

A UNIVERSAL EXPANSION

FIVE YEARS AGO THIS MONTH DELAWARE PASSED A CONTROVERSIAL LAW THAT BROUGHT CURBSIDE ACCESS TO ALL HOUSEHOLDS. OUR AUTHORS EXPLAIN THE PROGRAM'S IMPLEMENTATION AND GIVE DETAILS ON THE RISING RECYCLING RATE THAT HAS RESULTED. BY MICHAEL PARKOWSKI AND NATALIE STARR

It would be easy to simply declare Delaware's Universal Recycling Law a big success. While you wouldn't be wrong for doing so, to truly understand why the law has been so successful you have to understand how it evolved and why it works for the First State.

Delaware is unique in that most of the population resides in unincorporated areas and less than 10 percent of municipal solid waste is collected by municipal crews or under a municipal contract. And because Delaware is so small, a single statewide entity – the Delaware Solid Waste Authority (DSWA) – manages all waste and most recycling. Since DSWA touches almost every ton of waste or recycling generated in Delaware, it has the ability to accurately track and record weights of trash and recycling, with historical records dating back to 1975, when the authority was established. This allows for a level of data collection many other states could not possibly accomplish.

Delaware was slow to embrace recycling. In its early years DSWA focused on converting a large number of unlined county and city dumps into three centralized modern sanitary landfills (one for each county). Delaware's first statewide recycling program was started by DSWA in 1990 as a drop-off program, and residents separated their recyclables by commodity into different colored containers. The program eventually grew to 180 drop-off centers located throughout the state with an estimated 50,000 households participating. But in the late '90s and early 2000s, curbside recycling became popular in nearby states, trash totals rose with the

growth of the economy and some Delaware residents began pushing for the curbside option.

From subscription to single-stream

Several Delaware lawmakers tried to pass mandatory curbside recycling laws but with little support. "Mandatory," in fact, became a four-letter word in the Blue Hen State. Private trash haulers were not ready to make the large investment in subscription-based curbside recycling, so in 2003 DSWA itself began offering a voluntary subscription curbside recycling service. Even though the number of customers grew rapidly, collection costs were high due the program's source-separated collection process as well as the large service area spawned by the subscription approach.

By 2008, single-stream MRFs arrived in neighboring Maryland, New Jersey and Pennsylvania, enabling DSWA to switch to single-stream curbside cart collection and transfer materials out of state for processing. This development reduced collection costs and made it more convenient for the growing customer list, which at that point also included many municipal contracts. But even with these savings, DSWA still subsidized program costs heavily to enable participation throughout the state. By the end of 2008, approximately 76,000 Delaware households (23 percent) had curbside recycling service, up from the less than 1,000 enrolled when the program started in 2003.

As more and more Delaware households signed up for curbside

recycling, private haulers also wanted to become service providers – but with some assurances. Unable to subsidize service themselves, private haulers wanted DSWA to stop its subsidized curbside program (so private haulers could add customers and achieve denser routing). The haulers also asked for a mandatory system that would push their trash customers into the recycling realm.

During this transition period, the state bottle deposit law also became a source of much debate. The General Assembly voted to remove the 5-cent bottle deposit, which applied to carbonated beverages sold in glass and plastic, though not in aluminum. However, with many groups opposed to this step, the governor vetoed the plan while promising an alternative.

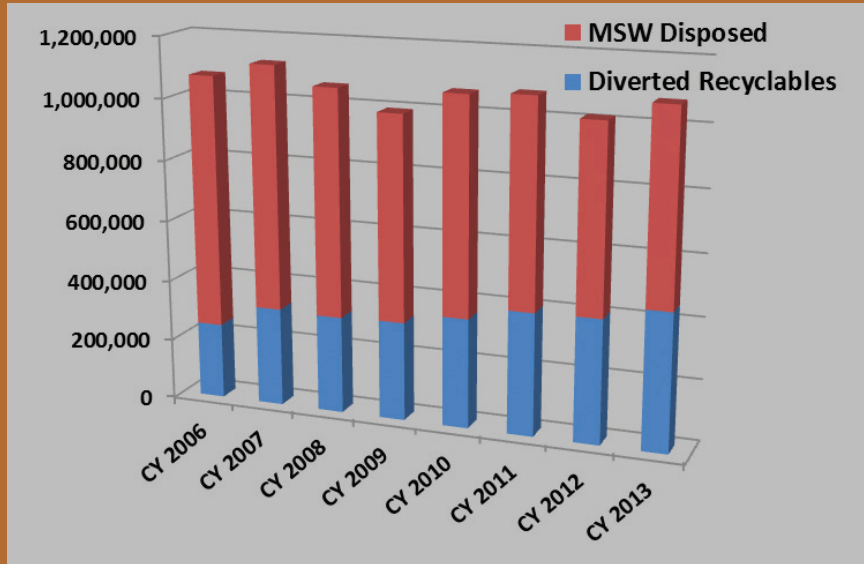
The governor’s office and lawmakers saw an opportunity to gather different stakeholders together to craft that alternative – the Universal Recycling Law. Even for a small state like Delaware it was rare to see so many diverse groups come together through the process. And it became clear things were working because no one was completely happy when the process was over.

Everyone pays for service

The Universal Recycling Law, which passed on May 10, 2010, provided everyone something but not everything they wanted. Highlights of the law include:

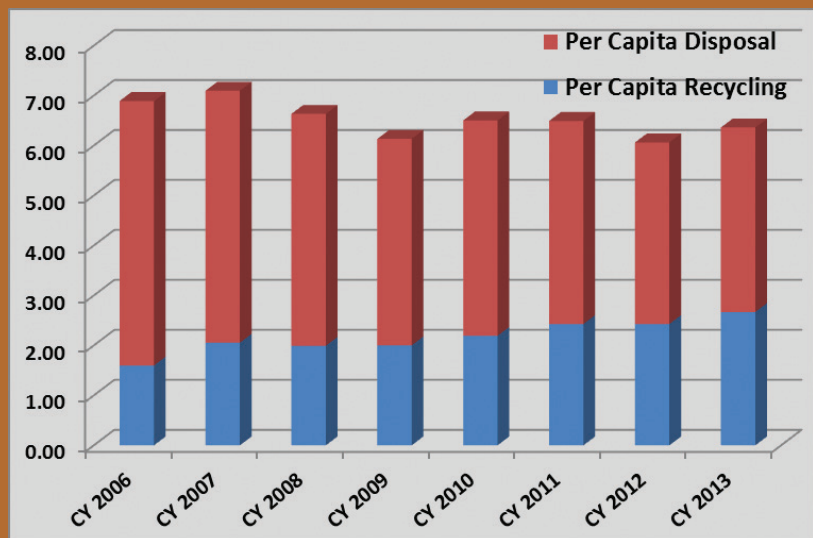
- Residential trash haulers must provide every customer a recycling cart and collect recyclables at least once every other week. Residents pay for the service in their subscription trash fee, regardless of whether they participate or not.
- The 5-cent deposit was converted to a 4-cent fee paid by consumers. The fee went into a recycling fund and was distributed in the form of grants to haulers and municipalities to pay for needed recycling infrastructure. (The fee arrangement ended in December of 2014, but it raised millions of dollars for equipment and new programs.)
- DSWA was forced to end its curbside recycling collection service.
- Trash haulers that collect from multi-family complexes must provide recycling containers along with trash containers.
- Commercial, industrial and institutional entities must develop a comprehensive recycling program.

Table 1 | MSW disposal and recycling in Delaware (in tons)



Source: Delaware Solid Waste Authority, on all tables

Table 2 | Disposal and recycling in Delaware (pounds per person per day)



About the same time, a yard waste disposal ban was written into the permit for DSWA’s largest landfill, and shortly after similar bans went into effect at the two other DSWA landfills.

As a result of the Universal Recycling Law, DSWA was able to contract with ReCommunity to build a single-stream MRF in Delaware. More importantly, mu-

nicipal solid waste recycling rose significantly (from roughly 250,000 tons in 2006 to 450,000 tons in 2013) and landfill tons fell dramatically from a peak of 1.107 million tons in 2006 to 710,000 tons in 2013 (some of this landfill tonnage includes construction and demolition waste, which is not included in tracking MSW recycling and is therefore not included in the charts that

accompany this story).

Table 1 on page 38 shows the changes over time in municipal solid waste disposal and recycling.

Table 2, meanwhile, shows per capita recycling and disposal during the same 2006-2013 period. The statistics adjust for the growth in population, which occurred throughout this time frame.

And finally, the MSW recycling rate is shown in Table 3. The rate grew from 23 percent to 42 percent (rounded) in eight years, and this was during a time of stagnant or falling recycling rates in many other parts of the U.S.

Keeping the data honest

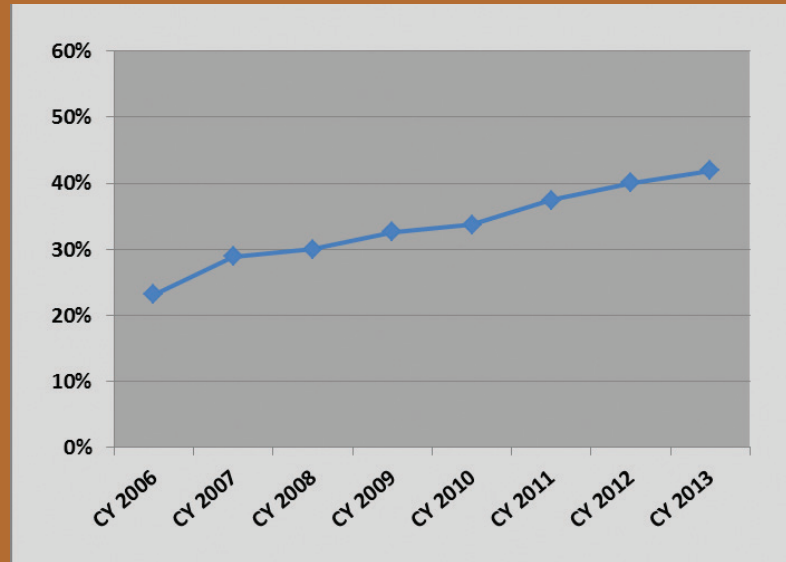
All of us in the recycling field know the challenges and variables that go into recycling rate calculation, and we'd be wise to approach with skepticism any significant rise in a reported rate. Delaware took pains to address the issue.

While the small size of the state certainly played a role in the quick ascent of the Delaware rate, the use of "strategic" metrics did not. Accurate tracking of recycling activity was critical from the start. A governor-appointed Recycling Public Advisory Council (RPAC) formed a Measurement and Methodology subcommittee in 2006 to ensure progress reporting allowed for meaningful comparisons from year to year as well as accurate tracking moving forward. Delaware's RPAC was initially established by Gov. Thomas Carper in 2000. In 2006 Gov. Ruth Ann Minner issued Executive Order 90, re-establishing RPAC and establishing "a 51 percent diversion rate for recyclables from Delaware's municipal solid waste stream comprised of residential and commercial solid waste."

The methodology the subcommittee adopted used the 1997 EPA guidance document "Measuring Recycling: A Guide for State and Local Governments" as the basis, and many materials previously included in reports on Delaware recycling were dropped. For example, all construction and demolition waste was excluded from both the numerator (recycling) and the denominator (recycling plus disposal) of the calculations. The new methodology also left out scrap metal, though it did continue to include appliances and lead acid batteries.

Working together, RPAC members tracked all types of recycling and sought to distinguish residential and commercial

Table 3 | Delaware's MSW recycling rate (2006 – 2013)

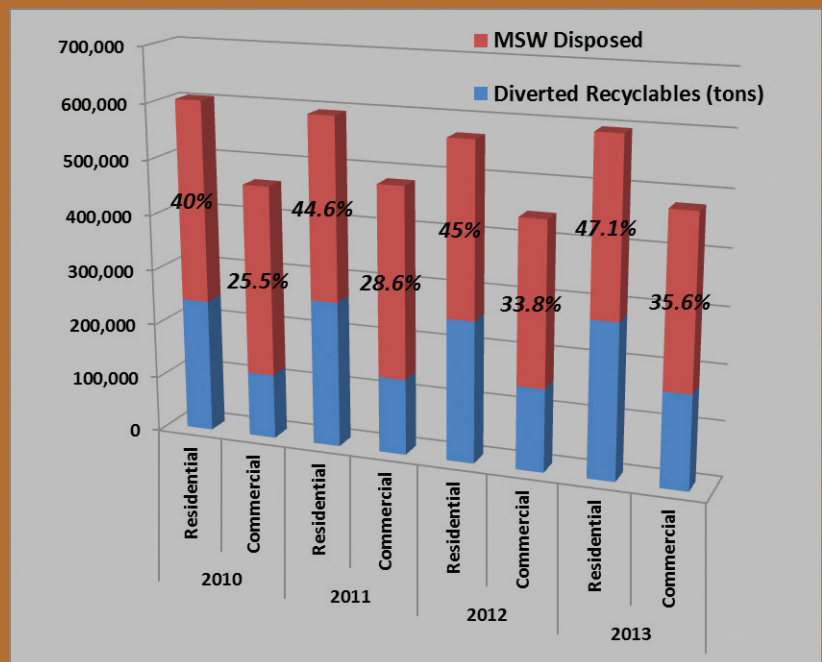


sources. DSWA's 2006-2007 Waste Characterization Study also collected data on the source of incoming loads, and it refined the waste tracking at all six transfer facility scale houses in the state in an effort to accurately distinguish between incoming residential,

commercial and C&D material. This resulted in annual reporting of all incoming loads by material and vehicle type, allowing for calculation of total residential, commercial and C&D waste by facility.

When the Universal Recycling Law

Table 4 | Residential and commercial diversion (percentages shown on bars are recycling rates)



was being drafted, stakeholders were well aware of the need for accurate reporting of recycling activity and incorporated a reporting requirement into the law. After several years of voluntary reporting, generators, haulers and handlers of recyclable materials were required to report annual recycling quantities starting in calendar year 2011. Compliance with the reporting law has been high, and it has improved each year as facilities have developed a better understanding of the reporting requirements and the program's intent.

Residential and commercial recycling and disposal statistics for the last four years are shown in Table 4. From these figures, recycling rates for each sector are calculated.

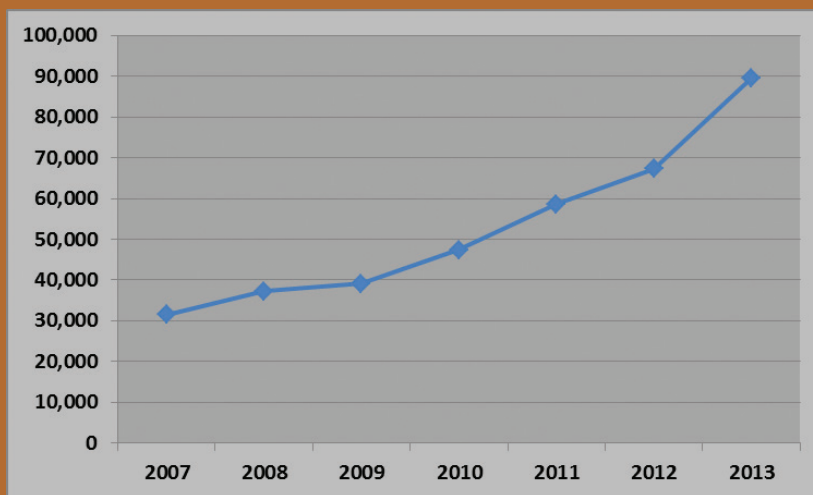
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Probably most instructive is the growth in the recycling of paper and packaging (single-stream collected materials) among Delaware households before and after the implementation of the Universal Recycling law. See Table 5 for the specifics on that upward movement.

The gains in this area can be attributed first and foremost to the increases in recycling access that came alongside the Universal law. Before the legislation took effect, Delaware had one of the most comprehensive drop-off programs in the U.S., with nearly 200 locations placed strategically around the state. But even with this, recycling participation was low – fewer than 20 percent of households took part in 2003. Even with DSWA's voluntary subscription recycling program starting up in 2004, the growth in residential recycling was limited. The peak of 76,000 households subscribing (a number that included municipalities like Dover and Wilmington that had signed up all households) still amounted to less than 25 percent of the state's population. And many of those that were signed up were former drop-off users.

The Universal law ushered in statewide residential curbside recycling: Access was

Table 5 | Residential recycling of paper and packaging (in tons)



ensured for all, with the cost embedded in the monthly rate.

What's next

Clearly, the population in Delaware is embracing the change in the state's recycling format. Now the state is looking to evolve the program further.

Requirements for small commercial generators kicked in Jan. 1, 2014, and improvements in commercial recycling rates are expected to follow.

But DSWA hasn't stopped at MSW recycling. It has recently partnered with an innovative construction and demolition debris recycling business, Revolution Recycling, which has built and is now operating a mixed C&D processing facility in New Castle County.

Delaware also recognizes yard debris and food scraps play a big role in recycling rates. Over the past decade there has been growth in curbside yard debris collection in both incorporated areas and by subscription. In addition, DSWA is looking more closely at the source of yard debris and its impact on residential recycling rates. The

state is also investigating ways to increase food scrap diversion and manage organics for beneficial use.

Re-calculating Delaware's progress in achieving higher levels of recycling is part of Delaware's solid waste plan, "Moving Toward Zero Waste." Next year DSWA plans to conduct a statewide waste characterization study. Combined with the mandatory annual recycling reporting requirements, the study will allow DSWA to report statewide materials recovery rates with even more authenticity. Stay tuned to see how the big efforts in one of America's smallest states continue to develop. **RR**

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