

Executive Project Summary

Project Title: Connecting Discards, Reuse, and STEM

Project Area: East Michigan Council of Governments Region: Arenac, Bay, Clare, Gladwin, Gratiot, Huron, Iosco, Isabella, Midland, Ogemaw, Roscommon, Saginaw, Sanilac, Tuscola Counties, and the Saginaw Chippewa Indian Tribe.

Author(s): Iris Waste Diversion Specialists Inc.

Overview:

Conduct research to determine opportunities for diversion of discarded materials used in the built environment and in the manufacturing process in the region including:

- a. Current disposal and diversion data and practices of generators of construction and demolition (C&D) materials
- b. Current disposal and diversion data and practices during historical building renovation and demolition
- c. Existing end-markets for C&D materials and architectural building salvage
- d. Identification of potential sources of manufacturing scrap suitable for adaptive reuse
- e. Entrepreneurial opportunities
- f. STEM education and maker space opportunities

Research will consist of surveys and interviews with generators in the region regarding their interest in pursuing initiative and identification of potential stakeholders/partners

Identify and interview current C&D recovery/architectural salvage operations in Michigan to learn best practices

Problem Statement:

According to the State of Michigan 2021 Landfill Report 513,081 cubic yards of construction and demolition waste was disposed from the EMCOG region. Disposal costs contractors thousands of dollars, without consideration to the landfill volume. These wasted materials represent a tragic loss of resources, value, and economic and community development opportunity.

There is a need for more STEM-related and maker-related materials for in-school and out-of-school time educators and programs serving youth in school-home-community environments.

There is not a formal network connecting generators and users of discards in the region.

Proposed Solution:

Through research and surveys, our findings concluded that:

- Users need consistent quality and quantity of materials for use in the classroom, vocational technical education, arts, and public use.
- Many users look for discards at the Upcyclers Shoppe of Midland Recyclers.
- Generators have limited space for storage, have no easy method for relaying that they have discards for reuse. They do not look at their discards from a reuse perspective and typically on divert standard recyclables.
- Both users and generators indicated their main interest in this project was waste diversion.

Through this project, what implications for further research or community engagement have you identified?

Our proposed solution is to conduct further research with manufacturers and generators of materials, specifically targeting smaller businesses. Facilitate collaboration with existing organizations such as Midland Recyclers, Bay City Recycles Center, etc. to expand their operations to receive and distribute discards. Operational improvements and expansion of the Isabella County recycling facility in the near future also presents an opportunity for collaboration. Explore the establishment of a formal network in the region for connecting generators of discards with users.

What partnerships were built or strengthened because of the adoption and completion of this project?

Throughout this project, we have identified some other companies that have a need for materials and could help us develop a reuse network.

Final Thoughts/feedback for CERI team:

Survey participation from generators of discards was low throughout the project and the short time frame impacted the ability to reach out and gain a significant amount of data from them. There was significant interest among those who took part in the project, and they indicated that further pursuit of this project is warranted.

Additional Project Materials:

Initial Stakeholder Meeting Recording (held on 7/24/2022):

https://us02web.zoom.us/rec/share/TWIheoDRC-JaHa2ojcrUw_NSe8AuzWgOaHFSy0042B0f5LI9GpQLKROr6qNagRk.wLqOoHTgGGzGM-wn

Passcode: 5sC%6RUh

Presentation of Findings Recording (held on 11/2/2022):

<https://us02web.zoom.us/rec/share/e1JAI0Z7KKTD9QXi2rVGIVirF5RO9RPncr0Q6iQYRIQa7oSQqegGtGAaEaUXTe2.7dvG9KYXpadaSH0R?startTime=1667397994000>

Passcode: .b2UrJUy

Survey Instruments on Following Pages

Connecting Discards to Reuse Grant Survey

This survey is being conducted as part of a grant study* to gather information and data that will support future initiatives to capture construction, architectural, and manufacturing discards for reuse by artisans, STEM programs, workforce development programs, entrepreneurs, and community members in the Great Lakes Bay Region. For the purposes of this project, the word *discards* is being used in place of the word *waste* to describe materials that could be collected or salvaged and made use of in another form.

There are two surveys to choose from depending on your relationship with discards. **This is the *Generator of Discards* survey for those who generate or have reusable materials.**

If you are not a generator of material but use reusable materials, please follow the link to the [Users of Discards survey](#).

You may complete both surveys if you represent both groups.

If you do not fit into either group, you can support this project by sharing the survey with people in your network

**East Michigan Council of Governments has received funding on behalf of stakeholders and partners in the region through the MSU Center for Community and Economic Development Comprehensive Economic Recovery Initiative (CERI) supplemental award granted by the U.S. Department of Commerce, Economic Development Administration (EDA). Project completion date is November 30, 2022.*

Questions for Generators of Discards

*** Please provide the geographic area you affiliate with. Example, city, county, region**

0/250

*** Check the materials that you are currently diverting from the landfill to reuse or recycling.**

- ☐ Construction materials
- ☐ Salvaged architectural materials
- ☐ Pallets
- ☐ Scrap metals
- ☐ Plastic strapping
- ☐ Manufacturing process scrap
- ☐ Fabric/textiles
- ☐ Other

*** What companies accept the materials checked above for reuse or recycling?**

0/250

Provide any data that could help quantify the amount of material you divert to reuse or recycling. For example, pounds/tons, cubic yards, bales, barrels, quantity, etc.

0/250

What challenges have you experienced when looking to find potential users of this material?

0/250

*** If you are not currently diverting materials, please check those that you would like to divert from the landfill to reuse or recycling.**

- ☐ Salvaged architectural materials
- ☐ Pallets
- ☐ Pallets
- ☐ Plastic strapping
- ☐ Manufacturing process scrap
- ☐ Fabric/textiles
- ☐ Other

What resources do you use or know of that could help develop a network in support of this project?

0/250

What opportunities are you aware of that could help develop a reuse network?

0/250

List the name of other companies/organizations/individuals who generate reusable discards and might be interested in diverting them to reuse.

0/250

*** What is your main area of interest related to this project?**

- ☐ Saving money
- ☐ Waste diversion
- ☐ Sustainability goals
- ☐ Community development
- ☐ Workforce development
- ☐ Other

An in-person meeting is being planned on November 2, 2022, to present and discuss the findings of this project. To receive information about this meeting, please provide your contact information.

Name:

0/50

Company/organization:

0/50

Email:

0/50

Submit Survey

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There are two surveys to choose from. **This is the *User of Discards* survey for those who would use materials collected for reuse.**

If you are not a user of discards, please follow the link to the [Generator of Discards survey](#).

You may complete both surveys if you represent both groups.

If you do not fit into either group, you can support this project by sharing the email with the survey links with people in your network.

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Questions for Users of Discards

*** Please provide the geographic area you affiliate with. Example, city, county, region**

0/250

*** What specific kinds of materials do you have a need for?**

0/250

*** Where do you currently get reusable discarded materials?**

- ☐ Local resale/reuse/thrift shop
- ☐ Salvage yard
- ☐ Midland Recyclers
- ☐ Online
- ☐ Other

*** Please provide the names of any sources of reusable discards so that we may include them in our resource list.**

0/250

*** What are you using these materials for?**

- ☐ Artwork
- ☐ Craft projects
- ☐ Science, Technology, Engineering, Math (STEM) education
- ☐ Construction/Architecture
- ☐ Other

*** How often do you need these materials?**

- ☐ Monthly
- ☐ Every 3 – 6 months
- ☐ Annually
- ☐ Other

Provide any data that could help quantify the amount of material you would use. For example, pounds of material, number of construction/renovation projects, number of students/classrooms using the materials.

0/500

What challenges have you experienced when looking for reusable materials?

0/500

What opportunities are you aware of that could help develop a reuse network?

0/500

*** What is your main area of interest related to this project?**

- ☐ Saving money
- ☐ Waste diversion
- ☐ Community development
- ☐ Workforce development
- ☐ Other

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Connecting Discards, Reuse, and STEM

Project Introduction

August 24, 2022

Project Partners

Jane Fitzpatrick, East Michigan Council of Governments

Mike Kelly, The Conservation Fund/Saginaw Bay
Watershed Initiative Network

Rich Van Tol, Bay-Arenac Intermediate School District

Joe Trommater, Duncan Gervin, Clare-Gladwin Regional
Educational Service Agency

Sarah Archer, Iris Waste Diversion Specialists

Project Concept – Birth Story

- Over 500,000 cubic yards of construction and demolition waste landfilled in 2020
 - Saginaw, Bay, Midland, Clare, Arenac Counties
- Unknowns
 - What other materials in our region?
 - How much?
 - Where are they coming from?
- Interest in use of scrap materials in education and arts
- Disconnected reuse activities, organizations, and businesses
- Loss of historical architecture in communities rich with historical buildings



Project Concept – Ultimate Goal

- To facilitate the capture of wasted resources and put them into beneficial use throughout the region.
- To invigorate the reuse economy at the local level.

To get started we need
more information

Project Funding

- Backstory

- 2021 – UNSUCCESSFUL

- Grant application to State of Michigan Dept. of Environment Great Lakes & Energy (EGLE)

- 2021 – SUCCESSFUL

- East Michigan Council of Governments (EMCOG) grant application to MSU Center for Community & Economic Development
 - \$5,000 award
 - Green light with delayed start – Project commences August 2022



The Vision

- To capture currently wasted resources and put them into beneficial use throughout the region.
 - Repurposed/Upcycled products
 - Job training/skill building
 - Creative reuse
 - Makers spaces
 - STEM Learning
 - Artists
 - Artisans
- To stimulate a reuse economy
 - Develop network of outlets for discards
 - Create entrepreneurial opportunities
- To significantly reduce the number of useful materials disposed of in the landfill
- Extend the useful life of discarded materials

Project Purpose

- To determine current disposal practices for
 - Construction materials
 - Architectural building materials
 - Manufacturers scrap
- To gauge interest in developing a reuse network and
- Identify potential stakeholders
- To identify current and potential opportunities for diversion to reuse, repurposing, recycling



Program Examples

Baltimore, Maryland



SecondChanceInc.org



Program Examples

Ann Arbor, Michigan



recycleannarbor.org

The Recovery Yard

- Michigan's only non-profit construction and demolition recycler
- 10,000 square foot processing facility
- 1,685 Tons Recycled (2021)

Program Examples

Midland, Michigan



- Upcyclers Shoppe

Cyndie Roberts, Education & Marketing Coordinator

midlandrecyclers.org



How to Help the Project

- Become a Stakeholder
 - Materials for reuse
 - Wants materials to reuse
 - Entrepreneur
 - Connector
 - Funding resources
- Take Our Survey
 - Email link – September
 - Identify needs
 - Local generators of reusable materials
 - Local reuse activity
- Share survey widely

Next Steps

- Research – Now through October
- Workshop – Early November
 - Summary of research
 - Future of project
- Seek Additional Funding



Project Contacts:

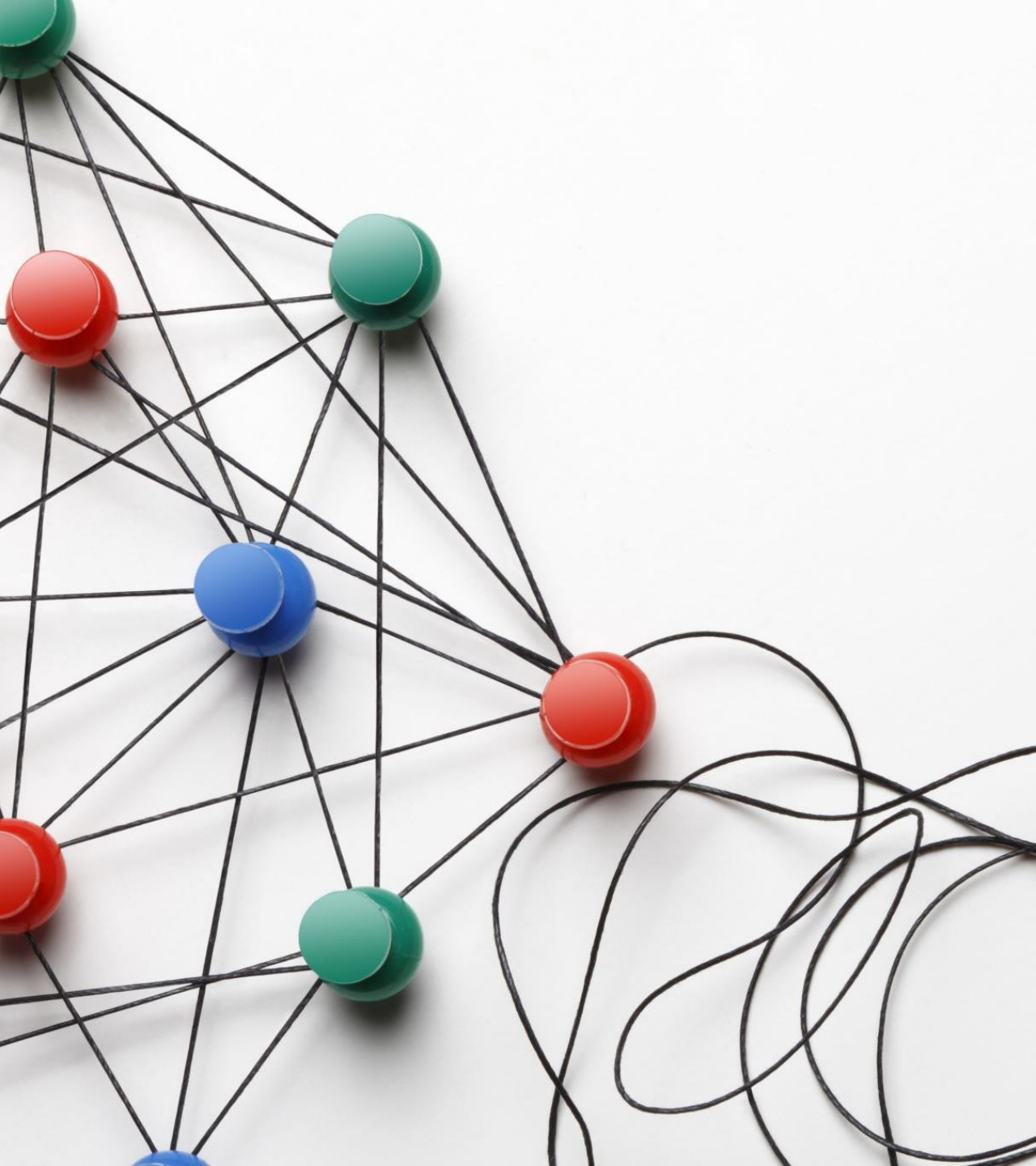
Tamsin Andres

tamsin@iriswds.com

Sarah Archer

sarah@iriswds.com

Iris Waste Diversion Specialists



Connecting Discards, Reuse, and STEM

A REGIONAL APPROACH

Agenda



WELCOME AND
INTRODUCTIONS



FUNDING
JOURNEY



SPEAKER:
REX LAMORE



PROJECT SCOPE OF
WORK



RESEARCH
FINDINGS



CHALLENGES AND
LESSONS LEARNED



NEXT STEPS AND
GROUP DISCUSSION

Introduction & Funding Journey

Jane Fitzpatrick - Programs
Manager

East Michigan
Council of Governments

Goals

- Connect material discards such as construction and demolition (C&D) materials, and manufacturing process scraps with regional STEM programs, artisans, entrepreneurs, workforce development programs and community members
- Identify usable goods from landfill disposal

Research Phase: Actions

- Survey regional stakeholders and C&D generators
- Conduct general research on C&D in the region and the State
- Hold a workshop to report findings and gauge future
- Apply findings in the first project phase to a broader initiative developed through the EDA Economic Adjustment Assistance program

Core Group

Jane Fitzpatrick - East Michigan Council of Governments

Sarah Archer - Iris Waste Diversion Specialists Inc.

Rich VanTol - Bay-Arenac Intermediate School District

Mike Kelly - The Conservation Fund

Joe Trommater - Clare-Gladwin Regional Education Service District

Tamsin Andres- Iris Waste Diversion Specialists Inc.

Project Activities

Core group

- Initial group working throughout the project

Stakeholders group

- Zoom meeting held August 24th, 2022

Survey

- Users of discards
- Generators of discards

Research/Outreach

- Contractors, SCRAP Creative Reuse, Michigan Materials Marketplace, etc.

Survey Development

- What we wanted to Learn

- What materials are needed? What are they used for?
- What options are available for getting these materials?
- What materials are being produced and discarded in landfills?
- Are companies currently diverting discards?
 - If so, what kinds?
 - If not, are they interested?

Survey Terminology Defined

Users - The User of Discards Survey is for those who would use materials suitable for reuse

Generators - The Generator of Discards Survey is for those who generate or have materials suitable for reuse.

Discards - For the purposes of this project, the word discards is being used in place of the word waste to describe materials that could be collected or salvaged and made use of in another form.

Other Research

Assessing Annual Landfill Report for
C&D disposed by EMCOG Counties

Construction companies/contractors in
the region

SCRAP Creative Reuse operations

Michigan Materials Marketplace

2017 Michigan Economic Development
Corporation (MEDC) study

Research Findings

Annual Landfill Report

Total Municipal & Commercial Waste
(MCW) from EMCOG Counties:
1,526,090 cubic yards

Total C&D waste from EMCOG Counties:
513,081 cubic yards

Construction Company Outreach

- Calls made to various building and construction contractors in the Midland, Saginaw, Bay Region to ask them to participate in our survey
- Interest in the project was limited
- No survey participation as an outcome of the calls



SCRAP Creative Reuse

Ann Arbor Location

- Phone interview
- Most donations come from the Public
- About 2% or less are from business
- Referred to Franchise Headquarters - Portland, Oregon



SCRAP Creative Reuse – Portland, Oregon

- More donations from businesses than Ann Arbor
- Majority of donations are still from the general public
- SCRAP is well established in the community
- Businesses donate are already familiar with SCRAP
- Smaller businesses as suppliers rather than large companies
- Businesses include:
 - Architecture firms
 - Leftover products from conventions
 - Framing stores
 - Manufacturers
 - Etc.



Michigan Materials Marketplace

Explored to find what materials were being diverted and sold on the marketplace in the region

- Similar Initiative
- Hard to source where the items were coming from
- Mostly pallets and industrial plastics
- Most items were no longer available
- Somewhat difficult to navigate

Survey Results

RESPONSES FROM “USERS OF DISCARDS” RESPONSES

Geographic Area by County

Midland: 6

Bay: 5

Great Lakes Bay Region - primarily
Saginaw, Bay, and Midland: 4

Ithaca, Isabella, Arenac, Gratiot: 1 each

What
specific
kinds of
materials
do you have
a need for?

Industrial plastics, metal, and glass

Cardboard/Usable Boxes

Natural products: Zebra mussels, grape vines, pinecones

Standard recyclables

Wooden pallets

Construction materials

Bike inner tubes

Household goods

Plant pots of various sizes

Parts for desktop engineering projects

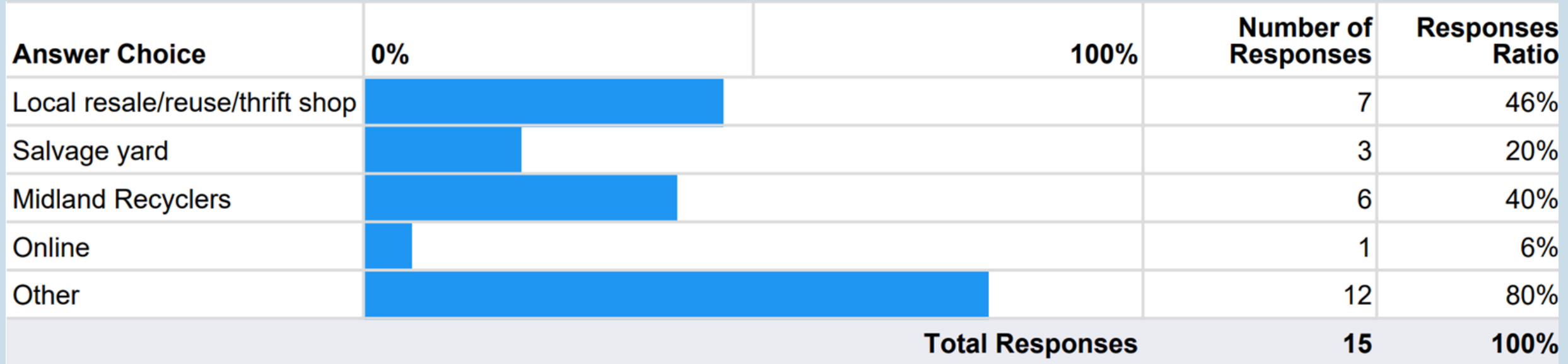
School and craft supplies

Adhesives and fasteners

Fabric

Junk drawer items (pen caps, keys, ribbon spools, etc.)

Where do you currently get reusable discarded materials?



Other:

- Home Discards/donations from friends and family
- Garage sales, thrift stores and curbside pickup
- Manufacturers
- Customers
- Local Businesses-Farmers, restaurants, grocery stores, bakeries, caterers, corporate kitchens and schools

Names of specific sources:

- Craigslist
- Hidden Harvest
- Alley T
- Commission on Aging
- Sparrow Medical Group
- Jack's Bike Shop

What are you using these materials for?

Answer Choice	0%	100%	Number of Responses	Responses Ratio
Artwork	<div><div></div></div>		6	40%
Craft projects	<div><div></div></div>		7	46%
Science, Technology, Engineering, Math (STEM) education	<div><div></div></div>		7	46%
Construction/Architecture	<div><div></div></div>		5	33%
Other	<div><div></div></div>		6	40%
Total Responses			15	100%

Other:

- Refilling household and personal care products that customers purchase at FILL
- Grind them up for calcium for plants (Zebra Muscles)
- Clothing
- Bouncy footrests for my students who need to move
- Feeding those in need
- End using into new manufacturing processes

How often do you need these material?

Answer Choice	0%	100%	Number of Responses	Responses Ratio
Monthly	<div><div></div></div>		6	40%
Every 3 – 6 months	<div><div></div></div>		1	6%
Annually	<div><div></div></div>		3	20%
Other	<div><div></div></div>		5	33%
Total Responses			15	100%

Other:

Answers varied but were usually dependent on consistency of items available.

Answers also involved matching up timing of use to school season etc.

Some materials were constantly in demand.

"Depends on the availability. If these items are consistently and reliably available, we can systemically incorporate them across schools and programs."

Provide any data that could help quantify the amount of material you would use.

Most answers were able to provide qualitative data to represent their needs of discarded items.

Some answers involved the number of students and how frequently they have those students to give an idea on an amount of materials.

"I work with 550 kindergarten through sixth grade students. They come to my STEAM lab once a week for 50 minutes. Each classroom uses recycled items at least once a month."

What challenges have you experienced when looking for reusable materials?

Quality and quantity of materials

Consistency in availability of materials

Logistics: Finding resources that provide reusable discards and the time and fuel costs of getting them

Lack of storage for excess materials

"Consistent, sustainable, accessible, affordable and reliable supply of materials."

"We have asked parents for many. That has worked fairly well. The biggest challenge has been getting too many without the ability to store them or the wrong type of material."

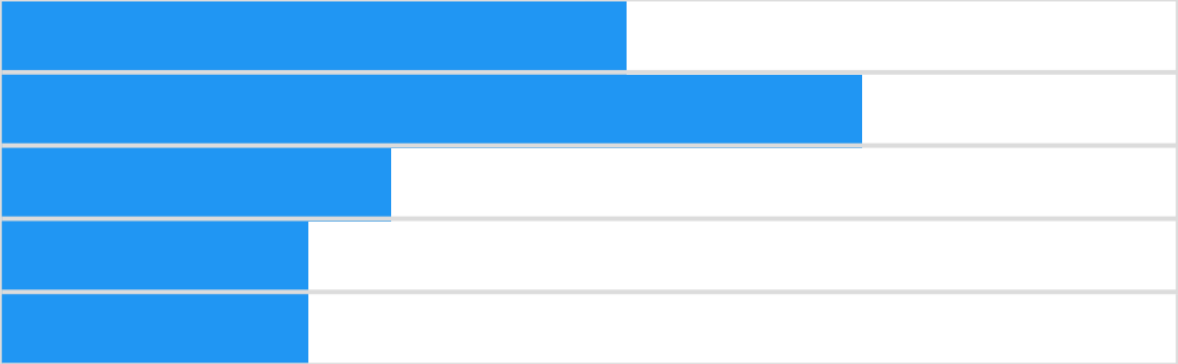
What
opportunities
are you
aware of that
could help
develop a
reuse
network?

Midland Recyclers

Unaware of opportunities, but
interested

Learning from the sustainability model
of other organizations practicing
rescue and reuse, like Hidden Harvest

What is your main area of interest related to this project?

Answer Choice	0% 	100%	Number of Responses	Responses Ratio
Saving money			8	53%
Waste diversion ★			11	73%
Community development			5	33%
Workforce development			4	26%
Other			4	26%
Total Responses			15	100%

Survey Results

RESPONSES FROM “GENERATORS OF DISCARDS” RESPONSES

Geographic Area By County

Midland - 3

Gratiot - 2

Bay - 1

Regional - Midland, Bay, Saginaw, and
Isabella counties

What materials are you currently diverting from the landfill to reuse or recycle?

Answer Choice	0%	100%	Number of Responses	Responses Ratio
Construction materials			0	0%
Salvaged architectural materials			0	0%
Pallets	<div></div>		2	33%
Scrap metals	<div></div>		1	16%
Plastic strapping	<div></div>		2	33%
Manufacturing process scrap			0	0%
Fabric/textiles			0	0%
Other	<div></div>		5	83%
Total Responses			6	100%

Other:

Mostly cardboard and other
Standard recyclables

What companies accept these materials to reuse or recycle?

Mostly Midland Recyclers
None or unknown

Provide any data that could help quantify the amount of material you divert to reuse or recycling.

- Most answers were able to provide some form of measurement (number of pallets, weight etc.)
- Standard recyclables main materials currently being diverted

What
challenges
have you
experienced
when
looking to
find
potential
users of this
material?

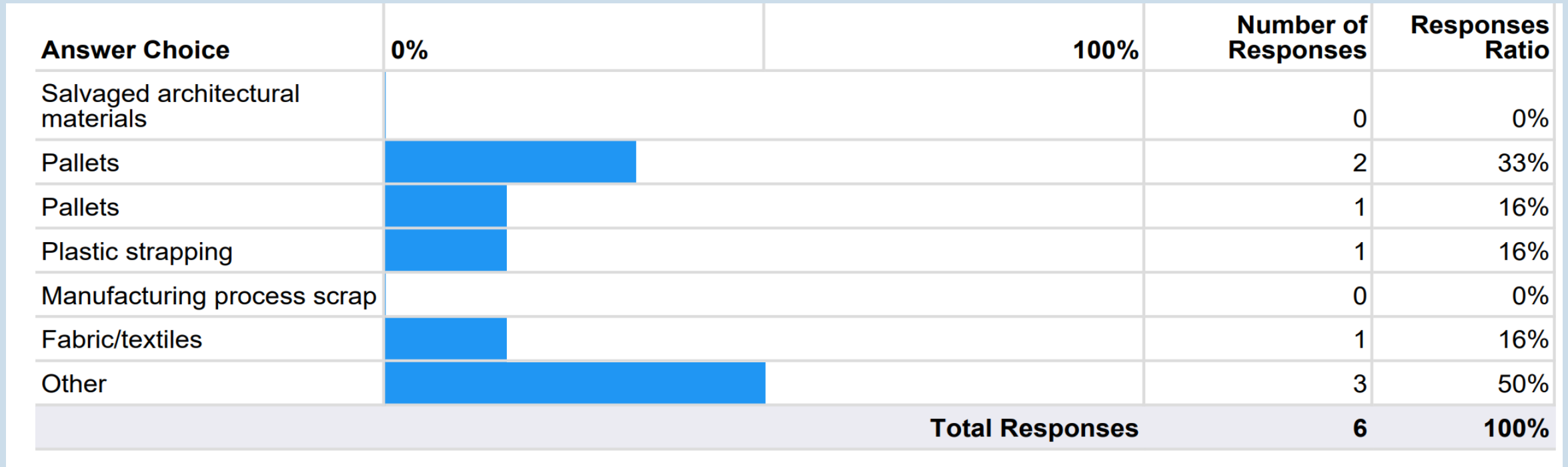
Lack of storage space

Advertising for the available items

Struggling to find a market for the items:
Hard to get rid of

"Waiting to find a reuse of a plastic item
takes up space and I don't have the
storage. Not sure where to advertise the
"discard" to get the word out"

What materials are you currently diverting?



Other:

Mostly standard recyclables

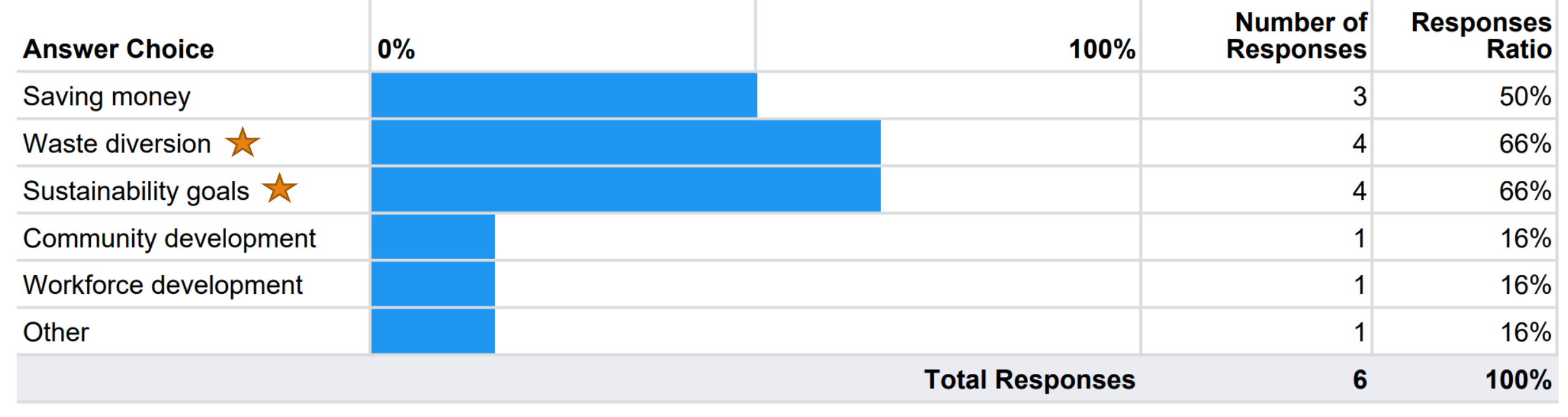
Questions 7, 8, and 9

To learn about other
sources/generators of discards

Identify others who could help
develop a reuse network

Few answers: an indicator that most
generators are unaware of their
options

What is your main area of interest related to this project?



Main Take-aways from Survey Results and Research

Users:

- Have a need
- Consistent quantity and quality

Generators:

- Limited space for storage
- Don't know how to get material to user
- Don't know they have useful materials with an end market

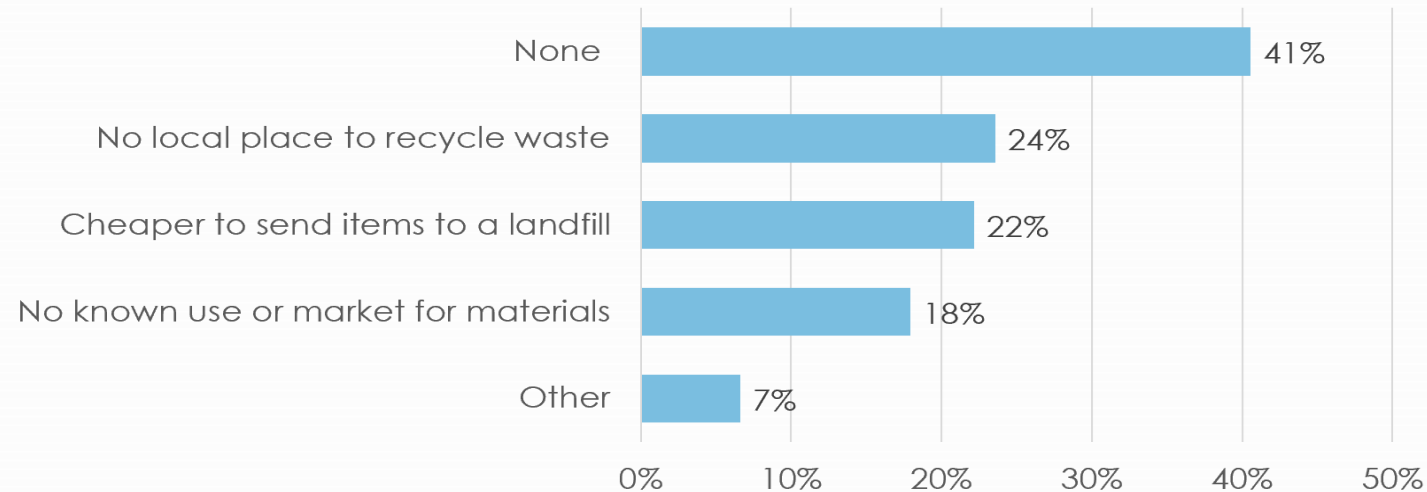
Common to Both:

- Waste diversion is main interest in the project

Michigan Materials Marketplace and data from Michigan Economic Development Corporation (MEDC) study in 2017

Among those who reuse/recycle...

What challenges do you face when trying to find new uses for production materials? Select all that apply.



“73% of all survey participants report currently reusing or recycling manufacturing production waste.”

“Establish local recycle centers that would be networked and could take in and provide recycled materials.”

At this time, many companies had not looked into opportunities to recycle, and didn't know they were available

Challenges

Short time frame



Limited data & info

Lessons Learned

- Manufacturers don't realize they have useful materials to divert
 - They don't know about their options to recycle even though they would like to do so
 - "Manufacturers, but not all manufacturers, recycle 100 percent of the plastics they use" Survey response
- The success of Portland scrap box was largely attributed to them being established in their community
 - Raises potential for the involvement of Midland Recyclers or Bay City Recycles Drop-Off Center

Next Steps

What to focus on moving forward

- Apply for funding
- Focus more on the potential of Manufacturers being involved and what materials they can offer
- Phone interviews/more real-time contact with generators as opposed to emails
- Target smaller businesses



Group Discussion

Thank you for
Your
Participation