edge is anticipated to shift as the impoundment narrows to a free-flowing channel. Thus, most of these properties would expand in area towards the river with the laterally shifting edge of normal water.

For a subset of properties, however, a fixed boundary is defined or the water's edge is not referenced in the deed. These properties may not change in area as a result of the narrowing of the wetted width as the impoundment reverts to a free-flowing channel. The one area where the deed does not reference the river's edge is along North Huron River Drive along the R. A. Nicholl's Huron River Hills Plat. Typically, if the intent is to the edge of water, then it would be called out in the description and shown on the plat. However, a certified boundary survey may be necessary to locate the monuments to determine if the lots go to the top of bank or extend down to the water. The bank heights extend over 20 feet above the water at some properties. Many of the property owners have been using the land from the top of bank to the edge of water for some time – staircases, sitting areas, and docks were common, which raises a question about riparian rights. These properties are also identified on the map in Appendix E, which depicts a generalized river channel following dam removal.

Some riverfront landowners may initially perceive the dam removal negatively – with the loss of a lake front view, potential decrease in property values, or conversely, the expansion of property that increases the taxable area. Riverfront landowners may also question whether the land is buildable (it will likely be in the floodplain), and how they can manage the land for their view or continued use. This additional land may at first be perceived as a management burden. Some properties may expand across a municipal boundary, and thus complicate taxation. Project partners will need to continue to engage riverfront landowners with this information through a concerted and well-intentioned listening and outreach effort. In addition, both HRWC and the City of Ypsilanti will need to seek legal guidance on future considerations.

Through these discussions with riverfront landowners it will be important to note that the lake view will transition to a view of a river meandering through a floodplain meadow, which will also be scenic and offer different recreational opportunities that will enhance property values. Sediment erosion will be limited and predictable. Revegetation within the exposed floodplain will be relatively rapid. Referring to similar projects will help allay common fears and build support for the restoration of the river.



It does not appear that any existing properties would be reduced in area by the removal of the dam and reformation of a free-flowing river. It is unclear what obligation, if any, the dam owner has to the upstream property owners with regard to the changing edge of water, and what process the dam owner must follow regarding the change in property lines. Neither the dam owner, nor the HRWC, is interested in acquiring the land that emerges between the existing water's edge and the anticipated river channel. Pending legal guidance pertaining to real estate, it seems reasonable that individual riverfront landowners (whose deeds reference the water's edge) who do not want their properties to expand, can have their deeds redefined to the current boundary. Unclaimed land may revert to the municipality, county, or state.

The prospect of the shifting edge of water and the expansion of most properties does not preclude dam removal but does warrant additional consideration of private property rights and legal obligations of the dam owner.

Conclusion of Dam Removal Feasibility

This feasibility study focused on three critical issues: (i) sediment quantity and quality, (ii) potential infrastructure/utilities impacts, and (iii) riverfront land ownership. Sediment quality was found to be generally within human health and ecological criteria and thus, supportive of the feasibility of dam removal. Sediment quantity, owing to depths much less than the height of the dam, is relatively low and can be addressed with a combination of passive and active approaches. While sediment probing reveals little potential for massive channel downcutting, the existing bridges can likely be protected and preserved in the event of dam removal, although the extent and cost of stabilization and reinforcement is unknown at this point. Finally, although riverfront landowners may gain land, their concerns will need to be addressed with more direct outreach. All three issues warrant additional consideration and follow-up, but this study concludes that these three critical issues support the feasibility of dam removal.

Conceptual Dam Removal Design and Sediment Management Approach

In concept, the design for this dam removal includes the following aspects:

1. Removal of the concrete spillway to the full vertical extent.
2. Retention of some side portion of the spillway only for the purposes of maintaining structural support for the adjacent retaining wall on river right, or the Peninsular Paper Dam building on river left.
3. Preservation of the Peninsular Paper Dam building for eventual repair and reuse.
4. Active management of sediment in the immediate vicinity of the dam.
5. Passive management of sediment in the majority of the impoundment.
6. Placement of excavated impounded sediment along the Conrail Railroad embankment and adjacent area.
7. Creation / stabilization of banks in the vicinity of the dam and Peninsular Paper Dam Park.
8. Active planting and landscaping to extend Peninsular Paper Dam Park.
9. Passive revegetation of large swaths of the impoundment that will revert to floodplain meadow, wetland or ultimately wooded areas.
10. Stabilization of stormwater outfalls from the Railroad embankment, upstream of Peninsular Paper Dam Park, and adjacent to the bridge crossings.
11. Scour protection / structural reinforcement of the Conrail Railroad bridge.
12. Scour protection of the Superior Road bridge.

Extensive experience in completed dam removals strongly indicates that the sediment that is laterally distal from the thalweg, outside of the anticipated edge of the river channel, would not be mobilized and transported downstream in the event of dam removal. Rather, following full removal of the spillway, water levels will drop by

roughly 13 feet (at normal flows), and the majority of impounded sediment will be exposed, and gradually dewater in place. Even without intervention (e.g. grading, stabilization, planting), areas that are not vegetated at the time of removal will be rapidly colonized by herbaceous vegetation, due to the presence of a seed bank in the sediment, and achieve widespread cover within the first growing season. Full cover is often achieved by the end of the second growing season. During this period, sediment at the surface may be susceptible to some erosion by large flood events; however, higher flood flows generally spread out across the new floodplain at shallow depths and low velocities that would not mobilize the majority of impounded sediment. With no intervention, vegetation communities will gradually transition; initially as annual herbaceous vegetation, then perennial vegetation, following a plant succession trajectory from emergent vegetation community to scrub-shrub, and eventually to a forested wetland or floodplain. Active planting can be undertaken to accelerate the establishment of vegetative cover, to infuse the floodplain with desirable plant species and increase plant diversity, or to pre-empt the establishment of non-native invasive species.

While sediment *quality* supports passive sediment management, the large *quantity* of sediment proximal to the dam will likely necessitate some active sediment management near the dam. The larger deposit of sediment at the dam, if released passively following dam removal, would release rapidly potentially overwhelming the downstream reach, accumulating in the channel and burying benthic habitat, temporarily. As such, a hybrid passive/active sediment management approach is recommended and most feasible for this dam removal. This hybrid approach would entail active excavation of in-channel sediment, potentially 7,500 CY, proximal to the dam as part of dam removal construction activity, and onsite relocation/stabilization, and beneficial re-use in the Peninsular Park area. Meanwhile



Figure 1. Artistic rendering of the vision for Peninsular Park with dam removal. (SmithGroup)

the hybrid approach would allow in-channel sediment upstream to transport downstream naturally over time, as the restored channel adjusts in width, depth, and slope. This sediment in upstream reaches is anticipated to transport downstream at a more gradual rate that would likely not overwhelm the downstream reach. Impounded sediment offset from the channel will settle, dewater and revegetate in place, and revert to floodplain meadow or wetland. Areas that do not require active land management should be allowed to transition through plant succession. Areas proximal to Peninsular Park, that will be actively managed for public use, should be landscaped and planted in preparation for the greater vision for the Park.

Vision for Peninsular Park

The impoundment behind Peninsular Dam is the focal point for Peninsular Park, a 7.8-acre park on the north side of the river just upstream from Depot Town and downtown Ypsilanti. With dam removal, the size of Peninsular Park would increase to include the land on the north side of the river that is currently submerged behind the dam. HRWC and its partners have begun to develop a post-dam removal vision to redevelop and revitalize the Park into a vibrant hub of recreation, dining, and community activity (Figures 1 and 2). The former powerhouse, with its distinctive architecture and landmark neon sign, could be redeveloped to provide commercial opportunities such as a riverside restaurant with outdoor dining, a canoe/kayak/bicycle livery or other ventures. HRWC commissioned an

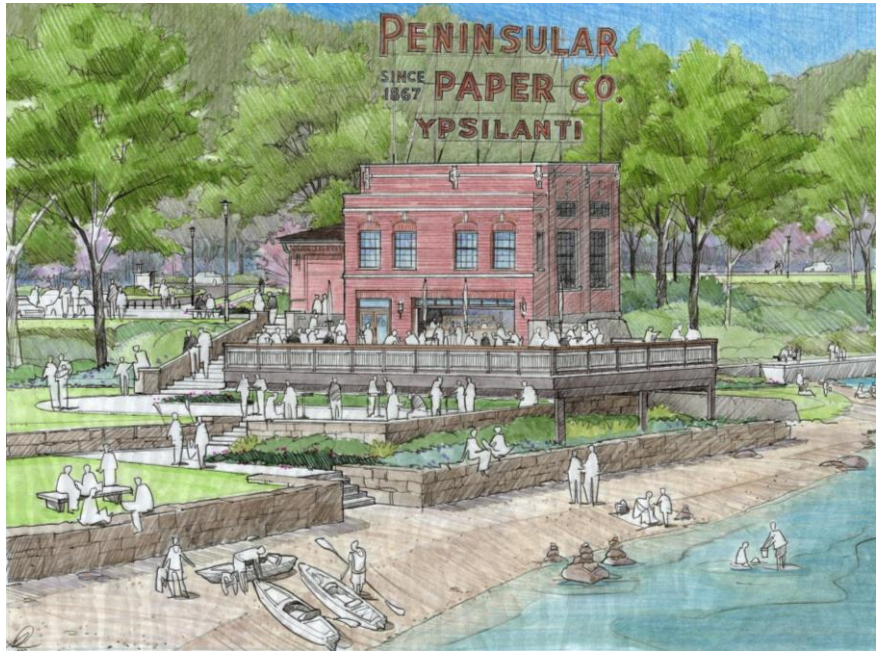


Figure 2. Artistic rendering of the vision for Peninsular Paper Dam Powerhouse with dam removal. (SmithGroup)

artistic rendering, completed by design firm SmithGroup, to illustrate the creation of floodplain re-utilized as public park land, as well as, the preservation and re-use of the iconic powerhouse.

Peninsular Park is located on the Huron River Water Trail (HRWT), a 104-mile long paddling trail extending from Proud Lake in Oakland County to Lake Erie. The dam currently serves as a barrier to canoeists and kayakers paddling on the HRWT; the portage around the dam is challenging and discourages many paddlers from using this stretch of the river. Removing the dam would eliminate this difficult portage and provide a four-mile long, free-flowing paddling experience through Ypsilanti between the Superior Dam and Belleville Lake. Eliminating the portage could attract more paddlers to Ypsilanti, a designated Trail Town offering a variety of shopping, dining, entertainment and cultural experiences on the HRWT.

Concept-Level Dam Removal Construction Cost Estimate

A construction cost estimate is provided (Appendix F) that includes the major dam removal and sediment management steps described above: dam removal and active management of sediment at dam, scour protection and potential reinforcement of Conrail Railroad bridge, and scour protection at Superior Road bridge. Costs are based on lump sum costs and unit costs from similar projects, as well as broad quantity estimates (volume of dam, volume of sediment, volume of imported stone, etc.) that reflect the conceptual level of the dam removal design. Construction costs are best developed from final engineering design plans, as other issues can arise during final engineering design that can increase or decrease costs. Due to the inherent assumptions and uncertainties in the conceptual design, the cost estimate includes a 30% contingency. The concept-level construction cost estimate for dam removal is \$1,734,000. The concept-level construction cost estimate for scour protection and reinforcement at the Railroad Bridge is \$705,000. The concept-level construction cost estimate scour protection at Superior Road Bridge is \$225,000. The cost estimate for dam removal does not include the cost to implement the greater vision of Peninsular Park described above, nor does it include engineering design, permitting, bidding, or construction oversight. A large component of the dam removal cost is the active management of sediment and bank stabilization, which can be adjusted in final



design. A large component of the Railroad Bridge is based on the potential need for structural reinforcement, the need for which is to be determined following additional investigation.

As stated above, a previous cost for repair was estimated at approximately \$659,000 in 2014 which with inflation, would now likely exceed \$750,000. Repairs included work on the principal spillway, abutment walls, auxiliary spillway, and demolition of the powerhouse. Broad estimates for permitting, engineering design services, and construction engineering services are also included. After the needed dam repairs, additional costs are incurred over the long-term for ongoing maintenance, dam inspections every 3 years, as well as updates to the Emergency Action Plan. As long as the dam is in place, the dam owner retains liability.

Dam repair costs are typically incurred by the dam owner. However, due to the significant potential for environmental benefit, a variety of potential funding sources exist for dam removal, usually in the form of grants. Most dam removals are supported by some form of grant money; dam owners rarely carry the sole financial burden due to the broader benefits to the environment and public safety. Several of these sources that are relevant to Peninsular Paper Dam are identified in Appendix G.

PENINSULAR PAPER DAM: DAM REMOVAL ASSESSMENT AND FEASIBILITY REPORT

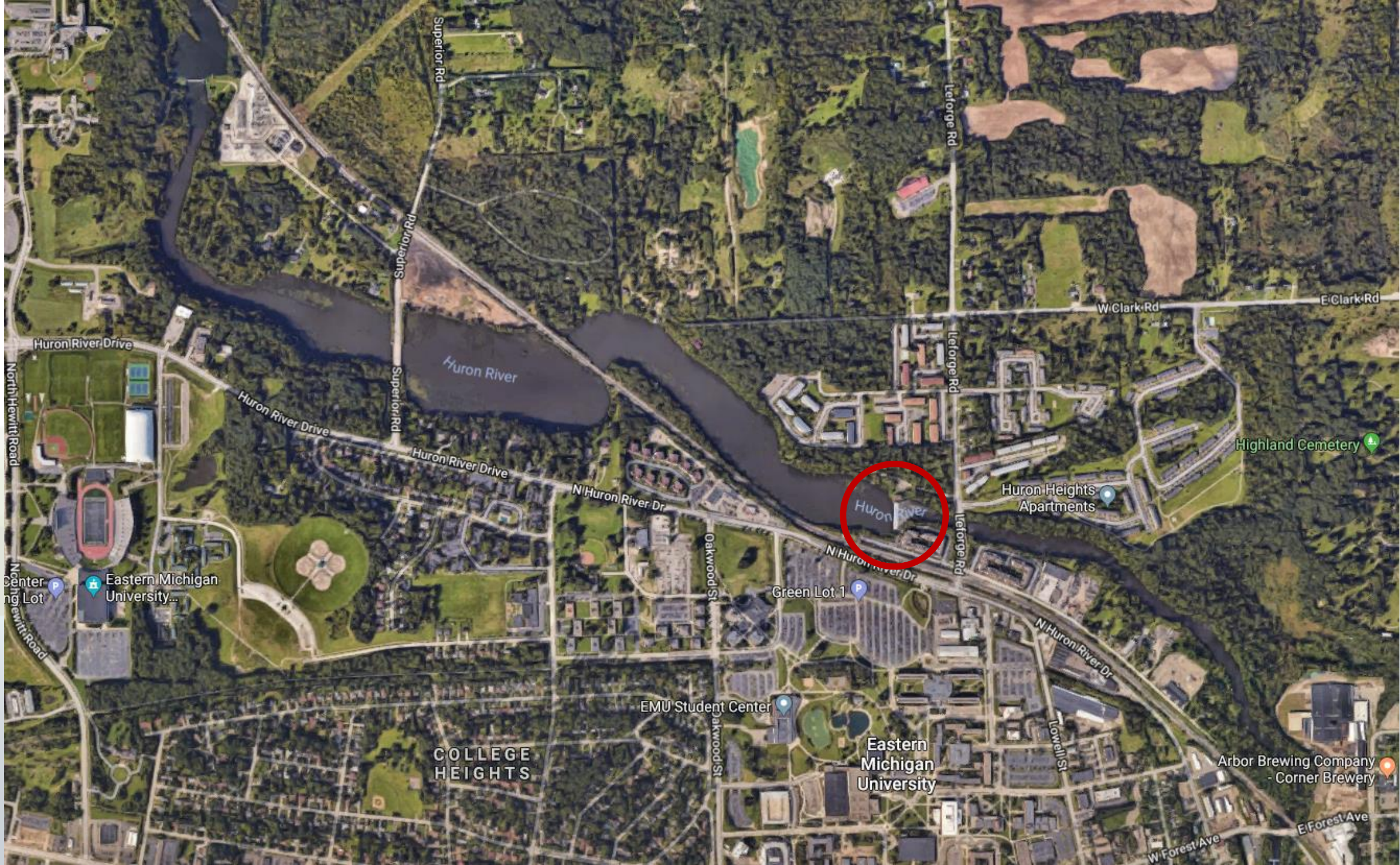
City of Ypsilanti

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

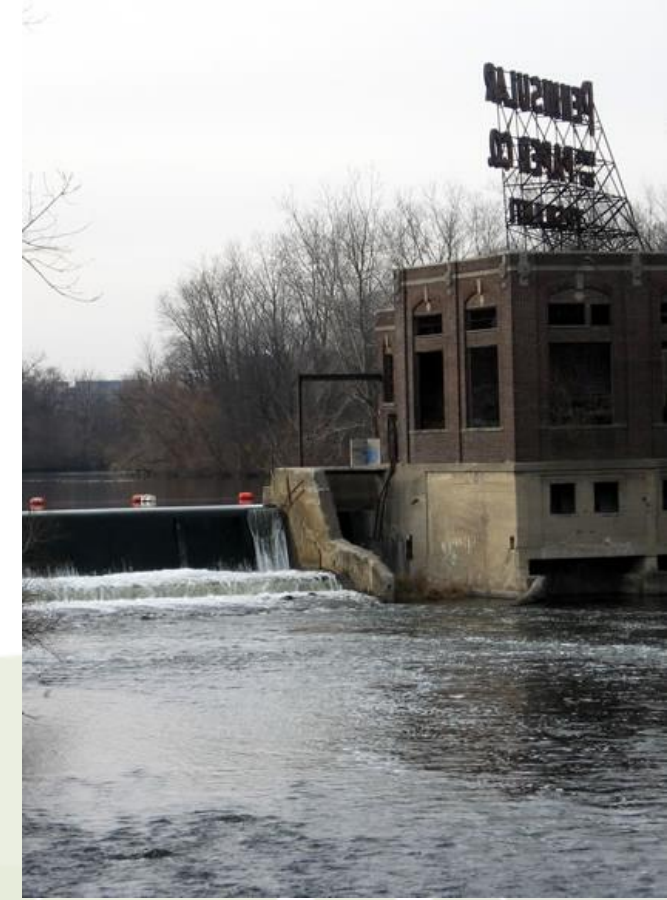


Why Dam Removal Is Being Considered

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

Removing the dam would:

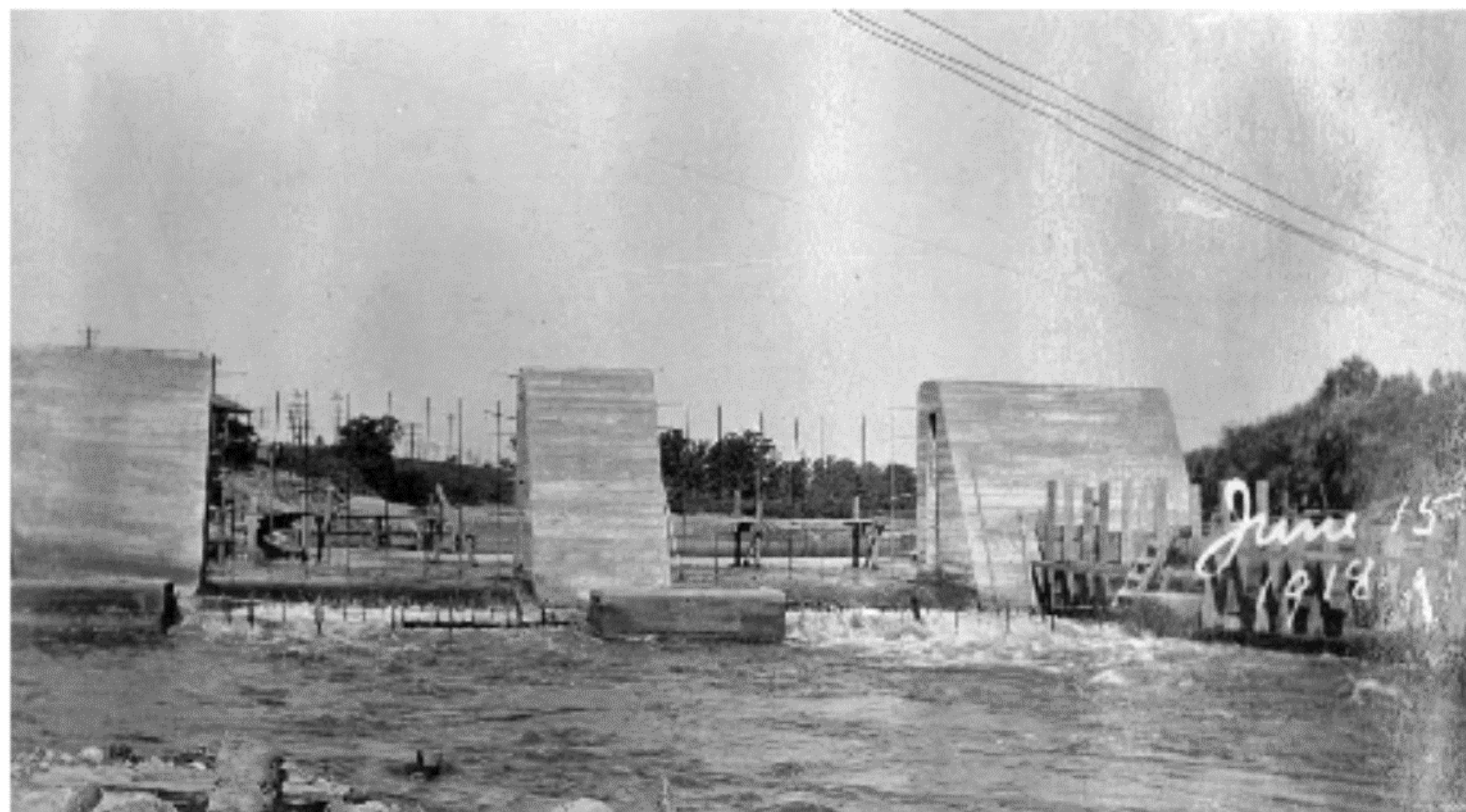
- Eliminate the public safety hazard.
- Deregulate the dam and relieve legal liability to the city.
- Remove city obligations for repair, safety inspections and maintenance
- Improve water quality for this reach of Huron River.
- Restore >1-mile of free-flowing river, associated fishery, with adjacent 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

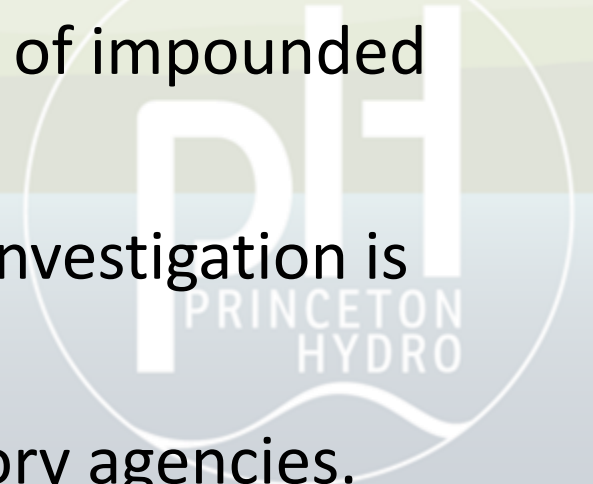


Sediment Analysis

- 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.

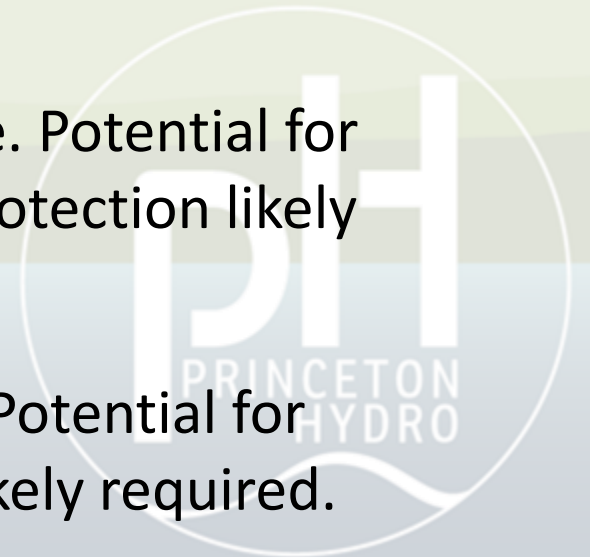


Potential Impacts to Infrastructure and Utilities

Utilities: **No anticipated impacts.**

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

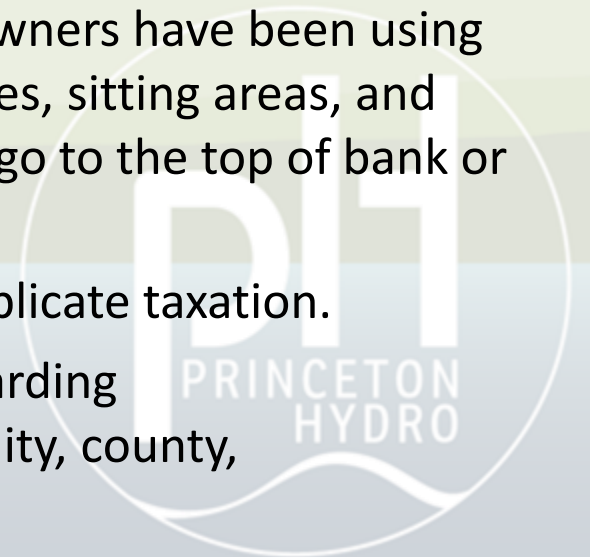
- ***Conrail Railroad Embankment:*** Potential for sediment erosion. Scour protection will be required.
- ***Conrail Railroad Bridge: Built ~1899.*** Current scour under bridge. Potential for increased scour around fortified timber piles. Increased scour protection likely required.
- ***Superior Road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

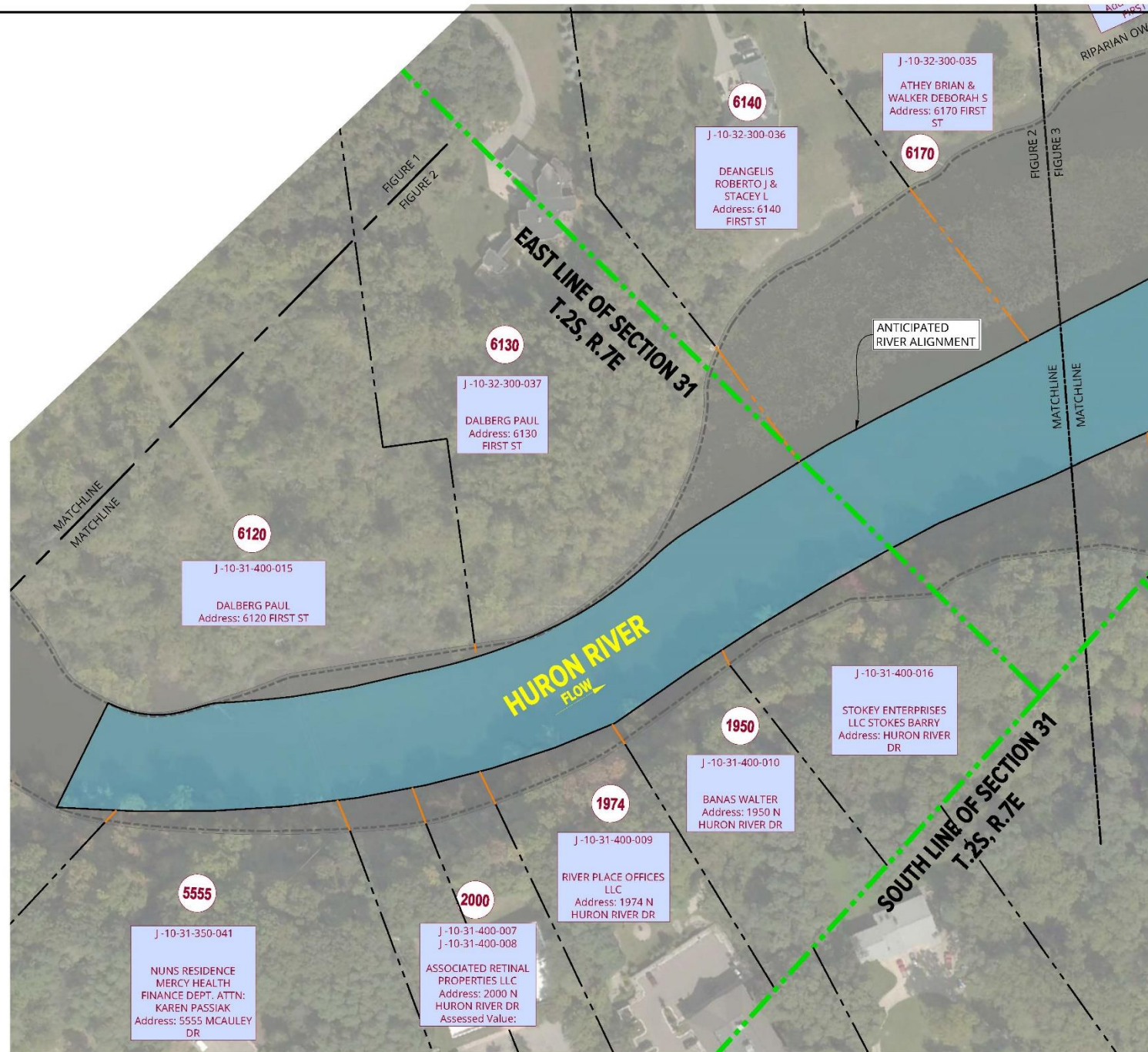


Riverfront Landownership

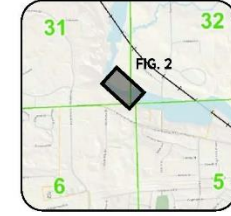
There are many changes that would occur but none preclude feasibility of removal.

- 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 ESTIMATE CALL TO OR ALONG EDGE OF WATER
- SECTION LINE
- 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, T.2S, R.7E
- NO STATEMENT OR REFERENCE TO WATER'S 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.



Orientation
Scale
GRAPHIC SCALE: 1" = 50'

Project
PENINSULAR PAPER DAM

Project Location
**HURON RIVER
YPSILANTI, MI**

Sheet Name
RIPARIAN OWNERSHIP

Surveyor's Seal

REV	REVISION	DATE	BY
01	ANTICIPATED WATERLINE	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

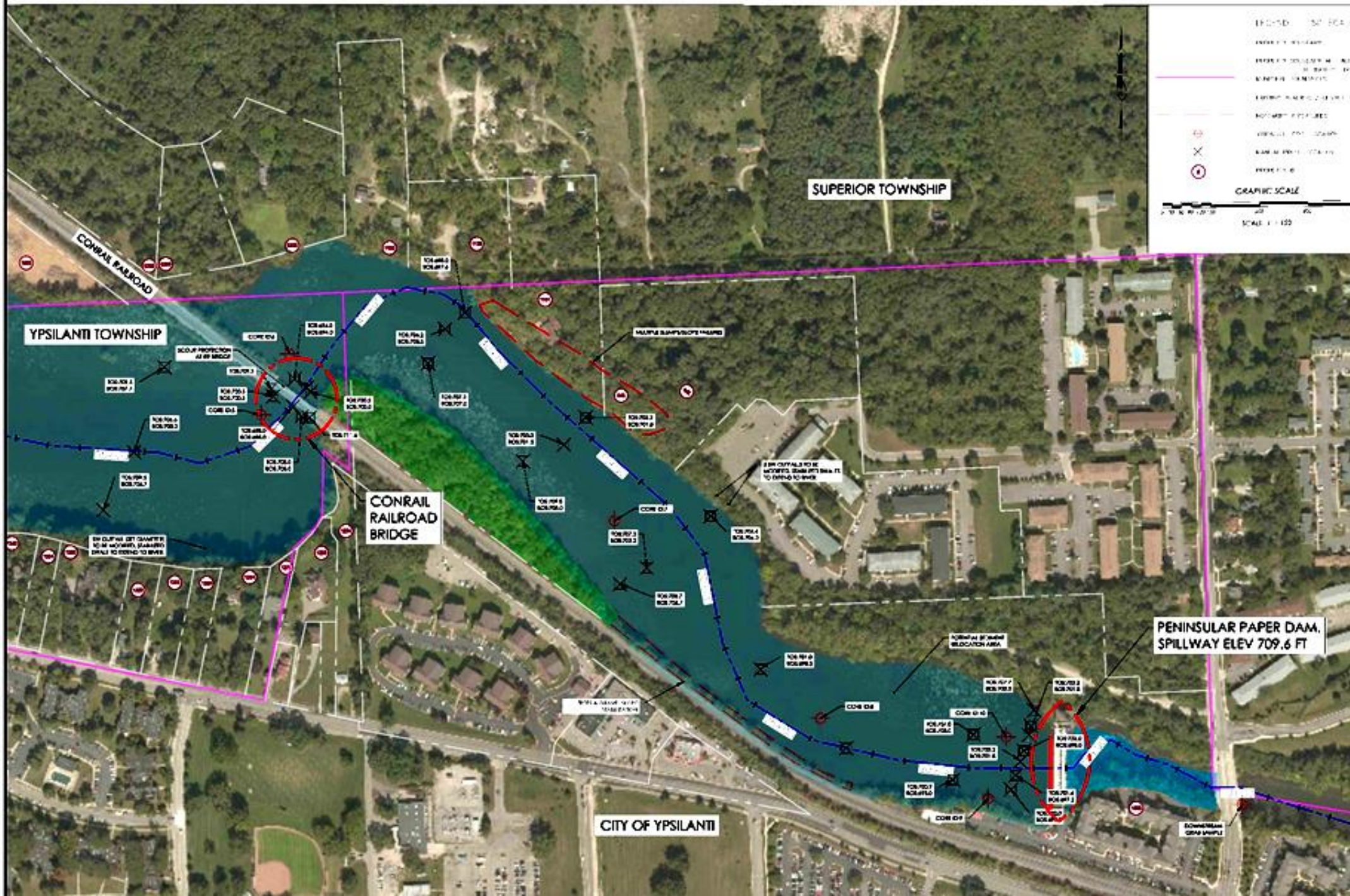
DRAFT

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**

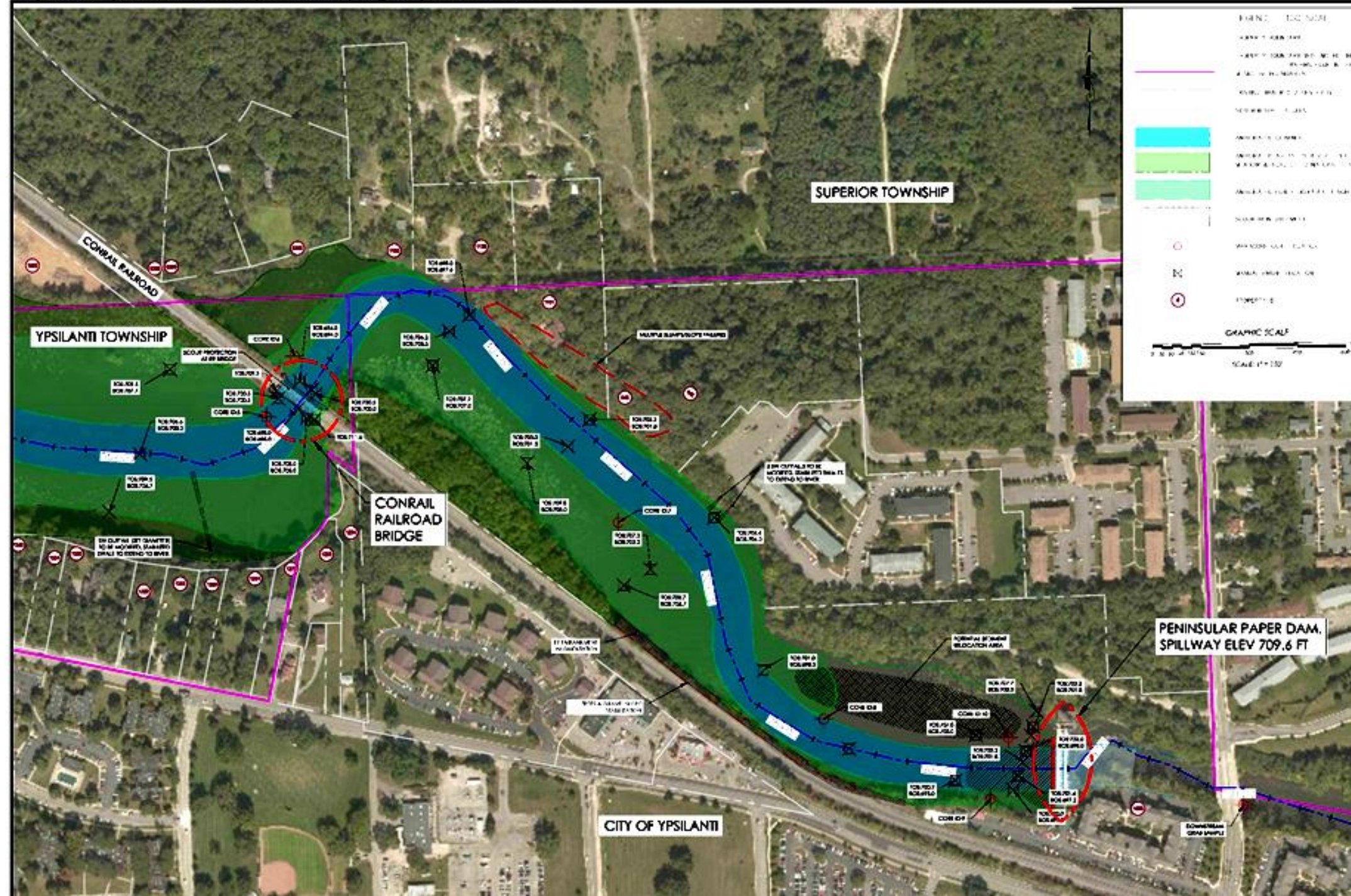




Existing Conditions



Proposed Conditions





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

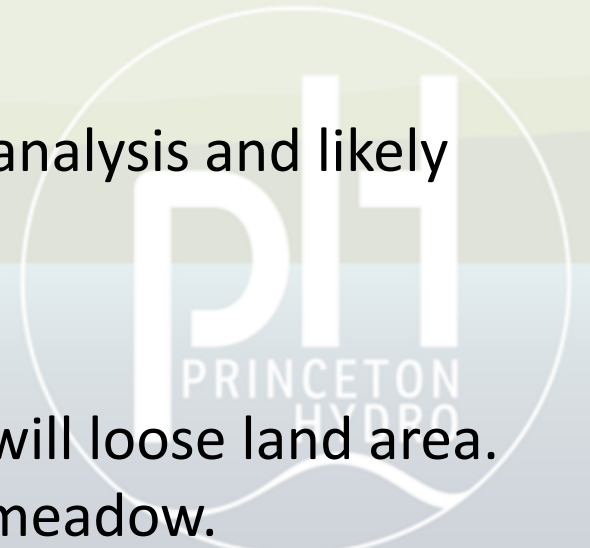
- Quality: Generally within human health and ecological criteria and support the feasibility of dam removal.
- Quantity: Relatively low compared to dam height. Can be addressed with passive and active approaches.

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)

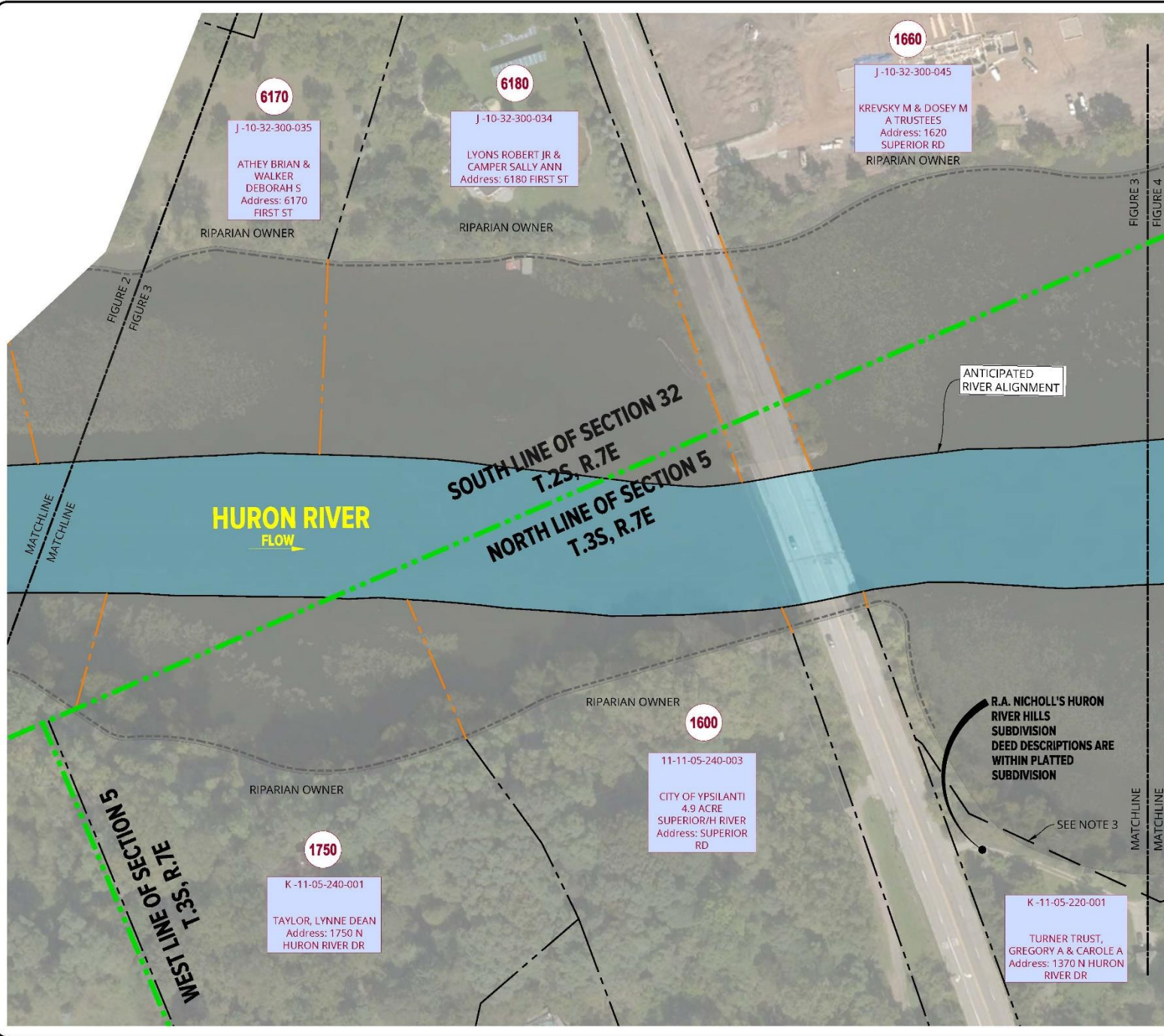


HRWC Discussion of Sustainability Benefits

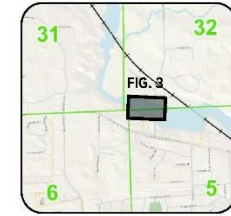
Removal would improve community resilience, provide a sustainable river corridor, and would remove risk of dam failure to Ypsilanti residents.

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



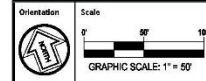
KEY MAP
NOT TO SCALE

LEGEND

- ORIGINAL HURON RIVER LIMITS
- ANTICIPATED HURON RIVER LIMITS
- DEED DESCRIPTION CALL TO CORRELATING 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 EXISTING 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	DESCRIPTION	DATE	BY
01	ANTICIPATED WATERLINE	01-04-2018	FRZ

Date
09-13-18

SME Project No.
079107.00

Project Manager
JAS

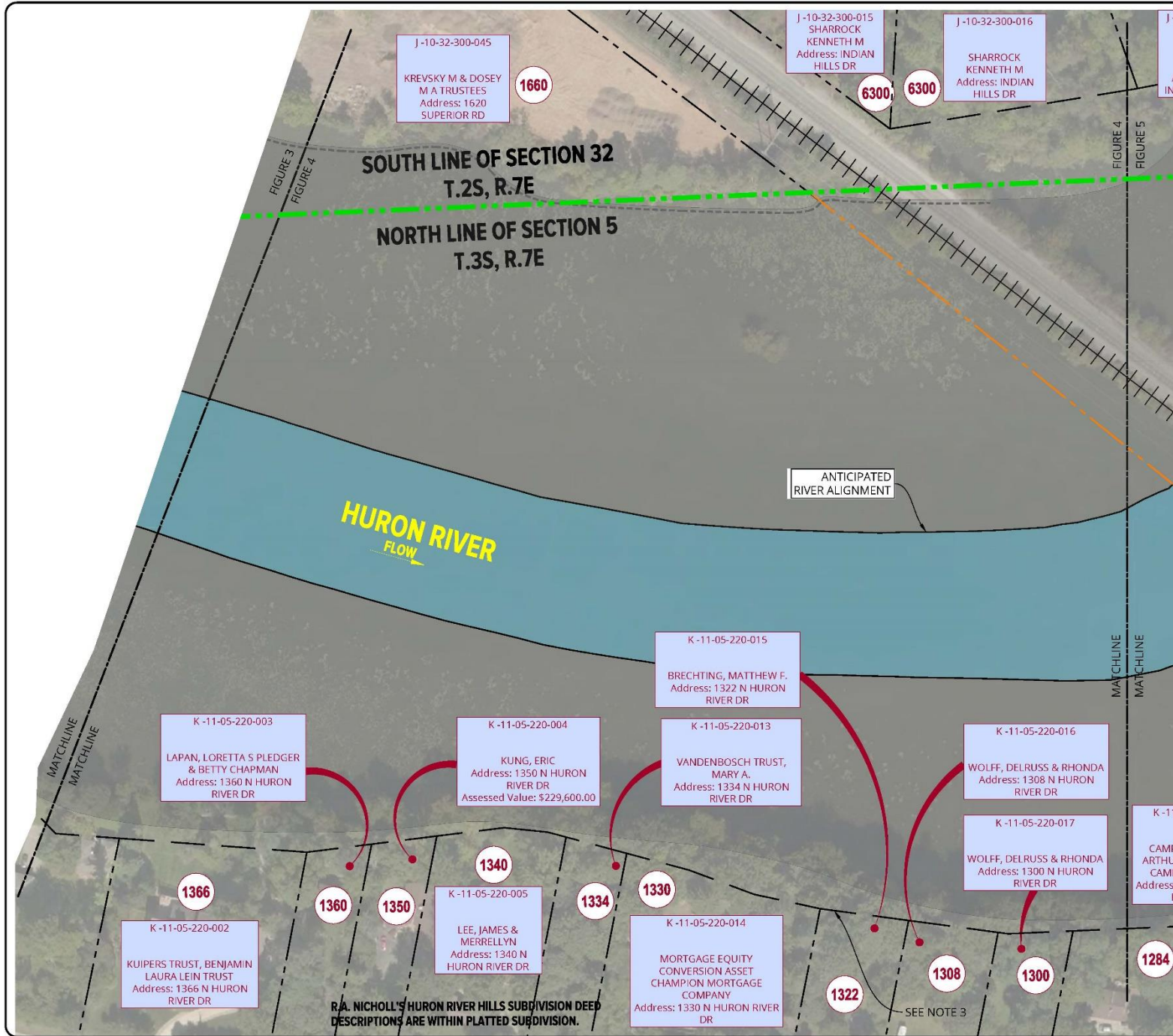
Designer
FRZ

CADD
SRP

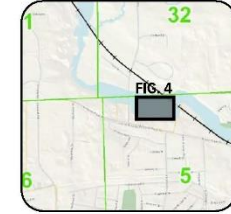
Checked By
FRZ

Sheet No.
FIGURE 3

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LOCATION MAP
NOT TO SCALE



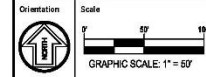
KEY MAP
NOT TO SCALE

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 ALIGNMENT 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
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Date
09-13-18

SME Project No.
079107.00

Project Manager:
JAS

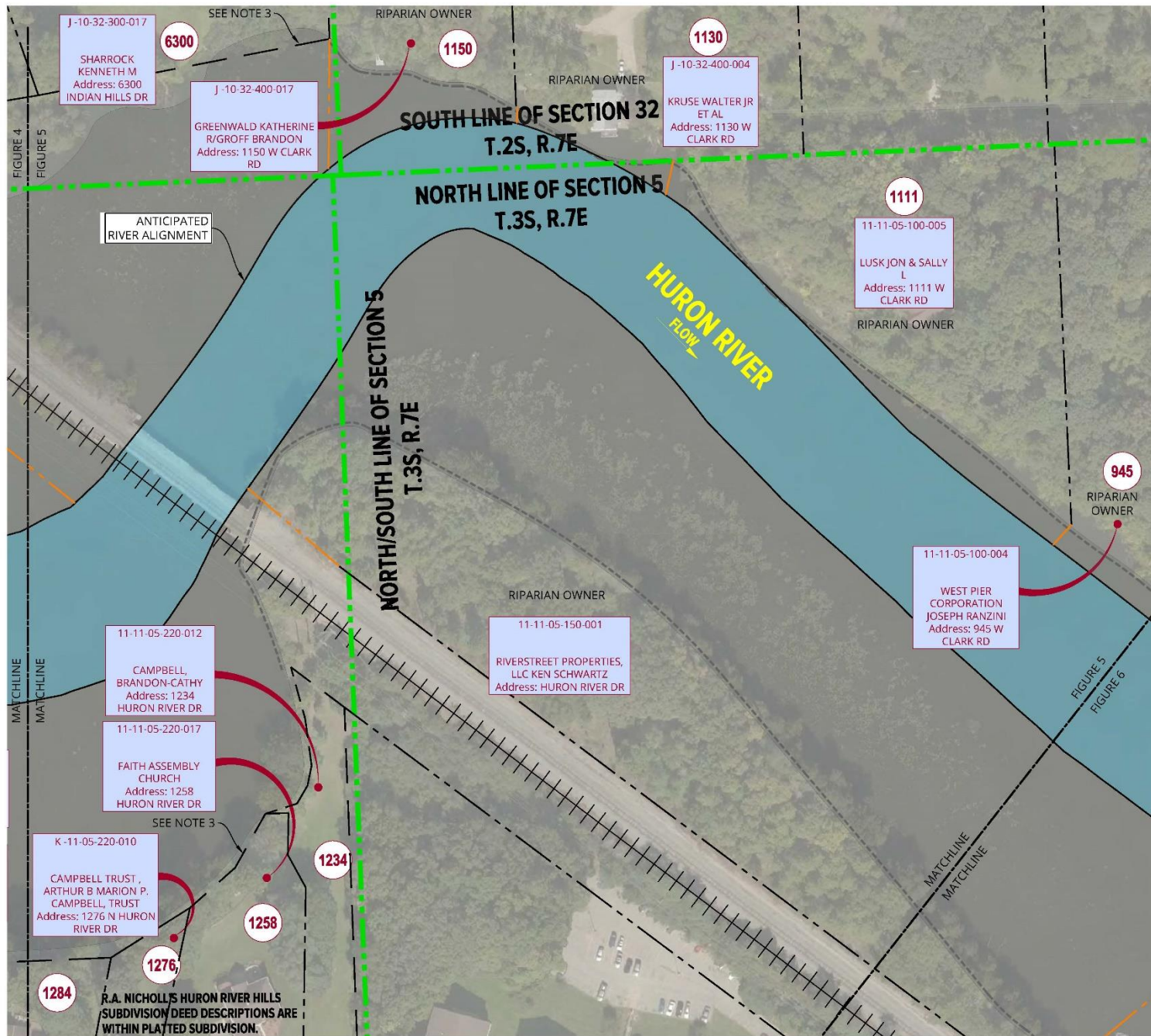
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FRZ

CADD:
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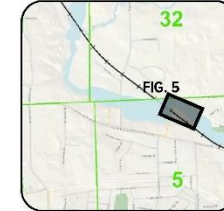
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Sheet No.
FIGURE 4

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LOCATION MAP
NOT TO SCALE



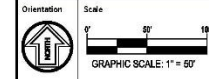
KEY MAP
NOT TO SCALE

LEGEND

- ORIGINAL HURON RIVER LIMITS
- ANTICIPATED HURON RIVER LIMITS
- DEEDS REFERENCE CALL TO OR ALONG EDGE OF WATER
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- PROPERTY LINE
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NOTES

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- NO STATEMENT OR REFERENCE TO WATERS EDGE IN THE RECORDED PLAT OR DEEDS.
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Project
PENINSULAR PAPER DAM

Project Location
**HURON RIVER
YPSILANTI, MI**

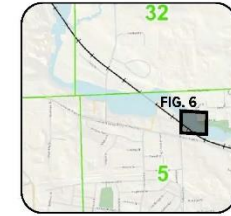
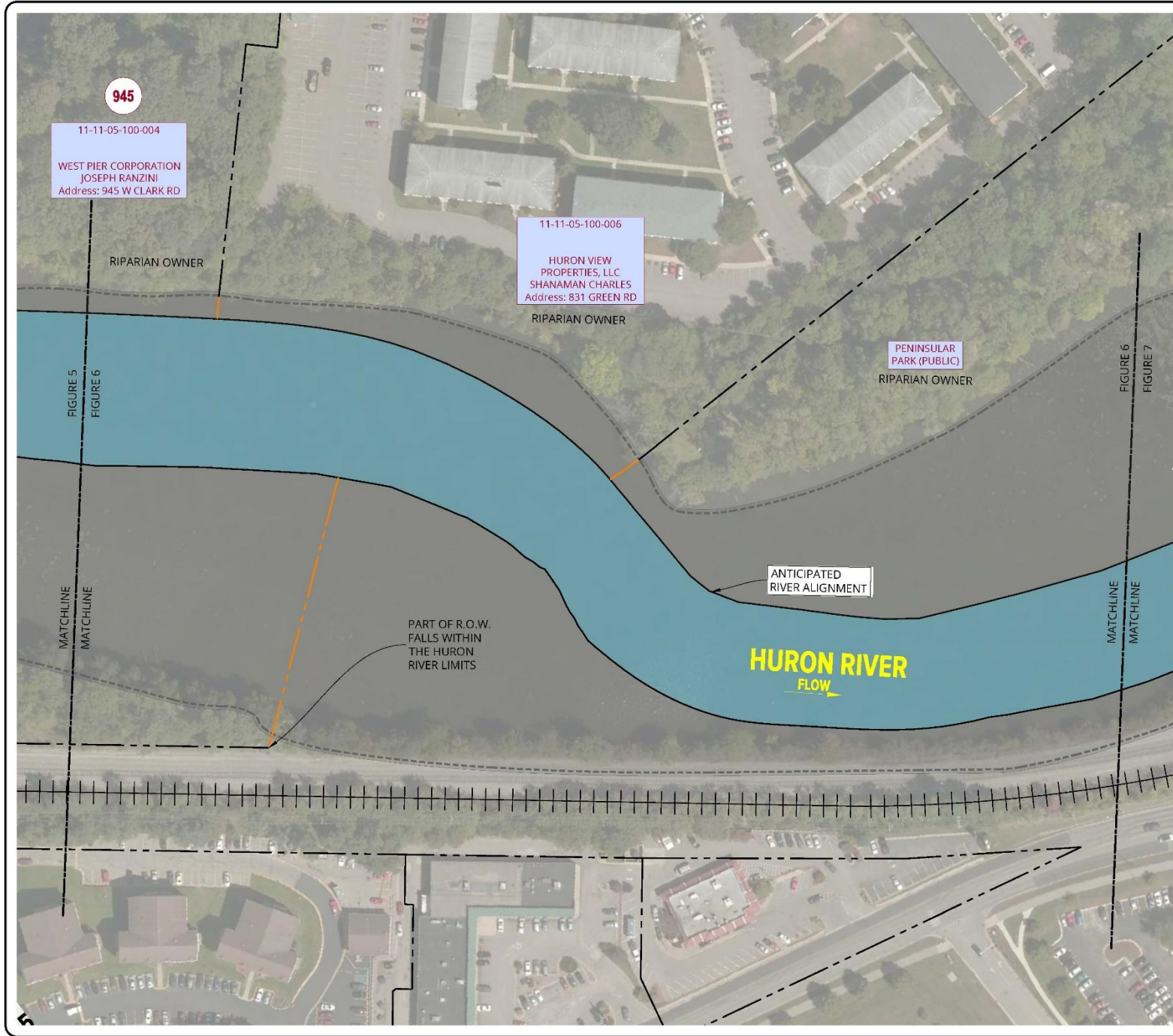
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RIPARIAN OWNERSHIP

Surveyor's Seal

Revisions			
REV	DATE	BY	APP
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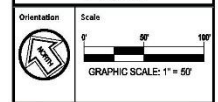
Date: 09-13-18
SME Project No.: 079107.00
Project Manager: JAS
Designer: FRZ
CADD: SRP
Checked By: FRZ
Sheet No.: **FIGURE 5**

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- LEGEND**
- ORIGINAL HURON RIVER LIMITS
 - ANTICIPATED HURON RIVER LIMITS
 - DEED RIGHT-BENCH CALL TO CORNER/EDGE OF WATER
 - SECTION LINE
 - PROPOSED PROPERTY LINE
 - PROPERTY LINE
 - NO REFERENCE TO WATER'S EDGE

- NOTES**
1. THE DEED RIGHT-BENCH CALL TO CORNER/EDGE OF WATER IS DERIVED FROM THE MOST RECENT RECORDED DEED.
 2. SOUTH OF SECTION 34, TOWNSHIP 34N, RANGE 12E.
 3. NO STATEMENT FOR REFERENCE TO WATER'S EDGE IN THE DEED RIGHT-BENCH CALL TO CORNER/EDGE OF WATER.
 4. THE PARCELS ARE EXTENDED TO THE WATER'S EDGE AS SHOWN FOR CONCEPTUAL VIEWING ONLY. THESE PARCELS DO NOT REPRESENT LEGAL BOUNDARIES OR RIPARIAN RIGHTS AND ARE DISPLAYED FOR THEORETICAL PURPOSES.



Project
PENINSULAR PAPER DAM

Project Location
**HURON RIVER
YPSILANTI, MI**

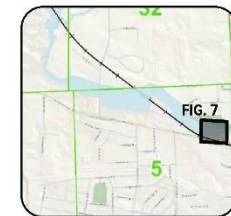
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RIPARIAN OWNERSHIP

Surveyor's Seal

Revisions			
REV	DESCRIPTION	DATE	BY
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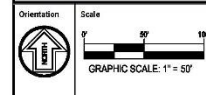
Date	09-13-18
SME Project No.	079107.00
Project Manager:	JAS
Designer:	FRZ
CADD:	SRP
Checked By:	FRZ
Sheet No.	FIGURE 6

DRAFT



- 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 STATEMENT 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.



Project
PENINSULAR PAPER DAM

Project Location
**HURON RIVER
YPSILANTI, MI**

Sheet Name
RIPARIAN OWNERSHIP

Surveyor's Seal

Revisions			
REV	REVISION	DATE	BY
01	ANTICIPATED WATERLINE	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
DRAWN BY: JAS
CHECKED BY: FRZ
CADD: SRP
PROJECT: 079107.00
SHEET: 01 OF 01
SME: 11-11-05-100-012

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)



THE CITY OF YPSILANTI

ENERGY PLAN 2018



CITY OF
YPSILANTI

Home of Eastern Michigan University

November 2018

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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.



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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.

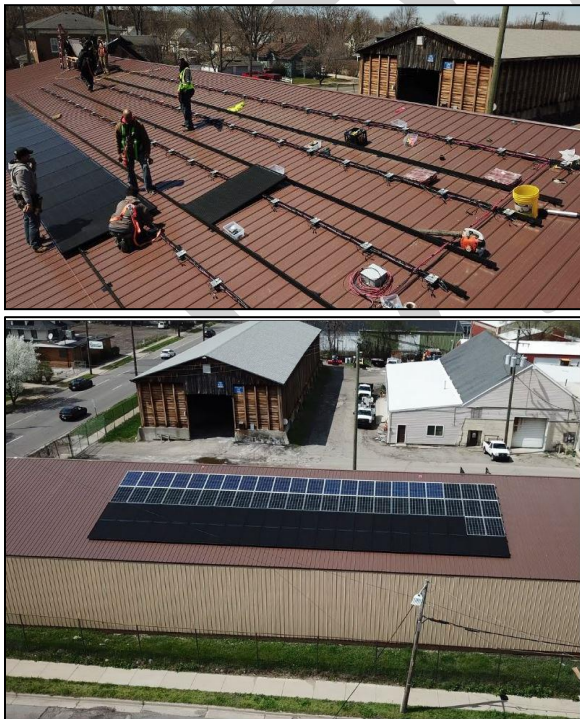


Figure 1. Solar array Installation on City of Ypsilanti Department of Public Service carport. Source: solarypsi.org



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		✓				

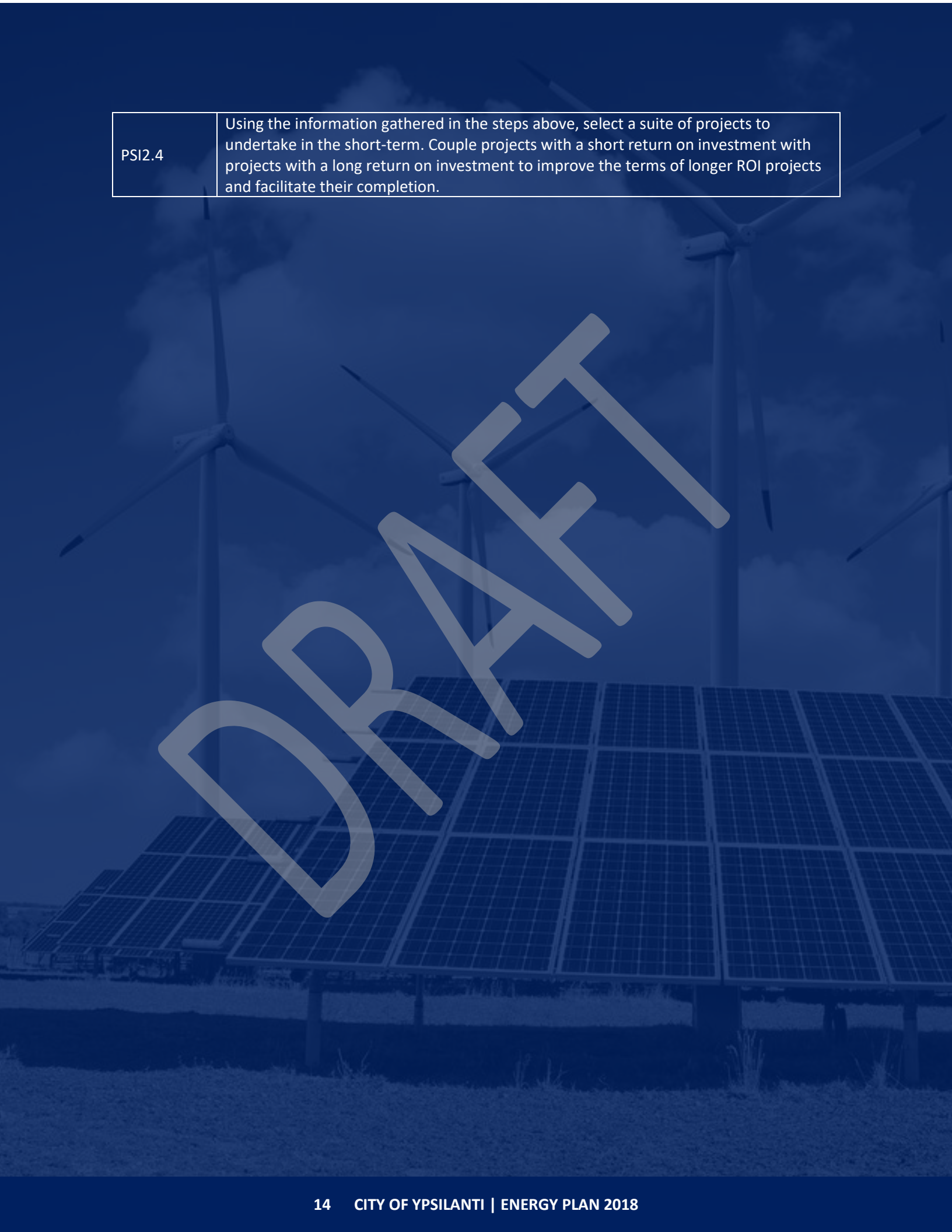
West Cross St.	Streetscaping on West Cross used LED fixtures in new streetlights	2011	Unknown		✓				
City Hall	2.5 kW photovoltaic solar array with help of Solar Ypsi initiative (12 Sanyo HIT 205 watt). <i>Historic District Commission developed explicit guidelines to streamline appropriate installation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

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.

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.

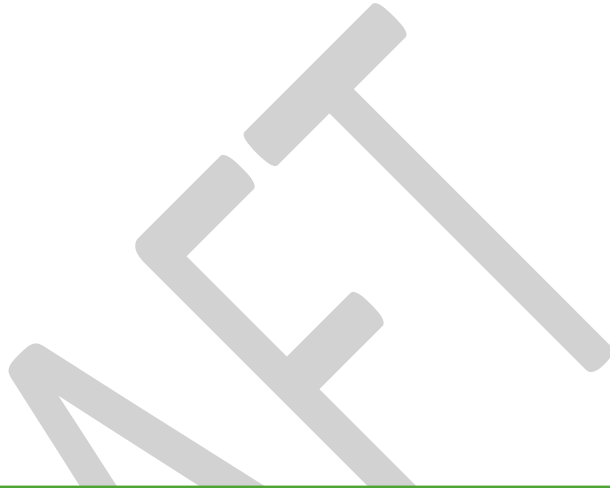
The Energy Star Portfolio Manager tool is recommended for tracking. This tool will enable your energy manager to compare, at a glance, each building’s performance against similar buildings in your region as well as with one another.

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).		
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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
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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
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DATA

ACTION	TIME FRAME	LEAD DEPARTMENT
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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
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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
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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 Energy Plan

Brittany Turner
EcoWorks
January 14th, 2019



EcoWorks

Org-Wide Impacts



building energy solutions

- 50,000 individuals served
- 35 government partners
- 300 business partners
- 200 green jobs supported
- \$30M in energy savings





building energy solutions

OUR PROGRAMS



Residential Education

Residential Education programs empower people to take control of their utility bills to save energy, water, and money. EcoWorks' trainings do not just educate – they provide the knowledge, motivation, and tools for attendees to take action and lower their utility bills.

[LEARN MORE](#)

CONTACT US:

22400 W. Seven Mile Rd.
Detroit, Michigan 48219
Tel: 313.894.1030 ext 122

Alicia Miller
Residential Education Manager
amiller@ecoworksdetroit.org



Youth Energy Squad

Youth Energy Squad grows the next generation of green leaders by engaging youth from diverse backgrounds in hands-on service learning projects that make their homes, schools and communities more sustainable.

[LEARN MORE](#)

CONTACT US:

22400 W. Seven Mile Rd.
Detroit, Michigan 48219
Tel: 248.228.7595

Bryan Lewis
Program Director
bryan@youthenergysquad.org



Strategic Community Initiatives

Strategic Community Initiatives (SCI) serves as a catalyst for green initiatives across Michigan by working with local government, neighborhoods and businesses to build partnerships and provide expertise that bring solutions to life.

[LEARN MORE](#)

CONTACT US:

22400 W. Seven Mile Rd.
Detroit, Michigan 48219
Tel: 248.956.1150

Briana DuBose
Director
bdubose@ecoworksdetroit.org



EcoWorks

Strategic Community Initiatives



EcoWorks' Services

Technical Assistance

- Facilitate stakeholder meetings and training
- Utility bill optimization and benchmarking
- Energy efficiency and renewable energy consultations
- Energy management
- Facility assessments and audits
- Professional development for energy managers and staff

Energy Planning

- Integrate energy goals and programs into broader development plans
- Prioritize energy projects according to organizational goals
- Identify sustainable financing methods for energy projects

Project Management

- Owner's representation
- QA/QC and project evaluation
- RFP development
- Start-to-finish oversight
- Financing recommendations
- Impartial contract review





THE CITY OF YPSILANTI

ENERGY PLAN 2018



CITY OF
YPSILANTI

Home of Eastern Michigan University

November 2018



City of Ypsilanti Energy Plan Outline



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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

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.

ONGOING: Actions that require continuous monitoring or effort.

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)



Action Plan

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
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- Designed for **integration** with other **planning efforts**
- Establishes clear pathway to meeting **SMART** energy goals
 - Strategic
 - Measurable
 - Attainable
 - Realistic
 - Time Bound



Table B: Summary of Implemented Clean Energy Actions

Table B: Summary of Implemented Clean Energy Actions									
Facility Name	Projects Completed								
	Project Description	Date Completed	Fund Source	Retro-Commissi- oning	Lighting	Building Envelope	Supplement- al 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	All DTE owned streetlights	2014	Special		✓				



Table C: Project Action Plan Summary

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

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 truck port by year 2018.



Opportunities and Next Steps

- **Benchmarking**
 - Consistently benchmark natural gas and electricity bills
- **Hire an Energy Manager**
 - Either as an added part of a current employee's job description,
 - as a new position within the government,
 - or as a third-party contract
- **Energy Plan & Sustainability Plan**
 - Officially adopt energy plan
 - Create and adopt sustainability plan
- **Sustainability Commission**
 - Include implementation of this action plan into scope of work

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 numbers, meter numbers, square footage, year built, number of computers etc.	NOW EM



Sustainability Commission Tasks

PROJECT SELECTION AND IMPLEMENTATION

ACTION	TIME FRAME	LEAD DEPARTMENT
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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

STAFFING

ACTION	TIME FRAME	LEAD DEPARTMENT
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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



Sustainability Commission Tasks

POLICIES AND PROCEDURES		
ACTION	TIME FRAME	LEAD DEPARTMENT

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

PP1.9	Create and adopt a Sustainability Plan.	1-2 YEARS	SC
PP1.13	Consider development of a clean vehicle fleet plan.	1-2 YEARS	SC

COMMUNICATION		
ACTION	TIME FRAME	LEAD DEPARTMENT

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

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
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Additional Content

PROJECT SELECTION AND IMPLEMENTATION			
ACTION		TIME FRAME	LEAD DEPARTMENT
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).		

Get in touch!

Brittany Turner

EcoWorks, Strategic Community Initiatives

Energy Analyst

C: 313-647-8816

bturner@ecoworksdetroit.org



Action Minutes

City of Ypsilanti Sustainability Commission

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

Monday, December 10, 2018 – 7:00 p.m.

I. CALL TO ORDER: 7:01pm

II. ROLL CALL:

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

Also Present: Nancy Hare-Dickerson, Commission Secretary

III. AGENDA APPROVAL:

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

- 1. Remove IV. Presentation D. – “Ann Arbor’s Urban & Community Forest Management Plan” due to Commissioner McKee’s absence, at the request of Commissioner Michalowski;**
- 2. Move IV. Presentation C – “Ypsilanti’s Climate Action Plan with Commissioner Zeuner to IV. Presentation D, at the request of Commissioner Michalowski;**
- 3. Add as IV. Presentation C - “Sustainability Plan Advisor Proposal” Discussion, at the request of CED Director Joe Meyers.**

Vote: Unanimous

Motion: Carried

IV. PRESENTATIONS:

- A. Recycle Ann Arbor Recycle Drop Off Services – with Bryan Weinert and Steve Pratt**
- B. Washtenaw County Solid Waste Program – with specialists Jon Tulman and Noelle Bowman on behalf of Washtenaw County Public Works**

- C. Sustainability Plan Advisor Proposal Discussion – with Ypsilanti CED Director Joe Meyers
- D. Ypsilanti's Climate Action Plan – with Commissioner Zeuner

V. INTRODUCTIONS:

- A. Commissioner Katy Greenwald
- B. Commissioner Christian Cannon

VI. AUDIENCE PARTICIPATION

VII. CONSENT AGENDA

- A. Approval of October 9, 2018 Minutes
- B. Approval of 2019 Sustainability Commission Meeting Schedule

Bayha (Second Zeuner) moved to approve the Consent Agenda as follows:

Approval of the October 9, 2018 Minutes and the 2019 Sustainability Commission Meeting Schedule as submitted.

Vote: Unanimous

Motion: Carried

VIII. RESOLUTIONS/MOTIONS/DISCUSSIONS

- A. Climate Action Plan Discussion

IX. LIAISON REPORTS

- A. Sustainability Plan Subcommittee
- B. MGC Challenge Subcommittee
- C. Outreach Subcommittee
- D. Master Plan: Housing Affordability & Access Subcommittee
- E. EMU Sustainability Commission

X. COMMUNICATIONS

- A. Peninsular Dam Status Update
- B. Recycle Program Update

XI. AUDIENCE PARTICIPATION

XII. PROPOSED BUSINESS

XIII. NEXT MEETING DATE:

Monday, January 14, 2019

XIV. ADJOURNMENT: 9:39pm

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

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, December 10, 2018 – 7:00 p.m.

I. CALL TO ORDER: 7:01pm

II. ROLL CALL:

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

Also Present: Nancy Hare-Dickerson, Commission Secretary

III. AGENDA APPROVAL:

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

- 1. Remove IV. Presentation D. – “Ann Arbor’s Urban & Community Forest Management Plan” due to Commissioner McKee’s absence, at the request of Commissioner Michalowski;**
- 2. Move IV. Presentation C – “Ypsilanti’s Climate Action Plan with Commissioner Zeuner to IV. Presentation D, at the request of Commissioner Michalowski;**
- 3. Add as IV. Presentation C - “Sustainability Plan Advisor Proposal” Discussion, at the request of CED Director Joe Meyers.**

Vote: Unanimous

Motion: Carried

IV. PRESENTATIONS: [Presented after VII. Consent Agenda]

- A. Recycle Ann Arbor Recycle Drop Off Services – with Bryan Weinert and Steve Pratt**

- B. Washtenaw County Solid Waste Program – with specialists Jon Tulman and Noelle Bowman on behalf of Washtenaw County Public Works
- C. Sustainability Plan Advisor Proposal Discussion – with Ypsilanti CED Director Joe Meyers
- D. Ypsilanti's Climate Action Plan – with Commissioner Zeuner

V. INTRODUCTIONS:

- A. Commissioner Katy Greenwald – Associate professor at Eastern Michigan University in biology.
- B. Commissioner Christian Cannon – Mechanical engineering student at the University of Michigan in his senior year.

Both commissioners provided an overview of their work, study and interests.

VI. AUDIENCE PARTICIPATION – None

VII. CONSENT AGENDA

- A. Approval of October 9, 2018 Minutes
- B. Approval of 2019 Sustainability Commission Meeting Schedule

Bayha (Second Zeuner) moved to approve the Consent Agenda as follows:

Approval of the October 9, 2018 Minutes and the 2019 Sustainability Commission Meeting Schedule as submitted.

Vote: Unanimous

Motion: Carried

VIII. PRESENTATIONS *[From IV.]*

- A. Recycle Ann Arbor Recycling Drop Off Services – with Bryan Weinert and Steve Pratt

Bryan Weinert, Director of Strategy at Recycle Ann Arbor introduced Site Manager Steve Pratt and then presented an overview of Recycle Ann Arbor, outlining the residential, commercial and educational services that Recycle Ann Arbor provides.

Steve Pratt, Site Manager at the Ellsworth Road Drop Off Station outlined the new City of Ypsilanti voucher program that is in place with Recycle Ann Arbor and detailed the types of recycling materials that are accepted. Mr. Pratt indicated that a detailed list of acceptable and unacceptable materials, as well as the different service offerings can be located on the Recycle Ann Arbor and Ypsilanti City website.

Also discussed, in response to commissioner queries and comments:

1. Additional household, yard, electronic and miscellaneous items can be dropped off for a fee;
2. Items such as thermometers with mercury, fire extinguishers, mixed chemical solvents, gas oil-based paint and stains would need to be taken to the hazardous waste location;
3. Residents receive a one-time \$30 coupon with their voucher to help discount supplemental materials that require additional cost;
4. Commercial recycling is also being dropped off; i.e., bulk cardboard;
5. The number of residents who use the service is provided on the Recycle Ann Arbor monthly invoice that is sent to the City.

CED Director Joe Meyers added that the City tracks the resident vouchers that are issued, broken down by ward, which will help the City measure how well the program is working and if adjustments are needed. Mr. Meyers stated that 250 vouchers have currently been given out, with 52% in Ward 2, 34% in Ward 3 and 14% in Ward 1.

In response to commissioner queries and comments, Mr. Meyers also indicated:

1. The City continues to give out passes for residents to take yard waste to the Ypsilanti Township Compost Center.
2. Recyclables picked up by City DPS employees go to Chelsea.
3. The Recycle Ann Arbor service is for residents who used to take their recyclables to the former City Drop Off Center.
4. DPS employees who worked at the former City Drop Off Center were placed in to other service with no layoffs occurring.

Commissioner Michalowski asked that Recycle Ann Arbor provide an update in approximately six months on how the program is going.

B. Washtenaw County Solid Waste Program – with specialists Jon Tulman and Noelle Bowman on behalf of Washtenaw County Public Works

Solid Waste Specialist Jon Tulman introduced Solid Waste Specialist Noelle Bowman, Public Works Manager Theo Eggermont and Water Resources Commissioner Evan Pratt.

Mr. Tulman stated that their mission is to work and protect surface water in the environment to promote long-term environmental and economic sustainability of the county. He then provided an overview of the programs and services provided to Washtenaw County residents, including discussion of the Community Clean Up Days and School Recycling programs.

Solid Waste Specialist Noelle Bowman discussed the following programs:

1. The Master Composter Certification Program - a comprehensive compost education course offered annually in the fall.
2. The Waste Knot Environmental Excellence Program which seeks to reward and recognize businesses that are voluntarily committed to waste reduction and recycling, with technical support also being offered to help businesses meet their waste reduction and recycling goals. Ms. Bowman shared that some of the local Ypsilanti City partners are the Ypsi Freighthouse, High Scope Educational Research Foundation, Growing Hope, the Ypsilanti Food Co-op, Materials Unlimited and Data Optics.
3. The Zero Waste Washtenaw Program - a community program which partners with event organizers and groups to provide the resources and tool kit to help them reach their zero-waste goal.

In response to commissioner queries and comments, Ms. Bowman indicated the following:

1. The Master Composter Certification Program is a popular program with an average class size of 20-25 enrollees each fall.
2. The Environmental Excellence Partnership Program (E2P2) is less of a certification and more of a partner membership. Commissioner Zeuner discussed following up with Ms. Bowman on possible ways the process could be helpful to the Commission.
3. Her willingness to work with the Commission to help in implementing the Zero Waste Program. Commissioners Foley and Michalowski will follow up with her.

Commissioner Greenwald, as coordinator for the EMU Environmental Science and Society Program, offered that EMU students looking into internships in environmentally relevant fields may be interested in becoming involved.

In response to commissioner queries and comments, Mr. Tulman indicated the following:

1. Fee-for-service suggestions (churches/businesses) for residents without a personal vehicle wanting to dispose of hazardous waste items.
2. That there are several different recycling and disposal streams for collected materials – some can be reused, some are recycled, most flammables are captured and burned for energy recovery.
3. Vendors are questioned and vetted on where their collected materials are being taken.

In response to commissioner query, Water Resources Commissioner Pratt addressed the concern of leaves and twigs covering storm drains and the problems it can cause. Informational brochures are available through the Water Resources office which could be shared with City residents.

C. Sustainability Plan Advisor Proposal Discussion – with Ypsilanti CED Director Joe Meyers

CED Director Meyers indicated that City Council has allocated \$15,000 for the creation of a sustainability plan for the city. He outlined the four consultant proposals that were received. Commissioners provided input and questions which will be shared and discussed with the consultants and Council.

D. Ypsilanti's Climate Action Plan – with Commissioner Zeuner

Commissioner Zeuner provided a presentation based on his review of the Climate Action Plan, outlining the pros of the Plan and discussing suggestions for improvement with the sustainability plan - such as the inclusion of outreach to south side neighborhoods, addressing resilience, social vulnerability, housing affordability and access, as well as adaptation to address the impacts from climate change that will happen and that are happening.

IX. AUDIENCE PARTICIPATION

Lisa Voelker, Cross St.: overviewed her work with the Southeast Michigan Stewardship Coalition and expressed her desire to discuss with interested commissioners how students and teachers could play a role in answering some of the ecological needs that the City has.

Amber Fellows, Ward 3: expressed support for the idea of adaptation as far as its short-term impact in communities like Ypsilanti and that housing issues need to be part of the climate action plan.

Desirae Simmons, Ward 3: expressed her interest in the Zero Waste Washtenaw program – the scale of events that are done, the process for hosting an event and if there are ways to make that information more public. She also discussed a Housing Affordability and Accessibility survey being circulated and asked the Commission for distribution assistance. Commissioner Michalowski indicated the Commission could help distribute the survey through Facebook and its mailing list.

X. RESOLUTIONS/MOTIONS/DISCUSSIONS

A. Climate Action Plan Discussion

Commissioner Michalowski asked commissioners for their questions/thoughts from their review of the Climate Action Plan and/or comments regarding Commissioner Zeuner's presentation.

Feedback from commissioners, as follows:

1. Appreciation for Commissioner Zeuner's presentation;

2. Housing/rental data updates are needed in order to address housing affordability and access issues;
3. Outreach information is needed from the south side area;
4. Include working with Dave Strenski in the sustainability plan (advocating for more community solar over DTE type utility solar);
5. Information would be helpful regarding green roof advantages/solar advantages – mutually exclusive or use of both.

Commissioner Michalowski asked the committee to continue to review the Climate Action Plan and offer any additional input.

XI. LIAISON REPORTS

A. Sustainability Plan Subcommittee

Commissioner Michalowski asked for any thoughts/comments about the proposal he previously sent out.

Commissioner Zeuner indicated he would like to see an itemized budget.

Commissioner Zeuner acknowledged not being able to go forward with doing a master's project with the University of Michigan due to difficulty completing necessary requirements before the deadline.

Commissioner Michalowski encouraged further conversation of how to wrap the needs of the Commission into an internship project.

B. MGC Challenge Subcommittee

Commissioner Michalowski indicated that Commissioner McKee was planning to present an example of one of the goals and that Commissioner Heine has been working on an inventory of the MGC metrics.

Commissioner Heine stated that some DTE data was received which she will have to break down. Commissioner Zeuner offered to provide additional assistance.

C. Outreach Subcommittee

Commissioner Bayha indicated her intention to begin work on the Earth Day Ypsi event right after the New Year, with a plan to also contact Zero Waste Washtenaw for their assistance.

Commissioner Foley indicated his intention to continue with Zero Waste planning for the next upcoming Parkridge event.

Commissioner Michalowski indicated he will continue to reach out to the Heritage Festival and the First Friday events.

There was also discussion about Zero Waste outreach for possible inclusion of the Beer Fest and Elvis Fest events.

Commissioner Foley discussed his intention to coordinate a community outreach-sharing, in a Town Hall forum, of Commissioner Drennen's "Climate Reality Project" presentation and Commissioner Zeuner's "Ypsilanti's Climate Action Plan" presentation.

- D. Master Plan: Housing Affordability & Access Subcommittee
Commissioner Foley indicated his intention to provide a presentation of the housing survey data at the next meeting.
- E. EMU Sustainability Commission
Commissioner Greenwald shared that the commission is now staffed with a diverse cross section of people and that they also have a website and Facebook page set up with information on some of their immediate and long-term goals.

XII. COMMUNICATIONS

- A. Peninsular Dam Status Update
Commissioner Michalowski asked commissioners to review the report and asked for a volunteer to put together a brief statement as to the ecological benefits of removing the dam that the Commission can put out.

[Discussion ensued discussing and clarifying what the Plan proposes]

Commissioner Michalowski indicated that he will reach out to the Huron Watershed Council and the Friends of Peninsular Place to ask if they are willing to come in and discuss their perspectives regarding the dam removal.

- B. Recycle Program Update
[Commissioner Michalowski referenced the previously expressed information and updates received from above Presentations]

XIII. AUDIENCE PARTICIPATION- none

XIV. PROPOSED BUSINESS

- A. Climate action plan - Commissioner Zeuner
- B. Presentation re: paint recycling while helping in New Orleans post-Katrina – Commissioner Bayha

XV. NEXT MEETING DATE:

Monday, January 14, 2019

XVI. ADJOURNMENT: 9:39pm

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

Vote: Unanimous

Motion: Carried

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

RESOLUTION 2018-01-001 - 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, 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.

City of Ypsilanti

Master Plan Update & Sustainability Plan Proposal

December 3, 2018



View of the Streetscape project completed by Beckett & Raeder, Inc. for the city of Ypsilanti, Michigan



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PLANNING MISSION STATEMENT

We believe planning is, and should be, an understandable process of problem solving based on a common sense evaluation and analysis of the land and the program. Our clients actively participate in this process which means that our solutions are a product of their participation. The integrity of the process is the constant, regardless of the scale and complexity of the project.

OUR CORE VALUES

The Beckett & Raeder, Inc. team firmly believes and employs the following set of core values, which actively drive each professional throughout the duration of any project and contract. As a team, we strive to be:

- Responsive
- Exceeding Expectations
- Creative
- Passionate
- Dedicated

It is fundamental that each client receives services and expertise from Beckett & Raeder, Inc. while strictly adhering to the core values.

City of Ypsilanti

Master Plan Update & Sustainability Plan

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Fee Proposal	40

CONTACT:

John R. Iacoangeli, AICP, LEED AP, CNU-A





Statement of Understanding

December 3, 2018

City of Ypsilanti
Joe Meyers and Bonnie Wessler
1 South Huron Street
Ypsilanti, MI 48197

Regarding: Proposal for Master Plan Update & Sustainability Plan

Dear Joe and Bonnie,

I am pleased to submit for your consideration a proposal for professional planning services to prepare a Master Plan Update, Greenhouse Gas Inventory, and Sustainability Plan for the City of Ypsilanti. We have assembled a team that is expertly equipped with the skills, resources, and experience needed to successfully serve the City, including Beckett & Raeder's own award-winning master plan team joined by your familiar partners at EcoWorks and their colleagues through the Michigan Community Energy Partnership, SEEDS.

Master planning is a particular joy for Beckett & Raeder, Inc. Over the last ten years, our team has won more Daniel Burnham Awards for a Comprehensive Plan from the Michigan Chapter of the American Planning Association than any other planning firm in the state, and it's because we take great pride in crafting unique documents that speak directly to the communities they serve. We understand that the City of Ypsilanti is currently in possession of, and requesting and update to, a plan that has its own well-deserved Burnham Award, and this proposal is crafted with all of the care due to it. Our review of "Shape Ypsilanti" shows it to be constructed with impressive durability in mind. The intent of the activities described here is to mark progress toward the comprehensive vision, provide an opportunity for feedback and communication with citizens, and adjust course where necessary to continue toward that vision.

We salute the City for its efforts toward creating a more sustainable and responsible future, of which this inaugural Sustainability Plan is just one. We understand that this Plan is both distinct in focus from, and also highly integrated with, other City projects and processes, from its concurrent Energy Plan to daily municipal operations. The requested Greenhouse Gas Inventory and resultant implementation strategy will form the technical backbone of the plan, folding in and building upon the work of the 2012 Climate Action Plan. An inventory of the conditions and policies contributing to the City's overall sustainability will provide the framework from which goals, recommendations, and progress metrics can be developed. We further understand that the City has defined four broad areas of analysis to include Economy & Jobs; Education, Arts & Community; Equity & Empowerment; and Health & Safety:

BRI believes that plan alignment is a core strategy for implementation success, and recognizes concurrent planning efforts as an unparalleled opportunity to achieve it. This proposal is designed to maximize synergy and consistency among the plans. The community engagement process, shared between the plans, provides the biggest and most visible opportunity for coordination. We have structured our proposal for these events "a la carte" and anticipate finalizing the development of the program in conjunction with the Steering Committee. A less visible, but potentially more impactful, opportunity for coordination is among the implementation plans, which will be cross-referenced and presented jointly. Crafting strategies and actions which serve multiple goals is an effective and productive way to increase their likelihood of accomplishment.

We thank you for this invitation to submit the following proposal and are hopeful of its favorable consideration. As you know, we have loved Ypsi dearly as neighbors, alums, visitors, employees, and residents, and are always at the ready to join you in your march toward an ever-brighter tomorrow.

Sincerely,


John R. Iacangeli, AICP, LEED AP, CNU-A, Principal



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Our Firms



Beckett & Raeder, Inc. is a Michigan Corporation headquartered in Ann Arbor since 1966, with additional offices in Petoskey and Traverse City, Michigan.

The firm includes landscape architects, planners, civil engineers, LEED accredited professionals, and support staff maintaining registrations in the States of Michigan, Ohio, Indiana, and Illinois and certification at the national level.

Work for this proposal will be performed in the Ann Arbor office at 535 West William Street.



SEEDS is a 501(c)3 nonprofit organization established to implement local solutions to global issues at the intersection of ecology, education, and design.

Incorporated in 1999 by a handful of young graduate students studying ecological engineering and social sciences. SEEDS has always embraced the word design to be broadly inclusive of everything from design of engaging educational curriculum to design of methodologies for monitoring greenhouse gas emissions to the designers of buildings and trails and neighborhoods. The Energy & Environment arm of the organization takes a proactive and methodological approach to analysis and planning.



EcoWorks is a Detroit based nonprofit with over thirty years of providing services at the intersection of community development and sustainability.

While our roots are firmly planted in energy conservation, we have grown to emphasize all aspects of sustainable development as it relates to building affordable, energy efficient residential housing and commercial buildings.

Professional Affiliations & Organizations



Beckett & Raeder, Inc. is staffed by registered professional engineers, landscape architects, community planners, and environmental and ecological professionals and has specialized training and maintains professional affiliation with the following:

ACCREDITATIONS

U. S. Green Building Council LEED Accredited Professionals
Form Based Code Institute (FBCI)
Congress for the New Urbanism Accreditation (CNU-A)

CERTIFICATIONS

Michigan Economic Development Association Certified Economic Development Professional
Certified Stormwater Operator
Housing Development Finance Professional (HDFP)
Project Management Boot Camp
PASER Road Rating
Planning and Zoning Instructor (MAP)
Certificate of Real Estate
Certified Playground Safety Inspector (CPSI)
American Institute of Certified Planners (AICP)
National Charrette Institute Certification (NCI)
Certified Park and Recreation Professional

REGISTRATIONS

Professional Registered Engineers

- State of Michigan (PE)
- State of Ohio (PE)

Professional Landscape Architects

- State of Michigan (PLA)
- State of Ohio (PLA)
- State of Illinois (PLA)
- State of Indiana (PLA)
- Council of Landscape Architects Registration Boards

Residential Builder License

- State of Michigan

SPECIALIZED TRAINING

EPA Brownfield Redevelopment
People, Places and Placemaking
Economics of Place
Neighborhoods, Streets and Connections
Form Planning and Regulation
Collaborative Public Involvement
Applied Placemaking
Complete Streets
Geographic Information Systems
FEMA ICS-100, IS-00029, EFS 15
FEMA ICS-200, IS-00700 (NIMS)
Green Roof Design
Charrette System Training (NCI)

Services



MASTER PLANNING

- Campus Planning
- Traditional Neighborhood & Small Town Design
- Community Master Planning Watershed Planning
- Recreation Master Planning
- Park Master Planning
- Rural Land Planning Services
- Land Use Planning

COMMUNITY PLANNING & ZONING

- Comprehensive Master Plans Brownfield Redevelopment
- Zoning Ordinance /Codes
- Specialized Zoning Ordinance Provisions Development
- Standards and Guidelines
- Site Plan Review
- Strategic Planning
- Expert Witness Zoning Testimony
- Community Development
- Greenway Planning
- New Urbanism

ENVIRONMENTAL SERVICES

- Site Evaluation and Analysis
- Low Impact, Conservation Design
- Wetland Delineation
- Constructed Wetland Design & Installation
- Wetland Restoration
- Storm Water Management

ANALYSIS & EVALUATION

- Site Analysis
- Feasibility Studies
- Site Selection Studies
- Buildout Analysis
- Market Analysis
- Demographics
- Natural Features Interpretive Studies

PROJECT CONSTRUCTION

- Construction Administration
- Field Inspection
- Storm Water Operator
- Bridge Inspection
- Specification Writing
- Project Cost Estimating
- Construction Drawings

DOWNTOWN & ECONOMIC DEVELOPMENT

- Brownfield Redevelopment
- Grant Writing
- Downtown Management
- Downtown Master Plans
- Special Finance Districts
- Adaptive Reuse Studies
- Retail Market Analysis
- Strategic Planning/Visioning Workshops
- Physical Design Plans
- Streetscape Design & Implementation
- Wayfinding & Signage
- Tax Increment Financing & Development Plans
- DDA Creation

SITE DESIGN

- Planting Design
- Irrigation Design
- Grading Plans
- Utility Plans
- Pavement Design
- Lighting Design
- Site Design Guidelines
- Park Design

URBAN DESIGN

- Corridor Design & Planning
- Streetscape Design
- Waterfront Design

FACILITY DESIGN

- Marina Design
- Playground Design
- Athletic Facility Design
- K-12 Site Development
- Subdivision Design
- Campgrounds
- Parks Design
- Higher Education

INFRASTRUCTURE

- Storm Water Management
- Water Distribution Systems
- Sanitary Sewer Systems
- Capacity Analysis
- Capital Improvement
- Program Wellhead Design & Protection
- Pavement Evaluation
- Streets and Roads
- Onsite Sewage Treatment
- Utility Marking
- Parking

Selected Recent Awards



MICHIGAN ASSOCIATION OF PLANNING

Economic Planning and Development Award, 2018
Project Rising Tide

Urban Design Award, 2018
Jackson Downtown Streetscape
Jackson, MI

Best Practice Award, 2018
Planning for Resiliency in Michigan:
A Comprehensive Handbook

Urban Design Award, 2017
Jackson Blackman Park Expansion
Jackson, MI

Daniel Burnham Award for a
Comprehensive Plan, 2016
Jackson Community Master Plan
Jackson, MI

Implementation Award, 2016
Bear River Valley Recreation Area
Petoskey, Michigan

Daniel Burnham Award for a
Comprehensive Plan, 2015
Acme Township Master Plan
Acme, MI

Innovation in Economic Planning &
Development, 2015
Lakes to Land Regional Initiative: Food
and Farm System Assessment

Innovation in Regional
Planning, 2014
Lakes to Land Regional Planning Initiative

Daniel Burnham Award for a
Comprehensive Plan, 2013
Peshawbestown Master Plan
Grand Traverse Band of Ottawa
and Chippewa Indians

AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS

Merit Award, Michigan Chapter,
2016, Landscape Architectural
Sustainability
Wall Street East Parking Structure,
Ann Arbor, Michigan

Honor Award, Michigan Chapter,
2016, Landscape Architectural
Sustainability
Marshbank Park
West Bloomfield Township, Michigan

Merit Award, Michigan Chapter,
2015, Landscape Architectural Design
Munger Graduate Residences,
University of Michigan
Ann Arbor, Michigan

Merit Award, Michigan Chapter,
2014, Historic Significance
Petoskey Bayfront Park
Petoskey, Michigan

MICHIGAN RECREATION AND PARK ASSOCIATION (mParks)

Outstanding Park Design
Award, 2018
Petoskey Downtown Greenway,
South Segment
Petoskey, Michigan

Outstanding Park Design
Award, 2013
Argo Cascades
Ann Arbor, Michigan

IMAGIN (Improving Michigan's Access to Geographic Information Networks)

Innovation Award, 2018
Acme Township, Michigan

NATIONAL TRUST FOR HISTORIC PRESERVATION

Richard H. Driehaus National
Preservation Honor Award, 2014
McGregor Pool
Wayne State University
Detroit, Michigan

MICHIGAN HISTORIC PRESERVATION NETWORK

Government/Institution
Award, 2016
River Raisin Heritage Corridor, East Master
Plan
Monroe, Michigan

Environmental Practices



BRI All three of our physical offices operate out of adaptively-reused historic buildings, including a camera factory, a medical building, and a residence.

Staff at each location demonstrates a commitment to reduction of VMT. All offices are located in downtown settings, reducing vehicle travel for lunch and errands. (Though not policy, it's worth noting that a sizable percentage of the local lunch investments are made at Argus Farm Stop, a cooperative distributor of local agriculture products.) The firm routinely proposes and promotes remote technology to reduce emissions footprint of meeting consultations. Several employees live within walking distance, and two of the firm's seven planners commute exclusively by nonmotorized and mass transit. This would include the primary planner assigned to this project, who is willing to commute to meetings by bus as scheduling allows.

Recycling is a regular part of office operation, including paper, plastic, glass, and ink cartridges. Electronic documentation is preferred by policy. Single-use plastic straws have recently been discontinued, and several other single-use products are under review for replacement. Conversation inspired by this RFP has set in motion the beginning of a procedure to compost office kitchen waste.

We are headquartered in Washtenaw County, where approximately 50% of our employees live.

SEEDS Over 75% of gross expenses are spent on real people or businesses owned by real people within the State of Michigan - most of which occurs within 100 miles of the office site.

SEEDS has set a target for 100% Zero Waste.

Our last organization GHGe measured were 400MTCO₂e with close to 70% caused by transportation including the fact that we are responsible for driving an average of 200 children home at the conclusion of after school programs daily.

EcoWorks EcoWorks is committed to promoting clean energy initiatives through data driven decision making and strives to implement best practices internally.

Most recently, the EcoWorks offices completed an LED lighting retrofit project expected to generate significant environmental and financial benefits while serving as a concrete example of successful energy management for project partners and the surrounding community



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Work Approach and Timeframe

WORK PLAN: ORGANIZATION

The planning effort will begin with a clear understanding of the process, schedule, and desired outcomes. This phase establishes our effective working relationship with the City, and defines the Plan's stakeholders, technical advisory committee, and community outreach activities.

City Tasks

- Assemble Steering Team
- Provide relevant documents and data
- Review and affirm Program Management Plan

Deliverables

- Program Management Plan

Meetings (1)

- Kick Off meeting (1)

Timeframe

- 2-4 weeks

Working with City staff, the consultant team will prepare a Program Management Plan indicating a timeline for work task milestones and key decision-making points to be submitted to the Department of Economic Development for approval. The plan will clearly define work tasks, timing, and content of deliverables.

The City will assemble a Steering Team comprised of department heads and representatives. The Steering Team will provide information pertaining to operations and management of municipal resources; identify potential partnerships within City Hall to accomplish goals within the Plan; provide the Consultant with information pertaining to major stakeholders; and review the applicability of proposed best programs, policies, and practices that will assist the City in achieving its goals. City staff will provide all pertinent reports, data, studies, and background information.

A kickoff meeting will be held with key representatives from City departments and the Commissions, to review major issues facing the City and to clarify priorities. We welcome a tour of the City at this time.

WORK PLAN: COMMUNITY ENGAGEMENT

The City and our team are committed to a transparent and inclusive process with meaningful and useful community and resident involvement.

City Tasks

- Strategy discussion
- Outreach and promotion
- Event attendance

Deliverables

- Community engagement summary of findings

Meetings

- TBD

Timeframe

- 1 Month at beginning of project
- 1-2 Meetings toward end of project

This proposal presents a menu of community engagement options and anticipates a robust discussion with the Steering Team to design a program that meets the needs of the Master Plan Update and Sustainability Plan.

A combination of the two most cost-effective methods for engagement provide the baseline strategy. An online component consisting of an interactive web map or a traditional survey reaches those on the younger and more mobile side of the "digital divide." This is complemented by a site-based component designed to take the process directly to harder-to-reach populations, which could consist of feedback walls, hard-copy surveys, and "meeting-in-a-box" setups. A hybrid approach could see Steering Team volunteers administering surveys on-site, in "intercept" fashion.

Town Hall and charrette-style meetings are the gold standard for offering qualitative interactions between City and citizen. They are also resource-intensive and can be somewhat risky, in that their value depends heavily on turnout, which can be quite unpredictable. BRI Will work closely with the City to determine whether and when these types of events will best benefit the Master Plan Update and Sustainability Plan processes, and to leverage all available channels to encourage attendance.

Stakeholder participation is critical to implementation. In recognition of this key role, all master plan and sustainability plan stakeholders who have been identified throughout the process will be invited to a meeting to roll out the Implementation Matrices, and to collect final feedback before the plans are adopted.



WORK PLAN: DATA ANALYSIS

Current, targeted data will be assembled and analyzed to form the basis of the recommendations in the Master Plan and Sustainability Plan.

City Tasks

Review and ground-truth all data

Deliverables

- Demographic update
- Housing market review
- Economic review
- Transportation update
- Guiding Values sweep
- Sustainability inventory
- Environmental challenges assessment
- Regional sustainability review

Meetings (2, optional)

- Master Plan data review meeting
- Sustainability Plan data review meeting

Timeframe

1-2 Months

As noted in the Statement of Understanding, the City's current Master Plan is eminently updatable. This task will provide the most current numbers to assess changes to the City's demographic composition and housing market by Census tract. An economic review will update the employer, taxpayer, and budget data, as well as investigate changes in the focus industries of small manufacturing, creative enterprises, renewable energy, and local food. A transportation update will concentrate on assessing the effect of changes to AAATA services since the 2013 plan, updating reconfiguration projects, and continuing to support the potential for rail service.

As part of this data review, we will conduct a "sweep" of data mentioned in the plan's Guiding Values rubric, which loosely suggests metrics which may be used to measure progress toward implementing the values. It is the purpose of this activity to add an additional measure of functionality to this valuable tool.

An inventory of existing conditions and policies affecting sustainability will form the baseline data for the Sustainability Plan. This includes the Master Plan and Zoning Ordinance, with suggestions to be implemented in the Plan Update and recorded in the revised Zoning Plan. Environmental challenges within the City will be identified, including past and ongoing efforts to address them. A regional component will note environmental issues of external origin and local impact, and may highlight best practices from other communities.

WORK PLAN: GHG INVENTORY

A Greenhouse Gas inventory and optional benchmarking bring updated results of the 2012 Climate Action Plan into the Sustainability Plan.

City Tasks

- Review drafts

Deliverables

- GHG Report
- 12-month benchmarks by measure (optional)

Meetings (2)

- Feedback meeting
- Finalization meeting

Timeframe

- 1-2 Months

A greenhouse gas (GHG) emissions inventory for government and community emissions will efficiently update the original GHG inventory completed by EcoWorks for the 2012 Climate Action Plan based on revising aggregated current municipal energy use and any changes in usage, industry, and/or community demographics.

An expanded option includes this inventory, and also benchmarks energy use and GHG emissions for each municipal facility for at least 12 months of most recent data including walk through assessments. This option produces a quantified analysis of each clean energy and GHG reduction measure.

WORK PLAN: MASTER PLAN

BRI will provide the City with an updated Implementation Matrix and will oversee the process of adopting the Master Plan Update pursuant to PA 33 of 2008.

City Tasks

- Assemble all implementation stakeholders
- Schedule presentations on agendas

Deliverables

- Implementation Matrix
- Notices
- Resolution of adoption

Meetings (3)

- Presentation to Planning Commission
- Presentation to Council
- Public Hearing

Timeframe

- 3-4 Months, including required 63-day review

Drawing from the goal statements, objectives, and data, we will update the Implementation Matrix in the Master Plan, including funding resources, potential lead agencies, and benchmarks.

Once the Implementation Strategy has been finalized and ratified by the stakeholders, BRI will guide the process of adopting the update per PA 33 of 2008. This includes making one presentation to the Planning Commission as well as to City Council, attending the public hearing, incorporating all revisions, and drafting and sending all required notices.

WORK PLAN: SUSTAINABILITY PLAN

The City's first Sustainability Plan!

City Tasks

Assemble all implementation stakeholders

Deliverables

Implementation Matrix

Draft report

Final report

Meetings (1 plus 2 optional)

Draft review meeting (optional)

Presentation (optional)

Adoption

Timeframe

1 Month

The Ypsilanti Sustainability Plan will have three components. The first will be an introduction to sustainability in Ypsilanti, summarizing the results of the inventory of conditions and policies as well as the regional review.

The second component will focus on the GHG recommendations. It will include a summary of progress made since 2012 Climate Action Plan and an Implementation Action Plan with recommendations related to

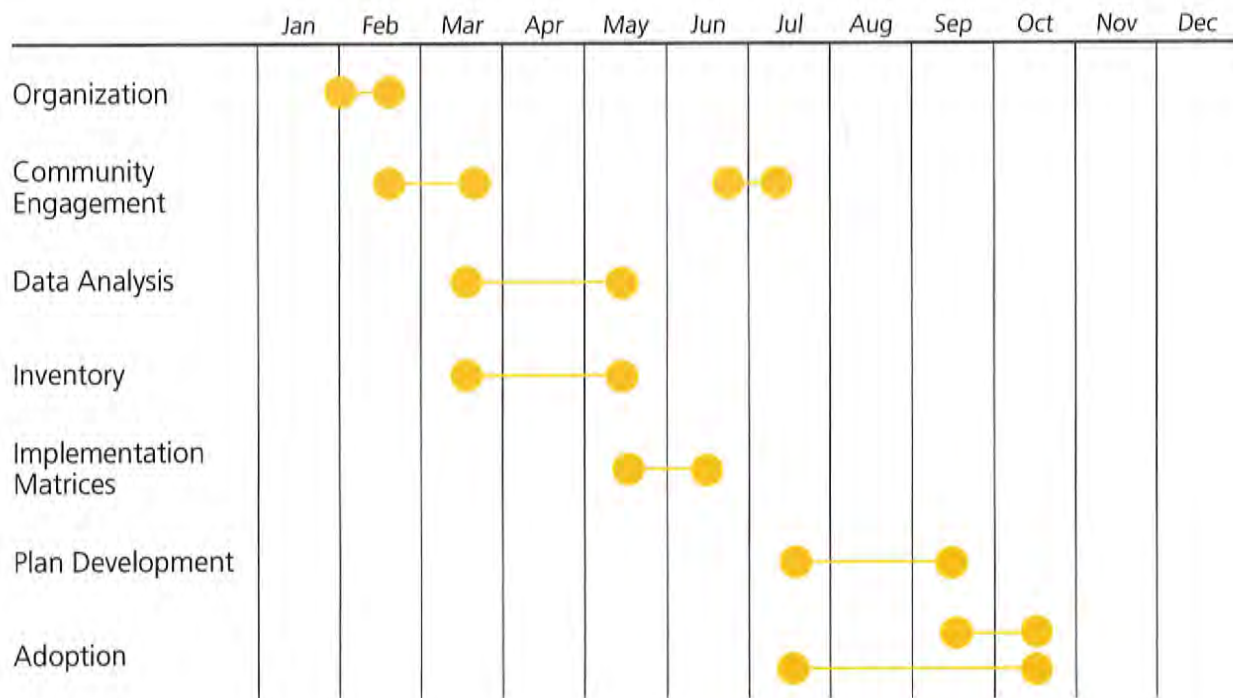
- Prioritized GHG emissions reduction measures.
- Prioritized energy efficiency measures including specific alignment with the nearly completed Ypsilanti Energy Plan.
- Funding and financing resources,
- Key agency accountabilities, and
- Targets and milestone benchmarks for use in ongoing monitoring.

The third component will bring these broad and specific analyses into a set of overarching goals and strategies addressing the following four categories as outlined by the City:

- Economy & Jobs: Create equitably shared prosperity and access to quality jobs in Ypsilanti
- Education, Arts & Community: Empower a vibrant, educated, connected and diverse Ypsilanti.
- Equity & Empowerment: Ensure equity, inclusion, and access to opportunity for all community members in Ypsilanti.
- Health & Safety: Strengthen Ypsilanti to be a healthy, resilient, and safe place for residents and businesses.

The plan will be assembled into a professional and engaging document and presented to the Commission. The best practice would be to present it with the Master Plan Update at a joint meeting of the two commissions. This proposal contemplates tree-free electronic delivery of the final plan.

Timeline





imagine

Your Team



John R. Iacoangeli, AICP, LEED AP, CNU-A, FBCI Partner, Community Planner

John joined Beckett & Raeder, Inc. (BRI) as a Principal in 1991 and is a Professional Certified Planner and a member of the American Institute of Certified Planners. John has over thirty years experience working with public and private sector clients on a variety of community and economic development based projects. He has been involved in the preparation and implementation of downtown and neighborhood revitalization, community development, economic development, historic preservation, and natural resource-based projects for numerous communities throughout the Midwest. His area of specialization is project implementation involving federal and state grants, local municipal financing, special authority financing, and public-private partnerships.

He serves as an advisor-consultant to planning commissions and a variety of redevelopment authorities (DDA, CIA, BRA) and is a frequent instructor for the Michigan Association of Planning and the MIPlace program.

EDUCATION

Master of Public Administration,
Northern Michigan University, Marquette,
Michigan

Bachelor of Science, Resource
Management, University of Michigan,
Ann Arbor, Michigan

CERTIFICATES

Certificate of Real Estate, University of
Michigan and Michigan Association of
Realtors

Congress for New Urbanism
Accreditation

Form Based Code Institute Certification

LEED Accredited Professional

FEMA
ICS-100, IS-00029, EFS 15.
ICS-200, IS-00700 (NIMS)

AFFILIATIONS

Rural Partners of Michigan (Board)

Toledo Metropolitan Council of
Governments (Committee)

NorthSky (Rotary Charities of Traverse
City)

SELECTED EXPERIENCE

Lakes to Land Regional Initiative
Collaborative Master Plan for sixteen
communities in Benzie and Manistee
Counties

Innovation in Regional Planning Award –
Michigan Association of Planning, 2014

Lakes to Land Farm and Food System
Assessment

Innovation in Economic Planning and
Development – Michigan Association of
Planning, 2015

Acme Township Placemaking &
Master Plan, Acme Township, Michigan

Daniel Burnham Award for a
Comprehensive Plan – Michigan
Association of Planning, 2015

River Raisin Heritage Corridor East
Master Plan

Monroe County Historical Society,
National Park Service, City of Monroe,
Monroe, Michigan

Merit Award – Michigan Chapter
of American Society of Landscape
Architects, 2013

Honor Award – Michigan Historic
Preservation Network, 2016

Peshawbestown Master Plan, Grand
Traverse Band of Chippewa and Ottawa
Indians, Peshawbestown, Michigan

Daniel Burnham Award for a
Comprehensive Plan – Michigan
Association of Planning, 2012

Michigan State Housing Development
Authority, Downtowns of Promise
Strategic Planning

Flint, Saginaw, Benton Harbor,
Hamtramck, Highland Park, Muskegon
Heights, and Detroit's Joy-Southfield
Neighborhood

City of Marquette Master Plan,
Historic Waterfront and Lower
Harbor Master Plan, Redevelopment
Plan, Marquette, Michigan

Dexter Strategic Plan and
Placemaking, Dexter, Michigan

Your Team



Leah DuMouchel, AICP, CNU-A, NCI-M&FCT, FBCI Senior Associate, Community Planner

Leah DuMouchel's planning experience includes innovative master planning projects and extensive community engagement. Her work coordinating project leadership teams, creating outreach materials, facilitating community engagement and visioning sessions, developing and administering surveys, implementing online communication channels, and conducting all manners of analysis provides the solid foundation for writing plans that genuinely reflect and serve their communities. From her previous career in journalism, she brings a polished, varied writing style and a sharp eye for "the whole story."

EDUCATION

Masters of Science, Urban and Regional Planning, Eastern Michigan University

Bachelor of Arts, Philosophy, University of Michigan

CERTIFICATIONS

Certified Planner, American Institute of Certified Planners;

Accredited Professional, Congress for the New Urbanism;

Certified Charrette Planner and Certified Charrette Manager, National Charrette Institute;

Form-Based Code Institute

AFFILIATIONS

American Planning Association, Michigan Chapter;

American Planning Association, Sustainable Communities Division;
American Planning Association, Planning and the Black Community Division; Congress for the New Urbanism; Detroit Association of Planners

TEACHING EXPERIENCE

MiPlace Partnership Curriculum

Planning and Zoning Essentials - Michigan Association of Planning

Michigan Association of Planning Conference

SELECTED EXPERIENCE

City of Ypsilanti Planning Services

Long-standing relationship with this mid-sized industrial city that is transforming into one of the "Great Places in America" according to its recent APA award, beginning as a planning school intern and including a period of contracted full-time office staffing during a time of transition. BRI landscape architects have completed streetscape and wayfinding projects within the City as well. City of Ypsilanti, MI

Project Rising Tide

Planning and technical support programs tailored to advance 19 economically challenged communities across the State. Innovation in Economic Planning and Development Award – Michigan Association of Planning, 2018

Trenton Coast Resiliency Master Plan

Innovative format partly funded by the Department of Environmental Quality integrates resiliency into the master plan, thus linking it to development regulation. The transformation of Trenton's industrial waterfront is the key focus. City of Trenton, MI

Daniel Burnham Award for a Comprehensive Plan – Michigan Association of Planning, 2017

Jackson Community Master Plan

A rethinking of land use and asset capitalization to bring this mid-sized, post-industrial into the New Economy City of Jackson, MI

Daniel Burnham Award for a Comprehensive Plan – Michigan Association of Planning, 2016

Lakes to Land Regional Initiative – Food Innovation District

Implementation project studying the market channels, production capability, and agricultural assets across Benzie and Manistee Counties in order to grow the local economy and retain dollars within the region where possible.

Innovation in Economic Planning and Development Award – Michigan Association of Planning, 2015

Your Team



Claire Karner, AICP, NCI
Associate, Planner

Claire has worked in the public, private, and non-profit sector on a diversity of community planning efforts; including natural resource policy, long-range transportation planning, climate adaptation, and the intersection between public health and land use policy. Claire enjoys learning from communities, and works hard to ensure that final products genuinely reflect the unique needs of the community they serve. She has led a number of comprehensive planning processes from beginning to end; facilitating community engagement and visioning sessions, managing communication and outreach, administering community-wide surveys, and drafting final plans and policies. She also has experience managing projects that integrate cutting-edge research into planning and local policies, using community-wide vulnerability assessments and scenario-based planning methods.

EDUCATION

Master of Community and Regional Planning, University of Oregon

Bachelor of Arts, Program in the Environment, University of Michigan

CERTIFICATIONS

Certified Planner, American Institute of Certified Planners

Certified Charrette Planner, National Charrette Institute

AFFILIATIONS

American Planning Association, Michigan Chapter

TEACHING EXPERIENCE

Climate and Health Adaptation Planning, Statewide Training

Natural Resource Planning and Policy, University of Oregon

Evolutionary Biology, University of Michigan

CONFERENCE SESSIONS

American Planning Conference

Michigan Association of Planning Conference

Michigan Municipal League Annual Conference

SELECTED EXPERIENCE

Planning Services
Bay Township, Michigan
Village of Ellsworth, Michigan
Banks Township, Michigan
Burt Township, Michigan
Hayes Township, Michigan

Project Rising Tide
Michigan Governor's Office & Michigan Economic Development Corporation (MEDC) – Master Planning and Zoning Ordinance Rewrites for 10 Communities throughout the State of Michigan

City of Harrison Master Plan

City of Evart Zoning Ordinance

Village of Newberry Master Plan

City of Harrison Recreation Plan, Harrison, Michigan

Village of Suttons Bay DDA Plan, Suttons Bay, Michigan

Clam Lake Township Master Plan, Clam Lake Township, Michigan

City of St. Joseph Master Plan*, St. Joseph, Michigan

Resilient Michigan Program*
Multi-year data-driven collaborative program working with over 15 communities to update their master plans through the lens of climate adaptation and resiliency

Lake Charlevoix Zoning Protections*
Collaborative effort to develop uniform zoning standards for all ten jurisdictions surrounding Lake Charlevoix

Restoring, Retrofitting, & Recoupling Michigan's Great Lakes Shorelines*
Community-wide coastal scenario planning and research effort aimed at enhancing resilience in six coastal jurisdictions

*Work completed outside of Beckett & Raeder, Inc.

Your Team



Marisa Laderach, GISP Project Professional, GIS Specialist

Marisa has experience in both planning and GIS as a consultant, cartographer, and educator. Her equal love of mapping and planning go hand-in-hand as she utilizes visual techniques to emphasize relevant and important planning data. This data can then be used in urban planning projects to create maps and graphics that easily convey information to clients, citizens, and stakeholders. Through analysis of physical, social, and environmental features, Marisa employs advanced analytical and processing techniques to enhance spatial information. Her skills include geodatabase management, network analysis, raster analysis, spatial interpolation, spatial analysis, and spatial statistics, among many others. A proud Michigan native, Marisa is strongly committed to improving communities in Michigan and the Midwest.

EDUCATION

Bachelor of Science, Environmental Geography, Double-Concentration in Land Use Planning and GIS

Minor in Environmental Studies, Central Michigan University

Master of Science, Urban and Regional Planning, Eastern Michigan University

CERTIFICATIONS

Certified Geographic Information Systems Professional, GISP, License No. 160436

GIS Graduate Certificate for Professionals

TEACHING EXPERIENCE

Eastern Michigan University, Institute for Geospatial Research & Education (IGRE)

Wayne County Regional Educational Service Authority (RESA)

BOARDS & COMMITTEES

Central Michigan University Geography Program Advisory Board Member

SELECTED EXPERIENCE

Acme Solar Suitability Analysis

Acme Township, Michigan

GIS Innovation Award – Improving Michigan's Access to Geographic Information Networks (IMAGIN), 2018

Trenton Coast Resiliency Master Plan

City of Trenton, Michigan

Daniel Burnham Award for a Comprehensive Plan – Michigan Association of Planning, 2017

Jackson Community Master Plan

City of Jackson, Michigan

Daniel Burnham Award for a Comprehensive Plan – Michigan Association of Planning, 2016

Project Rising Tide

Michigan Governor's Office & Michigan Economic Development Corporation (MEDC) – Master Planning and Zoning Ordinance Rewrites for 10 communities throughout the State of Michigan (GIS Services)

City of Sandusky Master Plan

City of Harrison Master Plan

Village of Newberry Master Plan

City of Ewart Master Plan

City of Ewart Zoning Ordinance

City of River Rouge Master Plan

Economic Planning and Development Award – Michigan Association of Planning, 2018

Northville Downtown Development

Authority Plan, City of Northville, Michigan

Arcadia-Pierport Watershed Plan

Multijurisdictional watershed plan for five townships and two villages, Benzie and Manistee Counties, Michigan

Kalamazoo County Master Plan

Kalamazoo County, Michigan

City of Sandusky Parks & Recreation

Plan, City of Sandusky, Michigan

Your Team



Michelle Bennett, AICP Candidate Project Professional, Planner

Michelle has experience in domestic and international planning that spans both the private and public sector. Michelle's professional experience within the planning field and prior focused on improving economic development opportunities in cities. Her experience managing large scale, survey-based projects and converting data into a digestible format for cities is critical for the implementation of economic development strategies. Aside from economic development, her interests also include the intersection of environmental, strategic, and recreation planning. Originally from California, Michelle is more interested in working on the urban issues that affect the Midwest.

EDUCATION

Bachelor of Arts, Urban Studies & Economics, University of California, San Diego

Master of Urban and Regional Planning, University of Michigan, Ann Arbor

TEACHING EXPERIENCE

University of Michigan, Legal Aspects of the Planning Process

AFFILIATIONS

American Planning Association, Michigan Chapter

SELECTED EXPERIENCE

Trenton Coast Resiliency Master Plan

City of Trenton, MI

Daniel Burnham Award for a Comprehensive Plan – Michigan Association of Planning, 2017

Pittsfield Township Parks and Recreation Plan

Pittsfield Township, Michigan

Kalamazoo County Master Plan

Kalamazoo County, MI

City of Sturgis Master Plan

Sturgis, MI

Project Rising Tide

Statewide Planning Initiative providing planning and zoning services to 10 communities throughout Michigan

Integrated Resource Management Plan, Nottawaseppi Huron Band of the Potawatomi Indians

Pine Creek Reservation, Fulton, MI

City of Northville Downtown

Strategic Plan

Northville Downtown Development Authority

Northville, Michigan

State of Nevada Usability Study*

Tourism Marketing Research

Nevada Commission of Tourism

City of Sydney Australia Business Plan*

Urban Agriculture Feasibility Study
Sydney, Australia



seeds

Ecology + Education + Design

PO Box 2454
Traverse City, MI 49685

SARNA SALZMAN, MS



PROFILE

- Green Community Consulting
- Participatory Process Design
- Community Resilience
- Program Evaluation
- Decentralized Management Solutions & Logic
- Triple-Bottom-Line Accounting

EDUCATION

Leave No Trace	
Certified trainer in outdoor skills and ethics	June 2004
University of California - Davis	Davis, CA
M.S. Community and Regional Development	March 2001
Kalamazoo College	Kalamazoo, MI
B.S. Anthropology and Sociology	June 1996

PROFESSIONAL EXPERIENCE

Executive Director	1/01-current	SEEDS
TRAVERSE CITY, MI	<i>Implementing solutions for ecology, education and community design.</i>	
▫ Founding Executive Director ▫ \$1.5 million annual budget; 25 regular employees plus seasonal staff including 75 Youth Conservation Corps members ▫ CFO responsibilities ▫ Program evaluation includes triple-bottom-line accounting: people+planet+profit ▫ Program management including Energy & Climate research and implementation projects ▫ Supervises all staff and programs, including: ◆ Energy Efficiency and Environmental Analysis ◆ K12 Youth Enrichment programs ◆ SEEDS Youth Conservation Corps ◆ Historic Barns Park build-out		

LEADERSHIP EXPERIENCE

Board of Directors, HOMESTRETCH – 2015
 Steering Committee, MICHIGAN GOVERNOR'S ENERGY EXCELLENCE AWARDS – 2015
 Commissioner, GRAND TRAVERSE COUNTY PLANNING COMMISSION – 2009-current (Chair for 2 years)
 Board of Directors, ORYANA NATURAL FOODS COOPERATIVE – 2004-2009
 Member, MICHIGAN ASSOCIATION OF PLANNING – 2009-current
 Member, GRAND TRAVERSE COUNTY RESOURCE RECOVERY COUNCIL – 2004-2008
 Advisory Committee, LOKA INSTITUTE - COMMUNITY BASED RESEARCH CONFERENCE – Spring 2002
 Student Representative, GRADUATE STUDENT ASSOCIATION, UC-Davis – 1998-99

HONORS & AWARDS

- 2015 Frank Purvis Stewardship Award from the Grand Traverse Chapter of Michigan Townships Association
- 2014 Presenter, Council of Michigan Foundations Conference "Supporting Our Grantees"
- 2010 Milliken New Generation Leadership Award from the Michigan Land Use Institute
- 2010 Presenter, Council of Michigan Foundations Conference "Tips for Nonprofit Restructuring"
- 2009 Named 40 Under 40 by the Business News

seeds



PO Box 2454
Traverse City, MI 49685

KEVIN SUMMERS



PROFILE

- Project Management
- Sustainability and Stewardship
- Community Development and Leadership
- Teaching, Education and Mentorship
- Energy and Environmental Analysis
- Energy Star Portfolio Manager

EDUCATION

Rutgers University
Teach for America Alternate Route Program
Teacher Certification

Camden, NJ
2005

Carnegie Mellon University
College of Fine Arts
BFA Art, Digital and Time-Based Media

Pittsburgh, PA
2002

Fachhochschule Schwabisch Hall
University of Applied Sciences
Media and Culture Design

Schwabisch Hall, Germany
2001

PROFESSIONAL EXPERIENCE

9/2014 – Present	Energy and Environmental Analysis Education Specialist	SEEDS
9/2009 – 9/2014	Community Learning Center Coordinator	SEEDS
8/2007 – 12/2007	Sustainability Intern	Coweeta Center, NC
9/2006 – 6/2007	Grade Dean, Math and Science Teacher	ECO Charter School, NJ
9/2004 – 6/2006	Teach for America School Team Leader	Teach for America, NJ

SELECTED PROFESSIONAL DEVELOPMENT

- *Portfolio Manager 101, 201, & 301*
Energy Star
- *Collaborative Muscles and Mindsets*
ReAmp
- *Financing Energy Efficiency Upgrades*
Energy Star
- *Tools for Coops to Advance Energy Efficiency and Renewables*
The Rural Caucus
- *Building Energy Asset Score for Energy Efficiency Services Companies*
US Department of Energy

APPOINTMENTS

2015	Advisory Board, Grand Traverse Stewardship Initiative, Traverse City, MI
2012	Leadership Team Member, Place Making in Manistee's North Corridor, Manistee, MI
2011	Leadership Team Member, Vogue Theatre Restoration, Manistee, MI
2010	President, Sophia Street Community Garden, Manistee, MI



Briana C. DuBose

Program Manager // [REDACTED]

Education

University of Cincinnati (Cincinnati, OH)
Juris Doctor (JD)

1993

University of Cincinnati (Cincinnati, OH)
Bachelor of Arts, Marketing & Communications

1987

Relevant Project Experience

Director, EcoWorks Strategic Community Initiatives Department

May 2018 – Present

Administrator of the strategic community initiatives division of an environmental non-profit focused on sustainability in municipal energy management, energy policy advocacy and community engagement.

Project Manager, Detroit Solar Feasibility Study

May 2018 – Present

Managing City Solar Feasibility Grant to develop an approach to streamlining solar development in the City of Detroit.

Project Manager, Community Energy Management

May 2018 - Present

Managing the 2018 Community Energy Management project funded by a grant from the Michigan Energy Office to bring energy efficiency statewide supporting municipalities, universities, school districts and hospital systems.

Project Manager, Municipal Energy Planning

May 2018 – Present

Managing Municipal Energy Planning program funded by the C.S. Mott Foundation to provide comprehensive energy planning services to municipalities in Southeast Michigan.

Previous Work Experience

Project Manager & Principal Consultant, The Chadwell Group, LLC (Detroit, MI)

2003 – 2018

- Leveraged expertise in business and operations management, organizational development, process optimization, and change management to advise clientele in obtaining strategic growth and cost savings.
- Functioned as the exclusive Midwest consultant with Nonprofit Finance Fund (NFF), specializing in creating financial feasibility and sustainability plans for grantees of the foundation's clients.
- Directed the implementation of SAP within the Wayne County's Purchasing Division, researching and selecting the vendor, negotiating contracts, planning the integration, and conducting end-user testing.

Contact us for more information:

www.ecoworksdetrit.org
info@ecoworksdetrit.org
(313) 894-1030

Your Team

Senior Consultant, Client Services, Headstrong Consulting (Detroit, MI)

2000 – 2003

- Served as a consultant to the Detroit Economic Growth Commission, driving the vision to revitalize the City of Detroit; established communications with DTE Energy throughout merger with Michcon Gas, providing operational planning and financial modeling on behalf of the corporation.
- Played a key role in DTE's corporate response to industry deregulation, implementing strategic plans that complied with new state energy laws while aligning with core business objectives.
- Fostered collaboration between key stakeholders, serving as a mediator and trusted business advisor.
- Compiled guidance documents to frame discussions with local legislators and community councils, obtaining buy-in and support from community leaders through strategic communications.

Certifications and Affiliations

- Certification: Lean Six Sigma Green Belt
- Leadership Oakland LOXII – recognized as one of 50 developing community leaders in southeast Michigan working to enhance quality of life in the region, with a focus on health, human services and diversity.
- Junior League Chicago Chapter – *Chair*
- Care House of Oakland County – *Volunteer*
- Tony Yates Caring for Kids Foundation – *Officer*

Relevant Areas of Expertise

- Nonprofit Management
- Process Optimization
- Continuous Improvement
- Strategic Planning
- Cost Reductions
- Stakeholder Relationships
- Program Leadership
- Project Management
- Cross-Functional Management



Brittany Turner

Energy Analyst // [REDACTED]

Education

University of Michigan, School of Natural Resources and Environment (Ann Arbor, MI)

May 2015

Master of Science, Natural Resources and Environment: Sustainable Systems

- Designed and spearheaded a master's project to investigate renewable energy potential, assess energy efficiency, and develop economic and policy instruments for the Little Traverse Bay Bands of Odawa Indians whom strive to achieve 25% renewable energy by year 2020.

North Carolina State University, College of Natural Resources (Raleigh, NC)

August 2013

Bachelor of Science, Environmental Technology and Management

- HAZWOPER 40-hour Certification

Relevant Project Experience

Energy Planner, Community Energy Planning

April 2016 – Present

Project funded by the C.S. Mott Foundation to provide energy planning services to 30 municipal governments. The program has helped to build capacity and leverage existing community energy management programs to a wider audience. Includes municipally focused workshops to provide training and education on key issues facing municipal leaders.

Energy Analyst, City of St. Clair Shores Benchmarking Project

August 2017 – May 2018

Document review and benchmarking of energy bills for 32 facilities owned by the City of St. Clair Shores; addressing relevant billing, rate, and sub-metering issues.

Energy Manager, Community Energy Management

April 2016 – August 2018

Project funded by the Michigan Energy Office to help build long-term energy efficient solutions for the southeast Michigan municipalities providing technical assistance, policy recommendations, and capacity building.

CEM Workshops (November 2017 – August 2018)

- Co-led and developed educational workshop material regarding energy management for dozens of municipalities in Southeast Michigan and supported overall grant management and reporting.

City of Detroit (October 2016 – August 2017):

- Support development of the City of Detroit's Sustainability Office, the city's audit process for 82 municipal structures, and benchmarking of all municipally owned buildings. Substantial cost savings identified through benchmarking Police and Fire department owned facilities and addressing relevant billing issues.

City of River Rouge (April 2016 – August 2017):

- Energy cost savings realized through benchmarking 13 municipally-owned buildings and implementation of various clean energy projects at City Hall and the Public Library. Creation of a Revolving Energy Fund at the Public Library to invest cost savings into future green projects. Establishment of Energy Commission to guide sustainable local green projects and policies.

Areas of Expertise

- Energy Management and Planning
- Benchmarking and Data Management
- Facilitation and Public Speaking
- Environmental Justice and Tribal Energy
- Revolving Energy Fund Development
- Technical Assistance for Energy Efficiency and Renewable Energy Projects

Previous Work Experience

Climate Justice Coordinator, EMEAC & REAMP (Detroit, MI)

Summer 2014, February 2015 – March 2016

- Organized grassroots sustainability initiatives in the climate justice department of the East Michigan Environmental Action Council and coordinated the Environmental Justice Caucus of the REAMP network addressing energy related justice issues within the Midwest. Assisted in organizing the Climate Justice Alliance, Our Power Detroit conference where more than 130 youth activists collaborated.

Graduate Fellow, Sandia National Labs Tribal Energy Program (Albuquerque, NM)

May 2015 – August 2015

- Authored a research paper focused on methods for tribal sustainable development, adaptation, and mitigation of climate change (publication expected). Instant immersion into strategic energy project planning and development activities working directly with experienced tribal energy experts. Traveled extensively to field sites with tribal renewable energy systems.



Henrik Mader

Energy Analyst / [REDACTED]

Education

University of Michigan, School for Environment and Sustainability (Ann Arbor, MI)

May 2015

Master of Science, Natural Resources and Environment: Sustainable Systems

- Master's Project: Improving Energy Sustainability for the Little Traverse Bay Bands of Odawa Indians (LTBB) Reservation
- GPA 3.85/ 4.0

Michigan State University, Residential College in the Arts and Humanities (East Lansing, MI)

May 2011

Bachelor of Arts, RCAH; Philosophy

- GPA 3.81/ 4.0 with Honors

Relevant Project Experience

Energy Planner, Southeast Michigan Municipal Energy Planning Project

January 2017 – August 2018

Project funded by the C.S. Mott foundation to help expand the reach and capacity of energy management in the Southeast Michigan region by updating and creating Energy Management Plans for a total of 30 municipalities. These plans expect to save municipalities approximately 550,000 kWh, and 47,000 therms of energy consumption through strategic planning, and offsetting more than 1,704 MT of CO₂e a year through municipally-led green projects.

Energy Analyst, HOPE Village Innovative Solar Implementation Ownership Network

April 2017 – Oct. 2018

As part of Eco-D, HOPE Village, one of the inaugural EcoDistricts in the City of Detroit is pursuing the DOE Solar in Your Community Challenge which is bringing solar energy to low-income residents. Partnered with Focus: HOPE, the team is looking for a medium-scale installation and innovative financing models that will provide equity and an investment opportunity for HOPE Village residents.

Energy Manager, City of Dearborn Community Energy Management Project

March 2017 – August 2017

Project funded by the Michigan Energy Office to advance long-term energy solutions for the City of Dearborn by providing technical assistance and education to staff and elected officials. Energy cost savings have been realized through diverse efficiency projects and monitored by benchmarking 24 municipally-owned buildings.

Energy Manager, City of Pleasant Ridge Community Energy Management Project

January 2017 – August 2017

Project funded by the Michigan Energy Office to support the City of Pleasant Ridge in developing municipal energy planning programs and identifying opportunities for energy efficiency and renewable energy initiatives. Objectives include the development of a Community Energy Strategic Plan, establishment of a Revolving Energy Fund, and facilitation of clean energy projects. Outcomes included installation of 25 kW solar PV array on rooftop of City Community Center.

Relevant Areas of Expertise

- Technical Assessments for Energy Efficiency and Renewable Energy Projects
- Policy Analysis
- Benchmarking and Data Management
- Revolving Energy Fund Development
- Energy Management Planning and Frameworks
- Sustainability Training, Facilitation and Education

Relevant Certifications and Memberships

- Candidate for North American Board of Certified Energy Practitioners (NABCEP) PV Associate certification
- Member of the Great Lakes Renewable Energy Association (GLREA)



imagine

Qualifications and References

Beckett & Raeder, Inc. is the premiere master planning firm in the state of Michigan. We have been making great places for over half a century all over Michigan and beyond, leveraging our multidisciplinary firm to serve client needs from conceptualization to construction. Our library of plans demonstrate a consistent commitment to identifying and then meeting the unique needs of communities of all sizes and configurations. We recognize that the City of Ypsilanti is in possession of a plan that is of excellent quality and durable enough to last through this update and more, and we want you to know that it is in competent and respectful hands with us.

While responsible land use has always been the bedrock of every service we provide, BRI has made concentrated investments in resiliency work over the past several years. In the City of Trenton, similar to Ypsi in both population and industrial base, we re-envisioned the master planning process and document to fully integrate resiliency principles, and are now updating the zoning ordinance to implement it. Working with the Land Information Access Association in Traverse City, BRI co-wrote the statewide guide to integrating resiliency principles across a variety of local government activities; we have also worked with the Michigan Association of Planning to develop and deliver training materials on environmental planning and resiliency.

SEEDS has been heavily engaged in community energy planning and smart energy and resource management for over a decade. We provide frameworks for strategic target setting and ongoing monitoring. SEEDS has created dozens of multi-year Energy Action Plans for specific municipalities and counties outlining current and projected energy use, greenhouse gas emissions, and the returns on dollars invested in clean energy including conservation, efficiency, and renewable technologies. SEEDS was also a lead coordinator for the City of Traverse City's residential efficiency program funded by the US Department of Energy making Traverse City one of the lead performers in the state.

Our clients and funding partners have included the Michigan Energy Office, NW Michigan Council of Governments, Grand Traverse County, the City of Traverse City, Traverse City Light & Power, the Michigan Land Use Institute and others. We have determined community-scale energy usage benchmarks including residential, commercial, industrial, and transportation sectors. We have also used these benchmarks to analyze regional job growth and economic development potential based on specific clean energy best practices.

In 2016 SEEDS formally joined forces with other Michigan nonprofit energy technical assistance providers to form the Michigan Community Energy Partnership (MICEP). SEEDS portfolio of research and planning documents relating to energy efficiency and sustainability goals is focused especially within the 10-counties of NW Lower Michigan. With MICEP partners, we are able to provide services and collective expertise to the entire State of Michigan for the benefit of communities that vary widely in geography, culture, demographics, available finances, and political will. Together, we were the original authors of the Community Energy Management Best Practices adopted by the State of Michigan. MICEP brings decades of experience in energy strategies and solutions for planning, implementation, consulting, and project financing.

EcoWorks based in Detroit is one of the founding MICEP partners. EcoWorks also co-founded institutions including the Southeast Michigan Regional Energy Office and the Detroit City Council's Green Task Force. EcoWorks serves Southeast Michigan municipalities offering non-profit energy management and planning services.

EcoWorks has a 36 year history of providing services at the intersection of community development and sustainability, with a particular focus on energy. EcoWorks provides energy management services to public sector organizations, municipalities, universities, schools and hospitals to address energy use within organizations in support of organizational economic, environmental and social goals. EcoWorks has worked with over 50 government partners, and 300 business partners, and has generated more than \$35 million in energy savings.

EcoWorks is developing comprehensive energy plans for 20 municipalities in Southeast Michigan. EcoWorks supports municipal climate and resilience goals through strategic energy planning. These services include technical assistance, energy management, project management, energy education, energy audits, and full program services for deploying financing and contractors to complete energy projects. EcoWorks creates opportunities to learn and practice the sustainable use of energy and natural resources through innovative education, job training, consulting and social business advocacy.

EcoWorks authored Ypsilanti's 2012 Climate Action Plan and conducted the city's 2012 GHG Inventory. EcoWorks is currently working with the City of Ypsilanti to complete a comprehensive Energy Plan.

Relevant Project Experience

Trenton Coast Resiliency Master Plan

City of Trenton, Michigan

2017 Daniel Burnham Master Plan Award

Like many downriver communities in Michigan, their heyday precedes them. Trenton's location along the Detroit River placed it at an important crossroads for economic prosperity in the middle of the 20th century. Home to major industry and shipping that was once a boon for the residents, their decline now serves, at least partially, as the impetus for a new type of planning that investigates the ties between people, land, and structures through a resiliency lens. In choosing a Resiliency Master Plan, Trenton has joined the national conversation on how to mitigate and adapt to climate change. As such, the city designed a framework to evaluate its resources and created action items to protect them.

Four community forums were held that served three vital functions: they connected City officials and staff with members of the public; those that attended caught an educational glimpse into resiliency planning; and the locations where meetings were held served a second purpose as emergency disaster centers for neighborhoods if ever in crisis. At the forums, an overview of resiliency planning was coupled with activities drawn from the efforts of the Red Cross: participants were first asked to assess the City's current standing with regard to each of the six resiliency characteristics, and then to share examples of previous, present, and future stressors while indicating whether successful responses to them had occurred. One special community forum discussed environmental and leadership issues with the next generation: junior high students. These often-unheard voices were given the opportunity to grade adults, using interactive, real-time voting technology, on a classic scale of A to D regarding how we are managing the city, the world, the environment, and change. Their clear-eyed assessment that we can mostly handle what we have but fall apart when we have to change, and their nearly uniform agreement that our problems at all scales can basically be boiled down to respect and accountability, were both sobering and inspiring.

The plan looks at case studies to investigate the feasibility of mitigation efforts such as investment in renewable energy and microgrids, and the effectiveness of rain garden to manage excessive rain water. Combined with its vulnerability analysis, informed policy recommendations were written that call for decreasing parking minimums and impervious pavement, increasing vegetation and green space, moving development away from the coastal zone, zone for higher density to prevent sprawl, and provide pedestrian and bicycle amenities to encourage nonmotorized transit. The Action Plan aims to boost green infrastructure, look into alternative energy and incentives for homeowners, ways to reduce vehicular emission, and encourage smarter development patterns to preserve natural resources. This plan was written with people, land, and structures in mind, all of whose combined effects would improve the environment and our relationship to it.

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Relevant Project Experience



Planning for Community Resilience in Michigan

A Comprehensive Handbook



The Planning for Community Resilience in Michigan: A Comprehensive Handbook has been developed for land use policy and planning practitioners to help ensure that resiliency principles and climate mitigation actions are integrated into plans and policies at every level of local government. Many of the 21st century urban and suburban issues faced by Michigan communities have a direct or indirect connection to the impacts from climate change. Land-use planners and policy makers are committed to thinking long-term about changes and trends, and how they will impact communities and natural resources. This handbook harnesses the expertise of statewide scientists, policy makers, and other experts to provide a step-by-step process for integrating resiliency planning into local food system planning, critical infrastructure decisions, natural resource management plans, zoning ordinances, and master plans. Numerous state agencies and organizations teamed up to support the development of the Handbook as a way of helping communities address the complex issues associated with climate change.

Relevant Project Experience

Ypsilanti Streetscape

Ypsilanti, Michigan

Beckett & Raeder, Inc. developed design and construction documents for a comprehensive downtown streetscape for the Ypsilanti Downtown Development Authority. An overall master plan was prepared identifying various zones of development, a hierarchy for the circulation and streetscape development, and revisions to the Michigan Avenue corridor road geometry including a proposed median. In order to obtain MDOT authorization for the revisions to the state trunkline, a traffic study was prepared to demonstrate that the proposed revisions could indeed handle the traffic volumes, and accommodate the turning movements existing in the downtown area.

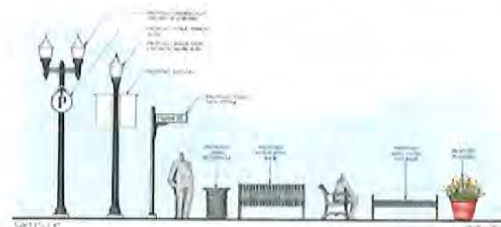
Streetscape paving and furnishings were designed to compliment the historic character of the downtown business district. Several small adjacent park areas were included in the master plan to integrate the Public Library, the Riverside Arts Center and the Huron River waterfront.

A custom designed banner was developed, highlighting the historic facades found throughout the business district. Beckett & Raeder, Inc. coordinated the installation of a Detroit Edison Lighting program, including accommodations for holiday lighting, and the banner system.

Beckett & Raeder, Inc. managed the implementation of the first phase of streetscape funded in part through the Tea-21 program, and DDA bonds. Beckett & Raeder is currently working with the DDA to develop a second phase of downtown improvements, seeking Tea-21 funding.

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Relevant Project Experience

Riverfront Parks

Ypsilanti, Michigan

The Riverfront Parks in the central area of Ypsilanti are one of a series of community segments and features that are proposed to be linked by a river open space system plan developed by Beckett & Raeder, Inc. The Riverfront Parks specifically include Riverside Park and Frog Island Park which form a riverfront link between the central business district and the historic "Depot Town" business area.

BRI developed an overall master plan for both parks outlining a phased reconfiguration of existing facilities and addition of new facilities. The key planned linking element of both parks is a riverfront walkway and trail system with overlooks, fishing piers, canoe docks, and a pedestrian bridge crossing the Huron River. Additional facilities proposed for Riverside Park include active and passive park pavilions, arboretum, open activities area and additional parking to serve the park and CBD businesses. Proposals for Frog Island Park included a performance amphitheater, sports facilities, and a plaza linking the park to the Depot Town Farmer's Market.



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Relevant Project Experience



seeds

Implementing local solutions to global challenges at the intersection of ecology, education, and design since 1999

Energy & Environment Proactive Analysis & Planning

Portfolio Highlights



2017-Present - Serves as facilitator for the Traverse City Manager's Green Team.



2016 - Founding partner of the Michigan Community Energy Partnership.

2015 - Installed 2.5KW solar array at Historic Barns Park and wrote a NetZero Buildout Plan for the Park and the Recreational Authority.

2011 - Assisted City of Traverse City procure a \$1.5million "Better Buildings for Michigan" grant.

2009 - Founding Grand Vision Energy Network facilitator.

2009 - Partnered with Networks Northwest to procure funding for energy action planning for local units of government, including \$400K in direct investment upgrades.

2008 - Served on the Traverse City Area Chamber of Commerce's Energy Policy Task Force.

SEEDS has focused on Clean Energy solutions for well over a decade. Our interest in energy is rooted in a quantified understanding of the impact energy consumption patterns have on core issues ranging from air and water quality to human health and community resilience.

The world is on the move toward Clean Energy, it is only a question of how long it will take. Lack of federal leadership has only strengthened the fact that the most significant leadership is currently coming from corporations and from cities and states. Michigan — and perhaps the Northwestern region especially — is primed to lean into this leadership space as well.

The REAL Framework for Energy Excellence



RELIABILITY

Does it turn on when I want it?

ECOLOGY

Does it harm other species?

AFFORDABILITY

Can I reasonably pay for it?

LOCAL ECONOMY

Who gets my dollars?

In 2015 and 2016, SEEDS served as co-chair of the Grand Vision Energy Network and developed a visual illustrating the consensus on a REAL Framework for Energy Excellence that helps people have constructive conversations about a complex topic. Different stakeholders have different priorities, and that's okay!

The Future of SEEDS Energy & Environment

The Problem:

Energy costs are a notable burden for communities. For institutions like schools, municipalities, and small businesses they are frequently in the top three budgeted expenses. For lower income residents, utility bills can be upwards of 15-20% of total income. At the same time, the average building wastes 30% of the energy consumed. The downward spiral of inefficient facilities, aging equipment, and stretched budgets, forces difficult and unfair choices. While inefficiencies and waste drain budgets, they also represent opportunities.

What We Can Do:

Managing for Clean Energy is one way to gain long-term cost savings and realize cash-flow benefits. Efficiency renovations and technology upgrades also create jobs and stimulate the local economy.

SEEDS fills two gaps in services to Michigan communities.

1. Technical Assistance to Institutions and Communities:
 - Quantify the "needles" communities & institutions want to move.
 - Provide basic trainings related to core clean energy principles and practices.
 - Personalize action planning based on local goals and opportunities.
 - Help navigate the complexities of implementation.
2. Network and Stakeholder Engagement: Convening community dialogs and interactive learning sessions.



Your Opportunity

Never before has there been such widespread momentum toward Clean Energy at both global and local levels. To keep momentum going locally, we must visibly demonstrate that the move to Clean Energy is financially rewarding, improves quality of life, and supports innovation in other arenas such as economic development, poverty reduction, community resilience, and water quality.

Moving to Clean Energy is complex, but doesn't need to be polarizing.

Want more? Contact: Executive Director Sarna Salzman
(231) 947-0312; sarna@ecoseeds.org

OUR GOAL: RAISE

\$80,000

to EXPAND SERVICES
to more PUBLIC
PURPOSE ENTITIES
and ELEVATE CRITICAL
COMMUNITY
CONVERSATIONS

Relevant Project Experience



Our Mission: EcoWorks is a Detroit-based nonprofit that creates opportunities to learn and practice the sustainable use of energy and natural resources through innovative education, job training, consulting, social business and advocacy.

We have generated savings of **more than \$30 million** for clients in our service area and have helped secure **over \$5 million** for local governments to invest in sustainability projects.

Strategic Community Initiatives

Low-cost & Custom-fit Energy Efficiency Solutions

Advantages of partnering with EcoWorks

Compared to their private and residential counterparts, municipalities, schools, and hospitals generally invest less in energy efficiency and renewable energy initiatives due to unique financial constraints. The community energy management approach can (1) free up capital to reinvest in future projects, (2) reduce or eliminate large variable costs, and (3) help organizations better manage financial resources for the benefit of constituents, patients, and students. Robust community energy management makes organizations more resilient, nimble, and proactive in a changing landscape. Contact us and set up a free consultation for your organization.



Briana DuBose, Director of Strategic Community Initiatives

✉ bdubose@ecoworksdetroit.org

☎ 248.956.1150

EcoWorks' Services

Technical Assistance

- Facilitate stakeholder meetings and training
- Utility bill optimization and benchmarking
- Energy efficiency and renewable energy consultations
- Energy management
- Facility assessments and audits
- Professional development for energy managers and staff

Energy Management

- Integrate energy goals and programs into broader development plans
- Prioritize energy projects according to organizational goals
- Identify sustainable financing methods for energy projects

Project Management

- Owner's representation
- QA/QC and project evaluation
- RFP development
- Start-to-finish oversight
- Financing recommendations
- Impartial contract review



Education Services
Training + Jobs

313.849.1030
ecoworksdetroit.org
building sustainable solutions

22400 W. Seven Mile Rd.
Detroit, MI 48219

References



M-115 Corridor Plan Vision Illustration, Cadillac, Michigan

BRI

SEEDS

EcoWorks



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Fee Proposal

	Fee	Expense	Base	Optional
Organization			\$865	
Program management plan	\$95			
Kickoff meeting	\$770			
Community Engagement			\$2,445	
Town Hall/Visioning meeting	\$1,450	\$25		\$1,475
Web-based survey or interactive map	\$1,050			
Site installations (2)	\$1,035	\$50		
Charrette-style open house meeting (Optional)	\$1,890	\$100		\$1,990
Joint action plan meeting	\$310			
Data Analysis			\$3,740	
Master plan update	\$1,870			
Master Plan data review meeting (Optional; could be conducted by Committee without consultant attendance)	\$380			\$380
Sustainability Plan	\$1,870			
Sustainability data review meeting (Optional; could be conducted by Committee without consultant attendance)	\$380			\$380
GHG Inventory			\$12,885	
GHG Inventory	\$12,885			
Benchmarking (Optional)	\$15,033			\$15,033
Master Plan			\$1,240	
Master plan implementation matrix	\$190			
Presentations (2)	\$500			
Adoption	\$550			
Sustainability Plan			\$3,849	
Sustainability goal statement	\$250			
Sustainability implementation matrix	\$1,889			
Sustainability plan preparation	\$1,520			
Review meeting (Optional; could be conducted by Committee without consultant attendance)	\$345			\$345
Presentation (Optional; could be combined with above)	\$190			\$190
Adoption	\$190			
Deliverables (Optional)	\$670	\$2,000		\$2,670
Master Plan			\$6,420	\$10,265
Greenhouse Gas Inventory			\$12,885	\$27,918
Sustainability Plan			\$5,719	\$9,304
Not to Exceed			\$25,024	\$47,487

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involve

Thank you.

John R. Iacoangeli, AICP, LEED AP, CNU-A
Principal



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CITY OF YPSILANTI

MASTER PLAN UPDATE AND SUSTAINABILITY PLAN

SMITHGROUP

December 3, 2018





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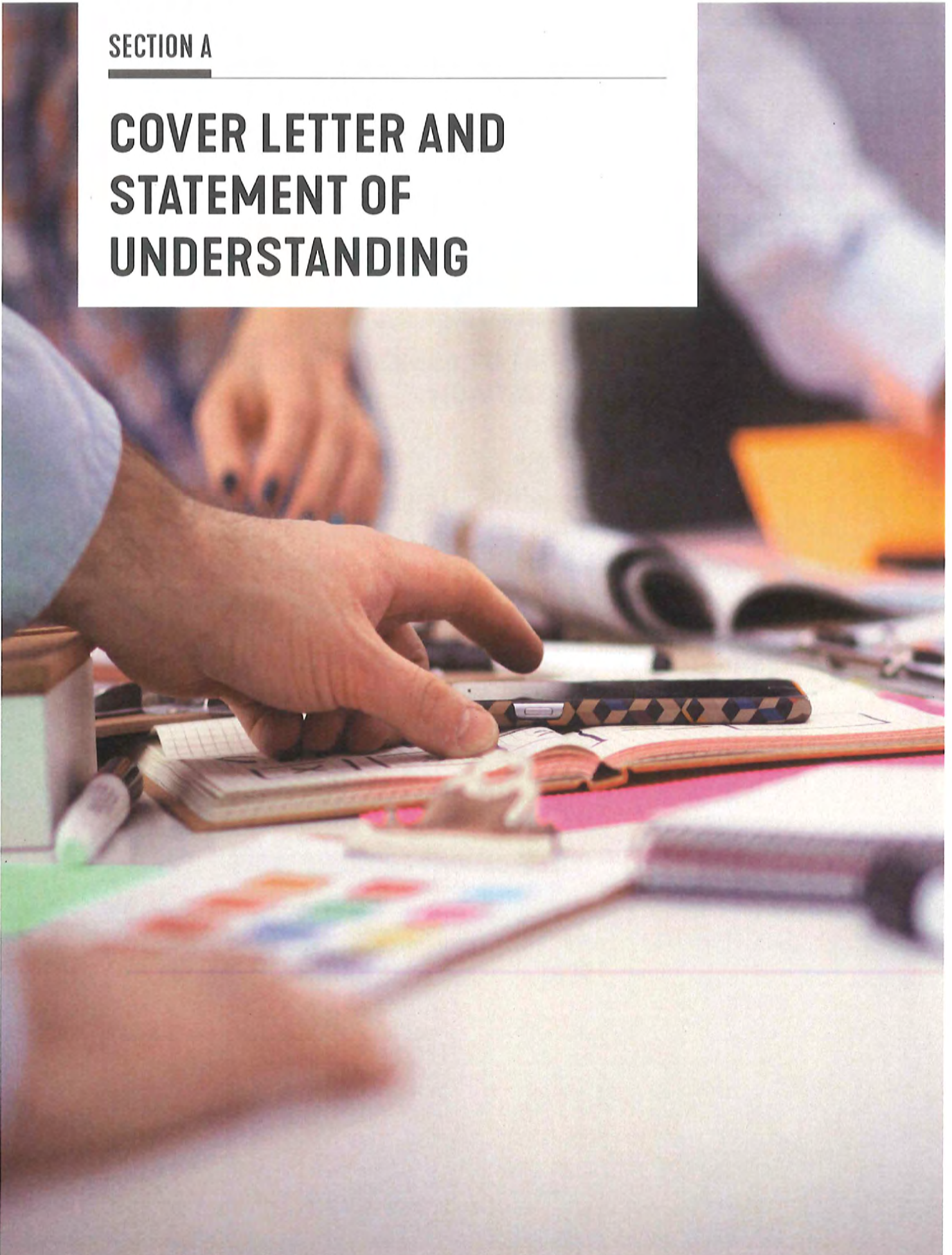
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SECTION A

COVER LETTER AND STATEMENT OF UNDERSTANDING



December 3, 2018

Re: Master Plan Update and Sustainability Plan

CITY CLERK

City of Ypsilanti
1 South Huron Street
Ypsilanti, Michigan 48197

Dear City Clerk and Members of the Selection Committee:

The SmithGroup team is pleased to present this proposal for the preparation of the City of Ypsilanti Master Plan Update and Sustainability Master Plan. Our team is excited to help you shape your sustainability vision and provide a strategic path towards implementing and tracking progress toward your goals.

OUR STRENGTHS

We have a breadth of experience in master planning, sustainability, and systems planning, and we have the communication skills, creative talent, and enthusiasm to partner with your community in developing a consensus-based plan that serves as an effective guide for future decision-making. Key strengths of our team include:

MASTER PLANNING

SmithGroup brings experience from preparing dozens of district and community master plans for communities throughout the Midwest and nationally. We are prepared to compile best practices from previous master plans to develop the smartest solutions for the unique challenges associated with Ypsilanti's urban setting.

We recognize the importance of understanding the existing 2013 Ypsilanti Master Plan for a Safe, Diverse, Sustainable City and its current status. By meeting Ypsilanti where it is, we can develop goals and objectives to optimize the Plan's revisions. SmithGroup benefits from an enormous network of in-house industry professionals that have the experience and scope to optimize planning around Ypsilanti's dense population, small urban setting, and rapidly changing economic setting. We will apply our deep understanding of these nuanced challenges, opportunities and best practices to Ypsilanti.

SUSTAINABILITY PLANNING

Sustainability metrics and performance indicators serve to shape city and institutional strategies and policy. SmithGroup's extensive background in sustainability planning make us exceptionally qualified to work with Ypsilanti to develop its inaugural Sustainability Plan. Ypsilanti's dedication to sustainability provides a strong foundation on which to develop goals, showcased in the City Master Plan and the Climate Action Plan. Using Ypsilanti's existing sustainability-centric goals, SmithGroup will develop people-based solutions alongside City officials and the Ypsilanti Master Plan.

PUBLIC ENGAGEMENT

Our planning approach builds consensus across diverse community groups. Our graphic, presentation, and facilitation skills ensure that opportunities for public input are productive, meaningful, and fun. For Ypsilanti, these engagement strategies will cater to its youthful, rapid population turnover rates. The final Plan will directly reflect the City's existing sustainability priorities, the community's input, and strong local support for implementing the plan over time.

ACTION ORIENTATION

Our clients will confirm that our planning work and implementation strategies lead to meaningful development tools and responsive built projects. We have extensive experience in the final design and engineering of urban and people-focused spaces. This depth of experience helps us to create a successful bridge between broad planning ideas and built projects.

MOVING FORWARD

We will revise the 2013 Master Plan's goals and objectives to account for recent trends and validate them with the public. The new Sustainability Plan component will establish a framework already begun by the Sustainability Commission to invigorate the Master Plan with policies and actions to embrace the triple bottom line across the City's policies and practices. The updated Plan will provide a tangible, implementation-focused guide for near and long-term efforts to make Ypsilanti a leader in achieving sustainable results.

Thank you for the opportunity to submit our proposal. If you have any questions or require additional information, please feel free to contact Kathleen Duffy [REDACTED]

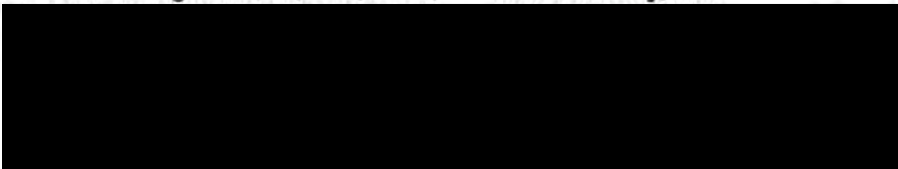
Sincerely,



Steven Baumgartner, PE, CEM, HBDP,



Kathleen Duffy, AICP



SMITHGROUP

Integrated design for scaled-up thinking and systems strategy.

Working across a network of 13 offices internationally, our team of 1,300 experts is committed to excellence in strategy, design and delivery—giving rise to new and innovative processes and methodologies that are redefining the way we work as teams. Our integrated practice offers depth in all disciplines serving the built and natural environment, including architecture, engineering (coastal, civil, structural, mechanical, electrical and plumbing), landscape architecture, urban design and planning. Our specialists leverage systems approaches to develop beautiful, sustainable, future-focused solutions for healthcare providers, science and technology organizations, higher education and cultural institutions, urban environments, diverse workplaces, mixed-use and waterfront developments, and parks and open spaces.

Blending artistry, technology, planning, research and strategy, SmithGroup specialists partner with clients to anticipate disruptors that are redefining their businesses and solve challenges impacting their worlds. Whether tasked to develop a business model, workflow processes, a campus master plan, a building, an energy model, or a strategic plan, our integrated team of experts relentlessly explore and refine until they arrive at a solution that realizes success at every scale of a project.

Our ability to skillfully blend aesthetics with performance, sustainability, and resiliency criteria necessary to create a better tomorrow—for clients, employees, the community, the environment, and our collective future—has earned SmithGroup recognition from top-ranking institutions, publications and design authorities the world over.

LOCATION

201 Depot Street
Second Floor
Ann Arbor, Michigan 48104

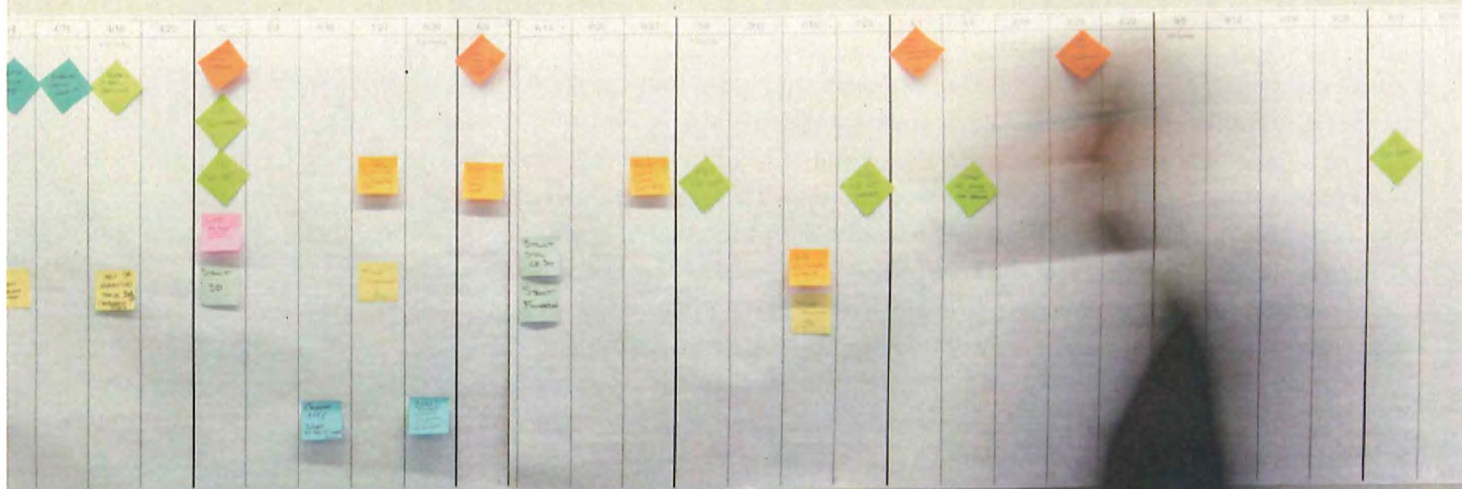
OTHER OFFICE LOCATIONS

Ann Arbor, MI; Boston, MA;
Dallas, TX; Detroit, MI; Los
Angeles, CA; Madison, WI;
Phoenix, AZ; Pittsburgh, PA;
San Diego, CA; San Francisco,
CA; Shanghai, China;
Washington, DC

SERVICES

Architecture
Building Technology
Civil Engineering
Construction Administration
Electrical Engineering
Facility Economics
Interior Design
Landscape Design
Master Planning
Mechanical Engineering
Programming/Planning
Structural Engineering
Telecommunications
Urban Design

WORK APPROACH AND TIMEFRAME



DETAILED DESCRIPTION OF THE PROPOSED WORK

1. INITIATION

We believe project start-up is a critical step that will ensure all participants have a shared understanding of expectations and what will be delivered at the end of the process.

First, we would have a coordination call with the City's Steering Team to discuss the Work Plan, the public engagement strategy, confirm schedules, determine how to best coordinate activities and communicate with one another, and review existing plans and data.

We will prepare a Program Management Plan refined from this proposal with changes based on the Kick Off call. This Plan will set a strategic direction for meetings, deliverables, and the expectations of City Staff and our Project Team.

COMPONENTS OF A STRONG SUSTAINABILITY PLAN:

Demonstrate leadership on sustainability and performance

Embed a culture of sustainability within design, construction and operations, and makes it an integral part of decision making

Provide process and procedures for planning, monitoring, reporting, evaluating, and reviewing performance

Assign responsibility for achieving and exceeding sustainability indicators and targets

Reference compliance with relevant sustainability policies and guidance

Turn the sustainability aspirations into reality

2. ASSESSMENT

Following our agreed upon schedule and approach with the Steering Team, we will begin our analysis, including an audit of the current Master Plan, Sustainability Commission's work to date, and inventory available data. The goal is to come armed to the first Kick Off meeting with some baseline metrics.

- **Online Survey.** At the onset of our process, we will prepare an online survey that can remain open during this phase of the process.
- **Master Plan Data Refresh.** Since the existing plan utilizes 2010 Census data, the Master Plan is relatively up-to-date. We will prepare a baseline analysis using ESRI Community Analyst to pull the latest demographic estimates and trends. We would rely on a City Intern to update the plan's tables with the most relevant metrics from our Census update and refresh other data from local sources as necessary (WATS, AAATA, City Assessor). We will not provide an update to the market analysis.
- **Greenhouse Gas Inventory and Report.** We will provide high-level quantitative and qualitative estimates for government and community emissions. The inventory would use best practices in emission estimates per building or activity type, likely in line with assumptions from EcoWorks. Estimates could be refined given the availability of data. Projections will be established based on business as usual trends. We will build a wedge diagram with estimates of high-level strategies to reach mid-term and long-term goals.
- **Energy Efficiency and Resource Management Inventory.** We will provide high level estimates based on typical use for government and community operations, likely gathered from EcoWorks and

energy plan baselines. This will be supplemented with some qualitative review from the Visioning Open House, survey, and municipal feedback on challenges and strengths.

- **Analysis and Baseline Assessment of Sustainability Indicators.** We will synthesize overall assumptions for calculations and inventories. It is our understanding that recommendations of strategies (actions) in each target area are not provided in this effort.
- **Sustainability Commission Kick Off.** We will present our results from the inventory and indicator assessment. This inventory will provide the framework toward setting goals with the Commission using the LEED for Cities and Communities (formerly STAR Communities) framework.

- **Visioning Open House.** Based on the Kick Off work session with the Sustainability Commission, we will vet baseline sustainability goals and existing master plan goals at a Visioning Open House. To help spread the word and reach an ethnically diverse attendance, we would suggest the City target three churches: Brown AME, Messiah Temple, and Second Baptist. Through interactive visioning exercises focused on the triple bottom line, we will present the environmental factors analyzed above as well as focusing on coalescing goals around the STAR theme areas of Economy and Jobs, Education, Arts and Community, Equity and Empowerment, and Health and Safety. We would rely on the City to help identify key community leaders to help spread the word and tailor a "Pop-Up" version of our visioning exercises/online survey to deploy at a limited number of key locations frequented by locals (Depot Town, EMU,



Downtown) following the Open House to supplement input. We will gauge the success of these efforts and the survey to ensure a wide enough cross section of the population has been reached and tailor the Pop Ups to capture the missing representation.

3. DRAFT

Building on the analysis and engagement, we will provide appropriate amendments to the Master Plan that align with the draft Sustainability goals and strategies. The Sustainability Plan draft will be a self-contained chapter amendment to the overall Master Plan and will speak to Ypsilanti's current state and future goals—as a City but also as a larger part of a region. This document will also contain recommendations for implementation and attainment. The plan's implementation matrix will be updated to combine revisions to the existing actions and integrate the new sustainability actions and metrics to meet the LEED (STAR) framework. The actions will be further fleshed out with responsible parties and budgets where applicable to meet MEDC RRC requirements.



Once an 80-90% draft is complete, we will hold a draft plan work session at both a Planning Commission and Sustainability Commission meeting. Following those sessions, revisions will be made for a public open house to confirm the plan direction. Draft presentations will then follow at the Sustainability Commission, Planning Commission who will recommend distribution to Council, and at Council to authorize distribution for the 42-day review period. During the review period, we will rely on City Staff to collect public comments and coordinate any other edits to provide us with one set of final edits for adoption. We will rely on City Staff to present the final plan for adoption at Planning Commission and Council Meetings.

We will provide you with editable versions of the plans and graphics and 20 bound copies of the plan.



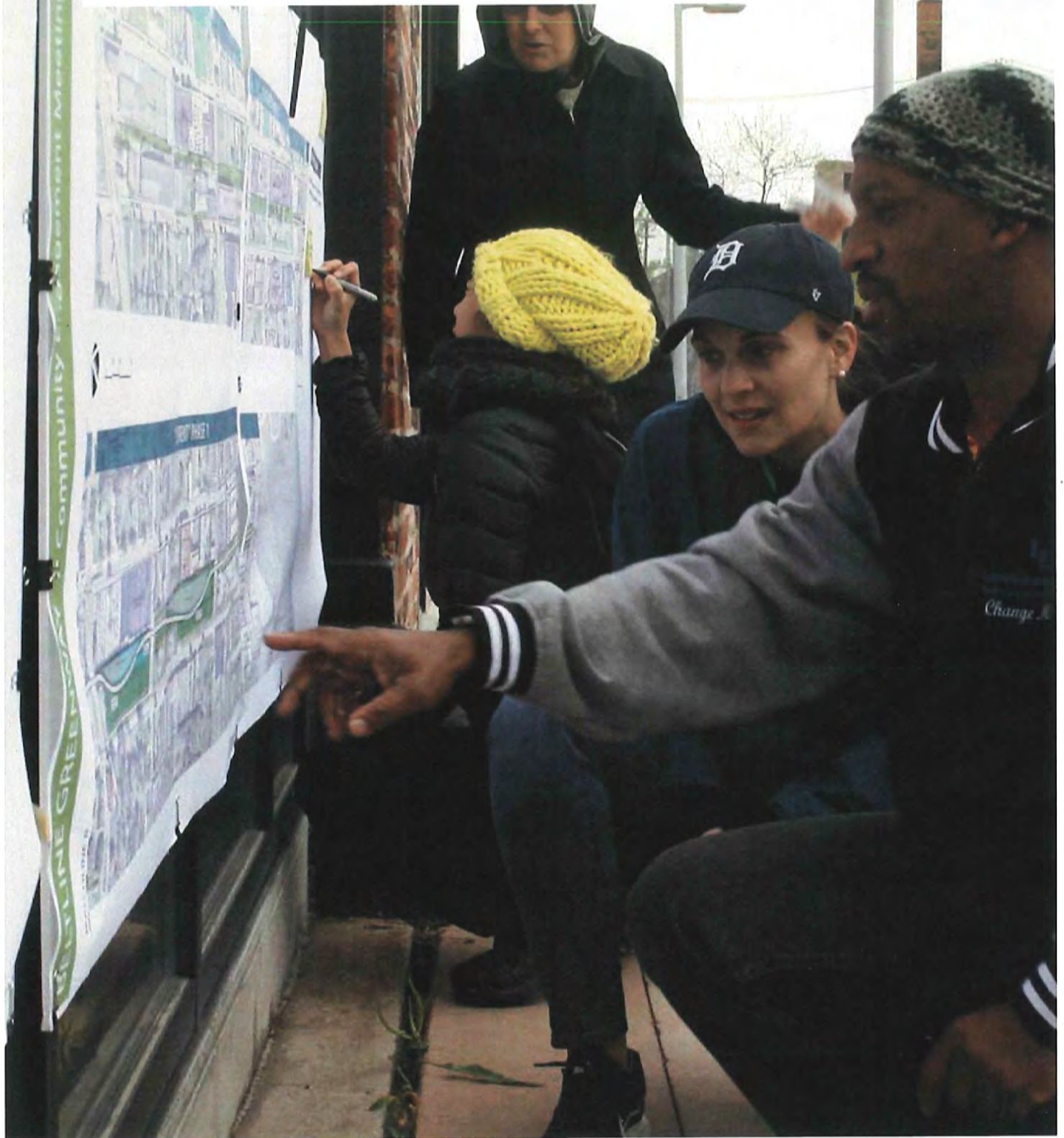
ANTICIPATED TIMEFRAME

We expect to meet your six-month timeframe for a copy of the draft plan for distribution. The 42-day review period and adoption will necessitate a few extra months beyond that six-month timeframe. Any other delays caused by the logistics of meeting schedules, facility availability for the open house, or follow-up pop-ups may delay the schedule, but we will do our best to work with you to keep a tight schedule.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1. INITIATION									
Kick Off Call									
Program Management Plan									
Review Existing Plans/Data									
Confirm Engagement Strategy									
2. ASSESSMENT									
Online Survey									
Master Plan Data Refresh									
Greenhouse Gas Inventory and Report									
Energy Efficiency and Resource Management Inventory									
Analysis and Baseline Assessment of Sustainability Indicators									
Kick Off Meeting and Preliminary Sustainability Goals									
Visioning Open House									
Pop-Up Visioning Sessions (more staff/commission involvement)									
3. DRAFT PLAN									
Draft Goal Statements (Sustainability Plan)									
Draft Objectives Update (Master Plan)									
Draft Plan Preparation (Sustainability Plan)									
Draft Implementation Matrix (Both)									
Draft Work Plan Session									
4. FINALIZE PLAN									
Plan Revisions									
Draft Plan Open House									
Draft Plan Presentations									
Final Plan Revisions									
Adoption Meetings (managed by City Staff)									

-  Sustainability Commission
-  Planning Commission
-  City Council
-  Public Open House

PUBLIC PARTICIPATION PROCESS



ENGAGING THE PUBLIC

PUBLIC PARTICIPATION PROCESS

The SmithGroup team recognizes that the Ypsilanti Sustainability Plan is a transformative opportunity for the community to express their long-term vision, build resilience, energize programs and proactively shape their environment. Critically, the planning process itself must be a mechanism for building collaboration between neighborhoods and their residents, the commercial districts and their businesses, and institutions and their services—improving the quality of life for all of the above. Our community engagement process will:

- Facilitate meetings, workshops, interviews and the development of public outreach materials that reflect how community members receive information.
- Coordinate with officials and staff to grasp the history and understanding of the planning studies and past initiatives associated with the master plan and creation of the Sustainability Commission.
- Establish a meeting schedule.
- Use creative strategies for public engagement and broad project participation.

The following are aspects of the planning process that we feel underpin the entire effort and are central for achieving enduring success:

A COMMUNITY-DRIVEN PLAN, NOT A CITY OR CONSULTANT-DRIVEN SOLUTION.

The planning process best serves the community when it empowers its citizens to make informed decisions on the matters affecting their lives. The process should promote the notion of ecological democracy—where the community is the decision maker and where

engagement builds social capital and cohesion. Education is key for promoting stewardship.

FOCUS ON THE PEOPLE, NOT THE “WHAT AND WHERE.”

While physical design plans or intervention strategies will be part of the planning process—it is essential to acknowledge how such changes will impact people first and foremost. Understanding how proposals will improve the health and well-being of people, improve personal mobility, and connect people to each other and essential goods and services is vital.

EQUITY AS A BASIS FOR DECISION-MAKING.

A decision cannot be equitable unless everyone involved has a voice at the table. To understand equity, the process must understand who is affected by future changes and how they will be affected. Leveraging a robust history of outreach and coupling it with further means of engaging the community, building consensus, and hearing from everyone is essential for having an equitable outcome.

GROUNDING IN REALITY AND AN IMPLEMENTABLE STRUCTURE.

Successful plans do not wait until the end to figure out how they will be implemented. Laying the groundwork for implementation and a governance structure at the onset of the planning process is paramount, and must answer the pragmatic question—“Who owns the Plan and is responsible for its successful implementation?”

ENGAGEMENT STRATEGY

As a community-driven planning process, engaging stakeholders, residents, business and others in the Master/Sustainability Plan is paramount for the success of the project. There is no one-size-fits-all solution for equitably engaging the diverse voices within a community. A broad range of strategies need to be employed, recognizing that certain stakeholders can be better engaged with certain methods and that



these methods may vary at different points in the process. Successful community engagement hinges on two critical issues:

1. **Who** needs to be engaged and what is their role in the planning process?
2. Which **methods** are best suited to engaging each stakeholder?

OUR TOOLKIT

SmithGroup has employed dozens of approaches for managing public engagements that are tailored to the size and composition of the involved community groups. A core value of all our approaches is that they are transparent, elicit valuable input, identify impediments, and build consensus among all parties.

For large, city-wide planning efforts, effectively facilitating large groups is vital to success. Workshops with many participants often mean that a diversity of perspectives will be present. SmithGroup emphasizes providing a range of activities that allow all participants to comfortably express their views and to feel that they are being heard. Ensuring that all voices are recognized can be complemented by activities that bring everyone together to build a common understanding of the issues and opportunities at hand. Some of the activities SmithGroup employees during public engagement meetings include:

- Brainstorming
- Graphical Mapping Exercises
- Post-it Commenting
- Dot-voting
- Priority Setting/Allocation Games
- Visual Preference Voting

- Real-time Electronic Voting (using "clickers")
- Reflective Writing and Idea Sharing
- Alternative Future Explorations
- Small Group Discussions with Participant Note Takers
- Small Groups "Reporting Out" to the Whole Group
- Sequencing Topic "Stations" (i.e., musical chairs approach)

In addition to orchestrating the workshops, SmithGroup facilitates the overall public engagement process and ensures that everything runs smoothly by employing several organizational methods, including:

- Providing comment sheets at all public meetings for participants to write in thoughts they have about the content of the workshops or the process itself.
- Assisting the client in making workshop results available to the entire community.
- Providing community notices or publishing a newsletter about outcomes as well as upcoming engagement opportunities.
- Analyzing workshop results and providing a statistical analysis where appropriate.
- Developing online surveys, "workshops-in-a-box," or takeaway activities that participants can share with their friends, families, and neighbors.
- Tailoring the visioning exercises for pop up workshops. Rather than asking people to come to a workshop, bring the workshop to them. A couple sessions of informal pop-up works at busy locations—such as pedestrian-heavy business areas, libraries, recreational facilities, and other civic or business centers—can reach a broader cross-section of people. Piggybacking on other community events with local support is also an effective way to conduct pop up workshops.



COMMUNICATION STRATEGY

The success of any planning project hinges on effective communication at many levels. Communication between project team members and key stakeholders is critical for the planning process to function. However, ongoing communication with the broader community is just as important. The community needs to have clarity about the intended direction and purpose of the Plan, be informed about upcoming events and ways of being involved in the process and have access to key project information and resources in order to be informed and knowledgeable about important planning issues.

A SUCCESSFUL COMMUNICATION APPROACH

Project Portal: This is a web-based landing page for all information on the project. This could be a page on the City's website with the flexibility to post key documents, resources and announcements. Ideally, the portal provides a method to post announcements and updates that can be shared social media platforms.

Press Media: One of the best ways of getting coverage on a project is going directly to the press. Asking to be interviewed by local print, radio and even television coverage can increase awareness of the project and drive participation in outreach. It also presents an opportunity to respond to common questions or concerns raised during the planning process in a manner likely to be seen and heard by a broader audience.

Tap Existing Networks: The Sustainability Commission, Planning Commission, and Affordability subcommittee can be a part of building a broader pipeline for communication. Asking participants to forward announcements or project information throughout their own networks is a key strategy.

OUR APPROACH:

SmithGroup has a long history of forging alliances and building consensus with clients, stakeholders, and citizens groups—key to the success of any project. We listen to and learn from citizens through public meetings, charrettes, interviews, focus groups, and workshops. We work comfortably with a wide range of government agencies, understanding their needs and fulfilling their procedural requirements. Our plans and projects are successful because they satisfy the aspirations of both public and private interests, and the citizenry of the community.

SmithGroup has exceptional experience in facilitating public engagement processes with clients and their communities on projects ranging from regional master planning to detailed site-specific design. Our priority is to build consensus among clients, stakeholders, and citizen groups with an engagement process that is transparent, inclusive, respectful, and meaningful to the community. We customize involvement strategies to meet the needs of each individual project and collaborate with our client teams to determine the most effective pathway for engaging their communities. SmithGroup creates dynamic opportunities for community members to become involved in the decision-making process. When contrasting points of view are present, we help participants discover creative solutions to issues that can be embraced by all perspectives.

SECTION D

PROFESSIONAL STAFF AND RESOURCES



KEY PROJECT TEAM MEMBERS

SmithGroup is more than a collection of discipline experts working in a variety of markets. Our team is united in mission, purpose and voice, resolved to build upon our legacy with people-based solutions that integrate across scales.



PRINCIPAL-IN-CHARGE | URBAN SUSTAINABILITY PLANNER

STEVEN BAUMGARTNER

PE, ECODISTRICTS AP, CEM, HBDP, LEED AP



EDUCATION

Bachelor of Science in Mechanical Engineering, Minor in Mathematics
Union College, 1999

REGISTRATIONS

Professional Engineer:
New York, District of Columbia

Certified Energy Manager

High-Performance Building Design
Professional

LEED Accredited Professional

PROFESSIONAL AFFILIATIONS

ASHRAE - Member and New York
Chapter President 2012-2013

US Green Building Council

Society for College and University
Planning

Pittsburgh Downtown Partnership's
Envision Downtown, Technical
Committee Member, 2016-present

Pittsburgh River Life, Technical
Committee Member - 2016-present

Steven specializes in infrastructure planning, energy strategy, and sustainability framework development and implementation. He has a history of creating unique solutions to assist his clients in meeting their high-performance, economic and strategic missions. With a background in mechanical and energy engineering, he has been involved in design and research of energy simulation/analysis and sustainable system design through a number of projects in various stages of design and construction.

- University of North Carolina at Chapel Hill, Three Zeros Planning, Chapel Hill, North Carolina
- New York City Economic Development Corporation, New York City's Roadmap to 80x50, New York, New York*
- New York Power Authority (NYPA), Five Cities Energy Master Plan, Albany, Buffalo, Rochester, Syracuse, Yonkers, New York*
- Bedrock Development, Energy Infrastructure Strategy, Detroit, Michigan
- Detroit Future City Industrial Adaptive Reuse Opportunities Assessment, Detroit, Michigan
- Hazelwood Green (Almono) Development, Energy Infrastructure Analysis and P3 Procurement Assistance, Pittsburgh, Pennsylvania
- Pittsburgh Cultural Trust - Waterfront Master Plan - Sustainability Framework, Pittsburgh, Pennsylvania*
- Case Western Reserve, University Strategic Energy Planning, Cleveland, Ohio*
- University of Richmond, Sustainability Strategic Plan, Richmond, Virginia
- California State University, Chico Campus Master Plan, Chico, California
- George Mason University, Sustainability Planning Comprehensive Master Planning Effort, Fairfax, Virginia*
- Rice University, Campus Land Use Study, Houston, Texas*
- The New School, Carbon Planning, New York, New York*
- University of Pittsburgh, Sustainability Plan, Pittsburgh, Pennsylvania*

**Experience prior to SmithGroup*

KATHLEEN DUFFY

AICP



Kathleen specializes in urban design and planning and has a wide variety of planning experience ranging from small villages to capital cities, from rural townships to urban centers. She is an expert on land use, character and placemaking projects and excels in redevelopment and economic development strategies. Her creative problem solving, unique design skills and big picture thinking allow her to effectively and efficiently implement public engagement strategies that are inclusive and ultimately results in an implementable plan.

- Michigan Economic Development Corporation, Redevelopment Ready Communities Program, Various Communities, Michigan
- City of Grand Rapids, Southtown Corridor Improvement District Area Specific Plan, Grand Rapids, Michigan
- Washtenaw County, Reimagine Washtenaw, Ann Arbor and Ypsilanti, Michigan*
- City of Lansing, Michigan, Design Lansing Comprehensive Plan, Lansing, Michigan
- Ypsilanti Township Redevelopment Plan, Ypsilanti, Michigan*
- Battle Creek Downtown Plan, Battle Creek, Michigan
- Dearborn West Downtown Form-Based Code, Dearborn, Michigan
- Ferndale Downtown Form-Based Code, Ferndale, Michigan
- Genoa Township Comprehensive Plan Update, Genoa Township, Michigan*
- Lathrup Village City Center Implementation Plan, Lathrup Village, Michigan
- Mount Clemens Master Plan Update and Zoning Ordinance, Mount Clemens, Michigan
- Shelby Township Town Center and Comprehensive Plan, Shelby Township, Michigan*
- Village of Lexington Master Plan Update, Lexington, Michigan
- Wyandotte Comprehensive Plan, Wyandotte, Michigan

EDUCATION

Master of Urban and Regional Planning,
University of Illinois, 2008

Bachelor of Science in Architecture with
a Minor in Art History,
University of Michigan, 2006

Urban Land Institute Larson Center for
Leadership, Class of 2014

REGISTRATIONS

American Institute of Certified Planners

PROFESSIONAL AFFILIATIONS

American Planning Association

Urban Land Institute

Form-Based Code Institute

National Charrette Institute

**Experience prior to SmithGroup*

SUSTAINABILITY PLANNER

KATIE GRAUER

LEED GREEN ASSOCIATE



With more than 10 years experience, Katie Grauer joined the SmithGroup team with a background in policy and data analysis, community engagement, and project management. Katie thrives on her desire to shape developments that empower clients and to create lasting sustainable places that will serve generations to come. Committed to SmithGroup's value of giving back, Katie is involved in her local community through work with the EcoInnovation District Task force, Envision Downtown, and Vermont Leadership Institute.

- University of North Carolina, Three Zeros Environmental Initiative, Chapel Hill, North Carolina
- California State University, Chico Campus Master Plan, Chico, California
- Aquaponics Facility and Farmers Market Feasibility Study, Buffalo, New York*
- Mixed Use Development, Energy Systems Strategy, Pittsburgh, Pennsylvania*
- Open Streets Attendee Demographics, Pittsburgh, Pennsylvania*
- Pittsburgh Land Bank, Community Feedback, Pittsburgh, Pennsylvania*
- Strategies for Commercial Corridors Adapting to Neighborhood Change, Pittsburgh, Pennsylvania*
- Uptown Public Realm, Stormwater Management, Pittsburgh, Pennsylvania*

EDUCATION

Master of Science,
Public Policy and Management
Carnegie Mellon University, 2018

Bachelor of Fine Arts
Temple University, 2007

REGISTRATIONS

LEED Green Associate

PROFESSIONAL AFFILIATIONS

IEDC Sustainability Advisory Committee

Green Building Alliance

American Planning Association

**Experience prior to SmithGroup*

ALEXANDRIA HUFF

AICP



Alexandria brings a specialization in planning and urban design to the SmithGroup team. Her specialties include comprehensive planning, strategic planning, corridor planning, redevelopment, downtown development, historic preservation, and zoning/form-based codes. She has a wealth of experience and education regarding community planning, design and architecture, and historic preservation. Her implementation-driven work style and passion for her work allow her to develop strategies processes that directly translate to high quality deliverables.

- Michigan Economic Development Corporation, Redevelopment Ready Communities Program, Various Communities, Michigan
- Washtenaw Avenue Design Guidelines, Pittsfield and Ypsilanti Township, Michigan*
- Ypsilanti Capital Improvement Plan, Ypsilanti, Michigan*
- Center Line Capital Improvement Plan, Center Line, Michigan*
- Dixie Highway Corridor Strategy, Oakland County, Michigan*
- Howell Master Plan, Howell, Michigan*
- Howell Form Based Code, Howell, Michigan*
- Huntington Woods Housing Study, Huntington Woods, Michigan*
- Huntington Woods Parks & Recreation Master Plan, Huntington Woods, Michigan*
- Independence Township Master Plan, Independence Township, Michigan*
- Independence Township Dixie Highway Action Plan, Independence Township, Michigan*
- Novi Town Center Design Guidelines, Novi, Michigan*
- Southfield Centrepolis SmartZone Action Plan, Southfield, Michigan*
- Springfield Township Design Guidelines, Springfield Township, Michigan*
- Troy Master Plan, Troy, Michigan*

EDUCATION

Master of Urban Planning,
University of Michigan, 2014

5-21 Special Education Generalist,
University of Colorado Denver, 2011

Bachelor of Science in Architecture,
University of Michigan, 2010

REGISTRATIONS

American Institute of Certified Planners

PROFESSIONAL AFFILIATIONS

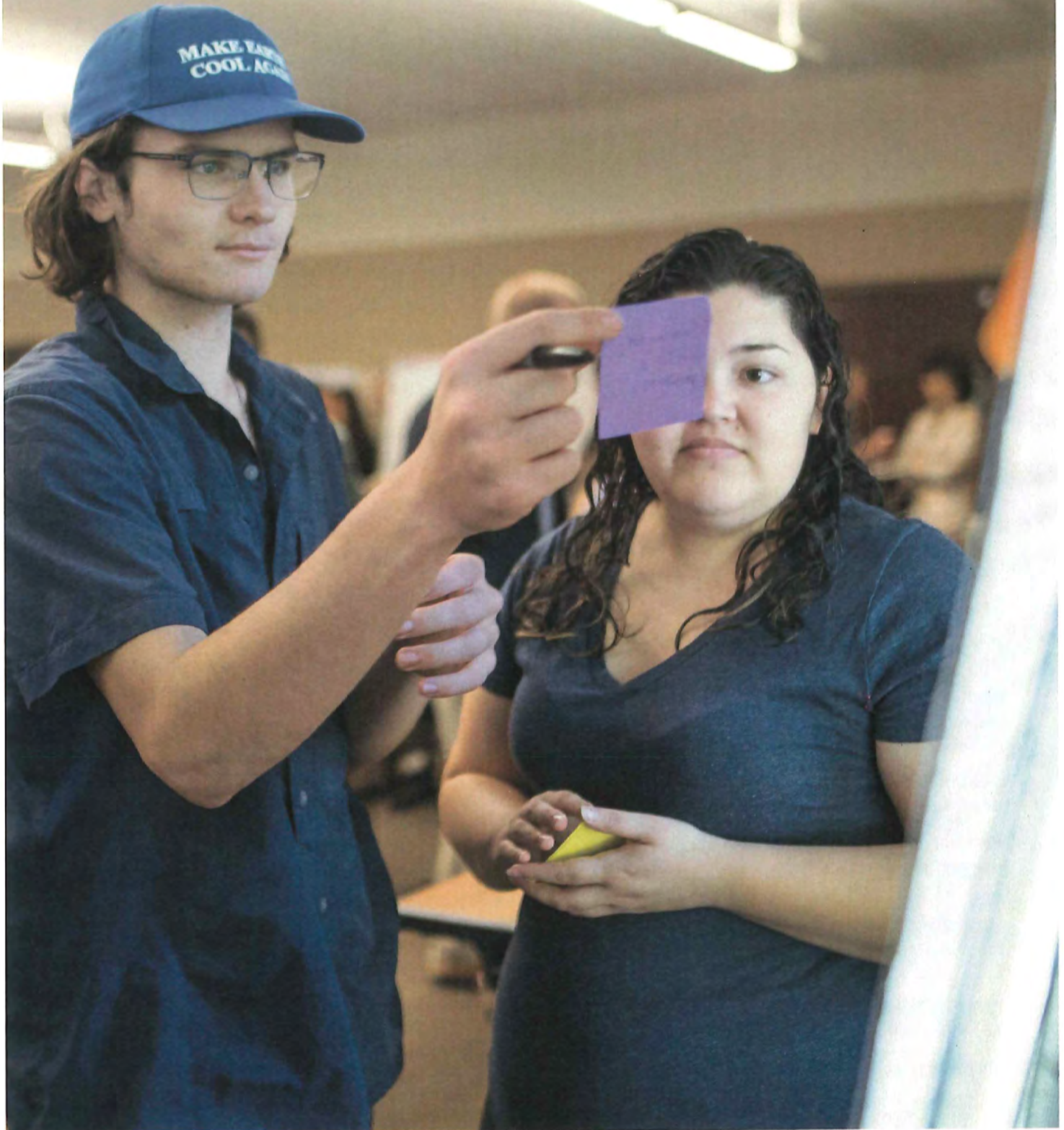
American Planning Association

Michigan Historic Preservation Network

**Experience Prior to SmithGroup*

SECTION E

QUALIFICATIONS AND REFERENCES



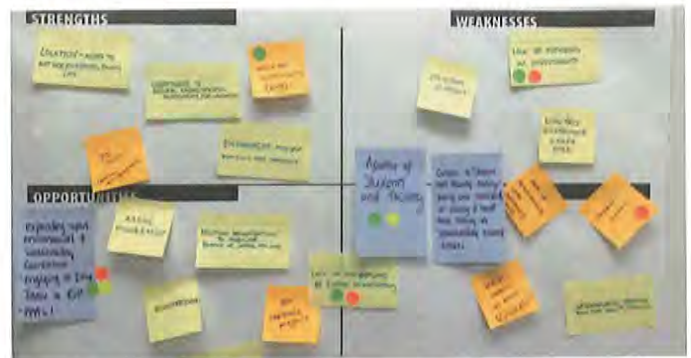
SUSTAINABILITY & HIGH-PERFORMANCE FRAMEWORKS

Metric-driven frameworks and tools to drive our clients' performance missions.

In an increasingly connected and data driven world, it sometimes feels like we have all the answers at our fingertips. It's important to acknowledge that those answers can take varying forms, as we see with third party sustainability frameworks. From EcoDistricts, STARS, LEED, and others, each of these aims to ensure a hospitable world, but navigating the right fit can be confusing as cities and institutions shift from a facilities focus to a strategic overview of how infrastructure and goals overlap. This process relies on a strong engagement process, followed by ample analysis to construct a picture of our client's needs.

Frameworks are not a once size fit all, but when one is chosen there should be institutional buy-in. The use of standards that change between departments, neighborhoods, or residents reveals problematic processes that have not been inclusive. To grasp the extent of a need or the proper metric to identify success, the thoughtful consultation of a wide range of stakeholders must be part of the pathway.

SmithGroup has experience supporting multiple types of clients, ranging in size and mission, to develop their own sets of metrics and performance indicators. We listen and engage in a conversation to synthesize numerous perspectives and voices into a cohesive narrative of our clients driving factors. Our team's technical expertise on strategies around energy, water, mobility, and other factors translates that narrative into a grounded but bold assertion of our clients' goals.



UNIVERSITY OF RICHMOND SUSTAINABILITY STRATEGIC PLAN, CSU CHICO MASTER PLAN, LAKE PLACID LEED FOR CITIES WORKSHOP

ANN ARBOR PLANNING + DESIGN

LOCATION

Ann Arbor, Michigan

DOWNTOWN PLAN

The Plan recommended policy objectives and plan concepts to guide public and private development decision-making in the downtown area; and addressed a broad range of issues concerning downtown's future: from land use priorities and parking management objectives to more detailed design guidelines for enhancing downtown's pedestrian orientation and identity as a place.

CONNECTING WILLIAM STREET

SmithGroup explored building development and streetscape scenarios for William Street that spearheads the analytical evaluation of the properties and the streetscape environment, generates and evaluates alternative development concepts in coordination with a market analyst, and knit the streetscape environment together through a sequence of open spaces. The process successfully yielded a preferred urban design concept that reflected the values and desires of the greater Ann Arbor community.

DOWNTOWN STREET DESIGN MANUAL

The manual is a comprehensive set of standards to govern the design and construction of public and private projects impacting the street right-of-way in a manner that will enhance the streets' urban design quality and function while also recognizing the important social, economic, and environmental needs they serve. The planning represented an unprecedented level of cross-agency and stakeholder coordination for the City.

FIRST, ASHLEY + WILLAMS STREETSCAPES

Planning, design and engineering services for First, Ashley and William Streets in Ann Arbor. First and Ashley Streets include study and design for restoration of two-way traffic. William Street includes study and design for a two-way protected bike lane.

THE TREELINE: ALLEN CREEK GREENWAY URBAN TRAIL

Development of a comprehensive master plan for the Allen Creek Greenway with a goal of connecting users to the county-wide Border-to-Border trail along the Huron River. The 3-mile trail master plan focuses on the user experience, land use and economics, hydrology and infrastructure, mobility and transportation, as well as implementation and management.



DOWNTOWN PLAN

DOWNTOWN PLANNING + FORM-BASED CODE

LOCATION

Dearborn, Michigan

DOWNTOWN WEST DEARBORN URBAN DESIGN

SmithGroup is working with the City of Dearborn to create a more vibrant and successful downtown with improved connections, a welcoming and comfortable pedestrian experience and with new housing options for a diverse population including young professionals and empty nesters. A multi-purpose festival street was designed that will run parallel to Michigan Avenue and will allow businesses and the City to program the street with events/activities throughout the year. Our design solutions focus around three strategies:

- Improve the connections to the downtown
- Improve the experience for residents and visitors once they get downtown
- Prioritize the redevelopment of four strategic parcels in the downtown core to increase the residential population

DEARBORN WEST DOWNTOWN FORM-BASED CODE

Dearborn's West Downtown has seen a recent resurgence in mixed-use development, but its outdated zoning district led to a cumbersome review process riddled with variances and special approvals. In an effort to modernize its regulations, the City sought a pilot district that could be replicated for the East Downtown and its corridors and subsequent phases. Recent plans by Ford Motor Company to invest in a transformational project in the heart of West Downtown led to a natural synthesis with the City's adjacent efforts to create standards for streetscape and parking, and to allow taller mixed-use projects by right. Building on the momentum from the Ford project, SmithGroup led a public open house to generate ideas and enthusiasm for a set of sub-districts to capture the distinct characteristics of the core downtown and adjacent neighborhoods.



MICHIGAN ECONOMIC DEVELOPMENT CORPORATION

REDEVELOPMENT READY COMMUNITIES PROGRAM

LOCATION

Various Communities, Michigan



SmithGroup is part of a team that serves as advisors to the Michigan Economic Development Corporation's (MEDC) "Redevelopment Ready Community" program. Through this program our team has performed master plan work in: Mount Clemens, Owosso, Newaygo, Wyandotte, and Lexington. Additional RRC Community experience includes:

- | | | | |
|-------------------|-------------|---------------------|-------------|
| ■ Ferndale | ■ Dearborn | ■ East Lansing | ■ Midland |
| ■ Battle Creek | ■ Oak Park | ■ Lansing | ■ Ypsilanti |
| ■ Lathrop Village | ■ Menominee | ■ Meridian Township | ■ Detroit |
| ■ Big Rapids | ■ Ironwood | ■ Ann Arbor | ■ Vassar |

SOUTHTOWN CORRIDOR IMPROVEMENT DISTRICT AREA SPECIFIC PLAN

LOCATION

Grand Rapids, Michigan



The Area Specific Plan for the Southtown Corridor Improvement District is a transformative opportunity for the community to express their long-term vision, build health and resilience, energize programs, and proactively shape their environment. SmithGroup was selected to develop a planning process to be a mechanism for building collaboration between neighborhoods and their residents, the commercial districts and their businesses, and institutions and their services to improve the overall quality of life.

The planning effort aimed to support the business districts of the Southtown CID in a way that strengthens and expands cultural and neighborhood assets and brings vitality to the District. Both the Plan development process and resulting implementation was based on community voice and ownership of outcomes with an equitable approach to decision-making and long-term community action.

REIMAGINE WASHTENAW

LOCATION

Ann Arbor and Ypsilanti, Michigan



SmithGroup's work for ReImagine Washtenaw focused on embracing a complete streets approach to enhance the pedestrian, non-motorized, and transit experience.

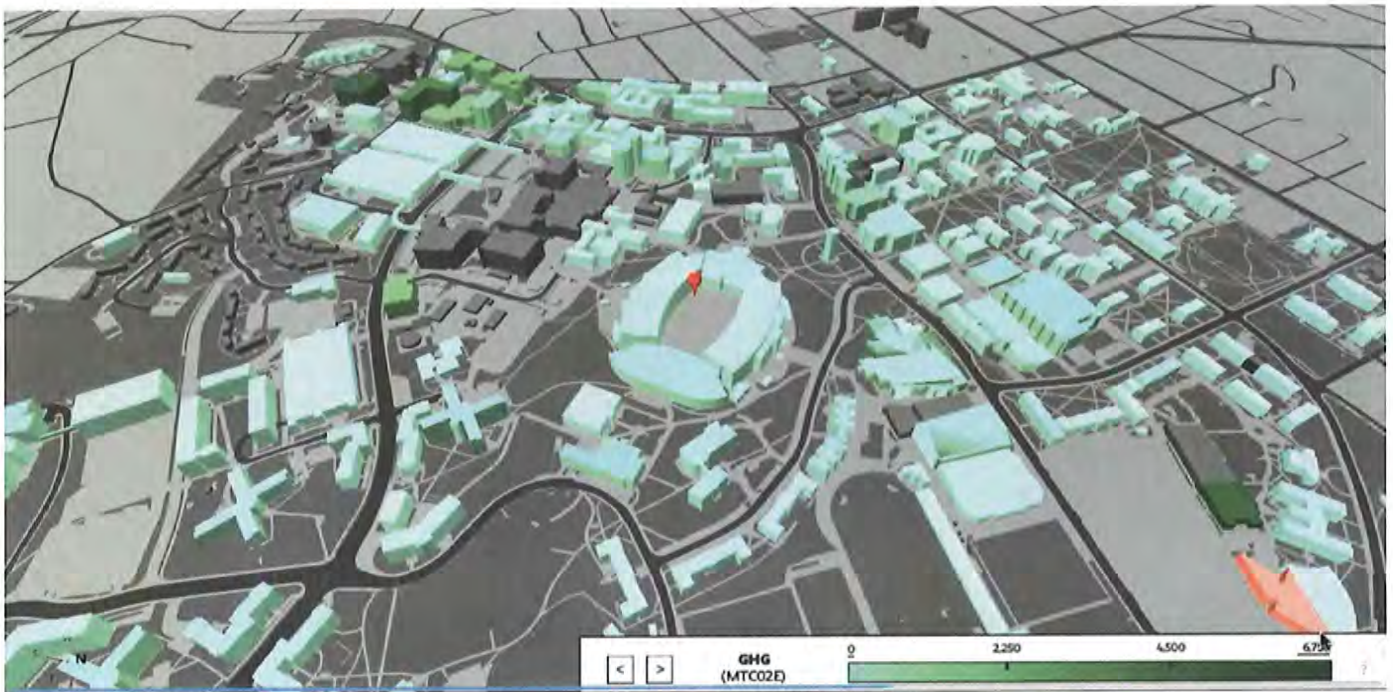
A collaborative committee, representing each of the four communities, was engaged in a process to identify future road cross-sections, nodes of proposed revitalization, and transit super-stop locations as part of the proposed corridor improvements. Applications of a road diet, narrow and wide boulevards, continuous buffered bicycle lanes, and dedicated transit service were evaluated. Individually, each community evaluated adjacent land use policies that would provide the foundation for economic redevelopment.



THREE ZEROS ENVIRONMENTAL INITIATIVE

LOCATION

Chapel Hill, North Carolina



The Three Zeros Environmental Initiative, launched in the fall of 2016 by University Chancellor Carol Folt, had a goal to move the campus towards water neutrality, zero waste, and greenhouse gas neutrality and plays a critical role UNC's sustainability efforts.

The process included the creation of a number of assets to clarify Three Zeros goals and how they relate to the Master Plan, facilitate discussions around strategies for infrastructure and buildings, and highlight opportunities for coordinated development.

Our team has been supporting UNC's charge for six years. Steven Baumgartner led their Strategic Sustainability Plan and energy/climate/infrastructure overlays to the comprehensive plan.

SmithGroup is working with the University to think across scales and disciplines to create a bespoke framework to achieve their aggressive goals. This work balances technical and analytical with organizational and strategic, giving UNC a pathway forward and clear investment prioritization.

To achieve this, the team engaged in combination of regular stakeholder meetings and detailed analysis for each of the Three Zero topic areas.

LEED FOR COMMUNITIES

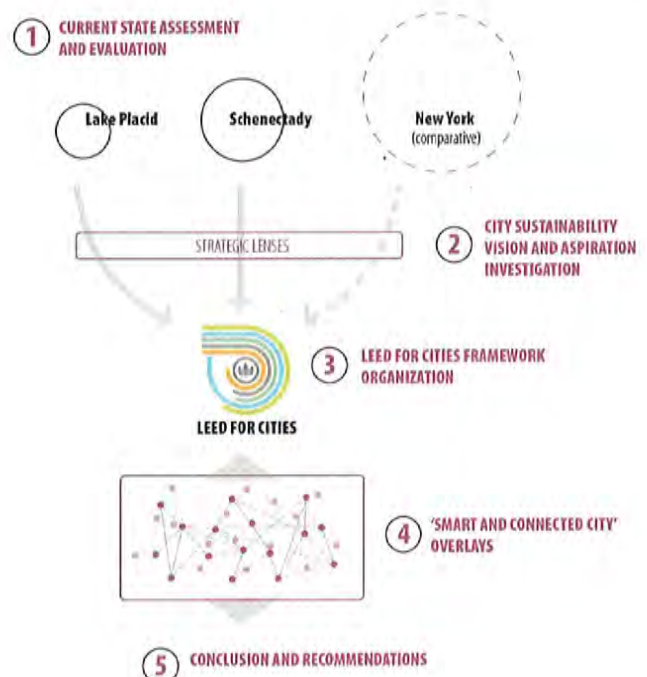
LOCATION

Lake Placid, New York

Designed as an opportunity to analyze and learn from third party frameworks at scale, SmithGroup engaged with Clarkson University to explore LEED for Cities and Communities (LFC) and how data and connectivity can support community goals. Using LFC as baseline for comparison, Clarkson embarked work with the village of Lake Placid—with Schenectady and New York City as foils—to begin to evaluate the intersections of data, technology, and community engagement.



A one-day kickoff workshop included faculty and staff from Clarkson University, the Mayor of Lake Placid, representatives from the Planning Commission, and other community stakeholders. Through stimulating dialogue and breakout sessions, our team worked with attendees to think critically about the local strengths and challenges using the principles and metrics outlined in LFC. Versed in additional frameworks for resilience and sustainability, our SmithGroup team was able to help guide Clarkson best practices in data gathering and process mapping.



FIVE CITIES ENERGY MASTER PLAN

LOCATION

Albany, Buffalo, Rochester, Syracuse, and Yonkers, New York



The New York Power Authority (NYPA) embarked on an effort to support the development of comprehensive energy master plans for five of the largest cities in New York State: Albany, Buffalo, Rochester, Syracuse, and Yonkers. The goals of this planning effort were to reduce the cities' energy consumption, strengthen the reliability of their energy infrastructure, create jobs in local clean energy industries, and contribute to a cleaner environment. This effort was a significant expansion of the nature and scope of NYPA's traditional energy efficiency efforts. It required a far more comprehensive and coordinated approach, encompassing both the public and private sectors in each City, and going well beyond energy usage in individual facilities.

Therefore, NYPA hired Steven Baumgartner and his previous firm to support the development of the five energy master plans. Throughout this project, the firm served as a thought partner for NYPA and enhanced its organizational capabilities. Specifically,



the project team provided strategic input into the design of the program, including planning processes, stakeholder engagement, and technical standards. The team also provided program management services, coordinated the five individual energy master planning efforts, managed the work of the consultants hired to develop each plan, and ensured high quality, timely deliverables. To do so, the team established management, communications, and technical process to make sure these plans were delivered on time; were consistent across the cities, yet reflective of each city's unique characteristics and needs; meet high quality standards; and were cost-effective and actionable. In this strategic program management role, Steven and the project team ensured that the five plans draw upon existing sustainability and energy plans, adopt best practices of those plans, and in turn serve as models for other municipalities nationwide.

**Work performed by Steven Baumgartner while at a previous firm*

NEW YORK CITY'S ROADMAP TO 80X50

LOCATION

New York New York



New York City has established a mid-term carbon emissions reduction goal of 40% by 2030 (40X30), and an ambitious long-term carbon emissions reduction goal of 80% by 2050 (80x50). In the City's OneNYC: the Plan for a Strong and Just City, the Mayor's Office of Sustainability committed to developing 80X50 action plans for four sectors: buildings, energy supply, transportation and waste. The four sectorial action plans combine to form an integrated 80X50 Implementation Plan.

Steven Baumgartner lead a team of partner firms, in close collaboration with the Mayor's Office and a number of City agencies, to conduct analysis, facilitate stakeholder engagement, and recommend

an integrated set of strategies related to energy supply, transportation, and waste to achieve the City's emissions reduction targets. For these work streams, the team is developed and executed sector-specific methodologies for evaluating and prioritizing strategies, and established baseline greenhouse emissions trajectories to evaluate the effect of reduction actions. This work included leveraging geo-spatial tools to identify opportunities for clean energy, resource recovery, and other emissions reduction strategies.

Additionally, Steven managed the coordination of work across the four sectors to develop an overall Integrated 80X50 Action Plan. To do so, the team synthesized the team's quantitative analysis with its technical expertise and strategic insights to develop both a high-level framework to meet the 80x50 goal, and near-term initiatives to put the City on a trajectory to meet both the 40x30 and 80x50 targets. This 80x50 Action Plan is intended to have impacts beyond NYC.

Steven's work with the City represents a replicable model for other organizations grappling with long-term, aggressive planning in the face of changing technologies, behaviors, and political climates within the realities of existing fiscal constraints, regulatory structures, and the built environment.

**Work performed by Steven Baumgartner while at a previous firm*

SECTION F

FEEES



PROJECT COSTS

FEES FOR PERFORMING REQUIRED SERVICES

Master Plan: \$15,000 (Fifteen thousand dollars)

Sustainability Plan: \$50,000 (Fifty thousand dollars)

Expenses: \$2,500 (Two thousand five hundred dollars)

20 Printed Copies of the Plan: \$1,000 (One thousand dollars)

TOTAL: \$66,500 (Sixty-six thousand five hundred dollars)

OPTIONAL MEETINGS

If deemed necessary during the Program Management development, we can provide additional meetings:

- Commission Work Sessions: \$1000
- Public Open Houses: \$3,000
- Pop Up Sessions: \$750
- Presentations: \$500

Design a Better Future

SMITHGROUP

smithgroup.com

734.662.4457

201 Depot Street

Second Floor

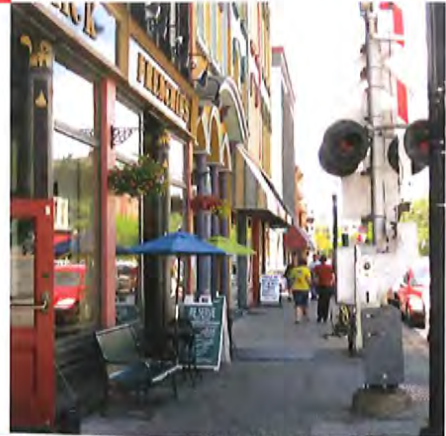
Ann Arbor, Michigan 48104

MCKENNA

PROPOSAL TO PROVIDE

Master Plan Update and Sustainability Plan

CITY OF YPSILANTI, MICHIGAN



DECEMBER 3, 2018

Communities for real life.



December 3, 2018

Frances McMullan
City Clerk
City of Ypsilanti
1 South Huron Street
Ypsilanti, Michigan 48197

Subject: Proposed Partnership for the Ypsilanti Master Plan Update and Sustainability Plan

Dear Ms. McMullan:

What an opportunity for Ypsilanti leaders and community members to continue the strong momentum of creating great places, an environment for strong investment, and high quality of life for generations to come! We are incredibly excited about the prospect of partnering and collaborating with your team on the 2019 Master Plan Update and Sustainability Plan project, and hope that you'll find our team to be the most qualified, most energetic, and most forward-thinking (after all, planning is a hopeful and visionary endeavor!).

Ypsilanti has a rich history of planning and development success, and has always planned to preserve that success for future generations. The people of Ypsilanti expect City leaders to maintain the City's record of excellence in community services. The Master Plan Update and Sustainability Plan is critically important to how the City evolves to meet the demands of its residents in coming years.

Focus on New Opportunities

McKenna is Michigan's leading planning and design firm. We work with private sector market realities and manage complex municipal redevelopment projects – public acquisition, demolition, grant and other funding, urban design, marketing, and disposition – and are continuously implementing smart redevelopment principles for Midwest municipalities and select private clients.

We propose to prepare the Ypsilanti Master Plan Update and Sustainability Plan with a focus on implementation to empower the City to maintain excellence while introducing new opportunities. We believe it is advantageous for Ypsilanti update the Shape Ypsilanti plan with current objectives and goals. It is equally important that the Sustainability Commission have work with residents to develop a plan that incorporates best practices into a new vision for citywide sustainability efforts. The plans must speak to residents and business owners clearly and effectively. Noting specific planning areas, design preferences, and consensus visions will ensure the City continues to grow intentionally and with respect to its many neighborhood and historic assets.

Why Our Team?

The McKenna team has the right kind of experience and the proven approach Ypsilanti needs to help work through this challenging but rewarding process. We perform ongoing planning and zoning work in communities across Michigan and the entire Great Lakes Region – so we know how to navigate complex processes in successful communities in high demand by residents current and future looking for the highest quality of life.

HEADQUARTERS

235 East Main Street
Suite 105
Northville, Michigan 48167

☎ 248.596.0920
F 248.596.0930
MCKA.COM

Communities for real life.

McKenna proposes the following core team members for the project:

- **Project Manager:** Paul Lippens, AICP, Director of Urban Design and Mobility
- **Outreach Specialist:** Laura Haw, AICP, Principal Planner
- **Development Specialist:** Mario Ortega, Principal Planner
- **Assistant Project Manager:** Wendy Caldwell, Associate Planner
- **Planning Support and Mapping:** Alex Novak, Assistant Planner
- **Graphic Design:** Carrie Leitner, Art Director

Together with the dedicated people of Ypsilanti, we will help you create an exciting, implementable vision that will benefit current and future generations for years to come.

Thank you for considering our team.

Respectfully submitted,

McKENNA



John Jackson, AICP
President



Paul Lippens, AICP
Director of Urban Design and Mobility





Master Plan Update and Sustainability Plan

CITY OF YPSILANTI, MICHIGAN



PREPARED 3 DECEMBER 2018 BY

MCKENNA
235 East Main St.
Suite 105
Northville, Michigan 48167

O 248.596.0920
F 248.596.0930
E info@mcka.com
MCKA.COM

MCKENNA

Communities for real life.

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Project Examples

Executive Summary



McKenna planners are ready to “hit the ground running” on the the City of Ypsilanti Master Plan Update and Sustainability Plan. Above, a rendering of a farmers market / flex space the McKenna team designed for “Realize Cedar” for the Delhi, Michigan DDA – a true placemaking success!

PROJECT TEAM

Our project team, overseen by Director of Urban Planning and Mobility, Paul Lippens AICP, NCI brings diverse expertise to the Ypsilanti project, from land use planning to urban design, transportation planning, market and geographic data analysis and action plan implementation. McKenna is excited to partner with Matt Naud, who served as Ann Arbor’s lead sustainability planner for nearly two decades. Matt is a nationally regarded expert and a welcomed addition to McKenna’s Team

MCKENNA TEAM ADVANTAGE

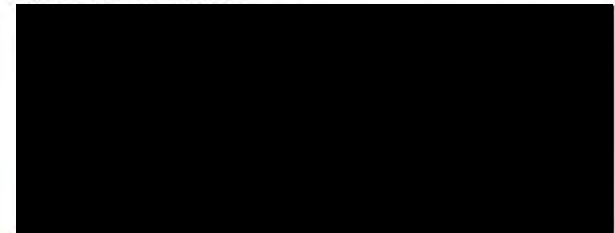
- Unmatched responsiveness to clients.
- #1 redevelopment planning and implementation firm in Michigan, with dozens of successful similar projects over the years.
- Public engagement that is strategic, interactive, and fun.
- Teamed with National sustainability expert, Matt Naud.
- Forward-thinking approach for future success – planning with practical, identifiable results at the forefront of our minds.

THINK LOCAL:

MCKENNA’S HOME OFFICES

McKenna values Ypsilanti’s commitment to supporting local business, as established by Chapter 2, Article VI of the Code of Ordinances.

McKenna’s proposed project manager, Paul Lippens, is a homeowner in Ypsilanti. Further, McKenna’s flexible work policy will permit a substantial portion of the plan to be produced at Paul’s Home Office.



PROJECT SCHEDULE

McKenna proposes a 6-month timeframe for preparing the Master Plan Update and Draft a Sustainability Plan accomplishing high-quality, strategic public engagement (particularly with City leaders), analysis and overall project planning. We understand the engagement process may extend this timeline to not more than 6-months.

Statement of Understanding



Riverside Park is one of Ypsilanti's most recognizable recreational resources. Celebrating the community's historical strengths, enhancing vitality, and continually striving for the highest quality of life for its residents are some of the themes evident in the City's long-range planning documents.

PROJECT UNDERSTANDING

The City of Ypsilanti's Master Plan "Shape Ypsilanti" was last prepared in 2013. This important guiding document needs an update not only in accordance with the Michigan Planning Enabling Act, but also to recognize the City's accomplishments and update the vision for the pressing issues facing the City. The Master Plan needs to respond to current conditions and anticipate future conditions responsibly, sustainably, and resiliently. The City also has several other essential planning documents that contribute to the policy framework for future development, including the non-motorized plan, and the climate action plan. Ypsilanti needs a plan that serves as a policy guide to direct growth in a manageable, sustainable fashion, as determined by public input and the leadership of the City's elected officials and staff.

Based on geographic, functional, and character considerations, Ypsilanti is defined by three distinct downtown areas, Michigan Ave (downtown), Depot Town, and the Cross Street area, which historically has primarily served University students, faculty, and staff. The City has several strong commercial corridors that function as gateway through its well-established neighborhoods to each of these centers. Washtenaw, Michigan Avenue, and Huron all have unique character but share a relatively strong retail base and neighborhood services connections. Shape Ypsilanti establishes a framework for governing future land use that recognizes the City's overall morphology and the importance of each of the places within the City.

The Huron River forms the backbone of the City's connections to natural features and along its path through the City there are strong neighborhoods, parks, and commercial connections. The River is a vital resource and its prominence in future planning is essential.

The City also benefits from a close proximity to I-94 and ever-increasing regional transit connections through AAATA, BRT plans, commuter rail, and possible Amtrak service extensions. Single-family residential properties account for a large portion of the land in the City, while denser residential properties exist in the Central Neighborhood area and along corridors into the downtown areas.

As with many town & gown cities, Eastern Michigan University is a great resource to Ypsilanti residents but also offers unique challenges. EMU is the largest single landowner in the City, at 800 acres it accounts for approximately 36% of the total land area. Continued coordination of EMU facility and housing needs will be an ongoing reason to update Master Plan objectives.

As mentioned prior, the City and its leaders, in consultation with residents have undertaken a number of planning processes in recent years, including:

- Ypsilanti Non-Motorized Transportation Plan
- Ypsilanti Climate Action Plan
- Energy Plan (current effort)
- Shape Ypsilanti Plan

These plans will be informative to update the Master Plan, a process that will focus mostly on reevaluating the goal, updating the implementation plan, and when appropriate, updating key recommendations if new ideas are revealed during public outreach. These plans will also form the basis of a new sustainability plan for the City. A plan that will recognize the leadership and direction of the newly formed Sustainability Commission. Further, this process is not only an opportunity to advance previous City, County, and regional planning efforts, but also to update the Master Plan to reflect the current sensibilities of City residents and incorporate latest in best practices for sustainable development. We understand public engagement will drive the development of certain scope elements of the plan.

The Master Plan update is an important opportunity to incorporate City Council directives into a long-range planning policy document and coordinate Councils' preferences with Planning Commission and the Sustainability Commission. In addition to best planning practices as they relate to community development, resource preservation, economic development, and community character and identity, the plan can introduce elements of branding, effective community communication and engagement, and good governance.

As Ypsilanti rethinks, affirms, and/or creates its vision for the future, it is vital to identify and to build on the community's strengths. Now, residents and leaders can set a vision for the next 50 years. The McKenna team understands that for sustained success in the City, the Master Plan update and Sustainability Plan must excel in six important areas:

1. The plans must be a living plan that inspires people to own the plan and work to implement the vision. Stakeholder and resident buy-in are imperative.
2. The plans must realize the efforts of the 2013 Shape Ypsilanti Master Plan and the above-referenced plans.
3. The plans must integrate current and future planning, design, mobility, and future land use trends by expanding the recommendations of City plans that are "on the books" – and synthesize those plans into the Master Plan update.
4. The plans must define responsible growth and sustainable development practices which can then be capitalized on through changes in regulations to support the plan.
5. The plans must reaffirm future land use and transportation system recommendations for function and form characteristics.
6. The plans must place emphasis on the value of the City's regional and local assets; including the Huron River, Eastern Michigan University, and its three distinct downtown districts.

A Living Plan for Ypsilanti

The plans prepared in the last decade by the City provide a strong starting point for the Master Plan update. However, the McKenna team will view this update process as an opportunity to build on what's worked with a new and refreshed document. We know that there will be many relevant findings discovered in our analysis of the current planning and regulatory framework, as well as in current work being conducted that must be captured by

the effort. Our team is adept in using modern communication methods – video, graphics, websites, and we have the ability to tailor our deliverables to the target audience.

We are confident that our team, working with the City's dedicated leaders, professional staff, local neighbors, and business community will successfully navigate the path to success. Let's get some work done!

Project Approach

The McKenna team understands that the City desires a Master Plan Update and Sustainability Plan that sets a current and clear vision, guides local decisions, and effectuates real change. We also believe the plan will be a collaborative effort between our team and City influencers: it must be rooted in community values and aspirations inspired by City leadership and stakeholders, while being technically informed and backed by realistic strategies based on the McKenna team's years of comprehensive planning experience and practical implementation knowledge.

Work Approach



Eastern Michigan University is a regional draw, and one of the many assets that will be affect the future development framework for the City.

PROJECT EXPECTATIONS

The following work program has been specifically developed to ensure that the following expectations are met:

The Master Plan update and Sustainability Plan will reflect City leaders and engaged stakeholders' identified direction for the future, as determined during visioning sessions conducted with the City Council, Planning Commission, the Sustainability Commission and municipal administrative staff AND residents and other stakeholders.

The 2013 Shape Ypsilanti Master Plan will be reviewed for relevance and updated for current planning best practice and compliance with the Michigan Planning Enabling Act.

The following planning documents will be synthesized and incorporated in the Master Plan update to create a document that reflects the overall planning, land use and development environment in Ypsilanti:

- 2010 Non-motorized Transportation Plan;
- Various Transit Plans of AAATA, RTA, etc.;
- 2012 Climate Action Plan;
- 2013 Shape Ypsilanti Plan; and
- Current (2018) Energy Plan

The Master Plan update and Sustainability Plan will define and convey in a compelling graphic format how and where development and redevelopment should occur over the next 10, 15, and 20 years; this will be

accomplished by evaluating and prioritizing development schemes most suited to achieving defined goals and objectives for each of the following chapters: City Framework, Transportation, Centers, Neighborhoods, Corridors, Districts, Redevelopment Areas. The Implementation Plan will likely be rewritten depending on findings in the public process. The Sustainability Plan will be written as a stand-alone subarea plan that can be adopted as part of the Master Plan.

The Master Plan update and Sustainability Plan will be largely driven by community input through public participation.

The Master Plan Update will validate prior recommendations and include a specific, graphically compelling implementation plan for immediate, short-term, and long-term goals and priorities. It will define what implementation successes will look like when achieved; we want to set the City up for success by envisioning the best-case scenario. "If all of our goals and objectives come to fruition, what will the community look like?"

To meet these expectations, we propose the following eight-step Work Approach. Our detailed philosophy and approach to each Step can be found in the following pages.

- **Task 1A** – Program Management Plan
- **Task 1B** – Data Analysis
- **Task 2** – Community Involvement
- **Task 3** – Goal Statements
- **Task 4** – Objective Update (Master Plan Only)
- **Task 5** – Plan Preparation (Sustainability Plan Only)
- **Task 6** – Implementation Matrix (Both Plans)
- **Task 7** – Presentation
- **Task 8** – Finalization and Adoption

TASK 1A. PROGRAM MANAGEMENT PLAN

The Program Management Plan consists of tasks and processes necessary to get the project up and running. These include:

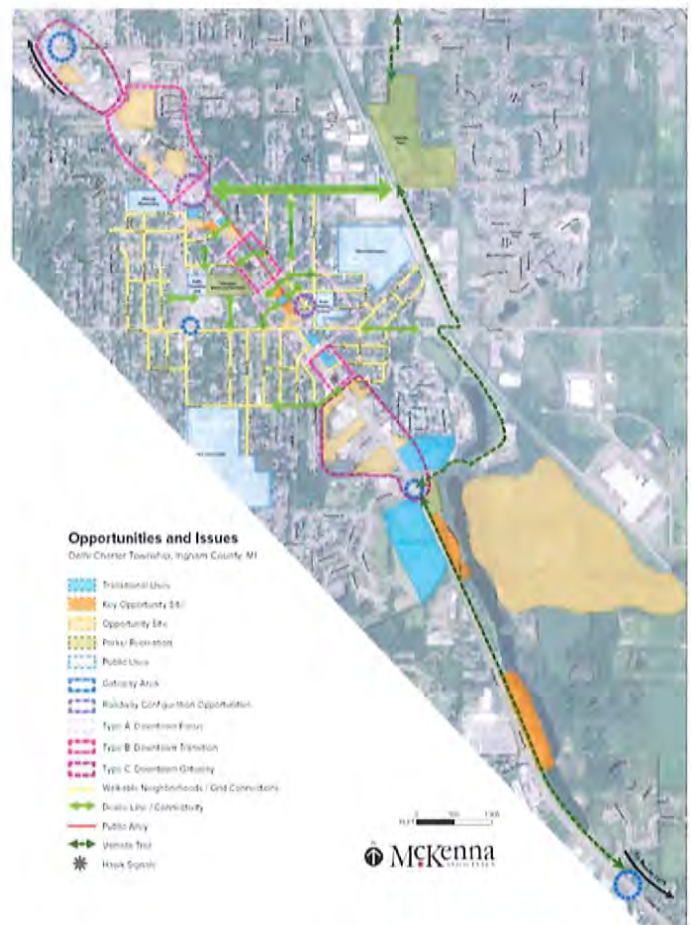
1. **PROGRAM MANAGEMENT PLAN.** McKenna will work with the City to prepare a program management plan that finalizes the work plan, timing and deliverables for key milestones, and process for obtaining feedback on key decision points by the Department of Economic Development. At this time, we will also engage the project steering team to formally establish their leadership role in the planning process.
2. **KICK-OFF AND PRELIMINARY SUSTAINABILITY GOALS.** We will meet with City leaders, Planning Commission members, Sustainability Commission members and community stakeholders as desired, to review the work plan and finalize a structure for review and management of the plan process to:
 - establish a working relationship,
 - reach an understanding of expectations,
 - answer questions,
 - make mutually agreed upon adjustments in the work plan, and
 - identify preferred method of communication (i.e. email, mail, telephone, etc.).

At the kick-off meeting, we will also finalize procedures for public input and the framework for public workshops, public exhibits, press releases and mechanisms for public input; and will identify stakeholder groups.

Finally, we will engage the Planning Commission and Sustainability Commission and other participants in a preliminary discussion of strategic issues and locations of importance to the City that will be critical for review and analysis during the planning process. Key stakeholders will be identified, those whom the Planning Commission will want to make special efforts to consult.

This meeting will also be used to establish the City's preliminary sustainability goals to further develop throughout the process. One potential guide for the process is the United Nations 17 Sustainable Development Goals:

1. No Poverty
2. Zero Hunger
3. Good Health and Well-being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation, and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Production and Consumption
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnership for the Goals



A page from McKenna's Realize Cedar Design Framework, an award-winning downtown economic development planning project for Cedar Street in Delhi (greater Lansing area).

TASK 1B. DATA ANALYSIS

1. **EXISTING CONDITIONS AND POLICY INVENTORY.** The Team will assess the policies and conditions affecting sustainability in Ypsilanti, as well as identify the potential for implementing cost-effective policies and initiatives that promote the goals established in the Climate Action Plan and future Sustainability Plan. Existing conditions will be evaluated and summarized in order to form action steps towards improvement, including but not limited to:

- Green Building
- Greenhouse Gas Emission Reduction
- Renewable Energy
- Water Conservation
- Waste Management
- Environmental Conditions

The relevant policies and initiatives that already exist in Ypsilanti will be a guide for the Plan and as such will be implemented into the document. We will identify any gaps in policy that could improve the sustainability of the community and recommend drafting new policies where necessary.

2. GREENHOUSE GAS (GHG) INVENTORY AND REPORT

- a. **Quick Action Approach.** Our base level of services will provide a GHG inventory and summary report of the GHG emission levels the City's municipal operations and the community as a whole. The inventory would be based on the readily available data and follow the ICLEI tools and protocols. A basic assessment of sustainability challenges would evaluate the core pillars of economics, environment, and social equity in the community based on the available reports, plans and data.
- b. **Comprehensive Assessment Approach. (Optional)** Our best level of services includes a GHG inventory of the City's municipal operations and entire community as well as a thorough assessment of the community based on the Sustainability Tools for Assessing and Rating Communities (STAR) framework. This approach will evaluate Ypsilanti's standing within the STAR framework, which assesses the following:
 - Built Environment
 - Climate & Energy
 - Economy & Jobs
 - Education, Arts & Community
 - Equity & Empowerment
 - Health & Safety
 - Natural Systems
 - Innovation & Process

The comprehensive assessment will dive deep into the environmental components of the City, addressing challenges such as population change, housing affordability, air and water quality, utilities costs, aging infrastructure, energy supply and diversity, and natural disaster risk.

- c. **Energy Efficiency and Resource Management Inventory.** The Team will conduct an inventory of the community's and municipal operations' utilization of energy and natural resources, resulting in a performance report and use reduction targets. Any incentive programs related to construction of energy efficient buildings, retrofitting existing buildings, utility consumer efficiency plans, and other current resource management strategies will be called out in the Plan and potentially expanded upon.
- d. **Analysis and Baseline Assessment of Sustainability Indicators.** Our Team will prioritize the topics within the baseline assessment that the Sustainability Plan should focus on. Utilizing all of the data analysis ground work, we will define the scope of the Plan and use the outcomes to communicate the most pressing challenges to the public and the Sustainability Commission. The analysis will also show the success that Ypsilanti has achieved thus far and aim to build upon that progress. The report will be reviewed with the Sustainability Commission for feedback and move into the next phase.

TASK 2. COMMUNITY INVOLVEMENT



The McKenna team's experience in community-led public processes will generate project success. Above, a 2017 outreach event in Birmingham, Michigan during their farmer's market's Harvest Festival, which gathered input from approximately 500 participants.

Our entire public outreach approach is based upon a philosophy that effective public participation is essential to shaping the project, maximizing its community benefits, and identifying and resolving potential issues and providing creative solutions as early as possible. Ypsilanti's leaders and identified stakeholders must help create the plan and take ownership for success.

LET'S STRATEGICALLY ENGAGE

We know from the City's Request for Proposals that the City and its residents expect a meaningful and inclusive public process for the Master Plan update and Sustainability Plan, and that the feedback from early engagement efforts will help to define the scope of the project as a whole. Accordingly, we are proposing several engagement opportunities; we understand, however, that the engagement efforts may be scaled back or added to based on the responses received. Please note that McKenna is committed to tailoring the project to fit the City's needs and we will be flexible in adding to or removing from the proposed scope of public engagement described herein.



McKenna facilitates policy-driven, design-based, and customized public engagement efforts for dozens of communities! Above, a visioning session in South Euclid, Ohio,.

1. **MASTER PLAN VISION AND COLLABORATION WORKSHOPS (3 SESSIONS).** The workshops will be a community-wide event, open and advertised to the public and local employers. We will assist the City with a notice that it can use to get "the word out" about the workshop event. The workshops will be designed to be an information, fun event which participants will enjoy attending.

The first workshop will be oriented toward visioning and background. It will begin with an introduction to the master planning process, will continue with a summary of the findings of the demographic and prior plan analysis, and will move to small group breakout discussions and prioritization of issues and assets identified. The group as a whole will then reconvene and complete an overall prioritization of issues, assets, and consensus on the characteristics of the desired future for the City.

The second workshop will focus on reviewing and assessing alternative options and draft recommendations included in both the Master Plan and the Sustainability Plan. The third workshop will be a presentation of the final draft to solicit input on the plan.

These workshops will be scheduled at different times to allow for the most people to have an opportunity to attend at least one event. We concur with the City's suggestion to host one workshop in the daytime, one in the evening, and one on the weekend. Further, we suggestion that the meetings are located in different places in the City to maximize participation. Events could be coordinated in and eastern Michigan Facility, hosted at the Freight House, or perhaps held at the Library or Riverside Arts Center.

2. **WARD-BASED TOWNHALL MEETINGS (3 SESSIONS)**

During the workshops, we will be identifying the issues that the City is seeking input for drafting of the Master Plan update and Sustainability Plan. These issues may pertain to specific locations and neighborhoods. Ward-based meetings will allow us to get specific information that pertains to sub areas within the City. Invitees will participate in a work session intended to extract the most pressing needs from a diverse group of influencers in each area. We depend on this engagement to help find the pulse of the community – what improvements will help industry, commerce, and community engagement thrive in the coming years.

For each session, we will undertake the following tasks:

- a. Prepare the agenda and program.
- b. Utilize effective ways of publicizing the event and encouraging attendance in order to attract an appropriately-sized group of attendees who are informed of the purpose of the meeting and prepared to participate in a meaningful and productive way.
- c. Effectively run the meeting, drawing out opinions from the attendees, achieving consensus where possible, creating enthusiasm for the planning process and expectations for the Plan, effectively recording and publishing the proceedings, and providing all attendees with a feeling that their time was well spent and their opinions were heard and given proper consideration.
- d. Provide a follow-up report of the proceedings that is available to the attendees and the community-at-large. The report will be included in the Plan.
- e. Pursue the consensus issues that result from the event(s) and incorporate them into the Plan.

3. ONLINE SURVEY AND MEET THE PLANNER “OFFICE HOURS” (4 SESSIONS)

In addition to a stakeholder involvement session, we feel it is important to provide an input mechanism for the general population to be heard and considered. To this end, McKenna will prepare an online survey, with links that can be shared and placed on the City website, to solicit input. We have had success with traditional question-and-answer surveys and have also used ESRI Storymaps as a map-based engagement tool. As with the engagement session results, we will incorporate the findings of the online engagement into the Master Plan Update and Sustainability Plan as appropriate.

McKenna also recognizes that the digital divide is an ongoing concern in outreach to Ypsilanti residents. To make sure that the online survey is not only available to residents that are commuter literate and have access to technology, McKenna will host a series of “meet the planner” drop-in sessions in a variety of places to target students, youth, low-income individuals, and people with accessibility concerns. Potential venues might be local coffee shops, the farmers market, First Friday events, or other locally planned events. At each of these events we will offer the opportunity for informal conversation and input as well as provide an opportunity to fill out a written or online survey in-person.

These sessions will also be an opportunity for the planning team to assess whether all the outreach activities have engaged a representative sample of the City’s racial and ethnic diversity. The planning team will make adjustments to places and locations of outreach as desired.

- 4. PUBLICITY.** The McKenna Team will assist City staff and publicize the public input process as well as the rest of the Master Plan Update and Sustainability Plan development in order to encourage greater participation. This includes linking drafts to the City website, inclusion in City newsletters (as applicable), working with the schools and businesses, and other means.

The collaboration workshops will be the keystone public participation event, but it will not be the only opportunity for the public to be involved in the development of the plan. All Planning Commission meetings will be open to the public, along with the required public hearing. The Workshops are designed to provide the public with a meaningful, hands-on opportunity to help shape the future of the City in ways that are not possible through a survey or a typical Planning Commission meeting.



The McKenna team will create engaging visuals to illustrate updated community preferences, as needed. Above, a rendering for a waterfront historic downtown park plan prepared by McKenna in Vicksburg,

TASK 3. GOALS STATEMENTS

McKenna will review the City's existing goals and modify them as necessary based upon the 2019 analysis, results of the Master Plan workshops, and other input received. Using that as a foundation, we will refine the goals and objectives for the Master Plan which will collectively set the direction for the new Plan.

Goals are general in nature and, as they relate to planning, are statements of ideals toward which the City will strive. Objectives are more specific policies, and are intended to present a means to attain the stated goal. Strategies are general approaches used to achieve objectives. Each objective may include three to eight strategies, depending on how complicated the objectives are. Strategies should be actionable and measurable and explain how you will accomplish the objective and why you are taking that approach. The goals, objectives, and strategies will be separated into categories (i.e. residential development, commercial development, economic development, community safety, etc.), and prioritized in terms of how they will contribute to long-range development.



- 1 / No Poverty
- 2 / Zero Hunger
- 3 / Good Health and Well-Being
- 4 / Quality Education
- 5 / Gender Equality
- 6 / Clean Water and Sanitation
- 7 / Affordable and Clean Energy
- 8 / Decent Work and Economic Growth
- 9 / Industry, Innovation and Infrastructure
- 10 / Reduced Inequalities
- 11 / Sustainable Cities and Communities
- 12 / Responsible Production and Consumption
- 13 / Climate Action
- 14 / Life Below Water
- 15 / Life On Land
- 16 / Peace, Justice and Strong Institutions
- 17 / Partnerships for the Goals

Our Team will utilize a combination of well-established sustainability performance rating systems paired with local knowledge to assist the City with developing a set of goals. Sourcing guidance from STAR Communities, the UN's

Sustainable Development Goals (see callout box), and Ypsilanti's very own Climate Action Plan to name a few, a holistic approach will ensure that goals are developed to address the following areas and beyond:

- a. Economy & Jobs
- b. Education, Arts & Community
- c. Equity & Empowerment
- d. Health & Safety

The goals that we produce will provide a framework for the public engagement work that will follow and coincide with plan development.

TASK 4. OBJECTIVES UPDATE (MASTER PLAN ONLY)

McKenna will review the City's existing Shape Ypsilanti Master Plan Objectives and modify them as necessary based upon the outreach and preferences. The team will also work with the City to capture the results of the many local accomplishments to implement the plan since its adoption.

TASK 5. PLAN PREPARATION (SUSTAINABILITY PLAN)

The Sustainability Plan will detail strategies and actions pertaining to addressing sustainability challenges, implementing tasks and roles, and identifying timelines, funding sources, and milestones. The purpose of the Sustainability Plan is to provide a concise list of implementation-ready projects that the City can pursue. The action plan will include:

- An illustrative strategic action plan listing specific tasks necessary to implement the plan
- Measurement indicators to track progress
- Policies and measures for implementation

TASK 6. IMPLEMENTATION MATRIX

One of the McKenna team's areas of expertise is implementation. A number of projects that we have led for communities have been recognized by Michigan Association of Planning's awards for excellence in implementation – our plans do not sit on the shelf. We will create engaging deliverables and account for opportunities and constraints in project management methods, private/public partnership models, availability of financing – including grants and loans, and implementation schedule requirements.

McKenna will create an implementation matrix for the Master Plan Update and the Sustainability Plan that includes specific recommendations, priorities, capital expenditures, programs, and actions will be provided. Responsible champions;

- Redevelopment objective met;
- Development task or action;
- Responsible party/parties;
- Potential funding source(s);
- Timeframe and priority;
- Benchmarks and reporting methods.

However, we will take a slightly different approach to a traditional Master Plan Implementation Strategy. For each Plan goals and objectives our team will prepare a brief narrative and identify key stakeholders and responsible parties for implementing strategies. Then, we will list the actionable tasks for each area along with task-relevant information (potential funding source, timeframe, priority, etc.).

The entire plan will be focused on implementation. An Implementation Roadmap will be crafted to provide a concise list of implementation-ready projects and strategies that the Township should pursue in order to fulfill the vision presented and the goals and objectives stated in the Plan. This portion of the Plan will include the following two elements:



The Southwest Michigan Prosperity Region's 5-Year Prosperity Plan; McKenna assisted on design. These info-graphics tell the community conditions simply and concisely. Implementation matrices must be graphically compelling.

TASK 7. PRESENTATIONS

McKenna will be available to make presentations to the Planning Commission, Sustainability Commission and City Council by request at any point during the planning process.

TASK 8. FINALIZATION AND ADOPTION

McKenna will assist the City with the adoption of the new Master Plan as follows:

1. **DISTRIBUTION OF DRAFT PLAN.** McKenna will prepare the draft Master Plan, including all elements described above and present it for review by the Sustainability Commission, Planning Commission and City Council. Based on the input and direction received, we will revise the draft and submit it to the Commission for recommendation to the City Council for dissemination as required by the MPEA. An electronic copy of the draft plan will be provided for the City to use for dissemination to the required entities for review and comment, with notices per the MPEA.
2. **FINAL REVIEW, PLANNING COMMISSION PUBLIC HEARING, AND ADOPTION.** Upon conclusion of the draft review and comment period for noticed entities, McKenna will review all comments received and, if deemed necessary, make modifications to the draft. McKenna will attend the Planning Commission public hearing to explain the Plan to the public, respond to review by entities, and assist with the adoption by the Planning Commission. McKenna will also attend, present the Plan at the public hearing, and assist with adoption.

Timeframe

PROPOSED 6-MONTH PROCESS

We propose to complete the City of Ypsilanti Master Plan Update and Sustainability Plan over the course of six months, with the understanding that obtaining public input to the City's satisfaction may extend this timeline. We believe the timeline below will allow us to ensure that the excitement and momentum that builds throughout the entire planning process can quickly be converted into energy and collaboration for implementation success. The process follows the requirements of the Michigan Planning Enabling Act, including the required 63-day comment period by neighboring and partner jurisdictions.

Tasks	MONTH					
	1	2	3	4	5	6
Task 1a: Program Management & Kick-Off						
Task 1b: Data Analysis						
Task 2: Community Involvement						
Task 3: Goal Statements						
Task 4: Objectives Update (Master Plan)						
Task 5: Plan Preparation (Sustainability Plan)						
Task 6: Implementation Matrix (Both Plans)						
Task 7: Presentations						
Task 8: Finalization and Adoption						
Master Plan Update Statutory Review (63-days)						

MEETINGS

Please note that we will work with the City during the project initiation and kick-off stage to finalize the meetings strategy. As part of this proposal, included in our proposed fee, we are proposing to lead and attend the following meetings:

- One (1) Project Kickoff meeting with Staff and other key influencers, as determined by the City;
- Three (3) Community Workshops
- Three (3) Ward-Based Townhall Meetings
- Four (4) Meet the Planner Sessions
- Three (3) Sustainability Commission, Planning Commission, and/or City Council Meetings

Total: Minimum fourteen (14) total meetings, as described above. If fewer meetings are desired, we will work with the City on a mutually agreed-upon modification to the work plan and project fee.

Project Fees

PRELIMINARY PROPOSED FEES

To provide City leaders with a predictable price, we have outlined a Work Program in this proposal, which we will accomplish for a proposed professional fee of twenty-five thousand dollars (\$25,000).

Proposed Work Program Costs	Fee
Task 1a: Program Management & Kick-Off	
Task 1b: Data Analysis	\$3,000
Task 2: Community Involvement	\$5,500
Task 3: Goal Statements	\$3,000
Task 4: Objectives Update (Master Plan)	\$1,500
Task 5: Plan Preparation (Sustainability Plan)	\$3,500
Task 6: Implementation Matrix (Both Plans)	\$2,500
Task 7: Presentations	\$4,000
Task 8: Finalization and Adoption	\$2,000
SUBTOTAL	\$25,000

McKenna will provide the following additional services if requested:

- Community Workshops or Townhalls - \$1000 per event
- Additional Sustainable Commission, Planning Commission, or City Council Meetings - \$500 per meeting
- Sustainability Plan: Comprehensive Assessment Approach - \$10,000

Qualifications



McKenna's downtown Northville, Michigan headquarters – a repurposed Ford Motor Company plant designed by Albert Kahn, built in the 1930s. Our inspiring and environmentally conscious office spaces reflect McKenna's commitment to our people, our communities, sustainable design and the rich technology heritage of the Midwest.

McKenna is a corporation formed under the laws of Michigan on May 2, 1978. The firm has offices in Downtown Northville, Detroit and Kalamazoo, Michigan.

McKenna helps community leaders and private investors create more vital, interesting, safe, functional and prosperous places to live, work, shop, play, and do business. We provide planning, zoning, landscape architecture, community and economic development and urban design assistance to cities, villages, townships, counties, and regional agencies, as well as select private clients. Our success can be measured by the physical improvements to hundreds of McKenna client communities, and by our 39-year record of client satisfaction and on-time, on-budget delivery.

McKenna currently provides project services to more than 85 communities and private land investors in Michigan, Ohio, Kentucky, Indiana, and Illinois. Anticipating and responding to change is a major distinction of McKenna's practice. McKenna's innovation and depth of experience is a resource for public and private decision-makers; we are a firm of roughly 20 planners, urban designers, and landscape architects.

HEADQUARTERS

235 East Main Street, Suite 105
Northville, MI 48167
T: (248) 596-0920
F: (248) 596-0930
E: info@mcka.com

DETROIT

28 W. Adams, Suite 1000
Detroit, MI 48226
P: (888) 226-4326
F: (248) 596-0930

WEST MICHIGAN

151 South Rose Street, Suite 920
Kalamazoo, MI 49007
P: (269) 382-4443
F: (269) 382-4540

AREAS OF SERVICE

Community Planning

- Master Plans (Cities, Villages, Townships, Counties and Regions)
- Neighborhood Preservation Plans
- Redevelopment Plans
- Corridor Plans
- Downtown Plans
- Growth Management Plans
- Park and Recreation Plans
- Capital Improvements Programs
- Community and Fiscal Impact Analysis
- Waterfront Planning
- Open Space Planning
- Historic Preservation Plans
- Transportation and Parking Plans
- GIS Analysis and Alternative Testing
- Access Management

Economic Development

- Public/Private Partnerships
- Brownfield Redevelopment Planning
- Downtown Redevelopment Action Plans
- Corridor Redevelopment
- Tax Increment Finance Plans
- Grant Applications
- Redevelopment Project Management
- Market Studies: Retail, Commercial, Residential, Industrial, Institutional
- Redevelopment Financing Assistance
- Land Assembly/Eminent Domain Assistance

Building Department Administration

- Zoning Administration
- Building Code and Zoning Enforcement
- Building Inspection
- Electrical, Mechanical and Plumbing Inspections
- Property Maintenance and Housing Inspection
- Landscape Construction Observation
- Code Enforcement
- Compliance with State
- Department Management Plans

Parks and Recreation

- Parks and Recreation Master Plans
- Park Design (neighborhood, community, regional)
- Ball Field Planning and Design
- Park and Recreation Facilities Design
- Bikeway and Trail Planning and Design
- Grant Applications
- Public Participation
- ADA Accessibility
- Park and Recreation Furnishings
- Universal Playgrounds



On-Site Management Services

- Zoning and Planning Administration
- Tax Increment Finance Authority Management
- Downtown Development Authority Administration
- CDBG Administration
- Housing Rehabilitation
- Project Management – Capital Improvement Projects
- Redevelopment Project Administration
- Community Development Administration
- Economic Development Administration

Development Codes

- Zoning Ordinance
- Zoning Ordinance and Resolution Review and Preparation
- Continuing Advisory Services to Elected and Appointed Officials, Planning and Zoning Commissions, and Boards of Appeal
- Subdivision and Condominium Regulations
- Form-Based Codes
- Environmental Regulations – Wetlands, Woodlands
- Expert Witnessing and Court Testimony on Zoning
- Sign Regulations
- Annexation Advisory Assistance
- Sex-Oriented Business Regulations and GIS Testing
- Open Space Regulations
- Planning and Zoning Code Training Seminars
- On-site Zoning Administration

Complete Streets and Transportation Planning

- Complete Streets Policy Development
- Complete Streets Design Guidelines
- Complete Streets Procedure and Implementation
- Corridor Plans
- Streetscape Plans
- Bicycle & Pedestrian Plans
- Bicycle Parking Plans
- Bicycle Sign Plans
- Bike Share Feasibility Studies
- Intersection Design & Crossing Plans
- Zoning and Regulatory Review
- User Maps and Wayfinding Studies
- Transportation Master Plans
- Site Plan Review of Transportation Facilities
- Circulation Studies Vehicles and Pedestrian
- TOD Studies
- Education and Training
- Transportation and Parking Plans
- Access Management
- Parking Studies

Public Participation (IAP2 Certified)

- Hands-on Workshops
- Focus Groups
- Surveys (telephone, online, direct mail)
- Public Hearings
- Open Houses
- Interactive Citizen Advisory Committees
- Youth Outreach
- Community Walks and Bike Rides
- Storefront Workshops
- Consensus Building
- Participatory Decision-Making
- Interviews (one-on-one)
- Community Preference Surveys
- Citizen Photo Shoots
- Charrettes

Community Development

- HUD CDBG Administration
- Analysis of Impediments to Fair Housing
- Environmental Review Records
- Consolidated Plans
- Elderly Housing Assistance
- Five Year and Annual Action Plans
- CDBG Program Planning and Applications
- Housing Rehabilitation Administration
- Market Studies – Market Rate, Elderly and Assisted Housing
- Housing Market Studies (MSHDA approved)

Urban Design

- Community Design Plans
- Placemaking Strategies
- Parks, Greens, Commons and Plaza Design
- Streetscape Design
- Site Planning
- Community Character Planning
- Historic Park Design
- Computer Visualization (before/after)
- Design Review
- Site Evaluation and Selection
- Design Manuals
- Neo-Traditional Design (TND)
- Urban Form Pattern Books
- Mixed Use (residential, retail, office, public, institutional) Design
- Public Art

Sustainability Plans

- Develop Neighborhood Stabilization Plans
- Green Infrastructure Plan for Community's Public Property
- Walkable/Bikeable Audits and Implementation Plans
- Community Master Plan, Strategic Plan, or Capital Improvement Plan
- Plan for Low Impact Development (LID) Components
- Local Planning and Zoning
- Access Management Plans for Transportation Corridors

Landscape Architecture

- Residential Development Plans (single family detached/attached; multi-family, elderly, mixed use, townhouses) Conventional & Cluster
- Site Analysis and Design
- Site Layout and Planning
- Construction Drawings and Construction Observation
- Landscape Architecture (MSHDA-approved)
- Arborist Services (tree surveys and maintenance plans)
- Greenways and Trail Planning and Design
- Native Plant Landscapes
- Wayfinding, Signs, and Interpretive Stations
- Environmental Performance Standards
- Public Art Development
- Public Space Design – Greenways, Bikeways, Streetscapes
- Wetlands, Woodlands, Groundwater, Aesthetic, and Vista Protection Regulations
- Sustainable Landscape Design

Awards / Accolades



McKenna has been honored by its peers and public with planning and design awards. We take pride in consistently delivering exceptional planning and personal service to public officials across the Midwest.

2017 Award for Excellence in Transportation Planning, Michigan Association of Planning.
Delhi Charter Township (Ingham County), MI – Realize Cedar: Urban Design Framework.

2016 Award for Excellence in Transportation Planning, Michigan Association of Planning.
City of Livonia, MI – Bike/Walk Livonia: A Future Transportation Plan.

2011 Outstanding Implementation Project, Michigan Association of Planning.
City of Grosse Pointe, MI – Downtown Revitalization Program.

2010 Site Design/Parks Award, Michigan Recreation and Park Association.
Van Buren Charter Township (Wayne County), MI – Riggs Heritage Park.

2009 Outstanding Implementation Project, Michigan Association of Planning.
Buena Vista Charter Township (Saginaw County), MI – Town Center Project.

2008 Merit Award, Outstanding Design, American Society of Landscape Architects, Michigan Chapter.
Brighton, MI – Green Oak Village Plan.

2007 Planner of Year Award, Michigan Association of Planning. Phillip C. McKenna, AICP, PCP.

2007 Interactive Mapping Tool GIS for Everyone Award, Improving Michigan's Access to Geographic Information Networks (IMAGIN), River Rouge, MI.

2005 CAM Magazine Year End Special Issue, Construction Association of Michigan in recognition of outstanding facility planning and design. Flat Rock, MI – Community Center Site Design and Boardwalk.

2004 Innovative Park Resource Award, Michigan Recreation and Park Association.
Downriver (Southeast MI) Linked Greenways – Wayside Companion Trail Signage and Wayfinding Manual.

2004 Outstanding Small Business Award, Crain's Detroit Business. McKenna.

2002 MRPA Master Plan Award, Michigan Recreation and Park Association.
Oakland County, MI, Orion Oaks County – Park Site (1,000 acre) Master Plan.

2001 Award for Landscape Architectural Design, Michigan Society of Landscape Architects
Flat Rock, MI – Community Fields Ballfield/Community Park Complex.

2001 Outstanding Facility Design Award, Michigan Recreation and Park Association.
Flat Rock, MI – Community Fields Ballfield/Community Park Complex.

2001 Award for Excellence in Comprehensive Planning- Large Jurisdiction, Ohio Planning Conference.
Dayton, OH – West View Development Opportunity Redevelopment Plan.

1999 Outstanding Planning Project Award, Michigan Association of Planning & Michigan Society of Planning Officials. Hamburg Township (Livingston County), MI – Open Space Development.

1996 Outstanding Planning Project Award Michigan Association of Planning & Michigan Society of Planning Officials. Plymouth Charter Township (Wayne County), MI – Ann Arbor Corridor Plan Commercial Corridor.

McKenna and its planners and designers have also been selected for other awards including Crain's Detroit Business 20-in-their-20's; Crain's Detroit Business "Coolest Places to Work"; and the Michigan Business and Professional Association's The 101 Best and Brightest Places to Work in Southeast and West Michigan.



M. Paul Lippens, AICP, NCI

DIRECTOR OF URBAN DESIGN AND MOBILITY
DIRECTOR, DETROIT STUDIO

EDUCATION

Master of Urban Planning
Taubman College
University of Michigan

Bachelor of Arts
Hampshire College

HONORS

Award for Excellence in Transportation Planning for "Realize Cedar: Urban Design Framework"
Delhi Charter Township (Ingham County), MI, Michigan Association of Planning

Award for Excellence in Transportation Planning for "Bike/Walk Livonia: A Future Transportation Plan"
City of Livonia, MI, Michigan Association of Planning

Implementation Award, 2013
Illinois American Planning Association

Best Practices Award, 2012
Illinois American Planning Association

PROFESSIONAL EXPERIENCE

Complete Streets Policy and Implementation

Award winning author of the Complete Streets, Complete Networks Design Manual, which combines the physical planning of infrastructure with an institutional understanding of project management, funding and prioritization. The manual provides guidance on the implementation of complete streets policy and presents a structure for evaluating street design, mode prioritization, network optimization and placemaking. Also coauthored the Complete Streets Chicago: Design Guide - Chicago's, Complete Streets v2.0.

Bicycle and Pedestrian Plans and Safety

Led award winning bicycle and pedestrian planning in Livonia, Delhi Township, Frenchtown Township, and Paw Paw (Michigan) Evanston, Midlothian, Palos Heights and Winfield (Illinois) and Lowell (Indiana), as well as sub regional bike plans in Chicago suburbs. Studied sidewalk gaps, and recommended bike lanes, sharrows, trails, and protected bikeways. Improved crossing safety and intersection design for people walking, biking, and taking transit. Made network recommendations which considered traffic vehicular volume, roadway configuration, MMLOS, destinations, delay, directness, and public perception.

Trail Planning and Access Studies

Lead planner and designer for the Fort Wayne Downtown/South Central Area Connectivity Plan. Planned a network of non-motorized transportation options to support neighborhood residential development, equity, and accessibility to regional amenities. The network is highlighted by an urban greenway linear park loop. A greenway extends the current Rivergreenway system as an armature linking neighborhoods with shared recreational, cultural and commercial resources. Additionally, led design and access studies on the Des Plaines River Trail, the Illinois Prairie Path, and Chicago's world famous Lakefront Trail.



PROFESSIONAL EXPERIENCE

Multi-Modal Transportation System Planning and Design

Led multi-modal planning projects in Indianapolis and Carmel, Indiana, which initiated transportation systems to integrate bicycle, pedestrian and transit modes in a network of streets that form typology-specific corridors. Designed system to encourage development of a place-based transportation, principally pulling land use analysis, housing and neighborhood planning, economic development potential, and green infrastructure into the plan to assure a comprehensive approach to add value to residents.

Signs and Wayfinding Systems

Created wayfinding and identity signs in relation to urban design projects in Terre Haute, West Baden Springs, and French Lick, Indiana and bicycle sign systems in Midlothian, Palos Park, Berwyn, Schaumburg, and Mount Prospect, Illinois. These projects included the design of the graphic pieces and the coordination of sign manufacturing and wayfinding campaign plus an interpretive sign campaign for the National Road Scenic Byway Trail in Terre Haute, Indiana. Managed the installation of MUTCD approved bicycle wayfinding signs in several Chicago suburbs.

Comprehensive and Subarea Planning

Led Master Plan efforts for Garden City, Portland, Midlothian Township, Inkster, Paw Paw, Tecumseh, and Commerce Township. Engagement techniques included steering committees, local business interviews, field intercept surveys, focus groups and charrettes. Identified four goal areas by public process to guide the downtown economy, place, sustainability, and transportation. Additional planning examples include the Oak Park, IL Comprehensive Plan, the Evanston IL, Main Street Station Area TOD study, and a Downtown Vision Plan for Terre Haute, IN.

Housing and Energy Efficiency

Created development visions for energy efficient affordable housing projects for the City County Department of Community Development. Created maps to illustrate affordable housing distribution comparative to low-moderate income census tracts. Evaluated feasibility and impacts of straw bale affordable housing development including a site plan, budget/cost estimates, and energy efficiency analysis comparing life cycle costing of straw bale with traditional development. Created an economic analysis of the feasibility of utilizing under-performing public land holdings to create more affordable housing.

Environmental Planning

For Ann Arbor's "State of the Environment Report," created illustrations of environmental policy issues affecting the City, including: maps of the watersheds, floodplains, lighting usage, contaminant sources and sites; conducted data analysis and prepared illustrative graphs to address goals for phosphorus reduction and energy use. Developed Mitigation Plan that assessed flood impacts on neighborhoods and a comprehensive land use approach to floodplains with additional work on water protection activities and hazard mitigation planning.

Urban Design

Led the Indianapolis East 10th Street Urban Design and Gateway Plan to improve the pedestrian environment and promote walkable access and crossing areas. The plan defines parking and parking management for businesses and residences, as well as the creation of bicycle facilities. Plan recommends improved bus shelters and bus pull-offs and intersection traffic management and improved vehicular traffic flow. Developed design alternatives for balanced multimodal transportation, and corridor/district placemaking, as well as destination functions; district identity elements; and public open space with design recommendations, construction budgets and implementation strategies.

Community Development

Managed the preparation of a Five-Year Consolidated Plan for a multi-jurisdictional HUD grant Consortium, including all project management and public engagement tasks. Responsible for document preparation, including submittal of Consolidated Plan using the eCon Planning Suite via HUD's Integrated Disbursement and Information System (IDIS).

Ordinance and Regulatory Review

Developed a Flood Mitigation Ordinance which involved public engagement, research of best practices, new ordinance drafting, and the evaluation of land use, infrastructure, and economic impacts. The project was vetted thoroughly with the Planning Commission, including public presentations.



MEMBERSHIPS

American Institute of Certified Planners
American Planning Association

Michigan Association of Planning
Congress for New Urbanism

CERTIFICATIONS

National Charrette Institute
Charrette Systems and Management and Facilitation

ACTIVITIES & PUBLIC SERVICE

Adjunct Professor of Urban Planning & Policy
University of Illinois Chicago (2013)

Board of Directors
Transportation Riders United (TRU)
(January 2014 to Present)

Planning Commissioner
City of Ypsilanti, MI (2006-2007)

SELECT PRESENTATIONS

"Planning for Tomorrow's Mobility"
MTPA Annual Conference, Grand Rapids 2017

"Decoding Complete Streets"
MAMC Annual Conference, Kalamazoo, 2017

"Hey Ho, Let's Go: Bike 2.0"
MAP Annual Conference, Kalamazoo, 2016

"Bike 2.0, Getting There From Here"
MML Annual Convention, Mackinac Island, 2016

"Promoting Your Community's Assets Through Wayfinding"
MAP Annual Conference, Detroit, 2015

"Decoding Complete Streets"
MAP Annual Conference, Mackinac, 2014

"Removing the Silos: Integrating Land Use & Transportation in Local Plans"
APA-CMA Conference, Chicago, 2013

"Complete Streets Implementation"
APA National Conference Session, Chicago, 2013

"The Boulevards and Beyond"
APA National Conference Session, Chicago, 2013

"Complete Streets: Tools to Move from Idea to Practice"
Tuesdays at APA/Chicago, Chicago, 2012

"Lessons in Completing Streets"
Complete Streets Forum, Toronto, 2012

"Complete Streets Implementation in Chicagoland"
APA National Conference Session, Los Angeles, 2012

"Creating Effective Bicycle Signage Systems"
The Change Institute, Rosemont, Illinois, 2010



Laura Haw, AICP, NCI

PRINCIPAL PLANNER

EDUCATION

Master of Urban Planning
Physical Planning and Design
Taubman College
University of Michigan

Bachelor of Arts (with honors)
International Development
Michigan State University

Bachelor of Arts (with honors)
Political Science / Pre-Law
Michigan State University

PROFESSIONAL EXPERIENCE

Comprehensive, Sub-Area, and Corridor Planning

Preparation of master plans, sub-area plans, and corridor plans including data collection, documentation and analysis of existing conditions, character planning, goals and objectives, and recommendations / strategic matrices for future project prioritization, phasing, and implementation processes. Additional focus on downtown districts, feasibility analysis, catalytic impact assessment, and ease of development opportunities. Project highlights:

- Master Plans (Village of Vicksburg, Village of Franklin, City of Eastpointe)
- Downtown Development Authority/TIFA Plans (City of Bangor, Village of Vicksburg, Plymouth Township, and more)
- The Upper Westside Neighborhood Plan, City of Detroit
- 8 Mile Boulevard: Catalyzing the Corridor (8MBA reinvestment study for multiple jurisdictions)

Parks and Recreation / Open Space Planning

Expertise in creating parks and recreation master plans, per MDNR requirements, including facilities assessment, natural features inventory, deficiencies analysis, and action plan programming. Experience in Phase II of Parks and Recreation master planning with MDNR grant applications. Additional practice in open space planning, including greenways (site analysis, traffic calming, optimal greenway layout, low-impact design techniques, gateways and wayfinding signage, local public art and a community maintenance plan) and development of a vacant land re-activation rooted in green infrastructure and conversation. Project highlights:

- Parks and Recreation Plans and Designs (Village of Lake Orion, Village of Three Oaks, City of Hudson, City of Birmingham, City of Portage, and more)
- Vacant Land Toolkit (City of Detroit)
- Woodmere Greenway (UNI study, southwest Detroit)

Lean Zoning

Experience in streamlining and re-structuring Zoning Ordinances to reduce red-tape, add clarity, and ensure quality building form. Preparation of text amendments to address new development trends, including elderly housing and accessory dwelling units, urban agriculture, non-traditional commercial uses, and planned unit developments.



PROFESSIONAL EXPERIENCE

Non-Motorized Transportation Planning

Instrumental collaborator on non-motorized transportation projects, including BIKE/WALK Livonia, a non-motorized plan for the City of Livonia.

Urban Design

Site design of residential and mixed-use neighborhoods in Michigan, including empty-nester housing, townhomes, and high-rise apartment complexes. Creation of Planned Unit Developments (PUD) of luxury campgrounds (550+ units in SC and CO) with recreational attractions, pedestrian amenities, and natural resource conservation / eco-tourism. Additional project highlights include the redevelopment of a vacant 62-acre site in south Chicago, IL into an active, mixed-use waterfront neighborhood and a 15 urban block redevelopment plan for Minneapolis, MN into a regional destination built upon the strengths of local businesses.

Graphic Design / Document Layout

Expertise in document layout for annual reports and master plans, including innovative and creative approaches to tables, maps, and information graphics. Photographic documentation of successful urban planning and design projects. Additional experience in creation of brand identity, marketing materials (brochures, flyers, presentation boards, etc.) and graphics for clients.

Public Engagement

Organization and the facilitation of various public engagement functions, including community-wide public workshops, charrettes, focus groups, steering committees, and open houses to inform and capture the visions and ideas of stakeholders. Experience in designing innovative materials for exercises, including presentations, visioning and mapping activities, and priority ballot voting to ensure interactive and meaningful public engagement. Additional capabilities in organizing and managing online public engagement platforms, including social media.

MEMBERSHIPS

American Institute of Certified Planners
American Planning Association
Michigan Association of Planning

CERTIFICATIONS

National Charrette Institute

Charrette Systems and Management and Facilitation



Mario Ortega, AICP

PRINCIPAL PLANNER

EDUCATION

Master of Science, Urban & Regional Planning
Eastern Michigan University

Bachelor of Arts, History
University of Michigan

SOFTWARE EXPERTISE

ESRI ArcView GIS 3.1
ESRI ARC/INFO 7.2
ESRI ArcGIS

AutoCAD LT
Microsoft Office
Adobe Creative Suite

MEMBERSHIPS

American Institute of Certified Planners
American Planning Association
Michigan Association of Planning

PROFESSIONAL EXPERIENCE

Continuing Planning Services

Provided planning and zoning consultation to several Michigan and Illinois communities including site plan and rezoning review for legislative bodies and Planning Commissions, community staff and community legal consultants. Advised elected officials and staff on potential residential, commercial, industrial and recreational projects' compliance with applicable planning and zoning standards.

TIF Redevelopment Plan Creation

Conducted field evaluation of structures and uses within a designated area to determine eligibility for establishing a Redevelopment Project Area. Conducted analysis of equalized assessed values to determine a redevelopment project budget based on tax increment financing. Created redevelopment plans for project area outlining effective public projects to stimulate private sector growth.

Project Management

Created budgets, assigned tasks and provided support to project assistants for master plans and other planning projects. Project manager, lead planner and primary client contact for planning and elected officials in multiple Midwest communities in Michigan, Illinois and Wisconsin.

Community Visioning Facilitation

Created background information and analysis and facilitated community visioning sessions to obtain public input for master plans, recreation plans and downtown development plans.

Financial Management And Policy Creation

Managed financial records of Section 8 Chicago non-profit organization. Developed financial goals and policies to help organization grow 400% in annual revenue. Developed activities and promoted events to raise funds for the Chicago Fire Foundation charity and increased annual donations by 18 times. Managed board members and set financial goals in specific fields of the organization.

Neighborhood Planning

As project manager, conducted demographic and market research, land use analysis, land use charrettes, created land use and district and corridor policies and created catalytic projects for the Milwaukee Near West Side Neighborhood.



PROFESSIONAL EXPERIENCE

Manager Financial and Business Operations:

Managed financial records of professional soccer organization. Provided assistance with annual budget and outlined financial goals for club. Managed payroll for over 20 employees. Coordinated travel for team over course of season.

GIS Administration

Directed GIS support and analysis for over 70 clients in three states for four McKenna offices.



Wendy Caldwell

ASSOCIATE PLANNER

EDUCATION

Bachelor of Science, Urban Planning
Michigan State University

PROFESSIONAL EXPERIENCE

Community Development and Placemaking

Collaborated with residents, local government and community development organizations to design and implement various projects in Detroit's neighborhoods including a right-of-way bioswale, solar energy installation, a repurposed vacant lot for biofuel crops, professional public art installations, and a youth garden project. Analyzed land and demographic data to create plans, area maps, informational graphics, and to inform community development decisions.

Community Engagement

Developed and delivered presentations to community members about various planning topics and facilitated planning meetings and workshops in support of neighborhood planning projects. Worked closely with residents and community leaders in Detroit's communities to ensure projects were implemented according to vision - increasing community ownership and sustainability of projects.

Geographic Information Systems (GIS)

Utilizes GIS software for visual analysis - to assess neighborhood conditions, proactively identify community concerns, and maximize local resources and opportunities. Collected and analyzed data from the U.S. Census Bureau and various open data sources.

Grant Writing and Proposal Development

Provided high level research and proposal development services for small businesses and non-profit organizations. Successfully procured various funding opportunities for non-profit clientele to expand current projects, implement new projects, increase service delivery, and increase organizational capacity.

Legislation and Policy

Advised and served as a subject matter expert for elected officials in Detroit to establish policy priorities and initiatives. Facilitated and coordinated communication between elected officials, municipal departments, stakeholders and constituents. Assisted with content and language development. Analyzed detailed documents regarding municipal budgets, policies, and projects.

Neighborhood Planning

Worked with residents, government agencies, small businesses, and philanthropic organizations to design and construct community projects and create new neighborhood visions. Leveraged resources from new development projects to maximize opportunities for residents including home repairs and upgrades for homeowners, neighborhood beautification, and on-site jobs and job training.

Partnership Development and Support

Developed relationships with non-profit organizations, community stakeholders, philanthropy and local leaders to accelerate planning and development work as well as access to resources. Collaborated on catalytic neighborhood planning projects with municipal agency partners and architecture firms.

Project Management

Managed community development and mobility projects. Implemented arts and culture, alternative energy, and storm water management strategies. Managed grant funds for non-profit clientele for the implementation of community development projects.



Alexandra Novak

ASSISTANT PLANNER

EDUCATION

Bachelor of Science, Urban Planning
Arizona State University

Bachelor of Arts, Sustainability
Arizona State University

MEMBERSHIPS

American Planning Association
Michigan Association of Planning

PROFESSIONAL EXPERIENCE

Neighborhood Planning

Developed planning and design projects with community leaders including a park renovation, a greenway/historic trail, and mixed-density infill housing in an urban neighborhood. Analyzed land and demographic data to create plans, area maps, informational graphics, and to inform community development decisions.

Development Review and Zoning

Assists with ongoing development review services including site plan, special land use, land division, variance, and rezoning. Analyzes applications based on applicable zoning and other regulations and present findings to community staff and commissioners. Researches and drafts zoning ordinance amendments and complete code rewrites for Michigan cities and townships.

Community Development and Placemaking

Managed and prepared grant applications for community improvements and redevelopment. Worked with a multidisciplinary team advising on principles of urban planning, land use, zoning, and placemaking. Supported planning of racial equity and economic opportunity workshops for community members in a changing neighborhood.

Geographic Information Systems (GIS)

Managed all GIS mapping of neighborhood planning and development initiatives. Collected and analyzed data from the U.S. Census Bureau and various open data sources. Created maps for economic development planning, transportation planning, and other development-related projects.

Real Estate Development

Strategized land acquisition and development opportunities while assessing the needs and demands of the local real estate market. Supported "missing middle" housing development projects including mixed-use and mixed-density infill housing and single-family conversion to multi-family home renovation projects.

Community Engagement

Built strong relationships with key community leaders and created opportunities for partnerships. Developed and delivered presentations to community members about various planning topics and facilitated planning meetings and workshops in support of neighborhood planning projects.

Partnership Development and Support

Developed relationships with non-profit organizations, community stakeholders, and local leaders to accelerate planning and development work as well as access to resources. Collaborated on catalytic neighborhood planning projects with municipal agency partners and architecture firms.

MATTHEW J. NAUD

1990	M.P.P.	Public Policy	University of Michigan
1985	M.S.	Biology	University of Michigan
1983	A.B.	Psychology	Boston College

Matthew Naud is the Environmental Coordinator for the City of Ann Arbor. For the past 17 years, he has lead or supported a broad range of sustainability initiatives in the city of Ann Arbor with a focus on energy efficiency, renewable energy, water quality, climate mitigation and adaptation, equity, remediation, and public engagement. He plays a leadership role on several peer-learning networks and is an appointed EPA advisor on Sustainable and Healthy Communities. Most recently, he has participated on State of Michigan advisory boards determining new cleanup criteria and rewriting the state solid waste regulations. He has given talks on urban sustainability at national and international conferences in Kathmandu, Copenhagen, Yogyakarta, and Delhi. Prior to his work in Ann Arbor, he spent 11 years consulting to USEPA and other state and federal agencies on emergency management and air quality projects including the Kuwait Oil fires. He has work experience in the biotechnology field and with Focus:HOPE in Detroit. He holds graduate degrees in Biology and Public Policy from the University of Michigan and an undergraduate degree from Boston College. He has served on the Alumni Boards of the Ford School of Public Policy, the University of Michigan, and the University of Detroit Jesuit High School. He was born and raised in Detroit.

ENVIRONMENTAL

COORDINATOR

City of Ann Arbor

2001 - 2018

- **Urban Sustainability Directors Network** – Peer learning network of 200 cities and county sustainability directors across the US and Canada. USDN core member and leadership role on Planning and Innovation Committees. USDN drives innovation in the urban sustainability space and helps to scale innovation across the network.
- **Michigan Green Communities Network** – Co-founder (with David Norwood, Dearborn) of this USDN regional peer-learning network among city, county, and township staff working on sustainability from across Michigan. The network is now housed within the MML Foundation and has most recently been funded with a generous grant from the Mott Foundation. 30 local governments participated in the most recent Michigan Green Communities Challenge.
- **Great Lakes Climate Adaptation Network** – Co-founder (with Matt Gray, Cleveland) of this USDN regional peer-learning network of Great Lake Cities working on climate adaptation. Secured research partnership with the University of Michigan Great Lakes Integrated Sciences and Assessments (GLISA). Under a USDN Innovation grant, developed a Vulnerability Assessment template with five great lake cities. Currently developing Neighborhoods at Risk tool with Headwaters Economics linking national climate risk data with socioeconomic data.
- **USEPA Board of Scientific Counselors (BOSC) – Vice-chair Sustainable and Healthy Communities (SHC) Subcommittee.** Re-appointed to a three-year term on the USEPA BOSC to provide advice, information, and recommendations to EPA's Office of Research and Development (ORD) on technical and management issues of its research programs.
- **Climate Resilient Communities** – participate in the Huron River Watershed Council project exploring climate adaptation in the following sectors: Water Infrastructure; In-stream Flows; Natural Infrastructure; and Hazard Mitigation
- **First PACE Program in Michigan** – Part of the Ann Arbor team that developed legislation, testified, and secured enactment of HB5640. Sold first municipal PACE bonds in Michigan to fund commercial energy efficiency projects.

- **Rent Rocket** – a 14-city collaborative project funded by USDN developing a web based tool to link rental and energy costs.
- **Health Impact Assessments** – Expanding Urban Tree Canopy as a Community Health Climate Adaptation Strategy: A Health Impact Assessment of the Ann Arbor Urban Forest & Community Management Plan
- **Sustainability Framework and Action Plan** – Funded by the Home Depot Foundation, developed a Sustainability Framework and Action Plan for Ann Arbor. Reviewed 30 plans and 226 goals to develop an integrated set of 16 sustainability goals for the city. The framework is adopted as an element of the Master Plan.
- **Capital Improvement Plan Metrics** – Developed metrics used by each Capital Improvement Project including the extent to which each project furthers environmental goals and/or reduces energy or improves renewable energy generation.
- **Green Rental Housing** – The city of Ann Arbor managed \$250,000 of the Washtenaw County HUD Sustainable Communities grant to explore strategies to “green” rental housing.
- **Brownfields** – Lead environmental staff supporting cleanup and redevelopment of properties. Ann Arbor requires source removal rather than paving over contamination. Project range from 600,000 sf redevelopment of 6-acre site to small infill developments.
- **MGP site remediation** – Coordinating with DTE energy to cleanup a manufactured gas plant site.
- **Climate Action Plan** – supporting Ann Arbor Team developing an update to the Climate Action Plan
 - Participate with UM GLISA effort to develop downscale climate data for the area.
- **Huron River and Impoundment Management Plan (2006 – 2010)** – Lead staff to an Environmental Commission Committee developing the first river management plan for Ann Arbor. Working with a broad cross-section of interested parties, developed research, analysis, and recommendations on managing aquatic vegetation, riparian buffers, harvesting options, cost/benefit analysis of dam retention and removal options. Developed materials for and presented options at three public meetings with over 350 attendees.
- **Landfill Contamination Modeling and Management (2008-2009)** – Directed modeling effort by contractors to re-evaluate the conceptual model for off-site contamination management at the City landfill. Developed a capture zone analysis that demonstrated more than adequate groundwater capture through existing system
- **Manufactured Fertilizer Ordinance** – (2006) Developed scientific support and background documents, drafted ordinance with City Attorney Office. Adopted by the Environmental Commission and City Council. Three years of subsequent sampling demonstrate statistically significant reductions in phosphorus loading to the Huron River.
- **Idling Ordinance** – Draft ordinance developed and awaiting Council action
- **UP505** – Lead Client for several graduate level projects – Green Rental Housing and Redevelopment of a Manufactured Gas Plant.
- **UP502** – Faculty for *Environmental Planning* at the Taubman College of Architecture and Urban Planning in Fall 2006
- **Green Fair** – Assist in organizing annual Green Fair to celebrate local non-profits, businesses, and governments working to improve the environment. Four blocks of Main street are closed one Friday evening in June each year.
- **2011/2012 ICMA/US Department of State Climate Change/Sustainability Professional Fellows Program** – hosted three fellows from Indonesia and participated in a reciprocal exchange for two weeks in Jakarta, Bogor, Yogyakarta, and Bali.
- **ICS-100, 200, 300, 400, 700, 800**
- **Crisis Management: Exercising Leadership in Extraordinary Times** – Harvard University Kennedy School – November 11-14, 2002

CONSULTANT**Self Employed****1999 - 2001**

Two years of independent consulting experience working on or managing large quantitative or qualitative analytical projects for federal, state, or private sector clients.

PROJECT MANAGER**ICF****1990 - 1999**

Nine years of consulting experience managing large quantitative or qualitative analytical projects for public, non-profit, or private sector clients. Significant projects include:

- Developed emergency response plans for the Georgia Division of Public Health and training over 600 DPH and county staff.
- Supported EPA's Emergency Operations Center during the Kuwait Oil Fires and the Midwest Floods including six weeks in the Middle East supporting a multi-agency U.S. team.
- Supported DOE during Response 95 – a FEMA exercise of a hurricane hitting New Orleans
- Discussed market trends and historic price data with automotive catalyst providers and catalyst recyclers to provide EPA with a market summary and supply and demand econometric model for platinum group metals.
- Supported the EPA FACA workgroups on modeling, EPA laboratory upgrade, and in-use deterioration in addition to the Mobile Source Technical Review Subcommittee and the Clean Air Act Advisory Committee.
- Evaluated seasonal/episodic control programs (ozone action days) for the EPA Office of Mobile Sources.
- Audited transit facility drug and alcohol test programs for the Federal Transit Administration.
- Developed training curriculum and delivered this laptop based LandView GIS training to a multi-agency audiences in Washington D.C., Chicago, Denver, New York, and Edison, NJ.

RESEARCH ASSOCIATE UNIVERSITY OF MICHIGAN**1988 - 1990**

Worked for the University of Michigan Office for the Vice President for Research supporting research and science funding projects. Prepared an analysis of the Highway Trust Fund that described the history of the fund and the potential use of this fund to support IVHS research. Interviewed staff on congressional committees and within federal departments such as DOT. Helped to coordinate the Project for the Integrated Study of Global Change at the University. Worked with scientists from many disciplines to organize and prepare a global change NSF proposal.

RESIDENT DIRECTOR UNIVERSITY OF MICHIGAN**1989 - 1990**

Managed a staff of seven Resident Assistants in one wing of a 1200 person residence hall. Responsible for staff schedules, reports, and evaluations. Rotated responsibility for the entire building with four other resident directors. Prepared training and other education materials for staff.

RESEARCH ASSOCIATE UNIVERSITY OF MICHIGAN**1987 - 1988**

As a Health Science Research Associate for the Michigan Gastrointestinal Peptide Research Center, performed research on several recombinant DNA (rDNA) projects including: the confirmation and resequencing of a cloned dog Gastrin molecule; participation in the search for the Gastrin receptor; and the library creation, isolation, cloning, and sequencing of Gastrotropin. This last project was published in the Journal of Biological Chemistry.

RESEARCH ASSISTANT ECOGEN, INC.**1986 - 1987**

Research Assistant to the Director of the Molecular Genetics Group of Ecogen, Inc. Characterized the molecular nature of bacterial proteins, which act as natural insecticides. Research included the introduction of transposable elements into *Bacillus thuringiensis* (BT), screening and isolating new strains of BT, cloning of delta-endotoxin genes, and the introduction of new genes into wild-type strains through mating and recombinant DNA techniques. A poster describing his work was presented at a conference on the Genetics and Biotechnology of Bacilli.

RESEARCH ASSISTANT UNIVERSITY OF MICHIGAN 1984 - 1985

As a graduate student, managed the laboratory for Dr. George Jones. Learned molecular biology research and microbiology laboratory techniques. Researched the effects of extrachromosomal elements on antibiotic biosynthesis within *Streptomyces antibioticus*.

VOLUNTEER COORDINATOR FOCUS: HOPE 1984

Supported the volunteer program at Focus: Hope coordinating volunteers and mailings, delivering tours of the facilities, and assisting with a door-to-door campaign in Pontiac, Michigan.

Publications

QR111 Public Health Emergency Response: Evaluation of Implementation of a New Emergency Management System for Public Health in the State of Georgia. Lora S. Werner, Matt Naud, and Anita Kellogg, 1999. 1/8/99 (<http://www.colorado.edu/hazards/qr/qr111/qr111.html>)

ENVIRONMENTAL LEGACIES OF THE GULF WAR: A CASE STUDY OF KUWAIT SEVEN YEARS LATER, Denis Ody, Dr. Reinhard Kaiser, Matthew Naud, Dr. Mark Vine, and Dr. Paul Walker, 1998 – Prepared for Green Cross International, presented at the Environmental Law Institute First International Conference on Addressing Environmental Consequences of War.

"Gastrotropin: Not an Enterotoxin but a Member of a Family of Cytoplasmic Hydrophobic Ligand Binding Proteins," Ira Gantz, Steven F. Nothwehr, Michael Lucey, James C. Sacchettini, John DelValle, Leonard J. Banaszak, Matthew Naud, Jeffrey I. Gordon, Tadataka Yamada, published in The Journal of Biological Chemistry, December 5, 1989.

"Mobilization of Cloned Delta-Endotoxin Genes into *Bacillus thuringiensis*," Gawron-Burke, C., Naud, M., VonTersch, M., Loidl, H., and Groat, R. The Fourth International Conference on Genetics and Biotechnology of Bacilli, San Diego, CA, 1987

References

CLIENT

CITY OF LIVONIA MICHIGAN

Mr. Mark Taormina

Planning and Economic Development Director

Planning and Economic Development Director
City of Livonia | Planning Department
(734) 466-2292

PLYMOUTH CHARTER TOWNSHIP, MICHIGAN

Mr. Kurt L. Heise

Township Supervisor

9955 N. Haggerty Road
Plymouth, MI 48170
(734) 354-3201

DELHI TOWNSHIP, MICHIGAN

Tracey Miller

Director of Community Development

2074 Aurelius Road
Holt, MI 48842
(517) 268-3038

PROJECT INFORMATION

Bike Walk Livonia; Livonia Vision 21 (Master Plan); Ongoing planning services

- Developed the first City of Livonia Non-motorized Plan
- Consulted on best practices for bikeway design and crossing facilities
- Lead the City's recent effort to modernize its Master Plan – Livonia Vision 21

Ann Arbor Road Corridor Improvement Plan; Ongoing planning services

- Character guidelines, streetscape improvement requirements for development and redevelopment projects
- Access management principles defined for the corridor

Realize Cedar Urban Design Framework

- Innovative document layout and deliverable
- Active online public engagement process
- Emphasis on corridor planning
- Graphically engaging
- Led by team member Paul Lippens

McKenna has prepared hundreds of Master Plans over our 40-year history and can provide additional information at the City's request.



MCKENNA

Communities for real life.

DESIGN
Urban Design

What we did:
PLANNING
Transportation Planning
Corridor Planning
Public Engagement

Realize Cedar: Urban Design Framework

**DELHI CHARTER TOWNSHIP,
INGHAM COUNTY, MICHIGAN**

McKenna worked with Delhi Charter Township on the award-winning Realize Cedar initiative to guide the design of a new downtown. The project included an innovative pop-up outreach events to reach residents where they were — local basketball games, riding the trails, shopping at the farmer's market, visiting the library, or watching music at Veterans' Memorial Park. Other outreach included digital display kiosks, online surveying and forums, local business presentations, and focus groups.

The project, which considered a roadway reconfiguration to reduce the number of lanes and create better biking, walking, and streetscape amenities, incorporated best practices for roadway operations and safety analysis. The transportation analysis followed the Federal Highway Administration process for the evaluation of Road Diets.

Ultimately, Realize Cedar is about facilitating the latent need for new housing and businesses. The Township now has a design framework to facilitate and evaluate new development at several key sites. The Urban Design Framework includes identity themes, materials standards, and signing guidelines for the entire corridor from Willoughby Road on the north and College Road on the south.





Communities for real life.

What we did:

PLANNING

Master Planning
Public Engagement

Master Plan

CITY OF EASTPOINTE, MICHIGAN

To better distinguish itself in the region, Eastpointe committed to creating a long-term vision for the future based on its assets of place, which also addresses the development challenges and pressures of today. To realize their vision, City leaders engaged McKenna to overhaul the previously adopted Master Plan, with a focus on identifying new opportunities for mixed-use and pedestrian developments, as well as recreation and non-motorized connections throughout the City.

A critical component to the new 2040 Master Plan was the identification and creation of Potential Intensity Change Areas (PICAs)—sub-areas within Eastpointe ripe for redevelopment particularly aligned with the community's goals and objectives. One such PICA recommendation was the reimagining of Kelly Road as The Parkway—a green, multi-modal transportation corridor that supports pedestrian scale and neighborhood serving commercial (i.e. food trucks), adaptable live/work spaces, public spaces for gathering and art, recreation paths to connect to major destinations and parks both along Kelly Road as well as within the large landscaped central median.

Eastpointe's goals and objectives were solidified through an extensive public engagement process, including a public open house, surveys, and focus groups with various stakeholders. The resulting Eastpointe 2040 Master Plan is a shared vision and blueprint for the community to maximize and prioritize its investments for long-term future successes.



EASTPOINTE
Plan 2040





MCKENNA

Communities for real life.

What we did:

DESIGN

Transportation Planning
Bike System Design

Non-Motorized Plan

CITY OF LIVONIA, MICHIGAN

LIVONIA
BIKE WALK



Livonia, Michigan has many strengths that make it an ideal place for developing a robust multi-modal network. It is strategically located to provide a much needed regional link between non-motorized facilities in neighboring communities and local destination areas like the Livonia Community Recreation Center, the Civic Center Complex, and Schoolcraft College. The community is home to an outstanding system of park and recreational amenities, school facilities, and a premier regional trail connection via Hines Parkway, which links dozens of Wayne County communities. Finally, the existing grid system in Livonia provides a strong foundation for the connectivity of neighborhoods and destinations; both for purpose (i.e. picking up something at the store, going to school, and visiting a library or a friend's house) and leisure (i.e. walking the dog, family bicycle ride, physical exercise, etc.).

Recognizing these strengths, McKenna worked with Livonia leaders to develop an award-winning plan that built upon the community assets and offered practical implementation steps to achieve some near-term connectivity in the network. The plan included an inventory and evaluation of the existing non-motorized network and identified key gaps in the existing bicycle and pedestrian network.

Multi-modal projects were prioritized accounting for proximity to schools, parks, residential areas and public areas to assure residents would get the most 'bang for the buck' as the plan is implemented. The plan also included design standards for bicycle and pedestrian design, with cross sections and traffic calming elements. McKenna worked with the City to coordinate the effort with other regional planning agencies, including the County and metropolitan planning organization.

The public outreach was a highlight of the planning effort, which included a series of online outreach efforts, a network design charrette, and a "Bike Livonia" workshop. During the Bike Livonia workshop, residents, decision makers, and professionals went out on the street to observe the best and worst elements of the existing non-motorized network, later discussing ideas for addressing these issues in the plan.



MCKENNA

Communities for real life.

What we did:

DESIGN

Master Plan

Community Empowerment

Suburban Retrofit

Livonia Vision 21, the City's Comprehensive Master Plan

CITY OF LIVONIA, MICHIGAN

McKenna partnered with the City of Livonia to develop a truly action-oriented, community driven plan that would build on years of progressive municipal planning. The primary focus for this comprehensive master plan, *Livonia Vision 21*, was to identify priority steps for the next three (3) years that would continue to secure Livonia for the next 100-years.

Livonia Vision 21 is not only the City's comprehensive policy document directing future decisions for land use, transportation, neighborhoods, infrastructure and open space, among other topics. It is also a community plan that resulted from McKenna's robust public engagement program and was strengthened by the involvement of community members throughout 2018.

Throughout the planning process, there were numerous opportunities for stakeholders to offer ideas and reactions with the 16 member appointed steering committee, administration and elected officials. Community engagement opportunities included online surveys, public meetings, presentations, and workshops. Exercises with the public focused on future land use, mobility, visual preference surveys, and missing middle housing and were designed to facilitate conversation about the most important aspects of the community. Outreach efforts also included an intense, two-day charrette in which three special planning areas for the City were creatively redesigned.

With significant public input, the *Livonia Vision 21* Plan positions Livonia for continued success and confirms the aspirations of residents, businesses and stakeholders.

LIVONIA
STARTS NOW V21





MCKENNA

Communities for real life.

What we did:

PLANNING

Master Plan

Community Empowerment

Redevelopment

Historic Preservation

Master Plan

CITY OF MONROE, MICHIGAN

McKenna was a proud partner in a regional planning exercise in the City of Monroe, Monroe Township, and Frenchtown Township known as Resilient Monroe. Led by non-profit planning group LIAA, the planning effort focused on environmental and economic resiliency and sustainability. McKenna was proud to bring our expertise and local knowledge to the project.

Arising out of that project, all three communities completed Master Plan updates. The City of Monroe completed most of their plan in-house, but asked McKenna for assistance in development an implementation plan to bring the ideas of Resilient Monroe to life.

Using our highly successful "Action Plan Matrix" technique, which consolidates implementation activities into an easy-to-use chart of key participants, funding sources, timelines, and priorities, McKenna gave the city a roadmap to success. Our recommendations included the introduction of a Form Based Code, infrastructure and streetscape investments, and amendments to the Zoning Ordinance to better reflect the Master Plan's priorities.

Our talented graphic design team also gave the city an attractive and exciting document to use as a guide for years to come.



ACTION PLAN

	PRIORITY	TIMELINE	CITY	OTHER GOVT	PRIVATE	NON-PROFIT	WESBAC
Provide for local infrastructure development, where needed, in support of economic development efforts.	1	2015-2016	MC	MC	BO	MC	MC
Build on existing business base and provide for retention and expansion.	1	2015-2016	MC	MC	BO	MC	MC
Continue development that is efforts by encouraging a mix of housing and complementary retail and services.	1	2015-2016	MC	MC	BO	MC	MC
Create a Telegraph Improvement Authority with Monroe and Frenchtown Charter Townships in order to work together to improve the corridor.	1	2015-2016	MC	MC	BO	MC	MC
Establish a local vocational institute as a regular forum for business owners to discuss educational training needs, program challenges, curriculum options, and resources.	1	2015-2016	MC	MC	BO	MC	MC
Increase and expand public-private partnerships and incentive programs such as DTE's Sustainability program.	1	2015-2016	MC	MC	BO	MC	MC
Promote expansion of the successful downtown redevelopment efforts.	2	2017-2018	MC	MC	BO	MC	MC
Promote tourism through the development of local retail facilities and services.	2	2017-2018	MC	MC	BO	MC	MC
Target redevelopment initiatives by providing funding assistance for environmental assessments to investigate properties with redevelopment potential.	2	2017-2018	MC	MC	BO	MC	MC
Develop new and enhance existing partnership programs that provide co-operation among public agencies, industry, labor and community to enhance economic growth throughout the City.	2	2017-2018	MC	MC	BO	MC	MC
Facilitate communication between businesses, neighborhoods, development interests, neighborhood associations, community based groups and other interested parties with respect to economic development and redevelopment.	2	2017-2018	MC	MC	BO	MC	MC
Expand the Monroe Farmers Market and increase marketing efforts.	3	2019-2020	MC	MC	BO	MC	MC



MCKENNA

Communities for real life.

What we did:

PLANNING

Master Planning
Downtown Planning
Neighborhood Planning
Public Engagement

Sustainable Rochester Plan

CITY OF ROCHESTER, MICHIGAN

Rochester, one of Michigan's premier medium-sized cities located north of Detroit, is surrounded by fast-growing communities—and thus has been subject to extreme development pressure. Rochester's walkability, vibrant downtown, and traditional neighborhoods have made it the center of this highly attractive suburban area in metro Detroit.

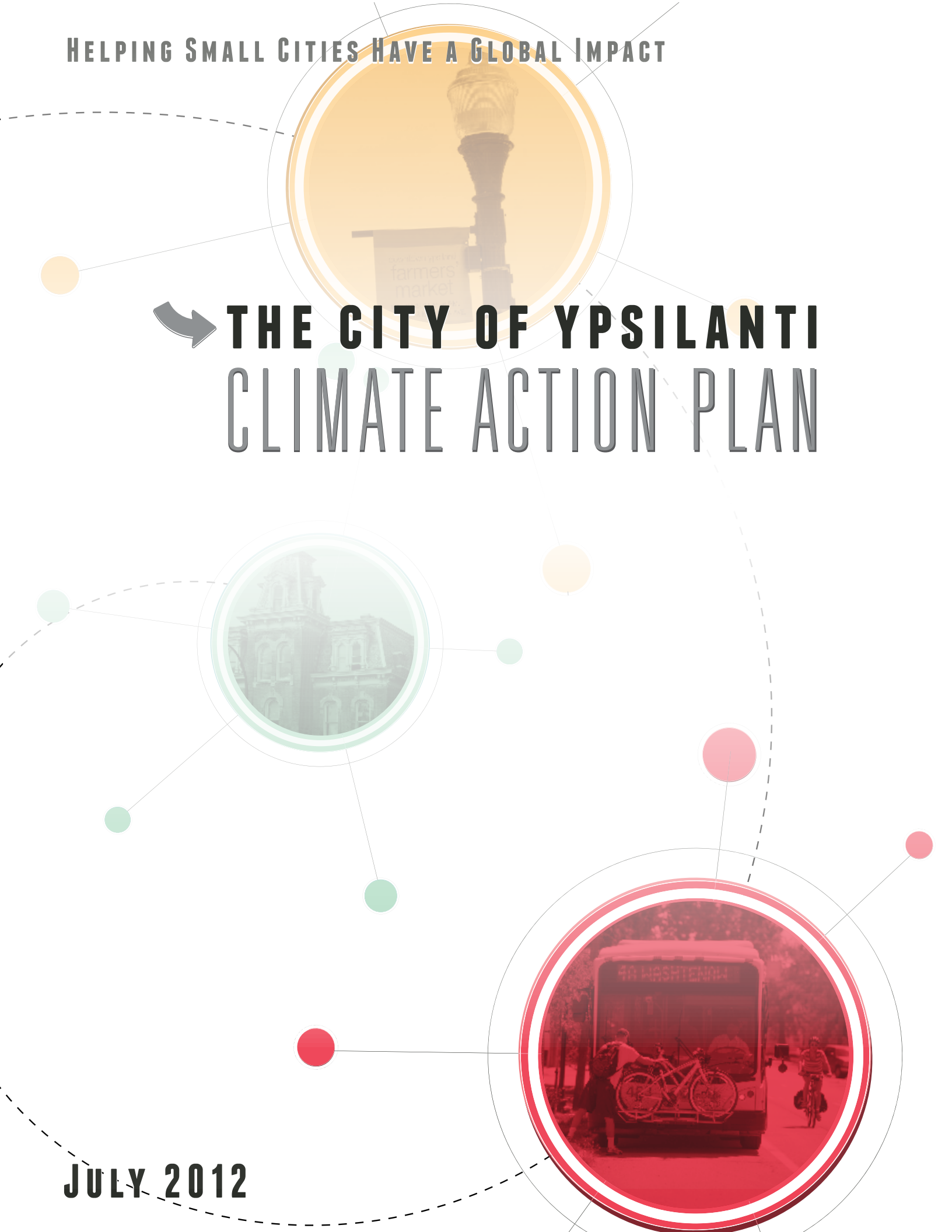
The City's recently updated Master Plan identified a number of "potential intensity change areas"—sites likely to redevelop in the near future. Rochester experienced a building boom of mixed-use and residential development in its downtown consistent with the Master Plan. However, City leaders saw the need to gain a thorough understanding of the impact each of these projects would have on the character of the community, as well as impacts on the community's natural, historic, and man-made systems.

Rochester engaged McKenna to develop a sustainability tool that would establish key measurable indicators. McKenna analyzed and developed 20 Rochester-specific indicators including tree coverage, traffic, parking, stormwater, and financial impact. McKenna's analysis included a determination of the baseline for each indicator; then, working closely with the Interdisciplinary Working Committee through a robust public process, McKenna developed optimal levels for each indicator based on the objectives of the Master Plan. The McKenna team developed a scoring system, on which each new development is scored—ensuring that future development is sustainable and consistent with the established and envisioned character of the community. In addition, the City appointed McKenna to its Sustainability Directorship.

Rochester leaders are highly satisfied with the Sustainable Rochester process and resulting sustainability tool, and have directed McKenna to incorporate the program into the development review process for a comprehensive, coordinated approach to community planning and design excellence.



HELPING SMALL CITIES HAVE A GLOBAL IMPACT



THE CITY OF YPSILANTI CLIMATE ACTION PLAN

JULY 2012



ACKNOWLEDGMENTS

► THE CITY OF YPSILANTI

Teresa Gillotti :: City Planner

Stan Kirton :: Director of Public Services

[PLANNING COMMISSION]

Commissioner Mark Bullard

Commissioner Gary Clark

Commissioner Phil Hollifield

Commissioner Roderick Johnson

Commissioner Daniel Lautenbach

Commissioner Brett Lenart

Commissioner Richard Murphy

Commissioner Kelly Weger

Commissioner Cheryl Zuellig

[CITY COUNCIL]

Mayor Paul Schreiber

Mayor Pro-Tem Lois Richardson

Council Representative Ricky Jefferson

Council Representative Michael Bodary

Council Representative Daniel Vogt

Council Representative Peter Murdock

Council Representative Brian Robb

► COMMUNITY ORGANIZATIONS

Eastern Michigan University

Growing Hope

EMU PLACE

Transition Ypsi

► MICHIGAN SUBURBS ALLIANCE

Valerie Bieberich :: Community Outreach

Stephanie Chueh :: Intern

Victoria Gasidlo :: Intern

Scott Kalafatis :: Intern

Sarah Hoerl :: Project Assistant

Richard Murphy :: Transportation Director

Andrew Reaume :: Graphic Designer

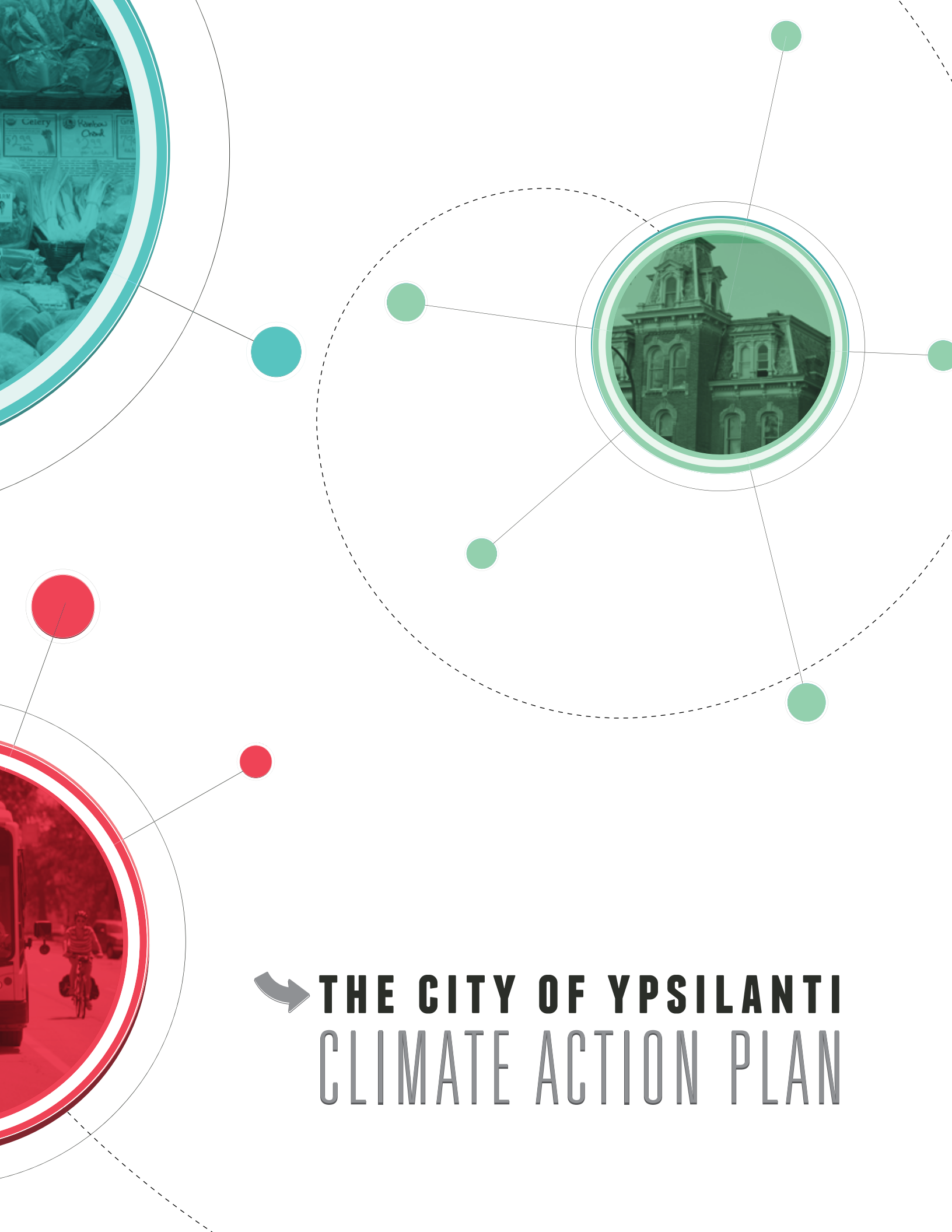
Melanie Piana :: Deputy Director

► WARM TRAINING CENTER

Amanda Cross :: Intern

Joel Howrani Heeres :: Sustainable Communities Coordinator





THE CITY OF YPSILANTI CLIMATE ACTION PLAN

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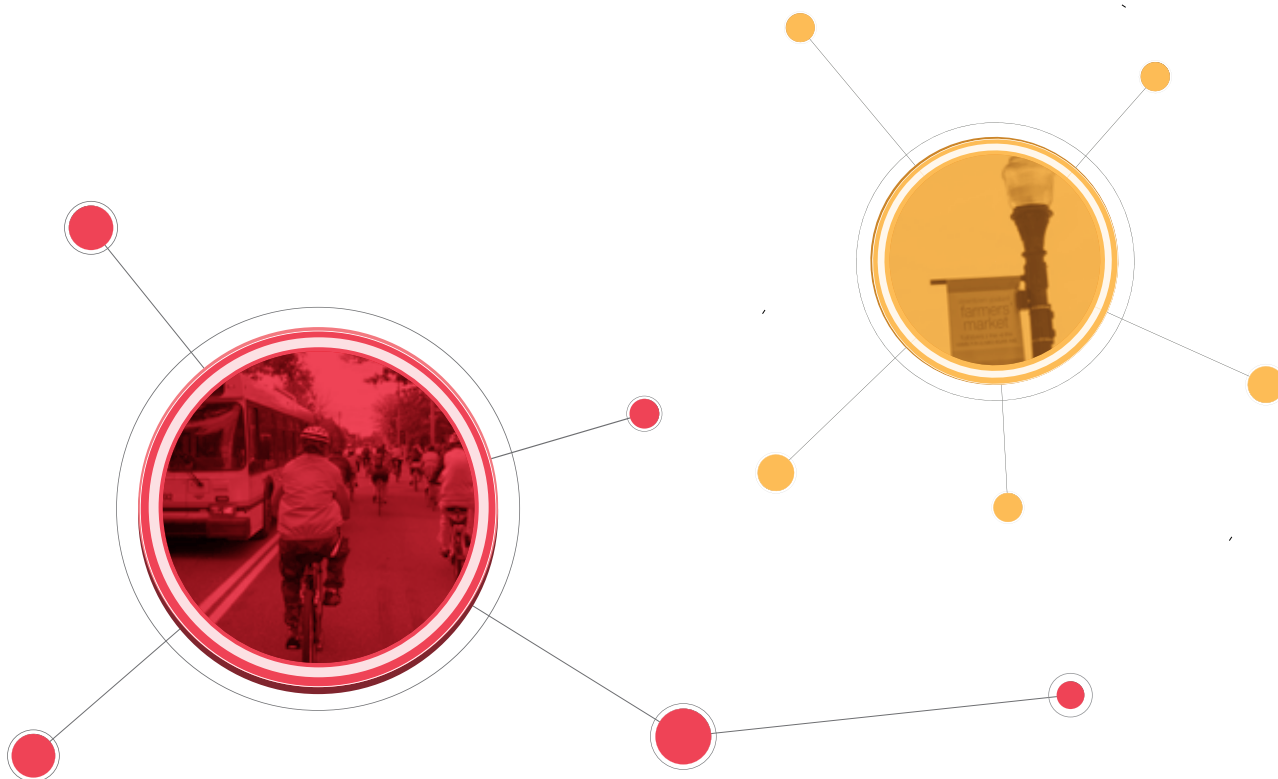
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WHAT THIS PLAN CONTAINS

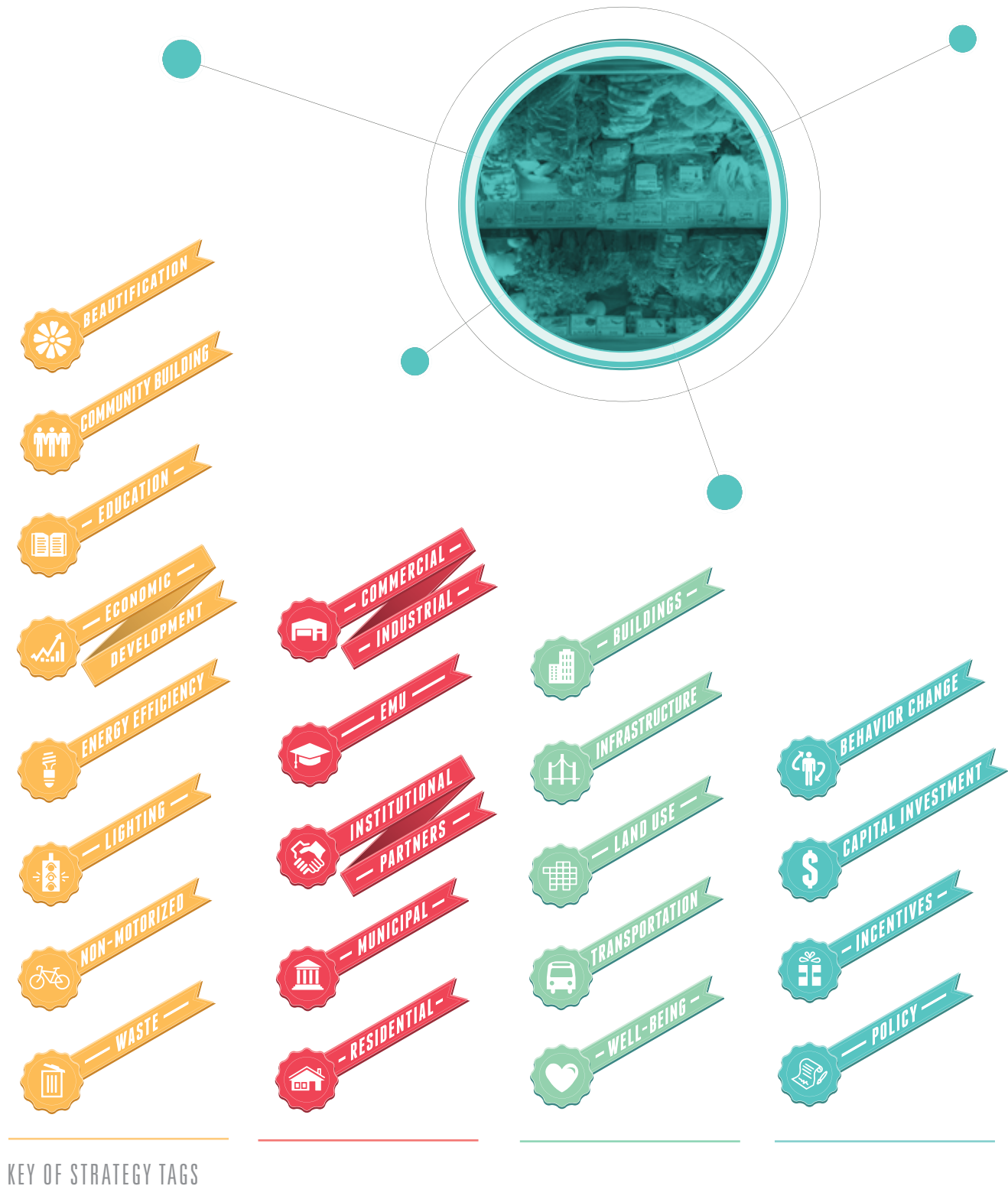
This report outlines a plan to guide Ypsilanti into a more sustainable future by coordinating municipal and community efforts to reduce greenhouse gas emissions and address climate change. The plan begins with an outline of the methodology used to create this plan and reviews community conditions, both from an emissions and qualitative standpoint. Next, the report delves into the strategies themselves and depicts the recommended tactics the city can use to reduce its greenhouse gas emissions. The strategies have been sorted into climate action areas: buildings, infrastructure, land use and transportation, and culture change. Additionally, the strategies have been given “tags” that indicate the nature of each idea, ranging from “municipal” to “behavior change.” These tags allow the user to further sort strategies by interest and acknowledge the interdisciplinary nature of each idea.

After presenting and explaining the proposed strategies, the report addresses implementation. Taking into account existing city and community efforts, the report proposes a course of action to achieve the stated goals. This plan recommends where the city can act by making direct investments, taking steps through its staff and administration, creating new policies to drive change, and coordinating with the region as a whole. The plan also recognizes that some efforts may need to be led by the community, whether through specific individuals, groups or institutions, or by the creation of an official taskforce or coalition.

Finally, more detailed information on GHG emissions and community-driven strategy ideas can be found in the two appendices. Appendix A contains the full technical assessment of municipal and community greenhouse gas emissions. Appendix B is a list of all strategy ideas collected during best practices research, exploration of related efforts and community outreach. This library of approaches has been included to encourage consideration and implementation by the community or future municipal efforts.



KEY OF STRATEGY TAGS



KEY OF STRATEGY TAGS



A CLIMATE ACTION PLAN FOR YPSILANTI

Metropolitan Detroit, as Michigan's largest metro area, is both the state's greatest challenge to sustainability and holds the most promise for the future. The region holds an abundance of human capital, energy and other resources for development but is also rooted in a history of sprawl, inadequate transportation options and aging infrastructure. To move toward a better, more sustainable future, we must draw on both a desire to change as well as local resources in order to confront these substantial barriers to reform. The City of Duluth lays out the environmental challenge to city development in its own climate plan: "International scientific and political communities recognize that elevated temperatures, loss of habitat and species, and economic hardships due to damage from severe weather patterns and changes in natural resources are just some of the substantial changes we may experience in the coming years if action is not taken to reverse current [emissions] trends."¹

As a built-out and de-industrializing community, Ypsilanti struggles to meet the challenge of reducing greenhouse gas emissions. While the city's historic core predates the automotive era, the land use and transportation decisions of the last half century have been planned around the automobile. This left the city with significant greenhouse gas "legacy costs."

In 2011, the City of Ypsilanti joined the Millennial Mayors Congress, a collaborative body of veteran and emerging civic leaders who focus on developing replicable models for local action that will produce a more prosperous, environmentally sustainable and equitable Detroit region. Each of the 22 participating communities is represented by a city official and a Millennial, or 18-35 year-old, resident. In December 2009, the Congress adopted the Energy Savings Protocol, setting a goal of reducing government uses of energy from non-renewable sources to 25% below 2005 levels by 2015. Now they are working together to implement localized approaches to this regional goal.

The Cities of Southgate, Hazel Park and Ypsilanti seek to go beyond this 2015 energy goal, however, and have stepped up to lead the region in local sustainability efforts. Together, the communities and their partners seek to assess strategies for community engagement, devise plans for reductions in municipal GHG emissions, and develop and test strategies targeting community-wide emissions due to limited transportation options, inefficient buildings, and dependence on fossil fuels. All three cities seek to develop and test components of a climate action plan that will result in a measurable reduction of Green House Gas (GHG) emissions from both city government and community activities.

1 | Skoog, Carin. "Greenhouse Gas Inventory & Forecast Report: With Recommendations for the Development of Duluth's Local Action Plan." City of Duluth. October 2001. Web, 12 June 2012. <http://www.natcapsolutions.org/ClimateManual/Cities/Chapter3/Duluth_baseline_14vii06.pdf>



WHAT IS CLIMATE ACTION PLANNING?

Climate change is by definition global and cannot be addressed by one community acting alone. Many mitigation efforts, however, can only be implemented at the local level, and community-scale strategies must be developed.

The local communities where we live and work present many opportunities to reduce greenhouse gas emissions, simultaneously addressing climate change and providing direct local benefits. While small cities may not be able to match national examples like Chicago for big flashy efforts, they have the ability to tailor efforts to local concerns and be just as impactful.

From an individual home to the citywide street network, local action can help slow climate change while also saving money, improving quality of life, and supporting new business and employment opportunities.

WHY YPSILANTI? WHY NOW?

Ypsilanti has already established itself as a leader in energy conservation and related issues, with the community taking a lead on sustainability. The Ypsilanti Climate Action Plan is a way to aggregate many of these efforts, support them through the City in the form of a formalized process, and collectively move forward toward City and community goals related to climate change.

Municipal efforts in the past few years have included a number of significant energy-related projects, and have been effective in an opportunistic, incremental approach: incorporating energy efficiency measures into already-planned projects, or leveraging outside funding opportunities to undertake projects that reduce greenhouse gas emissions and bring other benefits.

Examples of these projects include:

- ▶ Recent renovations to the city's Senior Center and Parkridge Community Center included energy-saving measures like insulation, more efficient windows and boiler upgrades, in addition to improvements for structural maintenance and better ADA access.
- ▶ City Hall features a 2.5 kW photovoltaic array installed in 2010 with the help of the Solar Ypsi initiative. During this project, the Historic District Commission also developed explicit guidelines for appropriate installation of solar panels on historic properties, streamlining future installations.
- ▶ A 2011 streetscaping project on West Cross used LED fixtures in the new streetlights, a choice expected to save the city over \$3,500 a year in energy and maintenance costs.
- ▶ Currently, the city is establishing a municipal tree nursery to provide for shade tree planting along public streets and in parks at a fraction of the cost of purchasing mature trees. This work is funded by a Great Lakes Restoration Initiative grant and includes a workforce training component.
- ▶ Ypsilanti has leveraged Congestion Mitigation and Air Quality grants for several recent projects, ranging from the construction of a segment of the "Border to Border" bike/walk trail to the replacement of the city's aging street sweeper with a lower emissions model.

Looking more broadly, Ypsilanti is home to a number of citizen groups and non-profits interested in climate-related issues. Whether around bicycling, gardening, farmers markets, renewable energy or general sustainability, the community's tradition of vibrant civic engagement provides both momentum and opportunity for new, coordinated efforts.

Finally, Eastern Michigan University, which occupies a quarter of the city's total land area and accounts for roughly 40% of the city's total daytime population,² has incorporated energy efficiency measures into its recent capital projects: the renovation and expansion of the Mark Jefferson Science Complex alone included energy-related improvements that will save an estimated \$400,000 in annual operating costs and eliminate more than 3,000 metric tons of carbon dioxide equivalent (mtCO₂e) in annual greenhouse gas emissions. The University has also taken steps to support transit commutes and encourage staff to live locally.

Through the sum of these efforts, Ypsilanti is already actively, though not always explicitly, pursuing climate change mitigation. The community lacks specific priorities. While the opportunistic approach has worked well in a number of cases, a strategic look at various options will help the city more strategically select projects—an important consideration in a time of extremely limited funds and staff time.



² | Based on commute data and estimates from EMU staff, Ypsilanti's daytime population is around 25,000. With around 5,000 students commuting into town for school and 5,000 students already residing in the city, EMU represents roughly 40% of the daytime population.

➔ A REGIONAL PARTNERSHIP FOR LOCAL AND GLOBAL IMPACT

This project is a collaborative effort made possible by a grant awarded to the City of Ypsilanti by the Michigan Department of Environmental Quality in August 2010. In partnership with the Michigan Suburbs Alliance, the Cities of Ypsilanti, Hazel Park and Southgate each received \$50,000 to develop a model process for small-city climate action planning. From 2010 to 2012, with leadership from the Michigan Suburbs Alliance, Ypsilanti has developed a basis for climate action planning that takes into account the city's limited resources and builds upon the tight-knit nature of the local community to effect change.

The participating cities set three goals for the local climate action planning process. First, test and model greenhouse gas emissions reduction strategies for small cities in metro Detroit. Second, engage a broad and diverse citizenry in reducing our collective carbon footprint. And third, develop a local climate action plan that addresses issues like transportation, buildings, renewable energy and government operations. This process will develop a model process and plan for other small Michigan cities to follow, a library of best-practice strategies to reduce greenhouse gas emissions and a city-specific climate action plan for each community to be adopted by city council.

A successful city climate action plan must be defined and supported by local residents and businesses. Citizens must feel empowered and included in the city's planning activities. Local development of the Ypsilanti Climate Action Plan was rooted in broad civic engagement and supported by planning professionals at the city, the Michigan Suburbs Alliance and WARM Training Center. Ypsilanti convened a dedicated group of local stakeholders throughout the process who participated in community forums to identify how the city can reduce the impact of climate change in their community. In large part, this report is their work.



OUR METHODOLOGY

► GREENHOUSE GAS DATA COLLECTION

Developing realistic, implementable strategies to mitigate the impacts of climate change requires a proven methodology to analyze Ypsilanti's greenhouse gas emissions. An inventory of GHG emissions establishes a baseline for both the government and community sectors, which is then used to develop strategies for targeted sectors and measure future emissions reductions resulting from the implementation of those strategies.

The tools and resources developed by ICLEI Local Governments for Sustainability guided our determination of sources and provided quantification methodologies. Since 1990, ICLEI has been assisting cities in their efforts to limit their environmental impacts by providing analytical tools and methods to help local governments and communities measure and reduce their greenhouse gas emissions.³ Preparation of this plan also drew on the experience of the Southeast Michigan Regional Energy Office, an intergovernmental organization that works with municipalities and other civic partners to support efficiency work, renewables and other energy-related projects in southeast Michigan. Ypsilanti is a member city of the Regional Energy Office.

The following concepts are used throughout this plan, and are explained here to orient non-experts to these technical issues and to ensure that those with background knowledge share an understanding with this plan. More technical detail can also be found in Appendix A.

- Greenhouse gas (GHG) emissions: The vast majority of scientists agree: an unprecedented increase in greenhouse gases, driven by human activity, is causing our climate to change. Greenhouse gases like carbon dioxide, methane, nitrous oxide and fluorinated gases are emitted in the course of daily activity, when we drive our cars, turn on lights and even when you exhale. GHG emissions can be either direct or indirect—a toaster indirectly emits, while the power plant that provides the electricity for that toaster directly emits. The EPA's website contains a wealth of information for those interested in learning more.⁴
- Metric tons of carbon dioxide equivalent (mtCO₂e): This unit is a generally accepted standard used to measure GHG emissions, combining all of the different greenhouse gases, weighted by their impact, into a single measure. This plan uses it throughout the discussion of various strategies to measure and compare their impact. One mtCO₂e is equivalent to the emissions produced by consuming 112 gallons of gasoline.
- Return on Investment (ROI): Return on investment defines the rate at which energy savings resulting from efficiency improvements will recoup the initial cost of the project. For example, a project that costs \$5,000 to implement and saves \$1,000 worth of energy annually has a 20% ROI, or a 5 year payback.

► ORGANIZATIONAL BOUNDARIES

In the absence of any US-based standard for assessing GHG emissions, the methods used for the evaluation of community emissions are outlined in the International Local Government Greenhouse Gas Emissions Analysis Protocol. The methods used for the evaluation of governmental emissions are outlined in the Local Government Operations Protocol (LGOP), which was developed through a partnership between the California Air Resources Board, California Climate Action Registry, and ICLEI.⁵

► COMMUNITY

ICLEI's International Local Government GHG Emissions Analysis Protocol indicates that any community-scale emissions inventory must include all emissions associated with any activity occurring within the geopolitical boundaries pertaining to the jurisdiction of the local government. The rationale for this edict is that local governments have a greater degree of influence over activities occurring within their jurisdictions, as opposed to activities occurring outside of their jurisdiction.⁶ The actual emission sources, as in the case of electrical power plants, may occur outside of the geopolitical boundaries but be driven by activities within the community.

³ | Local Government Operations Protocol. "The Climate Registry. ARB, CCAR, ICLEI, The Climate Registry, May 2010. Web. 23 May 2012. <<http://www.theclimateregistry.org/downloads/2010/05/2010-05-06-LGO-1.1.pdf>>.

⁴ | Start at: <http://www.epa.gov/climatechange/science/causes.html> ⁵ | Ibid.

⁶ | International Local Government Greenhouse Gas (GHG) Emissions Analysis Protocol, ICLEI, p. 11, <http://www.iclei.org/index.php?id=ghgprotocol>

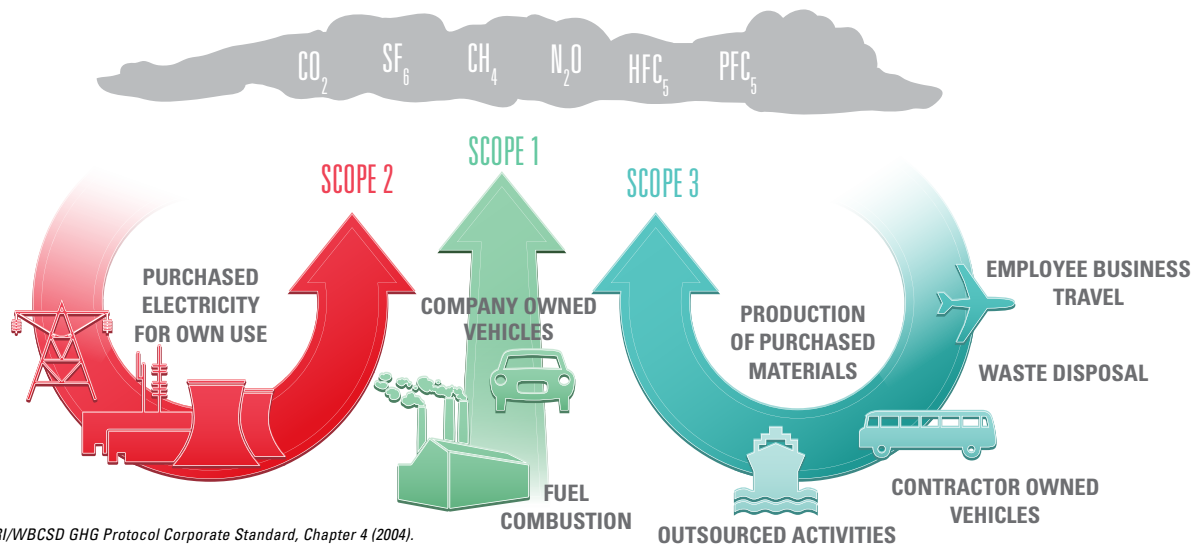
► GOVERNMENT

The Local Government Operations Protocol indicates that the preferred method quantifies GHG emissions only from sources over which a local government has operational control. A local government has operational control if it has the full authority to introduce and implement operating policies. According to this Protocol, “one or more of the following conditions establishes operational control:

- Wholly owning an operation, facility, or source;
- or
- Having the full authority to introduce and implement operational and health, safety and environmental policies (including both GHG- and non-GHG- related policies).⁷

Under this approach, the local government is responsible for all emissions that are emitted in any facility where the government has operational control. However, it is important to note that though a municipality may have full operational control over a facility, control of capital investments or other major changes may be shared. Under LGOP, however, this does not change the responsible party.⁸

➔ IDENTIFYING GHG OPERATIONAL BOUNDARIES



Source: WRI/WBCSD GHG Protocol Corporate Standard, Chapter 4 (2004).

► DEFINING SCOPE

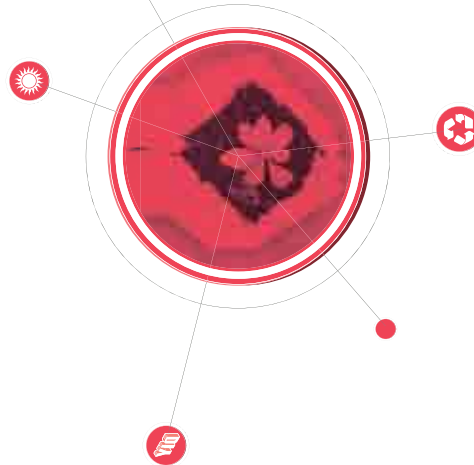
Greenhouse gases are emitted in the course of daily activity. To account for both direct and indirect emissions, improve transparency, and provide information for different types of climate policies and goals, this report follows the World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD) GHG Protocol Corporate Standard in categorizing direct and indirect emissions into “scopes” as follows:

- SCOPE 1:** All direct GHG emissions, with the exception of direct CO₂ emissions from biogenic sources, such as decaying food waste.
- SCOPE 2:** Indirect GHG emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling.
- SCOPE 3:** All other indirect emissions not covered in Scope 2, such as emissions resulting from the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity (e.g., employee commuting and business travel), outsourced activities, waste disposal, etc.⁹

7 | “Local Government Operations Protocol.” *The Climate Registry*. ARB, CCAR, ICLEI, The Climate Registry, May 2010. Web. 23 May 2012. <<http://www.theclimateresistry.org/downloads/2010/05/2010-05-06-LGO-1.1.pdf>>.

8 | Ibid. 9 | “The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard.” Revised ed. World Business Council for Sustainable Development and World Resources Institute, n.d. 25-32. Web. 23 May 2012. <<http://www.ghgprotocol.org/files/ghgp/public/ghg-protocol-revised.pdf>>.

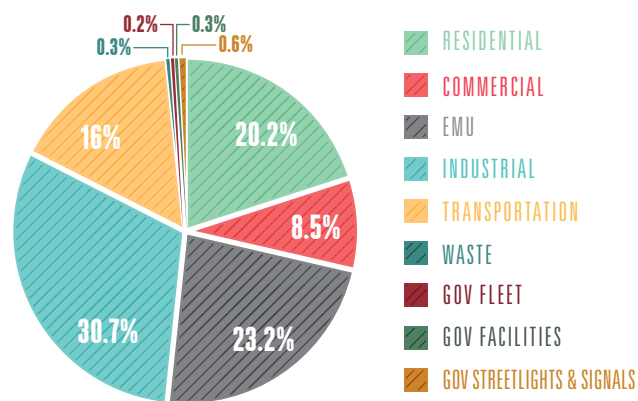
YPSILANTI'S BASELINE EMISSIONS & EXISTING CONDITIONS



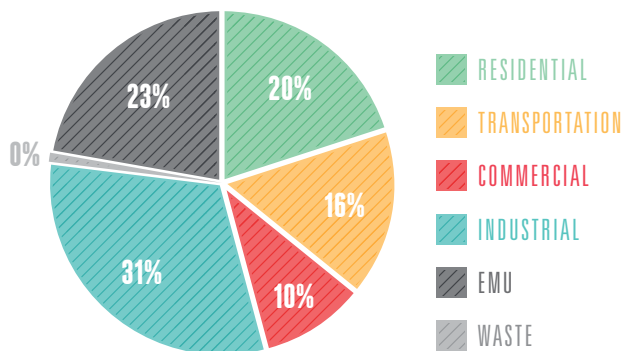
► GREENHOUSE GAS DATA COLLECTION

Over 15 months, the City of Ypsilanti and its consultants, Michigan Suburbs Alliance and WARM Training Center, collected available energy usage data with concentrated collection efforts across four main sectors: Buildings (commercial, industrial, residential and government), Culture Change (events, celebration and education), Infrastructure (water, waste and energy generation), and Land Use and Transportation (development patterns, travel options). Data was collected primarily from city departments (energy bills, fleet fuel usage, gas bills, etc), DTE Energy, Southeast Michigan Council of Governments and the U.S. Census. Combined, these four sectors provide an accurate summary of Ypsilanti's total community and municipal emission usage profile and existing conditions. These GHG emission baselines, analyzed by sector, provide a path to align community emission reductions goals with realistic strategies and resident desire to positively impact existing conditions, thereby reducing the city's impact on climate change.

TOTAL GHG EMISSIONS, COMMUNITY + GOVERNMENT
[TONS CO₂e]



COMMUNITY GHG EMISSIONS, 2008
[TONS CO₂e]



► COMMUNITY & GOVERNMENT EMISSIONS

The Ypsilanti community contributed 302,710 metric tons of GHG emissions (CO₂e) into the atmosphere in 2005/2008, equivalent to 15.0 metric tons per capita for the city.¹⁰ On average, national emissions per capita in 2000 were 24.5 metric tons CO₂ equivalent (CO₂e) for comparison.¹¹

The Ypsilanti city government contributed 3,387 metric tons of emissions, about 1.1% of the total emissions. Municipal emissions are typically a small percentage of the overall community emissions profile. Local government has a number of levers from which to change not only its own behavior, but also that of its citizens. Local governments have control over the processes, technologies, and procedures that result in municipal emissions. A dedicated focus on these emissions can be a productive source for emissions reductions.

¹⁰ | Transportation and waste data are from 2005. All other sectors are from 2008.

¹¹ | Baumert, Kevin A., Timothy Herzog, and Jonathan Pershing. Navigating the Numbers: Greenhouse Gas Data and International Climate Policy. N.p.: World Resources Institute, 2005. 22. Web. 23 May 2012. <http://pdf.wri.org/navigating_numbers_chapter4.pdf>.

► COMMUNITY SECTOR EMISSION USAGE

The commercial sector in Ypsilanti was the greatest contributor to GHG emissions, with 9.5% of the total emissions plus 23% additional commercial from Eastern Michigan University (EMU). Industrial followed close behind at 31%. Residential was third, with 20% of the total emissions. Transportation emitted 16% of total emissions. Emissions from community waste, a Scope 3 source, made up 0.3% of the overall emissions profile.

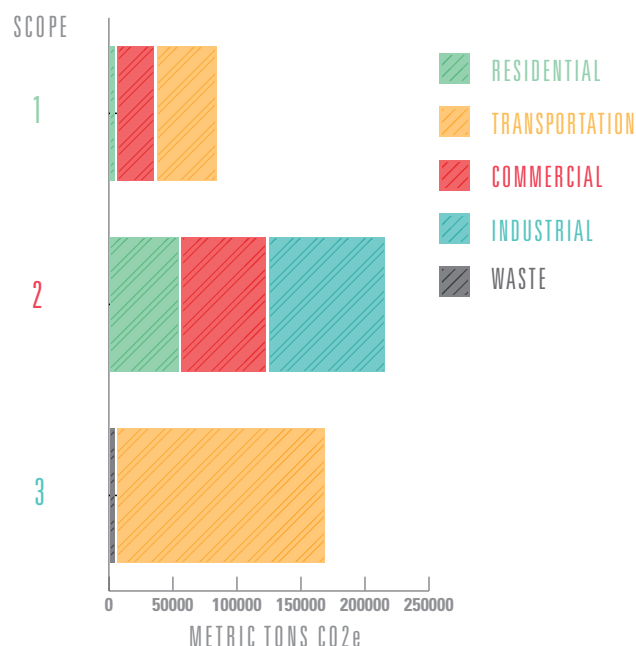
The large contributions of the industrial and commercial sectors are attributed to two factors. First, Eastern Michigan University, a significant part of the Ypsilanti community, was a large commercial emitter, producing 70,228 metric tons of CO₂ equivalent emissions in 2008. EMU's emissions were considered additive to the existing community emissions. Unclear data scope is another methodological issue that could have led to the large contribution of industrial and commercial to overall community emissions. See the Electricity/Natural Gas methodology section in Appendix A for an in-depth explanation.

► EMISSIONS BY SCOPE AND SECTOR

Examining emissions by scope is an important component of any GHG assessment, as scopes help prioritize investments to reduce impacts. Scope 1 and 2 emissions are the most directly impacted by local action and thus most inventories only include scope 1 and 2 emissions in their totals. Scope 3 emissions are those emissions either partly or wholly outside of the geographic bounds of the city.

For Ypsilanti, Scope 2 emissions are more than double Scope 1 emissions. Scope 3 emissions are attributed to sources outside of the city and, in Ypsilanti's case, include emissions from the miles travelled for all trips beginning or ending with the city (including those miles travelled outside of the city) and the fugitive emissions (largely methane) from garbage produced by city residents and businesses and sent to the Woodland Meadows landfill, operated by Waste Management.

2008 COMMUNITY GHG EMISSIONS BY SECTOR BY SCOPE



➔ OVERALL YPSILANTI EMISSIONS REDUCTION GOALS

From the baseline greenhouse gas emissions level of 302,710 metric tons CO₂-equivalent, the target reduction amount selected was 50% by 2050, or approximately 12.5% (37,838 mtCO₂e) per decade. This percentage is based on a review of climate planning efforts around the country and a consideration of feasibility: many of these used targets of 80%-100% emissions reductions by 2050, but based on the more limited powers of a smaller city on issues like regional land use or travel patterns, this number was considered unrealistic for Ypsilanti's plan.

In addition, the City of Ypsilanti should formally commit to the Millennial Mayors Congress 2009 Energy Savings Protocol by passing a resolution of support through the local City Council. This would add an additional energy savings goal of reducing municipal energy use from non-renewable sources to 25% below 2005 levels within 5 years time.¹²

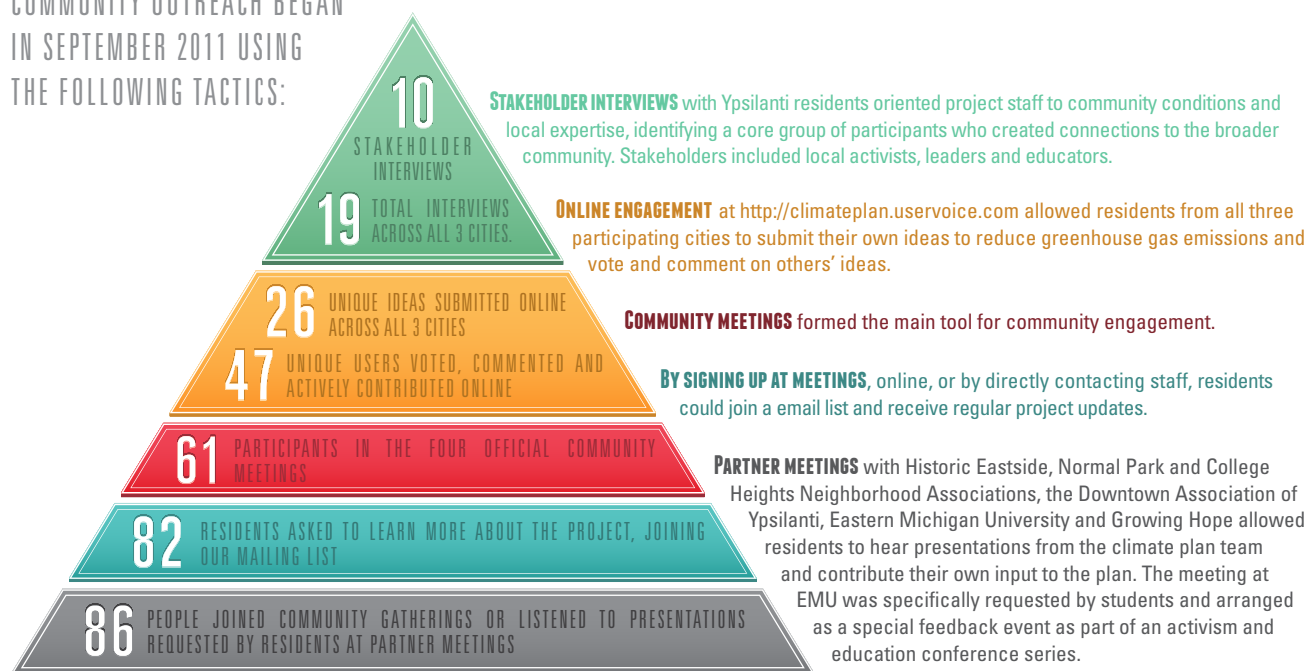
For more data and analysis about the city of Ypsilanti's GHG emission usage by community, sector and source, reference City of Ypsilanti's Greenhouse Gas Assessment, Appendix A.

¹² | The Millennial Mayors Congress Energy Savings Protocol, adopted in 2009, calls upon member cities to reduce energy use to 25% below 2005 levels by 2015. However, since City of Ypsilanti would be adopting the protocol later than the Congress as a whole, it would make sense to extend the target year.

PUBLIC ENGAGEMENT

The City of Ypsilanti chose to create this local climate action plan through a community-driven process. By engaging residents from the very beginning of the process, the plan has generated a greater variety of ideas, and the community as a whole will be more likely to support its implementation. This ensures that the final plan will more fully represent community desires, taking into account local challenges and resources. Ypsilanti already has a base of climate activists; however, these stakeholders act independently of one another with varied purpose. The primary planning process goal was to connect these parties with less-engaged citizens around the creation and later implementation of a climate action plan.

COMMUNITY OUTREACH BEGAN
IN SEPTEMBER 2011 USING
THE FOLLOWING TACTICS:



Through these opportunities for public engagement, residents were able to set local goals, inform plan writers about community conditions and resources, brainstorm ideas to reduce greenhouse gas emissions, assess proposed strategies, suggest how to best implement the plan, and give general feedback and comments on drafts of the Ypsilanti climate action plan. Residents also sought to move implementation of the lower-priority strategies—those that will not be included in this plan but that could be important for community goals—into the sphere of community work.

The City of Ypsilanti has few resources to implement this climate plan. Many of these strategies for greenhouse gas reductions will need to be driven by the community. This means the City must provide avenues for both formal and spontaneous citizen engagement in plan implementation. A final community meeting in September will kick off this process by informing a broad swath of citizens about the plan and providing them with resources to get involved.



➤ **RECOMMENDED** EMISSIONS-REDUCTION STRATEGIES

More than one hundred strategies were collected and considered for this plan, based both on community suggestions and on best practices research. The research considered related efforts in other communities, both locally and across the nation, as well as compilations of climate change mitigation tactics from ICLEI and Transition Network.

For the purpose of the plan document, attention has been focused on providing a greater level of detail on action steps and relevant resources for a smaller number of “first steps” strategies. These strategies were selected based on a combination of effectiveness (clear and significant links to greenhouse gas reduction), community support and perceived feasibility. The selection process also emphasized strategies that offer clear financial returns or other substantial benefits in addition to the greenhouse gas mitigation.

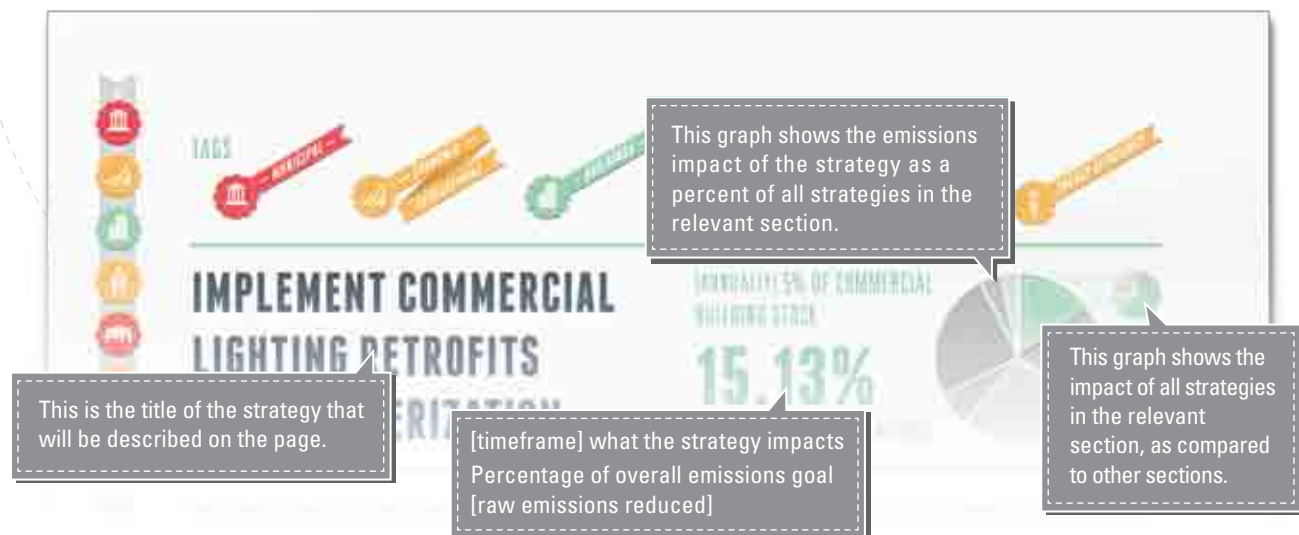
The full list of potential strategies identified during the process is included in Appendix B for reference. Some of these additional strategies may be appropriate “next steps” for future consideration; others are likely to be unworkable, due to cost, legal barriers, or other challenges.

THE SELECTED STRATEGIES HAVE BEEN GENERALLY DIVIDED INTO FOUR CATEGORIES, WITH THE ACKNOWLEDGEMENT THAT THESE OVERLAP AND ARE INTERCONNECTED:

- ▶ **BUILDINGS**
- ▶ **LAND USE & TRANSPORTATION**
- ▶ **INFRASTRUCTURE**
- ▶ **CULTURE CHANGE**

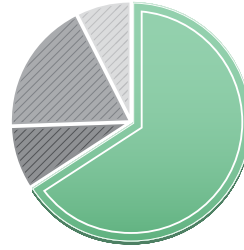
Within each strategy, examples are provided of successful implementation in other communities--locally, where possible, estimates of implementation costs on a relevant per-unit basis, estimates of potential greenhouse gas mitigation impacts, discussion of ancillary benefits, identification of potential partners or stakeholders for implementation, and additional considerations that may help appropriately target adoption. Except where otherwise noted, both implementation costs and GHG and cost savings were estimated using the ICLEI Climate and Air Pollution Planning Assistant version 1.5 (CAPPA), which contains standards derived from the experience of local governments across the country.

HOW TO READ A STRATEGY:





Buildings are where many of us live, work, play and emit greenhouse gases. Ypsilanti's historic buildings are an asset that should be preserved and upgraded for greater energy efficiency.



67.83%

OF 2020 TARGET
[BUILDING STRATEGY REDUCTIONS]

RECOMMENDED EMISSIONS-REDUCTION STRATEGIES

BUILDINGS

Heating and lighting buildings consumes a substantial amount of energy, producing 27% of emissions from municipal operations and the great majority of emissions at the community scale. As of 2010, city assessing records showed 6,683,191 square feet of commercial and industrial property on 446 parcels, and 6,495,995 square feet of residential property on 4,119 parcels.¹³

Improvements to buildings are made by individual building owners, but the City of Ypsilanti has a number of tools to support these improvements and can also use the improvements it makes to its own buildings to model opportunities for other property owners. Many energy efficiency improvements in buildings have high returns on investment, paying back capital costs in as little as 1 year, or within 5 to 10 years, making them attractive to property owners. National experience also suggests that highly energy-efficient buildings can bring higher rents or sale prices, providing another incentive for owners to make improvements.

Because each building is unique—especially when working with historic properties—it is difficult to identify “one size fits all” solutions. Any energy efficiency work on a building should start with an energy audit to identify the best opportunities to reduce energy usage and save money. DTE Energy offers walkthrough audit service for commercial properties as well as subsidized energy audits for homes; the Southeast Michigan Regional Energy Office and other nonprofits also offer home energy audits for a fee.

Due to the outsized role of energy use by buildings, 70% of the overall emissions reduction goal is targeted at building-related strategies: a 26,487 mtCO₂e reduction by 2020. Additional community goals set around buildings include:

- ▶ Property owners improve energy efficiency in all types of buildings, with special attention paid to historic structures.
- ▶ Owners and residents of rental housing units, a substantial portion of the city’s building stock, share in the benefits of energy savings.

Although Eastern’s campus does account for a substantial share of emissions within the city, the University has already undertaken improvements at a number of campus facilities, yielding 6,475 mtCO₂e in emissions reductions, and nearly \$800,000 in annual cost savings. Because Eastern is still in the midst of a multi-year program to identify and implement energy efficiency measures in their buildings, specific recommendations are not presented in this plan.

¹³ | These numbers may not include some un-assessed, tax-exempt properties.

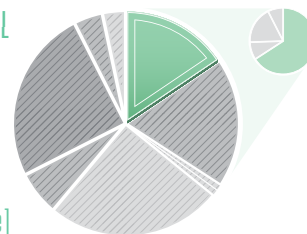


IMPLEMENT COMMERCIAL LIGHTING RETROFITS AND WEATHERIZATION

[ANNUALLY] 5% OF COMMERCIAL BUILDING STOCK

15.13%

OF 2020 TARGET [4809.6 mtCO₂e]



Ypsilanti's historic building stock is certainly an asset to the community. However, this historic nature also indicates that many of the buildings in town have outdated lighting technology. For commercial and institutional applications, lighting retrofits are one of the quickest, surest paybacks, usually in the range of 1 to 7 years. Commercial and industrial spaces should explore other energy efficiency measures, such as HVAC upgrades and insulation, in concert with lighting upgrades. The City of Ypsilanti has already upgraded many of their older fluorescent lights to more efficient fixtures.

► EXAMPLES:

Numerous Southeast Michigan Regional Energy Office members have performed lighting upgrades in their municipal buildings. A video case study can be found on the Energy Office's website.¹⁴ Ypsilanti has already upgraded some older fluorescent light ballasts in City Hall.

► IMPLEMENTATION COSTS:

Lighting retrofits are often in the range of \$60 per 1,000 square feet of building, depending on the technology used.

► EXPECTED GHG SAVINGS:

Lighting retrofits can bring energy savings of 15% or more: 1.5 mtCO₂e annually per 1,000 square feet of construction, based on ICLEI "typical experience" measures. Applied across approximately 100,000 square feet of municipal buildings, this would total 150 mtCO₂e. If 5% of the city's commercial and industrial properties undertake lighting upgrades annually, reductions of 4,000 mtCO₂e could be achieved by 2020.

Applying other weatherization measures for commercial and industrial sectors at the same installation level, focusing specifically on HVAC and air-sealing, can achieve an additional 1,067 mtCO₂e in emissions reductions by 2020.

► CONSIDERATIONS:

There are a number of options for lighting retrofits, ranging from T8 or T5 fluorescents to LED or other forms of solid state lighting technologies. An energy audit focused on lighting is recommended for any building that seeks to upgrade its lighting technology.

► ADDITIONAL BENEFITS:

Occupants can expect energy cost savings of approximately \$200 per 1,000 square feet, resulting in lower operating costs over the lifetime of the building. Lighting retrofits also reduce fluorescent flicker, improving employee comfort and building appearance. By better shielding a building from the elements, weatherization upgrades make a building more comfortable and save money.

► PARTNERS & STAKEHOLDERS:

DTE offers free walk-through inspections to advise commercial building owners on opportunities and available incentives. City of Ypsilanti, as a member of the Regional Energy Office, can also utilize those technical assistance resources to implement lighting retrofits in its buildings. The Regional Energy Office additionally expects to have access to PACE funding soon, and can use this financing to support commercial efficiency upgrades.

➔ RECOMMENDED APPROACH:

Upgrade lighting in city buildings as soon as possible. Advertise the availability of low and no cost energy audit services to help building owners prioritize the energy work they would like to do in their buildings. Partner with relevant organizations to help market available services.

¹⁴ | A video case study can be found at the following link: <http://www.youtube.com/watch?v=Rc7Fwz4rwek>

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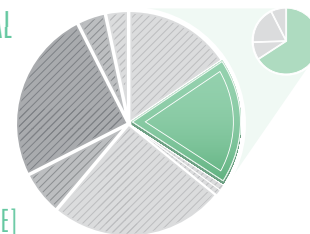


INSTALL AND PROMOTE BUILDING LIGHTING SENSORS

[ANNUALLY] 5% OF COMMERCIAL BUILDING STOCK

18.16%

OF 2020 TARGET [4809.6 MTCO₂E]



Installing occupancy sensors on interior lighting can be a simple and cost-effective way to reduce electricity consumption—typical experience suggests a 35% reduction in electricity usage is possible in commercial buildings, with payback of installation costs in less than a year. In other locations, light-level sensors that can dim or brighten lighting based on natural light levels can save energy while maintaining constant light levels. However, these light sensors require dimmer-friendly fixtures and may not be as reliable as occupancy sensors.

► IMPLEMENTATION COSTS:

Hardware and installation costs average around \$50 per room, or \$50-\$100 per 1,000 square feet.

► CONSIDERATIONS:

The total impact of this strategy is lessened significantly when lighting fixture upgrades are also undertaken. Additionally, the use patterns of many of the city's spaces specifically—whether they are occupied continuously or very rarely—may reduce effectiveness. However, the overall cost/benefit consideration remains high.

► EXPECTED GHG SAVINGS:

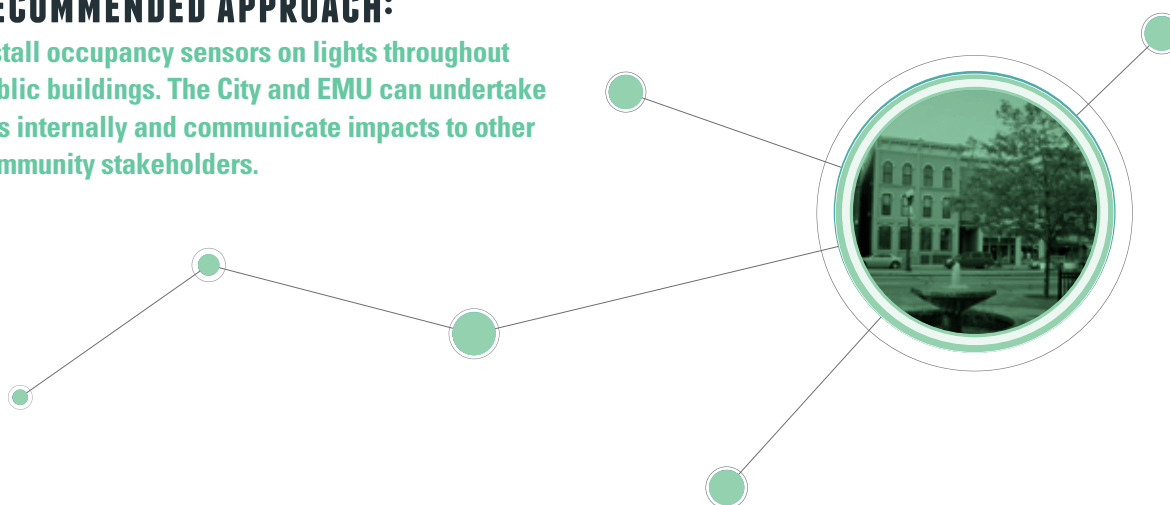
Each 1,000 square feet installed with occupancy sensors can prevent 1.8 mtCO₂e annually, with up to \$250 in accompanying annual electricity savings. Applied across all city buildings, this could reduce 180 mtCO₂e annually.

► PARTNERS & STAKEHOLDERS:

Beyond public and institutional buildings, improvements must be made by individual building owners. The Ypsilanti Downtown Development Authority, Downtown Association of Ypsilanti and Ypsilanti Area Chamber of Commerce can help get information to building owners.

➔ RECOMMENDED APPROACH:

Install occupancy sensors on lights throughout public buildings. The City and EMU can undertake this internally and communicate impacts to other community stakeholders.



TAGS

THE CITY OF YPSILANTI

2012 CAP REPORT

17

TAGS

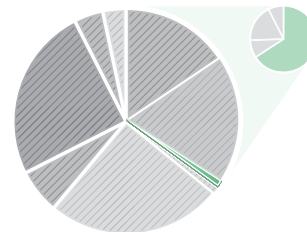


PURSUE SOLAR THERMAL AND PHOTOVOLTAIC OPPORTUNITIES

[ANNUALLY] 20 KW INSTALLED

0.66%

OF 2020 TARGET [176 mtCO₂e]



In general, building-scale alternative energy generation should only be pursued after all reasonable energy efficiency measures have been completed: energy efficiency is typically much more cost-effective than energy generation. However, Ypsilanti stakeholders have demonstrated a strong interest in alternative energy generation, and various combinations of federal tax incentives, DTE incentives and grant funding may make solar installations cost competitive. Solar energy generation may include solar photovoltaic (PV), which generates electricity, solar thermal, which heats water, or hybrid, “water-cooled” systems—photovoltaic panels that generate hot water as a byproduct.

► EXAMPLES:

The Solar Ypsi initiative has initiated or supported several solar photovoltaic installations around Ypsilanti, and is unique in the region for its online interface that shows live and cumulative energy generation.

► IMPLEMENTATION COSTS:

A University of Michigan team working with the Corner Brewery estimated a commercial-building-scaled 20 kW photovoltaic/thermal hybrid system as costing approximately \$200,000 to install.¹⁵

► CONSIDERATIONS:

Current federal incentives expire in 2016, while DTE’s SolarCurrents program is fully subscribed as of this plan’s adoption. Maintaining clear, current information on opportunities for interested businesses and homeowners will be the most significant challenge in supporting adoption. A solar thermal or hybrid system will have the most impact for a building that uses a lot of hot water.

► EXPECTED GHG SAVINGS:

Expected GHG savings: Each 1 kW of solar PV/thermal hybrid installed can be expected to offset 2,150 kWh of electricity and 223 cubic feet of natural gas usage annually, preventing 1.1 mtCO₂e of emissions.

► PARTNERS & STAKEHOLDERS:

Solar Ypsi is a strong unifying brand for the community. The site and the people behind it can serve as a clearinghouse for information and funding opportunities, with the support of relevant non-profits like Clean Energy Coalition and Regional Energy Office.

► ADDITIONAL BENEFITS:

Without any financial incentives, a solar system will likely take decades to recoup savings that equal the initial cost. Combinations of currently available incentives, however, can yield payback periods of less than 10 years. Additionally, solar installations have a higher profile than many other strategies: this visibility provides opportunities for education and for promotion of the community’s achievements, and support a sense of pride shared by many Ypsilanti residents.

➔ RECOMMENDED APPROACH:

Monitor financing opportunities for solar installation and publicize via Solar Ypsi. The City should monitor grant opportunities for solar hybrid systems on high water-usage public buildings, such as the Rutherford Pool and Fire Department, and remain alert for low-cost ways to support private installations; a PACE program would be one such option. A target of 20 kW of new installed capacity within the city annually would build on recent momentum.

¹⁵ | Bennett, Jazmine, Jarrett Diamond, Gary Fischer, and Kerby Smithson. “The Green Brewery Project.” Apr. (2010). Web. 25 May 2012. <<http://hdl.handle.net/2027.42/83664>>.



The Ypsilanti Food Cooperative installed a 12 panel, 2.38 KW solar array in 2009, in collaboration with SolarYpsi.



BUILDINGS

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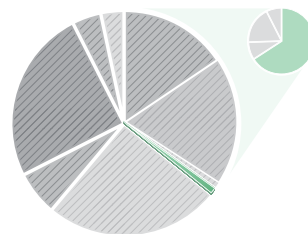


INCORPORATE GREEN BUILDING STANDARDS INTO INCENTIVE PROGRAMS

[ANNUALLY] 10,000 SQUARE FEET OF DEVELOPMENT

1.03%

OF 2020 TARGET [272 mtCO₂e]



Ypsilanti has made significant use of various redevelopment incentive programs and tax abatements over the past decade, including brownfield, obsolete property, industrial facilities, and facade grant programs. The City's adopted economic development incentive policy states a preference for projects that are "green," but does not provide any specific measure for green development. Providing clear guidance, via reference to industry-accepted standards or certifications, will make this criterion more meaningful and provide clearer guidance to developers and city staff. While Leadership in Energy and Environmental Design (LEED) certification is the most well-known program, it has been criticized for the costs required to achieve certification; alternative systems such as Green Building Initiative's Green Globes certification may be more appropriate to minimize the cost and effort needed to demonstrate compliance.

► EXAMPLES:

East Lansing adopted an ordinance in early 2009 requiring any construction project that receives municipal incentives to achieve LEED certification. The requirement is triggered based on the value of incentives as a percent of project cost.

► IMPLEMENTATION COSTS:

A Green Globes self-assessment costs about \$500, if the city is willing to allow review internally rather than requiring third-party review. A report with third-party verification costs about \$3000.

► EXPECTED GHG SAVINGS:

Certification can yield energy savings of 25% or more: 3.4 metric tons CO₂ annually per 1,000 square feet of construction, based on ICLEI "typical experience" measures.¹⁶ Based on recent history, with an average 10,000 square feet of development projects receiving public subsidies annually, such a policy could save a total of 272 mtCO₂e by 2020.

► ADDITIONAL BENEFITS:

Occupants can expect energy cost savings of up to \$500 per 1,000 square feet, and certified green buildings can also bring higher rents through cachet factors, translating to higher income for property owners and higher property values for the community.

► PARTNERS & STAKEHOLDERS:

Developers of recent projects in the city can be asked for feedback on the selected evaluation tool, as many are "repeat users" of incentive programs. Ann Arbor SPARK can help communicate the policy's benefits to prospective developers and businesses.

► CONSIDERATIONS:

The Green Globes certification process appears to be reasonably scaled for typical projects in the city, especially when tied to municipal subsidies—recent projects given Obsolete Property Rehabilitation Act abatements, for example, received \$50,000 or more per year in effective subsidy. An alternative approach based on building code-style language and review rather than a certification review would require publicly subsidized projects to use a standard such as ASHRAE 189.1 "High-Performance Buildings."¹⁷

16 | Using CAPPA 1.5 calculator, "Require Green Building for New Construction."

17 | This particular standard, however, does not cover "low-rise residential," which would exclude many recent projects that have received tax abatements.



➔ RECOMMENDED APPROACH:

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. While a trigger based on percent of project cost could also be used, the \$10,000 condition is already used in other city incentive policies and would provide consistency. This strategy could also be built into a graduated approach to incentives or abatements that adjusts the package according to the amount of community benefits in the proposed development.



TAGS

BUILDINGS

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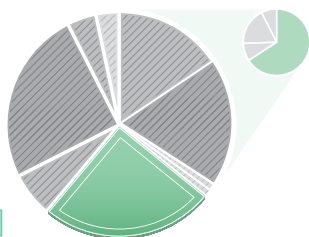


CREATE ENERGY-EFFICIENT RENTAL HOUSING CERTIFICATION

[ONGOING] ALL RENTAL HOUSING STOCK

24.32%

OF 2020 TARGET [6442.8 mtCO₂e]



Energy Efficient Rentals

A large share of Ypsilanti's housing—nearly 2/3 of all dwelling units—is rental-occupied, ranging from single-family homes to large apartment complexes. Rental housing is traditionally difficult to target with energy efficiency programs, because the capital cost of any upgrade is typically borne by the landlord, while the month-to-month costs, and therefore the benefits of any upgrade, are typically the tenants' responsibility. Ypsilanti already has a strong rental housing inspection and certification program that could be leveraged to address this problem through a combination of improved information and regulatory requirements. Chapter 58, Article IV of the City's Code of Ordinances addresses "Landlord and Tenant Relations" and could be extended for this purpose.

Energy efficiency rental housing ordinances could take a number of forms, and many of these options can be combined or implemented in phases over time. Local landlords must be involved in the process to ensure any new requirements are feasible. Many of the community's best and most attentive landlords may welcome new ways to differentiate themselves within a crowded market.

➡ OPTION 1: REQUIRE ENERGY COST DISCLOSURE BY LANDLORDS

The most basic approach to rental greening is to require that landlords provide tenants with information on utility costs prior to signing a lease. This gives tenants a better understanding of the total cost of a unit and allows them to shop around. It also avoids "punishing" landlords who invest in energy efficiency measures and attempt to recoup those costs through higher rents.

Examples: City of Ann Arbor City Code Sec. 8:524, "Information regarding utility charges" requires provision by landlords of estimated utility costs prior to signing a lease.

Implementation costs: Costs are minimal for both the city (developing and passing an ordinance) and for landlords (providing utility cost information).

Considerations: landlords who comply with this requirement can apply "peer enforcement" by encouraging prospective tenants to ask other landlords for the information.

➤ OPTION 2: PROVIDE FORMAL RECOGNITION FOR ENERGY EFFICIENT RENTAL UNITS

Verifying and certifying rental units that meet certain energy standards requires more effort, but would produce a more user-friendly way for tenants to “shop” for efficient units.

Examples: The “Energy Star Homes” program certifies new-construction homes nationally; while not directly applicable for Ypsilanti’s rental stock, it can be used to benchmark a certification program.

Implementation costs: Costs would remain minimal for landlords under this option; the City would require more effort to craft and administer the program, though it could still be managed within the existing rental housing inspection program.

Considerations: Staff have already discussed this option with City of Ann Arbor staff and have identified a shared interest: developing such a program in partnership would reduce the burden on city staff. While Eastern Michigan University does not currently offer a database of off-campus housing options, such a tool could help students find high-quality housing as well as offer a way to *communicate the energy efficiency certification*.

➤ OPTION 3: REQUIRE ACHIEVEMENT OF CERTAIN ENERGY STANDARDS

A more aggressive—and effective—approach would require that rental housing units meet certain efficiency standards. These standards would likely need to be phased upwards over time or tied to certain “triggering” events.

Examples: City of Ann Arbor City Code Sec 8:528, “Basic winterization in rental housing” provides minimum air sealing and insulation standards for rental units.

Implementation costs: Costs are minimal for the city, though developing such an ordinance would be more complex than the mandated disclosure option, and compliance costs would be higher for landlords--around \$3,000 per unit for weatherization.

Considerations: Current “weak market” conditions and Ypsilanti’s small geographic size mean this option may not be appropriate at present, due to concerns about placing additional burdens on landlords in the city that are not felt in the adjacent townships.

➤ FOR ALL OPTIONS:

► EXPECTED GHG SAVINGS:

Modeling this option as an educational program targeting Ypsilanti’s 5,300 rental housing units, 10% energy savings can be achieved, saving 1.20 mtCO₂ per rental household, or 6,443 mtCO₂ in total. This total, however, will not likely be achieved for several years due to the generally indirect, market-driven nature of the first two approaches.

► ADDITIONAL BENEFITS:

Median rental household earnings in Ypsilanti are around \$21,000 annually. This income group spends about 11% of its annual income on home energy costs. Providing tenants with the opportunity to reduce their home energy costs frees up income for other needs.

► PARTNERS & STAKEHOLDERS:

Local landlords, DTE and Ypsilanti Community Utilities Authority (YCUA), and the EMU Office of Campus Life can help design requirements that are appropriate for local conditions and easy to comply with. Ypsilanti Township could also be a partner in development and adoption of standards, as they look for ways to encourage and support “high road” rental properties in their community.

➤ RECOMMENDED APPROACH:

Develop a utility costs disclosure ordinance for rental housing units. Disclosure should include actual billings from utility providers, plus a calculation of each unit’s share, in the case of multi-unit properties with prorated utilities, and should be provided even when utility costs are included in rent charges. Depending on resources, a disclosure ordinance could be a first step, followed by a formal recognition or certification program for energy efficient units, or the two could happen at the same time. City of Ann Arbor, Ypsilanti Township, and Eastern Michigan University should all be approached to partner on any effort to establish uniform standards that are easy for landlords and tenants to understand.



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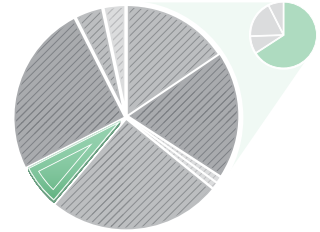


PROMOTE RESIDENTIAL WEATHERIZATION PROGRAMS

[BY 2020] 900 HOMES

6.12%

OF 2020 TARGET [1620 mtCO₂e]



Residential weatherization projects make homes more energy-efficient through methods such as insulation and caulking. Residents also become more aware of their energy use, spend less in energy costs and find that their homes become more comfortable. The City of Ypsilanti is already a participant in two programs that assist residents in weatherizing their homes: BetterBuildings for Michigan and, through Washtenaw County, the federally-funded Weatherization Assistance Program (WAP).

► EXAMPLES:

BetterBuildings for Michigan, a state-run program funded with federal dollars and administered by the Southeast Michigan Regional Energy Office, will “sweep” the City of Ypsilanti in June-December 2012. They expect to achieve 15% energy reductions in approximately 500 homes in Ypsilanti.

► IMPLEMENTATION COSTS:

A basic weatherization package that includes an energy audit, customer education, and installation of more efficient compact appliances like compact fluorescent lights and water saving showerheads costs between \$1,000 and \$1,300.

► EXPECTED GHG SAVINGS:

A basic weatherization package reduces a typical household’s emissions by about 1.1 mtCO₂e per year. If BetterBuildings hits its targets, including basic weatherization and additional measures, they will reduce annual emissions in Ypsilanti by 720 mtCO₂e by the end of 2012. Targeting an additional 50 homes per year through various programs will yield a total of 1620 mtCO₂e by 2020.

► ADDITIONAL BENEFITS:

The average household can expect to save between \$300 and \$450 per year after a basic weatherization project. Residents will also be more comfortable in their homes, as they are better insulated from the elements, and may see property values increase.

► PARTNERS & STAKEHOLDERS:

Homeowners and landlords should be made aware of existing opportunities and the benefits that come along with weatherization. Federal, state and county governments as well as utility providers such as DTE should be tapped for funding and other support.

► CONSIDERATIONS:

Weatherization programs received a large influx of support from the American Recovery and Reinvestment Act. Many of the opportunities afforded by this expansion, however, are set to end at the end of 2012. The Weatherization Assistance Program may continue, but is targeted only towards low-income households. Federal and state budgets will largely determine future availability of funds for weatherization.

➔ RECOMMENDED APPROACH:

Promote available energy efficiency incentive programs to reach maximum adoption in the city. The city and community partners should aggressively promote available home (and business) energy efficiency programs in order to capture as much benefit as possible for city residents. Some of these programs, like BetterBuildings, can offer as much support as residents are able to take advantage of, but are time limited; others, like WAP, are more limited in the total funds available, and the city should be alert for opportunities to support expanded funding at the state and federal levels.



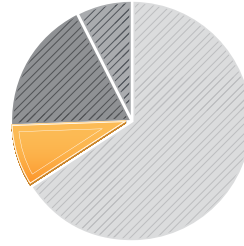
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These new LED streetlights in Ypsilanti's downtown area demonstrate an infrastructure project that saves money for the city, beautifies the downtown area, and reduces GHG emissions.



8.77%

OF 2020 TARGET

[INFRASTRUCTURE STRATEGY REDUCTIONS]

RECOMMENDED EMISSIONS-REDUCTION STRATEGIES

INFRASTRUCTURE

The following strategies cover programs the city could initiate in order to reduce the amount of greenhouse gases emitted by municipal service provision—or by the behaviors it supports. Several of these deal with waste stream management, as an opportunity to affect the “upstream” impacts related to manufacturing the items that residents consume. It is important to note that Ypsilanti has been proactive with providing services such as curbside recycling and yard waste pick-up, but only 18.8% of the municipally collected waste stream (by weight) is in the form of recycling, compared to the national average of 34%; since this does not include larger housing complexes or business users, most of whom only have garbage dumpsters, not recycling, the overall recycling rate is likely even lower.

By implementing the following strategies, we seek to achieve 15% of our total greenhouse gas reduction target, or 5,676 mtCO₂e by 2020. The community has also stated qualitative goals for Ypsilanti including that the city maintains the high quality level of its city services, with special focus on waste management and energy efficiency.

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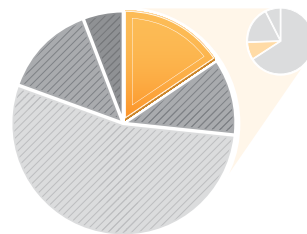


UPGRADE STREETLIGHTS TO LEDS

[BY 2020]

ALL STREET LIGHTS CITYWIDE

8.99%

OF 2020 TARGET [510.4 mtCO₂e]

LED-based street lighting options are becoming more prevalent, typically offering opportunities for fast return on investment through lower energy use and reduced maintenance costs relative to traditional mercury vapor and high pressure sodium lighting. With 54% of Ypsilanti's governmental sector emissions coming from street lighting and traffic signals, this is a high-priority target. Ypsilanti's street lighting has a high percent of total energy use partially because of reduced energy use by the city in other areas, but is also high on a per capita basis when compared to other cities. Ypsilanti has 1,770 streetlights that are owned and operated by DTE.

► EXAMPLES:

Ypsilanti's West Cross streetscaping project upgraded 28 streetlights to LEDs and will save \$3,500 annually at DTE's current rates.

► IMPLEMENTATION COSTS:

A typical streetlight upgrade costs \$600-\$700 per fixture, including hardware and installation. Replacing all DTE-maintained streetlights at this rate would cost a total of \$1.1 million, though economies of scale could be achieved for larger installations.

► EXPECTED GHG SAVINGS:

Each streetlight upgrade averages 0.25 mtCO₂e in annual savings, yielding about 500 mtCO₂e if all of the streetlights were converted to LED.

► ADDITIONAL BENEFITS:

DTE does not yet have standard rates for LED fixtures, so exact savings are hard to estimate, but cities in DTE's service area have experienced an average of \$90 annual savings per fixture. This means the payback period for the initial conversion costs is about 7 years. If Ypsilanti's entire inventory of street lighting were upgraded, the City could save \$160,000 annually. In addition to cost savings, many people prefer the whiter light of LED fixtures to traditional yellow high-pressure sodium lighting. The conversion could also reduce light pollution and glare.

► PARTNERS & STAKEHOLDERS:

Any conversion must be negotiated with DTE. By partnering with other institutional entities such as EMU or with other cities via the Regional Energy Office, joint purchasing could reduce hardware costs. The Michigan Public Service Commission and Department of Energy, Labor and Economic Growth have provided grants for streetlight conversions in recent years, which could reduce costs further. The DDA may also pay for streetlight upgrades in their designated downtown districts through TIF funds.

➔ RECOMMENDED APPROACH:

Upgrade as many street lights 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. This should be undertaken as soon as possible, so that savings from initial upgrades can pay for additional lights in future years. The DDA and Public Services Department should also review existing light levels during this process—in some locations, additional energy and cost savings may be achieved through removal of unneeded fixtures.

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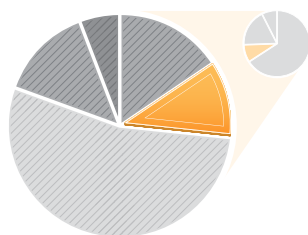
INCREASE STREET TREE CANOPY

[ANNUALLY]

112 STREET TREES PLANTED

6.31%

OF 2020 TARGET [358.4 mtCO₂e]



Canopy trees provide several climate-related benefits: absorbing carbon dioxide, shading buildings to reduce cooling costs and reducing the “heat island” effect of exposed street and parking lot asphalt. Canopy trees additionally provide aesthetic benefits, enhancing quality of life and property values. While many Ypsilanti neighborhoods have substantial canopy cover, the city’s February 2012 Urban Forestry Management Plan identified 3,000 additional planting sites within street rights-of-way and parks, not including opportunities on private properties.

► EXAMPLES:

The City of Ann Arbor has one of the largest urban forestry programs in the state, with over 47,000 trees. The city’s canopy saves businesses and homeowners an estimated \$2.25 million in energy costs annually.

► IMPLEMENTATION COSTS:

The Urban Forestry Management Plan prepared by Davey Resource Group recommends planting 974 trees over the next 8 years. At an average cost of \$110 per tree, this adds to approximately \$27,000 annually.

► PARTNERS & STAKEHOLDERS:

Individual residents can easily engage in tree planting, and community members have expressed interest in implementing this strategy.

► EXPECTED GHG SAVINGS:

Each canopy tree can offset about 0.4 mtCO₂e annually through a combination of carbon absorption and reduced cooling costs.

► ADDITIONAL BENEFITS:

The City of Ann Arbor’s urban forestry program is estimated to return \$2.68 for every \$1 invested, though most of these benefits accrue to private property owners through energy savings. Furthermore, street trees add an estimated 3% to residential property values.

► CONSIDERATIONS:

The DTE Energy Foundation offers annual matching grants for tree planting. The city’s recently-established tree nursery will provide low-cost trees, but they will not be ready to plant for a few years. City staff has proposed a streamlined process for allowing residents and business to plant trees in public rights-of-way.

➔ RECOMMENDED APPROACH:

Identify funding sources to implement recommended tree planting program, maintain existing trees and continue policy support. In addition to traditional public and grant funding sources, tree planting lends itself to crowdsourced approaches, including small donations or direct individual planting. The City should also ensure that its landscaping standards for development favor canopy tree planting, either on-site or in rights-of-way.



TAGS

INFRASTRUCTURE

2012 CAP REPORT

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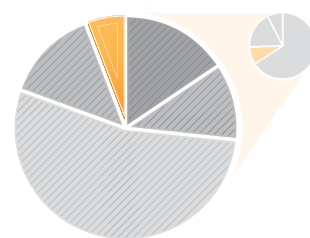


UPGRADE WASTEWATER PLANT CONTROLS & PROMOTE RESIDENTIAL WATER EFFICIENCY

[ONE-TIME]
CONTROL UPGRADES AT YCUA

3.20%

OF 2020 TARGET [181.5 mtCO₂e]



Wastewater treatment plants are energy-intensive: the Ypsilanti Community Utilities Authority spends over \$2 million annually in utility costs alone for its wastewater plant. Recent advances in plant control systems can allow for quick energy savings of 10-20% in the treatment process, just through upgrades of sensors and software. Water efficiency measures that reduce the total load and peak flow rates to the treatment plant can also save substantial amounts of energy.

► EXAMPLES:

The City of South Lyon performed sensor and control upgrades on its wastewater treatment plant in 2011, reducing annual energy usage by 10-15% and recouping upgrade costs in the first year. DTE and the Better Buildings for Michigan program provide residents with low-flow faucet aerators and showerheads as part of their home energy efficiency packages.

► IMPLEMENTATION COSTS:

The cost of wastewater treatment plant control upgrades depends on the specifics of the current system and opportunities identified. Home water efficiency measures—low-flow faucets, showerheads, and toilet replacements—cost about \$500 per bathroom.

► ADDITIONAL BENEFITS:

In addition to the system-wide cost savings provided by treatment plant improvements, with a potential payback of 6 months to 2 years, home water efficiency measures can save individuals money: a residential bathroom water efficiency package will save residents about half of a billing unit (measured in CCF—one hundred cubic feet of water) monthly, or about \$9 per billing cycle.

► EXPECTED GHG SAVINGS:

Control upgrades to the YCUA plant could save an estimated 550 mtCO₂e annually, system-wide. Residential water efficiency measures can save about 0.22 mtCO₂e per home, stemming from less water usage and resulting reductions in wastewater treatment and pumping.

► PARTNERS & STAKEHOLDERS:

The City of Ypsilanti appoints two members of YCUA's board, and should work with the adjacent townships to move energy efficiency measures forward. Local knowledge is available to support this work: Ann Arbor and South Lyon were the first two wastewater plants in Michigan to perform control upgrades, and Ypsilanti-based Utilities Instrumentation Service, Inc. (UIS) designed and implemented the South Lyon project.

► CONSIDERATIONS:

Reducing water usage benefits YCUA in several ways: reducing overall and peak loading and preventing the need for future capacity expansions. In addition to the DTE and BBFM programs, YCUA could consider promoting individual home or business water efficiency measures through a PACE-style financing program: providing individual loans to be paid back through the property's future water bills.

➔ RECOMMENDED APPROACH:

YCUA should investigate wastewater treatment control upgrades immediately—Utilities Instrumentation Service, Inc., staff have expressed an interest in working with YCUA on this project. YCUA should additionally consider an internal financing system for individual home and business water efficiency improvements, and can likely leverage the experience of City of Ann Arbor or Regional Energy Office staff to design a PACE-like program.

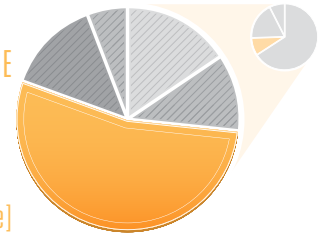


INCREASE RECYCLING RATES THROUGH COMPETITION

[BY 2020] RECYCLING RATE
INCREASED TO NATIONAL AVERAGE

30.85%

OF 2020 TARGET [7050.7 mtCO₂e]



Competition is a great motivator, and an inter-neighborhood recycling competition is a relatively low-cost way to increase visibility and encourage people to work together towards a shared goal: proving that where they live is the greenest and best. With a 2010 recycling rate of 18.8%, residents of Ypsilanti have a fair amount of room to improve their waste practices.

► EXAMPLES:

Alameda County in California has committed to reducing waste by 75%. In pursuit of this goal, they've established the website StopWaste.org and hold an annual "Ready Set Recycle" contest.¹⁸ They ask citizens to commit to keeping all recyclable and compostable items out of the trash, and randomly select garbage bins to measure the amount of these items in trash. Winners are eligible for cash and prizes. In the 2011 contest, 1537 residents made online pledges and 893 homes were selected for sorting.¹⁹

► IMPLEMENTATION COSTS:

The program in Alameda County cost \$856,712.²⁰ This was paid for out of facility fees and a grant from the recycling board to a nonprofit. Assuming the same cost per person, Ypsilanti could expect the program to cost \$44,000. However, this program was fairly expensive because Alameda County sent out trash bin sorters ahead of the regular trash collectors. If, instead, Ypsilanti simply weighed the amount recycled, costs could be kept to a minimum.

► ADDITIONAL BENEFITS:

A recycling competition would increase visibility for better waste management practices and can create better habits in participants, encouraging behavior change after the competition has ended. Reducing the amount of waste landfilled also can save the City money. The amount saved is variable, but as of May 2012, the City paid \$24.99 per ton of trash landfilled and received \$14 per ton of recyclables.

► EXPECTED GHG SAVINGS:

Each ton of waste diverted to recycling rather than to a landfill saves 2.87 metric tons CO₂e. If residents were challenged to increase their rate of recycling from the 2010 city average of 18.8% to the national recycling rate of 34.1% (and met that challenge), 610 tons of waste would be diverted from the landfill into recycling bins, saving 1750.94 mtCO₂e emissions.

► PARTNERS & STAKEHOLDERS:

As the provider of recycling services, the City of Ypsilanti should host and coordinate any waste-reduction competition. The Ann Arbor Materials Recovery Facility handles Ypsilanti's recycling and should also be included in any recycling efforts. The City should work with existing neighborhood associations to promote and coordinate the competition.

► CONSIDERATIONS:

Other Michigan cities and counties have paid for expanded recycling services through landfill or waste fees or have created intergovernmental agreements to expand purchasing power and lower prices. EMU already participates in an annual inter-university recycling competition—the community could use this as a model or compete against students to increase the rate of recycling. A system that measures waste and recycling amounts per pickup day could best allow for neighborhood competition, but because it would require a change in DPW methods, might be prohibitively expensive. A University of Michigan study found that four key themes to a successful recycling program were culture, convenience, communication of information and custodial support.²¹

18 | "Ready Set Recycle Contest," StopWaste.Org. Web. 30 May 2012. <<http://www.readysetrecyclecontest.org>>.

19 | Becerra, Jeff. "Winning the Recycling Game." Resource Recycling Aug. 2011: 31-33. Print.

20 | "Annual Budget Fiscal Year 2011-12." StopWaste.org. Alameda County Waste Management Authority, June 2011. Web. 1 June 2012. <<http://stopwaste.org/docs/fy11-12-budget.pdf>>.

21 | Fox, Elizabeth. "Recycling Best Practices Report." University of Michigan Plant Building and Grounds Services. Aug. 2011. Web. 30 May 2012. <<http://www.recycle.umich.edu/grounds/recycle/PDF/RecyclingBestPracticesReport.pdf>>.



➔ **RECOMMENDED APPROACH:**

Work with neighborhood associations and Eastern Michigan University to hold a recycling competition, based either on improvements over past performance or on town vs. gown recycling rates. The challenge for Ypsilanti residents should be to collaborate with or out-compete neighbors, but also on an individual level, to achieve the national average rate of recycling: 34.1%. The City should consider using a neighborhood competition as a pilot—perhaps working only with a few neighborhoods to begin with or seeking to later expand to include local businesses, as well.



PLACE ARTISTIC TRASH AND RECYCLING BINS THROUGHOUT COMMUNITY

► EXAMPLES:

Collegetown ART (Art, Recycling, and Trash cans) at Cornell University, as part of a student sustainability effort, held an art contest in the spring of 2010 to decorate bins on campus. Interested parties can sponsor a bin for between \$225 and \$900, and their company logo will appear on a decorated bin.²² Indiana University's "More Art, Less Trash" program hosted by the Student Sustainability Council offers small cash prizes each year for designs submitted to be displayed on ten recycle bins in high-use locations.²³

► IMPLEMENTATION COSTS:

Costs for implementation involve materials to create refuse and recycling bins. A 95-gallon waste bin typically costs between \$50 and \$75. The DDA budget currently allots \$20,000 annually for "pedestrian trash receptacle collection" in downtown areas. The city does not currently have public recycling bins, though it does provide recycling services to the downtown.

A report from 1993, shortly after University of Michigan (UM) instituted public recycling bins, states that the costs of recycling generally equal the savings from the reduced amount of trash it pays to be sent to the landfill.²⁴ UM has reported higher amounts of recycling on campus since it instituted public recycling bins.²⁵ The university receives payment for recyclables from its solid waste provider, which ultimately means that increased recycling reduces the cost to dispose of waste.

► EXPECTED GHG SAVINGS:

Every ton of waste diverted to recycling rather than a landfill saves 2.87 mtCO₂e. If public recycling in specially-indicated bins encouraged Ypsilanti residents to increase the community's rate of recycling to the national average of 34.1%, as discussed in the strategy "Increase recycling rate through competition," the community would reduce emissions by 1750.94 mtCO₂e.

Universities across the country have used decorated waste containers to encourage recycling efforts and proper waste disposal on their campuses while providing a creative outlet for local talent. These artistic receptacles beautify the city, pay for themselves with sponsorships, and teach citizens how to dispose their trash and recyclables.

► ADDITIONAL BENEFITS:

This strategy will expose residents and visitors to local artists and make the city's beautification and recycling efforts more visible. Displaying artwork created by local youth also provides an opportunity to teach children about environmental responsibility and recycling, especially if artistic bins are installed on school property. Installing bins that are available to the public at all hours of the day can support recycling city-wide.

► PARTNERS & STAKEHOLDERS:

Ypsilanti could partner with Eastern Michigan University and local schools to start a small-scale outdoor recycling program that features artistic bins and hold a contest to create the bin art. The DDA could also partner with local businesses to sponsor bins downtown.

► CONSIDERATIONS:

The City will need to ensure the recycling and trash receptacles are emptied regularly, approve the addition of a public recycling service, site these bins in high-traffic areas and limit the risk of cross contamination. The City of Ann Arbor's Commercial Recycling Expansion and Implementation Plan indicates that cross-contamination can be limited by ensuring that recycle bins are visibly distinct from garbage receptacles.²⁶ For example, if a recycling bin should only be used for aluminum cans, the bin should indicate this requirement in writing and with imagery. Recycle bins that are specifically intended for plastic bottles and aluminum cans could have cylindrical holes to deposit the intended materials, while bins for paper could have small, rectangular holes. Eye-catching designs can encourage citizens to use the proper receptacle. Depending on volume, sidewalk recycling could be emptied as part of the weekly pickup of curbside bins from individual businesses, or may need to be incorporated into the DDA's contract for emptying sidewalk trash cans.

➔ RECOMMENDED APPROACH:

Partner with EMU, local schools, and the DDA to create an artistic trash bin design contest, incorporating local sponsorships and educational efforts. Test the program first on EMU's campus while exploring options to expand downtown recycling, then move outwards into city itself. Additional savings could be generated by investing in an outdoor recycling service in the city's parks and downtown areas.

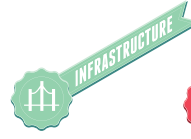
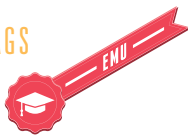
²² | Cornell University, "College Town Art," Web. 24 April 2012.
<<https://sites.google.com/site/collegetownart>>.

²³ | Indiana News Room, "'More Art, Less Trash' artistic outdoor recycling bins installed on campus," 9 April 2009. Web. 24 April 2012.
<<http://newsinfo.iu.edu/news/page/normal/10489.html>>.

²⁴ | EPA, "2009 Success Story: University of Michigan," Web. 24 April 2012.
<<http://www.epa.gov/wastes/partnerships/wastewise/challenge/gameday/09success-um.htm>>.

²⁵ | University of Michigan, "Recycling Timeline," 11 November 2010. Web. 24 April 2012.
<http://www.recycle.umich.edu/grounds/recycle/history_of_recycling.php>.

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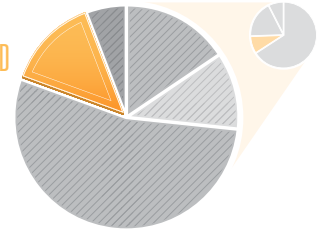


CREATE KITCHEN COMPOST DROP-OFF SYSTEM

[BY 2020]

5% OF FOOD WASTE COMPOSTED

7.93%

OF 2020 TARGET [450 mtCO₂e]

The US EPA estimates that food waste makes up 14 percent of the US municipal solid waste stream, making it the largest single component of landfilled material. Much of this waste could be composted rather than sent to a landfill.²⁶ Ypsilanti currently has a functional yard waste collection program and a free yard waste compost and wood chip pick-up site. Residents are interested in adding kitchen compost collection to these existing services. This requires more active management than composting yard waste alone in order to prevent contamination with non-compostable or vermin-attracting material. However, the added operations would result in a reduction of greenhouse gas emissions, preservation of landfill space, reduced need for fertilizers, a reduction in tipping fees by redirecting funds to sustainable waste management practices, and the production of a higher-value, more nutrient-rich compost. Additionally, newer self-contained biodigesters can maximize the amount of emissions avoided by capturing gases from compost materials for use as a heating fuel source for nearby buildings, and can also handle a wider variety of material, reducing the problems of contamination.

► EXAMPLES:

The US EPA provides guidance on how to incorporate “food residuals” into existing yard waste and composting operations:²⁷ this includes all pre- and post-consumer foods and food by-products, as well as organic items which may accompany food, such as manufactured organic materials and soiled paper products. The EPA guide details the rate of decomposition for various types of food waste, different methods to create the compost, and how to produce mixes suitable for redistribution or resale. Closer to home, the City of Ann Arbor collects uncooked vegetable waste as part of its curbside compost system.

► IMPLEMENTATION COSTS:

Cornell University’s 1999 report “Small to Medium Scale Composting of Food Wastes in New York City” evaluated the use of municipal composting systems. A city can purchase existing equipment for composting food waste. This could cost between \$30,000 and \$80,000, depending on the amount of waste the city expects to collect. Labor to maintain the system can cost between \$15 and \$20 an hour.²⁸ The City of Eugene, Oregon has implemented a system for commercial food waste collection that charges per bin for weekly pick-up, based on cubic yard capacity. Combined with compost sales, this fee is intended to cover the costs of running the service.

► EXPECTED GHG SAVINGS:

Each ton of food waste recycled rather than landfilled can reduce emissions by 1 to 3 mtCO₂e, primarily in methane, depending on what practices are used. Using the EPA’s estimated share of total waste, Ypsilanti’s municipal waste stream likely contains 745 tons of food waste annually. For every 1% of this amount diverted to compost, up to 22.3 mtCO₂e could be reduced.

► ADDITIONAL BENEFITS:

Finished compost can be added to lawns and gardens to replenish nutrients in the soil. Biodigesters can additionally help heat nearby buildings, reducing heating costs from purchase of natural gas. Each 1% of the food waste currently landfilled will reduce landfill tipping costs by approximately \$175.

26 | “Basic Information about Food Waste.” US EPA. Web. 10 May 2012. <<http://www.epa.gov/osw/conservation/materials/organics/food/fd-basic.htm>>.

28 | “Small to Medium Food Wastes in New York City,” Cornell University, August 1999. Web. 24 April 2012. <<http://compost.css.cornell.edu/NYCComposting.pdf>>.

27 | The U.S. Composting Council, “Best Management Practices (BMPs) for Incorporating Food Residuals into Existing Yard Waste Composting Operations,” 2009. Web. 24 April 2012. <http://www.epa.gov/reg3wcmd/pdf/FR2YVW_BMP.pdf>.

► PARTNERS & STAKEHOLDERS:

The larger the venue, the more food waste is produced—partnering with the Downtown Association of Ypsilanti, the school system, or the proposed Washtenaw County Kitchen Incubator could provide large single sources of compostables, reducing collection costs and the difficulty of monitoring for contamination. One of these organizations or the local nonprofit Growing Hope should undertake a food waste audit to identify opportunities for a pilot project.

► CONSIDERATIONS:

Focusing on large producers of material can minimize contamination challenges, as can using biodigesters rather than open air composting. As compared to a curbside system, a voluntary drop-off program would eliminate collection costs and provide better control of waste stream. Educational efforts around home composting may be more cost-effective than a citywide system for non-institutional waste.

➔ RECOMMENDED APPROACH:

Partner with Growing Hope and local businesses that are high generators of food waste to implement a pilot program for a municipal kitchen compost system using the drop-off site method.

Solid waste, alternative energy or similarly targeted grants should be explored to fund installation of a biodigester at any selected pilot site.



Composting turns kitchen and yard waste into nutrient-rich soil.



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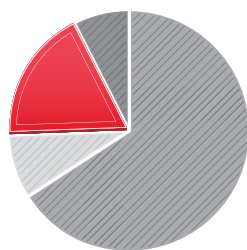
INFRASTRUCTURE

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Land use patterns are one of the largest factors in community greenhouse gas emissions. Many Ypsilanti residents already take advantage of the city's walkable streets and transit service.



18.97%

OF 2020 TARGET
[LAND USE & TRANSPORTATION
STRATEGY REDUCTIONS]

RECOMMENDED EMISSIONS-REDUCTION STRATEGIES

LAND USE & TRANSPORTATION

Land use patterns are a major determinant of development, travel choices and other behaviors that create greenhouse gas emissions. A community with smaller lot sizes and walkable commercial districts near residential areas will support walking, transit and cycling as alternatives to driving. In another example, a mixture of single- and multi-family housing types will reduce heating costs due to shared walls. Various sources have noted this impact: a recent EPA study showed that the choice to live in a transit-supportive location reduces household emissions more than undertaking home energy efficiency improvements and driving a fuel-efficient car.²⁹ The international Transition movement noted in its guide to climate planning that communities need to address land use first, “or else you may as well stop now.”³⁰

The City of Ypsilanti contains a downtown area and neighborhoods that feature walkable, compact and diverse land uses, and has taken conscious steps to encourage biking and walking and preserve transit service. The City has also sought to encourage infill development over the past decade, including downtown loft projects, rehabilitation of the former high school into senior housing, and construction of additional student housing. Parts of this section are therefore dedicated to measuring the expected impacts of existing policies and efforts. However, Ypsilanti still has improvements to make to its land use and transportation patterns. Some portions of the city are generally hostile to walking, such as the Washtenaw Avenue corridor, or lack neighborhood amenities, such as the Leforge Road area, and may require additional efforts to create the type of district that the community wants and that permit low-emissions travel behaviors.

Many more Ypsilanti residents and workers could take advantage of low-emissions travel modes. The Census’s Longitudinal Employer-Household Dynamics commuting dataset from 2010 shows that 52.7% of working Ypsilanti residents worked within 10 miles of home, including 29.6% working in Ann Arbor and 8.2% within Ypsilanti. Similarly, 50.7% of the 6,424 people employed within city limits live within 10 miles of their workplace. Many of these Ypsilanti residents and employees therefore have commute distances which make walking (1 mile), bicycling (5 miles), or transit (10 miles) reasonable options.

This plan seeks to accomplish 10% of its greenhouse gas reductions target through land use and transportation measures, reducing emissions by 3,784 mtCO₂e by 2020, with the following additional goals:

- ▶ Vacant and underused properties are redeveloped or reclaimed as green, productive spaces.
- ▶ Goods and services are available within neighborhoods, or within walking distance of residents.
- ▶ Streets are safe for all, providing for travel by any mode without fear of either crime or traffic crashes.
- ▶ Residents, commuters, and students choose to bike, walk or bus when possible.

²⁹ | US EPA, “Location Efficiency and Housing Type: Boiling it Down to BTUs,” March 2011. Web, 13 June 2012. <http://www.epa.gov/dced/pdf/location_efficiency_BTU.pdf>.

³⁰ | Daniel Lerch, *Post Carbon Cities: Planning for Energy and Climate Uncertainty*. Sebastopol, CA: Post Carbon Press, 2007.

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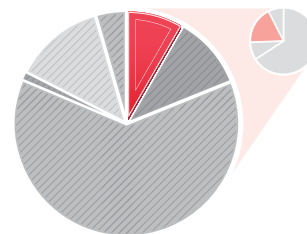


COMPLETE NETWORK OF BICYCLE FACILITIES

[ANNUALLY] 1 MILE BIKE LANE/
PATH CREATED

15.86%

OF 2020 TARGET [600 mtCO₂e]



Ypsilanti has shown a strong commitment to complete streets and non-motorized transportation, including bicycling, and has nearly 11.5 miles on on-road bike lanes and off-road paths. The 2006 WATS Non-Motorized Plan identifies 37.3 additional miles as “deficient” for bicycles (with each side of a two-way street counted independently). As the City is already actively pursuing this strategy, it is included primarily for the consideration of greenhouse gas impacts.

► EXPECTED GHG SAVINGS:

Each 1 mile of bike facilities per square mile of city area is estimated to increase cycling share by 1% of total travel.³¹ Applying this figure to non-freeway weekday passenger travel in Ypsilanti, each mile of bike lanes could convert 162,000 motor vehicle miles traveled (VMT) to cycling each year, leading to a reduction of 75 mtCO₂e. Assuming an additional mile of bike lanes is created in the city each year, through reconstruction or restriping projects, 600 mtCO₂e could be reduced annually by 2020.

► CONSIDERATIONS:

The Washtenaw County Road Commission will be an important partner in extending the bicycle network beyond Ypsilanti. WCRC has implemented 4-lane to 3-lane “road diets” recently and found them effective in improving both bicycle and automobile safety while maintaining road capacity. Including way-finding signs could help increase visibility of these projects and encourage more walking and biking, especially if these signs are visible from cars.

➔ RECOMMENDED APPROACH:

Continue development of bicycle and pedestrian network in coordination with Townships, WCRC, and Border to Border (B2B) trail development.

Considering existing, predominantly east/west commuting patterns, roads like Forest Avenue, East Cross and West Cross/Packard may hold the most benefit in terms of converting traffic from motor vehicle miles to bicycle miles.



³¹ | Dill, Jennifer and Theresa Carr. “Bicycle Commuting and Facilities in Major US Cities: If You Build Them, Commuters Will Use Them.” *Transportation Research Record: Journal of the Transportation Research Board*, No. 1828, TRB, 2003, pp 116-123

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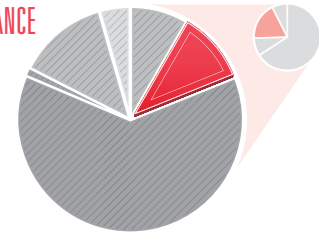


PROVIDE PARKING ALTERNATIVES & CASH-OUT OPTIONS FOR EMPLOYEES

[ANNUALLY] 2.5% OF SHORT-DISTANCE
COMMUTERS CHANGING MODES

19.56%

OF 2020 TARGET [740 mtCO₂e]



Employers typically subsidize automobile use by providing parking spaces for employees but do not take on responsibility for any costs associated with commuting by other modes, such as transit or bicycle. The City of Ypsilanti, for example, provides downtown parking permits for City Hall employees, which typically costs \$200 per pass; many EMU departments similarly cover the costs of employee parking permits, while student commuters pay \$200 for fall/winter parking hangtags. A parking cash-out program can be a beneficial alternative method to traditional employee parking programs. The cash-out program makes the cost of parking transparent to the employee, and removes the incentive to drive by offering them the cash value of an unused parking permit, or by allowing them to transfer the value of the permit to another travel mode, such as a transit pass.

► EXAMPLES:

The go!pass system is used by over 500 employers in downtown Ann Arbor to offer employees a transit fare benefit as an option to driving and parking. EMU recently offered students discounted Ann Arbor Transportation Authority (AATA) monthly passes as an alternative to buying a parking permit. Both these programs have proven popular.

► EXPECTED GHG SAVINGS:

Assuming a modest 2.5% shift of the commuters living within 10 miles of their workplace from driving alone to other modes, 92.5 mtCO₂e would be avoided annually.

► IMPLEMENTATION COSTS:

Employers who currently pay for employee parking can offer cash-out options or alternative benefits at no additional cost. Employers who own parking spaces and view them as a no-cost benefit to employees might consider this an additional \$200 annual cost per employee, if the cash-out value were set equal to the paid downtown or campus parking options.

► ADDITIONAL BENEFITS:

Downtown employees (including those at City Hall) who choose a cash-out or alternative benefit clear public parking spaces for downtown business patrons. Similarly, EMU commuters who choose alternative benefits free up parking capacity without new construction costs. Choosing to bike or walk to work rather than driving also carries health and fitness benefits.

► PARTNERS & STAKEHOLDERS:

The DDA, City Treasurer and EMU each issue employee parking permits for various lots; they and downtown commercial landlords would be the key actors in an alternative benefits system.

► CONSIDERATIONS:

The 2008 survey of downtown Ypsilanti employees found that offering transit benefits would be the single most appealing option to change commute behavior. In order to address other potential concerns about not driving to work, offering alternative commuter benefits works best in coordination with strategies like car-sharing systems and improved visibility of other travel modes.

➔ RECOMMENDED APPROACH:

Provide a discounted AATA pass via the City Treasurer and DDA as an alternative to downtown parking permits. AATA may be able to offer additional discounts for permits purchased by downtown employees, as counter-peak commuters. City Hall can lead by example by implementing a parking cash-out or alternative benefit option for employees currently eligible for parking permits. Other major parking providers such as Washtenaw County and the Key Bank Building may also be approached as potential participants. EMU should continue to promote their transit pass and shuttle options.



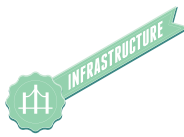
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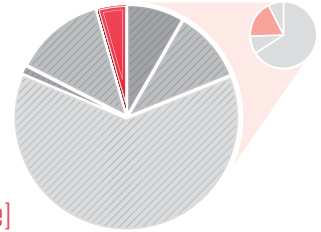
PURSUE IMPLEMENTATION OF TRANSIT MASTER PLAN

[BY 2020]

25% RIDERSHIP INCREASE

8.02%

OF 2020 TARGET [303.45 mtCO₂e]



Ypsilanti has shown strong support for transit: AATA figures show boardings in the City of Ypsilanti growing by 20% from 2005 to 2010, despite a decrease in service during that time, and voters overwhelmingly approved funding to support the system in 2010. The recently completed Washtenaw County-wide Transit Master Plan would continue to offer new options for Ypsilanti residents, commuters and students, including additional routes, improved frequency and hours of operation, and new services such as express commuter lines.

► EXAMPLES:

As an early implementation step in the Transit Master Plan, AATA implemented service increases on the Washtenaw Avenue route in early 2012 that yielded a 20% increase in ridership on that line within a few months. Expansion of AATA's Night Ride service to the Ypsilanti area also produced a significant increase in use of that service, though these numbers are not broken down by how many started or ended in the city itself. These immediate jumps in transit use following service increase show strong pent-up demand.

► IMPLEMENTATION COSTS:

AATA is still working with stakeholders around the county to finalize an implementation program and identify costs for the Transit Master Plan. In addition to rider fares and state and federal funding, implementation will likely require a county-wide or regional funding stream to be approved by voters.

► EXPECTED GHG SAVINGS:

Implementation of the Transit Master Plan should support continued ridership growth. Based on recent experience, a further 25% increase in ridership by 2020 appears possible: an additional 160,000 annual boardings within the city, or about 530 daily riders. Added to recent ridership gains, this would yield 303 mtCO₂e in reduced emissions.

► ADDITIONAL BENEFITS:

Continued increases in transit service will help mitigate congestion on major roads and in downtown and campus parking lots. High-quality transit service is also increasingly being cited as a factor in attracting new residents and businesses.

► PARTNERS & STAKEHOLDERS:

A new regional transit agency is being created under Public Act 196 to implement the plan. The City of Ypsilanti will have a seat on the board of this new agency and will need to work with neighboring communities to champion appropriate system improvements by this agency.

► CONSIDERATIONS:

Commuter rail service has been under discussion for many years and is currently a top transit priority for city officials and residents, but creation of this service remains very uncertain. One way to advance rail could be to simulate this service through new express, commuter-oriented bus service, in order to demonstrate demand.

➔ RECOMMENDED APPROACH:

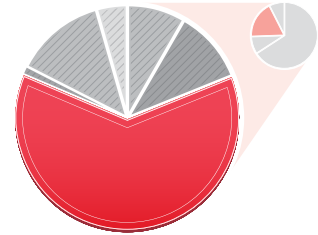
Champion creation of the 196 board, establishment of regional funding, and implementation of the Master Plan. Services that support commuting into Ann Arbor, for residents, and into Ypsilanti, for students, should be priorities for implementation.

TAGS



PROVIDE MORE VISIBILITY FOR ALTERNATIVE TRANSIT, INCLUDING BIKING & WALKING PATHS AND BUS ROUTES

[ONGOING] TRANSPORTATION
OPTIONS PROMOTED CITY-WIDE
116.29%
OF 2020 TARGET [4400 mtCO₂e]



While local governments cannot necessarily change the structure of regional transit systems, municipalities can facilitate the use and adoption of transit and non-motorized modes, including biking and walking. This includes a broad category of activities: cities can market available options, publish bicycle maps, improve signs for bike routes, or provide workshops or other informational material. The use of a survey to understand residents' transportation needs can help create more effective, targeted marketing and programs.

► EXAMPLES:

Portland, Oregon's Smart Trips program has reduced single-occupant car trips by 8-13% in the areas of the city that have been targeted.³² Transportation Riders United (TRU) has offered "Transit 101" workshops in Detroit and its suburbs in past years to teach people how to use the transit system, successfully converting "never riders" to "occasional riders."

► IMPLEMENTATION COSTS:

Costs for implementing biking/walking or ridership promotion programs typically cost around \$30 per household targeted. Some measures, such as bike/walk maps, are significantly cheaper; others, such as reduced-rate transit passes, are significantly more expensive.

► ADDITIONAL BENEFITS:

People who switch from car use to other travel modes can save substantially on travel costs. Reducing the number of vehicles on the road results in less congestion and a reduced need for parking. Additionally, increased walking and biking improves health and fitness.

► EXPECTED GHG SAVINGS:

Average GHG savings are about 0.8 metric tons mtCO₂e per household, or 4,400 mtCO₂e city-wide.

► PARTNERS & STAKEHOLDERS:

The Ann Arbor Transportation Authority is the key partner to promote transit and is currently rolling out increased transit service within the city and countywide. City of Ann Arbor and Washtenaw County can both assist in establishing and publishing bike routes and maps. Community groups such as Bike Ypsi and the Washtenaw Biking and Walking Coalition could help spread the word about any new initiatives among social networks.

► CONSIDERATIONS:

People look for predictability and convenience in their travel modes. To encourage a switch, additional benefits must be highlighted because it can be hard for other travel modes to compete with automobiles on only convenience measures.

RECOMMENDED APPROACH:

Engage community partners in an effort to understand residents' travel needs and develop a marketing plan to meet those needs. Provide bicycle maps, designated routes, and other wayfinding mechanisms to make the transition to bike commuting easy and convenient. Special attention should be paid to the connections between EMU's campus and Ypsilanti's downtown and Depot Town areas, encouraging students to explore the surrounding city. The existing Non-Motorized Advisory Committee should lead this effort within the city.

32 | "Smart Trips." Portland Bureau of Transportation. Web. 25 April 2012.
<<http://www.portlandonline.com/TRANSPORTATION/index.cfm?c=ediab>>.

TAGS



CREATE AND PROMOTE BIKE-SHARING AND CAR-SHARING PROGRAMS

Vehicle-sharing programs allow users to rent bikes or cars by the hour, increasing transportation access and making it easier to get where they need to go. Creating a bike-sharing or car-sharing program in Ypsilanti would supplement existing bus service, allow more residents to go without cars, and encourage travelers to take advantage of existing non-motorized transportation networks while spending time in Ypsilanti.

► EXAMPLES:

M-Bike.org suggests that our region should use Nice Ride Minnesota—the twin cities' bike share program—as a model. Users can pick up a bike from one of 75 kiosks over a 7.75 square mile service area. Rental rates are charged by the hour, and users must pay to subscribe for the day, month or year. The program is managed by a nonprofit. Nice Ride MN was founded through a partnership between local government, foundations, and local businesses.

Zipcar operates 20 shared cars on the University of Michigan campus and 10 more in downtown Ann Arbor. Zipcar estimates each shared car takes 15-20 cars off the road. Hertz started an hourly car rental service at Eastern Michigan University during the Fall 2011 semester, with two cars available on campus.

► IMPLEMENTATION COSTS:

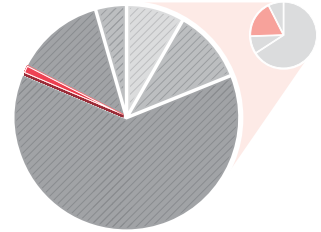
University bike rental programs are typically funded by grants and rental fees. Initial costs include bike and rack purchase, storage, maintenance and management hiring. A bike share program that covers EMU's campus, Ypsilanti's historic downtown and Depot Town could be implemented with initial costs of \$492,000 and an annual operating cost of \$229,000.³³ Annual operating costs could be recouped through fees for subscription or bike use.

Zipcar typically requires a "sponsor" to guarantee a minimum monthly revenue for each car; in Ann Arbor, the DDA and University of Michigan play this role. The Hertz On-Demand service does not have this requirement, but provides vehicles based only on rental revenue estimates. This makes implementation effectively free to the city or university, but also limits the local ability to steer development of the system.

[ANNUALLY] 2100 DRIVERS USE
BIKESHARING NETWORK

2.18%

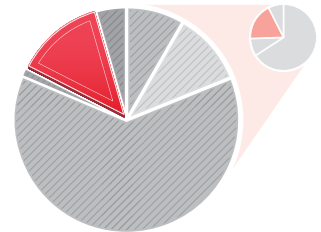
OF 2020 TARGET [82.4 mtCO₂e]



[ANNUALLY] 250 DRIVERS JOIN
CARSHARING NETWORK

24.05%

OF 2020 TARGET [910 mtCO₂e]



► EXPECTED GHG SAVINGS:

Bike Detroit notes that a 4 mile trip by bicycle will keep 15 pounds of pollutants out of the air. Using the same ridership projections as Nice Ride which estimates 5% of resident use, 3% local employee use, and 7% student use, bike sharing could alleviate 23,007 vehicle miles travelled annually in Ypsilanti. That equates to 10.3 mtCO₂e in savings annually.

National experience shows a typical car-sharing user reduces vehicle miles traveled (VMT) by 44%, due to adoption of more effective travel habits, and estimates a market potential of up to 10% of residents aged 21 and up, with a particular growth potential for university campuses. Based on SEMCOG estimates for trips starting or ending in the city, each 1% of residents over 21 who become car-sharing users (130 members) would reduce driving by 138,000 miles annually, preventing 66 mtCO₂e in emissions. Considering the large campus and near-campus populations and growing downtown resident base, a modest 2.5% adoption (325 active users) should be possible by 2020, yielding 165 mtCO₂e in emissions reductions and 345,500 fewer miles driven.³⁴

► ADDITIONAL BENEFITS:

Encouraging bike use improves resident quality of life due to increased exercise. Both bike-sharing and car-sharing decrease the amount of cars on the road, limiting the amount of traffic congestion and traffic delays—saving time and gas. Fewer cars commuting to campus also reduces the need for parking spaces.

³³ | This calculation uses Nice Ride's cost per bike and formulas for projected number of subscribers, and assumes that 1 bike will cover 15 subscribers.

³⁴ | In spring of 2012 (before students left campus for the summer), reservations for Hertz cars on EMU's campus ranged from roughly 150-200 per month. This does not account for unique uses, so 325 is a reasonable but reachable goal.

► PARTNERS & STAKEHOLDERS:

More and more students across the country are urging their universities to provide bike rentals on campus to encourage safer, faster, cheaper, more environmentally friendly means of traveling to class and around the city. Eastern Michigan University would be a great place to implement these practices. Oakland University already runs a free bike share program—EMU could meet with staff there. Ypsilanti Cycle and BikesEMU should also be approached as partners.

► CONSIDERATIONS:

The City of Ann Arbor may soon be adopting a bike sharing program. Once this effort gets underway (if Ypsilanti's does not begin before FY2013, which is when Ann Arbor's is slated to begin), Ypsilanti can learn from this neighboring city.

➔ RECOMMENDED APPROACH:

Partner with Eastern Michigan University to create a bike-sharing program and to expand the car-sharing network both on-campus and downtown. The programs can originate at the university, targeting students as the primary users with the source of information available online and at new student orientation. University faculty and employees, and downtown employees, should be targeted with information on bike- and car-sharing options as a support for car-free commutes; landlords and neighborhood associations can provide residents with information on car-sharing as a cost-saving alternative to a second household car.



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PRIORITIZE INFILL DEVELOPMENT OPPORTUNITIES IN MASTER PLAN UPDATE

► RE-EVALUATE PARKING STANDARDS:

The City's zoning ordinance requires large amounts of parking for new and expanded developments; not only does this reinforce high-emissions automobile travel habits, but it also poses a financial challenge for many of the small developers working in the city. Significantly reducing the parking requirements could both support other transportation modes as well as ease costs on businesses and developers.

► CONSIDER THE ROLE OF "NEIGHBORHOOD" COMMERCIAL USES:

While the City's B1 zoning district is named "neighborhood commercial", its primary application is on Washtenaw Avenue, which has a decidedly non-neighborhood feel. This district should be evaluated and potentially updated for use in supporting single-parcel "corner store" uses in actual neighborhoods, such as the convenience store at the corner of East Forest and Prospect or even a more full-service grocery store.

► TACKLE TRANSIT ORIENTED DEVELOPMENT:

The City has worked with neighboring communities to identify potential improvements along Washtenaw Avenue that would support additional development, an improved environment for walking and biking, and increased transit service between Ypsilanti and Ann Arbor. This effort should be supported by specific zoning ordinance updates to enable the desired development of Washtenaw as both a transit corridor and an amenity for surrounding residential neighborhoods. Similarly, while the City has aggressively pursued the reinstatement of Amtrak and commuter rail service in Depot Town, it should conduct specific planning to encourage new private development in the area that can take advantage of future rail service.

Infill development prioritizes development on vacant or underused land in existing cities and urban areas over construction in outlying areas. In addition to supporting lower GHG behaviors, as mentioned in the introduction to this section, infill development makes financial sense to communities, increasing tax yield over a given area: the State of Michigan's 2009 Climate Action Plan identifies land use planning measures as the single most cost-effective means to reduce greenhouse gas emissions. While development policies can be responsible for the greatest degree of change in a community's energy consumption, this change tends to happen slowly and incrementally.

Additionally, most of the energy savings yielded by infill development are not due to behavior changes of people already in town. The majority of energy savings result from households that choose to locate in the city and have access to transit and non-motorized travel options, rather than locating in auto-dependent outlying areas. The reductions therefore can't be counted against the city's baseline emissions—they may actually result in an increase in emissions produced by city residents, but a net decrease at the regional scale.

While the City of Ypsilanti is no stranger to encouraging infill, it could capitalize on additional opportunities. These suggestions should be fully developed during the upcoming revision of the city's Master Plan.

► UNDERTAKE SITE-SPECIFIC REDEVELOPMENT PLANNING:

Ypsilanti can provide the best environment for infill development by identifying individual priority sites and specifically planning for development of those sites. Priority sites for development can include both city-owned properties and vacant private properties with willing owners. An appropriate redevelopment process will ensure that sites have a vision shared and supported by the public, appropriate zoning is in place, available incentives are specifically identified, and the sites are being actively marketed. Ypsilanti has done some of these things, such as establishing districts for obsolete property and industrial facility incentives, and should continue these efforts. The city can look to the redevelopment ready sites best practices outlined by MEDC's "Redevelopment Ready Communities" program for additional guidance.



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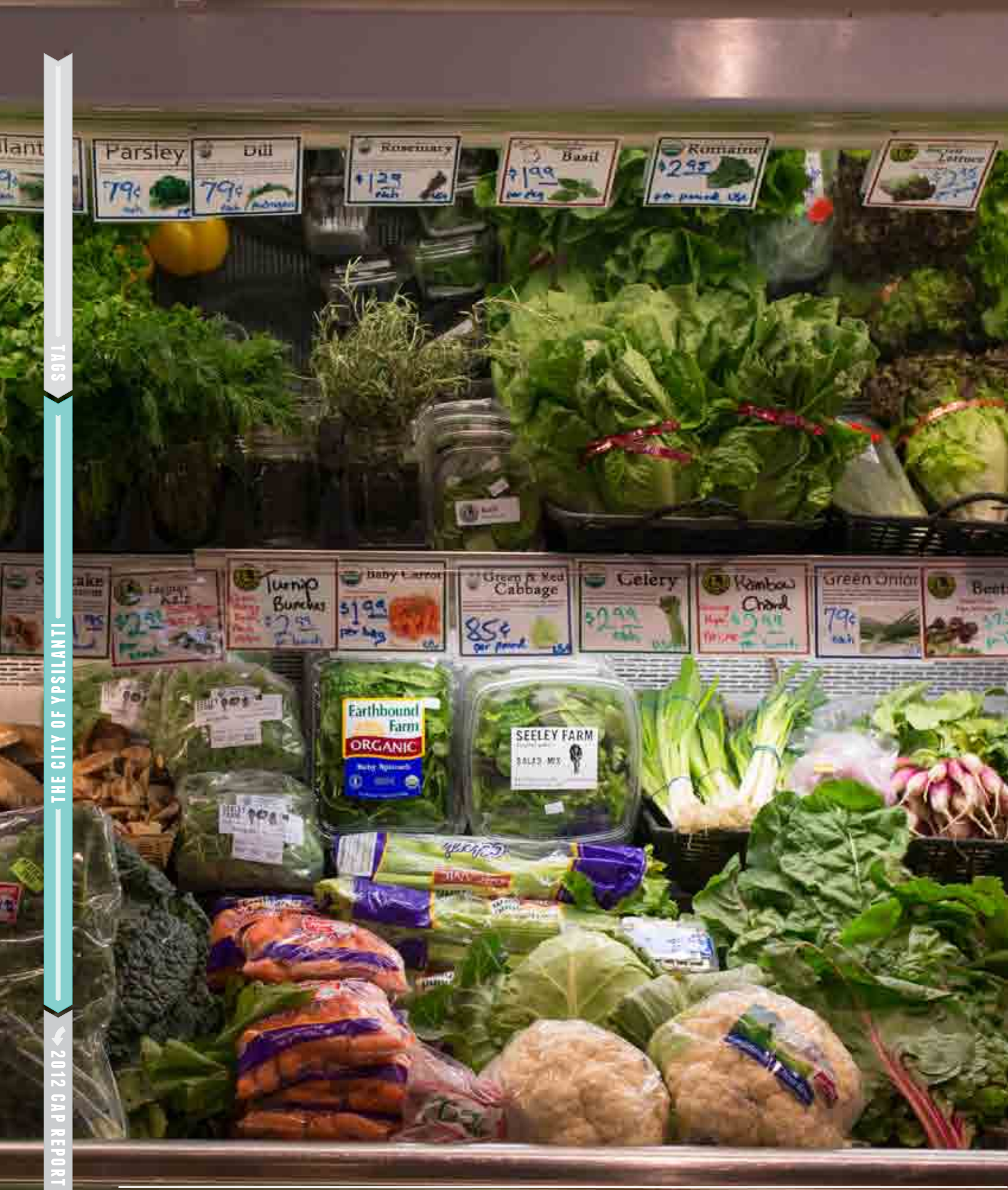


► FILL THE “MISSING MIDDLE” SEGMENT OF THE HOUSING STOCK:

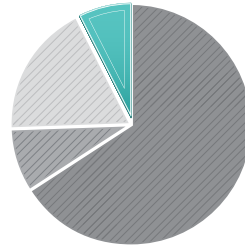
While some neighborhoods, such as the Historic South Side, appear to have a stable mix of single-family houses and 2- to 3-unit apartment houses, the city’s zoning predominantly supports either strict single-family housing or large apartment complexes. Revisiting the topic of small “accessory dwelling units,” encouraging rehabilitation of historic carriage barns and other tools can bring more people to Ypsilanti neighborhoods, supporting property values and taking advantage of the walkable, transit-served downtowns, without the impact of the larger apartment building. This is particularly an opportunity within the historic core, where large homes now typically house much smaller families than they once did.

► PLAN FOR COMMERCIAL USES IN HURON RIVER DRIVE AREA:

More than 2,500 people live in the apartment complexes around Leforge Road and Huron River Drive, but the area virtually lacks neighborhood amenities for these residents and encourages driving. Planning for additional uses in this area that serve these residents could reduce automobile necessity, strengthen these residents’ connection to the Ypsilanti community and also capture business from on-campus residents and campus commuters. Uses such as coffee shops and small-format grocery stores have been identified as desires during past planning work, though land availability will be a challenge for any substantial commercial use.



Culture change describes how Ypsilanti residents interact within their community, and how their decisions impact GHG emissions. This picture from the Ypsilanti Food Co-Op reminds us that even individual behaviors surrounding food can emit GHGs and impact Ypsilanti in myriad other ways.



3.05%

OF 2020 TARGET
[CULTURE CHANGE STRATEGY REDUCTIONS]

RECOMMENDED EMISSIONS-REDUCTION STRATEGIES

CULTURE CHANGE

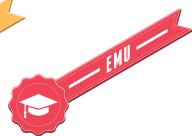
Individual behavior is one of the most important ways we impact greenhouse gas emissions, but it is also one of the most difficult to measure or change. While many Ypsilanti residents already recognize the importance of living in a way that's oriented around sustainability concerns and around reducing greenhouse gas emissions, they feel the majority of citizens have not heard of or do not fully understand these concepts. In order to relate to these issues and change behavior to incorporate the concepts into daily life, Ypsilanti residents need to understand sustainability and the actions they can take.

This section on culture change attempts to begin the difficult task of reorienting community thought and practice around climate change, the natural environment, and triple-bottom-line sustainability. We seek to achieve 5% of our total greenhouse gas reduction target through these strategies, or 1,891 mtCO₂e by 2020.

Based on community feedback, we have also set a number of qualitative goals for the future:

- ▶ Ypsilanti celebrates efforts to reduce greenhouse gas emissions and circulates information about sustainability and reducing greenhouse gases to residents. Community members understand the importance of climate action and the ways they can impact climate change, individually and collectively.
- ▶ In partnership with the community and municipal plans and priorities, local schools have refocused education towards sustainability.
- ▶ Ypsilanti works in collaboration with surrounding communities and the metro Detroit region to achieve broader changes.

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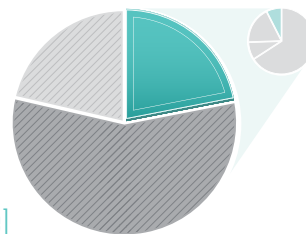
ENCOURAGE CONSERVATION THROUGH ENERGY COMPETITION

[ONGOING]

25% RIDERSHIP INCREASE

13.20%

OF 2020 TARGET [249.69 mtCO₂e]



Given that the City of Ypsilanti is home to Eastern Michigan University, leveraging college rivalry can be a powerful tool to leverage energy savings both within the university and the community. A non-university Ypsilanti competition could motivate the community to improve on past performance. The main key to a competition is extensive marketing and promotions, along with a web presence, key giveaways such as efficient light bulbs, and cultivating peer to peer networks.

► EXAMPLES:

The "Take Charge Challenge" in Kansas pitted 16 different towns (some with universities) against one another in a 9 month long challenge to save energy. Total savings were \$2,341,025 in energy costs and 22 million pounds of CO₂ emissions.³⁵

► IMPLEMENTATION COSTS:

Costs are around \$2 to \$5 per person contacted, which would equate to \$50 to \$100/ton of GHG reduction. Of course, this can vary greatly depending on the depth of contacts, availability of volunteer labor, and other factors.

► EXPECTED GHG SAVINGS:

Each person contacted can be expected to save about 55 kWh during the time of the competition, or about 1.75 lbs of CO₂e. There are many questions about the longevity of the behavior changes, but the changes done within the competition can be a gateway to further improvements.

► ADDITIONAL BENEFITS:

Energy savings for students and residents of Eastern Michigan University and Ypsilanti.

► PARTNERS & STAKEHOLDERS:

Eastern Michigan University would be a prime partner in this endeavor, as shown in the Kansas competition, university rivalries motivated more energy savings than towns without universities. Within the university and the city, networking with as many existing organizations as possible would help spread the words. The challenger cities would also be essential partners. Competition could also be coordinated through neighborhood associations or even commercial groups. Residents are able to rent Kill-A-Watt EZ electricity usage monitor from the Ypsilanti District Library, so tracking resources are readily available.

► CONSIDERATIONS:

One main consideration would be fostering change that "sticks" and articulating the energy conservation message while promoting the rivalry. Many people, students especially, may be motivated to "Beat State," but the challenge will be in relaying the actual reasoning behind the conservation competition. The strategy could be first tested by the university or by select neighborhoods and then expanded city-wide.



RECOMMENDED APPROACH:

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.

³⁵ | "Take Charge Challenge with Efficiency Kansas," Take Charge Kansas, http://www.takechargekansas.org/Site_Data/Sub_Pages/Home.php, accessed May 15, 2012.



COMMUNITY SUSTAINABILITY LIBRARY

Ypsilanti stakeholders are knowledgeable about and interested in issues of climate change, energy use and environmental sustainability. Ypsilanti residents are willing to take on individual and community action to support local emissions reductions, but would benefit from a resource library: a shared space to hold collective knowledge on these topics and catalogue community resources.

► EXAMPLES:

The Green Garage in Detroit is home to the Urban Sustainability Library, which hosts, produces and disseminates information on how "people and organizations [can] make more sustainable choices."³⁶ Their physical and online library contains books and studies, but also displays current projects and facilitates community conversations.

► IMPLEMENTATION COSTS:

This library can be created with limited monetary expense, though it will require a large time investment from stakeholders. Costs may include staff and volunteer time as well as the physical or online space for the library.

► EXPECTED GHG SAVINGS:

Compilation of this resource library will not, in itself, result in GHG emissions reductions. It may inspire future reductions, but these are difficult to quantify.



*Energy Efficient
Rentals*

► ADDITIONAL BENEFITS:

As a community resource, the library can continue to collect best practices, new ideas and possible emissions reductions strategies after the climate plan has been adopted and the process is complete. It can serve as a new communal, coordinating space for sustainability in Ypsilanti and lead to individual and community actions to reduce emissions.

► PARTNERS & STAKEHOLDERS:

The Ypsilanti District Library and Eastern Michigan University can act as hosts, curators and resources for the strategy library. They should be accompanied by the many community groups who have a stake in either pulling from or putting resources into the library, including Transition Ypsilanti, local nonprofits and neighborhood associations.

► CONSIDERATIONS:

Simply compiling existing community resources will lead to a substantial base of knowledge for the library. The difficult part is curating the collection, ensuring it is kept up to date and usable by the average person. Outreach strategies must also be built into the creation of the library to publicize its existence and begin the dialogue that is at the heart of this community space.

➡ RECOMMENDED APPROACH:

Local experts and the EMU community can create an Ypsilanti sustainability library. The City will be able to pull from resources compiled in the process of creating this climate action plan as well as in a collaborative and ongoing research effort with EMU students. A plan for the continued existence of the library should be developed in partnership with community stakeholders.

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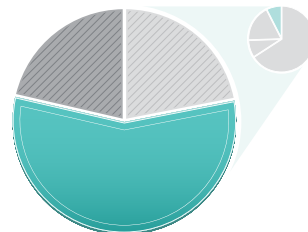


RESIDENTIAL ENERGY EDUCATION

[ANNUALLY]
100 HOUSEHOLDS

38.20%

OF 2020 TARGET [640 mtCO₂e]



Teaching residents to use low- and no-cost techniques for saving energy in their home is one of the most cost-effective ways to reduce energy use and resulting emissions on a community scale. This can be done through a workshop setting or a home visit. Workshops are the less expensive option, but corresponding savings are less as well.

➤ OPTION 1: IMPLEMENT A SERIES OF ENERGY SAVING WORKSHOPS IN DIFFERENT VENUES.

Use these workshops to communicate a basic level of understanding of home energy issues to residents, such as how to read your energy bill, sealing doors and windows and turning off appliances when not in use.

Examples: The City of Lathrup Village held a workshop to educate its residents on how to save money in their homes.³⁷ The Southeast Michigan Regional Energy Office put together a video case study that can be found at this link: <http://bit.ly/JLU8pc>. The City of Ypsilanti's Historic District Commission has in the past hosted workshops by State Historic Preservation Office (SHPO) staff and EMU Historic Preservation students on historic home maintenance—this topic could be expanded to include energy-specific historic home workshops.

Implementation costs: Workshops can be conducted by local non-profits for about \$500 each, either as stand-alone programs or as part of an existing, funded projects such as home weatherization programs or municipal energy efficiency upgrades.

Expected GHG savings: Based on the past experience of the Southeast Michigan Regional Energy Office, households can expect to save .8 mtCO₂e from implementing measures outlined in the workshop format. Assuming an average of 25 participants per workshop and 4 workshops per year, these workshops could reach 100 households, reducing carbon emissions by 80 mtCO₂e annually. By 2020, expected emissions savings add to a total 640 mtCO₂e.

➤ OPTION 2: IMPLEMENT A COMPREHENSIVE PROGRAM THAT ENCOURAGES ALL RESIDENTS OF THE CITY TO EITHER ATTEND A WORKSHOP OR HAVE A HOME VISIT, OR BOTH.

This would require both funding and an outside entity to administer the program.

Examples: The BetterBuildings for Michigan (BBFM) program is conducting consumer education, energy audits and direct installation of energy efficiency measures in Ypsilanti over the course of 2012.³⁸

Implementation costs: A residential energy audit and education program will cost approximately \$1000 per household to implement. This cost may be reduced or covered by programs such as BBFM or DTE incentives.

Expected GHG savings: Similar programs have achieved an approximate 1.2 mtCO₂e reduction per house in yearly GHG emissions.

37 | "EECBG Case Study #10: Resident Education." WARMTraining.org. N.p., n.d. Web. 21 May 2012. <http://www.warmtraining.org/gov/pdf/EECBG%20Case%20Study10_ResidentEducation.pdf>.

38 | BetterBuildings for Michigan. Southeast Michigan Regional Energy Office, n.d. Web. 22 May 2012. <<http://regionalenergyoffice.org/betterbuildings/>>.

➤ FOR ALL OPTIONS:

► CONSIDERATIONS:

The City of Ypsilanti should leverage the federal resources of the BetterBuildings for Michigan program during 2012 to get as much federal funding as possible to fund energy education and improvements for Ypsilanti housing stock. Any educational initiative should publicize the energy and money savings achieved by participants. Deliberately communicating benefits is key to the success of this strategy.

► ADDITIONAL BENEFITS:

WARM Training Center, BetterBuildings for Michigan, Clean Energy Coalition and DTE offer relevant programs. EMU's historic preservation program or Washtenaw Community College's building trades programs may also be able to offer workshops for residents.

➤ RECOMMENDED APPROACH:

Work with local universities and nonprofit organizations to expand educational workshops and resources. Past leveraging of EMU and SHPO offerings for historic property owners can be expanded to include a focus on energy efficiency in historic properties—a substantial share of Ypsilanti's building stock. BBFM outreach efforts during the course of 2012 should increase general awareness of energy-saving behaviors, and non-profit partners can build on this with future targeted educational efforts.



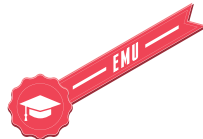
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CULTURE CHANGE

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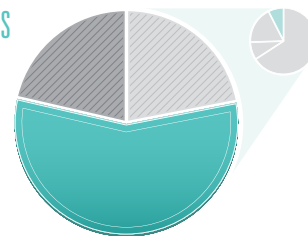


ENCOURAGE PUBLIC EMPLOYEES TO LIVE IN YPSILANTI

[ANNUALLY] 5 PUBLIC EMPLOYEES
MOVE INTO YPSILANTI

12.69%

OF 2020 TARGET [240 mtCO₂e]



Residents frequently express a preference for municipal and other public employees to live in the city where they work. While requiring residency as a condition of employment is not legal, public employers can provide incentives to promote residency. The Eastern Leaders Group (ELG) and EMU successfully launched a new incentive in 2012 for new staff and faculty to live within Ypsilanti: a forgivable loan towards a down payment or related housing expense. Similar programs in Detroit have proven very successful. All such programs have the twin goals of supporting the local housing market and encouraging commuters to invest—emotionally and monetarily—in the community. However, these programs also support reduced GHG emissions by offering the participants a better ability to use non-car travel options, both to commute to work and to meet other needs.

► EXAMPLES:

ELG and EMU expect the LiveYpsi program to have its first home closing in the summer of 2012. The program could be easily extended to other employers after the pilot phase at EMU.

► IMPLEMENTATION COSTS:

Detroit's Live Midtown and Live Downtown programs offer \$20,000 incentives; LiveYpsi provides a \$7,500 incentive, equivalent to a 5-10% down payment on most Ypsilanti home purchases.

► ADDITIONAL BENEFITS:

In addition to the intangible benefits usually cited for public sector employee residency—greater investment in the community—such a program can also have indirect fiscal benefits for the community. By incentivizing new buyers, this strategy can contribute to faster recovery of home prices. More importantly, if targeted at foreclosed homes, it can help mitigate the estimated 1-2% loss of property value caused to every property within a block radius of a foreclosure.³⁹

► EXPECTED GHG SAVINGS:

Each employee who moves from an average 25 mile one-way commute to an in-town commute will prevent approximately 6 mtCO₂e annually.

► PARTNERS & STAKEHOLDERS:

Expanding ELG's program would be the easiest way to implement this strategy. Washtenaw County and YPSD may be approached to offer residency benefits to their employees.

► CONSIDERATIONS:

Offering direct cash incentives to public employees is politically difficult, and substantial work needs to be done to define the fiscal benefits of the strategy for the city and set the right level of incentive. To reduce the cost of implementing such a program, it would be most easily introduced at the same time that employee concessions are being sought, as part of the overall package. Since the City and other local public employers make very few new hires, the incentive might be offered to all employees, rather than only to new hires.

➔ RECOMMENDED APPROACH:

Consider a public employee residency incentive, in the form of a forgivable loan for down payment assistance for purchase of foreclosed homes. Defining the fiscal benefits of the program will be the key to successful implementation. ELG and EMU should continue to pursue additional funding sources for the LiveYpsi program, such as MSHDA, the Community Foundation and other foundations, and work to expand the program to municipal and other employees."

39 | Immergluck, Dan, and Geoff Smith. "There Goes the Neighborhood: The Effect of Single-Family Mortgage Foreclosures on Property Values." June (2005). Web. 21 May 2012. <http://ftp.nw.org/network/neighborworksprogs/foreclosureresolutions/reports/documents/TGTN_Report.pdf>.



PROMOTE CITY SUCCESSIONS TO LEAD BY EXAMPLE

The City of Ypsilanti has already taken on a number of energy-saving, “green” initiatives. By better publicizing and educating citizens around these efforts, they can impact the actions of their constituents. The government should create a coordinated strategy to educate residents about the steps that staff, officials and institutions take to create a more sustainable city. Leading by example requires not only better communication, but a visible presence in the community.

► EXAMPLES:

The City of Southgate created a video case study of the solar panels installed on its city buildings, featuring the mayor. This video ran on the local access channel, and the City is talking about using it, in conjunction with mayoral appearances, as an education and outreach tool.⁴⁰

► IMPLEMENTATION COSTS:

The City of Ypsilanti may need to devote staff time to personal outreach, written communications and social media updates. Costs other than time, though, can be minimal to none.

► EXPECTED GHG SAVINGS:

This strategy is geared towards the publication of GHG emissions reductions rather than achieving new reductions, though it may inspire citizen action.

► ADDITIONAL BENEFITS:

The City can lead a community-wide resurgence in the sustainability movement and contribute to education efforts.

► PARTNERS & STAKEHOLDERS:

City leaders, including appointed and elected officials and staff, must commit to in-person participation and more intentional, coordinated communications. They will need to work with local news agencies, both print and online, and community groups to reach citizens. Solar Ypsi is already reporting the city’s solar power generation—this can compose part of the city’s outreach and provides a model for further efforts.

► CONSIDERATIONS:

Communications and outreach around sustainability should be part of a greater institutional culture of openness in government operations. The city currently appears to lack an adopted or understood overall communications and outreach plan. Low cost methods of public outreach include social media, public events such as the Heritage Festival or the Mayor’s State of the City, or the incorporation of energy and sustainability into existing reporting such as the state-required dashboard.

➔ RECOMMENDED APPROACH:

Increase communications and citizen outreach around sustainability, publicizing efforts and providing information on how citizens can get involved or replicate green initiatives. These efforts should be part of a broader communications strategy by the city, rather than a standalone effort, in order to present energy and sustainability concerns alongside economic development, budgetary, and other information. This overall strategy should consider the role of the city’s recently updated webpage and Facebook presence alongside more “traditional” media and outreach work.

⁴⁰ | Watch the full video at this link: http://www.youtube.com/watch?v=7pAVV4LJYwo&list=PLE5A3534EF7B9E14C&index=7&feature=plpp_video

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INCLUDE STEWARDSHIP, ENGAGEMENT & SUSTAINABILITY EDUCATION IN LOCAL SCHOOLS

► EXAMPLES:

The EPA encourages K-12 educators to join the “SustainK12 listserve” which allows for collaboration on strategies that implement sustainable practices and lessons in their teaching plans. The EPA also links to various resources on environmental education curricula.⁴¹ The Sustainable School Project located in Vermont provides examples of lesson plans suitable for grades 3-8 on a number of subjects. They also provide the Sustainable Schools Project Starter Kit, which outlines three modules for teachers and students to complete in about two days.⁴² The Ecology Center in Ann Arbor provides workshops that are aligned with Michigan Grade Level Content Expectations. Their classroom programs and field trip options are fun for students and teach valuable lessons about the environment.⁴³

► IMPLEMENTATION COSTS:

Implementation costs are relatively low and should only require training educators on relevant subjects as well as the purchase of any materials that might be needed for class projects. With the number of project examples available, the schools can design a curriculum that fits their budgets while still making an impact on the student body.

► EXPECTED GHG SAVINGS:

Including sustainability education in school curriculum will not, in itself, result in GHG emissions reductions, but will support the implementation of other strategies the community undertakes. Educating schoolchildren sets the stage for a more sustainable future.

The residents of Ypsilanti have expressed a desire to teach students in grades K-12 about how each person can make sustainable choices each day to impact the future. The EPA agrees that the future of environmental education lies in teaching the concepts of sustainability and stewardship through youth programs and provides information on how schools can get more involved.

► ADDITIONAL BENEFITS:

Students learn about sustainable life choices early and have the chance to make a larger impact throughout their lifetimes. It is also likely that students will bring home what they learn, encouraging parents to change their own behaviors.

► PARTNERS & STAKEHOLDERS:

Ypsilanti Public Schools and any local charter or private schools should be the primary parties in this effort. Ypsilanti is lucky to have local sustainability resources such as Creative Change Educational Solutions, Growing Hope and Transition Ypsilanti, that the city can reach out to for support in encouraging the local schools to include sustainability efforts to the curriculum. The city would benefit from engaging these experts and local teachers from K-12 schools, especially Central Gardens Middle School, Washtenaw Community College and Eastern Michigan University when meeting with the school board to discuss implementation methods.

► CONSIDERATIONS:

The city may not have much control over the Ypsilanti public school system curriculum. The success of this strategy relies on a positive relationship between the city, the school board and other local educational institutions.

► RECOMMENDED APPROACH:

Utilize the community’s experts to gather support for adding sustainability education to the curriculum in local K-12 schools. There are many resources and ready-made lesson plans that can be added to existing school practices. The Eastern Michigan University community and local schoolteachers and parents would serve as valuable stakeholders to lead this strategy.

⁴¹ | “Teaching Stewardship and Sustainability.” US EPA, n.d. Web. 22 May 2012. <<http://www.epa.gov/region8/ee/teachingsustainability.html>>.

⁴² | Sustainable Schools Project. Shelburne Farms, n.d. Web. 22 May 2012. <<http://www.sustainableschoolsproject.org/>>.

⁴³ | Ecology Center. n.d. Web. 22 May 2012. <<http://www.ecocenter.org/>>.

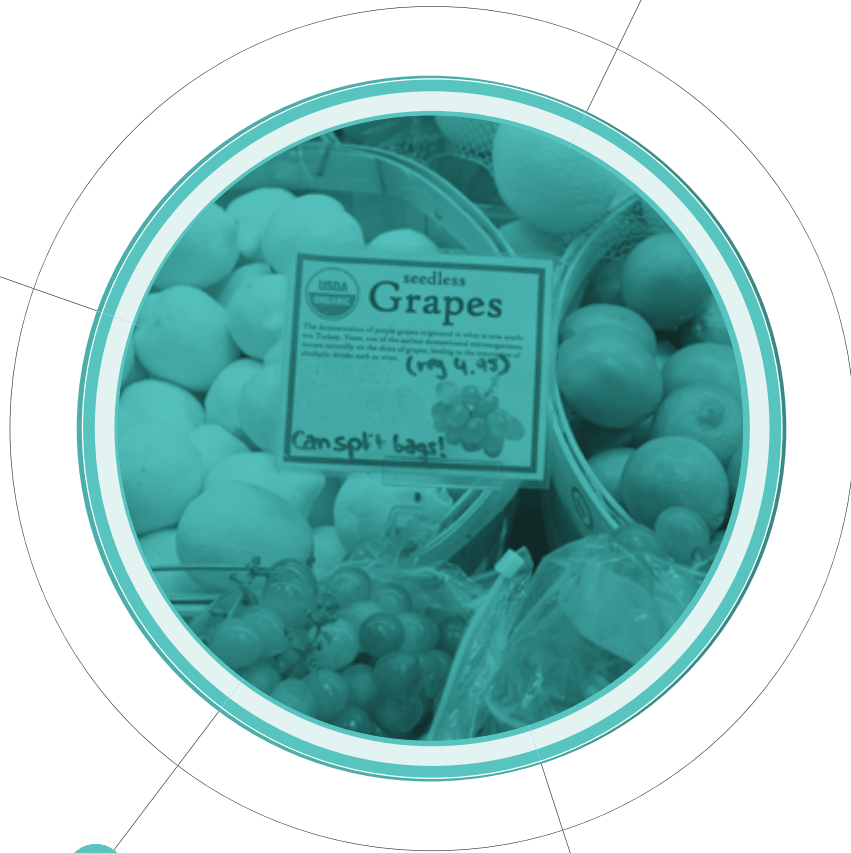


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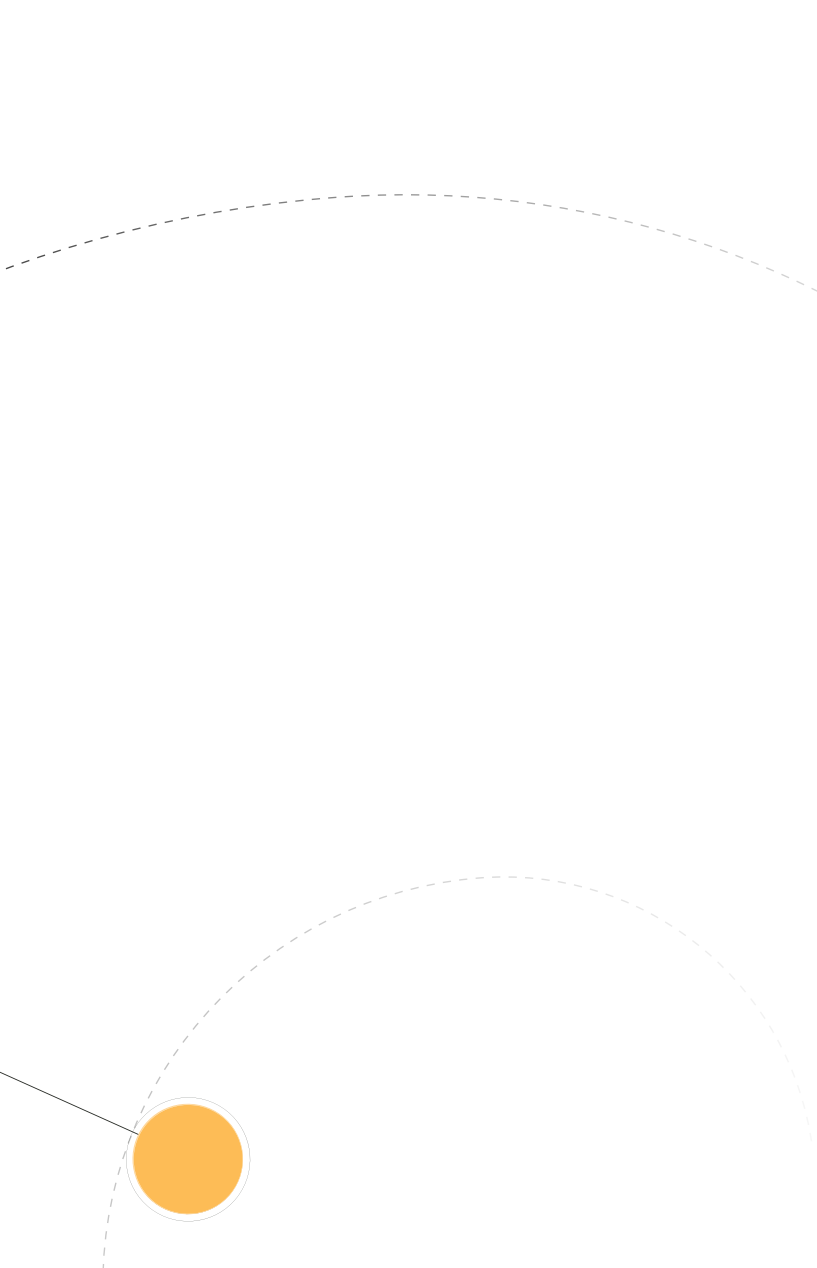
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CLIMATE ACTION PLANNING IMPLEMENTATION



The strategies detailed in this plan are considered to be immediate or short-term strategies: actions that can be implemented with existing tools and partners over the next 3-5 years, and which will yield net cost savings or other benefits under current conditions. Strategies are summarized in this section based on the City's role in implementing them. Some require direct capital investments by the city; others are changes to policies or ordinances; still others must be taken up by community members and will involve little direct involvement by City Hall. The strategies included here are by no means the only ones possible, and other opportunities may arise that should also be pursued and celebrated.

Together, the recommended strategies should yield about 37,000 mtCO₂e of GHG reductions in 2020, or about 2 mtCO₂e per capita. This plan generally errs on the side of conservative estimates of emissions savings and provides a limited number of recommended strategies, acknowledging the constrained role of city government in achieving community-wide change. In order to meet emissions-reduction goals, residents, community groups and other business and nongovernmental stakeholders must take on responsibility for their own actions and for those of their neighbors. The City of Ypsilanti may convene stakeholders, model action and inspire change, but will not be the lead actor in many of the most impactful emissions-reduction strategies.

EVALUATING AND COMMUNICATING PROGRESS

Because the focus of the plan is on near-term opportunities, some evaluation can take place immediately or on an annual basis. The plan as a whole should be evaluated after about five years to select a new set of action steps. Opportunities for evaluating and reporting progress include:

► CONTINUOUSLY:

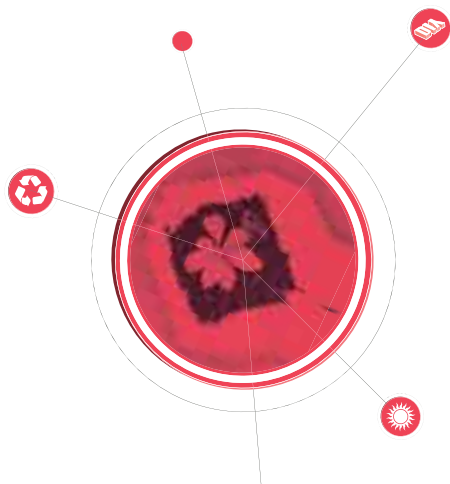
The city and its implementation partners have numerous channels available for communicating efforts as they happen. Social media such as the city's Facebook page and regular updates on a dedicated subpage of the City's homepage are especially suited for communicating implementation steps at launch, completion, and as they produce positive results. This almost-instant communication is especially important for action steps that require broad public awareness or participation in order to have significant impacts.

► ANNUALLY:

Existing communication tools can be used to report on progress from year-to-year, as well as to remind community members of ongoing efforts. The Mayor's State of the City address provides an opportunity to report city successes and recognize the efforts of community members. Information on programs or initiatives available to individual property owners could be provided within annual tax bills or water bills. Direct energy and cost savings by the city should be compiled from utility bills annually and reported on the local dashboard required by the State's Economic Vitality Incentive Program.

► LONG-TERM:

This entire plan should be evaluated in about 5 years to quantify community-wide trends in energy use and greenhouse gas emissions, and to comprehensively review successes and setbacks. By this point, most of the relatively easy, low-cost improvements to municipal operations and facilities management should be completed, and the city's actions are likely to be more indirect, with a greater focus on items like land use. As a result, maintaining a dedicated climate plan may be less important than incorporating any next steps into the city's master plan. Long-term evaluation of the climate plan should be coordinated with a 5-year update of that document.



FUNDING CHANGE: TOOLS AND OPPORTUNITIES

While many of the strategies recommended lead to significant cost savings for residents, businesses and City Hall, upfront implementation costs are still an issue in the city's current fiscal condition. Several options are possible to fund improvements.

► FEDERAL TAX INCENTIVES:

Private sector investments in energy efficiency measures may qualify for various federal tax incentive programs, reducing the effective cost. For example, the Business Energy Investment Tax Credit can be used to offset up to 30% of the capital costs of solar panels, wind turbines and similar measures installed by private businesses, and is expected to be available through 2016. The Historic Rehabilitation Tax Incentive can be used to offset up to 20% of the cost of appropriate renovation costs on buildings within the Ypsilanti Historic District. This incentive may cover lighting upgrades, weatherization, window and air-sealing work, and similar measures for commercial properties. DTE offers incentives for both commercial and residential properties, including rebates for energy efficiency measures and purchase of renewable energy credits (RECs) for solar photovoltaic installations. DTE funding may be used in tandem with tax incentives. All such incentive programs require documentation, and property owners are encouraged to research them carefully before undertaking projects.

► VOLUNTARY CONTRIBUTIONS:

Some projects may find community support through voluntary contributions. Ypsilanti has already had success with this approach around the Solar City Hall project, raising \$1,000 in grant matching funds through donations. A donation program is most appropriate for projects that have only indirect financial benefits but that are highly visible or provide benefits in the form of quality of life or pride of place. Efforts like planting street trees, raising matching funds for major bike/walk projects, alternative energy pilot projects or developing a community sustainability library are most likely to fall into this category. For a voluntary contribution program to work, it should have a clearly stated purpose for the funds. The city might consider asking a trusted third-party organization, such as the community foundation, to serve as fiduciary. Contributions could include structures such as monthly or annual "subscriptions" or a carbon offset based on the donor's driving patterns or utility bills.

► STATE AND FEDERAL GRANT FUNDING:

The largest energy-specific grant opportunities in recent years may or may not recur in the future: the Federal Energy Efficiency and Conservation Block Grants (EECBG), which were part of the federal stimulus program, and municipal grant programs by the Michigan Public Service Commission are not funded in 2012. Other recurring grant programs may be applicable to implementation of this plan, however. Michigan DEQ's Community Pollution Prevention grants, available annually, can often be used for capital projects related to air quality, which may include energy and GHG emissions reductions. Transportation funding such as Congestion Mitigation and Air Quality (CMAQ), Urban Safety, and Transportation Enhancement (TE) may support a variety of transit or non-motorized transportation efforts, and the city successfully leveraged these funds in the past.

► DDA TIF FUNDING:

In the past few years, the Ypsilanti DDA successfully used direct matching grants to help property owners make facade improvements and other capital investments. This program could be explicitly extended to cover energy efficiency or alternative energy projects; these projects are within the DDA's mission by helping reduce business operating costs. The DDA could also undertake public infrastructure improvements with its TIF funding, including streetlight upgrades, street tree planting, or shared geothermal well installation in coordination with future parking lot resurfacing work.

► PROPERTY ASSESSED CLEAN ENERGY (PACE):

A PACE program provides private property owners with affordable financing to make energy related improvements, with payments made over time in the form of an assessment on the property. Because the loan is attached to the property, it is considered lower risk than a loan to an individual, keeping defaults and financing costs low. Additionally, the cost savings from the energy efficiency improvements often cover the costs of the payments over time. A PACE program requires the backing of a municipal entity through issuance of bonds: the City of Ypsilanti is unlikely to undertake this, due to the community's small size and existing debt load, but the city can take advantage of a regionally pooled PACE program currently being created by the Regional Energy Office.

► REVOLVING LOAN FUND:

The City of Ypsilanti has set aside \$250,000 from past years' budget surpluses to be used as an internal revolving loan fund to make energy efficiency improvements to municipal buildings. This unusual and forward-thinking action provides the city with the resources to invest in its own energy and cost savings. The city should undertake full energy audits of its structures to identify the highest returns on investment of these modest funds, and leverage DTE rebates or bulk purchasing opportunities with EMU or other communities. In any case, though, the city should work to invest as quickly as possible: it is only once the fund is used that the savings from energy improvements can replenish the account. Similarly, returns to the fund should be spent as soon as the accumulated savings are enough to make further investments, in order to maximize financial benefits.



EFFORTS UNDERWAY

These are activities that are currently underway by the city or other actors in the community. These efforts may not need any active intervention at this point, except to be monitored and celebrated as significant achievements.

➔ CITY ACTIONS: CONTINUE PROGRESS, CELEBRATE SUCCESS!

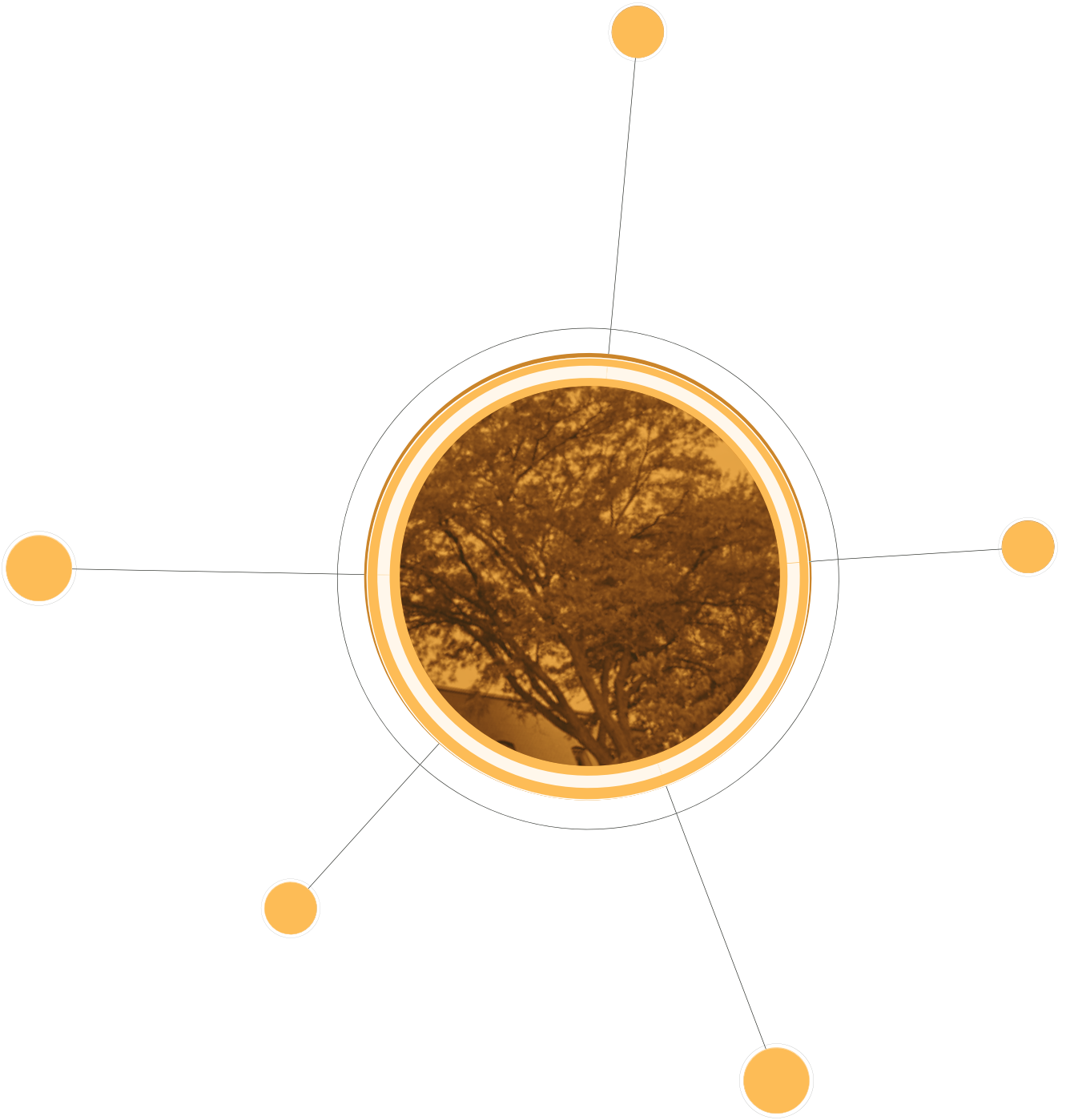
STRATEGY	SHARE OF TARGET	COST AND FUNDING SOURCES	LEAD ACTOR	PARTNERS
Continue development of bicycle and pedestrian network.	600 mtCO ₂ e	\$5,000-\$20,000 per mile on-road \$100,000 per mile off-road	Planning & Development Department, Non-Motorized Advisory Committee	Washtenaw Area Transportation Study (WATS), Washtenaw County Parks & Recreation Commission (WCPARC), EMU, adjacent townships, Washtenaw County Road Commission
Champion development of the County-wide Transit Master Plan	303 mtCO ₂ e	Funding via CMAQ (federal), WCPARC, MDOT Urban Safety funds To be determined by 196 board for regional funding	City Council, via 196 board representative	Ann Arbor Transit Authority (AATA), Washtenaw County, adjacent Townships
Prioritize infill development opportunities in Master Plan update.	Depends on specific measures adopted	Funding in place via Washtenaw County	Planning & Development Department, Planning Commission	Business and neighborhood associations, DDA, Ann Arbor SPARK, Washtenaw County, EMU
Increase communications and outreach around sustainability, publicizing efforts and providing information on how citizens can get involved.	Supports implementation of other efforts.	Costs: Staff time	City Manager and Department of Public Services	Elected officials, city staff, COPAC, local media

DIRECT INVESTMENTS

Some strategies require direct capital investment by the city or a close partner to upgrade buildings, infrastructure, or other assets so that they function more efficiently. These actions typically also result in direct financial savings for the city government in the form of reduced energy bills. As noted above, the city has previously established an internal revolving loan fund (RLF) to invest in energy efficiency improvements and recapture cost savings. Because these strategies provide extremely good returns on investment, the city should pursue them aggressively, in order to enjoy the cost savings as soon as possible: it would be reasonable to begin implementation of all of these strategies within the first year after adopting the plan.

➔ **CITY ACTIONS: PRIORITIZE PROJECTS, IDENTIFY FUNDING OPPORTUNITIES, PERFORM WORK, TRACK RESULTS.**

STRATEGY	POTENTIAL GREENHOUSE GAS EMISSIONS REDUCED	COST AND FUNDING SOURCES	LEAD ACTOR	PARTNERS
Upgrade lighting fixtures in city buildings as soon as possible.	150 mtCO ₂ e	\$6,000 Expected ROI less than 1 year Funding via internal RLF	Department of Public Services	Southeast Michigan Regional Energy Office
Install occupancy sensors on lights throughout public buildings.	180 mtCO ₂ e	\$7,500 Expected ROI less than 1 year Funding via internal RLF	Department of Public Services	---
Upgrade street lights as quickly as possible, focusing on least efficient fixtures first.	0.25 mtCO ₂ e per fixture 510 mtCO ₂ e for all lights	\$400-600 per fixture Up to \$1.1 million for all Expected ROI 4-7 years. Funding via internal RLF and additional grants	Department of Public Services	Downtown Development Authority, Eastern Michigan University, Southeast Michigan Regional Energy Office
Investigate sensor and control improvements at YCUA wastewater treatment plant.	182 mtCO ₂ e	\$250,000 Expected ROI 0.5-2 years	YCUA	Adjacent Townships, UIS Corp., Regional Energy Office



PROGRAMMATIC EFFORTS

These strategies generally rely on some ongoing effort by the city or a close partner to support or encourage behavioral change in the community at large. These actions typically do not result in a direct energy cost savings to the city government, but may free up resources for other efforts or result in increased tax revenues by making the community more attractive and supporting property values.

↪ CITY ACTIONS: IDENTIFY NECESSARY PARTNERS, REFINE PROGRAM GOALS AND ACTIVITIES, LAUNCH.

STRATEGY	SHARE OF TARGET	COST AND FUNDING SOURCES	LEAD ACTOR	PARTNERS
Educate on the availability of low and no cost business energy audit services through multiple partners.	4,000 mtCO ₂ e	Free to city	Southeast Michigan Regional Energy Office	DTE Energy, DDA, Chamber of Commerce, Downtown Association of Ypsilanti (DAY)
Monitor financing opportunities for solar installation and publicize via Solar Ypsi.	176 mtCO ₂ e	City: staff time	Solar Ypsi	Regional Energy Office, Clean Energy Coalition
Promote available energy efficiency incentive programs to reach maximum adoption in the city.	720 mtCO ₂ e	Installation: \$10,000 per kW capacity Funding via available grants and credits Free to city	Planning & Development	Regional Energy Office, Washtenaw County, DTE
Increase recycling rates via promotion and competition.	1750.94 mtCO ₂ e (2.87 mtCO ₂ e per ton of recycling diversion)	City: Staff time	Department of Public Services	Eastern Michigan University, Ann Arbor Materials Recovery Facility, neighborhood associations

STRATEGY	SHARE OF TARGET	COST AND FUNDING SOURCES	LEAD ACTOR	PARTNERS
Provide attractive sidewalk recycling bins for downtown, campus.	(supports goal of increased recycling rates)	\$50-75 per bin Funding from local sponsorships	DDA	DDA, Eastern Michigan University, downtown business owners
Engage community partners in an effort to understand residents' travel needs and develop a marketing plan to meet those needs.	4,400 mtCO ₂ e	\$30 per household targeted	Non-Motorized Advisory Committee	Ann Arbor Transportation Authority, EMU
Partner with Eastern Michigan University to create a bike-sharing program and car-sharing network.	Bike sharing: 82.4 mtCO ₂ e Car sharing: 910 mtCO ₂ e	Bike sharing: \$492,000 initially \$229,000 annually Annual operating costs recouped via fees for subscription Car sharing: No cost to city	EMU	DDA, Hertz, Non-Motorized Advisory Committee
Implement a series of energy saving workshops in different venues.	640 mtCO ₂ e	---	EMU, Clean Energy Coalition	WARM Training Center, SHPO, BBFM
Develop home and business water efficiency financing program.	0.22 mtCO ₂ e per household 181.5 mtCO ₂ e by 2020	\$500 per household	YCUA	Regional Energy Office, City of Ann Arbor

POLICIES DRIVING CHANGE

One of the most effective ways for government to effect broad change in the community is through policy efforts that remove barriers to or provide incentives for certain activities. Land use policy and zoning, building codes, and use of tax abatements and financial incentives all provide opportunities to create a more attractive environment for low-carbon investments and behaviors.

↪ CITY ACTIONS: REFINE GOALS, CRAFT LEGISLATIVE OR POLICY LANGUAGE, ADOPT, APPLY AND PROMOTE.

STRATEGY	SHARE OF TARGET	COST AND FUNDING SOURCES	LEAD ACTOR	PARTNERS
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.	272 mtCO ₂ e	City costs: staff time only, as part of incentive review process	Planning & Development Department	SPARK, local developers
Develop a utility costs disclosure ordinance for rental housing units.	6,443 mtCO ₂ e	City costs: staff time only, to develop ordinance and monitor as part of existing rental certification enforcement	Building Department	Planning & Development Department, City of Ann Arbor, Ypsilanti Township, local landlords
Identify funding sources to implement recommended tree planting program and continue policy support.	358 mtCO ₂ e	\$110 per tree or \$27,000 annually DTE grants or voluntary contributions appropriate	Planning & Development	Department of Public Services, individual residents and businesses

STRATEGY	SHARE OF TARGET	COST AND FUNDING SOURCES	LEAD ACTOR	PARTNERS
Partner with DDA and AATA to provide a discounted transit pass via the City Treasurer as an alternative to downtown parking permits.	740 mtCO ₂ e	No additional cost or \$200 per employee	DDA	Ann Arbor Transportation Authority, Washtenaw County, Key Bank, EMU
Expand "Live Ypsi" public employee residency incentives.	240 mtCO ₂ e	\$5,000-\$10,000 Consider general fund seed funding as well as MSHDA and foundation sources	Eastern Leaders Group	EMU, Planning & Development, Washtenaw County, Ypsilanti Public Schools



COMMUNITY INITIATIVES

Ypsilanti has a strong tradition of grassroots citizen efforts, and several strategies arose in the community engagement process that would not necessarily need the involvement of the city government, but could be undertaken by community members. This category of strategies may require city support in the form of endorsement of grant applications, ordinance or policy changes, or similar actions.

The city will locate future citizen involvement in the plan in a few central locations. The City of Ypsilanti will communicate regularly with residents about progress towards plan implementation through events, a dedicated page on the City's website, and existing social and traditional media channels. The Michigan Suburbs Alliance webpage will host a model library of strategies to reduce greenhouse gas emissions and related resources for citizens to learn more about the issue. Eastern Michigan University students and professors will work with City and Suburbs Alliance staff to create an Ypsilanti Sustainability Library--a central location to house resources, host community dialogue and provide a gathering place for interested citizens. Finally, the city and EMU should consider a joint advisory committee, with campus staff, faculty and students working alongside city staff, residents and business owners. As an advisory body, this group would not have any formal policy-making powers but would facilitate collaboration and coordination by the various stakeholders. Ideally, this body could include Township, school district and hospital partners as well.

↪ CITY ACTIONS: SUPPORT, ENDORSE, REMOVE BARRIERS.

STRATEGY	SHARE OF TARGET	COST AND FUNDING SOURCES	LEAD ACTOR	PARTNERS
Work with community stakeholders to initiate an energy competition.	1998 mtCO2e	\$2 to \$5 per person contacted	Neighborhood associations, DTE Energy	EMU, Ypsilanti District Library, residents
Create an Ypsilanti sustainability library.	Supports implementation of other efforts	Costs may include staff and volunteer time as well as the physical or online space for the library	Members of EMU community	Local residents, Ypsilanti Public School District (YPSD), Ypsilanti District Library
Utilize the community's experts to gather support for adding sustainability education to the curriculum in local K-12 schools.	Supports implementation of other efforts	Costs may include the training of educators and the purchase of supplies for lesson plans	YPSD	EMU, Central Gardens Middle School, Washtenaw Community College, Creative Change Educational Solutions, Growing Hope, Transition Ypsilanti

STRATEGY	SHARE OF TARGET	COST AND FUNDING SOURCES	LEAD ACTOR	PARTNERS
Implement a series of energy saving workshops in different venues.	640 mtCO2e	---	EMU, Clean Energy Coalition	WARM Training Center, SHPO, BBFM
Implement a pilot program for a municipal kitchen compost system with high food-waste generators.	450 mtCO2e	\$50,000 for biodigester unit	Growing Hope, Washtenaw County Kitchen Incubator	DDA, Downtown Association of Ypsilanti, Washtenaw County Kitchen Incubator, YPSD





michigan suburbs alliance



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22757 Woodward Avenue, Suite 250 Ferndale, MI 48220 | 34 N. Washington Street, Suite A Ypsilanti, MI 48197
www.MichiganSuburbsAlliance.org