Metropolitan Wastewater
MANAGEMENT COMMISSION

partners in wastewater management

REQUEST FOR INTEREST (RFI)

FOR

BIOCYCLE FARM POPLAR USE INNOVATION

April 20, 2021

Project Location:

MWMC Biosolids Management Facility and Biocycle Farm
29689 Awbrey Lane, Eugene, Oregon 97402

Information:

Website:
http://www.mwmcpartners.org/capital-improvements/request-for-proposals/
MWMC Project Manager:
Mr. Todd Miller
tmiller@springfield-or.gov
(541) 736-7137

Submit Reponses to:

Mr. Todd Miller, Environmental Services Supervisor
City of Springfield – Public Works Department
Environmental Services Division
225 Fifth Street, Springfield, OR 97477

Responses Due:

May 28, 2021 at 5:00 PM Local Time

Contents

I. PURPOSE

The Metropolitan Wastewater Management Commission (MWMC) will partner with selected respondents to this RFI to develop, advance, and innovate uses of Biocycle Farm poplar for local economic and social benefits. Depending on the interests identified and the scale, scope, and benefits of the interested Respondent, the MWMC may enter in agreements to:

- Sell or provide poplar logs, boards, biochar, or biomass to Respondents
- Facilitate demonstration of poplar products/biochar and use
- Collaborate with poplar materials design and use innovation

The MWMC is specifically in developing market relationships, pilot projects, innovative uses, and other cooperative partnerships to develop the highest and best use of Biocycle Farm poplar., Potentially interested Respondents include:

- Local mill operators
- Sustainable wood products producers/suppliers
- Local builders and craftspeople
- Architectural and structural materials designers and researchers
- Fiber/pulp product producers/suppliers
- Landscape/soil products producers/suppliers
- Biochar producers/users
- Biomass users

II. SCHEDULE

All responses to this RFI are due by 5:00 p.m. on May 28, 2021

- April 20, 2021 – RFI released and inquiry/input period begins
- May 28, 2021 – RFI response period closes
- June 11, 2021 – MWMC completes review of RFI responses
- June-July 2021 – MWMC enters into relationships with selected Respondents
- July-September 2021 – opportunities for log utilization
- July 2021 through post-harvest – opportunities poplar board, biochar, and ongoing innovation collaborations

III. HOW TO RESPOND TO THE RFI

To submit responses to this RFI please refer to Form of Response (Section VII) herein for instructions on completing the attached interest survey. The answers to this RFI will be evaluated by Eugene/Springfield regional wastewater program staff for decisions on proceeding with partnership and collaboration agreements.

CONTACT INFORMATION

The following individual may be contacted for information regarding this RFI.

Todd Miller, Environmental Services Supervisor
City of Springfield
Public Works– Environmental Services Division
225 Fifth Street, Springfield, OR 97477
541-736-7137 / tmiller@springfield-or.gov

IV. GOALS AND OBJECTIVES

The MWMC's purpose for issuing this RFI is to foster long-term, local partnerships to achieve the highest and best use of Biocycle Farm poplar for the community. Highest and best uses are those that demonstrate high value for environmental, societal, and economic benefits. The MWMC is offering this non-competitive RFI solicitation approach to provide an open opportunity process to innovate and demonstrate potential for integrating poplar into the local economy.

There are three principal areas of innovation interest for RFI Respondents:

1. Solid wood (logs or boards)
2. Biomass (chips, hog fuel, or produced biochar)
3. Building materials and design research & development

The MWMC anticipates formal relationships resulting from this RFI may include, but not necessarily be limited to:

- Identified Buyer's List
    - The MWMC will identify known buyers for the MWMC's harvest contractor for open market sales of logs and chips produced from the 2021 harvest
- Preferred Buyer's List
    - The MWMC will direct the MWMC's harvest contractor to sell specific quantities of logs, chips, or hog fuel at an arranged price to buyers for demonstration/pilot uses
- Poplar Board User Agreements
    - The MWMC will sell or otherwise provide milled poplar boards (of 5/4-inch by 6- or 8-inch dimensions) or poplar slabs (5/4-inch thick, live edge, random width) for users to demonstrate or pilot market potential
    - User agreements may include purchase, consignment sales, or no-cost provision of poplar boards or slabs
- Biochar Production Partners
    - The MWMC will partner with Respondents to produce biochar with hog fuel or other suitable poplar material for the MWMC's internal or community partner use and/or for Respondent's demonstration/pilot use
- Biochar Use Partners

    - The MWMC will provide biochar for local partners to demonstrate/pilot use
- Biomass Use Partners
    - The MWMC will provide hog fuel or other suitable biomass to Respondents to demonstrate/pilot use of this material for potential future market or other benefits
- Wood Products Innovation Partners
    - The MWMC will collaborate with research and teaching institutions and others to research, develop, and innovate use of poplar for building materials or other benefits
- Architectural Design Partners
    - The MWMC will collaborate with teaching institutions, design professionals, and others to develop opportunities to integrate locally-sourced poplar materials into building design.

V. ABOUT BIOCYCLE FARM POPLAR

The MWMC operates the Biocycle Farm, a hybrid poplar tree farm comprising approximately 400 acres of trees. The farm was established as a permanent land application site for Class B biosolids, which are reclaimed from the wastewater treatment process. The trees are irrigated with recycled water also reclaimed from the wastewater treatment process. The Biocycle Farm provides the MWMC with flexibility in managing reclaimed biosolids and recycled water, which have other beneficial uses in the local community. The poplar trees uptake excess nutrients and provide other environmental benefits for soil and groundwater protection. The MWMC intends to further the benefits of the Biocycle Farm through sustainable use of the harvested poplar.

The farm is an agricultural operation with a maximum rotation age of 12 years[1]. The farm is organized into three Management Units (MUs), each with a northern and southern half. These units may be managed as six separate age-classes in the future, which would provide a consistent harvest of 50-80 acres every two years. The MWMC is currently planning for the 2021 harvest of 12-year old MU3 poplar planted in 2009. The bulk of the poplar will be sold for chips and logs on the open market. Based on past experience, the MWMC has confirmed that poplar markets are volatile both in demand and pricing. Biocycle Farm poplar has been used for plywood veneer, paper pulp, cardboard, charcoal, bioenergy, and other uses. The two best market opportunities – plywood veneer and newsprint – changed due to other market forces. The MWMC contracted with local mills and manufacturers for pilot scale ceiling grille production. The MWMC has determined that there is interest in poplar products locally, including the local/sustainable source aspect of Biocycle Farm. However, innovation and demonstration is needed to prove the market potential.

[1] The Biocycle Farm operates under agricultural rules associated with its designated land use as "farmed wetland," which limits growth of poplar crops to 12 years or less (ORS 308A.056(3)(j)).

GEOGRAPHIC LOCATION

The Biocycle Farm is located northwest of Eugene, Oregon, adjacent to the MWMC's Biosolids Management Facility operations at 29689 Awbrey Lane, Eugene, Oregon 97402.

Figure 1. Biocycle Farm Vicinity Location and Site Layout

PROJECTED HARVEST AND MATERIAL AVAILABILITY

Based on the growth and performance curves, the MWMC projects that MU3 will yield 45 to 60 BDT of pulpwood per acre. For sawlogs, which should also have a greater potential due to size of Year 12 trees, 1 BDT yields approximately 1 MBF of log material. The MWMC expects 25% or more of total pulpwood to be suitable for peeler or saw logs.

The MWMC intends to have poplar boards and slabs milled specifically for opportunities identified through this RFI. The intended production is:

- Rough milled, dried, 5/4" x 6" and 5/4" x 8" poplar boards: 40 MBF
- Rough milled, dried, 5/4" thick, random width, live-edge poplar slabs: 8.5 MBF

The MWMC's next harvest is currently expected in 2027. Earlier harvests of younger trees may be possible if the MWMC alters the MU rotations to provide more consistent, 2-year rotations of 11- or 12-year harvests in the more distant future. Based on outcomes of the MU3 harvest and emerging market opportunities, the MWMC can adapt the harvest schedule for the most optimal long-term market supply of poplar. Under the MWMC's estimations, future 12-year harvests are projected to yield 50 BDT of pulpwood per acre (e.g. within the 45 to 60 BDT/acre range stated above), at approximately 33 BDT (33 MBF) of saw log material and 17 BDT of chip material. Adding a projected 15 BDT of hog fuel per acre, total biomass is expected to be 65 BDT/acre.

VI. SOLICITATION OF INPUT

The MWMC is seeking expressions of interest for poplar innovation through poplar use, demonstration, or experimentation and through theoretical and applied building materials science and design. The MWMC will partner with RFI respondents to establish mutually beneficially relationships to further poplar innovation. Areas of interest are expected to include, but not be limited to:

1. Poplar purchase, pilot use, resales, or demonstration partnership
2. Poplar biomass/biochar pilot production and/or use
3. Poplar building materials innovation/R&D partnership

This solicitation is open to anyone. The MWMC will contact Respondents to further discuss and arrange opportunities to collaborate.

VII. FORM OF RESPONSE

To respond to this RFI, please fill out and return the RFI Response Form. The form is a fillable PDF document.

The RFI Response Form is available on the MWMC website at www.mwmcpartners.org/proposals.html.

Responses may be submitted either by email or hard copy. Emailed electronic submittals are highly preferred. Respondents may fill out the form electronically or print and complete by hand. If by hand, scanned copies submitted via email will be accepted.

1. **VIA EMAIL**: Submit the completed RFI Response Form by email to

   Todd Miller, Environmental Services Supervisor
   City of Springfield – Public Works, Environmental Services Division
   tmiller@ springfield-or.gov

   Use "Poplar RFI" in the subject line your e-mail.

2. **VIA HARD COPY**: Mail a printed, completed form via mail or to:

   Todd Miller, Environmental Services Supervisor
   City of Springfield
   Public Works– Environmental Services Division
   225 Fifth Street, Springfield, OR 97477

Glossary of Terms

Agricultural Poplar Poplar is grown in Oregon under three potential sets of rules: (1) as an agricultural crop, limited to a maximum rotation age of 12 years (agricultural poplar), (2) as a non-forestry woodlot stand with less than a 20-year rotation age, and (3) as a forest product under the Oregon Forest Practices Act at rotations of greater than 20 years. The MWMC Biocycle Farm is limited to agricultural use, and therefore grows a maximum of 12-year rotations.

Biocycle Farm The MWMC Biocycle Farm is a 596-acre site operated for the application of biosolids as part of Eugene/Springfield's regional wastewater management strategy. The poplars provide rapid uptake of water and nutrients supplied through land application of liquid biosolids. The farm is planted in three management units (MUs) of hybrid poplar of between 110 and 160 acres each. The MWMC is considering more frequent, two-year rotations across six smaller MUs of 50-80 acres each for future harvests.

Biosolids Biosolids are the nutrient-rich organic solids that are derived from the treatment of domestic wastewater at municipal wastewater facilities. Once biosolids have been treated to meet state and federal regulations and the MWMC's own high standards, they are beneficially used as an agricultural soil amendment or potentially distributed as compost. The MWMC's biosolids are called Biocycle and are distributed to local cooperative grass seed farmers for fertilizer. Biosolids are rated as Class A or Class B according to federal regulations, depending on the level of treatment, pathogen reduction, and testing performed on the organic material. The MWMC performs treatment capable of meeting Class A standards, but operates as a Class B facility because the higher level of classification (and associated costs) is not necessary for current Biocycle use.

Exclusive Farm Use Exclusive farm use (EFU) is the Oregon land use designation for most of the Biocycle Farm. According to Oregon law, "farm use" means the current employment of land for the primary purpose of obtaining a profit in money by raising, harvesting and selling crops or the feeding, breeding, management and sale of, or the produce of, livestock, poultry, fur-bearing animals or honeybees or for dairying and the sale of dairy products or any other agricultural or horticultural use or animal husbandry or any combination thereof. "Farm use" includes the preparation, storage and disposal by marketing or otherwise of the products or by-products raised on such land for human or animal use. "Farm use" includes the on-site construction and maintenance of equipment and facilities used for the activities described.

Farmed Wetlands This USDA/NRCS classification applies to the Biocycle Farm's EFU land. The Biocycle Farm comprises seasonal wetlands that were "drained, dredged, filled, leveled, or otherwise manipulated before December 23, 1985 for the purpose of, or to have the effect of, making the production of an agricultural commodity possible and continue to meet specific wetland hydrology criteria." This designation limits the Biocycle Farm land use to either wetland or continued agriculture as long as site hydrology is maintained.

Heavy Industrial (I-3) Land Approximately 150 acres of the Biocycle Farm is designated at I-3. This designation generally accommodates industries that process large volumes of raw materials into refined products and/or that have significant external impacts. Examples of heavy industry include: lumber and wood products manufacturing; paper, chemicals and primary metal manufacturing; large-scale storage of hazardous materials; power plants; and railroad yards. Such industries often are energy-intensive, and resource-intensive. Heavy industrial transportation needs often include truck and rail. This designation may also accommodate light- and medium-industrial uses and supporting offices(local regulations permitting).

Hybrid Poplar Hybrid poplar, also known as hybrid cottonwood, is a farmed tree stock produced from hybrid crosses of cottonwood/poplar species known as varieties.

Management Unit (MU) The Biocycle Farm is currently laid out in three distinct management units (MUs) ranging from 116 to 156 acres each. Each MU hosts a separate age-class (rotation) of hybrid poplar. MU1 was replanted in 2016. MU2 was replanted in 2018. MU3 was initially planted in 2009 and is being harvested in 2021.

Recycled Water Recycled water is the cleaned and disinfected reclaimed water product produced from the wastewater treatment process. Recycled water is produced at the quality needed for the level of use. In Oregon, recycled water is classed as Class A, Class B, Class C, or Class D. The MWMC currently produces Class C recycled water, rated for non-food crop irrigation, for use at the Biocycle Farm. The MWMC is developing highest-quality Class A recycled water capability for future uses.

Varietal Different hybrid poplar strains are known as a varietal. Each varietal is a hybrid resulting from a cross of two different parent species of cottonwood or poplar The MWMC has been refining the types of varietals used in subsequent replants to establish the best-performing trees for the farm. In this regard, the MWMC expects ongoing increases in total yield by quantity and quality with each harvest.