



# STAKEHOLDER ENGAGEMENT

*Sector Working Sessions*

October 14, 2021 (2 Sessions)



# Helpful Tips...

- » **Share yourself...virtually.** Add your name & the organization you are with on your Zoom I.D.
- » **Be engaged.** Actively participate in the working sessions and let your voice and keyboard via chat be heard!
- » **Be open-minded & creative.** There are no wrong answers!
- » **Be critical & grounded.** While aspiration is needed, pragmatic feedback is necessary
- » **Be attentive.** Listen to your peers, speakers, & facilitators





# Circular Cleveland Engagement: Sector Working Sessions

1. Welcome Remarks
2. Run of Show
3. Working Session Breakouts
4. Reflection & Next Steps

# CIRCULAR CLEVELAND

## Major initiative to rethink waste management

- » One of six cities selected by RWJF
  - Awarded approximately \$475,000
  - 24-30 month project
  - Roadmap and implementation
  
- » Key features of award
  - Intentional focus on equity
  - Community engagement
  - Linkage to global ideas

Funding provided by   
Robert Wood Johnson  
Foundation

Cleveland  
Neighborhood  
Progress 



# Circular Cleveland Partners

Cleveland  
Neighborhood  
Progress



**CITY OF CLEVELAND**  
Mayor Frank G. Jackson



**NEIGHBORHOOD  
CONNECTIONS**

# CIRCULAR CLEVELAND ADVISORS



# CIRCULAR CLEVELAND ELEMENTS

## Key deliverables in RWJF application

1. Circular Cleveland Roadmap
2. Composting program at the Westside Market
3. Community engagement and expanded education including CC Ambassadors
4. Support for neighborhood projects through small grants
5. Incentives for small businesses advancing circular economy solutions



# PROGRESS UPDATE

## Work is already underway

- » Neighborhood grants
  - 14 grants awarded through Circular Cleveland Community Grants
  
- » Circular Cleveland Ambassadors
  - 10 Ambassadors
  - 12 Neighborhoods
  
- » Roadmap Process
  - Consultants working on developing the roadmap
  - Community and stakeholder engagement underway
  - Roadmap completion in January 2022



# Today's Agenda



01

**3:20 pm – 3:30 pm – Workshop 1 Reflections**

*Social, Public, and Private Sector Feedback*

02

**3:30 pm – 3:45 pm – The Reveal**

*Review data insights from the Metabolic team*

03

**3:45 pm – 4:25 pm – Sector Working Sessions**

*The Built Environment and Technology & Manufacturing and Industry*

04

**4:25 pm – 4:35 pm – Reflections & Next Steps**

*Deliverables, timelines, and levels of engagement*

05

**4:35 pm – 4:45 pm – Q&A and Adjourn**

*The floor is yours!*

# What Do We Want to Accomplish?

- » **A clear and more defined articulation** of the opportunities & barriers that an equitable & sustainable circular transition present Cleveland
- » **Candid and clear feedback** from the private sector on the economic opportunity and viability of how circularity can be embedded into key industries with the most potential: heavy industry, manufacturing, technology, the built environment, & local business
- » **Clarity & radical candor** from the public & social sector on the realities of how circularity can impact pollution, inclusion, and food systems in Cleveland
- » **Individual ownership** to proactively & enthusiastically participate as a key stakeholder in the Circular Cleveland project



# Circular Cleveland Kickoff

## Key Sector Themes

### The Guiding Questions

1. What is your definition of the circular economy?
1. What are existing examples of Circularity in Cleveland?
1. What are the opportunities the circular economy can bring?
1. What are the barriers currently in the way?

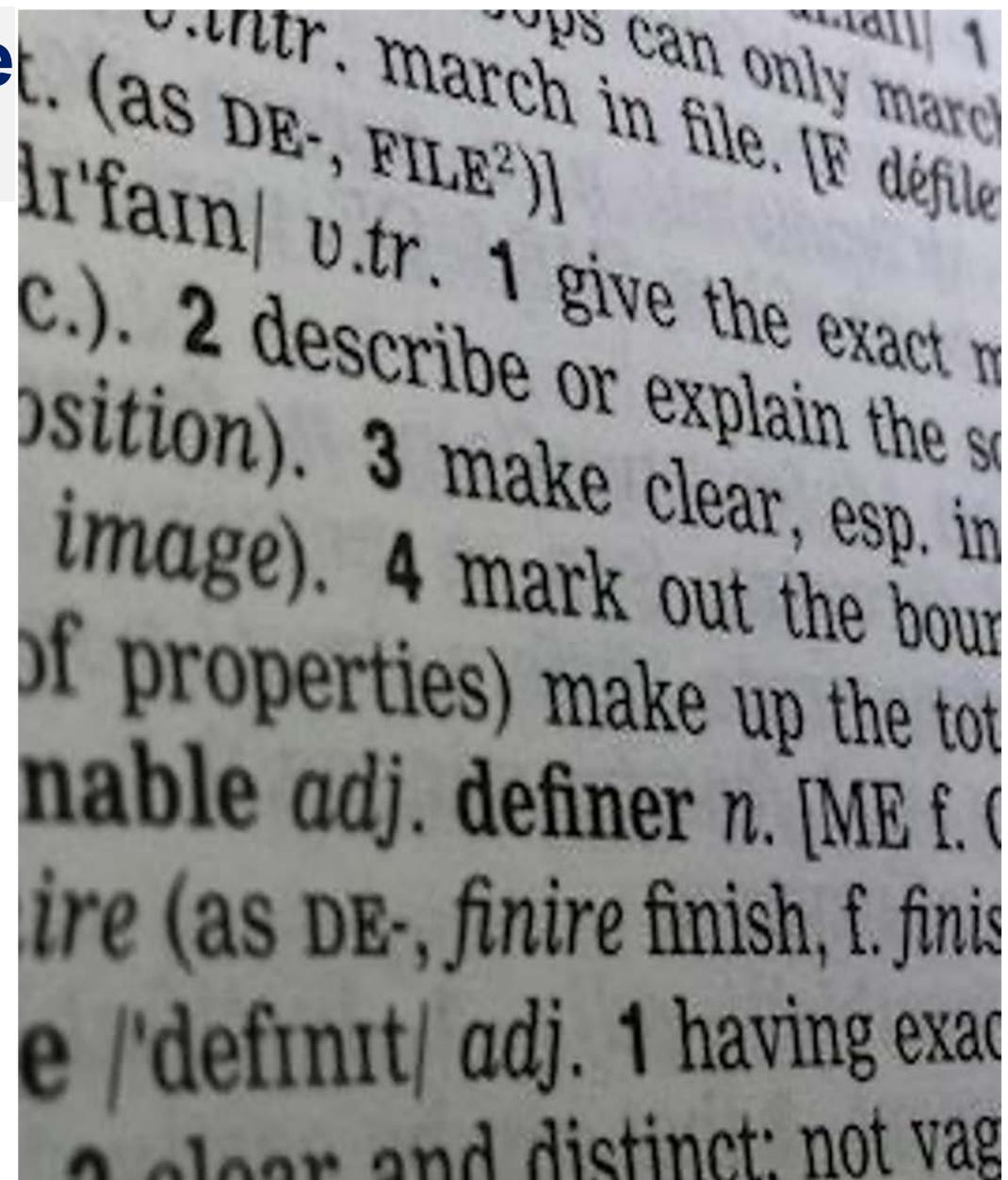
# Q1. What is your definition of the circular economy?

## Private Sector

- » Many of the participants were familiar with the term from a mitigating waste perspective and were familiar with corporate jargons such as “Zero Waste”
- » the private sector participants focused on linking circularity to waste as a potential resource and recycling

## Public & Social Sector

- » Most respondents thought the circular economy was focusing on “turning waste into a reusable resource” & the current economic platform does not account for waste effectively.
- » Theme with the most respondent feedback defined the circular economy to be holistic and “a means to a more inclusive and equitable economic platform”.



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## Q2. What are existing city examples of circularity?

### All Sectors Unite!

- » All three sectors were equally aware of how circularity already exists in Cleveland
- » Rust Belt Riders, The Upcycled Parts Shop, and The Rebuilders Exchange were the most popular, each having over 5 responses.



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# Q3. What are the circular opportunities?

## Private Sector

- » Reputation Management was the biggest private sector theme with the respondents' focus was on better public relations-both in the community and with their employees- and feel that the circular economy could also improve their respective ESG metrics.
- » Innovation was the second most popular theme with a focus on creating a “competitive advantage” and influence large suppliers

## Public & Social Sector

- » Community engagement was the primary theme with many respondents feeling that the circular economy brought an opportunity to engage deeper with the local communities & that the circular economy provided a sense of local pride that all types of people could unite behind
- » Waste and resource efficiency was next on the list as a path to turn waste into resource.



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## Q4. What are the primary barriers?

### Private Sector

- » Limited access to circular goods topped the list due to lack of circular supply/value chains, the accessibility of sustainable/circular products, and an overall lack of logistics
- » Respondents also felt the company's management did not yet buy-in to circular and there is not incentives for managers to spend resources on it

### Public & Social Sector

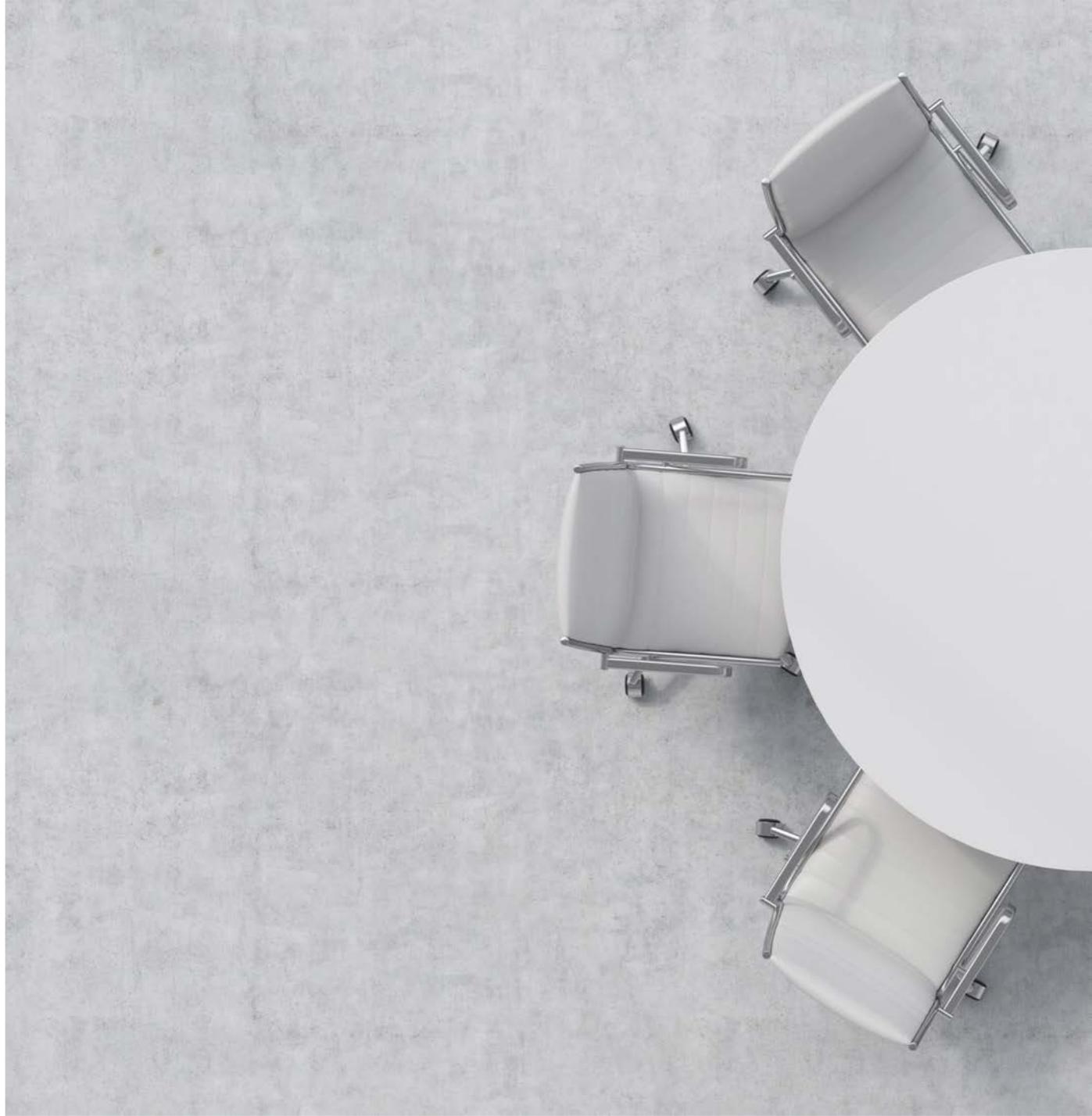
- » The theme of "Racism & Accountability" had the highest number of respondents, painting a clear picture of the systemic racism and inequities that exist in the current system
- » The theme "Counterproductive & Stagnant Mindset" limited both the citizens & govt from being open to change behavior due to the short-termism that is pervasive in today's instant gratification mindset as well as skeptical of the ability to collectively think longer term of where "we should be".





# The Big Reveal

Metabolic Data Insights



# A Landscape Analysis - Method



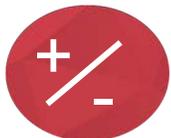
**1. Conduct a regional material flow analysis**



**2. Evaluate existing waste strategies**



**3. Policy analysis on topic of sustainability**



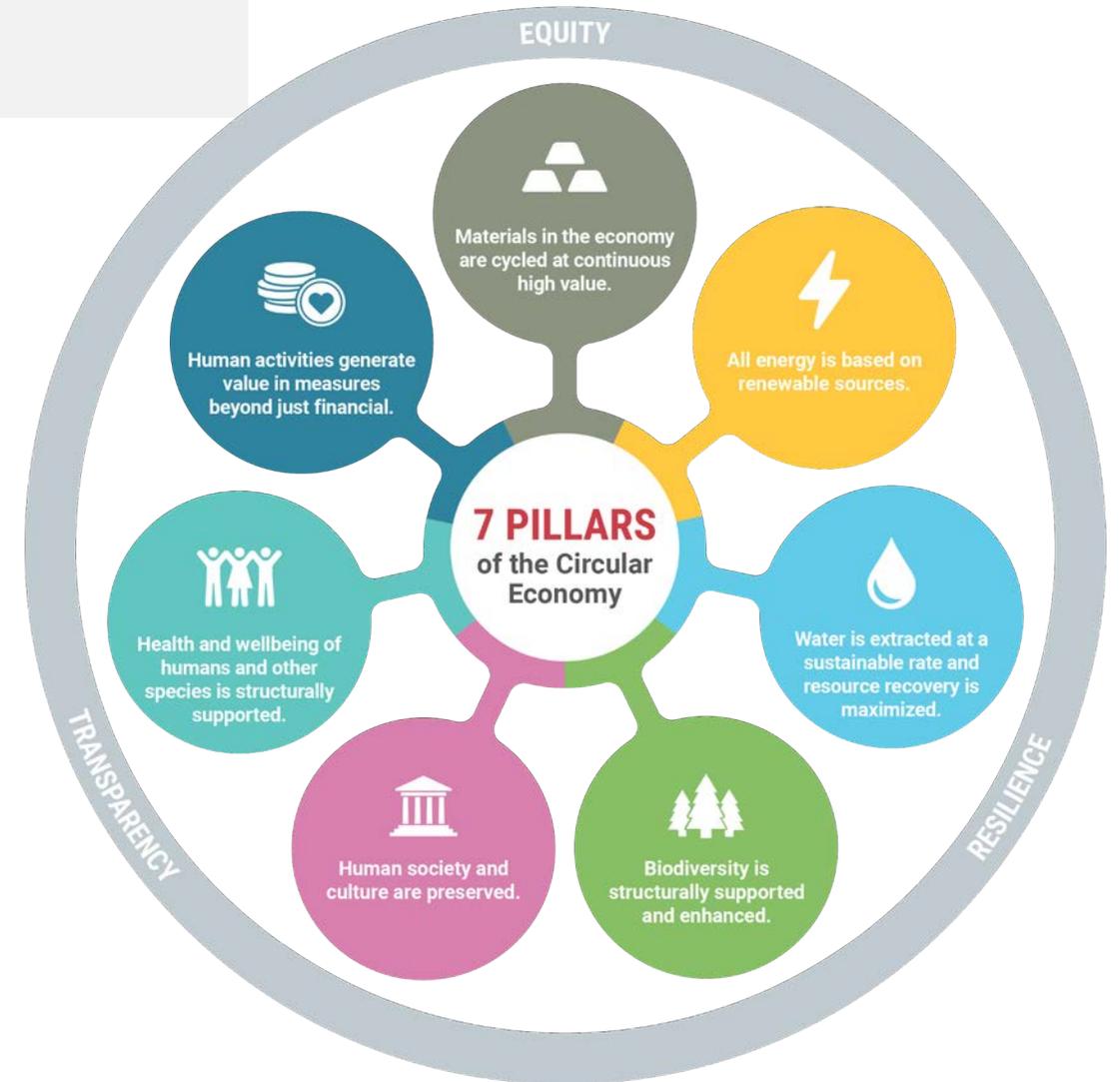
**4. Verify and complement insights with key stakeholders**



**5. Collaboratively select focus areas for Cleveland**

# The Seven Pillars of the Circular Economy

-  Materials in the economy are cycled at continuous high value
-  All **Energy** is based on renewable resources
-  **Water** is extracted at a sustainable rate and resource recovery is maximized
-  **Biodiversity** is structurally supported
-  **Human society and culture** is preserved
-  **The health and wellbeing** of humans and other species is structurally supported
-  Human activities generate **value** in measures beyond just financial



+ Infrastructures and mobility options are sustainable

# Selecting focus areas for Circular Cleveland

**The transition to an inclusive circular economy entails a far-reaching systemic change across all sectors, scales, and stakeholders.**

## Choosing focus areas allows us to:

1. Allocate time and resources to the topics most relevant for Cleveland's communities
1. Build upon the momentum of Cleveland's existing strengths and opportunities as well existing programs and initiatives
1. Create a feasible roadmap that addresses the city's major environmental impacts

# Proposed Focus Areas

## Focus area #1 Circular manufacturing



Stimulating **low impact material use, clean energy, and material symbiosis** in and among local industries.

## Focus area #2 Circular built environment



Developing the built environment to **support socio-economic development**, while **minimizing environmental impact** and **ensuring reusability at end-of-life**.

## Focus area #3 Remediating pollution



Adopting policies and programs to **regenerate Cleveland's polluted areas** for a **healthy, thriving environment**.

## Focus area #4 Valuing resources



Divert the **valorizable fraction** of mixed waste from landfill. Building on Cleveland's local initiatives, focusing on organics, to **close the nutrient cycle**.

# Proposed Focus Areas

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## Focus area #4 Valorizing resources



Divert the **valorizable fraction** of mixed waste from landfill. Building on Cleveland's local initiatives, focusing on organics, to **close the nutrient cycle**.

Materials & environment

Community and inclusivity

Data accessibility

Focus area #3

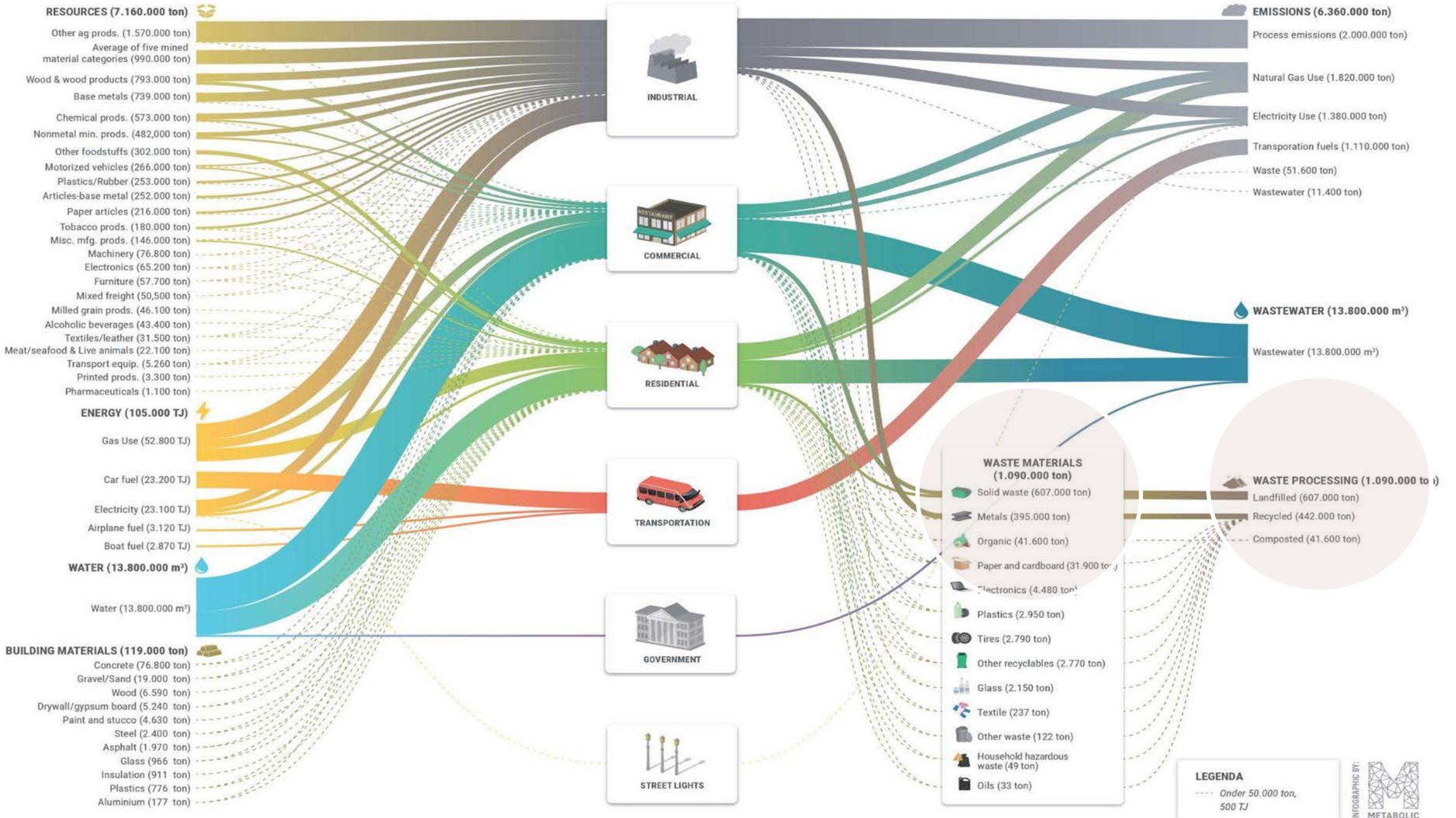
# Getting More Value from Resources

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**Divert the valorizable fraction of mixed waste from landfill. Building on Cleveland's local initiatives, focusing on organics, to close the nutrient cycle.**



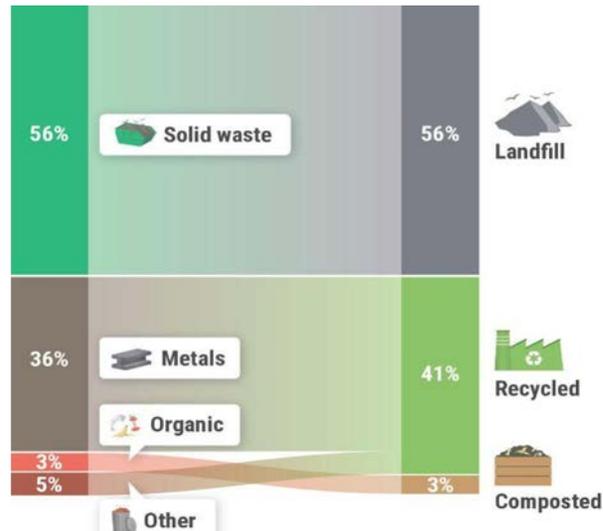
**MATERIAL USERS**



# Highlighted Insights: Getting More Value from Resources



## TOTAL WASTE COMPOSITION & PROCESSING



**Waste production:** residents in Cleveland produce way less waste per capita than the average US citizen, but far above the global average (highly composed of organics)



**Mixed waste composition:** 96% of collected household waste is sent to landfill, of which an approximated 31% is organic waste (17% food waste and 14% yard waste), 21% is paper, and 15% is plastic.



**Urban agriculture, food waste, and composting infrastructure:** many initiatives and programs are in place around stimulating urban agriculture and diverting food waste. Infrastructures for composting and biomass to energy are present (e.g. [Rust Belt Riders](#), Cuyahoga Composting Center)



**Transparency:** Commercial and industrial organic waste data are not complete (large unknown fraction in mixed waste)

# Highlighted Opportunities: Getting More Value from Resources



**Valorization of waste:** Increase the collection of separate waste fractions through scaling up an efficient curbside recycling program and other existing community programs (expand the recycling program and educate citizens)



**Circular entrepreneurship:** Stimulating local circular entrepreneurship around repair, reuse and recycling to allow valorization of household and commercial waste. Promote high value extraction of organic waste to close the local nutrient loops.



**Smart Connections:** Can we utilize the high percentage of vacant lots to close nutrient loops and provide space for composting?



**Monitoring commercial and industrial organic waste:** Increase the monitoring of the waste flows to allow better diversion and valorization through synergies and innovative treatments (food processing industries, supermarkets, food service)



**Circular cultivation:** Adopt high efficiency and low-input, circular cultivation methods (e.g. aquaponics).

# Best Practices: Getting More Value from Resources



## CIRCO Circular Economy tracks

[CIRCO](#) is an organization that teaches classes about the circular economy to help kickstart circular initiatives, visions, and businesses. Two thirds of attendees have been shown to actively engage in circular economy projects after attending the tracks.



## Repair Cafe

Repair cafe international is an organization that stimulates the creation of repair cafes in Belgium and the Netherlands, through offering interested people practical, legal, social and branding advice for starting a repair cafe. The organization also provides an overview of repair cafe locations.



## Pay-As-You-Throw (PAYT)

San Jose, a city in the US with currently around a million inhabitants, implemented a PAYT-system back in 1993. It resulted in extensive annual savings on municipal solid waste costs, and a strong increase in recycling rates.



## Scrap Store 22@

Located in Barcelona's hub for circular initiatives, Scrap Store 22@ is a place to foster material exchanges between local businesses, designers and artists. The materials available for reuse and recycling are donated by local companies or organizations.



Focus area #4

# Remediating Pollution

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**Adopting policies and programs to regenerate Cleveland's polluted areas for a healthy, thriving environment.**



# Highlighted Insights: Remediating Pollution



**Air quality:** Cleveland fails to meet air quality [U.S. Environmental Protection Agency standards](#)



**Polluted areas and green spaces:** Cleveland has extensive polluted areas present as a result of past and present industry and they have ongoing efforts to develop more green spaces and to increase tree canopy.



**Water pollution:** existing efforts to improve quality of waterways and lake Erie, but unknown water output from all industries (massive nutrient loading)



**Lead pollution:** strong correlation between the racial composition of K-8 schools and the share of students with elevated blood lead levels in Cleveland Metropolitan Schools district.

# Highlighted Opportunities: Remediating Pollution



**Apply regenerative bioremediation practices:** utilizing remediation parks to clean up brownfields



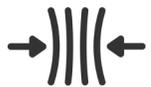
**Maximize use of vacant land:** After remediation, use lands productively for pilots, food production or growing biomaterials.



**Work together:** Address pollution of Lake Erie and surroundings collaboratively with cities in Canada and the US and recycle wastewater between industries



**Nutrient recovery:** Potential to valorise nutrients from wastewater (e.g. Phosphorus and Nitrogen)



**Climate resiliency:** Adopt nature-based solutions and increase green space to build a more climate resilient city and strengthen the culture of cultivation in the city.

# Best Practices: Remediating Pollution



## De Ceuvel

A sustainable 'living lab' office park on the site of a former shipyard in Amsterdam North. It is home to 17 workspaces and a popular community cafe, and provides an example on how to transform the post-industrial area (with contaminated land) into a mixed-use residential and commercial area.



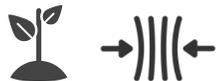
## Aquaponics in Vienna

Blün - a Vienna-based start-up for integrated urban food production - demonstrates that fish and vegetables can be produced in a fully circular system in urban areas. The semi-closed system allows for food production on contaminated sites.



## Nature inclusive construction

Green space can improve local air quality, water retention, a comfortable living environment, and serve as habitat for insect and bird species in cities. Examples of nature inclusive design are bird nests in building elements, green walls and roofs, insect hotels.



## "DrainGardens" in Austria

As a nature-based alternative to an costly expansion of sewage capacity, the town constructed various small-scale "DrainGardens" along urban streets that capture and slowly release excess rain water.



Focus area #1

# Circular Manufacturing

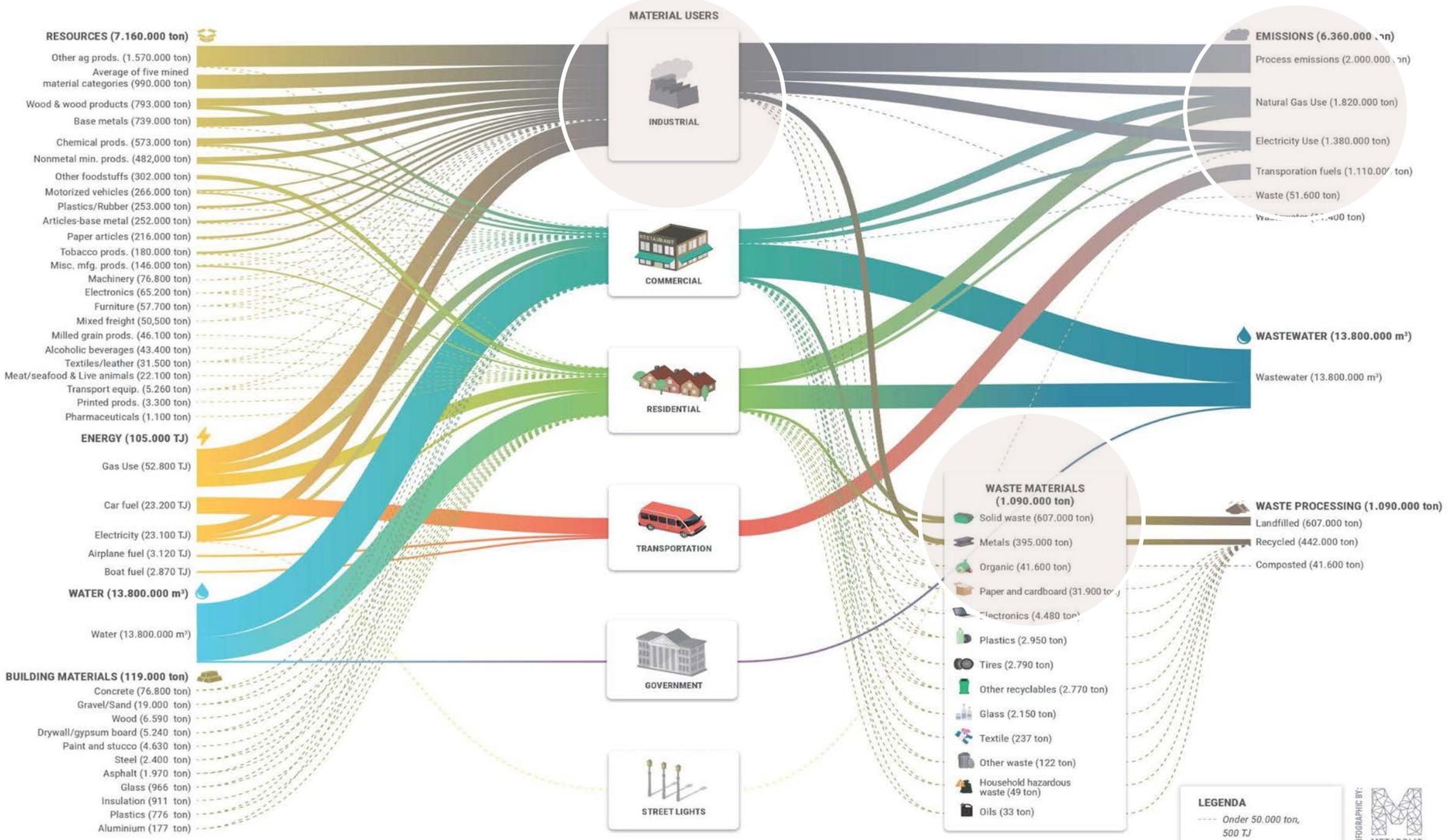
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**Stimulating low impact material use, clean energy, and material symbiosis in and among local industries (to generate value).**



# A Material Flow Analysis: Circular Manufacturing





# Proposed Focus Areas

## Focus area #1 Circular manufacturing



Stimulating **low impact material use, clean energy, and material symbiosis** in and among local industries.

## WORKSHOP 2

## Focus area #2 Circular built environment



Developing the built environment to **support socio-economic development**, while **minimizing environmental impact** and **ensuring reusability at end-of-life**.

## Focus area #3 Remediating pollution



Adopting policies and programs to **regenerate Cleveland's polluted areas** for a **healthy, thriving environment**.

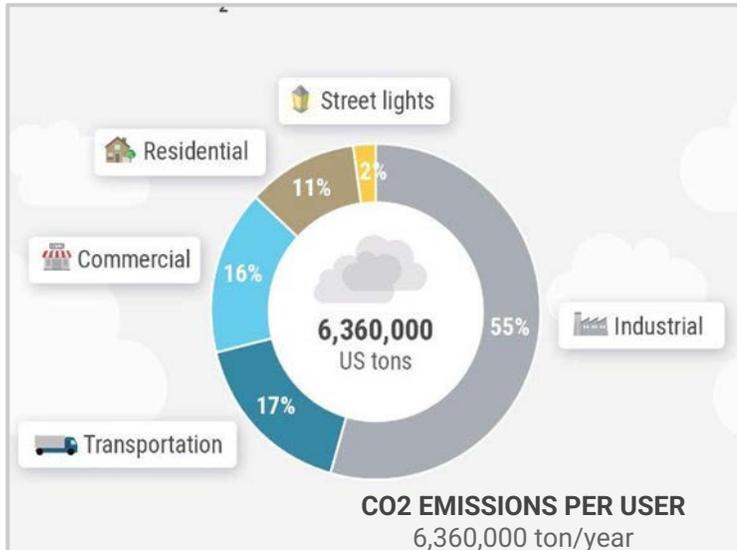
## WORKSHOP 3

## Focus area #4 Valorizing resources

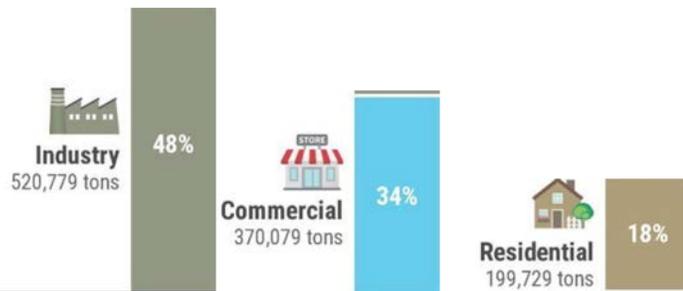


Divert the **valorizable fraction** of mixed waste from landfill. Building on Cleveland's local initiatives, focusing on organics, to **close the nutrient cycle**.

# Highlighted Insights: Circular Manufacturing



**WASTE GENERATION IN CLEVELAND**  
1,090,000 ton waste/year



**Industry:** Almost half of waste comes from Industry. Industry is responsible for **55% of the emissions**.



**Steel production:** The state of Ohio still hosts a massive steel industry that yearly produces 10% of the total US steel production.



**Employment:** The steel industry in Ohio employs around 22,000 people directly, and 97,000 indirectly. ([~12% of employment in Cleveland](#) (3rd largest industry after healthcare sector and retail))



**Transparency:** There's a lack of transparency of the industrial material flows and their processing.



**Excellent distribution infrastructure:** Ohio has excellent multi-modal infrastructure (air, road, rail, boat) and is a just one-day drive away from more than 60% of US and Canadian population.

# Highlighted Opportunities: Circular Manufacturing



**Emissions:** Decrease carbon emissions by stimulating alternative production methods and material consumption.



**Synergies:** Stimulate symbiosis between industrial actors (e.g. energy, water, materials) to allow for synergy of resources.



**Green jobs:** Develop green jobs and provide training matching residents' skills.



**Reporting and transparency:** Have frameworks and tools for industry in place to stimulate reporting on material flows.



**Energy:** Lower the energy demand by increasing efficiency and shift to cleaner energy with decentralized electricity production.

# Best Practices: Circular Manufacturing



## District Heating Scotland

The main goal is to deliver low-carbon energy through district heating networks which deliver heat from single or multiple energy sources (industrial processes, renewable technologies) to a number of buildings.



## INSIGHTS- Creating a training program for Industrial Symbiosis Facilitators

The currently running EU-funded [INSIGHTS](#) project works on developing a curriculum and training program for a new professional profile: The industrial symbiosis facilitator who identifies synergies between regional sectors and helps them establishing material or energy exchanges.



## Kalundborg (1970) - The world's first eco-industrial park

World's first example of industrial symbiosis. Over 14 industrial partners mutually share energy, water and materials, saving over 635,000 tons of CO2 and 24.2 million euros in economic expenses per year.



## PeelPioneers

The Dutch company PeelPioneers transforms orange peel waste from restaurants, hotels or supermarkets into valuable products for the food industry.



Focus area #2

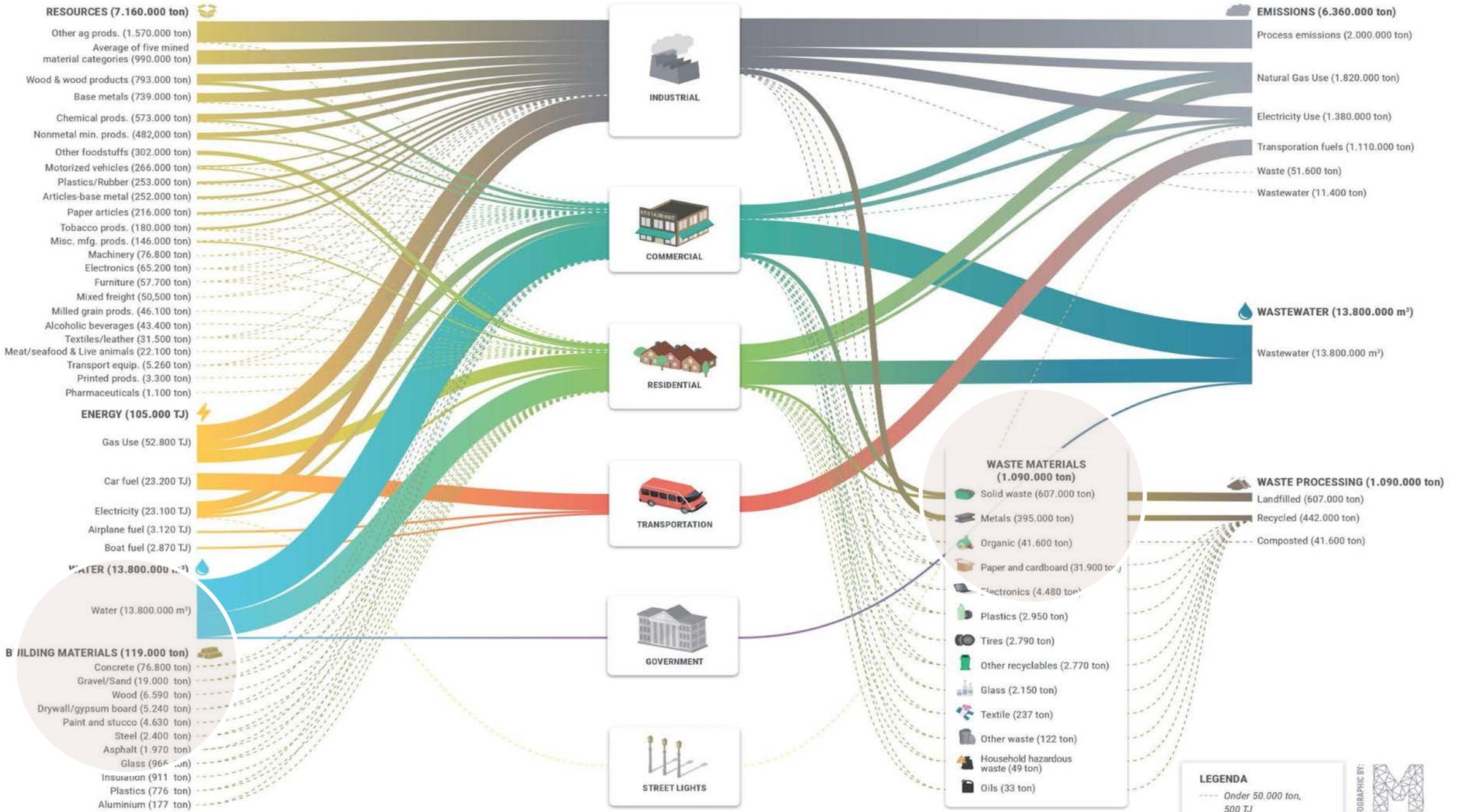
# Built Environment

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**Developing the built environment to support socio-economic development, while minimizing environmental impact and ensuring reusability at end-of-life.**



**MATERIAL USERS**

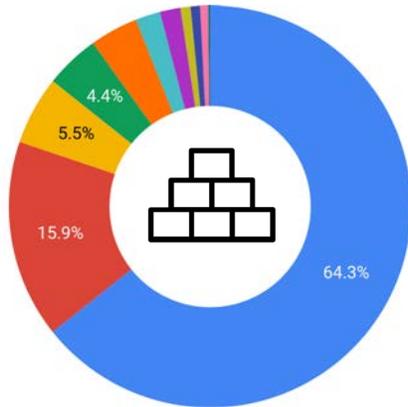


# Highlighted Insights: Built Environment

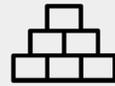
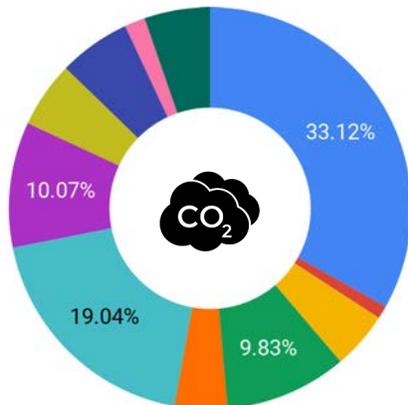
## LEGEND

- Concrete
- Gravel/sand
- Wood
- Drywall/gypsum board
- Paint and stucco
- Steel
- Asphalt
- Glass
- Insulation
- Plastics
- Aluminium

YEARLY CONSUMED  
CONSTRUCTION MATERIALS  
119,460 ton waste/year



EMBEDDED CO<sub>2</sub>-emissions  
26,329 ton/year



**Valorization:** We are **unsure what happens to construction waste** due to the absence of data. There are a few projects targeting the reuse of construction materials such as the [Deconstruction](#) initiative, but their impact is hard to quantify.



**Vacant land:** The Municipal Land Bank reports **extensive vacant land** (under public control) (7,500 vacant lots).



**Homelessness:** High homelessness and poverty rate (poverty rate of 18.3% in 2019)



**Impacts:** There is **limited binding policy on the impact of used materials** in the built environment and energy performance. The construction of green buildings is promoted through initiatives such as [District 2030](#) or the [Green Building Tax Amendment](#).

# Highlighted Opportunities: Built Environment



**Wealth building:** Leveraging urban development to increase household income, through densification and decreasing the value of housing captured by landlords through Community Land Trusts-structures (CLT) or by creating decentralized energy systems.



**Low impact construction strategies:** Implement policies to decrease the impact of the construction sector (e.g. by using sustainable biomaterials or reused materials).



**Collecting data for urban mining:** By gathering information on which materials are used where, we can allow materials to be reused at high quality for multiple lifecycles.



**Green procurement guidelines:** strengthen the existing green procurement clause for public projects to promote the use of innovative and sustainable materials

# Best Practices: Built Environment



## Circular Built Environment (CBE) Hub

Academia and leading partners in the construction industry are collaborating through the [CBE hub](#). The hub manifests itself as a platform through which diverse parties conduct coordinated research and do innovative projects around circular buildings.



## Material Passports

[Madaster](#) is an online platform that allows property data to be stored. The platform gives identity to the materials present in building, allowing for potential high value reuse.



## Circular standards

The city of Amsterdam has taken the principles of circular tendering (i.e. the circular performance of a building project) to six circular housing projects.



## De Warren- cooperative living

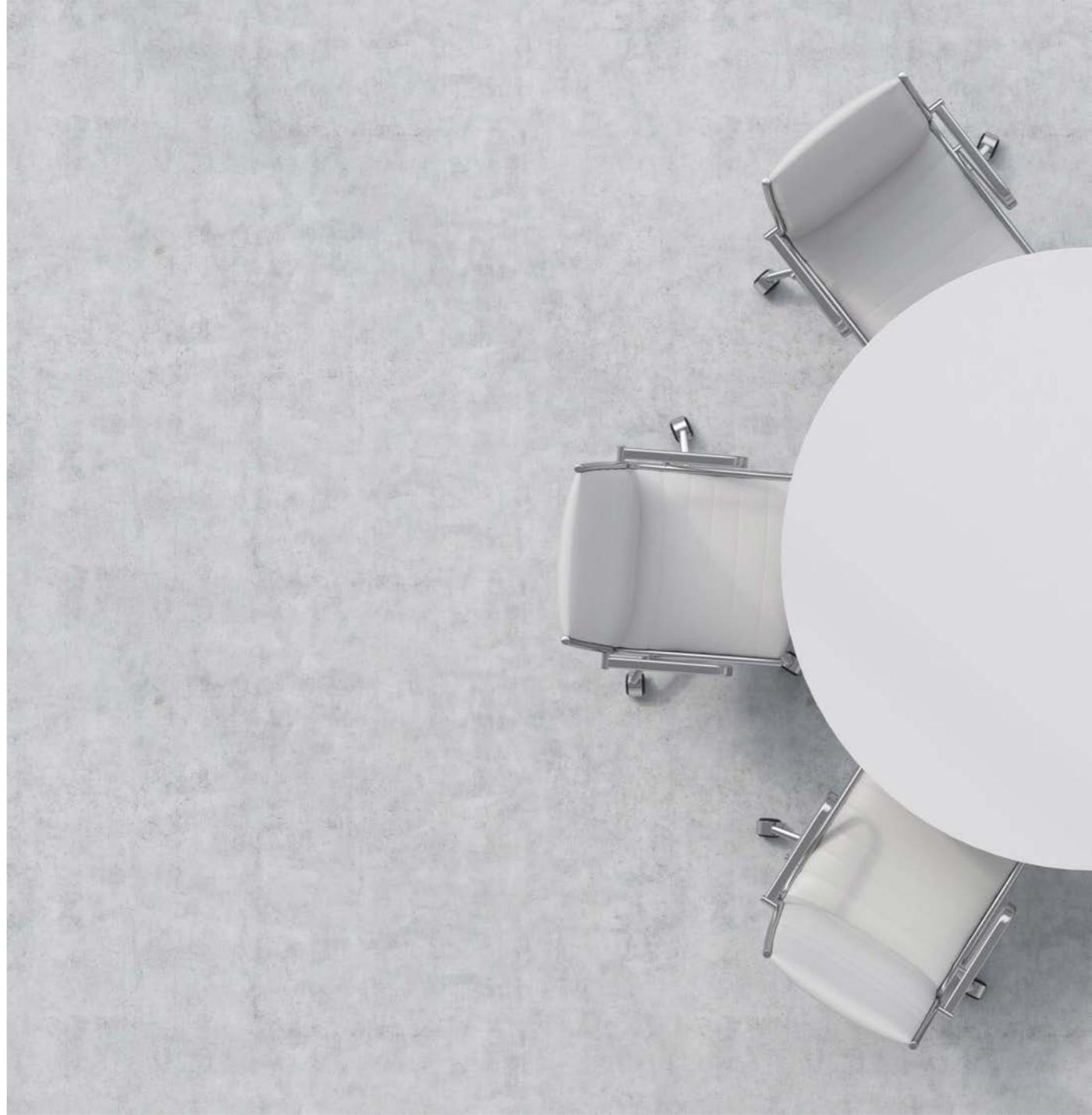
[De Warren](#) is a cooperative living and sustainable building project, initiated by 50 driven individuals in Amsterdam. Through crowdfunding, loans, private investment and some sustainability subsidies, the group is building a super sustainable apartment complex of 16-20 apartments, that will provide long-term sustainable and affordable housing to the city.





# Working Sessions

A Sector Perspective

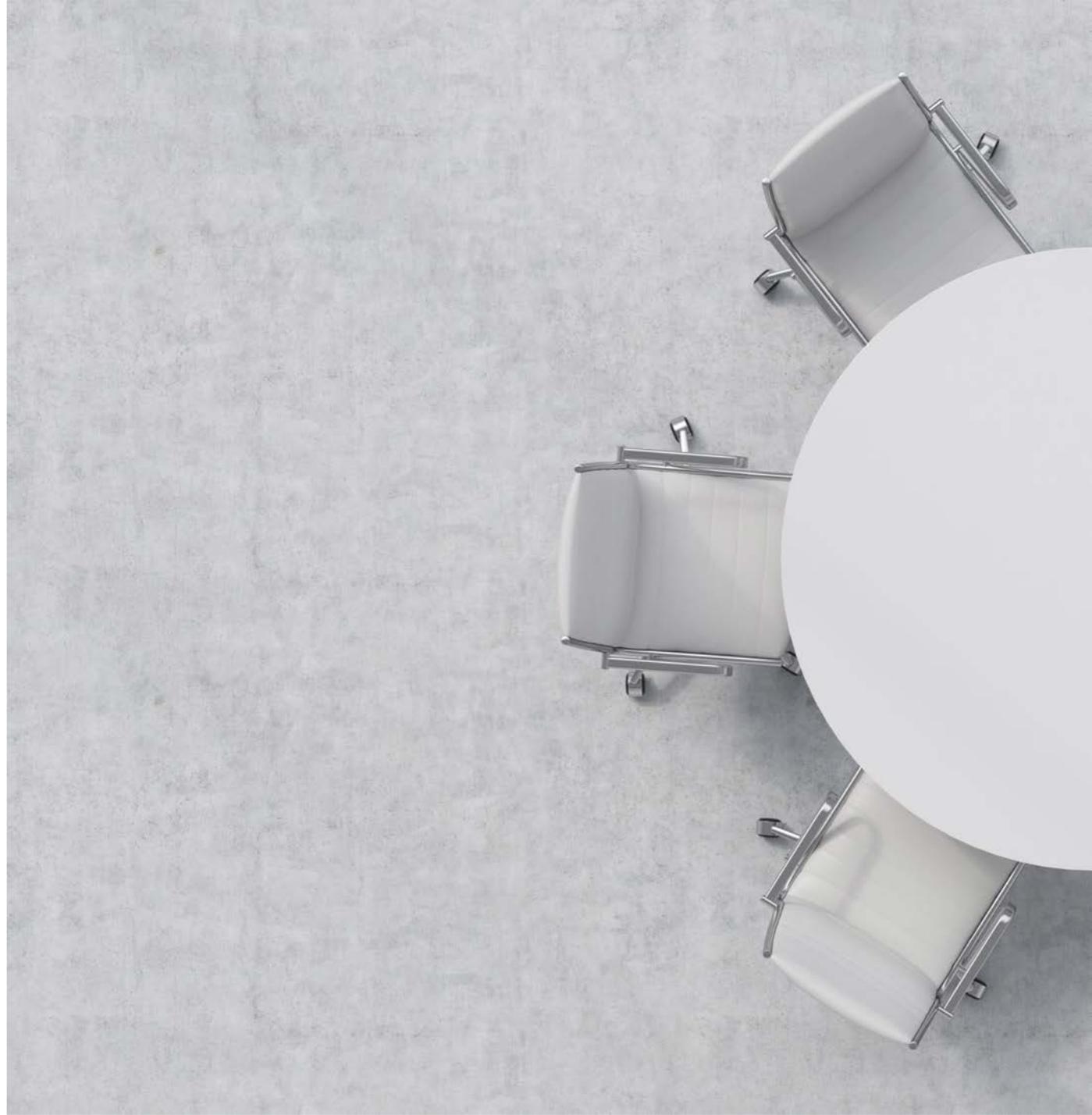






# Reflections

Where are we & where are we going



# CIRCULAR CLEVELAND PROJECT TIMELINE

## Year 1 (Nov. 2020 to Oct. 2021)

- Cleveland joins EMF Network
- Roadmap RFP issued and awarded
- WSM RFP issued and awarded
- Racial Equity Trainings
- Roadmap data analysis and ecosystem scan
- Neighborhood workshops
- City peer exchange
- 1<sup>st</sup> round of community grants
- Finalize racial equity toolkit
- 1<sup>st</sup> draft of roadmap

## Year 2 (Nov. 2021 to Oct. 2022)

- Release annual progress report
- Finalize and release roadmap
- Great Lakes workshop
- Additional neighborhood workshops
- Additional community grants
- Launch economic development incentives

## Year 3 (Nov. 2022 to April 2023)

- Release annual progress report
- Final round of community grants
- Final round of economic development incentives
- Transition from grant period to long-term implementation

# CIRCULAR CLEVELAND WORKSHOP TIMELINE

## Engagements Completed!

- **Workshop #1:** August 17 & 19
- **Workshop #2 & #3:** October 14th

## Future Engagements

- **Workshop #4:** November 17th
- **Workshop #5:** Early January

\*\*Deep dive engagements will be conducted between Oct 18-Nov 17th to capture additional insights





**Thank  
you!**