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# City of Bristol

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Single Stream Recycling Pilot Program

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# City Background Information

- Population – 60,722
  - Area of City – 25.5 square miles
  - MSW curbside collections by Municipal employees
  - Curbside collections for residential dwellings of five (5) units or less
  - No Commercial Collections
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## Breakdown of Curbside Properties Served

- 16608 Residential dwellings served curbside
    - 30 Five-family residential dwellings
    - 96 Four-family residential dwellings
    - 748 Three-family residential dwellings
    - 1453 Two-family residential dwellings
    - 14281 Single-family residential dwellings
  - 19965 total residential units served curbside
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# Main Municipal Solid Waste Curbside Services

- Household Rubbish – collected weekly
  - Recycling – collected bi-weekly
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## Other Special Curbside Collections Provided

- Leaf Collection (bagged leaves only) – weekly [month of April, and mid October through the end of November]
  - Yard Waste – weekly summer subscription service [mid April through mid November] (presently \$50.00 per year)
  - Bulky Waste – by appointment [one pick-up per year per residential unit]
  - Brush Pick-up – by appointment [unlimited]
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# MSW Disposal

- Rubbish - member of the Bristol Resource Recovery Facility Operating Committee [BRRFOC] which has a contract with Covanta (Waste-to-Energy Incinerator) in Bristol
  - Recycling - member of the Tunxis Recycling Operating Committee [TROC] which has a contract with the IPC in Berlin presently owned by Murphy Road Recycling, LLC (formerly owned by Recycle America/Waste Management)
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# Public Works Curbside Collections

## Operations 1990+/- to 1998

- 28 employees assigned daily to curbside collection
    - Daily Rubbish Collection: Eight (8) three-person rubbish routes
    - Daily Recycling Collection: Four (4) one-person recycling routes
  
  - Total of 80 employees in operations [Solid Waste, Streets, and Equipment Maintenance]
  
  - Between 1/3 and 1/2 of work force assigned to collections daily when considering [vacations, sick, worker's compensation, etc.]
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# Public Works Overhaul Considered

- 1994 – CCM [Connecticut Council of Municipalities] Study
    - Study was undertaken to try and improve efficiencies in Public Works
    - Of the whole study, City focused mainly on the portion of study that suggested going from three-man rubbish crews to two-man rubbish crews
  - 1995 – Public Works began purchasing two-man rubbish trucks
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# Discussions of Public Works Overhaul

- 1996 – Emphasis on trying to implement two-man collection operations
    - Began negotiations with the Union
    - Union adamantly against two-man operation
  
  - 1997 – Election year
    - Union still against two-man
    - Not much progress
    - Public Works started researching automated operations
    - Public Works chooses not to purchase any additional two-man collection trucks until negotiations progress further
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# Alternative Concepts Considered

- 1998 – Changes that supported alternative concepts
    - Article on how the City of Los Angeles was looking to institute automated collections to save money – their program called for giving each resident a 65 gallon automated rubbish barrel and a 95 gallon SS [single stream] recycling automated barrel
    - Public Works began checking automated operations in Waterford, Springfield, Avon, etc. to see how they might apply to Bristol
    - Public Act 98-99 was going into effect October 1, 1998 which put a “ban on significant quantities of grass clippings sent to landfills and trash to energy facilities”
    - Public Works was planning on instituting a yard waste collection service for a fee beginning May of 1999.
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# Alternative Concepts Developed

- March 1998 – Staff prepares a four (4) phase alternative concept plan to improve efficiency
    - Phase 1 – Implementation of Automated Solid Waste Collection – projected to save \$517,000 annually
    - Phase 2 – As a result of DEP NOV's, relocate compost site
    - Phase 3 – In anticipation of starting a semi-automated yard waste collection program in 1999 – Phase 3 would be to automate it.
    - Phase 4 – Automate Recycling Collection Operations.
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# Phase 4 – Automate Recycling Collection Operations

- Proposed Automated Recycling Collection Operations
    - Make the existing four (4) routes per day into two (2) routes per day
    - Provide each residence with two automated barrels [a red barrel for newspaper, cardboard, etc. and blue barrel for bottles, cans, etc.] – basically the Warwick, R.I. process
    - Two automated trucks would empty the red barrels daily and two other trucks would empty the blue barrels daily
    - No change in personnel – i.e. still four (4) trucks per day
    - If recycling was to increase in the future the barrels would provide the needed capacity
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# Negotiations Completed

- November 1998 – Union and City came to agreement on provisions to improve solid waste collection efficiencies
    - The eight 3-man rubbish routes daily would be consolidated into six 3-man rubbish routes daily
    - 2-man rubbish collection operation would be voluntary
    - Job classification of “automated truck driver” created allowing for future automated collections
    - Provisions for a semi-automated yard waste collection included
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# Plan Implementation

- 1999
    - January 1999 - Present off-budget request to BOF [Board of Finance] for pilot automated rubbish collection program
    - February 1999 – Number of rubbish routes reduced
    - March 1999 - Request fo BOF for pilot automated rubbish collection program as part of fiscal 1999/2000 budget
    - May 1999 – Semi-automated yard waste collection program starts with 350 paying customers
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# Yard Waste Service



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# Pilot Automated Rubbish Funding Approved

## ■ 2000

- February 2000 –Request for pilot rubbish collection program as part of fiscal 2000/2001 budget
  - May 2000 – City Council overrides BOF approved budget and approves budget modification that includes funding for a pilot automated rubbish collection program in final approved 2000/2001 budget
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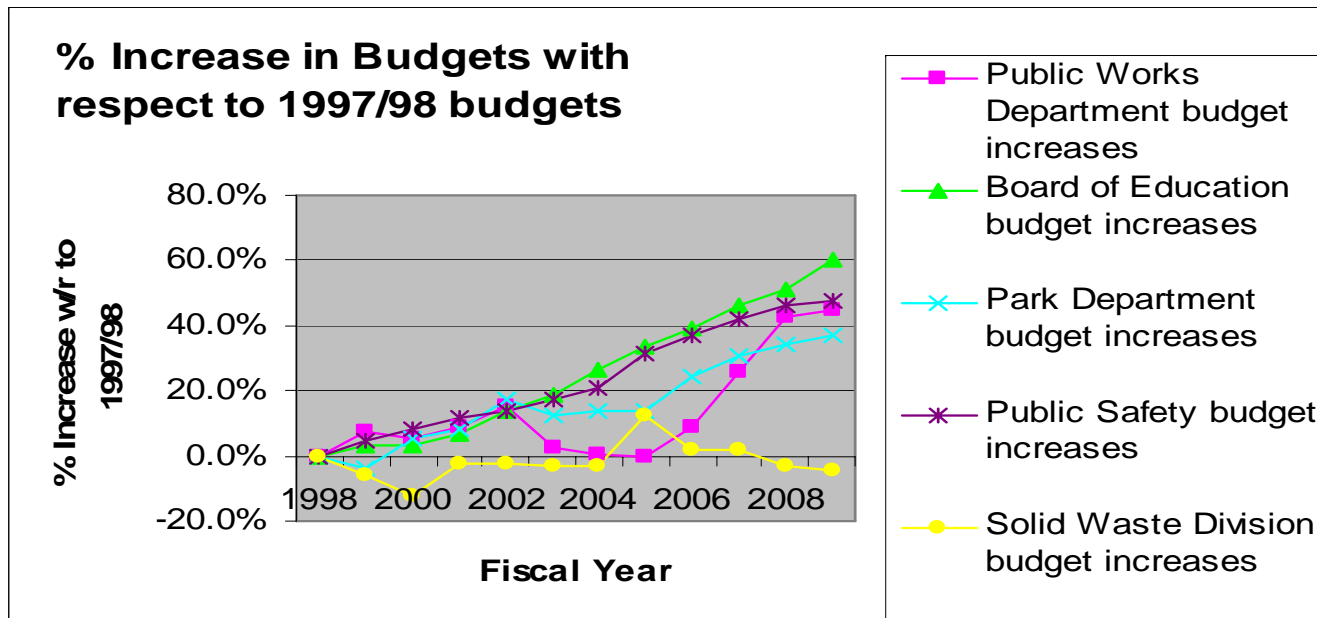
# Pilot Automated Rubbish Collection Implemented

- 2001
  - May – Pilot Automated Rubbish program started [5 routes – 1 per day]
  - November – Surveyed 10% of residents in pilot area
  - December – Survey indicates a 94% overall approval rating for automated collection
- 2002-2005
  - Remainder of City automated

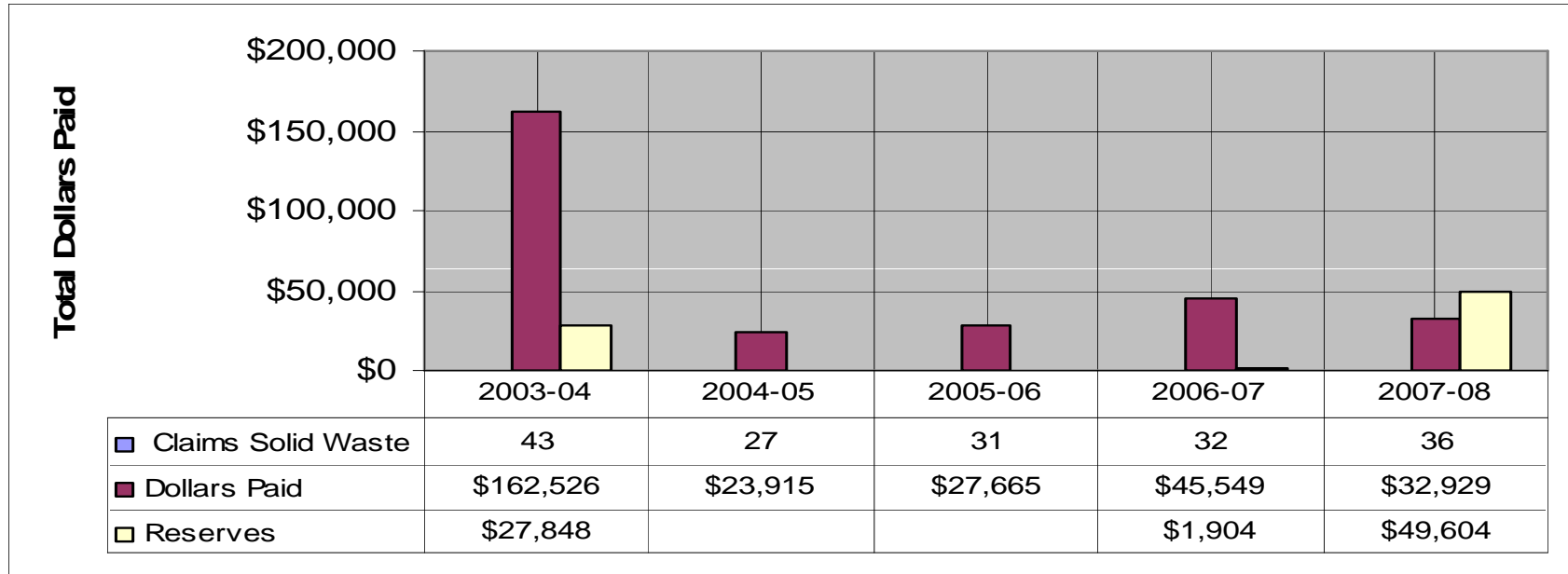


# Benefits of automating rubbish collection operations

- Fiscal Year 1997/98 Board of Finance approved budget for Solid Waste Division - \$3.55 million.
- Fiscal Year 2008/09 Board of Finance approved budget for Solid Waste Division - \$3.39 million.
- Present budget is 4.5% less than FY1997/98 budget



# Solid Waste Worker's Compensation Claims History



- 2005 – Automation fully implemented
- Average savings in Worker's Compensation claims relative to 2003-04 is \$130,000 per year

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## Final Savings from Automating Rubbish

- Freed up \$1.14 million/year in labor, benefits, etc.
  - Total savings \$1.27 million/year in labor, benefits, worker's compensation claims savings, etc.
  - Reduced solid waste work force from 35 employees to 27 employees
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# Alternate Dual-Stream Automated Recycling

- 2000
  - Dual stream automated cart – bottles, cans, etc. on one side; newspaper, cardboard, etc. on the other side
  - Requires a special split-body truck to empty
  - Barrel positioning at curb critical
  - Vendor indicated it was in use out west mostly but was coming east
- 2002
  - At the SWANA show in Baltimore, they had a couple split-body trucks on display and there were multiple vendors had split barrels
  - Looked viable



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# Developments in Recycling

- 2003
    - Concerns with durability of split-barrel container and need for special split-body trucks
    - Discussions with Recycle America indicate SS recycling is a ways off in Connecticut
  - 2004
    - Began auditing recycling and sending out letters to residents who are not recycling
  - 2005
    - Recycle America representative mentions that Waste Management may be building a SS facility in Auburn, MA
    - TROC hires Aceti Associates to prepare a report and recommendations for increasing recycling in region
    - Public Works requests funding from BOF for FY2005/06 for automated recycling barrels to be used for a pilot SS recycling route. Mention staff may need to haul material to Auburn, MA.
    - BOF cuts funding for request mainly because of potential hauling to MA.
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# Developments in Recycling - continued

## ■ 2006

- April - Aceti report to TROC recommends to “make larger bins available in Bristol”
  - Public Works considers going to weekly recycling
  - However, cost of existing bi-weekly recycling is \$539,000/yr while the cost for weekly recycling would be \$1.04 million/yr
  - Staff leaning toward a partial automation solution [automated barrel for newspaper, cardboard, etc. and the existing bin for bottles, cans, etc.] i.e. AA (automated assisted) program
  - Yard Waste program automated
  - Recycle America/Waste Management sells Berlin facility to Murphy Road Recycling, LLC
  - May - TROC preparing a bin procurement and distribution to member Cities and Towns
  - May - Bristol requests their share of funds instead of bins to be used as seed money to get BOF to allow purchase of automated recycling barrels for a proposed pilot AA recycling program
  - November – BOF approves additional funding for pilot AA recycling route
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# Developments in Recycling - continued

## ■ 2007

- May – Public Works introduces pilot AA recycling route (756 units served)
  - Pilot residents given 68-gallon blue automated barrel – for cardboard, newspaper, magazines, office paper, etc.; existing bins to be used for bottles, cans, etc.
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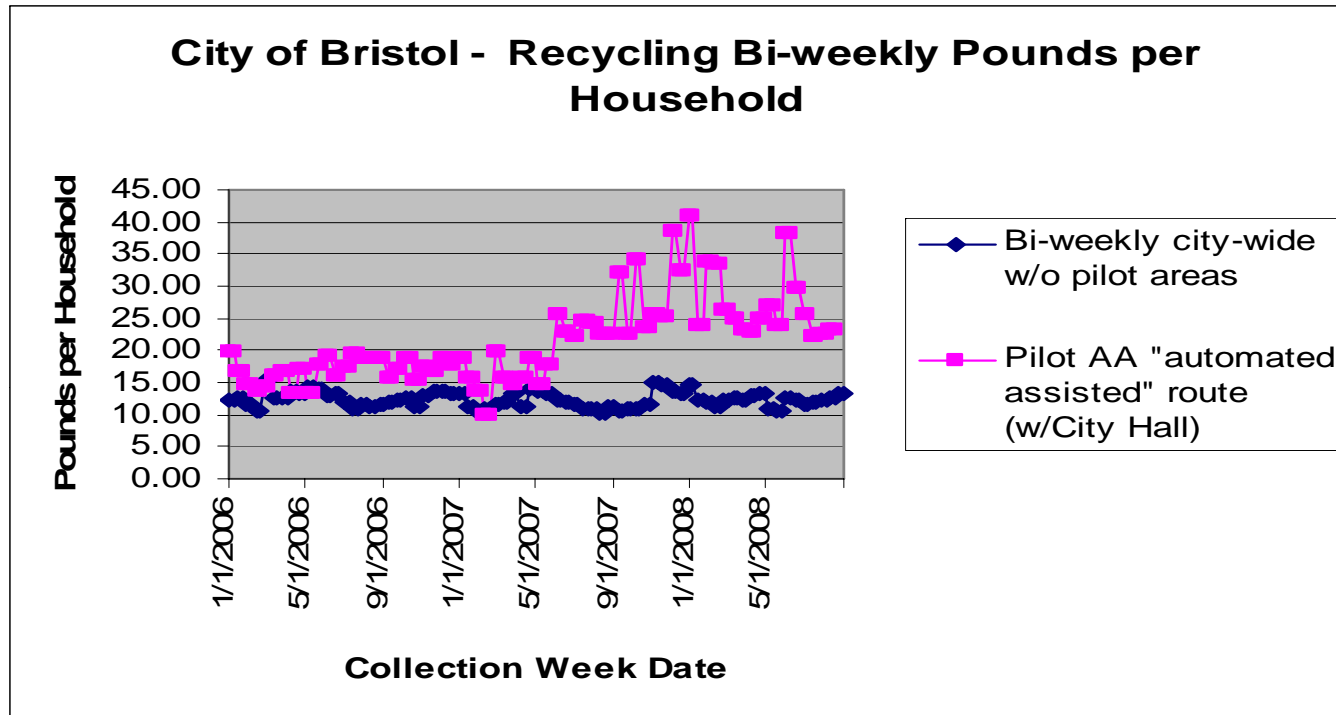
# Pilot AA Recycling Route Implemented – 5/30/07



# AA Collection



# Results of Pilot AA Recycling



- Recycling increased 60.5% (for period from 5/30/07 to present vs. period from 1/6/2006 through 5/29/07)
- Increase of 60.1% (for period from 5/30/07 to 5/30/08 vs. same previous period 5/30/06 to 5/30/07)
- Rubbish dropped 7.8 % on AA pilot route

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# Developments in Recycling - continued

## ■ 2007

- May – BOF approves funds in FY2007/08 budget for a second pilot recycling route
  - December – Public Works introduces pilot SS recycling route (896 units served)
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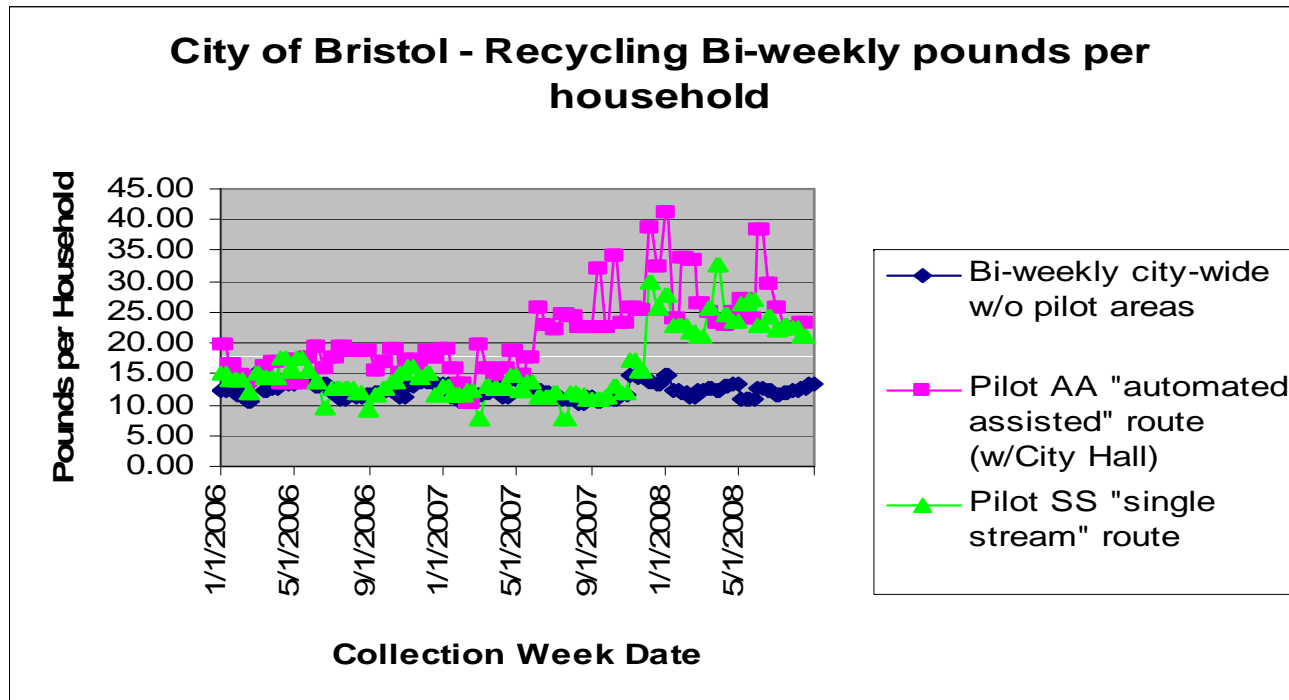
# Pilot SS Recycling Route Implemented – 12/7/07



# SS Collection



# Results of Pilot SS Recycling



- Recycling increased 86% (for period from 12/2/07 to present vs. period from 1/6/2006 through 11/27/07)
- Increase of 101.9% (for period from 12/2/07 to 8/31/08 vs. same previous period 12/2/06 to 8/31/07)
- Rubbish dropped 6.4 % on pilot SS route

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# Cost Comparisons for Recycling — based on

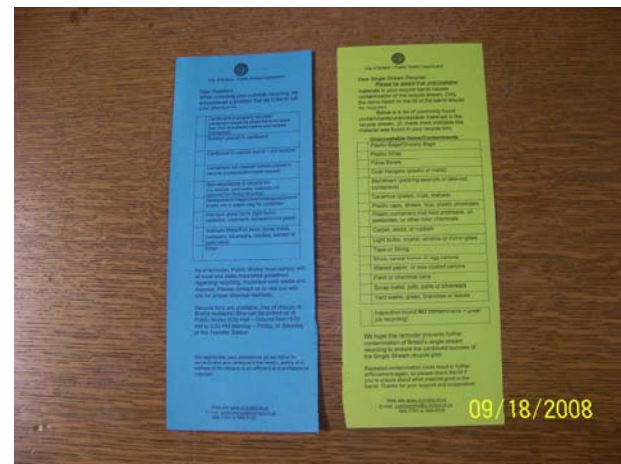
Bristol (includes equipment, labor, tipping fee, fuel, maint., etc.)

- Existing bi-weekly conventional collection - \$539,000/year
  - Weekly conventional collection - \$1,040,000/year
    - Requires doubling recycling work force, equipment, etc.
  - AA bi-weekly collection - \$743,000/year
    - Added cost for automated portion of collection (barrels, truck \$265,000 automated vs. \$160,000 conventional)
  - “Warwick, R.I.” (2 – barrels: dual stream) bi-weekly collection - \$817,000/year
    - Added cost for both collections being automated
  - “Single Stream” bi-weekly collection - \$391,000/year
    - Savings of \$148,000/year over existing conventional collection
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# IPC Comments

- Initially quality of material delivered was very good
- In the spring quality dropped off
- Concept of “one barrel does it all” possible cause of problem
- Staff inspected each barrel over the course of two collections
- Quality of material restored



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## Our Conclusions – on the collection side

- SS seems to make recycling easier for residents
    - Still need to educate residents
  - Residents are requesting the program be expanded
  - SS provides a significant increase in recycling
  - SS has a lower yearly cost
  - SS can be done manually, probably need larger bins/barrel (35 gal.)
  - Cannot do SS without an IPC that will take and handle the material
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# Recycling Improvement Options - Common Elements

- Pay-As-You-Throw
  - Recycle Bank
  - Single Stream
    - Each option increases recycling
    - Each option is dependent on larger recycling containers
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# Future Collection Thoughts – 20 years out

- Single Stream recycling on one side
- Rubbish on the other side
- Could increase recycling from bi-weekly to weekly
- Projected collection (rubbish/recycling) savings – 33% on fleet, labor, fuel, and maintenance costs

