



Windy City

Biosolids/Compost

Spring 2024

Closing the Loop - Biosolids



Recycling nutrients and carbon creates something beautiful. The zinnias here were grown in soil amended with MWRD air-dried biosolids. Southside Blooms, a flower farm on Chicago's southside, used EQ Compost to provide a rich growth media for their sunflowers.

Imagine a community in which there is no such thing as waste. Every input was once an output, and every output has a new purpose. In this community, recycling is not just an eco-friendly ideal, but an economic fuel. This is the concept of a circular economy. Biosolids are a key resource in closing the loop for circular economy to be realized in our local communities.

The United States produces 7.2 million dry tons of biosolids every year. About 55% of the biosolids are applied in farmland and urban turf and other grass areas. Putting biosolids in landfills leads to demands on physical space and produces methane and other greenhouse gases. Landfilling also removes important resources from our system, including phosphorous, which is a nonrenewable resource that is mined for agricultural use and will possibly be depleted by mid-21st century. The diversion of biosolids from land filling to land application generates numerous benefits in ecology, economics, and social aspects.

At the MWRD, we land apply ALL of our biosolids. Why is this important? Thinking about biosolids

as a resource instead of waste provides benefits locally and globally. Locally, we are able to improve soil for agriculture, parks, and recreation. We reduce our own carbon footprint by using biosolids again, rather than treating them as a waste product. Globally, our biosolids Carbon credits help offset the anthropogenic emissions for the goal of net zero emission by 2050 and keeping those resources active instead of requiring increased mining or production.

Locally, taxpayers benefit from land application of biosolids when it is applied to municipal golf courses and parks by reducing the input costs. Additionally, agricultural businesses, such as Southside Blooms, have blossomed by including biosolids in their soil. Parks have been able to improve turfgrass and gardens, increasing benefits to their communities without added costs. Improved business growth and community quality further promote the next generation of the circular economy, demonstrating that biosolids really do close the loop.

What is a Circular Economy?

A circular economy focuses on redefining waste as resources, aiming to establish a more sustainable and efficient system. It's changing the flow of resources from one of new materials in, old materials out, into a cycle that reduces the need for inputs.

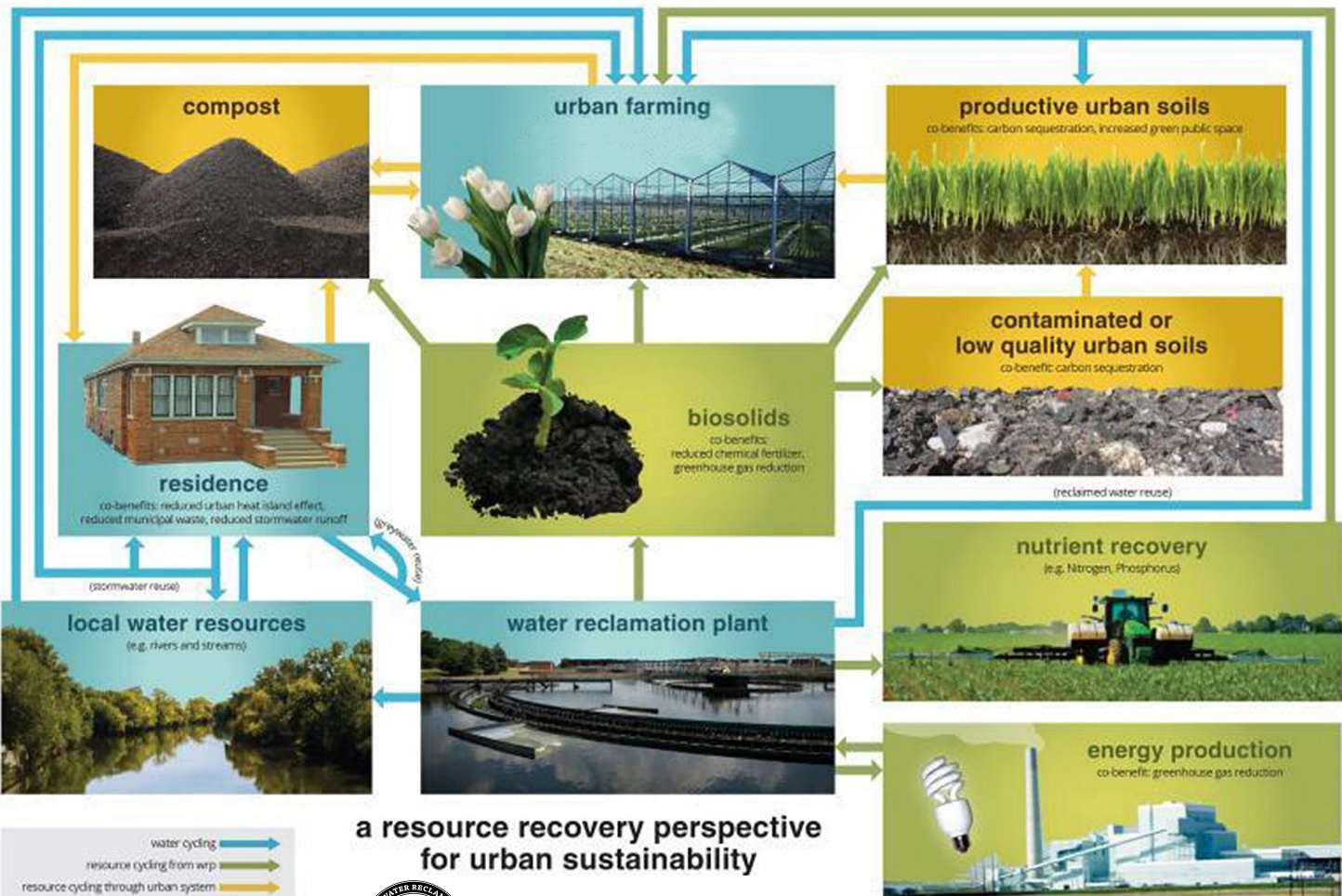
Principles of a circular economy:

- Eliminate waste and pollution
- Circulate products and materials
- Regenerate nature

Land-applying biosolids meets all of these principles, enriching our local environment in the process!

The MWRD is one of many water reclamation plants that provide a closed-loop biosolids land application program. Throughout the United States, a variety of programs provide free material, while others sell biosolids to farmers or other landowners. Milorganite is the oldest program in the country, selling biosolids for almost 100 years. Bloom, the Washington, D.C. product, is sold for a wide variety of agricultural applications, golf courses, and soil blending. On the other side of the country, Tagro is provided to orchards and community gardens in Washington State. Here in Chicago, our focus is to provide a free product to parks and golf courses that our community can enjoy. We also provide the material for construction projects and other land-uses. The carbon and nutrients in biosolids are broken down by microorganisms and redistributed in the soil, providing plants with what they need.

Try this! Identify one area that can be adjusted to fit a circular economy. For example, if you are reading this, you likely have land to manage, whether many acres or a small yard. Often there is a cost for disposing of yard waste and a cost of adding soil amendments. Instead of bagging your leaves this year, leave them as a protective mulch. It will reduce disposal costs and input costs. What other cost-in, cost-out systems do you have that can be turned into a circular economy?



[f](#)
[X](#)
[@](#)
[▶](#)
[in](#)
mwrdd.org

Kumar, K., Hundal, L. 2016. Soil in the city: Sustainably improving urban soils. Journal of Environmental Quality 45:2-8

Sustainable

Landscapers' CORNER



We've compiled some of the most frequently asked questions of 2023 and taken them to our soil scientists. If your questions are not covered here, please reach out to us at biosolids@mwrld.org.



YOU!

Who is this issue's sustainable landscaper?

It is YOU!

QUESTION: Are biosolids and compost still free with free delivery?

MWRD: Yes! We offer free biosolids and compost to non-residential users such as parks, golf courses, and construction projects.

QUESTION: What can I use to spread biosolids for topdressing?

MWRD: Several different types of spreaders can be used for biosolids. The most common spreader for low rates (topdressing) is a manure-type spreader with rear discharge. Other options include application vehicles with rear splash plate or side discharge, also for topdressing, or dump trucks with spreading completed with bulldozers or other heavy machinery for heavy rates at establishment.



Photo of Tiger spreader topdressing a field with biosolids at a 1/2" rate.

QUESTION: What is a good rate for establishing turf?

MWRD: We recommend 2" of biosolids incorporated into the top 4" of soil for establishment of new turf.

QUESTION: What is a good rate for topdressing? How much should I order?

MWRD: We recommend topdressing with 1/4" rate of biosolids. This is approximately 1.5 semi loads, or 40-45 cubic yards, per acre. So, if you are spreading 10 acres, we recommend 15 semi loads.

QUESTION: Is there a limit of how much biosolids we can order?

MWRD: There is no limit to the amount of biosolids you can order, but the delivery of biosolids will depend on the amount available at our drying site. Our air-dried biosolids are generally available from May to November.

QUESTION: If we do not have our own spreading equipment and elect to use the spreading contractor available through the MWRD, how long will we have to wait?



Tractor with bucket attachment for application of heavy rate of biosolids to restore ball fields.

MWRD: The MWRD does have a spreading contractor available for parks and municipal biosolids spreading. The wait will depend upon the demand for the spreading contractor and the availability of biosolids. Some parks have received spreading within a week of ordering, but some have had to wait several months due to the weather, availability, or

Sustainable Landscapers' Corner, cont.

scheduling of the contractor. You can always contact us if you have a specific timeframe for spreading the biosolids.

QUESTION: Should I spread biosolids after core aeration?

MWRD: Although we have not done studies on the benefits of spreading after core aeration, we have heard anecdotally from our users that the soil health improves even more quickly when following this practice. Biosolids increase the microbial activity in soils. By spreading biosolids after core aeration, biosolids will immediately increase microbial communities in the rootzone of plants, while biosolids also increase overall organic matter near the roots.

QUESTION: Do you have to be a park or municipal organization to order free biosolids or can contractors order them as well?

MWRD: Contractors can also order biosolids, whether they are used for parks, athletic fields, roadsides, construction projects, or other applications.

QUESTION: Is salt build-up a problem caused by biosolids application?

MWRD: No, it does not cause build-up of salts because sodium (Na) in the material is low and provides a healthy balance of organic matter to the soil; it improves soil quality.



The MWRD's EQ Biosolids is a product of wastewater treatment that supplies organic matter and improves the structure and porosity of soils, which allows plants to more effectively utilize nutrients. Air-dried biosolids can be used as a soil amendment or conditioner for establishing turfgrass and for mixing into custom topsoil blends.

Compost is available now for pick-up of orders of 5 cubic yards or more with a dump truck or trailer. Compost delivery for large orders will be available beginning April 1st. We are not continuing our residential program at this time.

EQ Biosolids will be available beginning in May. Orders can be placed in advance at <https://mwrdd.org/form/eq-biosolids-order-form> and information on biosolids is available on our website <https://mwrdd.org/what-we-do/biosolids>.

Improve Your Greenspace and Manage Stormwater

Looking to improve your green space and manage stormwater in the process? Turn to the MWRD's Green Neighbor Guide. This on-line resource, available [here](#), provides homeowners and business owners with detailed information and outlines the equipment and step-by-step instructions required to manage stormwater through green infrastructure practices. The Green Neighbor Guide educates readers on the value of green infrastructure, encourages them to implement projects at home through valuable tips and ideas, and it empowers property owners to play a role in the battle to manage excess water flow that has arisen in part due to climate change and increasingly intense and unpredictable precipitation. The MWRD is committed to the use of green infrastructure to help reduce flooding while reducing the load on the sewer system. Green infrastructure serves as a stormwater management tool that is designed to capture water and allow it to infiltrate into the ground before it enters the traditional conveyance system. These engineered installations store, infiltrate, and/or evaporate stormwater, thereby mimicking the natural water cycle.



For more information on the use of EQ biosolids or to include them in your projects, please visit our website at mwrdd.org/biosolids or contact:

Theresa Johnston, PhD, Senior Environmental Soil Scientist
Monitoring & Research Department, Biosolids Utilization and Soil Science
6001 W. Pershing Road, Cicero, IL 60804
Phone: 708-588-4066 Email: johnstont@mwrdd.org

BOARD of COMMISSIONERS

KARI K. STEELE
President

PATRICIA THERESA FLYNN
Vice President

MARCELINO GARCIA
Chairman of Finance

PRECIOUS BRADY-DAVIS

YUMEKA BROWN

CAMERON DAVIS

DANIEL POGORZELSKI

EIRA L. CORRAL SEPÚLVEDA

MARIYANA T. SPYROPOULOS

BRIAN A. PERKOVICH
Executive Director