

Getting On-Board with On-Board Truck Scales:

Arlington County's Experience

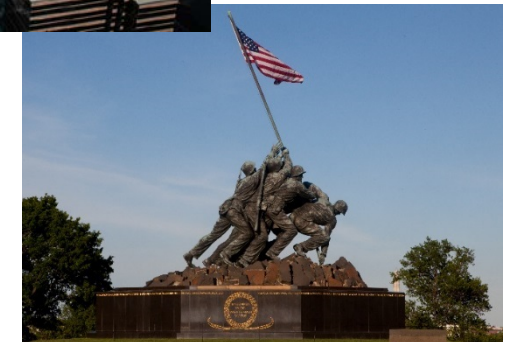
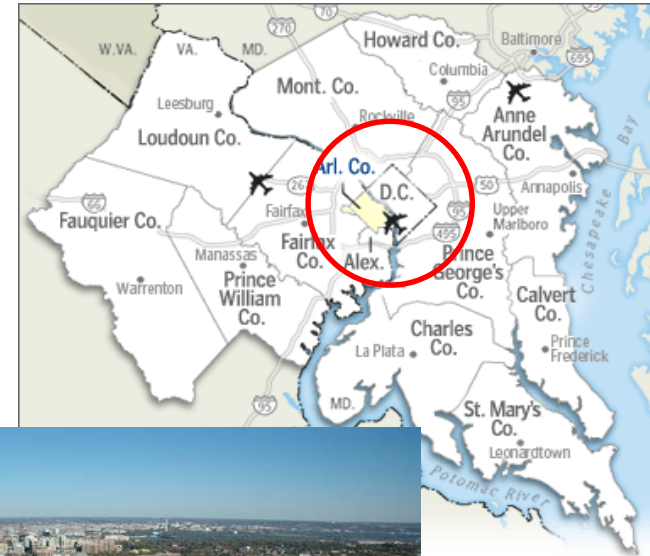
*Phil Bresee, Chief, Environmental Management Office, Arlington County
Solid Waste Bureau*

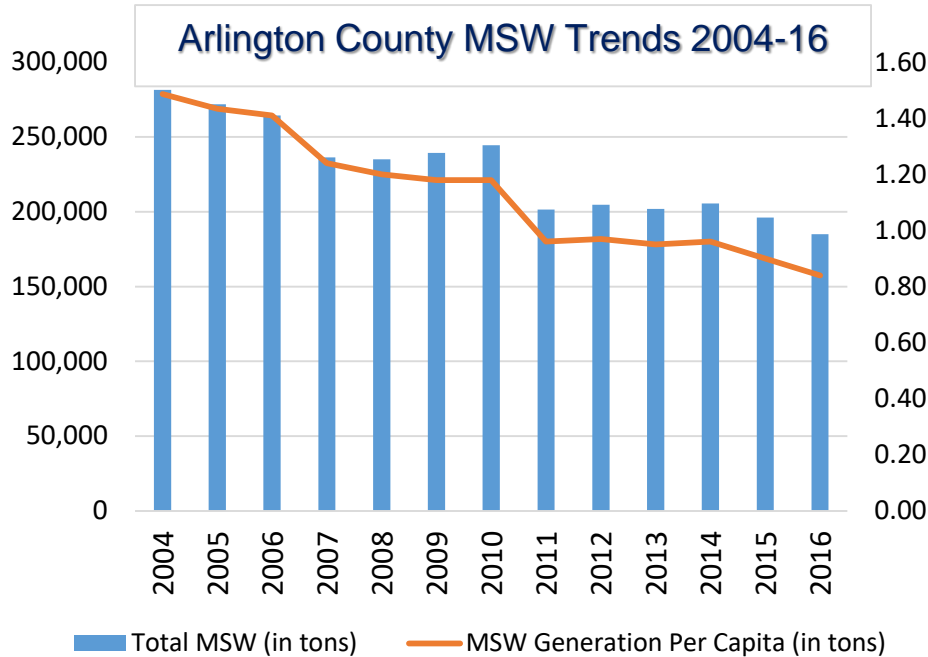
*MWCoG Recycling Committee
March 15, 2018*



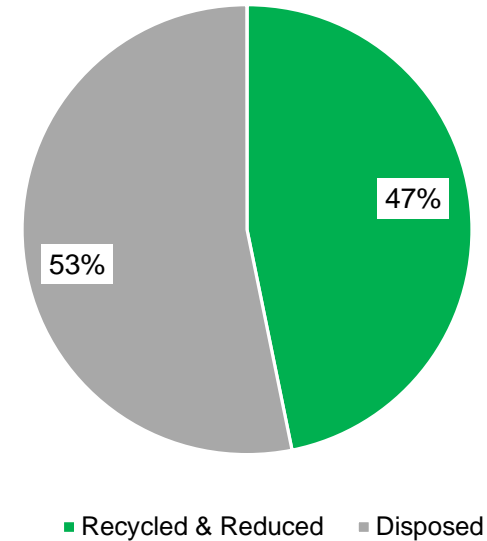
About Arlington County...

- Land area = 26.2 miles
- Population = ~225,000
- Households = ~104,000
- 211,000 at-place employees each day
- Large federal government presence - Defense Dept., TSA, DEA
- High educational attainment and income:
 - 71% adults over the age of 25 with BS/BA or higher; 38% hold graduate or professional degrees
 - \$110,900 per household & \$84,400 per capita incomes
 - Average home value \$603,500 (2016)





Arlington County MSW Management in 2016



- 185,000 tons of MSW generated in 2016
- Multi-family & commercial sector makes up 2/3 of overall MSW generation
- Recycling rates by sector:
 - Residential= ~55%
 - MF/C = ~40%
- 2017 statistics being compiled (report typically ready in April)

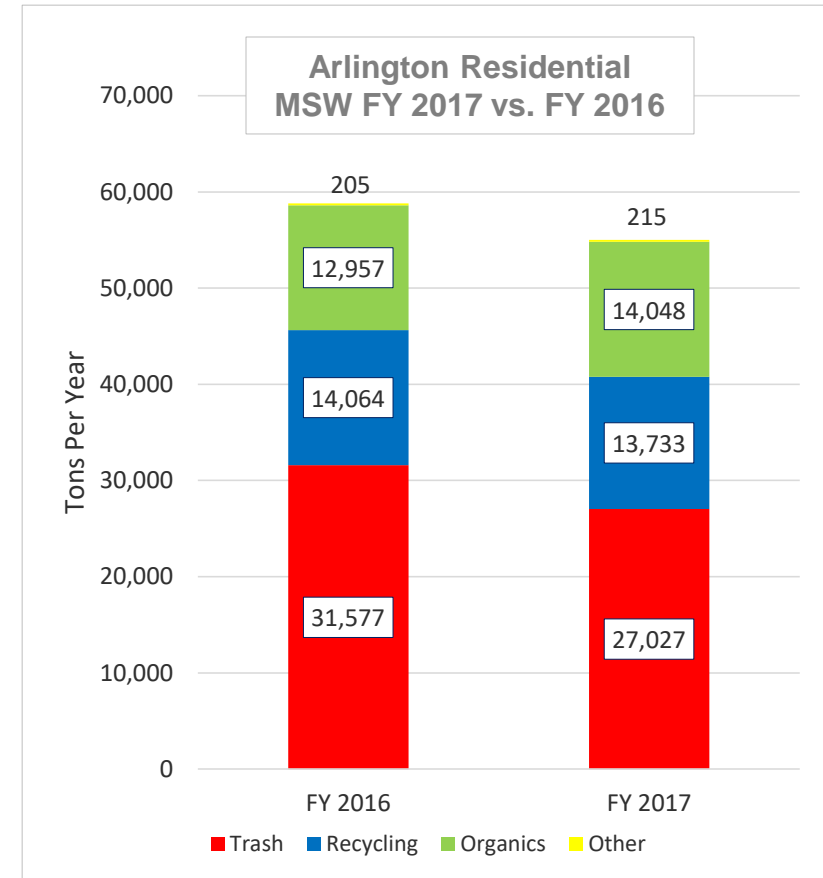
- Provides weekly curbside recycling, yard waste and trash collections to 33,200 homes
 - Household solid waste rate = \$314.16 per year
- On-call collection fee-based services for E-waste, scrap metals and bulk appliances (contracted)
- Manage multi-family & commercial recycling programs and code enforcement
- Education and outreach support for all programs
- HHM drop-off events



- Mulch pickup & on-call mulch delivery
- Services two citizens' drop-off centers
- Operates Earth Products Recycling Yard

Residential MSW In Arlington County

- Arlington residents creating less garbage!
 - 6.4% year-over-year decrease in overall MSW generation
 - 14% decrease in disposal FY 2017 vs. FY 2016
- Per-household yield of 800+ lbs. HH/year for both single-stream and yard trimmings
- ~50% residential diversion rate
- FY 2018 YTD shows 1% decrease in disposal; 5.3% overall decrease in MSW generation over 2017



Arlington County Government



- 55 total facilities, including:
 - 19 Community centers & parks
 - 8 Libraries
 - 10 Fire stations
 - Office buildings, courts
 - Public works facilities & yards
- 3,600 employees

Arlington Public Schools

- 40 Schools & facilities, including:
 - 23 Elementary schools
 - 5 Middle schools
 - 4 High schools
 - 8 other
- 28,000 student enrollment
- 4,700 teachers & staff



- County & APS have contracted out for services since 1990s.
- *Current (2018) system:*
 - 95 facilities
 - ~180 dumpsters;
 - ~235 roll-out carts
 - ~130,000 cubic yards of annual service
- Historical (pre-2017) challenges have included:
 - Disposal tonnages not split out by entity, needed to use cubic yards-to-lbs. estimates to measure
 - Data concerns (possible mixing with residential)
 - Low recycling rates & oversubscribed for trash service
 - For 2014-2016 system averaged 4,020 tons of MSW generation per year and just a 19% recycling rate

2016 Procurement Process



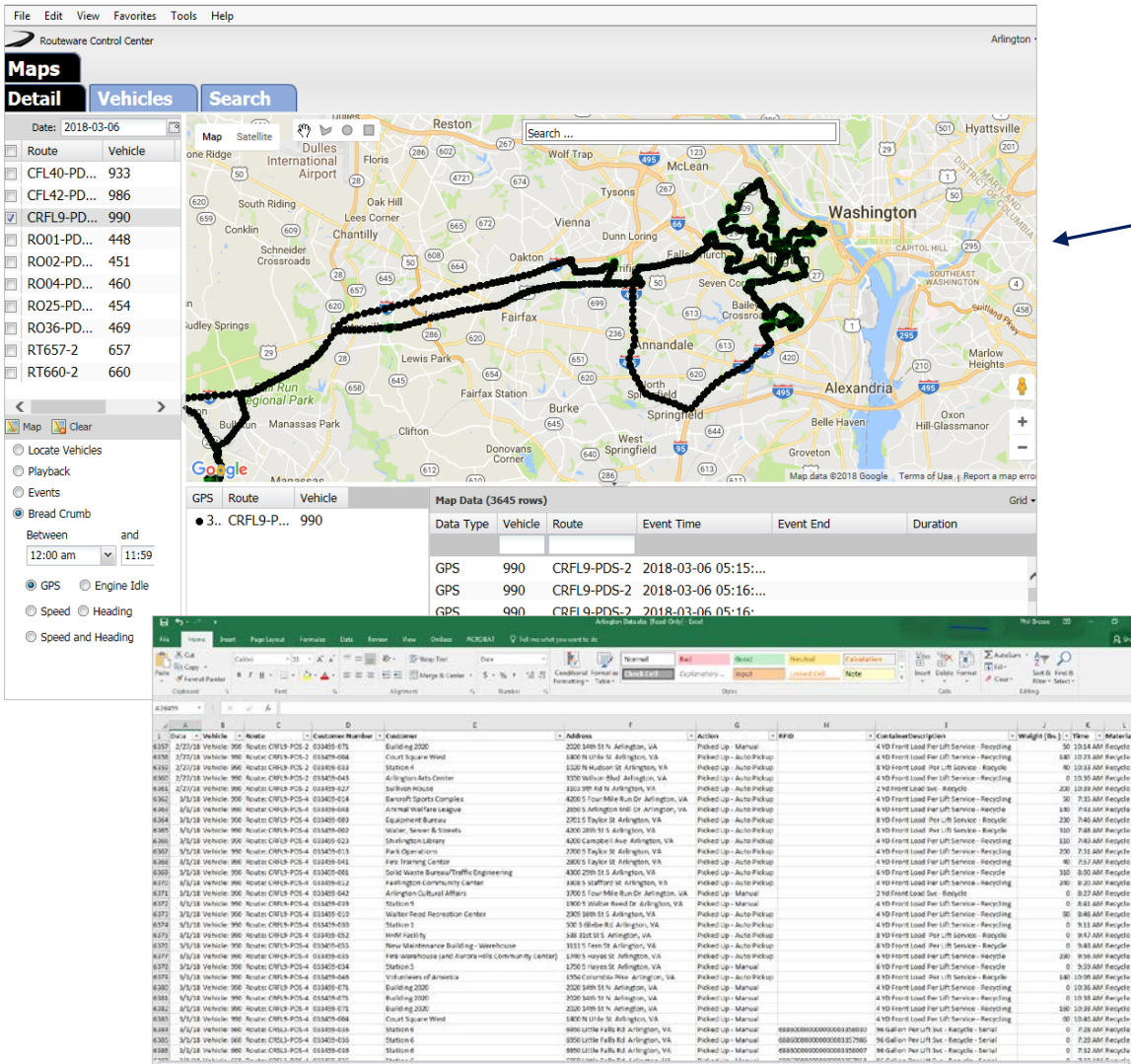
- New ITB for services developed & issued during 2016
- ITB features:
 - Dedicated collections (no mixing with commercial)
 - Split out disposal & recyclables processing costs from collections
 - Consolidate contractor invoicing
 - Ability to add organics
 - Focus on service level right-sizing
 - RFID for carts
 - On-board scale systems & GPS for trucks
- Four bidders – contract awarded to Envirosolutions, Inc. (ESI)

New Contract Implementation

- Contract with ESI started January, 2017
- Different scale systems tested through winter & early spring (Routeware is system selected)
- Scale data begins to be collected in April



System Features



The screenshot displays the Routeware Control Center interface. At the top, there are menu options: File, Edit, View, Favorites, Tools, Help. Below the menu is the 'Routeware Control Center' header and the location 'Arlington'. The main interface is divided into several sections:

- Maps:** Includes 'Detail' and 'Vehicles' tabs, a search bar, and a date filter set to '2018-03-06'.
- Map:** A Google Maps view of Arlington, Virginia, showing a green breadcrumb trail for route 990. The trail starts near the airport and winds through the city.
- Map Data (3645 rows):** A table with columns: Data Type, Vehicle, Route, Event Time, Event End, Duration. It lists GPS events for vehicle 990 on route CRFL9-PDS-2.
- Map Data Table:** A detailed table with columns: Date, Vehicle, Route, Customer Number, Customer, Address, Action, #PID, Cost, Weight, and Material. It lists various stops and actions for the route.

Routeware maps – Bread crumb trails & playback. Locate vehicles and map events in real-time. Allows for verification of services.

Reports exported to MS Excel

Challenges & Troubleshooting?

- Too many cart reads...
 - *Range of readers too wide or reading too many times*
- 0 lbs. dumpster weights...
 - *Site inspections show empty containers*
- Variances between disposal & processing site scales vs. on-board truck scales range from 8% to 21% (under)
 - *Requires monthly reconciliation with APS (WTE & MRF scales are “legal for trade”)*
 - *Tonnage # differences are allocated based on program service levels using procedures developed with APS*



- ✓ Ability to delineate APS and County tons
- ✓ Will allow for more drilled-down review of service levels (more right-sizing)
- ✓ Use data to target low-performing facilities
- ✓ More transparency
- ✓ Investment in new service has helped spur new APS and County agencies program initiatives
 - Increase in recycling rate to ~26%



Thank You & Questions!

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