

Terra Nova Rural Park Entry Refresh – Recycled Plastic Pilot Information Bulletin

Introduction

The City has refreshed the Terra Nova Red Barn entry area. As part of this project, the City has constructed new garden plots using an innovative, circular construction material—recycled plastic lumber. This product is made of recycled plastics recovered from our oceans and manufactured by a local, Richmond-based company, demonstrating a local, closed-loop approach to material reuse. This initiative aligns with the Richmond Circular City Strategy, supporting efforts to maximize resource value, lower carbon impacts, and explore long-lasting, sustainable alternatives to traditional construction materials.

The following is additional information about the project and this sustainably sourced product.

Pilot Project Overview

- The City is piloting an innovative recycled plastic lumber product as part of the Terra Nova Red Barn entry area refresh project.
- The project launched in 2023 with the goal of enhancing park infrastructure while trialing circular materials.
- Project Goals:
 - Create a more welcoming park entry
 - Improve function and productivity
 - Expand educational and learning opportunities
 - Advance Richmond's use of durable, circular materials in public spaces.
 - Enhance accessibility and inclusion
- In alignment with the Richmond Circular City Strategy and climate goals, this project explores an opportunity to test alternative, more sustainable materials for the new community garden beds.

Ocean Legacy, Full Circle Plastics and the Recycled Plastic Lumber

- Ocean Legacy is a local, Steveston-based company that collects ocean plastic pollution, sorts it and converts it into pellets used to make a wide range of products, such as garden tools, buttons and recycled plastic lumber.
- Full Circle Plastics, which is based in Alberta, uses the pellets to make recycled lumber that can be used in place of standard timber products.
- The plastic lumber has been tested to ensure it is safe to be in contact with soil and plants grown for human consumption. The tests, conducted by an independent scientific laboratory, confirmed it is safe for use. Therefore, the product is safe for growing food.

For more information about the product and manufacturers, visit:

- Ocean Legacy's website:
<https://oceanlegacy.ca/about/>
- Full Circle Plastics' website:
<https://www.fullcircleplastics.com/>

Frequently Asked Questions

Q: Why was Terra Nova selected to try out this product?

A: Terra Nova was chosen to try out this product because of the timing of the project, the project's objectives and was in keeping with the experimental and educational spirit of Terra Nova Rural Park. Terra Nova was selected for this pilot due to its alignment with the project timeline, objectives, and its role as a hub for innovation, hands-on learning, and environmental education. The site provides an ideal setting to trial durable, circular materials that extend product lifecycles, reduce reliance on virgin resources, and support regenerative material use in public spaces.

Q: Why are we using this product?

A: Typically, raised garden beds utilize untreated or Western Red Cedar lumber. Over time, both materials degrade due to their direct contact with soil and moisture. Pressure-treated wood is not considered food safe, making it unsuitable for garden use. In alignment with Richmond's Circular City Strategy, this pilot allows the City to trial a durable, long-lasting circular material, reducing the need for virgin timber and extending material lifecycles. Beyond garden beds, this initiative also supports the evaluation of recycled plastic lumber for broader applications, such as park furnishings, fences and pathway borders. Since the material resembles wood in size and density, it will be assessed for its structural integrity and long-term performance in outdoor settings.

Q: Why don't we use plastic lumber in other community gardens?

A: This is a first! The use of the plastic lumber at this site is unique and represents a step toward integrating circular materials into Richmond's public spaces. Real-world exposure to use, weathering throughout the four seasons, and alignment with circular economy principles such as material longevity and resource regeneration will be monitored. More research and engagement will help evaluate its performance and potential for broader adoption in future garden plots and other municipal applications.

Q: What kind of plastics are used in the plastic lumber?

A: Full Circle Plastics uses reclaimed HDPE, LDPE and PP (2, 4 and 5) plastics, giving new life to recovered materials that once drifted through our oceans. These food-safe plastics, originally found in items milk jugs, yogurt containers, bread bags and resealable storage bags, are now transformed into durable garden beds, closing the loop from shoreline to soil. Through this process, materials once lost to the currents are reimagined as a foundation for food production and plant growth, demonstrating how circular innovation can turn recovered plastic into a resource that nurtures both plants and community.

Q: How are the pellets converted into plastic planks?

A: Plastics are heated and formed into standard lumber sizes. No chemicals or binders are used to convert the plastics into the lumber.

Q: Is Plastic lumber safe for growing vegetables or other plants intended for consumption?

A: Yes. The plastics use in Full Circle Plastics' plastic lumber are considered food grade by the Government of Canada, Canadian Food Inspection Agency. Due to the stable nature of these materials, they do not leach any chemicals, toxic or otherwise, into the soil within the garden bed. The City has confirmed this by conducting its own testing by a scientific commercial laboratory.

Q: Can my vegetables still be considered organic if grown in these garden beds?

A: Organic certification is given on a case by case basis and considers many factors, therefore certification cannot be guaranteed. However, the Canadian Organic Standards states plastics are permitted in organic gardens, like PVC in row covers, plastic mulch & irrigation. Additionally, Ocean Legacy's plastic lumber has been used in a variety of food production related uses at farms which have been certified organic by independent organic farming certification organizations.

Q: Can recycled plastic lumber be considered sustainable or eco-friendly?

A: Yes, it is considered a sustainable option. A key advantage of recycled plastic lumber is its role in the circular economy. By repurposing recovered plastics, Ocean Legacy helps restore marine environments, extends the lifecycle of valuable materials and reduces reliance on virgin timber, providing a resilient alternative to wood.

Q: How durable is plastic lumber compared to traditional wood?

A: Recycled plastic lumber stands out for its resilience. Unlike traditional wood, it doesn't rot, splinter, or succumb to pests like termites. Its moisture-resistant nature also ensures it is unaffected by water, preventing warping or twisting over time. The City will be observing this products durability as part of this pilot project.

Q: How long does Plastic Lumber last before it needs to be replaced?

A: Based on the manufacture's specifications, this recycled plastic product is expected to last approximately 50 years. In comparison, traditional wooden raised beds typically last 5-10 years, based on conditions.

Q: Will the plastic lumber melt in extreme heat or crack in cold weather?

A: Based on the manufacture's specifications, this is not expected to melt or crack. The recycled HDPE plastic used in this product is resistant to cracking or chipping, even in extreme hot or cold weather. The City will monitor the performance of this product.

Q: What are the drawbacks of using plastic lumber?

A: Depending on the dimension of the lumber, wood is generally more rigid and has greater linear strength. Recycled plastic beds need some form of cross-bracing and/or additional staking to stiffen the sides and prevent them from bowing and deforming along its entire length. Plastic lumber is also more expensive than traditional wood.

For more information about the City's Circular Economy vision and strategy, visit

www.richmond.ca/services/climate/circulareconomy.