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LOCAL

Good news for recycling Oak Ridgers: most of your recyclables are used for new products

Smurfit Westrock Knoxville Recycling officials answers questions

Carolyn Krause Special to The Oak Ridger

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Only about 10-14% of what Oak Ridge and Knoxville city residents [attempt to recycle](#) is sent to a landfill, according to Tyler Adams, general manager, and Derek Senter, senior specialist for procurement, at [Smurfit Westrock](#) Knoxville Recycling on Proctor Street in Knoxville. That is the facility that receives and processes the potentially recyclable waste collected in area communities that have recycling services, including what Waste Connections picks up in Oak Ridge.

Smurfit Westrock, which is headquartered in Dublin, Ireland, is a global leader in sustainable packaging that operates in 40 countries. It has 62 paper mills and more than 500 packaging converting plants, including three recycling locations in Tennessee.

The two men recently briefed the city of Oak Ridge Environmental Quality Advisory Board (EQAB) about the status of plastic, paper, cardboard and metal that are collected from Knoxville and Oak Ridge household recycling bins, known as “single stream input.”

[Here's what Oak Ridgers should and shouldn't recycle](#)

Their information was somewhat surprising for the EQAB board members because of the many press reports indicating that much of the material put out for recycling, including plastics, ends up in landfills.

“Smurfit Westrock Knoxville Recycle processes up to 98,000 tons of recycled waste a year,” Senter said. “Up to 15,000 tons of that is from households and the other 83,000 tons of materials sent to us for recycling comes from businesses and municipalities.”

Joel Hewett, retiring EQAB chair, said, “From what you’re telling us, should our message to our citizens be that most of the waste we put in our recycling bins is truly being recycled and put to real use as part of what we call the circular economy?”

Senter replied, “That’s exactly right.”

“The technology is changing,” Hewett said. “What negative stuff we’ve heard about recycling is no longer true. It’s okay to put Starbucks cups and Juicy Packs in the recycling bin because they will be reused.”

Senter asserted that Smurfit Westrock Knoxville Recycling uses 86-90% of the waste collected in Knoxville and Oak Ridge’s recycling bins, and from businesses and municipalities, to make consumer products, ranging from carpet to pizza boxes and juice bottles.

Senter began by showing the EQAB members a three-minute video showing how the company sorts material sent to it for recycling from Oak Ridge, Knoxville and many other municipalities.

According to the video, “The facility’s single stream system uses people, automation and manual processes to sort materials by size, shape and type. Employees re-sort materials to remove large or contaminated items. People are also stationed at locations along the belt to remove contaminants like plastic garbage bags and other non-recyclables.

Non-recyclable items are harmful

“Non-recyclable items can break down the sorting equipment and negatively affect the quality of otherwise good recyclables. Smurfit Westrock operators use different types of equipment to separate materials.

“The Eddy Current Separator uses magnets to divide aluminum cans from tin cans. The Optical Sorter identifies the molecular makeup of a plastic item and then uses a puff of air to send the item from the stream into its own separate pile to be baled.”

It was noted during the talk that #1 or #2 plastics are separated from other plastics and used to make new products. However, the plastics marked #3 through #7 have fewer industrial uses and usually end up in landfills.

The video’s narrative continued: “Next, crews sort materials into the baler, which compresses and then wraps the materials into a bale that is easy to stack and ship. Baled materials are ready to ship regionally to buyers from several industries that manufacture non-recycled items into new materials.”

The video states that Smurfit Westrock operates several paper mills that use the reclaimed paper fiber from the paper that residents toss into recycling bins to make new recycled paper board. It is used in a wide variety of food packaging and retail merchandise containers, such as the familiar recyclable pizza and Amazon boxes that are delivered to millions of homes.

The video stated that popular plastic water bottles are made of polyethylene terephthalate, labeled PET or PETE on the bottle label or with a #1 “chasing arrows” recycling symbol. This plastic type has such advantages as being transparent, lightweight, strong, durable and recyclable. Adams said these drink bottles should be tossed in the recycling bin, not the trash. The PET plastic from the bottles is used to make new lightweight plastic water bottles, soda bottles and juice bottles, in addition to containers for salad dressings and peanut butter.

The video stated that much of the PET plastic recycled in this area ends up in carpet manufactured in the region. Furthermore, it said that industries buy from Smurfit Westrock high-density polyethylene containers, such as plastic jugs and buckets made of #2 plastic, for use in manufacturing corrugated pipe, composite wood or plastic lumber.

Another message from the video is that all beverage containers should be recycled

and that the beverage industry reuses the aluminum cans

The video concluded with this statement: “So when you buy products that include recycled content, you reduce the need for virgin materials, stimulate the recycling industry and help create local and regional jobs in recycling, collection and processing.”

Robin Graham, a member of EQAB who is succeeding Hewett as chair, asked if she should rinse plastic items she intends to toss into the recycling bin. Adams remarked that small amounts of residue, such as a bit of cheese stuck to a pizza box, does not prevent recycling. However, containers must be empty because liquid in #1 or #2 plastic can make the waste too heavy to be separated by a puff of air as it passes through the optical sorter. He added that plastic and paper waste that is heavily contaminated with rotten food must be rejected because it would be unsafe for workers to be exposed to it.

Adams said Smurfit Westrock is the largest paper manufacturer in the world and largest producer of recycled paper fiber that it uses in its paper mills to make paper and cardboard for packaging.

Senter said Smurfit Westrock is a large international company with several operations in the Southeast, including Tennessee.

“We have created a lot of jobs right here in Tennessee,” he said. “All the material we receive from Oak Ridge and Knoxville stays in the Southeast, either at our own paper mills or at the carpet manufacturers down in Georgia or at plastic item fabricators in North Carolina. We’re not exporting.”

Senter showed a map of the company’s locations in Tennessee, including three plants in Knoxville.

“We’ve got a folding carton plant that makes the packages for Glad, Reynolds Wrap, Stouffer’s and Lean Cuisine products, as well as 12-pack boxes for cans of Coca-Cola, Pepsi and beer.”

Smurfit Westrock personnel, Adams said, like to say that their company is participating in the circular economy.

“We sell packaging to the customer, and the customer recycles it, meaning that it comes back to us.”

He explained that wastepaper is converted into pulp and sorted based on different fiber qualities and sizes. Corrugated cardboard, which tends to be composed of long fibers, is useful for products requiring strength such as new corrugated containers.

Graham wanted to know if cardboard containers with plastic caps can be recycled. Adams said that new technology now allows milk cartons, juice boxes and plastic-lined paper coffee cups to be recycled.

In the past, cardboard with plastic or adhesive on it was not recyclable. But Adams said if it is sent to a Westrock paper mill, the plastic associated with the container can be separated and sent to the landfill, while the paper is recycled.

Plastic bags, especially plastic garbage bags, and glass jars and glass bottles are a problem, Senter said. The company’s sorters try to separate out the plastic bags, which are sent to the landfill.

“Every ton of plastic bags that we send to the landfill is very detrimental to our profitability,” he added, noting that the total cost of recycling includes the price of baling labor, electricity, fuel, and the landfill tipping fee.

But no glass

Smurfit Westrock no longer accepts glass, Adams said, because when jars and bottles shatter, they damage and prematurely wear out the belts used in the company’s sorting processes.

Knoxville (but not Oak Ridge) collects glass separately and stores it for possible use later, it was noted. EQAB members commented that crushed glass can be used as a base material for roads, driveways, landscaping and even countertops.