

# YAHARA HILLS SUSTAINABILITY CAMPUS

A hub for recreation, environmental education, renewable energy, and innovation of circular economies.

NOVEMBER 3 2021



*Artistic rendering of future reclaimed open space.*

# ABOUT DANE COUNTY DEPT. OF WASTE & RENEWABLES



ACTIVE LANDFILL



RECYCLING PROGRAMS



CONSTRUCTION AND DEMO RECYCLING



CLEAN SWEEP



RENEWABLE NATURAL GAS

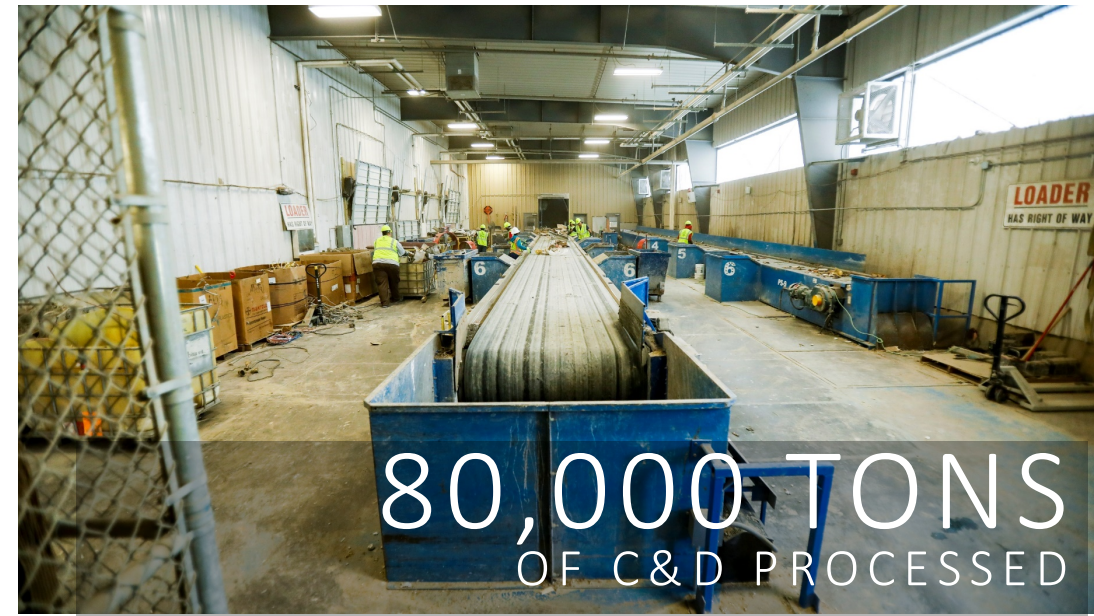


EDUCATION & TOURS



# HOW W&R SERVES THE COMMUNITY & CITY OF MADISON

- C&D recycling
- Clean Sweep's hazardous waste collection open 6 days per week
- Stable tipping fees
- Beneficial reuse of street sweepings for landfill daily cover
- Emergency response
- Needle disposal
- Public education and tours



# RODEFELD LANDFILL'S TIMELINE

○  
**2021**

Starting filling in the last horizontal expansion. Currently seeking a vertical expansion approval from Wi Dept of Natural Resources

○  
**2027**

Rodefeld Landfill closes without a vertical expansion.

○  
**2030**

Rodefeld Landfill is at maximum capacity.



*First bloom of the Rodefeld Landfill's native prairie final cover.*

# OLD PARADIGM

- Waste is a liability
- Minimal business activities
- Zero energy generation
- No cultural or social significance, a place to avoid

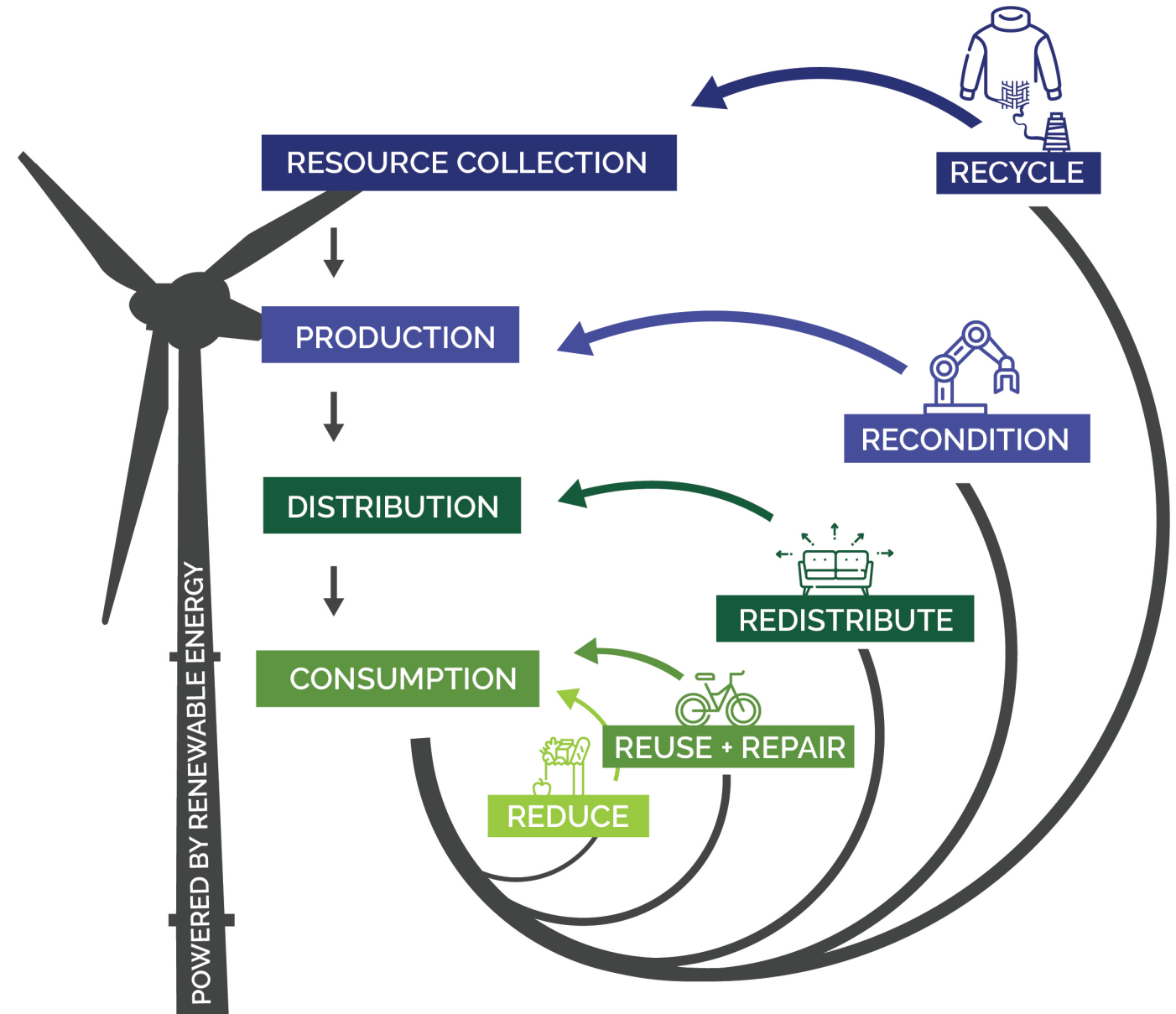
# THE VISION

- Waste is a resource
- Innovative social hubs and business activity
- Landfill gas to energy projects and other renewable energies
- Well planned space with recreation before, during and after landfiling

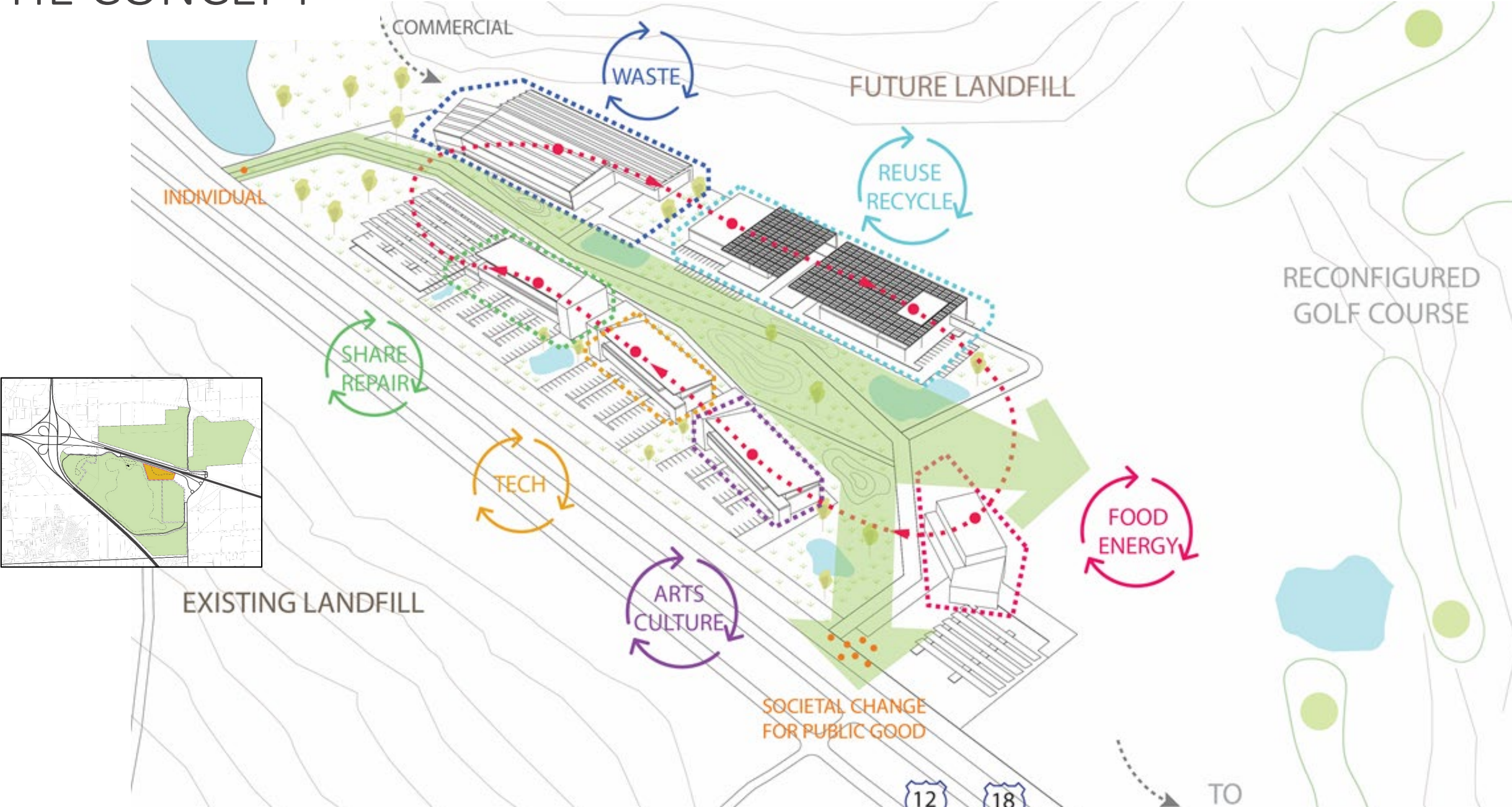


# CIRCULAR ECONOMIES

- Not just about recycling
- Educating communities about the impacts of our choices
- Repairing and building things to last and be repaired
- Using recycled materials to create markets
- Engineering materials and items to be recycled



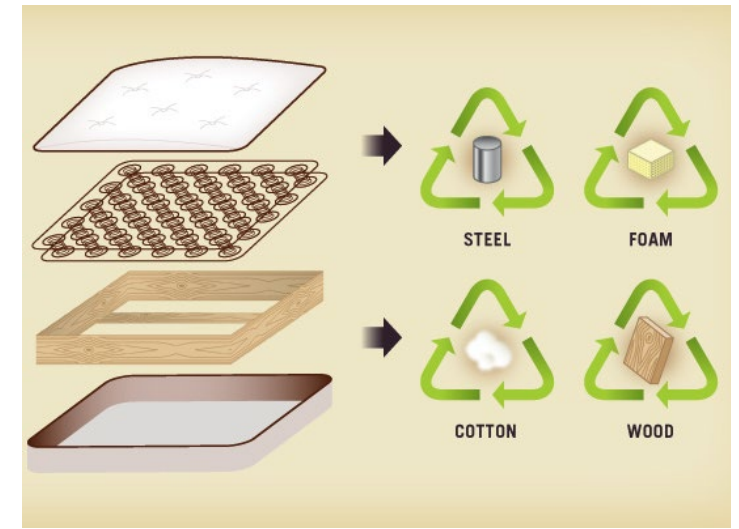
# THE CONCEPT



[Image courtesy of https://www.climateaction.org/](https://www.climateaction.org/)



# MATTRESS RECYCLING



- Springs recycled as scrap metal, wood frames create landscaping mulch, cotton used in industrial oil filters and foam paddings turns into carpet underlay
- Local markets currently in place for this opportunity (foam, wood, etc.)
- Currently accept +20K mattresses per year at the landfill
- Each recycled mattress saves 23 cubic feet of landfill space
- 1 new job created for every 3,000-5,000 mattresses recycled



# ORGANICS & FOOD WASTE



*Photo from JOHN HART, STATE JOURNAL ARCHIVES*

- Estimate 30% of the waste that is landfilled could be composted
- Composting organic material reduces GHG emissions and generates a marketable soil amendment
- Campus will include composting operation and W&R will work closely with City of Madison to develop a program that can accept food waste
- Site will save space for a digester and composting program will allow County and City to assess feasibility of a digester



- Diversion of high value items has significant environmental impact when considering full lifecycle costs of new goods
- Several successful examples including a Habitat for Humanity Restore near Lacrosse County's Landfill
- Retail use would create functional transition from landfilling activities to recreational use of the golf course
- W&R is engaging with local resale stores to determine future needs and interest
- [Retuna Recycling Mall](#) (Sweden) recycling center shown to the left:
  - \$11.7M in revenue and 50 jobs generated in 2.5 years

*Image courtesy of Lina Östling*

# EDUCATION

- Site to be designed with education and community access as a core principle
- Central to W&R mission to minimize waste and protect our environment
- Opportunities to collaborate with Ho-Chunk Gaming Madison
- Critical to moving towards a more sustainable waste management system



# RENEWABLE ENERGY

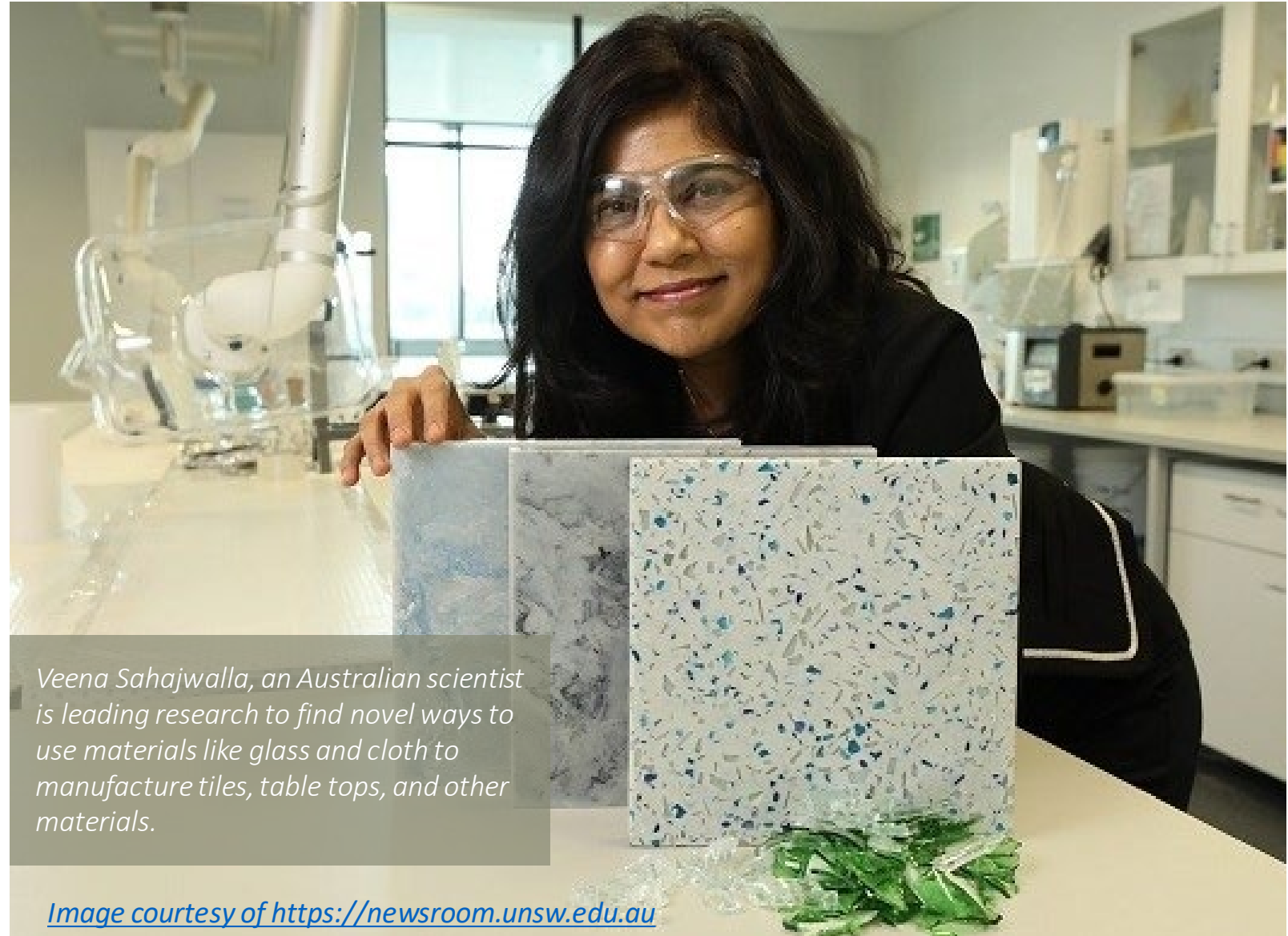
- Dane County W&R already a leader in renewable natural gas technology
- Industrial heat capture
- Solar (onsite and nearby)
- Green building and energy efficiency a priority for new construction
- Geothermal in or near landfill



*Dane County Biogas Plant Technician monitoring flow of renewable natural gas – generated and processed at the existing landfill – into the interstate pipeline.*

# RESEARCH & TECHNOLOGY

- Research of new technologies and emerging wastes
  - Batteries
  - Solar Panels
  - Carbon Capture
  - Other problem wastes and recycling opportunities
- W&R is an industrial advisory board member of the UW's Center on Chemical Upcycling of Waste Plastic



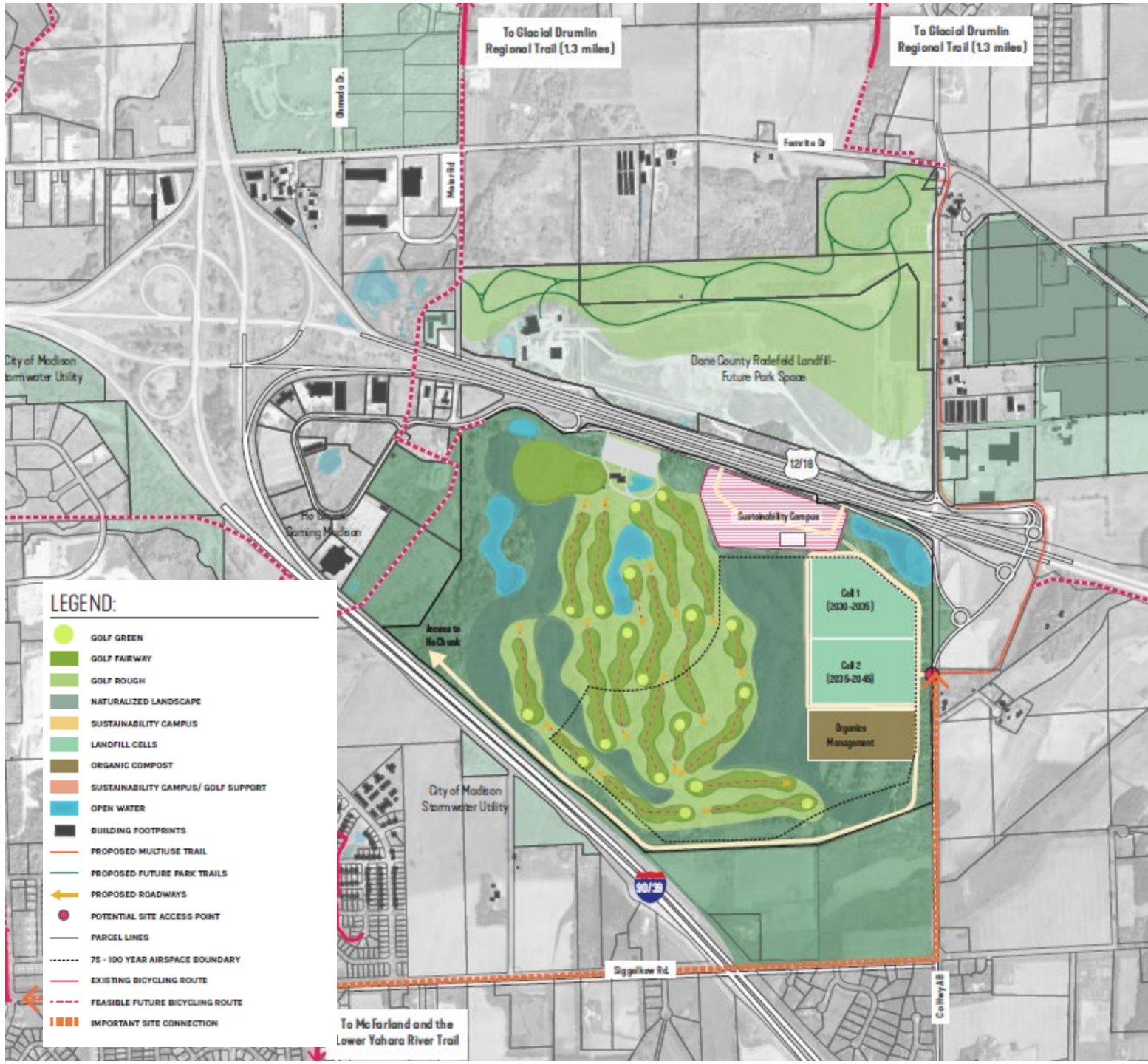
# RECREATION



- Conversion of Rodefeld Landfill to recreational uses
- Connectivity of trails and recreation opportunities
- Minimal site impacts for nearly a decade at Yahara
- Maintain and enhance current recreation with buffers and restoration

# RECREATION

- Alignment with planned trail extensions
- Preliminary engagement with various groups
- Funds budgeted for 2022 planning and stabilization at Rodefeld
- Dane County Parks to include Rodefeld in Parks and Open Space Plan
- Plans for expansion of native prairie on the final cover



# 2025

- 36 holes of golf possible through 2024
- Minimal disruption to the site prior to 2028/2029
- Goal to begin composting of organics and food in 2025 (15-30 acres)
- City to maintain access to existing buildings along AB
- Waste Education Center and Admin Facilities planned for the Sustainability Campus in 2025
- Potential for workshop, maker spaces, or other businesses within the Education Center





# 2030-2045

- 18 holes of golf possible until 2045 (and possibly beyond)
- Maintain golfing experience with buffers, protection of existing trees, and thoughtful planning and traffic patterns
- Relocate golf storage/maintenance facilities near clubhouse
- Potential for additional recycling or reuse businesses at Sustainability Campus



# why YAHARA?

## economics

- Minimize City's waste hauling costs
- Keep tipping fees steady
- Job opportunities
- Economic growth
- Localize waste and recycling systems
- Revenue from land sale
- Site has potential to serve waste management needs for +75 years



*The next closest landfill is 40 miles away which could increase City's costs of hauling by 80-100%. This extra hauling also creates GHG emissions and places the burden of our waste on another community.*

# sustainability

- Maintain (and increase) level of services currently provided
- Move Dane County towards a circular economy with local recycling and reuse options
- Organics management options, composting then possibly digestion
- Restore wetlands, habitat and help mitigate effects of flooding and climate change
- Renewable energy



*A view of the renewable natural gas plant through the native plants on the Rodefeld landfill.*

# equity

- Prevent shifting the burden of our waste to another community
- Job training and employment opportunities
- Increase access to existing park with alternative recreation options
- Align project goals with those of Ho-Chunk Gaming Madison



*Photo from City of Madison Streets Division*

# POTENTIAL STAKEHOLDERS AND PARTNERS

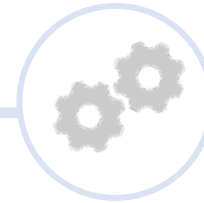


neighbors

Surrounding communities & landowners



educators & partners



collectors & processors



government

