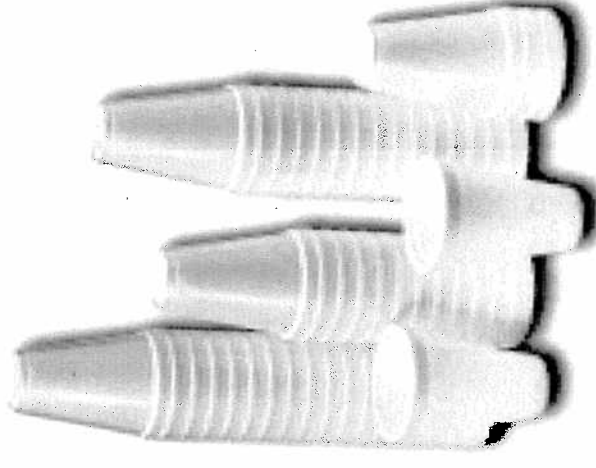


'Efficiency in Action' Polystyrene Densification Program Update

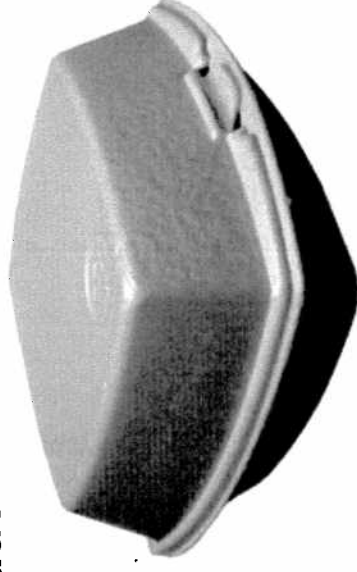


**General Committee
Presentation
October 3, 2011**

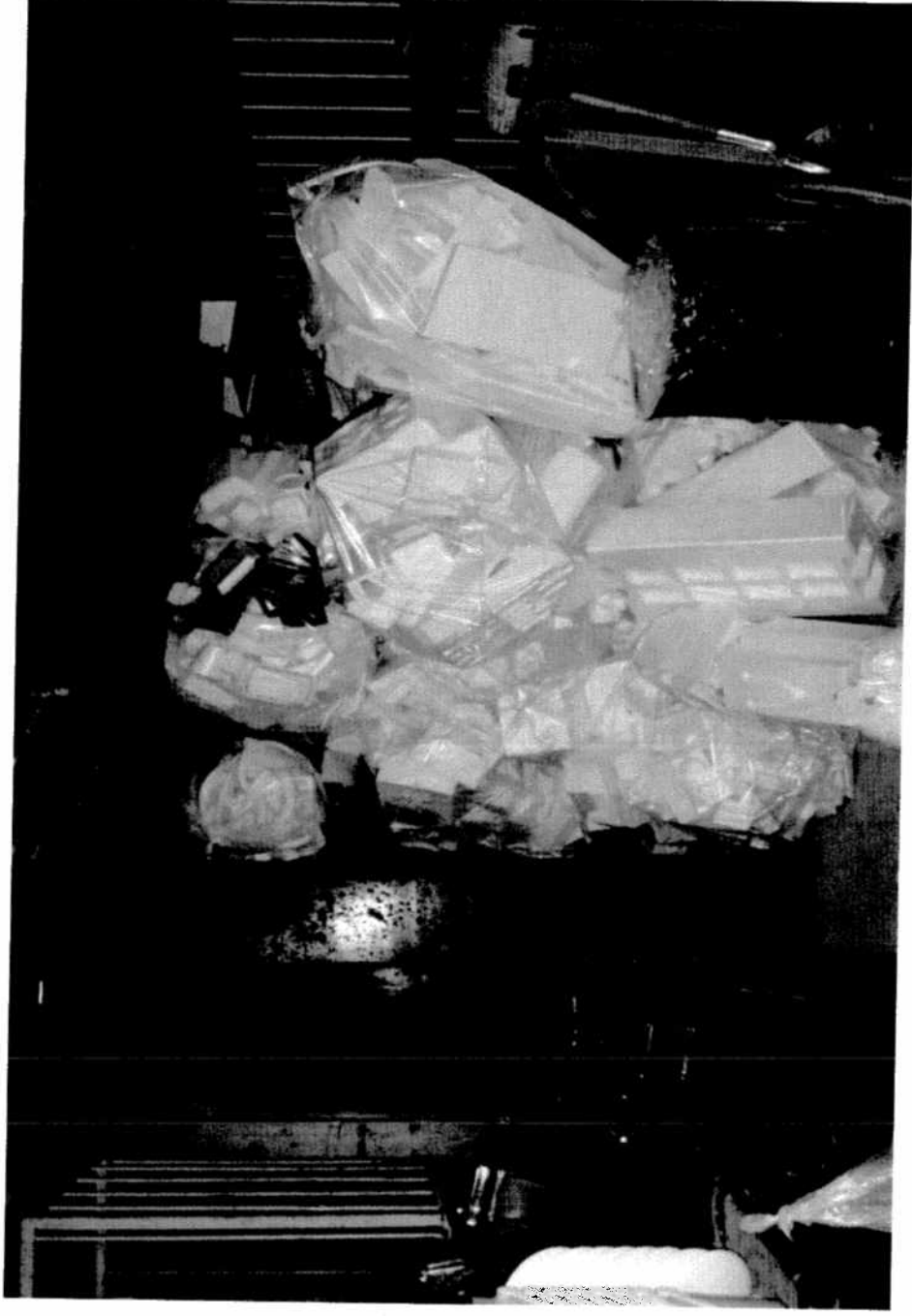
**Claudia Marsales, Senior Manager,
Waste & Environmental
Management Department**

Background

- Since 1999, Markham's 4 Community Recycling Depots have accepted clean polystyrene from residents – to increase diversion
- Receive over 20 tonnes of polystyrene each year
- Polystyrene is recyclable but not accepted by York Region's curbside Blue Box program
- Acceptable polystyrene materials include:
 - ✓ Foam meat trays, egg cartons, clamshell containers, cups, bowls and plates
 - ✓ Foam cushion packaging from electronics
- Polystyrene is a bulky, light weight material that requires large storage capacity and is costly to transport



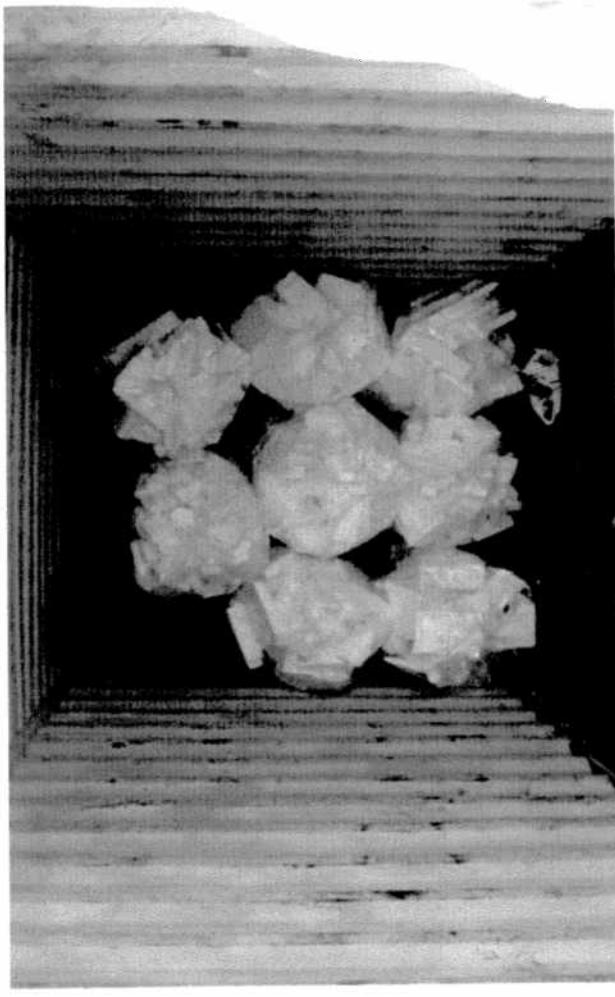
The Challenge



- Limited Storage Space
- High Transportation Costs

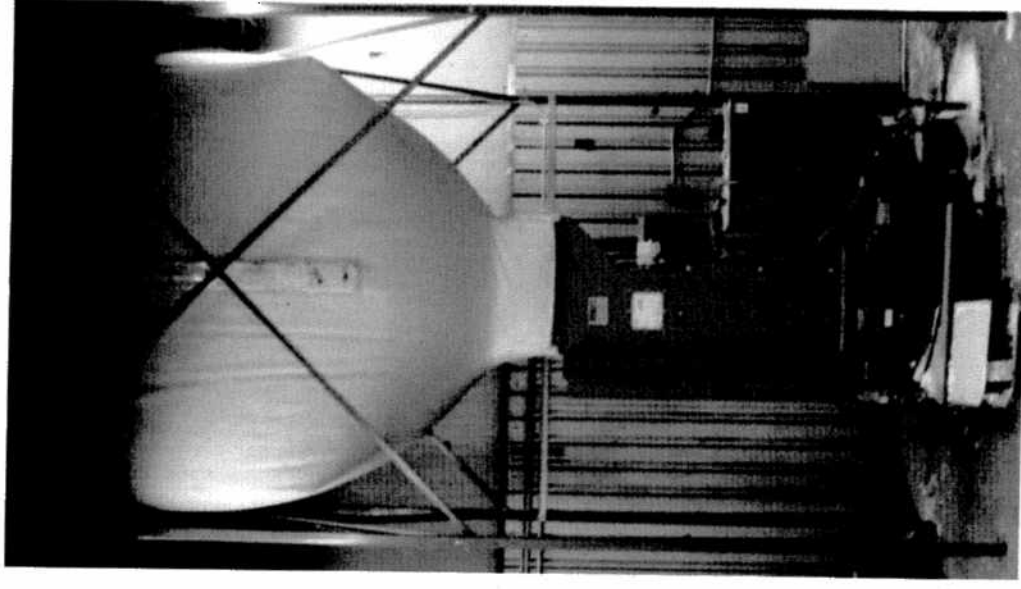
Recycling Markets

- Market for Polystyrene material has been unstable. In 2009 CPRA – Canadian Polystyrene Recycling Alliance in Mississauga closed
- Markham shipped an average of one transport trailer a week to Port Hope prior to the densification pilot – 8,450 bags/year
- No off setting revenue is received for bulk polystyrene material
- There is a growing North American market for polystyrene, provided that the material can be adequately reduced in volume to render transportation cost effective



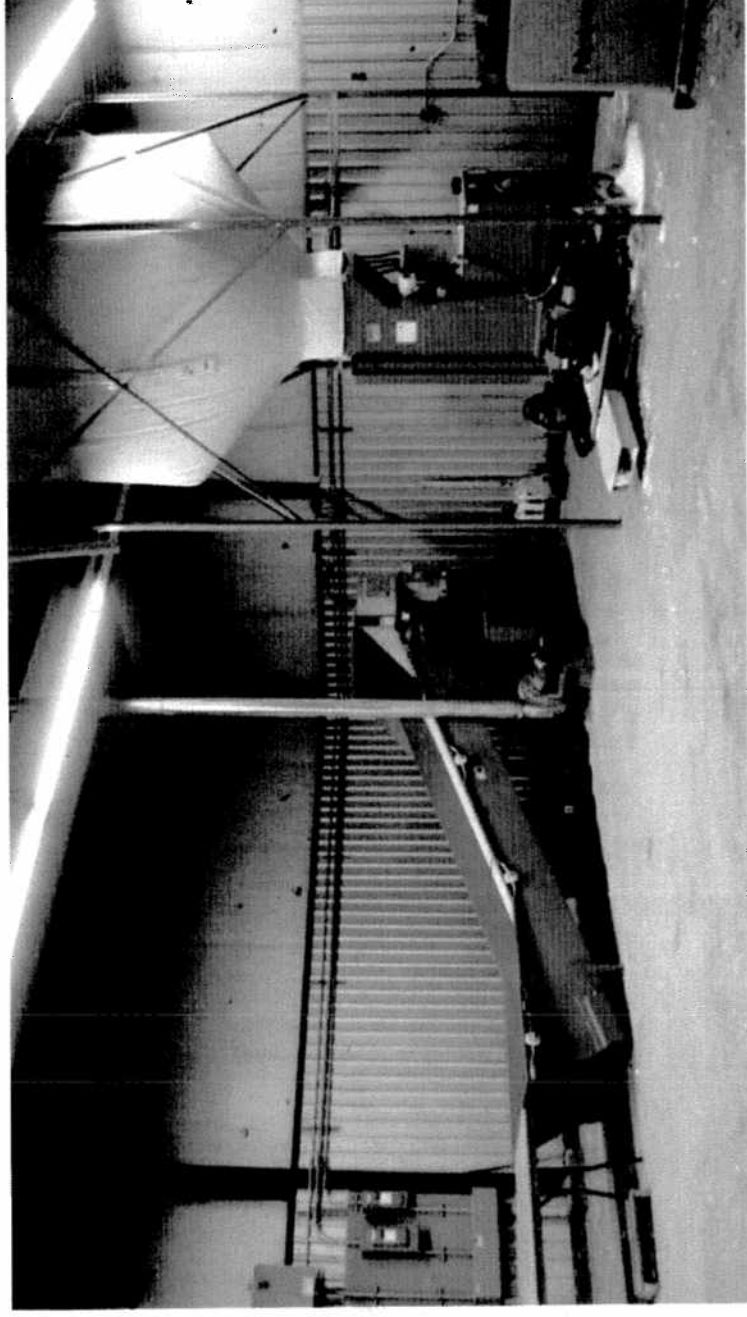
2010 Pilot Project

- In 2010 approached by CPIA (Canadian Plastics Industry Association) to pilot the 'Polymax' Polystyrene Densifier machine for two months on behalf of Ontario Municipalities
- CPIA paid machine lease payments of \$8,000
- Markham was selected for our high volumes and clean material from our Depot system
- Markham is the first Ontario community to establish a polystyrene densifier program for residential polystyrene



Operation

- Upon conclusion of the pilot in Spring 2011, an independent consultant evaluated the costs/ benefits and recommended proceeding with the purchase of the Polymax densifier



Building Markham's Future Together

Densifier Operation

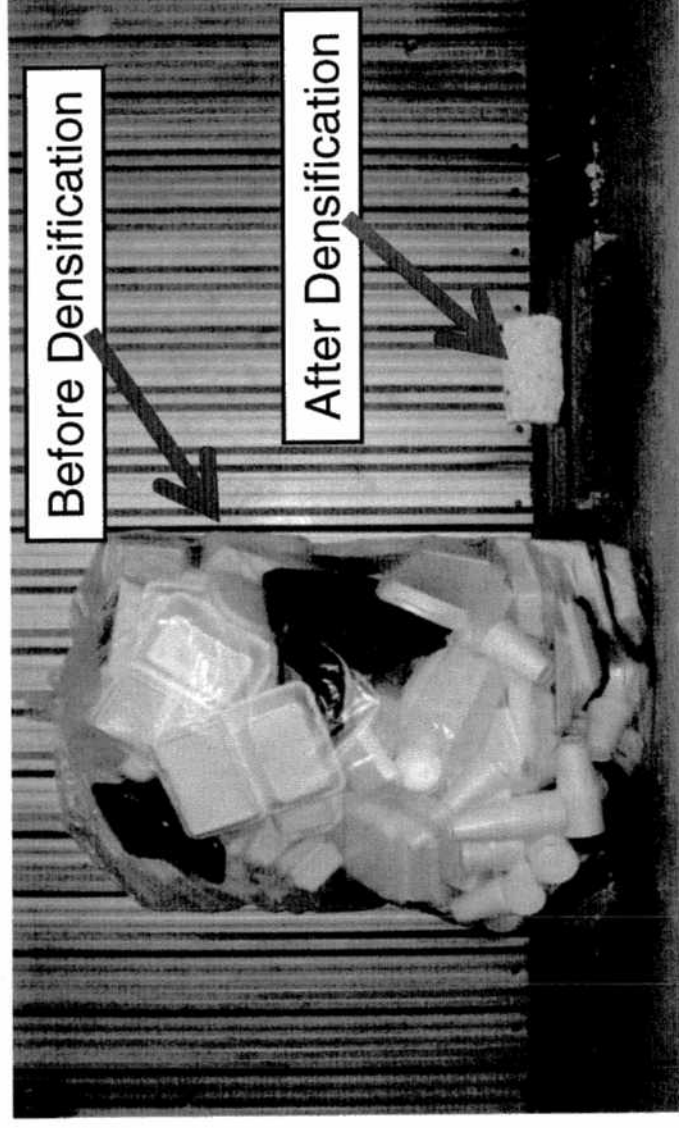


**Polystyrene Densifier & Storage Warehouse
8100 Warden Ave.**



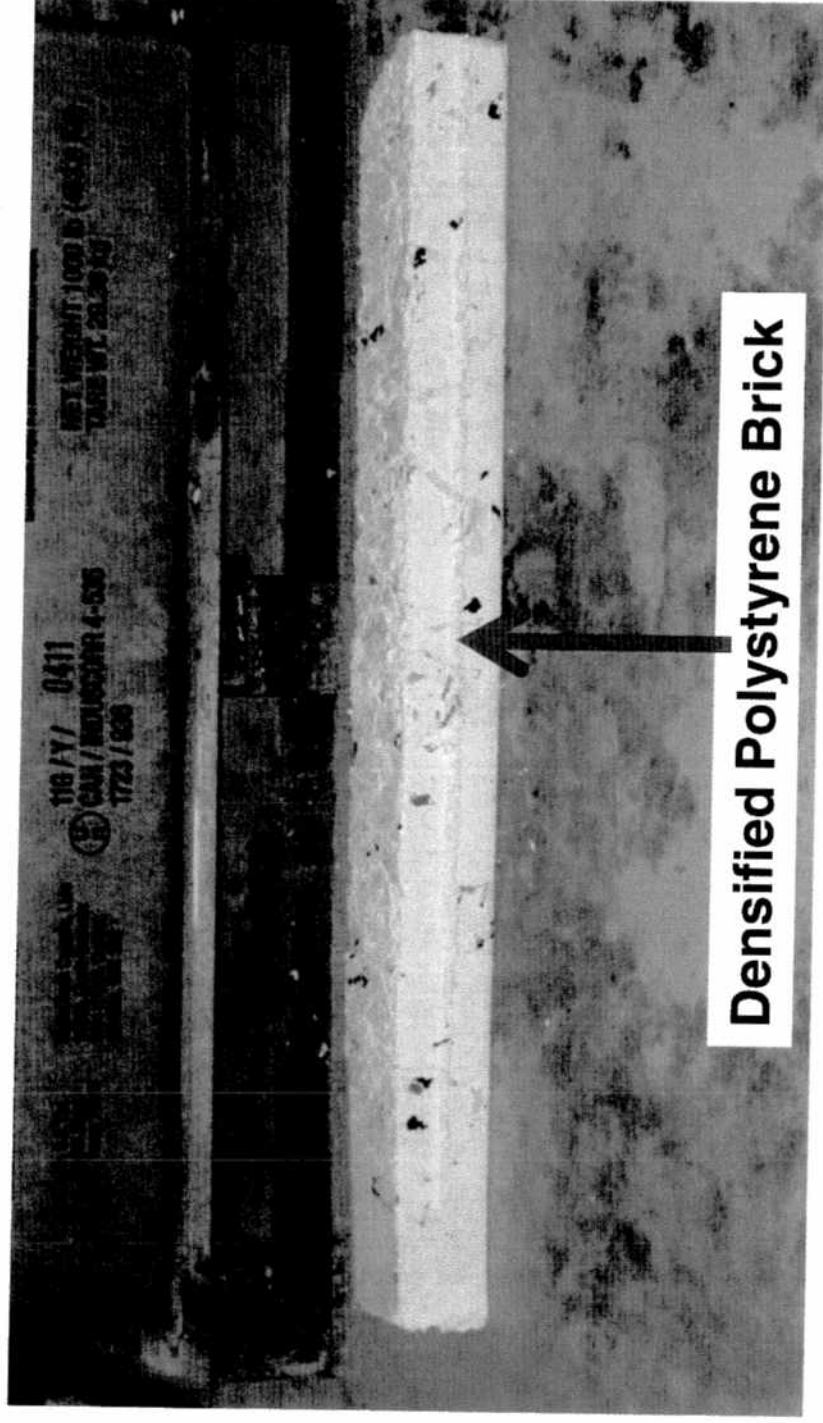
Processing Results

- A contractor has been retained to process the polystyrene materials using the Polymax machine
- The polystyrene is compacted into bricks, reducing volume and transportation frequency



Building Markham's Future Together

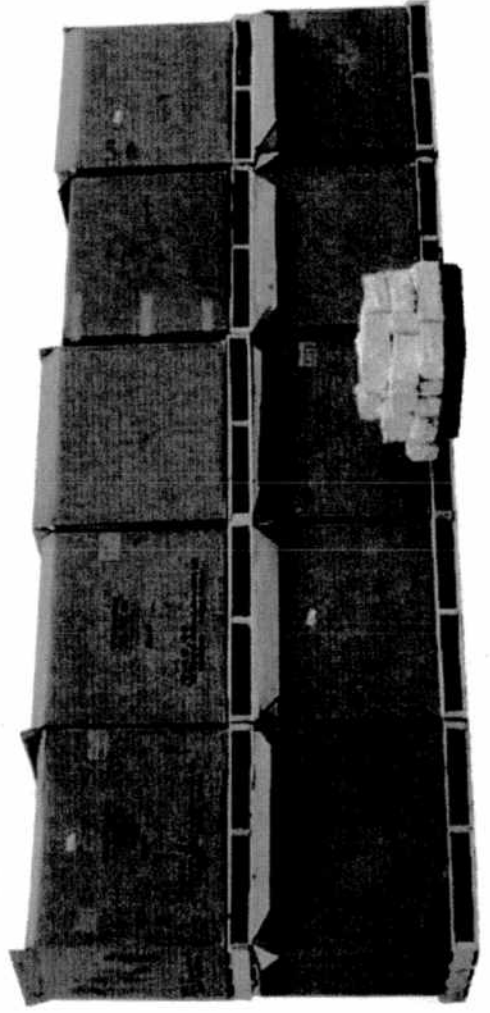
Final Product



Densified Polystyrene Brick

Building Markham's Future Together

Final Product

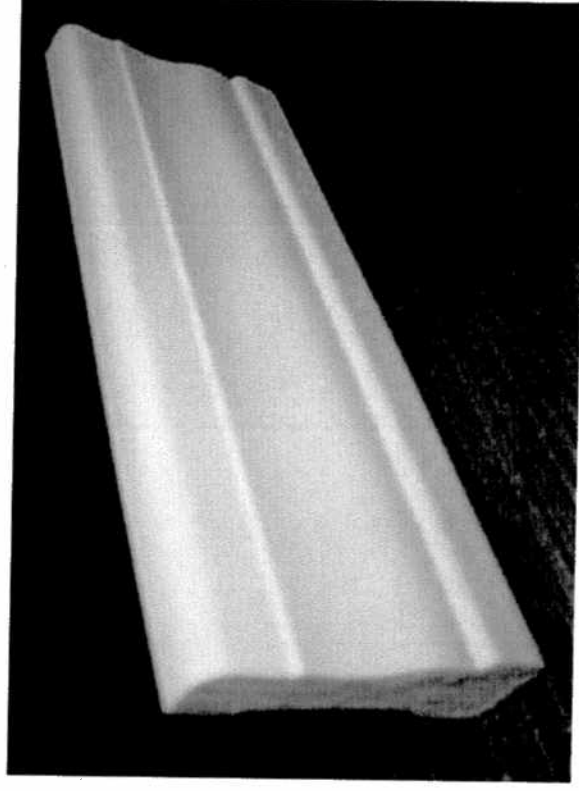
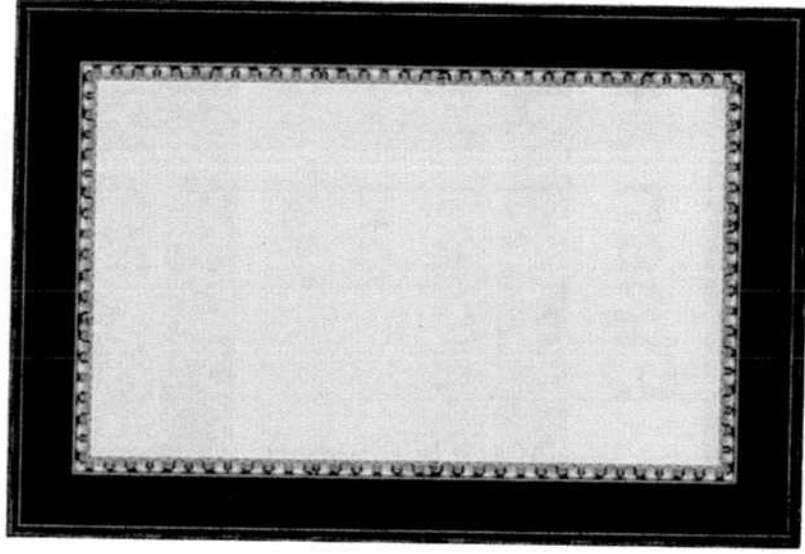


Polystyrene Bricks
Ready for Transport



Final Products

- The processed polystyrene bricks are sold to end market
- Bricks are made into picture frames and crown moulding products



Financial Considerations

Funding	
2010 Capital Budget (10296)	\$35,000
WDO Funding	\$56,090*
Total Funding	\$91,090** A
Expenditures	
Installation & Inspection	\$38,175
Purchase of Densifier Machine	\$42,161
Consultant	\$5,037
Misc.	\$536
Total Expenditures	\$85,910 B
Funds Remaining (To be returned to original funding source)	\$5,180 (A-B)

* Budget originally anticipated \$35K of external funding, Town was able to obtain \$56K.

** Majority of the WDO grant disbursements will be received before end of 2011 with the remainder of \$14K to be received April 2012 subject to satisfactory final report submission

Financial Considerations

Operating Budget Impact

Revenue Favourable Variance – New	
Sale of Polystyrene Bricks	\$5,239
Expenditures Favourable/(Unfavourable) Variance	
Contracted Services (Labour)	(\$27,000)
Maintenance	(\$5,967)
Transportation Costs	\$39,649
Expenditures Favourable Variance	\$6,682
Net Favourable Variance to Budget	\$11,921

The \$11,921 favourable net impact has been built into the 2012 operating budget submission.

Opportunities

- Opportunity to partner with York Region to process polystyrene collected from their Community Environmental Centre's (CEC's) which may further decrease operating costs
- Official launch scheduled for October 13, 2011 at 8100 Warden Avenue



Waste
Diversion
Ontario



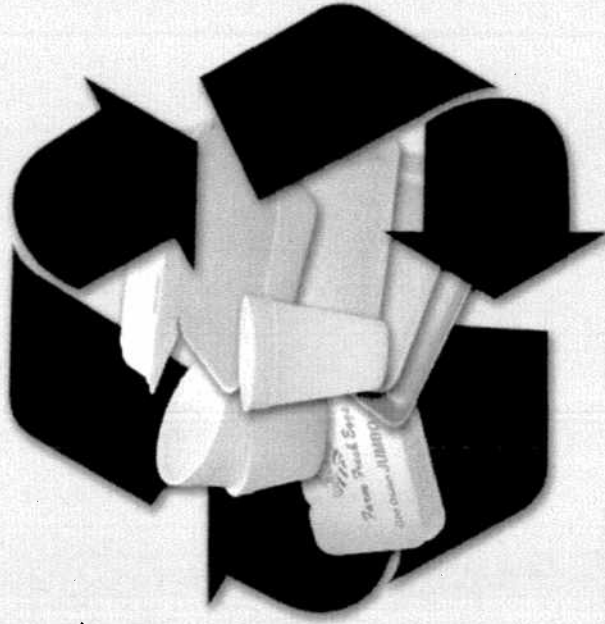
Canadian Plastics
Industry Association



Program Promotion

LOOK FOR THIS SYMBOL





POLYSTYRENE RECYCLING WORKS

CLEAN IT | BAG IT | BRING IT

Your polystyrene can be recycled into new plastic products.

Accepted Polystyrene #6 Packaging:

- Foam meat trays & egg cartons
- Foam clamshells
- Foam cups, bowls and plates

Rinse all food containers, remove and discard any absorbent pads, film wrap, labels, tape, paper and cardboard.

Not Accepted:

- Any foam container not marked with a #6 PS Symbol
- Any container/foam cushion packaging with labels, stickers, tape & not rinsed or dirty
- Any flexible "foam", shiny or bubble wrap
- Foam cushion packaging from electronics

Depot information:
www.markham.ca

