## Fauquier County Department of Environmental Services

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Construction Waste Trade and Recycling...
Reusing to Save Resources


## Fauquier County, Virginia



## Fauquier County Solid Waste Complex



## Construction \& Demolition / Waste Exchange

"is about green"


## C\&D Recycling in Virginia

- Faced with crowded landfills \& economic concerns Virginia currently relies mostly on Landfill's and transfer stations for processing C\&D waste.
- Mandated recycling rate
- Low Housing Market
- High Construction Costs
- Increased Disposal Fees
- Environmental concerns (Base on DEQ statistics) Virginia recycles $5 \%$ of its C\&D waste.


## C\&D Recycling Grows

- Fauquier County along with other Municipalities and States target the bulky construction material looking to reduce landfill burial tonnage and increase recycling rates.
- Recovery and processing plants are being built in different regions to offer opportunity to recycle construction waste.
- Researching markets and other outlets play an important role for the Individual commodities.
- Markets help determine whether to recycle the material or landfill.


## C\&D Recycling

## Fauquier County C\&D Waste Recovery Facility



In July 2, 2007, Fauquier County Environmental Services opened a construction waste recovery facility as a means to divert valuable reusable materials from the county landfill. As "green" becomes a red hot subject, Fauquier County supports owners/builders in the region with a means toward their LEED certification by recycling their construction waste. Currently, $53 \%$ of our incoming construction/demolition (C\&D) waste is recycled including inerts.

## C\&D Facilities in the Commonwealth

There are a little more than 14 permitted C\&D Facilities in the State of Virginia.

One of those Facilities are publicly-owned and operated


## Construction Waste Management

C \& D waste management planning is an essential tool for Fauquier County to improve environmental performance, preserve landfill space and operational cost.

Fauquier County received about 18,438.5 Tons. of construction waste in FY10 budget year. Generated from commercial, home building and renovation.


## Construction Waste Management

## Goal:



- Recycle construction and demolition waste (C\&D) to decrease demand for raw materials, conserve energy, reduce pollution, preserve landfill space and increase bottom line.



## C\&D Recycling

As the "green" movement gains momentum and the economy slowly recovers, keeping metal, cardboard, plastics, bottles, cans, etc., from landfills is the minimum material targeted to recycled.

We want to look for every opportunity to reuse or recycle every item possible.

Often, recycling is cash positive because some of the materials have value and landfill costs are reduced/eliminated.

| Incoming Tonnage (MIXED C\&D) | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | TOTAL | Yr Est. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Non-County |  |  |  |  |  |  |  |  |  |  |  |  |
| Incoming Commercial | 331 | 472 | 437 | 338 | 447 | 491 | 356 | 534 | 441 | 365 | 4,212 | 5,055 |
| Fairfax |  | $>390$ | 333 |  |  |  |  |  |  |  | 723 | 723 |
| Total Non-County | 331 | 862 | 770 | 338 | 447 | 491 | 356 | 534 | 441 | 365 | 4,935 | 5,778 |
| In-County |  |  |  |  |  |  |  |  |  |  |  |  |
| Incoming Commercial | 730 | 983 | 446 | 508 | 652 | 439 | 345 | 933 | 690 | 590 | 6,313 | 7,575 |
| Residential Direct Delivery | 31 | 14 | 58 | 14 | 23 | 27 | 15 | 19 | 25 | 19 | 246 | 295 |
| Corral Farm Residential Container | 84 | 90 | 148 | 107 | 74 | 63 | 54 | 52 | 64 | 71 | 807 | 968 |
| Bulk Containers from Sites | 109 | 160 | 152 | 165 | 175 | 122 | 123 | 143 | 179 | 209 | 1,538 | 1,846 |
| Total In-County | 954 | 1,246 | 804 | 794 | 924 | 652 | 536 | 1,147 | 957 | 890 | 8,903 | 10,684 |
| Total Waste Received at Facility | 1,284 | 2,108 | 1,574 | 1,132 | 1,371 | 1,143 | 892 | 1,681 | 1,398 | 1,255 | 13,838 | 16,461 |
| Incoming Non-County \% | 25.8\% | 40.9\% | 48.9\% | 29.9\% | 32.6\% | 42.9\% | 39.9\% | 31.8\% | 31.5\% | 29.1\% | 35.7\% |  |
| Incoming In-County \% | 74.2\% | 59.1\% | 51.1\% | 70.1\% | 67.4\% | 57.1\% | 60.1\% | 68.2\% | 68.5\% | 70.9\% | 64.3\% |  |


| Reuse/Recycled Materials | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | TOTAL | Yr Est. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Carpet | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Drywall | 23 | 0 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 53 | 63 |
| Fines (0-2) | 281 | 384 | 392 | 348 | 299 | 253 | 289 | 257 | 361 | 670 | 3,535 | 4,242 |
| Inert | 18 | 88 | 65 | 41 | 23 | 23 | 64 | 35 | 88 | 112 | 557 | 668 |
| Metal-Bulk | 35 | 77 | 62 | 45 | 47 | 32 | 52 | 34 | 54 | 76 | 514 | 617 |
| Metal-Fines | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Metal-Non Ferrous | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OCC | 5 | 11 | 6 | 4 | 11 | 4 | 9 | 8 | 4 | 13 | 75 | 89 |
| Padding - Carpet/Furniture | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plastic | 0 | 0 | 2 | 4 | 1 | 0 | 0 | 3 | 8 | 2 | 20 | 24 |
| Plastic - PVC (direct) | 4 | 3 | 0 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 14 | 17 |
| Shingles-Asphalt | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wood | 98 | 134 | 122 | 107 | 48 | 130 | 85 | 59 | 144 | 151 | 1,078 | 1,294 |
| Total Reuse/Recycle Tons | 464 | 698 | 649 | 551 | 430 | 475 | 498 | 397 | 659 | 1,023 | 5,845 | 7,015 |
| Tons to Fairfax |  | 276 | 218 |  |  |  |  |  |  |  | 494 | 494 |
| Estimated Tons to MSW Landfill | 820 | 1,134 | 707 | 581 | 942 | 668 | 394 | 1,285 | 739 | 232 | 7,499 | 8,999 |
| Estimated Total Residue Tons | 820 | 1,409 | 925 | 581 | 942 | 668 | 394 | 1,285 | 739 | 232 | 7,993 | 9,493 |
| C\&D Recycling Rate (no Com. Inert) | 36\% | 33\% | 41\% | 49\% | 31\% | 42\% | 56\% | 24\% | 47\% | 82\% | 42\% |  |

August 3, 2010
Fairfax Incoming C\&D Mixed


## C\&D Materials Sorted, Recycled, Reused \& Sold

- Drywall
- Asphalt Shingles
- Concrete, rock, cinder block, glass, dirt
- Carpet
- Rigid Plastic
- Vinyl siding
- Nursery/agricultural plastics
- Cardboard
- Wood
- Metal (Ferrous \& Non-Ferrous)


## Brick, Block \& Stone




## On site White Wood, Stone, Brick and Concrete



## Ferrous Metal



## Non -Ferrous Metal



## C\&D Plastic Recovery



Buckets


Vinyl Siding


Plastic Bags


Drink Bottle


Nursery Trays


Rigid Plastic

## Recycling Center Operations



## Bucket Processing



## Vinyl Siding Processing



## Cardboard Processing



## Waste Exchange

While many companies can find cost-effective ways to reduce the amount of waste they generate through recycling initiatives or reusing byproducts within their own operations, most municipalities and private waste facility do not have the same opportunities for in-house reductions because of restraints.

In these situations, exchanging waste could be a viable and inexpensive alternative for reducing the volume and cost of waste disposal, while preserving natural resources and the environment for future generations.

## Landfill Expansion



## C\&D Landfill Mìning



## C\&D Landfill Mining



## C\&D Landfill Mìnìng



## Other Recycling



Latex Paint


Posi-Shell \& Latex Paint for Daily cover

## Glass Re-Use



## Other Recycling



Aerosol and Small Propane Cylinder

## Average FY10 Market Prices for Recovered Materials

Metal
Scrap(Fe)
Scrap (fines/Fe) Non-Ferrous
Aluminum Cans
Bi-metal Cans
Cat food Cans
Paper
Cardboard
Mixed Paper
Newspaper
Office Paper
Books (Hardcover)
Plastic
HDPE-Natural
HDPE-Colored
PETE
Vinyl Siding
HDPE-Pipe
PVC-Drainage
Rigid Plastics

## \$/ Ton

\$ 175.50
\$ 120.00
\$ 472.17
\$ 1,164.72
\$ 146.78
\$ 500.00

Misc
Textiles
Belts, Shoes, Purses
Used Oil
"Green" Wood
"White" Wood
Drywall
Electronic Wastes
Reused Materials
\$ 119.02
\$ 97.76
90.51
155.50

0
\$/ Ton
\$ 580.00
\$ 440.00
\$ 280.00
\$ 120.00
\$ 0
\$ 120.00
\$ 90.00

## \$/ Ton

\$ 182.47
\$ 499.81
\$ 0.37/gal
\$ 2.00
\$ 1.00
(\$25.00)
(\$100.00)
\$/ Ton
\$ 0
\$ 0
\$ 110.00
\$ 0
\$

## Total 'Recycling Sales’ Revenue History



## Fauquier County Awards

Keep America Beautiful 2007 2nd $^{\text {nd }}$ Place National Award for Waste Reduction \& Recycling

Virginia Association of Counties 2008 Environmental Achievement Award

Virginia Recycling Association 2008 Award for Excellence in Recycling

## Benefits of C\&D Processing

- Recover additional materials to increase diversion rate
- Increase recycling revenue
- Increase (maintain) net revenue
- Replace purchased stone from quarries
- Mining project to defer landfill closure \& increase landfill airspace
- Waste 'trade' pilot
- Emergency response capability


C\&D recycling makes sense along with all recycling efforts.
Success in today's market requires:
Vision
Incentive
Innovation

"The key to a prosperous future is sustainability, and triple the bottom line-environmental responsibility, economic prosperity and social equity- is imperative as we move forward."

Rick Fedrizz, Pres., CEO \& Founding Chair, U.S. Green Building Council


